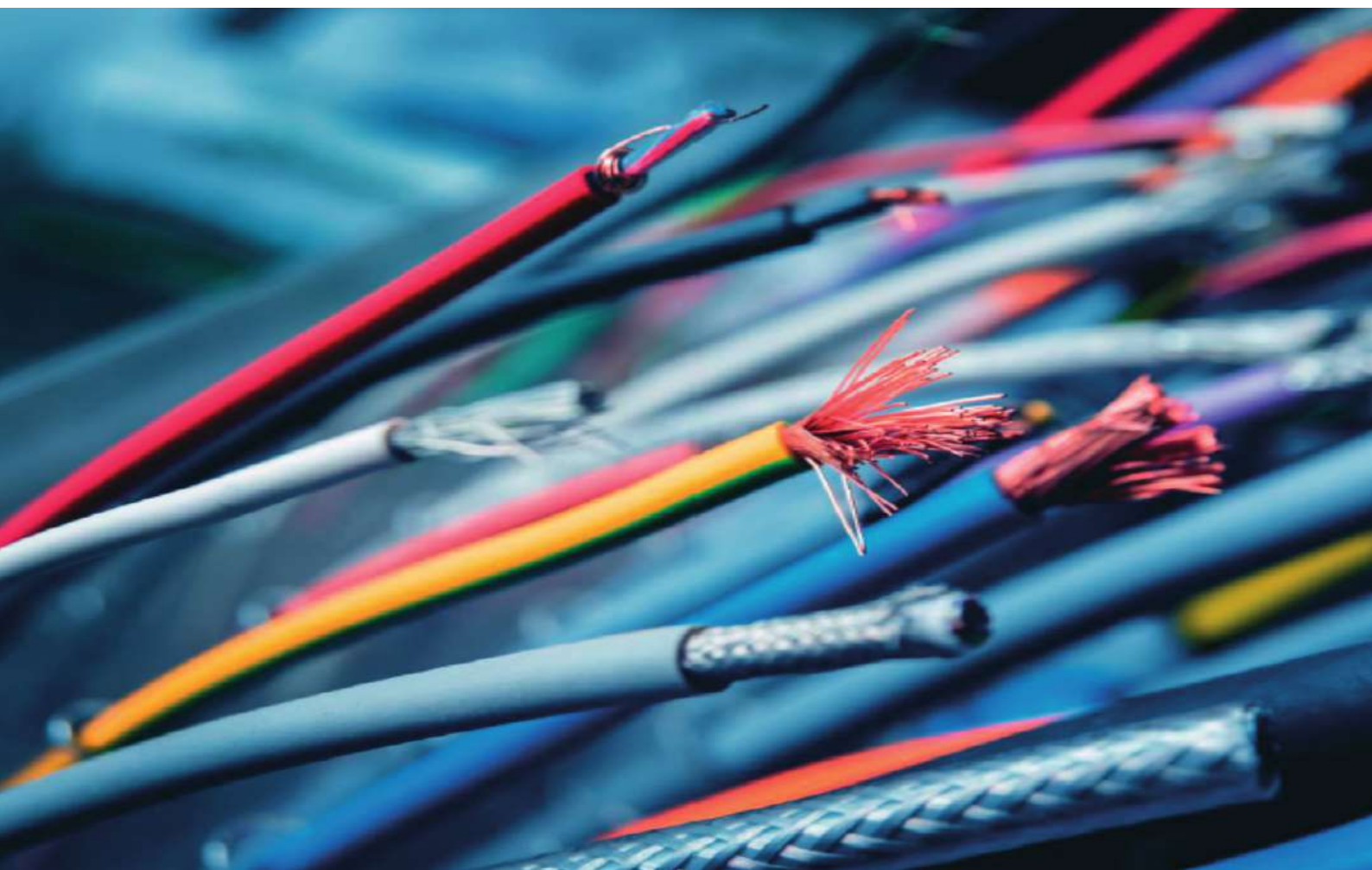


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- We are able to supply our customers with various types of electrical cables for both the domestic and international markets.

Böhm Kabel was founded in 1989, and we have more than 35 years of experience in the sale of electrical cables.

In this catalogue you will find for each article its technical data sheet, containing all useful specifications for recognising the most suitable cable for your needs.

Technical data, dimensions and weights are subject to change without notice.

Images and drawings are for illustrative purposes only.

Böhm Kabel reserves the right to change specifications and materials relating to technical developments.

Authorised distributor in Italy:

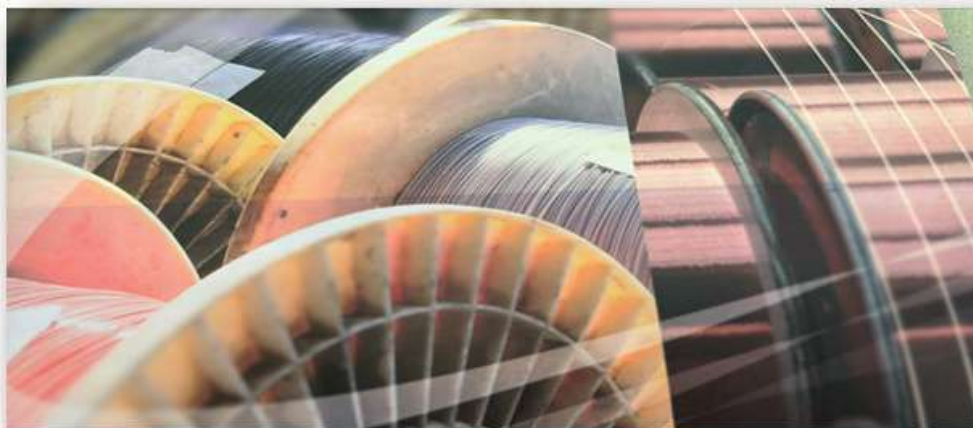
Moncavi Srl.

Certifications according to DIN ISO EN 9000ff



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# Flexible control cables

## YSLY-JZ - number coded flexible

### Technical data

adapted to DIN VDE 0281

#### Temperature range

flexing -5° C to +80° C

fixed installation -40° C to +80° C

**Nominal voltage**  $U_0/U = 300/500$  V

**Test voltage** 4000 V

**Insulation resistance** min. 20 MOhm x km

#### Minimum bending radius

for permanent approx. 7,5 x cable diam.

### Application

For flexible use for medium mechanical stress with free movements without tensile stress or forced movements in dry, moist and wet rooms. Not suitable for open air, wherever internationally recognized PVC cables are required. Usable as control cable on industrial machineries, conveyor systems or in industrial plants. The green-yellow earth core is laid in the outer layer.



Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km	Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
00101193	2X0,5 OZ	5,0	9,60	36,00	00101022	2X0,75 OZ	5,5	14,40	46,00
00101002	3X0,5	5,3	14,40	42,00	00101023	3X0,75	5,8	21,60	54,00
00101003	4X0,5	5,8	19,20	51,00	00101024	4X0,75	6,6	29,00	66,00
00101004	5X0,5	6,6	24,00	66,00	00101025	5X0,75	7,5	36,00	80,00
00101005	7X0,5	7,4	34,00	78,00	00101027	7X0,75	8,1	50,00	110,00
00101006	8X0,5	8,3	38,00	96,00	00101028	8X0,75	9,0	58,00	130,00
00101007	9X0,5	8,7	43,20	110,00	00101029	9X0,75	10,7	65,00	152,00
00101008	10X0,5	9,0	48,00	116,00	00101030	10X0,75	9,8	72,00	162,00
00101009	12X0,5	9,9	58,00	134,00	00101031	12X0,75	11,2	86,00	176,00
00101010	14X0,5	10,6	67,00	149,00	00101033	14X0,75	11,1	101,00	214,00
00101011	18X0,5	11,8	86,00	195,00	00101034	15X0,75	11,5	108,00	218,00
00101012	21X0,5	13,5	96,00	239,00	00101036	17X0,75	11,8	123,00	240,00
00101013	25X0,5	14,6	120,00	270,00	00101037	18X0,75	12,0	130,00	257,00
00101014	30X0,5	15,1	144,00	309,00	00101038	19X0,75	12,3	137,00	270,00
00101015	34X0,5	16,8	163,00	360,00	00101039	20X0,75	12,8	144,00	286,00
00101016	40X0,5	17,4	192,00	430,00	00101040	21X0,75	14,3	151,00	320,00
00101017	50X0,5	19,5	240,00	510,00	00101041	25X0,75	16,7	180,00	365,00
00101018	60X0,5	20,3	288,00	610,00	00101043	34X0,75	18,5	245,00	512,00
00101019	61X0,5	21,2	293,00	620,00	00101044	41X0,75	19,2	296,00	604,00
00101020	80X0,5	23,3	384,00	765,00	00101045	42X0,75	19,2	302,00	612,00
00101021	100X0,5	27,0	480,00	970,00	00101046	50X0,75	20,5	360,00	740,00
Further dimensions available on request Other colour codes on request					00101047	60X0,75	21,0	432,00	830,00
					00101048	61X0,75	21,5	439,00	846,00
					00101049	65X0,75	22,1	468,00	890,00
					00101050	80X0,75	24,9	576,00	1.075,00
					00101051	100X0,75	28,0	720,00	1.330,00



## Flexible control cables

### YSLY-JZ - number coded flexible

Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km	Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
00101052	2X1 OZ	5,8	19,20	53,00	00101078	2X1,5 OZ	6,6	29,00	70,00
00101053	3X1	6,3	29,00	67,00	00101079	3X1,5	7,0	43,00	86,00
00101054	4X1	6,9	38,40	81,00	00101080	4X1,5	7,9	58,00	109,00
00101055	5X1	7,8	48,00	103,00	00101081	5X1,5	8,8	72,00	138,00
00101056	6X1	8,6	58,00	120,00	00101083	7X1,5	9,8	101,00	130,00
00101057	7X1	8,7	67,00	133,00	00101084	8X1,5	11,6	115,00	178,00
00101058	8X1	10,4	77,00	170,00	00101085	9X1,5	13,0	129,00	216,00
00101059	9X1	11,2	86,00	199,00	00101086	10X1,5	12,7	144,00	255,00
00101060	10X1	11,4	96,00	215,00	00101087	12X1,5	13,6	173,00	257,00
00101061	12X1	11,7	115,00	225,00	00101088	14X1,5	13,8	202,00	305,00
00101062	14X1	12,6	134,00	270,00	00101089	18X1,5	16,4	259,00	345,00
00101064	18X1	14,3	173,00	344,00	00101090	20X1,5	16,5	288,00	430,00
00101065	20X1	15,0	192,00	370,00	00101091	21X1,5	17,2	302,00	529,00
00101066	21X1	15,8	205,00	384,00	00101092	25X1,5	19,4	360,00	620,00
00101067	25X1	17,5	240,00	500,00	00101093	32X1,5	20,8	461,00	780,00
00101068	34X1	19,5	326,00	634,00	00101094	34X1,5	21,6	490,00	820,00
00101069	41X1	21,4	394,00	770,00	00101095	41X1,5	23,6	591,00	970,00
00101070	42X1	21,4	403,00	776,00	00101096	42X1,5	23,8	605,00	1.002,00
00101071	50X1	23,2	480,00	910,00	00101097	50X1,5	25,8	720,00	1.201,00
00101073	60X1	24,6	376,00	1.032,00	00101098	60X1,5	28,0	864,00	1.420,00
00101074	61X1	24,6	586,00	1.052,00	00101099	61X1,5	28,0	878,00	1.433,00
00101075	65X1	25,5	628,00	1.172,00	00101100	65X1,5	29,4	936,00	1.575,00
					00101101	80X1,5	32,6	1.152,00	1.870,00
					00101102	100X1,5	37,5	1.440,00	2.350,00

Further dimensions available on request  
Other colour codes on request

## Flexible control cables

### YSLY-JZ - number coded flexible

Part N°	N° of cores x cross-sec. mm <sup>2</sup>	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km	Part N°	N° of cores x cross-sec. mm <sup>2</sup>	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
00101103	2X2,5 OZ	8,3	48,00	112,00	00101124	4X10	17,6	384,00	647,00
00101104	3X2,5	8,8	72,00	132,00	00101125	5X10	19,3	480,00	790,00
00101105	4X2,5	9,8	96,00	172,00	00101126	7X10	22,6	672,00	1.091,00
00101106	5X2,5	11,0	120,00	216,00	00101127	4X16	21,6	614,00	991,00
00101107	7X2,5	13,4	168,00	272,00	00101128	5X16	24,2	768,00	1.237,00
00101108	12X2,5	16,9	288,00	504,00	00101129	7X16	27,3	1.075,00	1.779,00
00101109	14X2,5	17,0	336,00	569,00	00101130	4X25	28,7	960,00	1.580,00
00101110	18X2,5	19,6	432,00	704,00	00101133	4X35	31,3	1.344,00	2.106,00
00101111	25X2,5	24,0	600,00	1.014,00	00101134	5X35	36,8	1.680,00	2.600,00
00101112	34X2,5	27,8	816,00	1.470,00	00101135	4X50	35,8	1.920,00	2.930,00
00101113	2X4 OZ	10,7	123,00	214,00	00101136	4X70	43,0	2.688,00	4.085,00
00101114	3X4	11,0	115,20	214,00	00101137	4X95	51,2	3.648,00	5.530,00
00101115	4X4	12,6	154,00	292,00	00101138	4X120	60,2	4.608,00	7.000,00
00101116	5X4	13,8	192,00	352,00					
00101117	7X4	15,0	269,00	445,00					
00101118	12X4	19,6	461,00	790,00					
00101119	3X6	13,8	173,00	355,00					
00101120	4X6	14,0	230,00	389,00					
00101121	5X6	15,3	288,00	473,00					
00101122	7X6	17,3	403,00	625,00					

Further dimensions available on request  
Other colour codes on request

## Flexible control cables

### YSLY-JZ - 450/750V number coded flexible

#### Technical data

adapted to DIN VDE 0281

#### Temperature range

flexing -5° C to +80° C

fixed installation -40° C to +80° C

**Nominal voltage**  $U_0/U = 450/750$  V

**Test voltage** 4000 V

**Insulation resistance** min. 20 MOhm x km

#### Minimum bending radius

for permanent approx. 8,5 x cable diam.

#### Application

Cable with increased insulation rating in flexible use for medium mechanical stress with free movements without tensile stress or forced movements in dry, moist and wet rooms. Not suitable for open air, wherever internationally recognized PVC cables are required. Usable as control cable on industrial machineries, conveyor systems or in industrial plants. The green-yellow earth core is laid in the outer layer.

Lay in same tray with power cables is allowed.



Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km	Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
40101193	2X0,5 OZ	5,0	9,60	36,00	40101022	2X0,75 OZ	5,5	14,40	46,00
40101002	3X0,5	5,3	14,40	42,00	40101023	3X0,75	5,8	21,60	54,00
40101003	4X0,5	5,8	19,20	51,00	40101024	4X0,75	6,6	29,00	66,00
40101004	5X0,5	6,6	24,00	66,00	40101025	5X0,75	7,5	36,00	80,00
40101005	7X0,5	7,4	34,00	78,00	40101027	7X0,75	8,1	50,00	110,00
40101006	8X0,5	8,3	38,00	96,00	40101028	8X0,75	9,0	58,00	130,00
40101007	9X0,5	8,7	43,20	110,00	40101029	9X0,75	10,7	65,00	152,00
40101008	10X0,5	9,0	48,00	116,00	40101030	10X0,75	9,8	72,00	162,00
40101009	12X0,5	9,9	58,00	134,00	40101031	12X0,75	11,2	86,00	176,00
40101010	14X0,5	10,6	67,00	149,00	40101033	14X0,75	11,1	101,00	214,00
40101011	18X0,5	11,8	86,00	195,00	40101034	15X0,75	11,5	108,00	218,00
40101012	21X0,5	13,5	96,00	239,00	40101036	17X0,75	11,8	123,00	240,00
40101013	25X0,5	14,6	120,00	270,00	40101037	18X0,75	12,0	130,00	257,00
40101014	30X0,5	15,1	144,00	309,00	40101038	19X0,75	12,3	137,00	270,00
40101015	34X0,5	16,8	163,00	360,00	40101039	20X0,75	12,8	144,00	286,00
40101016	40X0,5	17,4	192,00	430,00	40101040	21X0,75	14,3	151,00	320,00
40101017	50X0,5	19,5	240,00	510,00	40101041	25X0,75	16,7	180,00	365,00
40101018	60X0,5	20,3	288,00	610,00	40101043	34X0,75	18,5	245,00	512,00
40101019	61X0,5	21,2	293,00	620,00	40101044	41X0,75	19,2	296,00	604,00
40101020	80X0,5	23,3	384,00	765,00	40101045	42X0,75	19,2	302,00	612,00
40101021	100X0,5	27,0	480,00	970,00	40101046	50X0,75	20,5	360,00	740,00
					40101047	60X0,75	21,0	432,00	830,00
					40101048	61X0,75	21,5	439,00	846,00
					40101049	65X0,75	22,1	468,00	890,00
					40101050	80X0,75	24,9	576,00	1.075,00
					40101051	100X0,75	28,0	720,00	1.330,00

Further dimensions available on request  
Other colour codes on request



## Flexible control cables

### YSLY-JZ - 450/750V number coded flexible

Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km	Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
40101052	2X1 OZ	5,8	19,20	53,00	40101078	2X1,5 OZ	6,6	29,00	70,00
40101053	3X1	6,3	29,00	67,00	40101079	3X1,5	7,0	43,00	86,00
40101054	4X1	6,9	38,40	81,00	40101080	4X1,5	7,9	58,00	109,00
40101055	5X1	7,8	48,00	103,00	40101081	5X1,5	8,8	72,00	138,00
40101056	6X1	8,6	58,00	120,00	40101083	7X1,5	9,8	101,00	130,00
40101057	7X1	8,7	67,00	133,00	40101084	8X1,5	11,6	115,00	178,00
40101058	8X1	10,4	77,00	170,00	40101085	9X1,5	13,0	129,00	216,00
40101059	9X1	11,2	86,00	199,00	40101086	10X1,5	12,7	144,00	255,00
40101060	10X1	11,4	96,00	215,00	40101087	12X1,5	13,6	173,00	257,00
40101061	12X1	11,7	115,00	225,00	40101088	14X1,5	13,8	202,00	305,00
40101062	14X1	12,6	134,00	270,00	40101089	18X1,5	16,4	259,00	345,00
40101064	18X1	14,3	173,00	344,00	40101090	20X1,5	16,5	288,00	430,00
40101065	20X1	15,0	192,00	370,00	40101091	21X1,5	17,2	302,00	529,00
40101066	21X1	15,8	205,00	384,00	40101092	25X1,5	19,4	360,00	620,00
40101067	25X1	17,5	240,00	500,00	40101093	32X1,5	20,8	461,00	780,00
40101068	34X1	19,5	326,00	634,00	40101094	34X1,5	21,6	490,00	820,00
40101069	41X1	21,4	394,00	770,00	40101095	41X1,5	23,6	591,00	970,00
40101070	42X1	21,4	403,00	776,00	40101096	42X1,5	23,8	605,00	1.002,00
40101071	50X1	23,2	480,00	910,00	40101097	50X1,5	25,8	720,00	1.201,00
40101073	60X1	24,6	376,00	1.032,00	40101098	60X1,5	28,0	864,00	1.420,00
40101074	61X1	24,6	586,00	1.052,00	40101099	61X1,5	28,0	878,00	1.433,00
40101075	65X1	25,5	628,00	1.172,00	40101100	65X1,5	29,4	936,00	1.575,00
					40101101	80X1,5	32,6	1.152,00	1.870,00
					40101102	100X1,5	37,5	1.440,00	2.350,00

Further dimensions available on request  
Other colour codes on request

## Flexible control cables

### YSLY/EB-OZ - number coded flexible intrinsic safety blue outer jacket

#### Technical data

##### Temperature range

flexing -5° C to +80° C

fixed installation -40° C to +80° C

**Nominal voltage**  $U_0/U = 300/500$  V

**Test voltage** 3000 V

##### Insulation resistance

min. 20 MOhm x km

##### Minimum bending radius

7,5 x cable diam.

#### Application

For hazardous areas with special marking (blue). Used as flexible control and measuring cables to meet the requirements for the installation of electrical apparatus. These installations are not earthed and require a separate power circuit. Not suitable for laying below ground. Extensively oil-resistant.



Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km	Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
00104003	2X0,75	5,5	14,40	46,00	00104022	2X1,5	6,6	29,00	70,00
00104033	3X0,75	5,8	21,60	54,00	00104023	3X1,5	7,0	43,00	86,00
00104035	4X0,75	6,6	29,00	66,00	00104024	4X1,5	7,9	58,00	109,00
00104006	5X0,75	7,5	36,00	80,00	00104025	5X1,5	8,8	72,00	130,00
00104007	7X0,75	8,1	50,00	110,00	00104026	7X1,5	9,8	101,00	178,00
00104008	12X0,75	11,2	86,00	176,00	00104027	12X1,5	13,6	173,00	305,00
00104009	18X0,75	12,0	130,00	257,00	00104028	18X1,5	16,4	259,00	430,00
00104010	25X0,75	16,7	180,00	365,00	00104029	25X1,5	19,4	360,00	620,00
00104011	2X1	5,8	19,20	53,00	00104031	34X1,5	21,6	490,00	820,00
00104032	3X1	6,3	29,00	67,00					
00104013	4X1	6,9	38,40	81,00					
00104014	5X1	7,8	48,00	103,00					
00104016	7X1	8,7	67,00	133,00					
00104017	12X1	11,7	115,00	225,00					
00104018	18X1	14,3	173,00	344,00					
00104020	25X1	17,5	240,00	500,00					

Further dimensions available on request  
All cross-sections also available in -JZ-

## Flexible control cables

### YSLY/EB-OZ - number coded flexible intrinsic safety blue outer jacket

Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km	Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
00104003	2X0,75	5,5	14,40	46,00	00104022	2X1,5	6,6	29,00	70,00
00104004	3X0,75	5,8	21,60	54,00	00104023	3X1,5	7,0	43,00	86,00
00104005	4X0,75	6,6	29,00	66,00	00104024	4X1,5	7,9	58,00	109,00
00104006	5X0,75	7,5	36,00	80,00	00104025	5X1,5	8,8	72,00	130,00
00104050	6X0,75	8,0	44,00	105,00	00104026	7X1,5	9,8	101,00	178,00
00104007	7X0,75	8,1	50,00	110,00	00104027	12X1,5	13,6	173,00	305,00
00104008	12X0,75	11,2	86,00	176,00	00104028	18X1,5	16,4	259,00	430,00
00104009	18X0,75	12,0	130,00	257,00	00104029	25X1,5	19,4	360,00	620,00
00104010	25X0,75	16,7	180,00	365,00	00104030	32X1,5	15,9	461,00	780,00
00104054	34X0,75	16,4	245,00	510,00					
00104056	41X0,75	17,6	298,00	607,00					
00104011	2X1	5,8	19,20	53,00					
00104032	3X1	6,2	29,00	67,00					
00104013	4X1	6,9	38,40	81,00					
00104014	5X1	7,8	48,00	103,00					
00104015	6X1	8,6	57,60	120,00					
00104016	7X1	8,7	67,00	133,00					
00104017	12X1	11,7	115,00	225,00					
00104018	18X1	14,3	173,00	334,00					
00104019	24X1	17,4	230,40	495,00					
00104020	25X1	17,5	240,00	500,00					
00104055	41X1	21,4	394,00	770,00					
00104021	56X1	24,0	537,60	920,00					
00104058	100X1	31,0	960,00	1.645,00					

Further dimensions available on request  
All cross-sections also available in -JZ-



## Flexible control cables

### YSLCY/EB-OZ - number coded flexible intrinsic safety blue outer jacket screened

#### Technical data

##### Temperature range

flexing -5° C to +80° C

fixed installation -40° C to +80° C

**Nominal voltage**  $U_0/U = 300/500$  V

**Test voltage** 3000 V

##### Insulation resistance

min. 20 MOhm x km

##### Minimum bending radius

10 x cable diam.

#### Application

For hazardous areas with special marking (blue). Used as flexible control and measuring cables to meet the requirements for the installation of electrical apparatus. These installations are not earthed and require a separate power circuit. Not suitable for laying below ground. Extensively oil-resistant.



Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km	Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
00106003	2X0,5	7,5	40,00	74,00	00106026	2X1	8,5	55,00	110,00
00106002	3X0,5	8,0	45,00	96,00	00106027	3X1	9,0	65,30	122,00
00106004	4X0,5	8,2	55,00	104,00	00106138	4X1	9,5	83,10	148,00
00106005	5X0,5	9,6	66,00	118,00	00106029	5X1	10,2	89,40	170,00
00106006	7X0,5	9,9	81,00	140,00	00106030	7X1	10,8	126,00	209,00
00106007	12X0,5	12,5	138,50	190,00	00106031	12X1	14,2	188,10	350,00
00106147	14X0,5	11,9	122,00	223,00	00106032	18X1	16,5	286,00	505,00
00106008	18X0,5	14,5	156,40	280,00	00106033	25X1	19,6	388,50	660,00
00106009	25X0,5	16,7	250,20	410,00	00106034	34X1	22,4	505,00	840,00
00106010	30X0,5	17,5	297,00	480,00	00106035	41X1	24,5	578,00	1.000,00
00106011	40X0,5	20,0	341,50	600,00	00106036	50X1	25,6	688,00	1.150,00
00106122	50X0,5	20,9	407,00	740,00	00106037	61X1	29,0	782,00	1.350,00
00106012	52X0,5	22,0	377,00	730,00	00106124	2X1,5	9,3	66,00	140,00
00106013	61X0,5	25,0	479,00	840,00	00106126	3X1,5	9,6	83,00	160,00
00106014	2X0,75	7,6	49,00	92,00	00106094	4X1,5	9,9	100,00	178,00
00106084	2X0,75	7,6	49,00	92,00	00106127	5X1,5	10,6	129,00	210,00
00106015	3X0,75	8,0	58,00	102,00	00106042	7X1,5	13,3	195,00	290,00
00106134	3X0,75	8,0	58,00	102,00	00106043	12X1,5	16,0	278,50	450,00
00106016	4X0,75	8,6	75,00	115,00	00106044	18X1,5	19,5	390,00	620,00
00106135	4X0,75	8,6	75,00	115,00	00106045	25X1,5	22,6	535,00	790,00
00106017	5X0,75	9,0	83,00	150,00	00106046	34X1,5	25,9	702,00	1.130,00
00106018	7X0,75	10,6	102,00	178,00	00106145	35X1,5	22,7	645,00	1.100,00
00106019	12X0,75	12,9	176,00	280,00	00106140	40X1,5	24,4	730,00	1.350,00
00106020	18X0,75	14,8	241,50	370,00	00106047	41X1,5	28,3	845,00	1.280,00
00106021	25X0,75	17,6	322,00	499,00	00106141	42x1,5	25,5	865,00	1.350,00
00106022	34X0,75	20,9	473,00	670,00	00106048	50X1,5	29,9	1.005,00	1.600,00
00106023	41X0,75	22,9	583,00	790,00	00106049	61X1,5	33,1	1.212,00	1.780,00
00106024	50X0,75	24,5	695,00	950,00					

Further dimensions available on request  
All cross-sections also available in -JZ-

## Flexible control cables

### YSLCY/EB-OZ - number coded flexible intrinsic safety blue outer jacket screened

Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km	Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
00106113	2X2,5	10,3	112,00	180,00	00106123	4X10	22,0	540,00	940,00
00106051	3X2,5	11,5	146,00	209,00	00106093	5X10	25,4	714,00	1.105,00
00106052	4X2,5	12,3	168,00	250,00	00106066	7X10	26,0	850,00	1.181,00
00106053	5X2,5	14,2	198,00	320,00	00106067	4X16	25,5	1.240,00	1.230,00
00106054	7X2,5	14,9	288,00	416,00	00106097	5X16	28,6	1.053,00	1.480,00
00106055	12X2,5	19,4	477,30	690,00	00106148	7X16	28,0	1.075,00	2.166,00
00106056	18X2,5	23,5	598,00	958,00	00106069	4X25	35,6	1.310,00	1.790,00
00106057	25X2,5	27,5	848,00	1.027,00	00106070	5X25	36,3	1.396,00	1.874,00
00106131	3X4	12,3	178,00	340,00	00106109	5X25	36,3	1.396,00	1.874,00
00106099	4X4	15,7	294,00	410,00	00106071	4X35	37,2	1.610,00	2.260,00
00106059	5X4	16,9	328,00	480,00	00106072	5X35	37,8	1.901,00	2.950,00
00106086	5X4	16,9	328,00	480,00	00106088	4X50	40,6	2.220,00	3.290,00
00106060	7X4	18,8	355,00	620,00	00106074	4X70	51,0	3.175,00	4.500,00
00106061	4X6	18,0	361,00	559,00	00106090	4X95	57,0	4.060,00	5.920,00
00106087	5X6	20,3	441,00	680,00	00106076	4X120	68,0	5.150,00	7.230,00
00106077	7X6	22,2	505,00	907,00					

Further dimensions available on request  
All cross-sections also available in -JZ-

## Flexible control cables

### YSLYSY-JZ - number coded flexible steel wire braid

#### Technical data

adapted to DIN VDE 0245, 0281, 0293, 0295

#### Temperature range

flexing -5° C to +80° C

fixed installation -40° C to +80° C

**Nominal voltage**  $U_0/U = 300/500$  V

**Test voltage** 4000 V

**Insulation resistance**

min. 20 MOhm x km

**Minimum bending radius**

approx. 6 x cable diam. (fixed installation)

#### Application

For use as measuring and control cables in tool machineries, plant installations, power stations and in data equipment. The braided screen offers best possible protection against mechanical damage. The galvanized coating on the steel wire braid helps to protect against corrosion, and also notably improves the soldering performance. The transparent outer sheath gives the cable an optical revaluation.



Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km	Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
00105002	2X0,5 OZ	8,0	9,60	80,00	00105014	2X0,75 OZ	8,5	14,40	97,00
00105003	3X0,5	8,5	14,40	90,00	00105015	3X0,75	9,0	21,60	102,00
00105004	4X0,5	9,0	19,20	101,00	00105016	4X0,75	9,5	29,00	120,00
00105005	5X0,5	10,5	24,00	118,00	00105017	5X0,75	10,6	36,00	140,00
00105006	7X0,5	11,0	33,60	155,00	00105018	7X0,75	11,5	50,00	180,00
00105007	12X0,5	13,0	58,00	217,00	00105019	12X0,75	14,0	86,00	290,00
00105008	18X0,5	15,0	86,00	340,00	00105020	18X0,75	16,0	130,00	380,00
00105009	25X0,5	17,5	120,00	405,00	00105021	25X0,75	17,8	180,00	500,00
00105010	34X0,5	18,4	163,00	480,00	00105022	34X0,75	20,5	245,00	660,00
00105011	40X0,5	20,5	192,00	560,00	00105023	40X0,75	22,5	288,00	730,00
00105012	52X0,5	23,0	250,00	690,00	00105024	50X0,75	24,6	360,00	920,00
00105013	61X0,5	24,6	293,00	840,00	00105025	61X0,75	25,9	439,00	1.080,00
00105026	2X1 OZ	9,0	19,20	110,00	00105039	2X1,5 OZ	10,0	29,00	125,00
00105027	3X1	9,5	29,00	130,00	00105040	3X1,5	10,5	43,00	146,00
00105028	4X1	10,0	38,40	140,00	00105041	4X1,5	11,5	58,00	190,00
00105029	5X1	11,0	48,00	160,00	00105042	5X1,5	12,5	72,00	209,00
00105030	7X1	11,9	67,00	200,00	00105043	7X1,5	13,6	101,00	280,00
00105031	9X1	14,4	86,00	290,00	00105044	12X1,5	16,9	173,00	440,00
00105032	12X1	15,0	115,00	330,00	00105084	18X1,5	20,0	259,00	590,00
00105033	18X1	17,1	173,00	490,00	00105046	25X1,5	23,2	360,00	780,00
00105034	25X1	20,0	240,00	620,00	00105047	34X1,5	26,0	490,00	1.120,00
00105035	34X1	22,5	326,00	820,00	00105048	41X1,5	28,4	591,00	1.360,00
00105036	40X1	23,8	384,00	940,00	00105049	50X1,5	30,5	720,00	1.582,00
00105037	50X1	25,6	480,00	1.110,00	00105050	61X1,5	31,8	878,00	1.800,00
00105038	61X1	27,2	586,00	1.300,00					

Further dimensions available on request  
Other colour codes on request  
(minimum quantity)

## Flexible control cables

### YLSY-JZ - number coded flexible steel wire braid

Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km		Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
00105051	2X2,5 OZ	10,8	48,00	185,00		00105070	4X10	22,0	384,00	940,00
00105052	3X2,5	13,0	72,00	245,00		00105071	5X10	24,1	480,00	1.060,00
00105053	4X2,5	14,5	96,00	290,00		00105072	7X10	25,9	672,00	1.550,00
00105054	5X2,5	15,5	120,00	340,00		00105073	4X16	25,5	614,00	1.350,00
00105055	7X2,5	16,8	168,00	415,00		00105074	5X16	27,5	768,00	1.730,00
00105056	12X2,5	21,9	288,00	650,00		00105075	7X16	31,0	1.075,00	2.160,00
00105057	18X2,5	25,4	432,00	890,00		00105076	4X25	29,4	960,00	2.000,00
00105058	25X2,5	29,9	600,00	1.450,00		00105077	5X25	32,1	1.200,00	2.400,00
00105059	34X2,5	33,6	816,00	1.800,00		00105078	4X35	34,8	1.344,00	2.500,00
00105060	50X2,5	39,4	1.200,00	2.200,00		00105079	5X35	37,4	1.680,00	3.000,00
00105061	61X2,5	41,5	1.464,00	2.990,00		00105080	4X50	40,3	1.920,00	3.500,00
00105063	3X4	14,4	115,00	340,00		00105081	4X70	44,6	2.688,00	4.500,00
00105064	4X4	16,5	154,00	425,00		00105082	4X95	51,7	3.648,00	6.200,00
00105065	5X4	17,6	192,00	496,00						
00105066	7X4	20,1	269,00	635,00						
00105067	4X6	18,2	230,00	570,00						
00105083	5X6	20,2	288,00	670,00						
00105069	7X6	21,9	403,00	840,00						

Further dimensions available on request  
Other colour codes on request  
(minimum quantity)

## Flexible control cables

### YSLCY-JZ - EMC-type flexible Cu-screened transparent

#### Technical data

##### Temperature range

flexing -5° C to +80° C

fixed installation -40° C to +80° C

**Nominal voltage**  $U_0/U = 300/500$  V

**Test voltage** 4000 V

**Insulation resistance**

> 20 MOhm x km

#### Application

For use as measuring, control and connection cable for machine tools, conveyor belts, tool machineries, plant installations, control and computer units in dry, damp or wet rooms at normal stress. The braided copper screen serves as electromagnetic screen between the internal electric circuits and the surroundings. The transparent outer sheath gives the cable an optical revaluation.



Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km	Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
00106003	2X0,5 OZ	7,5	40,00	74,00	00106026	2X1 OZ	8,5	55,00	110,00
00106002	3X0,5	8,0	45,00	96,00	00106027	3X1	9,0	65,30	122,00
00106004	4X0,5	8,2	55,00	104,00	00106138	4X1	9,5	83,10	148,00
00106005	5X0,5	9,6	66,00	118,00	00106029	5X1	10,2	89,40	170,00
00106006	7X0,5	9,9	81,00	140,00	00106030	7X1	10,8	126,00	209,00
00106007	12X0,5	12,5	138,50	190,00	00106031	12X1	14,2	188,10	350,00
00106147	14X0,5	11,9	122,00	223,00	00106032	18X1	16,5	286,00	505,00
00106008	18X0,5	14,5	156,40	280,00	00106033	25X1	19,6	388,50	660,00
00106009	25X0,5	16,7	250,20	410,00	00106034	34X1	22,4	505,00	840,00
00106010	30X0,5	17,5	297,00	480,00	00106035	41X1	24,5	578,00	1.000,00
00106011	40X0,5	20,0	341,50	600,00	00106036	50X1	25,6	688,00	1.150,00
00106122	50X0,5	20,9	407,00	740,00	00106037	61X1	29,0	782,00	1.350,00
00106012	52X0,5	22,0	377,00	730,00	00106124	2X1,5 OZ	9,3	66,00	140,00
00106013	61X0,5	25,0	479,00	840,00	00106126	3X1,5	9,6	83,00	160,00
00106014	2X0,75 OZ	7,6	49,00	92,00	00106094	4X1,5	9,9	100,00	178,00
00106015	3X0,75	8,0	58,00	102,00	00106127	5X1,5	10,6	129,00	210,00
00106016	4X0,75	8,6	75,00	115,00	00106042	7X1,5	13,3	195,00	290,00
00106017	5X0,75	9,0	83,00	150,00	00106043	12X1,5	16,0	278,50	450,00
00106018	7X0,75	10,6	102,00	178,00	00106044	18X1,5	19,5	390,00	620,00
00106019	12X0,75	12,9	176,00	280,00	00106045	25X1,5	22,6	535,00	790,00
00106020	18X0,75	14,8	241,50	370,00	00106046	34X1,5	25,9	702,00	1.130,00
00106021	25X0,75	17,6	322,00	499,00	00106145	35X1,5	22,7	645,00	1.100,00
00106022	34X0,75	20,9	473,00	670,00	00106140	40X1,5	24,4	730,00	1.350,00
00106023	41X0,75	22,9	583,00	790,00	00106047	41X1,5	28,3	845,00	1.280,00
00106024	50X0,75	24,5	695,00	950,00	00106141	42x1,5	25,5	865,00	1.350,00
00106025	61X0,75	26,2	798,00	1.100,00	00106048	50X1,5	29,9	1.005,00	1.600,00
00106146	64X0,75	28,0	603,00	1.150,00	00106049	61X1,5	33,1	1.212,00	1.780,00

Further dimensions available on request

Other colour codes on request

(minimum quantity)

## Flexible control cables

### YSLYCY-JZ - EMC-type flexible

### Cu-screened transparent

Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km	Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
00106113	2X2,5 OZ	10,3	112,00	180,00	00106123	4X10	22,0	540,00	940,00
00106051	3X2,5	11,5	146,00	209,00	00106093	5X10	25,4	714,00	1.105,00
00106052	4X2,5	12,3	168,00	250,00	00106066	7X10	26,0	850,00	1.181,00
00106053	5X2,5	14,2	198,00	320,00	00106067	4X16	25,5	1.240,00	1.230,00
00106054	7X2,5	14,9	288,00	416,00	00106097	5X16	28,6	1.053,00	1.480,00
00106055	12X2,5	19,4	477,30	690,00	00106148	7X16	28,0	1.075,00	2.166,00
00106056	18X2,5	23,5	598,00	958,00	00106069	4X25	35,6	1.310,00	1.790,00
00106057	25X2,5	27,5	848,00	1.027,00	00106070	5X25	36,3	1.396,00	1.874,00
00106131	3X4	12,3	178,00	340,00	00106109	5X25	36,3	1.396,00	1.874,00
00106099	4X4	15,7	294,00	410,00	00106071	4X35	37,2	1.610,00	2.260,00
00106059	5X4	16,9	328,00	480,00	00106072	5X35	37,8	1.901,00	2.950,00
00106060	7X4	18,8	355,00	620,00	00106088	4X50	40,6	2.220,00	3.290,00
00106061	4X6	18,0	361,00	559,00	00106074	4X70	51,0	3.175,00	4.500,00
00106087	5X6	20,3	441,00	680,00	00106090	4X95	57,0	4.060,00	5.920,00
00106077	7X6	22,2	505,00	907,00	00106076	4X120	68,0	5.150,00	7.230,00

Further dimensions available on request  
Other colour codes on request  
(minimum quantity)-

## Flexible control cables

### YSLCY-OZ/JZ - EMC-type

### Cu-screened control cable

#### Technical data

adapted to DIN VDE 0245, 0281 part 13

#### Temperature range

flexing -5° C to +70° C

fixed installation -30° C to +70° C

**Nominal voltage** 300/500 V

**Test voltage** 4000 V

#### Insulation resistance

min. 20 MOhm x km

#### Minimum bending radius

approx. 10 x cable diam.

#### Application

For use as shielded cable in control circuits, tool making and machine industries as well as signal cable in control systems and electronics. The usual PVC-inner sheath has been replaced by a stabilizing foil separator, thus reducing the total diameter of the cable. The high covering percentage of the copper screen offers an interference-free signal transfer.



Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km	Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
01104157	1X0,5	5,9	15,00	21,00	01104021	2X0,75	1,0	43,00	50,00
01104003	2X0,5	5,9	36,00	49,00	01104022	3X0,75	6,2	52,00	64,00
01104004	3X0,5	6,2	43,00	55,00	01104024	4X0,75	7,1	61,00	77,00
01104005	4X0,5	6,6	49,00	61,00	01104026	5X0,75	7,7	72,00	93,00
01104006	5X0,5	7,1	57,00	76,00	01104160	6X0,75	8,3	85,00	114,00
01104007	6X0,5	7,6	66,00	89,00	01104027	7X0,75	8,6	90,00	130,00
01104008	7X0,5	7,6	69,00	98,00	01104159	8X0,75	8,8	110,00	140,00
01104009	8X0,5	8,1	82,00	110,00	01104028	10X0,75	10,0	131,00	170,00
01104010	10X0,5	9,3	93,00	131,00	01104029	12X0,75	10,5	154,00	187,00
01104011	12X0,5	9,6	107,00	147,00	01104030	14X0,75	11,8	166,00	239,00
01104012	16X0,5	10,5	129,00	184,00	01104031	16X0,75	12,0	183,00	249,00
01104013	18X0,5	11,0	152,00	203,00	01104032	18X0,75	12,5	205,00	274,00
01104014	20X0,5	11,4	165,00	220,00	01104033	19X0,75	12,8	213,00	290,00
01104015	24X0,5	13,3	190,00	274,00	01104034	21X0,75	14,0	237,00	330,00
01104167	25X0,5	14,0	211,00	280,00	01104035	24X0,75	14,5	250,00	349,00
01104016	27X0,5	14,0	229,00	318,00	01104040	25X0,75	14,8	285,00	361,00
01104017	32X0,5	14,4	287,00	341,00	01104041	27X0,75	15,0	299,00	420,00
01104162	34X0,5	15,5	312,00	360,00	01104042	30X0,75	17,1	315,00	445,00
01104018	42X0,5	17,3	365,00	490,00	01104190	32X0,75	15,9	330,00	445,00
01104019	50X0,5	18,5	407,00	562,00	01104044	34X0,75	17,8	350,00	498,00
					01104045	37X0,75	18,8	360,00	588,00
					01104046	40X0,75	19,2	393,00	640,00
					01104047	42X0,75	20,0	440,00	680,00
					01104048	48X0,75	21,4	463,00	690,00
					01104049	50X0,75	21,9	480,00	696,00
					01104050	61X0,75	21,9	555,00	810,00

Further dimensions available on request

## Flexible control cables

### YSLCY-OZ/JZ - EMC-type

### Cu-screened control cable

Part N°	N° of cores x cross-sec. mm <sup>2</sup>	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km	Part N°	N° of cores x cross-sec. mm <sup>2</sup>	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
01104051	1X1	5,0	23,00	1,00	01104189	1x2,5	5,6	42,00	64,80
01104052	2X1	7,4	51,00	78,00	01104174	2X2,5	8,6	96,00	130,00
01104053	3X1	6,3	70,00	78,00	01104094	3X2,5	10,9	122,00	179,00
01104054	4X1	6,8	80,00	94,00	01104095	4X2,5	11,8	148,00	219,00
01104055	5X1	7,6	95,00	122,00	01104096	5X2,5	13,1	180,00	279,00
01104056	6X1	10,0	105,00	160,00	01104097	7X2,5	14,1	253,00	349,00
01104057	7X1	8,8	120,00	152,00	01104098	12X2,5	18,8	385,00	609,00
01104058	8X1	11,2	130,00	210,00	01104187	1x4	6,2	58,00	84,60
01104175	10X1	13,5	142,00	250,00	01104164	2X4	11,5	150,00	194,00
01104060	12X1	10,6	172,00	250,00	01104099	3X4	12,0	178,00	233,00
01104061	16X1	15,5	225,00	360,00	01104100	4X4	13,2	248,00	305,00
01104062	18X1	12,5	268,00	366,00	01104102	5X4	14,4	269,00	373,00
01104063	19X1	12,8	280,00	1,00	01104188	1x6	7,7	87,00	132,00
01104064	20X1	16,2	290,00	410,00	01104180	2X6	12,5	159,00	230,00
01104065	25X1	15,4	354,00	518,00	01104103	4X6	16,0	360,00	450,00
01104066	27X1	16,6	385,00	575,00	01104108	5X6	17,7	369,00	558,00
01104067	34X1	17,0	450,00	710,00	01104104	4X10	20,0	485,00	800,00
01104069	42X1	20,3	533,00	876,00	01104110	5X10	21,5	714,00	854,00
01104070	50X1	21,8	625,00	1.002,00	01104106	4X16	24,0	830,00	1.070,00
01104071	1X1,5	5,3	29,00	48,00	01104111	5X16	25,4	1.050,00	1.260,00
01104072	2X1,5	8,0	65,00	95,00	01104107	4X25	31,0	1.310,00	1.380,00
01104073	3X1,5	7,4	90,00	97,00	01104113	5X25	31,6	1.433,00	1.922,00
01104074	4X1,5	8,0	110,00	122,00					
01104075	5X1,5	8,8	125,00	150,00					
01104177	6X1,5	10,8	144,00	200,00					
01104077	7X1,5	10,2	159,00	192,00					
01104078	8X1,5	12,3	175,00	260,00					
01104079	10X1,5	12,0	210,00	274,00					
01104080	12X1,5	12,6	268,00	315,00					
01104081	16X1,5	16,0	359,00	452,00					
01104082	18X1,5	15,1	373,00	450,00					
01104083	19X1,5	15,5	380,00	494,00					
01104084	20X1,5	17,8	385,00	551,00					
01104085	21X1,5	15,9	392,00	530,00					
01104086	25X1,5	20,6	530,00	689,00					
01104087	27X1,5	19,3	575,00	760,00					
01104088	30X1,5	19,3	593,00	790,00					
01104089	32X1,5	22,2	615,00	852,00					
01104090	34X1,5	20,5	640,00	885,00					
01104091	37X1,5	21,3	695,00	920,00					
01104092	42X1,5	22,3	780,00	1.004,00					
01104093	50X1,5	24,4	974,00	1.210,00					

Further dimensions available on request



## Flexible control cables

### YSLCY-OZ/JZ - 450/750V EMC-type

### Cu-screened control cable

#### Technical data

adapted to DIN VDE 0245, 0281 part 13

#### Temperature range

flexing -5° C to +70° C

fixed installation -30° C to +70° C

**Nominal voltage** 450/750 V

**Test voltage** 4000 V

#### Insulation resistance

min. 20 MOhm x km

#### Minimum bending radius

approx. 10 x cable diam.

#### Application

Increased insulation ratings control cable for use as screened cable in control or power circuits, tool making and machine industries as well as signal cable in control systems and electronics. The usual PVC-inner sheath has been replaced by a stabilizing foil separator, thus reducing the total diameter of the cable. The high covering percentage of the copper screen offers an interference-free signal transfer.



Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km	Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
41104157	1X0,5	5,9	15,00	21,00	41104021	2X0,75	1,0	43,00	50,00
41104003	2X0,5	5,9	36,00	49,00	41104022	3X0,75	6,2	52,00	64,00
41104004	3X0,5	6,2	43,00	55,00	41104024	4X0,75	7,1	61,00	77,00
41104005	4X0,5	6,6	49,00	61,00	41104026	5X0,75	7,7	72,00	93,00
41104006	5X0,5	7,1	57,00	76,00	41104160	6X0,75	8,3	85,00	114,00
41104007	6X0,5	7,6	66,00	89,00	41104027	7X0,75	8,6	90,00	130,00
41104008	7X0,5	7,6	69,00	98,00	41104159	8X0,75	8,8	110,00	140,00
41104009	8X0,5	8,1	82,00	110,00	41104028	10X0,75	10,0	131,00	170,00
41104010	10X0,5	9,3	93,00	131,00	41104029	12X0,75	10,5	154,00	187,00
41104011	12X0,5	9,6	107,00	147,00	41104030	14X0,75	11,8	166,00	239,00
41104012	16X0,5	10,5	129,00	184,00	41104031	16X0,75	12,0	183,00	249,00
41104013	18X0,5	11,0	152,00	203,00	41104032	18X0,75	12,5	205,00	274,00
41104014	20X0,5	11,4	165,00	220,00	41104033	19X0,75	12,8	213,00	290,00
41104015	24X0,5	13,3	190,00	274,00	41104034	21X0,75	14,0	237,00	330,00
41104167	25X0,5	14,0	211,00	280,00	41104035	24X0,75	14,5	250,00	349,00
41104016	27X0,5	14,0	229,00	318,00	41104040	25X0,75	14,8	285,00	361,00
41104017	32X0,5	14,4	287,00	341,00	41104041	27X0,75	15,0	299,00	420,00
41104162	34X0,5	15,5	312,00	360,00	41104042	30X0,75	17,1	315,00	445,00
41104018	42X0,5	17,3	365,00	490,00	41104190	32X0,75	15,9	330,00	445,00
41104019	50X0,5	18,5	407,00	562,00	41104044	34X0,75	17,8	350,00	498,00
					41104045	37X0,75	18,8	360,00	588,00
					41104046	40X0,75	19,2	393,00	640,00
					41104047	42X0,75	20,0	440,00	680,00
					41104048	48X0,75	21,4	463,00	690,00
					41104049	50X0,75	21,9	480,00	696,00
					41104050	61X0,75	21,9	555,00	810,00

## Flexible control cables

### YSLCY-OZ/JZ - 450/750V EMC-type

### Cu-screened control cable

Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km	Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
41104051	1X1	5,0	23,00	1,00	41104189	1x2,5	5,6	42,00	64,80
41104052	2X1	7,4	51,00	78,00	41104174	2X2,5	8,6	96,00	130,00
41104053	3X1	6,3	70,00	78,00	41104094	3X2,5	10,9	122,00	179,00
41104054	4X1	6,8	80,00	94,00	41104095	4X2,5	11,8	148,00	219,00
41104055	5X1	7,6	95,00	122,00	41104096	5X2,5	13,1	180,00	279,00
41104056	6X1	10,0	105,00	160,00	41104097	7X2,5	14,1	253,00	349,00
41104057	7X1	8,8	120,00	152,00	41104098	12X2,5	18,8	385,00	609,00
41104058	8X1	11,2	130,00	210,00	41104187	1x4	6,2	58,00	84,60
41104175	10X1	13,5	142,00	250,00	41104164	2X4	11,5	150,00	194,00
41104060	12X1	10,6	172,00	250,00	41104099	3X4	12,0	178,00	233,00
41104061	16X1	15,5	225,00	360,00	41104100	4X4	13,2	248,00	305,00
41104062	18X1	12,5	268,00	366,00	41104102	5X4	14,4	269,00	373,00
41104063	19X1	12,8	280,00	1,00	41104188	1x6	7,7	87,00	132,00
41104064	20X1	16,2	290,00	410,00	41104180	2X6	12,5	159,00	230,00
41104065	25X1	15,4	354,00	518,00	41104103	4X6	16,0	360,00	450,00
41104066	27X1	16,6	385,00	575,00	41104108	5X6	17,7	369,00	558,00
41104067	34X1	17,0	450,00	710,00	41104104	4X10	20,0	485,00	800,00
41104069	42X1	20,3	533,00	876,00	41104110	5X10	21,5	714,00	854,00
41104070	50X1	21,8	625,00	1.002,00	41104106	4X16	24,0	830,00	1.070,00
41104071	1X1,5	5,3	29,00	48,00	41104111	5X16	25,4	1.050,00	1.260,00
41104072	2X1,5	8,0	65,00	95,00	41104107	4X25	31,0	1.310,00	1.380,00
41104073	3X1,5	7,4	90,00	97,00	41104113	5X25	31,6	1.433,00	1.922,00
41104074	4X1,5	8,0	110,00	122,00					
41104075	5X1,5	8,8	125,00	150,00					
41104177	6X1,5	10,8	144,00	200,00					
41104077	7X1,5	10,2	159,00	192,00					
41104078	8X1,5	12,3	175,00	260,00					
41104079	10X1,5	12,0	210,00	274,00					
41104080	12X1,5	12,6	268,00	315,00					
41104081	16X1,5	16,0	359,00	452,00					
41104082	18X1,5	15,1	373,00	450,00					
41104083	19X1,5	15,5	380,00	494,00					
41104084	20X1,5	17,8	385,00	551,00					
41104085	21X1,5	15,9	392,00	530,00					
41104086	25X1,5	20,6	530,00	689,00					
41104087	27X1,5	19,3	575,00	760,00					
41104088	30X1,5	19,3	593,00	790,00					
41104089	32X1,5	22,2	615,00	852,00					
41104090	34X1,5	20,5	640,00	885,00					
41104091	37X1,5	21,3	695,00	920,00					
41104092	42X1,5	22,3	780,00	1.004,00					
41104093	50X1,5	24,4	974,00	1.210,00					

Further dimensions available on request

## Flexible control cables

### YSLY 0,6/1 kV- number coded flexible

#### Technical data

adapted to DIN VDE 0281

#### Temperature range

flexing -5° C to +80° C

fixed installation -40° C to +80° C

**Nominal voltage**  $U_0/U = 0,6/1\text{kV}$

**Test voltage** 4000 V

**Insulation resistance** min. 13,3 MOhm x km

#### Minimum bending radius

for permanent approx. 7,5 x cable diam.

#### Application

For flexible use for medium mechanical stress with free movements without tensile stress or forced movements in dry, moist and wet rooms. Not suitable for open air, wherever internationally recognized PVC cables are required. Usable as control cable on industrial machineries, conveyor systems or in industrial plants. The green-yellow earth core is laid in the outer layer.



Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km	Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
00101193	2X0,5 OZ	5,0	9,60	36,00	00101022	2X0,75 OZ	5,5	14,40	46,00
00101002	3X0,5	5,3	14,40	42,00	00101023	3X0,75	5,8	21,60	54,00
00101003	4X0,5	5,8	19,20	51,00	00101024	4X0,75	6,6	29,00	66,00
00101004	5X0,5	6,6	24,00	66,00	00101025	5X0,75	7,5	36,00	80,00
00101005	7X0,5	7,4	34,00	78,00	00101027	7X0,75	8,1	50,00	110,00
00101006	8X0,5	8,3	38,00	96,00	00101028	8X0,75	9,0	58,00	130,00
00101007	9X0,5	8,7	43,20	110,00	00101029	9X0,75	10,7	65,00	152,00
00101008	10X0,5	9,0	48,00	116,00	00101030	10X0,75	9,8	72,00	162,00
00101009	12X0,5	9,9	58,00	134,00	00101031	12X0,75	11,2	86,00	176,00
00101010	14X0,5	10,6	67,00	149,00	00101033	14X0,75	11,1	101,00	214,00
00101011	18X0,5	11,8	86,00	195,00	00101034	15X0,75	11,5	108,00	218,00
00101012	21X0,5	13,5	96,00	239,00	00101036	17X0,75	11,8	123,00	240,00
00101013	25X0,5	14,6	120,00	270,00	00101037	18X0,75	12,0	130,00	257,00
00101014	30X0,5	15,1	144,00	309,00	00101038	19X0,75	12,3	137,00	270,00
00101015	34X0,5	16,8	163,00	360,00	00101039	20X0,75	12,8	144,00	286,00
00101016	40X0,5	17,4	192,00	430,00	00101040	21X0,75	14,3	151,00	320,00
00101017	50X0,5	19,5	240,00	510,00	00101041	25X0,75	16,7	180,00	365,00
00101018	60X0,5	20,3	288,00	610,00	00101043	34X0,75	18,5	245,00	512,00
00101019	61X0,5	21,2	293,00	620,00	00101044	41X0,75	19,2	296,00	604,00
00101020	80X0,5	23,3	384,00	765,00	00101045	42X0,75	19,2	302,00	612,00
00101021	100X0,5	27,0	480,00	970,00	00101046	50X0,75	20,5	360,00	740,00
					00101047	60X0,75	21,0	432,00	830,00
					00101048	61X0,75	21,5	439,00	846,00
					00101049	65X0,75	22,1	468,00	890,00
					00101050	80X0,75	24,9	576,00	1.075,00
					00101051	100X0,75	28,0	720,00	1.330,00

Further dimensions available on request  
Other colour codes on request

## Flexible control cables

### YSLY 0,6/1 kV- number coded flexible

Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km	Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
00101052	2X1 OZ	5,8	19,20	53,00	00101078	2X1,5 OZ	6,6	29,00	70,00
00101053	3X1	6,3	29,00	67,00	00101079	3X1,5	7,0	43,00	86,00
00101054	4X1	6,9	38,40	81,00	00101080	4X1,5	7,9	58,00	109,00
00101055	5X1	7,8	48,00	103,00	00101081	5X1,5	8,8	72,00	138,00
00101056	6X1	8,6	58,00	120,00	00101083	7X1,5	9,8	101,00	130,00
00101057	7X1	8,7	67,00	133,00	00101084	8X1,5	11,6	115,00	178,00
00101058	8X1	10,4	77,00	170,00	00101085	9X1,5	13,0	129,00	216,00
00101059	9X1	11,2	86,00	199,00	00101086	10X1,5	12,7	144,00	255,00
00101060	10X1	11,4	96,00	215,00	00101087	12X1,5	13,6	173,00	257,00
00101061	12X1	11,7	115,00	225,00	00101088	14X1,5	13,8	202,00	305,00
00101062	14X1	12,6	134,00	270,00	00101089	18X1,5	16,4	259,00	345,00
00101064	18X1	14,3	173,00	344,00	00101090	20X1,5	16,5	288,00	430,00
00101065	20X1	15,0	192,00	370,00	00101091	21X1,5	17,2	302,00	529,00
00101066	21X1	15,8	205,00	384,00	00101092	25X1,5	19,4	360,00	620,00
00101067	25X1	17,5	240,00	500,00	00101093	32X1,5	20,8	461,00	780,00
00101068	34X1	19,5	326,00	634,00	00101094	34X1,5	21,6	490,00	820,00
00101069	41X1	21,4	394,00	770,00	00101095	41X1,5	23,6	591,00	970,00
00101070	42X1	21,4	403,00	776,00	00101096	42X1,5	23,8	605,00	1.002,00
00101071	50X1	23,2	480,00	910,00	00101097	50X1,5	25,8	720,00	1.201,00
00101073	60X1	24,6	376,00	1.032,00	00101098	60X1,5	28,0	864,00	1.420,00
00101103	2X2,5 OZ	8,3	48,00	112,00	00101124	4X10	17,6	384,00	647,00
00101104	3X2,5	8,8	72,00	132,00	00101125	5X10	19,3	480,00	790,00
00101105	4X2,5	9,8	96,00	172,00	00101126	7X10	22,6	672,00	1.091,00
00101106	5X2,5	11,0	120,00	216,00	00101127	4X16	21,6	614,00	991,00
00101107	7X2,5	13,4	168,00	272,00	00101128	5X16	24,2	768,00	1.237,00
00101108	12X2,5	16,9	288,00	504,00	00101129	7X16	27,3	1.075,00	1.779,00
00101109	14X2,5	17,0	336,00	569,00	00101130	4X25	28,7	960,00	1.580,00
00101110	18X2,5	19,6	432,00	704,00	00101133	4X35	31,3	1.344,00	2.106,00
00101111	25X2,5	24,0	600,00	1.014,00	00101134	5X35	36,8	1.680,00	2.600,00
00101112	34X2,5	27,8	816,00	1.470,00	00101135	4X50	35,8	1.920,00	2.930,00
00101113	2X4 OZ	10,7	123,00	214,00	00101136	4X70	43,0	2.688,00	4.085,00
00101114	3X4	11,0	115,20	214,00	00101137	4X95	51,2	3.648,00	5.530,00
00101115	4X4	12,6	154,00	292,00	00101138	4X120	60,2	4.608,00	7.000,00
00101116	5X4	13,8	192,00	352,00					
00101117	7X4	15,0	269,00	445,00					
00101118	12X4	19,6	461,00	790,00					
00101119	3X6	13,8	173,00	355,00					
00101120	4X6	14,0	230,00	389,00					
00101121	5X6	15,3	288,00	473,00					
00101122	7X6	17,3	403,00	625,00					

Further dimensions available on request  
Other colour codes on request

## Flexible control cables

### YSLYCY 0,6/1 kV (EMC-type)- number coded flexible

#### Technical data

adapted to DIN VDE 0281

#### Temperature range

**flexing** -5° C to +80° C

**fixed installation** -40° C to +80° C

**Screening** cu-braiding tinned

**Nominal voltage** U0/U = 0,6/1kV

**Test voltage** 4000 V

**Insulation resistance** min. 13,3 MOhm x km

#### Minimum bending radius

for permanent approx. 7,5 x cable diam.

#### Application

For flexible use for medium mechanical stress with free movements without tensile stress or forced movements in dry, moist and wet rooms. Not suitable for open air, wherever internationally recognized PVC cables are required. Usable as control cable on industrial machineries, conveyor systems or in industrial plants. The green-yellow earth core is laid in the outer layer.



Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km	Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
00101193	2X0,5 OZ	5,0	9,60	36,00	00101022	2X0,75 OZ	5,5	14,40	46,00
00101002	3X0,5	5,3	14,40	42,00	00101023	3X0,75	5,8	21,60	54,00
00101003	4X0,5	5,8	19,20	51,00	00101024	4X0,75	6,6	29,00	66,00
00101004	5X0,5	6,6	24,00	66,00	00101025	5X0,75	7,5	36,00	80,00
00101005	7X0,5	7,4	34,00	78,00	00101027	7X0,75	8,1	50,00	110,00
00101006	8X0,5	8,3	38,00	96,00	00101028	8X0,75	9,0	58,00	130,00
00101007	9X0,5	8,7	43,20	110,00	00101029	9X0,75	10,7	65,00	152,00
00101008	10X0,5	9,0	48,00	116,00	00101030	10X0,75	9,8	72,00	162,00
00101009	12X0,5	9,9	58,00	134,00	00101031	12X0,75	11,2	86,00	176,00
00101010	14X0,5	10,6	67,00	149,00	00101033	14X0,75	11,1	101,00	214,00
00101011	18X0,5	11,8	86,00	195,00	00101034	15X0,75	11,5	108,00	218,00
00101012	21X0,5	13,5	96,00	239,00	00101036	17X0,75	11,8	123,00	240,00
00101013	25X0,5	14,6	120,00	270,00	00101037	18X0,75	12,0	130,00	257,00
00101014	30X0,5	15,1	144,00	309,00	00101038	19X0,75	12,3	137,00	270,00
00101015	34X0,5	16,8	163,00	360,00	00101039	20X0,75	12,8	144,00	286,00
00101016	40X0,5	17,4	192,00	430,00	00101040	21X0,75	14,3	151,00	320,00
00101017	50X0,5	19,5	240,00	510,00	00101041	25X0,75	16,7	180,00	365,00
00101018	60X0,5	20,3	288,00	610,00	00101043	34X0,75	18,5	245,00	512,00
00101019	61X0,5	21,2	293,00	620,00	00101044	41X0,75	19,2	296,00	604,00
00101020	80X0,5	23,3	384,00	765,00	00101045	42X0,75	19,2	302,00	612,00
00101021	100X0,5	27,0	480,00	970,00	00101046	50X0,75	20,5	360,00	740,00
					00101047	60X0,75	21,0	432,00	830,00
					00101048	61X0,75	21,5	439,00	846,00
					00101049	65X0,75	22,1	468,00	890,00
					00101050	80X0,75	24,9	576,00	1.075,00
					00101051	100X0,75	28,0	720,00	1.330,00

Further dimensions available on request  
Other colour codes on request

## Flexible control cables

### YSLYCY 0,6/1 kV (EMC-type)- number coded flexible

Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km	Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
00101052	2X1 OZ	5,8	19,20	53,00	00101078	2X1,5 OZ	6,6	29,00	70,00
00101053	3X1	6,3	29,00	67,00	00101079	3X1,5	7,0	43,00	86,00
00101054	4X1	6,9	38,40	81,00	00101080	4X1,5	7,9	58,00	109,00
00101055	5X1	7,8	48,00	103,00	00101081	5X1,5	8,8	72,00	138,00
00101056	6X1	8,6	58,00	120,00	00101083	7X1,5	9,8	101,00	130,00
00101057	7X1	8,7	67,00	133,00	00101084	8X1,5	11,6	115,00	178,00
00101058	8X1	10,4	77,00	170,00	00101085	9X1,5	13,0	129,00	216,00
00101059	9X1	11,2	86,00	199,00	00101086	10X1,5	12,7	144,00	255,00
00101060	10X1	11,4	96,00	215,00	00101087	12X1,5	13,6	173,00	257,00
00101061	12X1	11,7	115,00	225,00	00101088	14X1,5	13,8	202,00	305,00
00101062	14X1	12,6	134,00	270,00	00101089	18X1,5	16,4	259,00	345,00
00101064	18X1	14,3	173,00	344,00	00101090	20X1,5	16,5	288,00	430,00
00101065	20X1	15,0	192,00	370,00	00101091	21X1,5	17,2	302,00	529,00
00101066	21X1	15,8	205,00	384,00	00101092	25X1,5	19,4	360,00	620,00
00101067	25X1	17,5	240,00	500,00	00101093	32X1,5	20,8	461,00	780,00
00101068	34X1	19,5	326,00	634,00	00101094	34X1,5	21,6	490,00	820,00
00101069	41X1	21,4	394,00	770,00	00101095	41X1,5	23,6	591,00	970,00
00101070	42X1	21,4	403,00	776,00	00101096	42X1,5	23,8	605,00	1.002,00
00101071	50X1	23,2	480,00	910,00	00101097	50X1,5	25,8	720,00	1.201,00
00101073	60X1	24,6	376,00	1.032,00	00101098	60X1,5	28,0	864,00	1.420,00
00101103	2X2,5 OZ	8,3	48,00	112,00	00101124	4X10	17,6	384,00	647,00
00101104	3X2,5	8,8	72,00	132,00	00101125	5X10	19,3	480,00	790,00
00101105	4X2,5	9,8	96,00	172,00	00101126	7X10	22,6	672,00	1.091,00
00101106	5X2,5	11,0	120,00	216,00	00101127	4X16	21,6	614,00	991,00
00101107	7X2,5	13,4	168,00	272,00	00101128	5X16	24,2	768,00	1.237,00
00101108	12X2,5	16,9	288,00	504,00	00101129	7X16	27,3	1.075,00	1.779,00
00101109	14X2,5	17,0	336,00	569,00	00101130	4X25	28,7	960,00	1.580,00
00101110	18X2,5	19,6	432,00	704,00	00101133	4X35	31,3	1.344,00	2.106,00
00101111	25X2,5	24,0	600,00	1.014,00	00101134	5X35	36,8	1.680,00	2.600,00
00101112	34X2,5	27,8	816,00	1.470,00	00101135	4X50	35,8	1.920,00	2.930,00
00101113	2X4 OZ	10,7	123,00	214,00	00101136	4X70	43,0	2.688,00	4.085,00
00101114	3X4	11,0	115,20	214,00	00101137	4X95	51,2	3.648,00	5.530,00
00101115	4X4	12,6	154,00	292,00	00101138	4X120	60,2	4.608,00	7.000,00
00101116	5X4	13,8	192,00	352,00					
00101117	7X4	15,0	269,00	445,00					
00101118	12X4	19,6	461,00	790,00					
00101119	3X6	13,8	173,00	355,00					
00101120	4X6	14,0	230,00	389,00					
00101121	5X6	15,3	288,00	473,00					
00101122	7X6	17,3	403,00	625,00					

Further dimensions available on request  
Other colour codes on request

## Flexible control cables

### 2YSLCY-J - 0,6 / 1 kV - EMC-type

### motor power supply cable double screened transparent

#### Technical data

adapted to DIN VDE 0250

#### Temperature range

flexing +5° C bis +70° C

fixed installation -40° C bis +70° C

**Nominal voltage**  $U_0/U = 600/1000$  V

**Test voltage** 2500 V

#### Insulation resistance

min. 200 MOhm x km

#### Application

Frequency converters assure electromagnetic compatibility in plants and buildings, facility units and operating equipment where the fields of electromagnetic interference might cause adverse effects on the surroundings. Supply and connecting cable for medium mechanical stress in fixed installations and forced movements in dry, moist and wet surroundings, not usable for outdoor applications. Particularly suitable for use with industrial pumps, ventilators, conveyor belts and air-conditioning installations. An interference-free operation of frequency converters is obtained due to the optimal screening.



Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
00109001	4X1,5	10,4	95,00	230,00
00109002	4X2,5	12,1	150,00	300,00
00109003	4X4	14,5	235,00	485,00
00109004	4X6	16,4	320,00	630,00
00109005	4X10	19,3	533,00	860,00
00109006	4X16	21,9	789,00	1.290,00
00109007	4X25	26,6	1.236,00	1.860,00
00109008	4X35	29,9	1.662,00	2.610,00
00109009	4X50	35,0	2.345,00	2.950,00
00109010	4X70	39,4	3.196,00	3.950,00
00109011	4X95	46,0	4.316,00	5.300,00
00109012	4X120	51,9	5.435,00	6.600,00
00109013	4X150	57,5	6.394,00	7.040,00
00109014	4X185	61,1	7.639,00	8.380,00
00109016	4X240	69,0	10.013,00	12.150,00

Further dimensions available on request

## Flexible control cables

### 2YSLCYK-J - 0,6/1kV - EMC-type motor power supply cable double screened

#### Technical data

adapted to DIN VDE 0250

#### Temperature range

flexing -5° C bis +70° C

fixed installation -40° C bis +70° C

**Nominal voltage**  $U_0/U = 600/1000$  V

**Test voltage** 2500 V

#### Insulation resistance

min. 200 MOhm x km

#### Application

Frequency converters assure electromagnetic compatibility in plants and buildings, facility units and operating equipment where the fields of electromagnetic interference might cause adverse effects on the surroundings. Supply and connecting cable for medium mechanical stress in fixed installations and forced movements in dry, moist and wet surroundings and in the open. Particularly suitable for use with industrial pumps, ventilators, conveyor belts and air-conditioning installations. An interference-free operation of frequency converters is obtained due to the optimal screening.



Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
00111002	4X2,5	12,1	150,00	300,00
00111003	4X4	14,5	235,00	485,00
00111004	4X6	16,4	320,00	630,00
00111005	4X10	19,3	533,00	533,00
00111006	4X16	21,9	798,00	1.290,00
00111007	4X25	26,6	1.236,00	1.860,00
00111008	4X35	29,9	1.663,00	2.610,00
00111009	4X50	35,0	2.397,00	2.950,00
00111010	4X70	39,4	3.196,00	3.950,00
00111011	4X95	46,0	4.316,00	5.300,00
00111012	4X120	51,9	5.435,00	6.600,00
00111013	4X150	57,5	6.394,00	7.040,00
00111014	4X185	61,1	7.639,00	8.380,00
00111002	4X2,5	12,1	150,00	300,00
00111015	3X70+3X10	38,5	2.980,00	3.173,00

Further dimensions available on request



## Flexible control cables

### 2XSL(ST)CHK-JB - 0,6/1kV - EMC-type motor power supply cable double screened

#### Technical data

adapted to DIN VDE 0250

#### Temperature range

flexing -5° C bis +80° C

fixed installation -40° C bis +90° C

**Nominal voltage**  $U_0/U = 600/1000$  V

**Test voltage** 2500 V

#### Insulation resistance

min. 200 MOhm x km



Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
01691031	3x1,5+3g0,25	10,8	86,00	140,00
01691032	3x2,5+3g0,5	12,0	143,00	219,00
01691033	3x4+3g1	13,0	224,00	323,00
01691034	3x6+3g1	14,3	298,00	429,00
01691006	3x10+3g1,5	16,7	491,00	615,00
01691007	3x16+3g2,5	19,3	723,00	819,00
01691036	3x25+3g4	23,2	1137,00	1324,00
01691035	3x35+3g6	26,1	1535,00	1718,00
01691037	3x50+3g10	30,2	2207,00	2398,00
01691038	3x70+3g10	34,7	2871,00	3055,00
01691039	3x95+3g16	38,7	3953,00	4161,00
01691040	3x120+3g16	42,0	4836,00	5073,00
01691041	3x150+3g25	48,3	5412,00	6128,00
01691042	3x185+3g35	54,1	6968,00	7189,00
01691043	3x240+3g50	60,0	8540,00	9594,00

Further dimensions available on request

#### Application

Frequency converters assure electromagnetic compatibility in plants and buildings, facility units and operating equipment where the fields of electromagnetic interference might cause adverse effects on the surroundings. Supply and connecting cable for medium mechanical stress in fixed installations and forced movements in dry, moist and wet surroundings and in the open. Particularly suitable for use with industrial pumps, ventilators, conveyor belts and air-conditioning installations. An interference-free operation of frequency converters is obtained due to the optimal screening.

## Flexible control cables

### H05VV5-F - flexible

### number coded DIN VDE - HAR approved

#### Technical data

acc. to DIN VDE 0281 part 13, HD 21.13S1 and IEC 60227/75

#### Temperature range

flexing -5° C to +70° C

fixed installation -40° C to +70° C

**Nominal voltage**  $U_0/U = 300/500$  V

**Test voltage** 2000 V, 5 min.

#### Insulation resistance

min. 20 MOhm x km

#### Minimum bending radius

flexing, approx. 7,5 x cable diam.

#### Application

For flexible use for medium mechanical stress with free movements without tensile stress or forced movements in dry, moist and wet rooms, but not suitable in the open. Developed as control and connecting cables for machines, tool machineries, conveyor belts and production lines. Complete oil-resistant. Resistant to chemical influences. For installation in moist and wet rooms, specially used for machines in breweries, bottling plants and car washing stations.



Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km	Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
01807001	2X0,75	7,2	14,40	27,00	01807024	2X1,5	7,7	29,00	84,00
01807003	3G0,75	6,6	21,60	62,00	01807027	3G1,5	8,4	43,00	105,00
01807006	4G0,75	7,2	29,00	75,00	01807031	4G1,5	9,3	58,00	133,00
01807008	5G0,75	8,0	36,00	96,00	01807034	5G1,5	10,4	72,00	167,00
01807010	2X1	6,6	19,20	60,00	01807037	7G1,5	11,5	101,00	209,00
01807013	3G1	7,0	29,00	74,00	01807039	2X2,5	9,3	48,00	126,00
01807017	4G1	7,8	38,00	90,00	01807042	3G2,5	10,0	72,00	158,00
01807020	5G1	8,6	48,00	113,00	01807043	4G2,5	11,0	96,00	196,00
01807022	7G1	9,5	67,00	131,00	01807046	5G2,5	12,3	120,00	242,00
Further dimensions available on request					01807047	7G2,5	13,3	168,00	299,00

## Flexible control cables

### H05VVC4V5-K - flexible, EMC-type number coded Cu-screened DIN VDE - HAR approved

#### Technical data

acc. to DIN VDE 0281 part 13, HD 21.13S1 and IEC 60227/74

#### Temperature range

flexing -5° C to +70° C

fixed installation -40° C to +70° C

**Nominal voltage**  $U_0/U = 300/500$  V

**Test voltage** core/core = 2 kV, 5 min.

core/screen = 2 kV, 5 min.

#### Insulation resistance

min. 20 MOhm x km

#### Minimum bending radius

flexing, approx. 10 x cable diam.

#### Application

For flexible use for medium mechanical stress with free movements without tensile stress or forced movements in dry, moist and wet rooms, but not suitable in the open. Developed as control and connecting cables for machines, tool machineries, conveyor belts and production lines. According to DIN VDE 0207 and 0473, complete oil-resistant. Resistant to chemical influences. For installation in moist and wet rooms, specially used for machines in breweries, bottling plants and car washing stations.



Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km	Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
00202001	2X0,5	8,1	40,00	84,00	00202023	2X1	8,8	56,00	145,00
00202002	3G0,5	8,4	46,50	100,00	00202024	3G1	9,3	62,00	130,00
00202003	4G0,5	9,1	57,00	126,00	00202025	4G1	10,4	78,30	160,00
00202004	5G0,5	10,1	68,00	140,00	00202026	5G1	11,0	91,00	190,00
00202005	7G0,5	11,4	86,00	190,00	00202027	7G1	12,8	118,00	250,00
00202006	12G0,5	13,5	141,00	265,00	00202028	12G1	15,9	198,00	400,00
00202007	18G0,5	16,3	172,00	384,00	00202029	18G1	18,7	303,60	555,00
00202008	25G0,5	19,7	266,00	500,00	00202030	25G1	22,6	411,90	730,00
00202009	34G0,5	21,3	297,00	620,00	00202031	34G1	24,8	516,30	940,00
00202010	50G0,5	25,3	464,00	860,00	00202032	50G1	29,0	728,30	1.270,00
00202011	61G0,5	27,2	525,00	1.070,00	00202033	60G1	31,0	882,50	1.520,00
00202012	2X0,75	8,1	49,00	100,00	00202034	61G1	31,0	882,50	1.510,00
00202013	3G0,75	8,8	55,00	112,00	00202055	2X1,5	9,3	56,00	140,00
00202014	4G0,75	10,0	67,00	145,00	00202035	3G1,5	10,2	83,00	165,00
00202015	5G0,75	10,6	77,40	170,00	00202036	4G1,5	10,9	97,80	200,00
00202016	7G0,75	12,1	109,00	254,00	00202037	5G1,5	11,6	118,00	230,00
00202017	12G0,75	14,3	184,50	310,00	00202038	7G1,5	13,5	218,00	314,00
00202018	18G0,75	17,3	257,30	470,00	00202039	12G1,5	16,8	309,00	490,00
00202019	25G0,75	20,8	318,60	614,00	00202040	18G1,5	20,0	411,40	680,00
00202020	34G0,75	23,1	409,40	790,00	00202041	25G1,5	24,2	546,50	930,00
00202021	50G0,75	27,0	582,00	1.065,00	00202042	34G1,5	26,3	752,00	1.180,00
00202022	61G0,75	31,0	678,50	1.390,00	00202043	50G1,5	34,0	1.030,00	1.660,00
Further dimensions available on request					00202044	61G1,5	36,5	1.235,00	1.850,00

## Flexible control cables

### H05VVC4V5-K - flexible EMC-type

number coded Cu-screened DIN VDE - HAR approved

Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
00202045	3G2,5	11,7	115,00	230,00
00202046	4G2,5	12,8	163,00	270,00
00202047	5G2,5	13,9	191,00	340,00
00202048	7G2,5	15,9	288,90	439,00
00202049	12G2,5	20,6	370,00	740,00
00202050	18G2,5	24,3	529,00	1.040,00
00202051	25G2,5	29,0	751,00	1.370,00
00202052	34G2,5	33,0	1.164,00	1.820,00
00202053	50G2,5	38,5	1.648,00	2.580,00
00202054	61G2,5	42,0	1.982,00	3.085,00

Further dimensions available on request

## Flexible control cables

### Multi-approvals control cable

#### UL, CSA, VDE/HAR, SEV

#### unscreened

#### Technical data

##### Temperature range

flexing -5° C to +70° C / +90° C (UL, CSA)

fixed installation -40° C to +70° C / +90° C (UL, CSA)

**Nominal voltage**  $U_0/U = 300/500$  V / 600 V (UL, CSA)

**Test voltage** 3000 V

**Insulation resistance**

min. 20 MOhm x km

#### Application

For use for medium mechanical stress with free movement without tensile stress or forced movements in dry, moist and wet rooms, but not suitable in the open. Developed as control and connecting cables for machines, tool machineries, conveyor belts and production lines. For installation in moist and wet rooms, specially used for machines in breweries, bottling plants and car washing stations.



Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
00303052	2X0,5	5,9	9,60	47,00
00303001	3G0,5	6,2	14,40	62,40
00303002	4G0,5	11,7	115,00	230,00
00303003	5G0,5	7,4	24,00	87,10
00303004	7G0,5	9,1	33,60	118,70
00303005	12G0,5	11,3	58,00	198,00
00303006	25G0,5	15,6	120,00	380,40
00303007	34G0,5	18,7	164,00	509,00
00303008	41G0,5	20,0	197,00	595,00
00303053	2X0,75	6,3	14,40	61,00
00303009	3G0,75	6,7	21,60	75,60
00303010	4G0,75	7,3	28,80	83,90
00303011	5G0,75	8,4	36,00	113,30
00303012	7G0,75	9,9	50,00	145,00
00303013	12G0,75	12,2	86,00	244,90
00303014	18G0,75	14,2	130,00	327,70
00303015	25G0,75	17,4	180,00	466,40
00303016	34G0,75	20,1	245,00	626,50
00303017	41G0,75	21,9	296,00	748,00
00303018	50G0,75	23,4	360,00	895,30

Further dimensions available on request

Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
00303019	3G1	7,2	28,80	89,30
00303020	4G1	7,8	38,40	98,60
00303021	5G1	9,0	48,00	132,10
00303022	7G1	11,1	67,00	169,30
00303023	12G1	13,2	115,00	285,90
00303024	18G1	16,0	173,00	405,20
00303025	25G1	19,0	240,00	596,50
00303026	34G1	22,4	326,00	741,70
00303027	41G1	24,0	394,00	886,00
00303028	50G1	26,0	480,00	1.072,20
00303029	61G1	28,5	586,00	1.266,00
00303030	65G1	30,5	624,00	1.410,00
00303055	2X1,5	7,5	28,80	95,00
00303031	3G1,5	7,9	43,00	109,80
00303032	4G1,5	9,0	58,00	140,70
00303033	5G1,5	9,8	72,00	168,00
00303034	7G1,5	12,2	101,00	224,20
00303035	12G1,5	14,5	173,00	361,70
00303036	18G1,5	17,6	259,00	518,30
00303037	25G1,5	20,7	360,00	729,90
00303038	34G1,5	24,6	490,00	946,60
00303039	41G1,5	26,3	591,00	1.136,00
00303040	50G1,5	28,6	720,00	1.382,10
00303041	61G1,5	31,4	879,00	1.638,90

**Flexible control cables**  
**Multi-approvals control cable**  
**UL, CSA, VDE/HAR, SEV**  
**unscreened**

Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
00303056	2X2,5	8,9	48,00	159,00
00303042	3G2,5	9,7	72,00	170,00
00303043	4G2,5	11,0	96,00	210,00
00303044	5G2,5	12,1	120,00	257,00
00303045	7G2,5	14,2	168,00	340,00
00303046	12G2,5	17,8	288,00	580,00
00303047	18G2,5	21,3	432,00	850,00

Further dimensions available on request

## Flexible control cables

### Multi-approvals control cable

#### UL, CSA, VDE/HAR, SEV

#### Cu-screened

#### Technical data

##### Temperature range

flexing -5° C to +70° C / +90° C (UL, CSA)

fixed installation -40° C to +70° C / +90° C (UL, CSA)

**Nominal voltage**  $U_0/U = 300/500$  V / 600 V (UL, CSA)

**Test voltage** 3000 V

##### Insulation resistance

min. 20 MOhm x km

#### Application

For use for medium mechanical stress with free movement without tensile stress or forced movements in dry, moist and wet rooms, but not suitable in the open. Developed as control and connecting cables for machines, tool machineries, conveyor belts and production lines. For installation in moist and wet rooms, specially used for machines in breweries, bottling plants and car washing stations.



Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
00304020	2X0,75	8,5	40,00	109,00
00304001	3G0,75	8,9	68,00	125,00
00304002	4G0,75	10,1	70,00	157,00
00304003	5G0,75	10,8	77,00	180,00
00304004	7G0,75	12,3	93,00	226,00
00304005	12G0,75	14,5	155,00	325,00
00304006	3G1	9,6	76,00	145,00
00304007	4G1	10,6	80,00	180,00
00304008	5G1	11,4	95,00	203,00
00304009	7G1	13,3	118,00	273,00
00304010	12G1	16,6	195,00	425,00
00304011	3G1,5	10,7	84,00	159,00
00304012	4G1,5	11,4	94,00	211,00
00304013	5G1,5	12,2	122,00	241,00
00304014	7G1,5	14,6	143,00	306,00
00304015	12G1,5	17,9	254,00	480,00
00304016	3G2,5	12,1	120,00	245,00
00304017	4G2,5	13,4	170,00	295,00
00304018	5G2,5	14,5	205,00	365,00
00304019	7G2,5	16,6	241,00	480,00

Further dimensions available on request

# Flexible control cables

## Multi-approvals control cable

### UL-CSA LISTED TC-ER

### unscreened - MTW 600V

#### Technical data

##### Temperature range

flexing -5° C to +70° C / +90° C (UL, CSA)

fixed installation -40° C to +70° C / +90° C (UL, CSA)

**Nominal voltage**  $U_0/U = 300/500 \text{ V} / 1000 \text{ V}$  (UL, CSA)

**Test voltage** 6000 V

##### Insulation resistance

min. 20 MOhm x km

#### Application

Designed for wiring and machines to export in North America for use for medium mechanical stress with free movement without tensile stress or forced movements in dry, moist and wet rooms, but not suitable in the open. Developed as control and connecting cables for machines, tool machineries, conveyor belts and production lines. For installation in moist and wet rooms, specially used for machines in breweries, bottling plants and car washing stations.



Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km	Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
70303052	2X0,5	5,9	9,60	47,00	70303019	3G1	7,2	28,80	89,30
70303001	3G0,5	6,2	14,40	62,40	70303020	4G1	7,8	38,40	98,60
70303002	4G0,5	11,7	115,00	230,00	70303021	5G1	9,0	48,00	132,10
70303003	5G0,5	7,4	24,00	87,10	70303022	7G1	11,1	67,00	169,30
70303004	7G0,5	9,1	33,60	118,70	70303023	12G1	13,2	115,00	285,90
70303005	12G0,5	11,3	58,00	198,00	70303024	18G1	16,0	173,00	405,20
70303006	25G0,5	15,6	120,00	380,40	70303025	25G1	19,0	240,00	596,50
70303007	34G0,5	18,7	164,00	509,00	70303026	34G1	22,4	326,00	741,70
70303008	41G0,5	20,0	197,00	595,00	70303027	41G1	24,0	394,00	886,00
70303053	2X0,75	6,3	14,40	61,00	70303028	50G1	26,0	480,00	1.072,20
70303009	3G0,75	6,7	21,60	75,60	70303029	61G1	28,5	586,00	1.266,00
70303010	4G0,75	7,3	28,80	83,90	70303030	65G1	30,5	624,00	1.410,00
70303011	5G0,75	8,4	36,00	113,30	70303055	2X1,5	7,5	28,80	95,00
70303012	7G0,75	9,9	50,00	145,00	70303031	3G1,5	7,9	43,00	109,80
70303013	12G0,75	12,2	86,00	244,90	70303032	4G1,5	9,0	58,00	140,70
70303014	18G0,75	14,2	130,00	327,70	70303033	5G1,5	9,8	72,00	168,00
70303015	25G0,75	17,4	180,00	466,40	70303034	7G1,5	12,2	101,00	224,20
70303016	34G0,75	20,1	245,00	626,50	70303035	12G1,5	14,5	173,00	361,70
70303017	41G0,75	21,9	296,00	748,00	70303036	18G1,5	17,6	259,00	518,30
70303018	50G0,75	23,4	360,00	895,30	70303037	25G1,5	20,7	360,00	729,90
					70303038	34G1,5	24,6	490,00	946,60
					70303039	41G1,5	26,3	591,00	1.136,00
					70303040	50G1,5	28,6	720,00	1.382,10
					70303041	61G1,5	31,4	879,00	1.638,90
					70303056	2X2,5	8,9	48,00	159,00
					70303042	3G2,5	9,7	72,00	170,00
					70303043	4G2,5	11,0	96,00	210,00
					70303044	5G2,5	12,1	120,00	257,00
					70303045	7G2,5	14,2	168,00	340,00
					70303046	12G2,5	17,8	288,00	580,00
					70303047	18G2,5	21,3	432,00	850,00

Further dimensions available on request



## Flexible control cables

### Multi-approvals control cable

### UL-CSA LISTED TC-ER

### Cu-screened MTW 600V

#### Technical data

##### Temperature range

flexing -5° C to +70° C / +90° C (UL, CSA)

fixed installation -40° C to +70° C / +90° C (UL, CSA)

**Nominal voltage**  $U_0/U = 300/500 \text{ V} / 1000 \text{ V}$  (UL, CSA)

**Test voltage** 6000 V

##### Insulation resistance

min. 20 MOhm x km

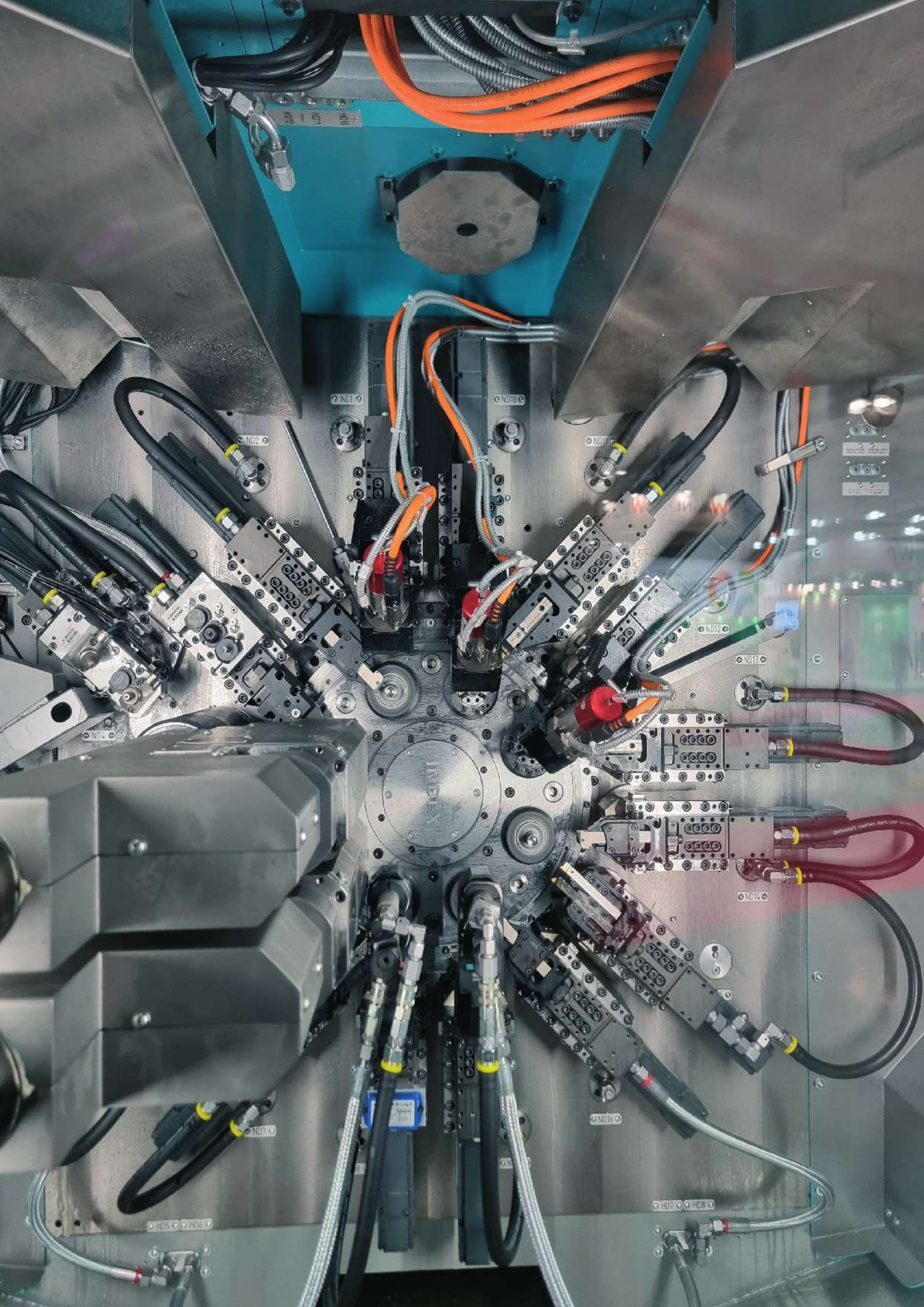


#### Application

Designed for machinery to be exported in North America for use for medium mechanical stress with free movement without tensile stress or forced movements in dry, moist and wet rooms, but not suitable in the open. Developed as control and connecting cables for machines, tool machineries, conveyor belts and production lines. For installation in moist and wet rooms, specially used for machines in breweries, bottling plants and car washing stations.

Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
70304020	2X0,75	8,5	40,00	109,00
70304001	3G0,75	8,9	68,00	125,00
70304002	4G0,75	10,1	70,00	157,00
70304003	5G0,75	10,8	77,00	180,00
70304004	7G0,75	12,3	93,00	226,00
70304005	12G0,75	14,5	155,00	325,00
70304006	3G1	9,6	76,00	145,00
70304007	4G1	10,6	80,00	180,00
70304008	5G1	11,4	95,00	203,00
70304009	7G1	13,3	118,00	273,00
70304010	12G1	16,6	195,00	425,00
70304011	3G1,5	10,7	84,00	159,00
70304012	4G1,5	11,4	94,00	211,00
70304013	5G1,5	12,2	122,00	241,00
70304014	7G1,5	14,6	143,00	306,00
70304015	12G1,5	17,9	254,00	480,00
70304016	3G2,5	12,1	120,00	245,00
70304017	4G2,5	13,4	170,00	295,00
70304018	5G2,5	14,5	205,00	365,00
70304019	7G2,5	16,6	241,00	480,00

Further dimensions available on request





## Drag chain cables

### bohmflex Chain PVC UL-CSA number coded

Ultraflexible due to special construction

#### Technical data

adapted to DIN VDE 0245, 0281

#### Temperature range

flexing -5° C to +70°C +90°C (UL/CSA)

fixed installation -40° C to +80°C +90C (UL/CSA)

**Nominal voltage** 300/500 V 1000V (UL/CSA)

**Test voltage** 4000 V

#### Insulation resistance

min. 20 MOhm x km

#### Minimum bending radius

7,5 x cable diam.

#### Application

Developed for use in cable trays. Ultraflexible. Ideal for all areas requiring a fast flexing cable. For example in machine industries, robotics and all areas of highly mobile machine parts. The long duration of life offers a secure performance as well as efficiency.



Black outer sheath on request

Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km	Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
00401001	2X0,5 OZ	5,3	9,60	40,00	00401017	2X1 OZ	7,1	19,20	64,00
00401002	3X0,5	5,6	2,00	48,00	00401018	3X1	7,4	29,00	82,00
00401003	4X0,5	6,4	5,60	58,00	00401019	4X1	8,1	38,40	110,00
00401004	5X0,5	7,0	24,00	67,00	00401020	5X1	9,3	48,00	136,00
00401005	7X0,5	8,3	33,60	88,00	00401021	7X1	11,1	67,00	190,00
00401006	12X0,5	10,0	58,00	136,00	00401022	12X1	12,8	115,00	291,00
00401007	18X0,5	11,7	86,40	195,00	00401024	18X1	15,2	173,00	418,00
00401008	25X0,5	13,7	120,00	274,00	00401025	25X1	18,3	240,00	597,00
00401009	2X0,75 OZ	5,9	14,40	56,00	00401028	2X1,5 OZ	7,5	29,00	90,00
00401010	3X0,75	6,2	21,60	74,00	00401029	3X1,5	7,9	43,00	115,00
00401011	4X0,75	7,8	28,80	99,00	00401030	4X1,5	8,8	58,00	145,00
00401012	5X0,75	9,3	36,00	118,00	00401031	5X1,5	9,9	72,00	178,00
00401013	7X0,75	11,2	50,00	164,00	00401032	7X1,5	11,8	101,00	270,00
00401014	12X0,75	11,9	86,00	249,00	00401033	12X1,5	13,6	173,00	388,00
00401015	18X0,75	13,2	130,00	354,00	00401035	18X1,5	16,2	259,00	587,00
00401016	25X0,75	15,9	180,00	695,00	00401036	25X1,5	19,9	360,00	798,00
					00401039	3X2,5	10,0	72,00	158,00
					00401040	4X2,5	10,0	96,00	197,00
					00401041	5X2,5	12,2	120,00	265,00
					00401042	7X2,5	15,1	168,00	355,00
					00401043	12X2,5	17,6	288,00	568,00
					00401066	18X2,5	18,1	432,00	800,00
					00401071	25X2,5	22,5	600,00	1.100,00
					00401057	3X4	11,2	120,00	214,00
					00401052	4X4	13,7	160,00	266,00
					00401048	5X4	13,7	200,00	325,00

Further dimensions available on request

## Drag chain cables

bohmflex Chain C-PVC UL-CSA EMC

Cu-screened  
number coded

Ultraflexible due to special construction

### Technical data

adapted to DIN VDE 0245, 0281

#### Temperature range

flexing -5° C to +70°C +90°C (UL/CSA)

fixed installation -40° C to +80°C +90°C (UL/CSA)

**Nominal voltage** 300/500 V +600V (UL/CSA)

**Test voltage** 4000 V

#### Insulation resistance

min. 20 MOhm x km

#### Minimum bending radius

7,5 x cable diam.

### Application

Developed for use in cable trays. Ultraflexible. Ideal for all areas requiring a fast flexing cable. For example in machine industries, robotics and all areas of highly mobile machine parts. The long duration of life offers a secure performance as well as efficiency. The braided copper screen offers effective protection from internal and external interference.



Black outer sheath on request

Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km	Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
00402001	2X0,5 OZ	7,5	38,90	90,00	00402028	2X1,5 OZ	10,3	74,00	165,00
00402002	3X0,5	7,8	43,40	112,00	00402029	3X1,5	10,7	96,00	202,00
00402003	4X0,5	8,2	64,00	135,00	00402030	4X1,5	11,4	102,00	240,00
00402004	5X0,5	9,3	72,00	165,00	00402031	5X1,5	12,3	127,00	280,00
00402005	7X0,5	10,7	78,00	216,00	00402032	7X1,5	14,2	183,00	396,00
00402006	12X0,5	12,4	128,00	270,00	00402033	12X1,5	16,0	179,00	585,00
00402007	18X0,5	14,1	171,00	441,00	00402034	18X1,5	20,0	420,00	830,00
00402008	25X0,75	16,7	180,00	365,00	00402035	25X1,5	22,8	590,00	1.140,00
00402008	2X0,75 OZ	8,1	53,00	104,00	00402058	3X2,5	9,5	72,00	145,00
00402009	3X0,75	8,4	78,00	127,00	00402044	4X2,5	11,8	161,00	247,00
00402010	4X0,75	9,4	80,00	183,00	00402048	5X2,5	13,2	194,00	307,00
00402011	5X0,75	10,3	88,00	195,00	00402047	7X2,5	15,8	262,00	418,00
00402012	7X0,75	12,1	98,00	265,00	00402036	4X4	13,7	238,00	360,00
00402013	12X0,75	13,6	168,00	363,00	00402043	4X6	16,1	318,00	514,00
00402014	18X0,75	15,6	228,00	542,00	00402046	4X10	20,2	521,00	824,00
00402015	25X0,75	18,6	343,00	909,00	00402037	4X16	23,2	780,00	1.207,00
00402016	2X1 OZ	9,9	65,00	113,00					
00402017	3X1	10,2	73,00	140,00					
00402018	4X1	10,9	78,00	190,00					
00402019	5X1	11,7	92,00	270,00					
00402020	7X1	13,5	137,00	305,00					
00402021	12X1	15,2	253,00	470,00					
00402022	18X1	17,6	296,00	620,00					
00402023	25X1	20,6	426,00	825,00					

Further dimensions available on request

## Drag chain cables

### bohmflex Chain PUR-HF UL-CSA number coded

#### Technical data

adapted to DIN VDE 0245, 0281

#### Temperature range

flexing -5° C to +70°C +80°C(UL/CSA)

fixed installation -40° C to +80°C +90°C(UL/CSA)

**Nominal voltage** 300/500 V - 1000V (UL/CSA)

**Test voltage** 4000 V

#### Insulation resistance

min. 20 MOhm x km

#### Minimum bending radius

7,5 x cable diam.

#### Application

Developed for use in cable trays. Ultraflexible, extreme robust PUR control cable. High tear, abrasion and oil-resistant. Ideal for all areas requiring a fast flexing cable. For example in machine industries, robotics and all areas of highly mobile machine parts. The long duration of life offers a secure performance as well as efficiency.



Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km	Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
00403044	2X0,5 OZ	5,8	10,00	36,00	00000000	2X1,5 OZ	7,9	28,80	78,00
00403041	3X0,5	5,9	14,00	40,00	00403016	3X1,5	8,7	43,20	115,00
00000000	4X0,5	6,9	19,20	55,00	00403017	4X1,5	9,4	57,60	145,00
00403035	5X0,5	7,3	24,00	62,00	00403018	5X1,5	10,3	72,00	178,00
00000000	7X0,5	8,5	33,60	86,00	00403019	7X1,5	13,0	100,80	270,00
00000000	12X0,5	10,6	57,60	128,00	00403020	12X1,5	14,8	172,80	388,00
00000000	18X0,5	12,4	86,40	187,00	00403021	18X1,5	17,4	259,00	587,00
00000000	25X0,5	15,3	120,00	258,00	00403022	25X1,5	21,1	360,00	798,00
00403001	2X0,75 OZ	7,1	14,40	49,00	00403023	3X2,5	11,2	72,00	158,00
00403002	3X0,75	7,4	21,60	74,00	00403024	4X2,5	12,1	96,00	197,00
00403003	4X0,75	8,0	28,80	99,00	00403025	5X2,5	13,2	120,00	265,00
00403004	5X0,75	8,6	36,00	118,00	00403039	7X2,5	14,2	168,00	286,00
00403005	7X0,75	10,1	50,40	164,00	00403031	12X2,5	17,0	288,00	526,00
00403006	12X0,75	12,4	86,00	249,00	00403032	25X2,5	24,3	600,00	982,00
00403007	18X0,75	14,4	129,60	354,00	00403040	4X4	12,3	160,00	252,00
00403008	25X0,75	16,7	180,00	695,00	00403043	7X4	15,6	269,00	550,00
00000000	2X1 OZ	7,1	19,20	61,00	00403045	4X6	14,7	230,00	377,00
00403009	3X1	8,2	28,80	82,00	00403038	5X6	16,0	288,00	580,00
00403010	4X1	8,9	38,40	110,00	00403048	7X6	17,5	403,00	800,00
00403011	5X1	9,7	48,00	136,00	00403049	4X10	18,2	384,00	614,00
00403012	7X1	12,3	67,20	190,00	00403026	4X16	23,8	614,00	1.063,00
00403013	12X1	14,0	115,20	291,00	00403027	4X25	29,4	960,00	1.590,00
00403014	18X1	16,4	172,80	418,00	00403028	4X35	32,8	1.344,00	2.200,00
00403015	25X1	19,1	240,00	597,00	00403029	4X50	38,9	1.920,00	2.400,00

Further dimensions available on request

## Drag chain cables

**bohmflex Chain PUR-HF UL-CSA EMC**  
**number coded**  
**EMC-type Cu-screened**

**Ultraflexible due to special construction**

### Technical data

adapted to DIN VDE 0245, 0281

### Temperature range

flexing -5° C to +70°C +80°C(UL/CSA)

fixed installation -40° C to +80°C +90°C(UL/CSA)

**Nominal voltage** 300/500 V - 1000V (UL/CSA)

**Test voltage** 4000 V

### Insulation resistance

min. 20 MOhm x km

### Minimum bending radius

7,5 x cable diam.

### Application

Developed for use in cable trays. Ultraflexible. Ideal for all areas requiring a fast flexing cable. For example in machine industries, robotics and all areas of highly mobile machine parts. The long duration of life offers a secure performance as well as efficiency. The braided copper screen offers effective protection from internal and external interference.



Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km	Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
00000000	2X0,5 OZ	6,9	33,50	72,00	00404017	2X1,5 OZ	10,3	51,00	165,00
00404001	3X0,5	7,8	52,00	112,00	00404018	3X1,5	10,7	79,00	202,00
00404044	4X0,5	7,9	55,00	94,00	00404019	4X1,5	11,4	98,00	240,00
00404052	5X0,5	8,4	65,00	106,00	00404020	5X1,5	12,3	116,00	280,00
00404051	7X0,5	10,0	84,00	172,00	00404021	7X1,5	14,2	168,00	396,00
00404039	12X0,5	11,0	97,00	190,00	00404022	12X1,5	16,0	253,00	585,00
00000000	18X0,5	13,5	183,20	276,80	00404023	18X1,5	20,0	360,00	830,00
00000000	25X0,5	19,5	247,00	356,20	00404024	25X1,5	22,8	476,00	1.140,00
00404002	2X0,75 OZ	8,1	33,00	104,00	00404042	36X1,5	23,6	655,00	1.066,00
00404029	3X0,75	8,4	52,00	127,00	00404049	50X1,5	31,6	1.033,00	1.857,00
00404003	4X0,75	9,4	62,00	183,00	00404025	3X2,5	12,8	119,00	140,00
00404004	5X0,75	10,3	74,00	195,00	00404026	4X2,5	13,7	164,00	180,00
00404005	7X0,75	12,1	95,00	265,00	00404027	5X2,5	14,8	192,00	220,00
00404006	12X0,75	13,6	157,00	363,00	00000000	7X2,5	16,0	295,00	403,20
00404007	18X0,75	15,6	235,00	545,00	00404045	12X2,5	18,2	410,00	589,00
00404008	25X0,75	18,6	281,00	585,00	00000000	18X2,5	22,3	633,20	797,00
00404048	34X0,75	22,6	388,00	720,00	00000000	25X2,5	26,4	832,00	1.075,50
00404009	2X1 OZ	9,9	60,00	113,00	00404032	4X6	16,1	318,00	499,00
00404010	3X1	10,2	63,00	140,00	00404037	5X6	23,0	441,00	800,00
00404011	4X1	10,9	77,00	190,00	00404053	4X10	25,0	485,00	1.140,00
00404012	5X1	11,7	88,00	270,00	00404038	4X16	28,3	840,00	1.386,00
00404013	7X1	13,5	134,00	305,00					
00404014	12X1	15,2	194,00	470,00					
00404015	18X1	17,6	280,00	620,00					
00404016	25X1	20,6	349,00	825,00					

Further dimensions available on request

## Drag chain cables

**bohmflex Chain Signal PVC UL-CSA**  
**colour coded to DIN VDE 47100**

**Ultraflexible due to special construction**

### Technical data

adapted to DIN VDE 0281 part 13

#### Temperature range

flexing -5° C to +70°C +90°C(UL/CSA)

fixed installation -40° C to +70°C +90°C(UL/CSA)

**Nominal voltage** 300/500 V - 600V (UL/CSA)

**Test voltage** 4000 V

#### Insulation resistance

min. 20 MOhm x km

**Minimum bending radius** approx. 7,5 x cable diam.

### Application

Developed for use in cable trays. Ultraflexible, extreme robust PUR control cable. High tear, abrasion and oil-resistant. Ideal for all areas requiring a fast flexing cable. For example in machine industries, robotics and all areas of highly mobile machine parts. The long duration of life offers a secure performance as well as efficiency.



Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km	Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
00000000	3X0,14	3,5	4,3	25,00	00404046	2X0,34	4,2	6,9	33,00
00404041	4X0,14	4,0	5,6	30,00	00404047	3X0,34	4,5	10,4	41,00
00404046	5X0,14	4,3	7,0	34,00	00404033	4X0,34	5,1	14,3	55,00
00000000	7X0,14	5,0	11,0	48,00	00404043	5X0,34	6,2	17,7	62,00
00404036	10X0,14	6,6	14,0	60,00	00404030	7X0,34	7,0	23,8	80,00
00000000	14X0,14	6,5	21,8	74,00	00404031	10X0,34	8,6	34,3	110,00
00000000	18X0,14	7,2	27,0	87,00	00404032	14X0,34	8,7	47,7	144,00
00404050	25X0,14	8,6	35,0	120,00	00404033	18X0,34	10,0	61,2	175,00
00000000	3X0,25	4,4	7,9	32,00	00404034	25X0,34	12,2	85,2	239,00
00404034	4X0,25	4,7	10,0	39,00					
00404035	5X0,25	5,1	12,5	49,00					
00404036	7X0,25	6,4	17,5	61,00					
00404037	10X0,25	7,7	25,0	80,00					
00404038	14X0,25	7,8	35,0	103,00					
00404056	18x0,25	8,8	45,0	125,00					
00404040	25X0,25	10,8	62,5	171,00					

Further dimensions available on request

## Drag chain cables

**bohmflex Chain C-PVC UL-CSA - twisted pairs**  
**colour coded to DIN VDE 47100**  
**EMC-type Cu-screened**

**Ultraflexible due to  
special construction**

### Technical data

adapted to DIN VDE 0245, 0821

#### Temperature range

flexing +5° C to +70°C +90°C(UL/CSA)

fixed installation -40° C to +70 C +90°C(UL/CSA)

**Nominal voltage** 300/500 V - 600V (UL/CSA)

**Test voltage** 1500 V

#### Insulation resistance

min. 20 Mohm x km

#### Minimum bending radius

7,5 mm<sup>2</sup>

### Application

Stranded pairs and overall screened. Ultraflexible data cables developed according to the newest state of technology improvement. PVC-core insulation and adhesion-free and cut-resistant PUR-outer jacket. Used for permanent flexible operations in machineries, machine tools, robotics, movable automated machinery parts as a transmission-cable for BUS-systems.



Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km	Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
00405002	1x2x0,25	4,8	14,00	27,00	00405021	1x2x0,75	6,9	34,00	61,00
00405003	2x2x0,25	7,1	32,00	60,00	00405022	2x2x0,75	9,7	60,00	112,00
00405004	3x2x0,25	7,4	38,40	72,00	00405023	3x2x0,75	10,9	85,70	157,00
00405005	4x2x0,25	8,4	43,20	89,00	00405024	4x2x0,75	11,5	93,60	172,00
00405007	5x2x0,25	9,0	51,50	103,00	00405025	5x2x0,75	12,5	113,00	202,00
00405008	6x2x0,25	9,8	71,80	131,00	00405006	6x2x0,75	13,4	130,40	231,00
00405009	8x2x0,25	11,5	74,40	155,00	00405026	8x2x0,75	16,4	192,20	342,00
00405010	10x2x0,25	12,8	90,00	186,00	00405027	10x2x0,75	19,3	258,00	466,00
00405011	14x2x0,25	13,4	111,20	219,00	00405028	14x2x0,75	20,0	316,60	545,00
00405012	1x2x0,5	6,4	22,00	47,00	00405029	1x2x1	7,3	42,00	71,00
00405013	2x2x0,5	9,3	50,00	99,00	00405030	2x2x1	10,3	73,00	129,00
00405014	3x2x0,5	10,0	71,80	130,00	00405031	3x2x1	11,4	93,60	169,00
00405015	4x2x0,5	11,1	74,40	148,00	00405001	4x2x1	12,3	117,80	204,00
00405016	5x2x0,5	11,9	84,50	168,00	00405032	5x2x1	13,3	139,00	237,00
00405017	6x2x0,5	12,8	99,60	194,00					
00405018	8x2x0,5	15,7	144,30	284,00					
00405019	10x2x0,5	17,6	176,00	343,00					
00405020	14x2x0,5	18,3	215,40	401,00					

Further dimensions available on request



## PUR cables

### YSLYK - flexible colour coded or number coded non-abrasive

#### Technical data

adapted to DIN VDE 0281, 0282

#### Temperature range

flexing -5° C to +80° C

fixed installation -40° C to +80° C

**Nominal voltage** U<sub>0</sub>/U = 300/500 V

**Test voltage** 3000 V

#### Insulation resistance

min. 20 MOhm x km

#### Minimum bending radius

7,5 x cable diam.

#### Application

Robust control cable, resistant to oil and abrasion. For use in tool making and machine industries, steel works, oil and coal industries and at building sites. It can also be used for portable tools, etc.. Recommendable if the cable comes in contact with chemical agents.



Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km	Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
00501002	2X0,75	6,5	14,40	45,00	00501017	2X2,5	10,8	48,00	141,00
00501003	3X0,75	7,1	21,60	60,00	00501018	3X2,5	10,1	72,00	137,00
00501004	4X0,75	8,2	29,00	80,00	00501019	4X2,5	11,5	96,00	193,00
00501005	5X0,75	8,9	36,00	95,00	00501020	5X2,5	11,9	120,00	208,00
00501006	7X0,75	7,9	50,00	143,00	00501021	7X2,5	15,8	168,00	378,00
00501027	10X0,75	o. r.	70,00	142,00	00501022	4X4	14,1	154,00	308,00
00501028	12X0,75	o. r.	83,00	163,00	00501023	5X4	14,7	192,00	380,00
00501029	18X0,75	o. r.	125,00	234,00	00501024	4X6	16,5	230,00	429,00
00501030	25X0,75	o. r.	173,00	324,00	00501025	5X6	18,0	288,00	560,00
00501007	2X1	7,1	19,00	59,00					
00501008	3X1	7,6	29,00	71,00					
00501009	4X1	8,5	38,00	95,00					
00501010	5X1	9,2	48,00	112,00					
00501011	7X1	8,2	67,00	171,00					
00501031	10X1	o. r.	92,00	171,00					
00501032	12X1	o. r.	110,00	197,00					
00501033	18X1	o. r.	165,00	289,00					
00501012	2X1,5	7,6	29,00	77,00					
00501013	3X1,5	8,1	43,00	92,00					
00501026	4X1,5	9,2	58,00	126,00					
00501036	4X1,5	9,2	58,00	126,00					
00501014	5X1,5	10,0	72,00	140,00					
00501015	7X1,5	11,5	101,00	196,00					
00501016	12X1,5	15,2	173,00	318,00					
00501034	18X1,5	o. r.	238,00	392,00					

Further dimensions available on request  
Other colour codes on request  
(minimum quantity)

## PUR cables

### H05/H07BQ-F - DIN VDE - HAR - PUR-jacket flexible cores rubber-insulated colour coded or number coded non-abrasive

#### Technical data

acc. to DIN VDE 0282 part 10 and HD 22.10 S1

#### Temperature range

flexing -35° C to +80° C

fixed installation -45° C to +90° C

**Permissible operating temperature** at conductor +90° C

#### Nominal voltage

H05BQ-F:  $U_0/U = 300/500$  V up to 1 mm

H07BQ-F:  $U_0/U = 450/750$  V as of 1,5 mm<sup>2</sup>

#### Test voltage

H05BQ-F: 2000 V up to 1 mm

H07BQ-F: 2500 V as of 1,5 mm<sup>2</sup>

#### Minimum bending radius for free movements

approx. 5 x cable diam.

#### Application

Usable for medium mechanical stress in dry, damp or wet areas, for connecting agricultural and commercial equipment and heaters provided that there is no danger of contact with hot parts or heat radiation. Robust and flexible. For electrical tools such as drills and hand-held circular saws as well as for portable motors and agricultural machineries, at building sites, docks and refrigeration plants. Resistance to oils, fat, petrol, ozone and oxygen, UV-radiation, hydrolysis, microbial attacks, water and weathering effects.



Other colours on request

#### H05BQ-F

Part N°	N° of cores x cross-sec. mm <sup>2</sup>	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
00502001	2X0,75	6,4	14,40	50,00
00502002	3G0,75	7,0	21,60	62,00
00502003	4G0,75	7,6	29,00	75,00
00502004	5G0,75	8,5	36,00	96,00
00502005	2X1	7,0	19,20	59,00
00502006	3G1	7,4	29,00	73,00
00502007	4G1	8,1	38,40	89,00
00502008	5G1	9,0	48,00	113,00

Further dimensions available on request

#### H07BQ-F

Part N°	N° of cores x cross-sec. mm <sup>2</sup>	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km	Part N°	N° of cores x cross-sec. mm <sup>2</sup>	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
00503001	2X1,5	8,4	29,00	86,00	00503011	3G4	12,2	115,00	218,00
00503002	3G1,5	8,9	43,00	107,00	00503012	4G4	13,5	154,00	280,00
00503003	4G1,5	9,9	58,00	136,00	00503013	5G4	16,5	192,00	406,00
00503004	5G1,5	10,8	72,00	164,00	00503014	3G6	o. r.	173,00	300,00
00503005	7G1,5	13,1	101,00	230,00	00503018	4G6	o. r.	230,00	383,00
00503006	12G1,5	16,3	173,00	366,00	00503015	5G6	17,2	288,00	560,00
00503007	2X2,5	9,8	48,00	90,00	00503019	4G10	o. r.	384,00	890,00
00503008	3G2,5	10,4	72,00	159,00	00503016	5G10	22,7	480,00	960,00
00503009	4G2,5	11,5	96,00	199,00	00503020	4G16	24,9	614,00	920,00
00503010	5G2,5	12,8	120,00	250,00	00503017	5G16	28,2	768,00	1.460,00
00503025	7G2,5	14,5	168,00	320,00					
00503026	12G2,5	19,0	288,00	520,00					

Further dimensions available on request

# Lift control cables with suspension strand

## LIFT 2TY

### with 2 external built in steel wire suspension cores

#### Technical data

adapted to DIN VDE 0250

#### Temperature range

flexing -15° C to +40° C

fixed installation -40° C to +70° C

#### Max. conductor temperature

under load +70° C

circuit conditions +150° C

**Nominal voltage**  $U_0/U = 300/500$  V

**Test voltage** 3000 V

**Free suspension height** max. 50 m

#### Minimum bending radius

20 x cable diam.

#### Application

For use as control or feeder cables in lifts and hoists under extreme conditions. Also suitable for installation in conveyor systems and manual control units. The external steel-suspension-cores can be dismantled without damaging the cable insulation.



Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
00614016	12X1	o. r.	115,20	446,00
00614007	18X1	17,0	172,80	528,00
00614008	25X1	21,0	240,00	660,00
00614009	30X1	21,9	288,00	760,00
00614010	8X1,5	14,9	115,20	426,00
00614005	12X1,5	16,5	172,80	505,00
00614011	16X1,5	18,5	220,00	540,00
00614012	20X1,5	21,0	288,00	715,00
00614014	24X1,5	22,6	346,00	820,00
00614015	30X1,5	26,0	410,00	980,00
00614025	12X2,5	18,0	246,00	580,00

Further dimensions available on request

# Lift control cables with suspension strand

**LYSLTK, YSLTK, YSLYTK unscreened**

**YSLYCYTK Cu-screened**

**Lift cable**

## Technical data

adapted to DIN VDE 0281 part 13

### Temperature range

flexing -20° C to +50° C

fixed installation -20° C to +70° C

### Max. conductor temperature

under load +70° C

circuit conditions +150° C

**Nominal voltage**  $U_0/U = 300/500$  V

**Test voltage** 2000 V

### Minimum bending radius

approx. 20 x cable diam.

### Insulation resistance

min. 20 MOhm x km

## Application

For use as control or feeder cables in lifts and hoists.

30 m pendal length for LYSLTK

50 m pendal length for YSLTK

Suspension height for medium mechanical stress in dry and moist areas. The PVC-outer sheath is oil-resistant according to DIN VDE 0281 part 1.



LYSLTK					YSLTK				
Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km	Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
00612001	7X0,75	11,5	50,00	145,00	00610001	7X0,75	13,2	50,00	165,00
00612002	12X0,75	15,9	86,00	285,00	00610002	12X0,75	16,9	86,00	295,00
00612003	18X0,75	15,4	130,00	303,00	00610003	18X0,75	16,9	130,00	320,00
00612004	24X0,75	160,0	173,00	415,00	00610004	24X0,75	20,1	173,00	460,00
00612005	30X0,75	20,9	216,00	545,00	00610005	30X0,75	22,4	216,00	595,00
00612006	7X1	11,5	67,00	168,00	00610006	7X1	12,2	67,00	190,00
00612007	12X1	16,1	115,00	326,00	00610007	12X1	17,2	115,00	340,00
00612008	18X1	16,2	173,00	358,00	00610008	18X1	16,5	173,00	370,00
00612009	24X1	19,1	230,00	500,00	00610009	24X1	20,0	230,00	540,00
00612010	30X1	21,4	288,00	636,00	Further dimensions available on request				

YSLYTK					YSLYCYTK				
Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km	Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
00615001	28X1+2x0,5 FM (C)	24,9	357,00	785,00	00611001	8X1+2x0,5 FM (C)	26,5	425,00	920,00

Further dimensions available on request

## Lift control cables with suspension strand

### KYSTY, KYSTYY, KYSTUY, KYSTFUY, KYSSTUY unscreened

### KYSTCY, KYSTCUY, KYSTFCUY Cu-screened

## PVC control cables with suspension strand

#### Technical data

adapted to DIN VDE 0250

#### Temperature range

flexing -15° C to +40° C

fixed installation -40° C to +70° C

#### Max. conductor temperature

under load +70° C

circuit conditions +150° C

**Nominal voltage**  $U_0/U = 300/500$  V

**Test voltage** 3000 V

**Free suspension height** max. 50 m

#### Minimum bending radius

10 x cable diam.

#### Application

For use as control or feeder cables in lifts and hoists.

Applicable under extreme conditions. Also ideally suited for installation in conveyor systems and manual control units.



KYSTY					KYSTUY				
Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km	Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
00603001	4X1	7,9	40,30	120,00	00604001	12X0,75	16,2	86,00	210,00
00603002	7X1	11,5	67,00	171,00	00604002	12X1	16,5	123,00	330,00
00603003	9X1	13,5	91,50	222,00	00604003	18X1	17,5	181,00	465,00
Further dimensions available on request					00604004	24X1	21,5	252,00	610,00
					00604005	30X1	25,0	288,00	770,00
					00604006	7X1+17X0,75	21,0	193,00	593,00
					00604007	7X1+23X0,75	23,6	236,00	750,00

KYSTFUY					KYSSTUY				
Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km	Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
00606001	28X1+2X0,5	23,5	305,30	740,00	00609001	18X1	17,5	181,00	390,00
Further dimensions available on request					00609002	24X1	20,2	252,00	515,00
					00609003	30X1	23,2	288,00	736,00

KYSTCUY					KYSTCY				
Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km	Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
00619001	3X2X0,75	14,2	105,00	155,00	00607001	4X0,75	o. r.	69,00	102,00
00619002	37X1	14,5	108,00	165,00	00607002	7X0,75	10,0	106,00	181,00
Further dimensions available on request					00607003	12X0,75	15,9	159,00	300,00

KYSTFCUY					KYSTCUY				
Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km	Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
00608001	328X1+2X0,5	25,0	412,80	785,00	00619001	3X2X0,75	14,2	105,00	155,00
Further dimensions available on request					00619002	37X1	14,5	108,00	165,00

## Lift control cables with suspension strand

YMHY-KT-OZ/JZ

## PVC control cables with suspension strand

### Technical data

#### Temperature range

flexing -30° C to +70° C

**Nominal voltage**  $U_0/U = 300/500$  V

### Application

For use as control or feeder cables in lifts and hoists.

Applicable under extreme conditions. Also ideally suited for installation in conveyor systems and manual control units.



Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km	Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
00613017	18X1	16,5	173,00	388,00	00613010	4X2,5	14,5	96,00	230,00
00613005	4X1,5	12,5	58,00	160,00	00613020	5X2,5	12,4	120,00	336,00
00613006	6X1,5	12,5	87,00	181,00	00613011	6X2,5	13,4	144,00	271,00
00613007	7X1,5	13,0	101,00	209,00	00613012	7X2,5	5,5	168,00	319,00
00613008	8X1,5	14,5	115,00	252,00	00613013	8X2,5	17,5	192,00	374,00
00613009	10X1,5	17,0	144,00	330,00					
00613001	12X1,5	18,5	173,00	382,00					
00613015	18X1,5	19,0	259,00	482,00					
00613003	24X1,5	21,0	360,00	652,00					
00613004	30X1,5	24,5	432,00	847,00					

Further dimensions available on request

## Lift control cables with suspension strand

### STN

### neoprene control cables with suspension strand

Other colours on request

#### Technical data

adapted to DIN VDE 0250 part 807 and DIN VDE 0282 part 807 and 808 with strain bearing support strand

#### Temperature range

flexing -30° C to +70° C

fixed installation -40° C to +70° C

**Nominal voltage**  $U_0/U = 450/750$  V

**Test voltage** 3000 V

**Minimum bending radius**

10 x cable diam.

#### Application

As a robust and weather-resistant cable for machines, equipment and appliances, which are constantly exposed to the weather conditions (building machineries, conveyor and hoist systems, dry docks etc.). Applicable as control and power cable in dry, damp and wet areas for wall- and push-button panels. Ozone-resistant core insulation, chloroprene outer jacket, hardly flammable and abrasion-resistant. The central supporting element is resistant.



STN									
Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km	Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
00601036	3x1	8,3	31,00	110,00	00601039	3X2,5	10,2	74,00	173,00
00601001	7x1	12,9	72,00	205,00	00601020	4x2,5	11,6	102,80	210,00
00601002	9x1	14,4	91,00	275,00	00601021	5x2,5	12,4	135,00	256,00
00601003	12x1	18,5	124,00	390,00	00601022	7x2,5	16,6	207,50	380,00
00601004	16x1	17,9	165,00	433,00	00601023	8x2,5	18,9	229,00	542,00
00601005	18x1	19,2	194,00	472,00	00601024	12x2,5	23,3	341,00	691,00
00601006	24x1	22,1	261,00	651,00	00601025	18x2,5	24,4	432,00	880,00
00601007	36x1	26,1	400,00	900,00	00601026	24x2,5	28,5	598,00	1.222,00
00601037	48x1	29,6	461,00	1.220,00	00601027	37x2,5	31,0	1.030,00	2.250,00
00601008	54x1	31,6	518,00	1.320,00	00601028	4x4	15,2	157,00	400,00
00601009	61x1	32,9	586,00	1.494,00	00601029	5x4	16,8	198,00	430,00
00601010	3x1,5	8,7	46,00	120,00	00601030	4x6	16,8	244,00	445,00
00601011	4x1,5	9,9	62,00	150,00	00601031	5x6	19,2	296,00	560,00
00601012	5x1,5	10,9	78,00	181,00	00601032	4x10	21,8	296,00	720,00
00601013	7x1,5	14,0	109,00	270,00	00601033	5x10	24,6	497,00	920,00
00601014	8x1,5	15,2	122,00	310,00	00601034	4x16	25,4	635,00	1.020,00
00601015	9x1,5	15,9	140,00	400,00	00601035	5x16	28,0	795,00	1.250,00
00601016	12x1,5	19,9	182,00	510,00					
00601017	18x1,5	20,9	288,00	600,00					
00601038	19x1,5	21,7	292,00	670,00					
00601018	24x1,5	23,4	374,00	818,00					
00601019	42x1,5	30,0	677,00	1.380,00					

Further dimensions available on request

## Lift control cables with suspension strand

### STCN - Cu-screened

### neoprene control cables with suspension strand

Other colours on request

#### Technical data

adapted to DIN VDE 0250 part 807 and DIN VDE 0282 part 807 and 808 with strain bearing support strand

#### Temperature range

flexing -30° C to +70° C

fixed installation -40° C to +70° C

**Nominal voltage**  $U_0/U = 450/750$  V

**Test voltage** 3000 V

**Minimum bending radius**

10 x cable diam.

#### Application

As a robust and weather-resistant cable for machines, equipment and appliances, which are constantly exposed to the weather conditions (building machineries, conveyor and hoist systems, dry docks etc.). Applicable as control and power cable in dry, damp and wet areas for wall- and push-button panels. Ozone-resistant core insulation, chloroprene outer jacket, hardly flammable and abrasion-resistant. The central supporting element is resistant.



#### STCN

Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
00602001	6x0,5	11,5	80,70	180,00
00602002	6x0,75	12,0	80,70	205,00
00602003	4x1	11,5	74,00	185,00
00602004	7x1	15,0	187,50	300,00
00602005	12x1	20,5	201,20	545,00
00602007	18x1	21,0	287,50	630,00
00602008	24x1	25,0	394,80	900,00
00602006	6x1,5	15,0	126,00	430,00

Further dimensions available on request



## Rubber-insulated cables

### H05RR-F, H05RN-F rubber-sheathed cable

#### Technical data

rubber insulation acc. to DIN VDE 0282 part 4,  
HD 22.4 S3 = IEC 60245-4

#### Temperature range

-30° C to +60° C

#### Permissible operating temperature

at conductor 60° C

**Nominal voltage**  $U_0/U = 300/500$  V

#### Max. operating voltage

three-phase and one-phase  $U_0/U = 318/550$  V

direct current-system  $U_0/U = 413/825$  V

**Test voltage** 2000 V

#### Minimum bending radius

approx. 7,5 x cable 1

**Behavior in fire** acc. to DIN VDE 0472 part 804 test method B  
and IEC 60332-1

ozone-resistant, oils and fat are allowed to come in touch

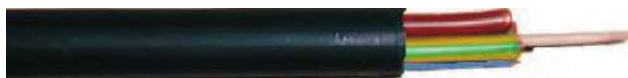
#### Application

**H05RR-F** acc. to DIN VDE 0282, part 4.

Suitable for connecting electrical appliances like vacuum cleaner, kitchen appliances, soldering irons etc.. For medium mechanical stress in households and offices and also for fixed installation in partition walls, furniture, decoration coverings and hollow spaces of prefabricated building parts. For use in the open for short time, industries or agriculture plants and for connecting commercial electrical tools.

**H05RN-F** acc. to DIN VDE 0282, part 4.

Suitable for connecting electrical equipment with low mechanical stress in dry, damp and wet areas as well as in the open, e.g. as a connection cable for horticulture tools. These cables may have contact with fat and oils (e.g. deep fryer). They are also suitable for fixed installation, e.g. in furniture, decoration coverings, partition walls and in hollow spaces of prefabricated building parts. The installation in hazardous areas is allowed.



#### H05RR-F

Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km	Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
01901001	2X0,75	6,2	14,40	60,00	01901003	4G0,75	9,6	29,00	90,00
01901004	2X1	6,8	19,20	73,00	01901006	4G1	10,0	38,00	105,00
01901007	2X1,5	8,2	29,00	115,00	01901009	4G1,5	12,5	58,00	165,00
01901011	2X2,5	9,5	48,00	160,00	01901013	4G2,5	14,0	96,00	235,00
01901002	3G0,75	8,8	21,60	75,00	01901010	5G1,5	13,5	72,00	190,00
01901005	3G1	9,2	29,00	85,00	01901014	5G2,5	15,5	120,00	285,00
01901008	3G1,5	11,0	43,00	135,00					
01901012	3G2,5	13,0	72,00	190,00					

Further dimensions available on request

#### H05RN-F

Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
01902001	2X0,75	8,2	14,40	63,00
01902005	2X1	8,8	19,20	75,00
01902002	3G0,75	8,8	21,60	77,00
01902006	3G1	9,2	29,00	88,00
01902001	2X0,75	8,2	14,40	63,00
01902005	2X1	8,8	19,20	75,00
01902002	3G0,75	8,8	21,60	77,00
01902006	3G1	9,2	29,00	88,00

Further dimensions available on request

# Rubber-insulated cables

## H07RN-F

### rubber-sheathed cable

harmonized type - VDE approved

#### Technical data

H07RN-F acc. to DIN VDE 0282 part 4, HD 22.4 S3 = IEC 60245-4

A07RN-F acc. to DIN VDE 0282 part 4

#### Temperature range

-30° C to +60° C

#### Permissible operating temperature

at conductor +60° C

**Nominal voltage**  $U_0/U = 450/750$  V

#### Operating voltage

max. permissible in three-phase and one-phase a. c. system

$U_0/U = 476/825$  V

direct current-system  $U_0/U = 619/1238$  V

**Test voltage** 2500 V

#### Permanent tensile load

max. 15 N/mm<sup>2</sup> under consideration of total copper cross-sections

#### Minimum bending radius

for fixed installation 4 x cable diam.

for guiding over roller 7,5 x cable diam.

during winding on drums 5 - 7 x cable diam.

#### Application

Heavy-duty rubber-sheathed flexible cables, suited for medium mechanical stress in dry, damp and wet areas as well as in the open and in agriculture plants. They are used for equipment in industry works such as boilers, heating plates, hand lamps, electric tools such as drills, circular saws and homework tools as well as for transportable motors or machines at sites. Also suitable for fixed installation on plaster, in temporary buildings and residential barracks. Suitable for direct laying on components and mechanical parts of machines, e.g. cranes and lifts.



Part N°	N° of cores x cross-sec. mm <sup>2</sup>	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km	Part N°	N° of cores x cross-sec. mm <sup>2</sup>	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
01904001	2X1	8,5	19,00	89,00	01904023	1X6	9,0	58,00	129,00
01904002	3G1	9,0	29,00	111,00	01904024	2X6	14,5	115,00	290,00
01904003	4G1	9,5	38,00	129,00	01904025	3G6	15,0	173,00	387,00
01904004	5G1	12,0	48,00	170,00	01904026	4G6	17,5	230,00	514,00
01904005	1X1,5	6,5	14,40	55,00	01904027	5G6	19,5	288,00	640,00
01904006	2X1,5	10,0	29,00	128,00	01904028	1X10	11,1	96,00	200,00
01904008	3G1,5	10,0	43,00	150,00	01904029	3G10	21,0	288,00	716,00
01904009	4G1,5	11,5	58,00	190,00	01904030	4G10	23,0	384,00	898,00
01904010	5G1,5	12,5	72,00	230,00	01904031	5G10	26,0	480,00	1.107,00
01904071	10G1,5	15,0	144,00	333,00	01904032	1X16	12,5	154,00	278,00
01904011	1X2,5	7,0	24,00	72,00	01904033	3G16	24,5	461,00	1.008,00
01904012	2X2,5	11,5	48,00	177,00	01904034	4G16	28,0	614,00	1.253,00
01904013	3G2,5	12,5	72,00	217,00	01904035	5G16	30,5	768,00	1.564,00
01904014	4G2,5	14,0	96,00	269,00	01904036	1X25	14,0	240,00	396,00
01904015	5G2,5	15,0	120,00	329,00	01904037	3G25	28,5	720,00	1.451,00
01904016	1X4	8,0	38,00	99,00	01904038	4G25	32,5	960,00	1.846,00
01904017	2X4	12,7	77,00	240,00	01904039	5G25	36,0	1.200,00	2.291,00
01904020	3G4	14,0	115,00	298,00					
01904021	4G4	15,5	154,00	373,00					
01904022	5G4	17,0	192,00	466,00					

Further dimensions available on request

# Rubber-insulated cables

H07RN-F

rubber-sheathed cable

harmonized type - VDE approved

Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km	Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
01904040	1X35	16,0	336,00	520,00	01904056	1X120	27,0	1.152,00	1.520,00
01904041	3G35	32,0	1.008,00	1.901,00	01904057	3G120	53,5	3.456,00	5.182,00
01904042	4G35	37,5	1.344,00	2.393,00	01904058	4G120	58,0	4.608,00	6.828,00
01904043	5G35	42,7	1.680,00	2.640,00	01904059	1X150	29,0	1.440,00	1.887,00
01904044	1X50	18,5	480,00	719,00	01904060	4G150	65,0	5.760,00	8.319,00
01904045	3G50	37,0	1.440,00	2.580,00	01904061	1X185	30,0	1.776,00	2.274,00
01904046	4G50	43,0	1.920,00	3.284,00	01904062	4G185	69,5	7.104,00	10.062,00
01904047	5G50	49,0	2.400,00	3.700,00	01904063	1X240	32,5	2.304,00	2.955,00
01904048	1X70	21,0	672,00	947,00	01904064	4G240	82,6	9.216,00	13.125,00
01904049	3G70	41,5	2.016,00	3.386,00	01904065	1X300	37,0	2.880,00	3.585,00
01904050	4G70	48,0	2.688,00	4.331,00	01904066	4G300	89,7	11.520,00	16.143,00
01904051	5G70	51,0	3.360,00	5.166,00	01904067	1X400	42,5	3.840,00	4.600,00
01904052	1X95	23,5	912,00	1.230,00	01904068	1X500	46,7	4.800,00	5.550,00
01904053	3G95	49,0	2.736,00	4.400,00	Further dimensions available on request				
01904054	4G95	55,0	3.648,00	5.712,00					
01904055	5G95	55,0	4.560,00	5.712,00					

# Rubber-insulated cables

## NSSHöu-O

### heavy-duty rubber cable for mining

#### Technical data

acc. to DIN VDE 0250 part 812,  
conductor resistance acc. to DIN VDE 0295

#### Temperature range

flexing -25° C to +80° C

fixed installation -40° C to +80° C

**Permissible operating temperature** at conductor +80° C

**Nominal voltage**  $U_0/U = 0,6/1$  kV

#### Operating voltage

three-phase and one-phase a. c.  $U_0/U = 0,69/1,15$  kV

direct current-system  $U_0/U = 1,04/1,73$  kV

**Test voltage** 3000 V

**Insulation resistance** min. 20 MOhm x km

**Tensile strength** static load: total cross-section x 15 N/mm<sup>2</sup>

#### Minimum bending radius

fixed installation 4 x cable diam.

flexing 10 x cable diam.

without forced operation 15 x cable diam.

#### Behavior in fire

acc. to DIN VDE 0472 part 804 test method B and IEC60332-1

#### Application

Suited as a connecting cable for very high mechanical stress. Applicable in underground and surface mining, industrial tools, stone-pits, at building sites, outdoors as well as indoors. Suitable for fixed installation on plaster, in dry, damp and wet zones. A long duration of life under extreme operating conditions is guaranteed. Not suitable for drumming and use in all types of machinery, such as robots, handling units and energy transfer units, where constant mobility is essential. Insulation of a plastic-rubber compound on EPR basis improves the resistance to ozone in order to avoid the formation of cracks due to ozone and insulation damage in switch-boards.



## NSSHöu-O

Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km	Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
01913031	1X16	13,5	154,00	260,00	01913001	2X1,5	14,5	29,00	190,00
01913036	1X25	16,5	240,00	400,00	01913007	2X2,5	15,8	48,00	250,00
01913040	1X35	18,0	336,00	500,00	01913016	2X4	17,3	77,00	270,00
01913042	1X50	20,0	480,00	680,00	01913022	2X6	22,0	115,00	280,00
01913045	1X70	22,0	672,00	910,00	01913032	2X16	27,0	307,00	740,00
01913048	1X95	25,0	912,00	1.170,00	01913037	2X25	31,0	480,00	975,00
01913051	1X120	27,5	1.152,00	1.470,00	01913008	3X2,5	16,5	72,00	280,00
01913054	1X150	30,0	1.440,00	1.740,00	01913017	3X4	20,0	115,00	420,00
01913055	1X185	32,0	1.776,00	2.215,00	01913024	3X6	22,0	173,00	520,00
01913056	1X240	36,0	2.304,00	2.830,00	01913027	3X10	25,0	288,00	800,00
01913057	1X300	41,0	2.880,00	3.460,00	01913009	4X2,5	19,0	96,00	370,00
Further dimensions available on request					01913021	5X4	23,0	192,00	560,00

# Rubber-insulated cables

## NSSHöu-J

### heavy-duty rubber cable for mining

#### Technical data

acc. to DIN VDE 0250 part 812,  
conductor resistance acc. to DIN VDE 0295

#### Temperature range

flexing -25° C to +80° C

fixed installation -40° C to +80° C

**Permissible operating temperature** at conductor +80° C

**Nominal voltage**  $U_0/U = 0,6/1$  kV

#### Operating voltage

three-phase and one-phase a. c.  $U_0/U = 0,69/1,15$  kV

direct current-system  $U_0/U = 1,04/1,73$  kV

**Test voltage** 3000 V

**Insulation resistance** min. 20 MOhm x km

**Tensile strength** static load: total cross-section x 15 N/mm²

#### Minimum bending radius

fixed installation 4 x cable diam.

flexing 10 x cable diam.

without forced operation 15 x cable diam.

#### Behavior in fire

acc. to DIN VDE 0472 part 804 test method B and IEC60332-1

#### Application

Suited as a connecting cable for very high mechanical stress. Applicable in underground and surface mining, industrial tools, stone-pits, at building sites, outdoors as well as indoors. Suitable for fixed installation on plaster, in dry, damp and wet zones. A long duration of life under extreme operating conditions is guaranteed. Not suitable for drumming and use in all types of machinery, such as robots, handling units and energy transfer units, where constant mobility is essential. Insulation of a plastic-rubber compound on EPR basis improves the resistance to ozone in order to avoid the formation of cracks due to ozone and insulation damage in switch-boards.



## NSSHöu- J

Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km	Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
01913002	3X1,5	12,5	43,00	200,00	01913043	3X50/25	42,0	1.680,00	2.700,00
01913008	3X2,5	16,5	72,00	280,00	01913046	3X70/35	51,0	2.352,00	4.450,00
01913018	3X4	20,0	115,00	420,00	01913049	3X95/50	59,0	3.216,00	5.870,00
01913023	3X6	22,0	173,00	520,00	01913052	3X120/70	64,0	4.128,00	7.340,00
01913028	3X10	25,0	288,00	800,00	01913004	5X1,5	14,0	72,00	280,00
01913033	3X16	28,0	461,00	970,00	01913010	5X2,5	17,5	120,00	410,00
01913003	4X1,5	13,0	58,00	230,00	01913020	5X4	23,0	192,00	560,00
01913011	4X2,5	19,0	96,00	370,00	01913026	5X6	22,0	288,00	740,00
01913019	4X4	18,0	154,00	470,00	01913030	5X10	26,0	480,00	1.070,00
01913025	4X6	19,5	230,00	580,00	01913035	5X16	34,0	768,00	1.670,00
01913029	4X10	24,0	384,00	940,00	01913039	5X25	42,0	1.200,00	2.460,00
01913034	4X16	28,5	614,00	1.400,00	1913005	7X1,5	45,4	101,00	470,00
01913038	4X25	34,0	960,00	2.000,00	1913012	7X2,5	o. r.	168,00	600,00
01913041	4X35	38,0	1.344,00	2.700,00	1913006	10X1,5	o. r.	144,00	570,00
01913044	4X50	45,0	1.920,00	3.700,00	01913043	10X2,5	42,0	240,00	790,00
01913047	4X70	54,0	2.688,00	4.310,00	1913014	12X2,5	o. r.	288,00	860,00
01913050	4X95	57,6	3.648,00	5.715,00	1913015	18X2,5	o. r.	432,00	1.240,00
01913053	4X120	64,0	4.608,00	7.245,00					

Further dimensions available on request

## Rubber-insulated cables

### H01N2-D, H01N2-E ultraflexible welding cable

harmonized type

#### Technical data

acc. to DIN VDE 0282 part 6 or HD 22.6 S2

#### Temperature range

flexing -25° C to 80° C

fixed installation -40° C to +80° C

#### Permissible working temperature

at conductor +85° C

**Nominal voltage** 100 V

**Test voltage** 1000 V

#### Application

For use between welding generators and hand-electrode in the automobile industry, shipbuilding, transport and conveyor systems, tool making machineries, welding robots. Retaining the high flexibility even under influence of ozone, oxygen, light, aggressive gases, oil and petrol. Resistant to cold, heat, and flames. Suitable for use in open spaces, dry and damp conditions.



H01N2-D					H01N2-E				
Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km	Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
01907001	1X10	9,4	96,00	135,00	01908003	1X25	13,0	240,00	310,00
01907002	1X16	11,5	154,00	220,00	01908004	1X35	14,5	336,00	410,00
01907003	1X25	13,0	240,00	310,00	01908005	1X50	17,0	480,00	570,00
01907004	1X35	14,5	366,00	410,00	01908006	1X70	19,5	672,00	790,00
01907005	1X50	17,0	480,00	570,00	01908007	1X95	22,0	912,00	1.050,00
01907006	1X70	19,5	672,00	790,00	01908008	1X120	24,0	1.152,00	1.330,00
01907007	1X95	22,0	912,00	1.050,00	01908009	1X150	26,0	1.440,00	o. r.
01907008	1X120	24,0	1.152,00	1.330,00	01908010	1X185	28,9	1.776,00	o. r.
01907009	1X150	26,0	1.440,00	1.590,00					
01907010	1X185	28,0	1.776,00	1.910,00					

Further dimensions available on request

## Rubber-insulated cables

### NSGAFöu - 1,8/3 kV - 3,6/6 kV

#### special rubber-insulated cable short-circuit and short-circuit to earth safe up to 1000 V

harmonized type

#### Technical data

acc. to DIN VDE 0250 part 602

#### Temperature range

flexing -25° C to + 80° C

fixed installation -40° C to +80° C

**Permissible operating temperature** at conductor +90° C

**Nominal voltage**  $U_0/U = 1,8/3$  kV

max. permissible operating voltage for three-phase and one-

phase alternating current operation  $U_0/U = 2,16/3,6$  kV

for direct current operation  $U_0/U = 2,7/5,4$  kV

**Test voltage** 6 kV

**Minimum bending radius**

approx. 5 x cable diam.

#### Application

Particularly suitable for protection against short-circuits in laying and for inherently earth-fault-proof routing in rail vehicles and buses. Suitable for laying in dry zones.



NSGAFöu - 1,8/3 kV					NSGAFöu - 3,6/6 kV				
Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km	Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
01909001	1X1,5	7,0	14,40	55,00	01914001	1X1,5	8,4	14,40	97,00
01909002	1X2,5	7,5	24,00	65,00	01914002	1X2,5	9,0	24,00	108,00
01909003	1X4	9,0	38,00	85,00	01914003	1X4	9,6	38,00	130,00
01909004	1X6	9,5	58,00	110,00	01914004	1X6	10,2	58,00	160,00
01909005	1X10	11,0	96,00	160,00	01914005	1X10	11,3	96,00	250,00
01909006	1X16	13,0	154,00	240,00	01914006	1X16	12,5	154,00	310,00
01909007	1X25	15,0	240,00	365,00	01914007	1X25	14,4	240,00	440,00
01909008	1X35	16,5	336,00	475,00	01914008	1X35	15,6	336,00	540,00
01909009	1X50	18,0	480,00	640,00	01914009	1X50	16,9	480,00	700,00
01909010	1X70	20,5	672,00	850,00	01914010	1X70	18,7	672,00	920,00
01909011	1X95	24,0	912,00	1.110,00	01914011	1X95	21,0	912,00	1.180,00
01909012	1X120	26,0	1.152,00	1.350,00	01914012	1X120	25,0	1.152,00	1.500,00
01909013	1X150	28,0	1.440,00	1.650,00	01914013	1X150	27,0	1.440,00	1.800,00
01909014	1X185	31,0	1.776,00	2.000,00	01914014	1X185	29,0	1.776,00	2.110,00
01909015	1X240	34,5	2.304,00	2.600,00	01914015	1X240	34,5	2.304,00	2.412,00
01909016	1X300	37,5	2.880,00	3.090,00	Further dimensions available on request				

## Heat-resistant cables

**SiD, SiF**

**A05SJ-U, H05SJ-K - DIN VDE - HAR**

**silicone single cores halogen-free**

**SiFZü silicone ignition cable halogen-free**

### Technical data

**Temperature range**

-50° C up to +180° C

**Rated voltage**  $U_0/U = 300/500$  V

**Test voltage** 2000 V

### Application

Preferably used in metallurgical industries, steel works, hot-rolling mills, etc.. Insulation consists of silicone rubber, resistant to vegetable and animal fat, many types of oil and diluted acids. Oxygen- and ozone-resistant insulation. SiFZü for wiring of ignition systems at high ambient temperatures like traffic, automotive and mechanical engineering.



**SiD, SiF**

**A05SJ-U, H05SJ-K**

**SiFZü**

SiD					SiF				
Part N°	N° of cores x cross-sec. mm <sup>2</sup>	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km	Part N°	N° of cores x cross-sec. mm <sup>2</sup>	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
00901004	0,5	2,0	4,80	8,00	00903001	0,25	1,0	2,40	5,00
00901039	0,75	2,1	7,20	10,00	00903107	0,5	1,1	4,80	8,00
00901008	1	2,3	9,60	13,00	00903093	1	2,5	9,60	14,00
00901040	1,5	2,5	14,40	18,00	00903116	2,5	3,4	24,00	30,00
00901020	2,5	3,2	24,00	29,00	00903032	4	4,2	38,00	48,00
00901041	4	3,9	38,00	45,00	00903127	6	5,2	58,00	71,00
00901042	6	4,4	58,00	65,00	00903042	10	7,0	96,00	120,00
00901004	0,5	2,0	4,80	8,00	00903126	16	8,4	154,00	188,00
00901039	0,75	2,1	7,20	10,00	00903055	50	13,9	480,00	560,00
					00903056	70	16,0	672,00	767,00
					00903058	95	18,4	912,00	1.032,00
					00903060	120	20,0	1.152,00	1.286,00
					00903094	150	23,0	1.440,00	1.565,00
					00903110	185	24,9	1.776,00	1.858,00
					00903063	240	27,4	2.400,00	2.450,00

Further dimensions available on request



# Heat-resistant cables

SiD, SiF

A05SJ-U, H05SJ-K - DIN VDE - HAR

silicone single cores halogen-free

SiFZü silicone ignition cable halogen-free

A05SJ-U										
Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km		Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
00904011	25	10,8	240,00	303,00		00904001	0,25	2,4	2,40	8,00
00904013	35	12,1	336,00	413,00		00904002	0,5	2,6	4,80	13,00
00904016	50	14,4	480,00	578,00		00904003	0,75	2,9	7,20	16,00
00904017	70	18,0	672,00	794,00		00904004	1	3,0	9,60	18,00
00904018	95	19,5	912,00	1.070,00		00904005	1,5	3,3	14,40	24,00
00904019	120	20,5	1.152,00	1.350,00		00904006	2,5	3,9	24,00	36,00
Further dimensions available on request						00904007	4	4,7	38,00	53,00
						00904008	6	5,7	58,00	77,00
						00904009	10	7,5	96,00	129,00
						00904010	16	8,9	154,00	198,00
						00904012	25	10,8	240,00	303,00
						00904014	35	12,1	336,00	413,00
						00904015	50	14,4	480,00	578,00

SiFZü				
Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
00906001	1	7,5	9,60	56,00
00906003	1,5	8,5	14,40	68,00
00906009	2,5	6,6	24,00	92,00

Further dimensions available on request

## Heat-resistant cables

### SiFZw

#### silicone twin cable halogen-free

##### Technical data

##### Temperature range

-50° C up to +180° C

**Rated voltage**  $U_0/U = 380$  V

**Test voltage** 2000 V

##### Application

For internal wiring of lighting and appliances at high ambient temperatures.



Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
00911001	2X0,5	o. r.	9,60	16,00
00911002	2X0,75	o. r.	14,40	22,00
00911003	2X1	o. r.	19,00	27,00
00911004	2X1,5	o. r.	29,00	38,00

Further dimensions available on request

# Heat-resistant cables

## SiHF

### silicone multi core cable halogen-free

#### Technical data

##### Temperature range

-50° C up to +180° C

**Rated voltage**  $U_0/U = 300/500$  V

**Test voltage** 2000 V

#### Application

Developed for use in industrial areas with increased temperature requirements like mechanical engineering, lighting industries, glass, ceramic and steel fabrication.



Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km	Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
00907065	4X0,5	5,2	19,20	56,00	00907035	2X2,5	9,3	48,00	134,00
00907066	5X0,5	5,9	24,00	66,00	00907034	3X2,5	9,7	72,00	152,00
00907067	7X0,5	7,6	33,60	84,00	00907036	4X2,5	17,0	96,00	188,00
00907086	12X0,5	9,8	576,00	141,00	00907037	5X2,5	11,7	120,00	228,00
00907001	2X0,75	6,4	14,40	53,00	00907039	6X2,5	12,7	144,00	269,00
00907003	3X0,75	6,8	21,60	63,00	00907040	7X2,5	12,7	168,00	293,00
00907004	4X0,75	7,8	29,00	83,00	00907041	12X2,5	16,2	288,00	490,00
00907005	5X0,75	8,5	36,00	101,00	00907070	2X4	10,8	77,00	180,00
00907006	6X0,75	9,2	43,00	115,00	00907043	3X4	11,4	115,00	224,00
00907007	7X0,75	9,2	50,00	124,00	00907044	4X4	12,5	154,00	295,00
00907068	2X1	6,7	19,00	59,00	00907031	5X4	14,4	192,00	359,00
00907009	3X1	7,5	29,00	77,00	00907045	6X4	15,6	230,00	442,00
00907010	4X1	8,1	38,00	94,00	00907046	7X4	15,6	269,00	479,00
00907083	4X1	8,1	38,00	94,00	00907047	2X6	12,2	115,00	274,00
00907011	5X1	8,9	48,00	115,00	00907048	3X6	13,0	173,00	338,00
00907012	6X1	9,6	58,00	134,00	00907049	4X6	14,2	230,00	441,00
00907013	7X1	9,6	67,00	144,00	00907050	5X6	16,2	288,00	535,00
00907087	12X1	11,5	115,20	231,00	00907051	6X6	17,7	346,00	631,00
00907014	2X1,5	7,6	29,00	81,00	00907052	7X6	17,7	403,00	685,00
00907015	3X1,5	8,0	43,00	98,00	00907053	4X10	19,8	384,00	707,00
00907033	4X1,5	8,6	58,00	148,00	00907054	4X16	22,2	614,00	989,00
00907016	5X1,5	9,6	72,00	147,00	00907055	4X25	27,7	960,00	1.446,00
00907017	6X1,5	10,4	86,00	173,00	00907071	2X10	17,6	192,00	400,00
00907018	7X1,5	10,4	101,00	187,00	00907057	3X10	18,7	288,00	620,00
00907019	8X1,5	11,6	115,00	213,00	00907058	5X10	22,5	480,00	900,00
00907020	10X1,5	13,1	144,00	263,00	00907072	2X16	20,4	308,00	400,00
00907021	12X1,5	13,6	173,00	314,00	00907060	3X16	22,0	462,00	500,00
00907028	13X1,5	13,9	187,20	341,00	00907061	5X16	26,7	770,00	850,00
00907022	14X1,5	14,8	202,00	379,00	00907062	4X35	32,8	1.344,00	2.100,00
00907023	16X1,5	16,2	231,00	438,00					
00907024	18X1,5	17,0	259,00	490,00					
00907025	20X1,5	17,5	288,00	527,00					
00907026	24X1,5	20,4	346,00	613,00					
00907027	25X1,5	o. r.	360,00	705,00					

Further dimensions available on request

## Heat-resistant cables

### H05SS-F - DIN VDE - HAR

#### silicone multi core cable halogen-free

##### Technical data

###### Temperature range

-50° C up to +180° C

**Rated voltage**  $U_0/U = 300/500$  V

**Test voltage** 2000 V

##### Application

Developed for use in industrial areas with increased temperature requirements like mechanical engineering, lighting industries, glass, ceramic and steel fabrication.



Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
00936003	2x0,75	6,4	14,40	59,30
00936004	3x0,75	7,0	21,60	74,00
00936005	4x0,75	7,6	28,80	90,30
00936006	5x0,75	8,5	36,00	113,30
00936021	6x0,75	9,6	43,00	135,00
00936007	2x1	6,8	19,20	69,80
00936008	3x1	7,2	28,80	84,00
00936009	4x1	7,9	38,40	103,10
00936010	5x1	8,8	48,00	129,40
00936011	2x1,5	8,4	28,80	105,80
00936002	3x1,5	8,9	43,20	127,60
00936012	4x1,5	9,9	57,60	161,80
00936013	5x1,5	10,9	72,00	196,80
00936014	2x2,5	9,8	48,00	151,70
00936015	3x2,5	10,4	72,00	185,50
00936001	4x2,5	11,6	96,00	235,60
00936016	5x2,5	12,9	120,00	293,60
00936017	3x4	12,3	115,20	270,70
00936018	3x6	14,0	172,80	368,60

Further dimensions available on request

## Heat-resistant cables

### SiF-Cu-Si - EMC-suitable Cu-screened silicone multi core cable halogen-free

#### Technical data

##### Temperature range

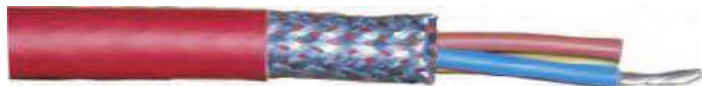
-50° C up to +180° C

**Rated voltage**  $U_0/U = 300/500$  V

**Test voltage** 2000 V

#### Application

Developed for use in industrial areas with increased temperature requirements like mechanical engineering, lighting industries, glass, ceramic and steel fabrication.



Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km	Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
00914001	2X0,5	6,8	25,70	56,00	00914028	2X1,5	8,8	66,40	107,00
00914002	3X0,5	7,1	30,80	67,00	00914029	3X1,5	9,2	81,30	131,00
00914003	4X0,5	7,8	48,10	86,00	00914030	4X1,5	9,9	98,50	157,00
00914004	5X0,5	8,3	56,80	102,00	00914031	5X1,5	10,8	122,20	194,00
00914005	7X0,5	8,9	71,30	123,00	00914033	7X1,5	11,6	155,80	239,00
00914006	10X0,5	10,8	98,90	166,00	00914034	10X1,5	14,8	213,00	339,00
00914007	12X0,5	11,1	108,20	184,00	00914035	12X1,5	15,2	242,60	386,00
00914008	16X0,5	12,1	132,90	229,00	00914036	16X1,5	17,4	394,50	523,00
00914009	18X0,5	23,1	143,70	262,00	00914037	18X1,5	18,2	365,80	577,00
00914010	2X0,75	7,6	42,90	75,00	00914038	2X2,5	10,0	89,10	141,00
00914011	3X0,75	7,9	50,90	89,00	00914039	3X2,5	10,5	121,90	184,00
00914012	4X0,75	8,5	61,30	105,00	00914040	4X2,5	11,4	146,90	222,00
00914013	5X0,75	9,1	74,00	152,00	00914041	5X2,5	12,3	176,60	272,00
00914014	7X0,75	9,8	91,10	192,00	00914032	7X2,5	13,8	226,90	351,00
00914015	10X0,75	12,0	127,90	208,00					
00914016	12X0,75	12,3	142,90	233,00					
00914017	16X0,75	13,9	182,60	307,00					
00914018	18X0,75	14,8	198,20	337,00					
00914019	2X1	7,8	48,20	82,00					
00914020	3X1	8,1	60,60	100,00					
00914021	4X1	8,7	75,90	121,00					
00914022	5X1	9,4	86,30	142,00					
00914023	7X1	10,1	108,50	173,00					
00914024	10X1	12,4	152,70	238,00					
00914025	12X1	13,1	172,60	280,00					
00914026	16X1	14,4	221,80	355,00					
00914027	18X1	15,1	242,40	391,00					

Further dimensions available on request

## Heat-resistant cables

### SiHF-Cu-Si - EMC-suitable Cu-screened silicone multi core cable halogen-free

#### Technical data

##### Temperature range

-50° C up to +180° C

**Rated voltage**  $U_0/U = 300/500$  V

**Test voltage** 2000 V

#### Application

Developed for use in industrial areas with increased temperature requirements like mechanical engineering, lighting industries, glass, ceramic and steel fabrication.



Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km	Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
00915001	2X0,5	8,6	55,40	108,00	00915046	2X1,5	10,6	87,60	171,00
00915002	3X0,5	8,9	60,70	117,00	00915031	3X1,5	11,2	103,30	198,00
00915003	4X0,5	9,4	66,40	130,00	00915032	4X1,5	11,9	131,60	234,00
00915004	5X0,5	9,9	81,00	153,00	00915033	5X1,5	13,2	148,30	281,00
00915005	7X0,5	10,5	92,20	172,00	00915034	7X1,5	14,2	193,40	344,00
00915006	10X0,5	13,0	123,90	241,00	00915035	10X1,5	17,6	268,30	482,00
00915007	12X0,5	13,3	134,30	262,00	00915036	12X1,5	18,0	298,40	530,00
00915008	16X0,5	14,5	170,10	325,00	00915037	16X1,5	20,0	362,20	660,00
00915011	18X0,5	15,1	181,00	350,00	00915038	18X1,5	20,8	393,91	719,00
00915012	2X0,75	9,2	61,30	123,00	00915047	2X2,5	12,0	122,20	230,00
00915013	3X0,75	9,5	69,10	135,00	00915040	3X2,5	12,9	147,60	275,00
00915014	4X0,75	10,1	86,60	158,00	00915041	4X2,5	14,2	188,60	339,00
00915015	5X0,75	10,7	95,10	179,00	00915042	5X2,5	15,2	214,70	393,00
00915016	7X0,75	11,6	111,30	211,00	00915043	7X2,5	16,8	262,50	488,00
00915017	10X0,75	14,4	165,10	305,00	00915049	4X6	18,8	449,00	781,00
00915018	12X0,75	14,7	180,20	332,00	00915051	4G10	25,7	759,00	1.294,00
00915019	16X0,75	16,5	212,10	416,00	00915052	4G16	28,4	1.180,00	1.988,00
00915020	18X0,75	17,2	228,00	451,00					
00915045	2X1	94,0	66,50	131,00					
00915022	3X1	9,7	86,00	153,00					
00915023	4X1	10,3	96,70	172,00					
00915024	5X1	11,2	108,10	201,00					
00915025	7X1	11,9	141,10	242,00					
00915026	10X1	14,8	189,90	338,00					
00915027	12X1	15,1	209,00	370,00					
00915028	16X1	17,0	251,60	468,00					
00915029	18X1	17,7	297,40	525,00					

Further dimensions available on request

## Heat-resistant cables

### SiHF-P steel wire braid silicone multi core cable halogen-free

#### Technical data

##### Temperature range

-50° C up to +180° C

**Rated voltage**  $U_0/U = 300/500$  V

**Test voltage** 2000 V

#### Application

Developed for use in industrial areas with increased temperature requirements like mechanical engineering, lighting industries, glass, ceramic and steel fabrication.



Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km	Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
00912001	2X0,75	8,4	14,40	90,00	00912028	2X2,5	11,2	48,00	187,00
00912002	3X0,75	8,8	21,60	101,00	00912029	3X2,5	11,7	72,00	205,00
00912003	4X0,75	9,8	29,00	129,00	00912030	4X2,5	12,6	96,00	278,00
00912004	5X0,75	10,5	36,00	157,00	00912031	5X2,5	13,8	120,00	322,00
00912005	6X0,75	11,0	43,00	170,00	00912032	6X2,5	14,8	144,00	351,00
00912006	7X0,75	11,2	50,00	177,00	00912033	7X2,5	14,9	168,00	380,00
00912007	2X1	8,5	19,20	97,00	00912046	12X2,5	18,3	288,00	620,00
00912008	3X1	9,4	29,00	122,00	00912034	2X4	13,0	77,00	272,00
00912009	4X1	9,9	38,00	141,00	00912035	3X4	13,5	115,00	311,00
00912010	5X1	10,9	48,00	166,00	00912036	4X4	15,5	154,00	384,00
00912011	6X1	11,6	58,00	189,00	00912037	5X4	16,5	192,00	460,00
00912012	7X1	11,7	67,00	197,00	00912038	6X4	17,6	230,00	580,00
00912013	2X1,5	9,5	29,00	127,00	00912039	7X4	18,0	269,00	620,00
00912014	3X1,5	10,0	43,00	145,00	00912040	2X6	15,6	115,00	366,00
00912015	4X1,5	10,8	58,00	173,00	00912041	3X6	16,4	173,00	434,00
00912016	5X1,5	11,5	72,00	202,00	00912026	4X6	19,0	230,00	545,00
00912017	6X1,5	12,5	86,00	240,00	00912042	5X6	19,9	288,00	660,00
00912018	7X1,5	12,5	101,00	244,00	00912047	6X6	19,2	346,00	760,00
00912025	8X1,5	13,5	115,00	261,00	00912048	7X6	20,7	403,00	830,00
00912024	10X1,5	15,1	144,00	292,00	00912043	4X10	22,6	384,00	900,00
00912023	12X1,5	16,0	173,00	327,00	00912044	4X16	26,6	614,00	1.215,00
00912022	14X1,5	16,7	202,00	382,00					
00912021	16X1,5	18,2	231,00	403,00					
00912020	18X1,5	19,2	259,00	440,00					
00912019	20X1,5	19,5	288,00	510,00					
00912027	24X1,5	22,0	346,00	600,00					

Further dimensions available on request



## Heat-resistant cables

### SiHF-GL-P glass silk braid steel wire braid silicone multi core cable halogen-free

#### Technical data

##### Temperature range

-50° C up to +180° C

**Rated voltage**  $U_0/U = 300/500$  V

**Test voltage** 2000 V

#### Application

Developed for use in industrial areas with increased temperature requirements like mechanical engineering, lighting industries, glass, ceramic and steel fabrication.



Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km	Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
00908001	2X0,75	7,9	14,40	90,00	00908034	2X4	12,5	77,00	272,00
00908002	3X0,75	8,3	21,60	101,00	00908035	3X4	13,0	115,00	311,00
00908003	4X0,75	9,3	29,00	129,00	00908036	4X4	15,0	154,00	384,00
00908004	5X0,75	10,0	36,00	157,00	00908037	5X4	16,0	192,00	460,00
00908005	6X0,75	10,5	43,00	170,00	00908038	6X4	17,1	230,00	580,00
00908006	7X0,75	10,7	50,00	177,00	00908039	7X4	17,5	269,00	620,00
00908007	2X1	8,0	19,00	97,00	00908050	2X6	15,1	115,00	366,00
00908008	3X1	8,9	29,00	122,00	00908041	3X6	15,9	173,00	434,00
00908009	4X1	9,4	38,00	141,00	00908042	4X6	18,5	230,00	545,00
00908010	5X1	10,4	48,00	166,00	00908043	5X6	19,4	288,00	660,00
00908011	6X1	11,1	58,00	189,00	00908044	6X6	19,2	346,00	760,00
00908012	7X1	11,2	67,00	197,00	00908045	7X6	20,7	403,00	830,00
00908013	2X1,5	9,0	29,00	127,00	00908046	4X10	22,1	384,00	900,00
00908014	3X1,5	9,5	43,00	145,00	00908047	4X16	26,1	614,00	1.215,00
00908015	4X1,5	10,3	58,00	173,00					
00908016	5X1,5	11,0	72,00	202,00					
00908017	6X1,5	12,0	86,00	240,00					
00908018	7X1,5	12,0	101,00	244,00					
00908019	8X1,5	13,0	115,00	261,00					
00908020	10X1,5	14,6	144,00	292,00					
00908021	12X1,5	15,5	173,00	327,00					
00908022	14X1,5	16,2	202,00	382,00					
00908023	16X1,5	17,7	231,00	403,00					
00908024	18X1,5	18,7	259,00	440,00					
00908025	20X1,5	19,0	288,00	510,00					
00908026	24X1,5	21,5	346,00	600,00					
00908027	2X2,5	10,7	48,00	187,00					
00908028	3X2,5	11,2	72,00	205,00					
00908029	4X2,5	12,1	96,00	278,00					
00908030	5X2,5	13,3	120,00	322,00					
00908031	6X2,5	14,3	144,00	351,00					
00908032	7X2,5	14,4	168,00	380,00					
00908033	12X2,5	18,3	288,00	620,00					

Further dimensions available on request

## Flat and round cables for festoon systems

### (A)05VVH6-F

### H05VVH6-F, H07VVH6-F - HAR

### PVC flat cable

#### Technical data

(A)05VVH6-F adapted to DIN VDE 0283 part 2 and 0281 part 404, IEC 60227-6

H05..., H07... acc. to DIN VDE 0283 part 2 and 0281 part 404, IEC 60227-6

#### Temperature range

flexing -5° C to +70° C

flexing -25° C to +70° C available on request

fixed installation -40° C to +70° C

#### Nominal voltage

up to 1 mm<sup>2</sup> U<sub>0</sub>/U = 300/500 V

up from 1,5 mm<sup>2</sup> U<sub>0</sub>/U = 450/750 V

Test voltage 3000 V

#### Minimum bending radius

approx. 10 x cable diam.

#### Application

Mainly for use as trailing cable for crane installations, floor conveyor systems and shelf control units.



### (A)05VVH6-F, H05VVH6-F

Part N°	N° of cores x cross-sec. mm <sup>2</sup>	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
00801001	4G0,75	4,2x13,0	29,00	90,00
00801002	8G0,75	4,2x25,5	58,00	175,00
00801003	12G0,75	4,2x33,5	86,00	230,00
00801016	16G0,75	4,2x45,5	120,00	330,00
00801004	18G0,75	4,2x51,0	130,00	380,00
00801006	24G0,75	4,2x65,0	172,00	490,00
00801007	4G1	4,4x13,5	38,00	105,00
00801008	5G1	4,4x16,0	48,00	120,00
00801009	8G1	4,4x26,5	77,00	205,00
00801010	12G1	4,4x36,0	115,00	300,00
00801011	18G1	4,4x55,0	173,00	450,00
00801012	24G1	4,4x70,0	230,00	590,00

Further dimensions available on request

## Flat and round cables for festoon systems

(A)05VVH6-F

H05VVH6-F, H07VVH6-F - HAR

PVC flat cable

H07VVH6-F									
Part N°	N° of cores x cross-sec. mm <sup>2</sup>	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km	Part N°	N° of cores x cross-sec. mm <sup>2</sup>	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
00802001	4G1,5	5,0x14,5	58,00	130,00	00802020	4G4	6,5x20,2	154,00	270,00
00802002	5G1,5	5,0x17,3	72,00	160,00	00802021	5G4	6,5x24,6	192,00	280,00
00802003	7G1,5	5,0x25,3	101,00	230,00	00802022	7G4	6,5x35,6	269,00	480,00
00802004	8G1,5	5,0x27,8	115,00	260,00	00802023	4G6	7,4x22,2	230,00	355,00
00802005	10G1,5	5,0x33,7	144,00	340,00	00802024	5G6	7,4x26,6	288,00	530,00
00802006	12G1,5	5,0x39,5	173,00	385,00	00802025	7G6	7,4x43,0	403,00	750,00
00802007	13G1,5	5,0x43,5	187,00	430,00	00802026	4G10	9,2x27,8	384,00	580,00
00802008	14G1,5	5,0x46,5	202,00	480,00	00802027	5G10	9,2x34,9	480,00	780,00
00802009	16G1,5	5,0x51,9	231,00	510,00	00802028	4G16	10,8x35,5	614,00	905,00
00802010	18G1,5	5,0x59,3	259,00	620,00	00802029	5G16	11,1x43,5	768,00	1.130,00
00802011	24G1,5	5,0x83,0	346,00	790,00	00802030	4G25	13,5x40,8	960,00	1.340,00
00802013	4G2,5	5,7x17,9	96,00	190,00	00802031	5G25	16,0x56,0	1.200,00	1.730,00
00802014	5G2,5	5,7x21,2	120,00	235,00	00802032	4G35	14,8x48,9	1.344,00	1.800,00
00802015	7G2,5	5,7x31,3	168,00	340,00	00802033	4G50	16,5x53,4	1.920,00	2.520,00
00802016	8G2,5	5,7x33,2	192,00	370,00	00802034	4G70	18,0x61,4	2.688,00	3.670,00
00802017	10G2,5	5,9x41,3	240,00	505,00	00802035	4G95	20,5x70,2	3.648,00	4.550,00
00802018	12G2,5	5,7x49,1	288,00	560,00	Further dimensions available on request				
00802019	24G2,5	5,7x102,0	576,00	1.100,00					

## Flat and round cables for festoon systems

### KYFLY PVC flat cable

#### Technical data

##### Temperature range

flexing -5° C to +70° C

**Nominal voltage**  $U_0/U = 300/500$  V

#### Application

Mainly for use as trailing cable for crane installations, floor conveyor systems and shelf control units.



Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
00806011	5X4X0,5 Bd	7,2x37,2	96,00	402,00
00806001	28X0,5 Bd	7,7x37,4	134,40	440,00
00806002	56X0,5 Bd	11,7x68,6	268,80	1.020,00
00806003	12X0,75	4,2x33,8	86,40	260,00
00806004	18X0,75	4,2x50,2	130,00	438,00
00806005	24X0,75	4,2x62,6	173,00	490,00
00806008	18X1	4,4x53,8	173,00	450,00
00806009	24X1	4,4x70,4	230,40	590,00
00806010	18X1,5	5,2x58,0	259,00	620,00
00806015	6X7X1,5 Bd	o. r.	677,00	1.750,00

Further dimensions available on request

## Flat and round cables for festoon systems

### KYFLCY - Cu-screened PVC flat cable

#### Technical data

##### Temperature range

flexing -5° C to +70° C

**Nominal voltage**  $U_0/U = 300/500$  V

#### Application

Mainly for use as trailing cable for crane installations, floor conveyor systems and shelf control units.



Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
00807017	5X0,5	4,4x20,4	60,00	100,00
00807018	20X0,5 Bd	7,2x37,4	175,00	439,00
00807019	56X0,5 Bd	11,7x68,5	455,00	1.180,00
00807024	4x1	o. r.	65,00	150,00
00807020	16X1 Bd	o. r.	315,00	500,00
00807002	4X1,5	5,5x18,0	91,00	160,00
00807005	8X1,5	5,5x34,0	220,00	380,00
00807003	12X1,5	5,5x50,5	330,00	569,00
00807006	4X2,5	6,5x21,0	168,00	240,00
00807012	8X2,5	o. r.	385,00	1,00
00807007	4X4	7,5x23,0	208,00	380,00
00807008	4X6	9,0x29,0	325,00	580,00
00807013	4X10	11,0x37,0	518,00	900,00
00807014	4X16	14,0x46,0	720,00	1.280,00
00807027	4X25	o. r.	1.040,00	1.800,00
00807029	4X35	o. r.	1.350,00	2.300,00
00807015	7X2X0,75	9,6x49,0	234,00	730,00
00807016	4X2X1	o. r.	140,00	435,00
00807028	7X3X1	o. r.	275,00	755,00

Further dimensions available on request

## Flat and round cables for festoon systems

### KYFLTCY - Cu-screened

### PVC flat cable with suspension strands

#### Technical data

##### Temperature range

flexing -5° C to +70° C

Nominal voltage  $U_0/U = 300/500$  V

#### Application

Mainly for use as trailing cable for crane installations, floor conveyor systems and shelf control units.



Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
00808001	20X0,5 Bd	7,2x37,4	175,00	439,00
00808002	8X1 Bd	o. r.	162,00	467,00
00808003	30X1 Bd	11,0x75,0	445,00	1.084,00
00808004	6X2,5	7,2x37,4	270,00	410,00
00808005	4X16 Bd	14,0x46,0	720,00	1.280,00
00808001	20X0,5 Bd	7,2x37,4	175,00	439,00
00808002	8X1 Bd	o. r.	162,00	467,00
00808003	30X1 Bd	11,0x75,0	445,00	1.084,00
00808004	6X2,5	7,2x37,4	270,00	410,00
00808005	4X16 Bd	14,0x46,0	720,00	1.280,00

Further dimensions available on request

# Flat and round cables for festoon systems

## NGFLGöu neoprene flat cable

### Technical data

acc. to DIN VDE 0250 part 809

### Temperature range

flexing -25° C to +60° C

fixed installation -40° C to +80° C

**Nominal voltage**  $U_0/U = 300/500$  V

**Test voltage** 3000 V

### Minimum bending radius

approx. 10 x cable diam.

### Application

Mainly for use as trailing cable for crane installations, floor conveyor systems and shelf control units. These cables are also available for export with UL-approval.



Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km	Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
00810001	4G1,5	6,2x17,5	58,00	160,00	00810027	4G25	16,0x49,5	960,00	1.580,00
00810002	5G1,5	6,2x21,5	72,00	240,00	00810028	5G25	16,0x60,0	1.200,00	2.200,00
00810003	7G1,5	6,2x29,0	101,00	280,00	00810029	7G25	16,0x8,0	1.680,00	2.810,00
00810004	8G1,5	6,2x31,5	115,00	310,00	00810030	4G35	17,0x55,0	1.344,00	2.150,00
00810005	10G1,5	6,5x40,0	144,00	430,00	00810031	5G35	17,0x68,0	1.680,00	3.960,00
00810006	12G1,5	6,5x47,0	173,00	510,00	00810032	7G35	17,0x88,0	2.352,00	3.830,00
00810007	24G1,5	12,5x55,0	346,00	1.050,00	00810033	4G50	19,0x63,0	1.920,00	2.960,00
00810008	4G2,5	7,5x21,0	96,00	270,00	00810034	4G70	22,0x72,0	2.688,00	4.000,00
00810009	5G2,5	7,5x27,0	120,00	330,00	00810035	4G95	25,0x82,0	3.648,00	5.300,00
00810010	7G2,5	7,5x35,0	168,00	460,00	00810036	4G120	28,0x89,0	4.608,00	6.400,00
00810011	8G2,5	8,0x39,0	192,00	520,00					
00810012	10G2,5	8,0x48,0	240,00	620,00					
00810013	12G2,5	8,0x56,0	288,00	800,00					
00810014	24G2,5	16,0x71,0	576,00	1.730,00					
00810015	4G4	9,0x26,0	154,00	400,00					
00810016	5G4	9,0x32,0	192,00	540,00					
00810020	7G4	9,0x42,0	269,00	680,00					
00810017	4G6	9,5x46,5	230,00	500,00					
00810018	5G6	11,0x59,8	288,00	650,00					
00810019	7G6	13,0x38,0	403,20	850,00					
00810021	4G10	13,0x50,0	384,00	760,00					
00810022	5G10	o. r.	480,00	1.000,00					
00810023	7G10	13,0x33,0	672,00	1.320,00					
00810024	4G16	13,0x38,0	614,00	1.100,00					
00810025	5G16	13,0x50,0	768,00	1.450,00					
00810026	7G16	13,0x70,9	1.075,00	1.970,00					

Further dimensions available on request



## Flat and round cables for festoon systems

### GFLCGöu-J - Cu-screened neoprene flat cable

#### Technical data

adapted to DIN VDE 0283 part 2

#### Temperature range

-35° C to +80° C

**Nominal voltage**  $U_0/U = 300/500$  V

**Test voltage** 3000 V

#### Application

Mainly for use as trailing cable for crane installations, gantry cranes, container cranes, handling systems, machine tools, lifts and e-chain cable carrier systems. Developed for high mechanical stress and frequent bending in a single plane. Copper screens are efficient against electromagnetic interferences caused by power cables.



Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
00812002	4X1,5	6,2x18,5	115,00	224,00
00812003	8X1,5	6,2x35,1	231,00	480,00
00812004	10X1,5	8,5x51,8	276,00	790,00
00812005	12X1,5	8,5x62,4	364,00	770,00
00812006	4X2,5	7,5x25,5	168,00	290,00
00812007	6X2,5	7,6x35,5	270,00	610,00
00812008	12X2,5	8,0x68,0	575,00	1.150,00
00812009	4X4	9,0x30,0	241,00	505,00
00812010	4X6	9,5x32,0	358,00	590,00
00812011	4X10	11,0x37,4	538,00	830,00
00812012	4X16	13,0x42,4	805,00	1.090,00
00812001	4X2X1	13,0x38,4	181,00	630,00
00812015	7X2X1	16,2x38,4	477,00	1.150,00

Further dimensions available on request

# Flat and round cables for festoon systems

## (N)GRDGöu neoprene round cable

### Technical data

in line with DIN VDE

### Temperature range

flexing -35° C to +90° C

fixed installation -50° C to +90° C

**Nominal voltage**  $U_0/U = 0,6/1$  kV

### Application

Flexible power and control cable suited for festoon systems and connecting movable parts of machine tools, material handling equipment, etc. in connection with high mechanical stress and frequent bending during operation. Suitable for simple reeling.



Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km	Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
00814001	1X25	8,0	240,00	386,00	00814028	12X1,5	20,8	173,00	600,00
00814002	1X35	8,1	336,00	493,00	00814029	18X1,5	24,4	259,00	840,00
00814003	1X50	9,6	480,00	670,00	00814030	24X1,5	29,3	346,00	1.160,00
00814004	1X70	11,2	672,00	900,00	00814031	30X1,5	30,6	432,00	1.300,00
00814005	1X95	13,1	912,00	140,00	00814032	36X1,5	32,9	518,00	1.510,00
00814006	1X120	14,7	1.152,00	1.430,00	00814033	12X2,5	23,9	288,00	840,00
00814007	1X150	16,5	1.440,00	1.740,00	00814034	18X2,5	29,5	432,00	1.240,00
00814008	1X185	17,9	1.776,00	2.150,00	00814035	24X2,5	33,7	576,00	1.640,00
00814009	3X4	15,8	115,00	400,00	00814036	30X2,5	35,3	720,00	1.850,00
00814010	3X6	17,0	173,00	490,00	00814037	36X2,5	38,4	864,00	2.210,00
00814011	3X10	20,9	288,00	750,00					
00814012	3X16	24,3	461,00	1.050,00	00815001	12X1(C)	23,5	239,00	755,00
00814013	3X25	28,7	720,00	1.530,00	00815002	18X1(C)	28,4	346,00	1.100,00
00814014	3X35	32,7	1.008,00	2.020,00	00815003	24X1(C)	33,2	478,00	1.510,00
00814015	3X50	38,4	1.440,00	2.820,00	00815004	30X1(C)	33,3	585,00	1.660,00
00814038	3x50+3x25/3	41,6	2.020,00	2.740,00	00815005	36X1(C)	36,2	717,00	1.960,00
00814016	4X4	18,8	154,00	459,00	00815010	9X2X0,5(C)	29,3	537,00	1.340,00
00814017	5X4	20,1	192,00	540,00	00815006	6X2X1(C)	32,1	427,00	1.260,00
00814018	4X6	20,4	230,00	570,00	00815007	9X2X1(C)	40,2	641,00	2.030,00
00814019	5X6	22,6	288,00	720,00	00815008	19X2,5+5x1(C)	31,0	556,00	1.650,00
00814020	4X10	24,5	384,00	890,00					
00814021	5X10	26,3	480,00	1.050,00					
00814022	4X16	30,0	614,00	1.330,00					
00814023	5X16	32,3	768,00	1.580,00					
00814024	4X25	35,2	960,00	1.950,00					
00814025	5X25	37,3	1.200,00	2.320,00					
00814026	4X35	38,2	1.344,00	2.450,00					
00814027	4X50	44,8	1.920,00	3.450,00					

Further dimensions available on request

## Flat and round cables for festoon systems

### (N)GRDGCGöu - Cu-screened neoprene round cable

#### Technical data

in line with DIN VDE

#### Temperature range

flexing -35° C to +90° C

fixed installation -50° C to +90° C

**Nominal voltage**  $U_0/U = 0,6/1$  kV

#### Application

Heavy-duty rubber cable for control and power supplies. For festoon applications with mechanical tensile stress in connection with dynamic stress.



Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
00820005	3X4+3X4/3	22,0	313,00	705,00
00820004	3X10+3X10/3	27,6	595,00	1.220,00
00820007	3X16+3X2,5	24,7	758,00	1.150,00
00820003	3X25+3X16/3	33,9	1.195,00	2.070,00
00820001	3X35+3X16/3	34,5	1.502,00	2.450,00
00820006	3X50+3X10	37,5	2.182,00	3.090,00
00820002	3X50+3X25/3	41,6	2.020,00	2.740,00
00820008	4X10	22,7	610,00	925,00

Further dimensions available on request

# Drum reeling rubber cables

## NSHTöu(K)-J

Also in PUR available

### Technical data

acc. to DIN VDE 0250 part 814

#### Temperature range

flexing -35° C to +90° C

fixed installation -45° C to +90° C

max. conductor temperature

under load +90° C

circuit conditions +200° C

**Nominal voltages**  $U_0/U = 0,6/1$  kV

for three-phase and one-phase a. c.

current installation  $U_0/U = 0,69/1,2$  kV

direct current-system  $U_0/U = 0,9/1,8$  kV

**Test voltage** 2500 V

#### Insulation resistance

min. 10 MOhm x km

#### Minimum bending radius

10 x cable diam.

### Application

For use at high mechanical stress, especially for applications with frequent winding and unwinding with simultaneous tensile and torsional stress, for building machineries, conveyors, shifts and cranes. Usable as robust and all weather-resistant cables of roughest operations in mining and railway motors. Resistant to ozone, radiation, oils, acids, fat, petrol, chemicals and solvents. Suitable for outdoor installation in dry, damp and wet zones.



Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km	Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
00701045	3X1,5	15,0	67,00	270,00	00701018	5X4	22,5	200,00	625,00
00701001	4X1,5	16,0	62,00	290,00	00701019	12X4	43,2	480,00	1.420,00
00701002	5X1,5	17,5	81,00	340,00	00701020	4X6	23,5	241,00	600,00
00701003	7X1,5	20,5	115,00	430,00	00701023	5X6	26,0	317,00	885,00
00701004	12X1,5	23,5	196,00	600,00	00701042	9X6	37,2	505,00	1,00
00701005	18X1,5	27,5	271,00	900,00	00701051	24X6	45,0	1.382,00	3.230,00
00701006	24X1,5	31,0	392,00	1.050,00	00701024	4X10	28,5	404,00	950,00
00701039	25X1,5+5X1,5(C)	39,7	543,00	2.150,00	00701025	5X10	30,5	528,00	1.225,00
00701007	30X1,5	33,5	432,00	1.250,00	00701043	9X10	34,2	860,00	1,00
00701008	42X1,5	37,0	633,00	1.775,00	00701026	4X16	31,0	645,00	1.335,00
00701048	3X2,5	15,4	72,00	320,00	00701036	4X160+5X3X2,50	o. r.	985,00	1.857,00
00701009	4X2,5	18,0	99,00	330,00	00701037	4X160+2(3X2,50)	o. r.	760,00	1.335,00
00701010	5X2,5	20,5	124,00	370,00	00701054	7X16+3X(4X2,5)	44,5	1.550,00	3.390,00
00701011	7X2,5	22,5	180,00	560,00	00701027	5X16	34,5	844,00	1.630,00
00701041	9X2,5	24,0	215,00	800,00	00701053	7X16	36,0	1.090,00	2.500,00
00701012	12X2,5	27,5	308,00	850,00	00701028	3X25	32,2	720,00	1,00
00701056	12X2,5+12X1,5(C)	34,0	586,00	1.400,00	00701029	4X25	36,5	1.005,00	1.900,00
00701013	18X2,5	30,5	451,00	1.000,00	00701030	4X35	41,5	1.417,00	2.600,00
00701022	19X2,5	33,0	485,00	1.250,00	00701031	4X50	48,0	2.024,00	3.500,00
00701050	19X2,5+5X1(C)	32,5	556,00	1.600,00	00701055	1X70	21,0	645,00	910,00
00701038	19X2,50+5X1,5(C)	37,0	661,00	1.900,00	00701032	4X70	52,5	2.688,00	4.600,00
00701047	5X2,5+5X1(C)	35,5	700,00	1.950,00	00701052	5X70+3X4	61,0	3.495,00	6.550,00
00701021	25X2,5+5X1,5(C)	40,0	812,00	2.000,00	00701046	3X95+3X50	52,0	3.216,00	5.330,00
00701014	24X2,5	35,5	616,00	1.550,00	00701033	4X95	60,0	3.845,00	6.000,00
00701015	30X2,5	37,0	771,00	1.800,00	00701049	120	25,1	1.138,00	1.510,00
00701044	44X2,5	42,8	1.056,00	2.830,00	00701035	4X120	64,5	4.857,00	7.450,00
00701016	50X2,5	47,5	1.200,00	3.050,00	00701034	4X150	71,0	5.760,00	9.090,00
00701017	4X4	21,0	160,00	470,00	Further dimensions available on request				

# Drum reeling rubber cables

## (N)SHTöu-J (RTS) or (SMK)

### Technical data

adapted to DIN VDE 0250 part 814

#### Temperature range

flexing -40° C to +90° C

fixed installation -50° C to +90° C

**Nominal voltage**  $U_0/U = 0,6/1$  kV

**Test voltage** 2500 V

### Application

For use at high mechanical stress, especially for applications with frequent winding and unwinding with simultaneous tensile and torsional stress, for building machinery, conveyors, shifts and cranes. Usable as robust and all weather-resistant cables of roughest operations in mining and railway motors. Resistant to ozone, radiation, oils, acids, fat, petrol, chemicals and solvents. Suitable for outdoor installation in dry, damp and wet zones.



Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km	Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
00706012	4X1,5	13,0	60,00	240,00	00706027	4X4	17,0	161,00	455,00
00706013	5X1,5	14,3	75,00	280,00	00706028	5X4	18,4	201,00	430,00
00706014	7X1,5	16,2	106,00	385,00	00706029	4X6	18,4	242,00	575,00
00706015	12X1,5	22,4	182,00	710,00	00706030	5X6	20,0	302,00	690,00
00706016	18X1,5	22,3	272,00	760,00	00706002	4X10	22,6	424,00	905,00
00706017	24X1,5	25,3	363,00	990,00	00706031	5X10	24,4	503,00	1.080,00
00706018	30X1,5	28,1	454,00	1.220,00	00706032	4X16	25,2	645,00	1.240,00
00706019	36X1,5	28,0	543,00	1.260,00	00706033	5X16	27,6	805,00	1.500,00
00706020	44X1,5	31,0	664,00	1.530,00	00706034	4X25	30,0	1.068,00	1.850,00
00706021	56X1,5	36,4	845,00	2.050,00	00706035	3x35+3x16/3	30,0	1.217,00	2.160,00
00706001	4x2,5	14,0	101,00	305,00	00706036	3x50+3x25/3	35,9	1.680,00	2.850,00
00706022	5X2,5	15,0	126,00	355,00	00706037	3x70+3x35/3	41,2	2.352,00	3.920,00
00706023	7X2,5	17,6	176,00	510,00	00706038	3x95+3x50/3	45,8	3.216,00	5.020,00
00706024	12X2,5	24,4	302,00	920,00	00706039	3x120+3x70/3	53,0	4.128,00	6.630,00
00706025	18X2,5	24,3	454,00	1.005,00	00706040	3x150+3x70/3	55,9	4.992,00	7.690,00
00706003	24X2,5	27,7	605,00	1.320,00	00706041	3x185+3x95/3	60,9	6.240,00	9.310,00
00706004	24X2,5(20kN)	27,7	605,00	1.320,00	00706042	3x240+3x120/3	69,4	8.064,00	12.200,00
00706005	30X2,5	30,9	756,00	1.660,00	00706011	46X1 (20kN)	28,1	567,00	1.190,00
00706006	30X2,5(20kN)	30,9	756,00	1.660,00	00706050	49x1 (20KN)	29,6	496,00	1.190,00
00706026	36X2,5	30,8	907,00	1.720,00	00706043	6x(2x0,5)C BUS	24,1	360,00	885,00
00706007	44X2,5	35,6	1.109,00	2.230,00	00706049	3x(2x1,0)C	23,0	215,00	755,00
00706008	44X2,5(20kN)	35,6	1.109,00	2.230,00	00706044	6x(2x1)C BUS	30,4	379,00	1.330,00
00706009	56X2,5	41,6	1.408,00	2.940,00	00706045	19x2,5+5x1(C)	27,7	585,00	1.290,00
00706010	56X2,5(20kN)	41,6	1.408,00	2.940,00	00706046	25x2,5+5x1(C)	30,9	736,00	1.620,00
					00706048	25x2,5+5x1,5(C)	31,0	736,00	1.620,00
					00706047	12x2,5+12x1(C)	27,6	554,00	1.560,00

Further dimensions available on request

## Mining cables

**NTSWöu 0,6/1 kV - 1,8/3 kV - 3,6/6 kV**

**NTSCGEWöu 1,8/3 kV - 3,6/6 kV - 6/10 kV - 12/20 kV - 18/30 kV**

### Technical data

acc. to specification DIN VDE 0250

min. radius of holding 5 x cable diam.

**Temperature range** -35° C up to +80° C

**Nominal voltage** 0,6/1 kV

**Test voltage** 4 kV

**max. speed** 60 mt./ min.

### Application

Applicable as tail and power supply cable in the open. Also usable in dry, humid and wet zones, e.g. in mine quarries and construction sites where very high mechanical stress appears on roller conveyors, cranes and similar heavy machineries.



### NTSWöu

Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
00705001	3x120+3x70/3	57,5	4.334,00	6.950,00
00709001	3x150+3x70/3	59,0	5.040,00	7.910,00

Further dimensions available on request

### NTSCGEWöu

Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
00708009	3x25/25 12/20 kV	66,5	960,00	5.940,00
00708002	3x25+3x25/3 3,6/6 kV	47,7	1.155,00	3.300,00
00708004	3x25+3x25/3 6/10 kV	47,7	1.155,00	3.300,00
00708007	3x35+3x16/3 12/20 kV	64,2	1.540,00	5.000,00
00708001	3x35+3x35/3 6/10 kV	51,0	1.411,00	3.860,00
00708005	3x50+3x10/3 6/10 kV	57,8	1.980,00	4.515,00
00708010	3x50+3x25/3 6/10 KV	44,4	1.764,00	3.480,00
00708006	3x70+3x35/3 6/10 kV	51,5	2.552,00	4.590,00
00708003	3x95+3x50/3 6/10 kV	55,0	3.497,00	5.660,00
00708009	3x25/25 12/20 kV	66,5	960,00	5.940,00
00708002	3x25+3x25/3 3,6/6 kV	47,7	1.155,00	3.300,00

**Also as (SM-R) or (SM) mining cables with optical fibres**

## PVC switch wires

### LiY, LiYv, LiFY switch wires

#### Technical data

adapted to DIN VDE 0812

LiYv (copper tinned)

#### Temperature range

flexing -5° C to +70° C

fixed installation -30° C to +80° C

#### Operating peak voltage LiY

0,14 mm<sup>2</sup> 500 V

0,25 - 1,50 mm<sup>2</sup> = 900 V

#### Test voltage LiY

0,14 mm<sup>2</sup> = 1200 V

0,25 - 1,50 mm<sup>2</sup> = 2500 V

#### Application

Applicable for connection for low voltage applications, communication apparatus, electronic assemblies, equipment, racks and switchboards. Not permitted to install for heavy current application outside of the equipment.



BKLiY					BKLiYv				
Part N°	N° of cores x cross-sec. mm <sup>2</sup>	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km	Part N°	N° of cores x cross-sec. mm <sup>2</sup>	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
01001001	0,08	1,0	0,80	2,00	01003011	0,14	1,0	1,30	1,40
01001002	0,14	1,2	1,40	1,00	01003012	0,25	1,3	2,40	1,50
01001036	0,25	1,4	2,40	1,00	01003150	0,34	1,1	3,30	1,60
01001030	0,34/1,3	1,1	1,90	1,00	01003148	0,38	1,6	3,70	1,70
01001004	0,5	2,0	4,80	2,00	01003100	0,5	1,8	4,80	4,80
01001024	0,5	2,0	4,80	2,00	01003041	0,75	2,0	7,20	7,20
01001037	0,5	2,0	4,80	2,00	01003049	1	2,1	9,60	3,00
01001041	2X0,5/1,8	3,4	9,60	4,00	01003066	1,5	2,6	14,40	3,00
01001006	1	2,3	9,60	3,00	01003177	2,5	3,5	24,00	4,00
01001007	1,5	2,8	14,40	3,00	01003178	4	4,9	40,00	40,60
Further dimensions available on request					01003088	16	3,5	24,00	160,00
					01003174	25	9,9	240,00	254,00

BKLiFY									
Part N°	N° of cores x cross-sec. mm <sup>2</sup>	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km	Part N°	N° of cores x cross-sec. mm <sup>2</sup>	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
01002097	0,1	1,0	1,20	2,10	01002122	4	5,0	38,00	50,00
01002104	0,14	1,1	1,40	2,60	01002106	6	6,5	60,00	71,00
01002019	0,25	1,4	2,50	4,20	01002072	10	7,5	100,00	130,00
01002029	0,5	2,0	5,50	8,00	01002073	16	9,0	160,00	160,00
01002042	0,75	2,2	8,00	12,00	01002096	25	10,5	240,00	294,00
01002050	1	2,5	10,80	18,00	01002120	35	11,7	336,00	380,00
01002059	1,5	3,5	15,00	22,00	01002115	50	14,7	480,00	521,00
01002066	2,5	3,8	25,00	37,00	01002094	70	17,0	672,00	740,00
Further dimensions available on request					01002112	95	19,0	950,00	800,00
					01002108	120	21,5	1.200,00	995,00

Colour combinations on large scale available

## Data cables

### LiYY

#### flexible switch and control cable coloured cores to DIN VDE 47100

##### Technical data

adapted to DIN VDE 0812, 0245

##### Temperature range

flexing -5° C to +80° C

fixed installation -40° C to +80° C

**Nominal voltage** 0,14 mm<sup>2</sup> = 350 V, ≥ 0,25 mm<sup>2</sup> = 500 V

**Test voltage** up to 0,25 = 1200 V, ≥ 0,34 mm<sup>2</sup> = 2000 V



##### Application

For flexible use with free movements without tensile stress or forced movements in dry, moist and wet zones, but not suitable in the open, wherever the construction requires a minimum outer diameter. Especially for such areas as tool making and machine industries as well as in electronic, computer, measurement and control sectors.

Part N°	N° of cores x cross-sec. mm <sup>2</sup>	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km	Part N°	N° of cores x cross-sec. mm <sup>2</sup>	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
01101001	2X0,14	3,3	2,70	12,00	01101051	2X0,25	3,8	4,80	18,00
01101002	3X0,14	3,4	4,00	15,00	01101052	3X0,25	4,0	7,20	22,00
01101007	4X0,14	3,7	5,40	17,00	01101054	4X0,25	4,6	9,60	26,00
01101003	5X0,14	4,0	6,70	22,00	01101056	5X0,25	4,9	12,00	30,00
01101010	6X0,14	4,4	8,10	25,00	01101058	6X0,25	5,4	14,40	36,00
01101012	7X0,14	4,4	9,40	26,00	01101060	7X0,25	5,4	16,80	42,00
01101014	8X0,14	4,7	10,80	29,00	01101062	8X0,25	6,1	19,20	49,00
01101016	10X0,14	5,4	13,40	35,00	01101064	10X0,25	7,0	24,00	57,00
01101018	12X0,14	5,6	16,10	43,00	01101066	12X0,25	7,2	28,80	66,00
01101020	14X0,14	6,0	18,80	48,00	01101068	14X0,25	7,9	33,60	75,00
01101022	16X0,14	6,3	21,50	52,00	01101070	16X0,25	8,1	38,40	84,00
01101024	18X0,14	7,0	24,20	65,00	01101072	18X0,25	8,8	43,20	72,00
01101026	20X0,14	7,5	26,90	70,00	01101074	20X0,25	9,1	48,00	101,00
01101028	21X0,14	7,6	28,20	77,00	01101075	21X0,25	9,6	50,00	107,00
01101030	24X0,14	8,0	32,30	87,00	01101077	24X0,25	9,8	58,00	120,00
01101177	25X0,14	7,6	33,60	91,00	01101079	25X0,25	9,8	65,00	130,00
01101032	27X0,14	8,1	36,30	97,00	01101180	26X0,25	9,9	64,00	135,00
01101034	30X0,14	8,4	40,30	106,00	01101081	27X0,25	10,0	72,00	140,00
01101036	32X0,14	8,7	43,00	112,00	01101083	30X0,25	10,4	77,00	156,00
01101040	34X0,14	o. r.	45,70	96,00	01101085	32X0,25	11,1	86,00	164,00
01101038	36X0,14	9,0	48,40	120,00	01101087	36X0,25	11,3	96,00	182,00
01101041	40X0,14	9,3	54,00	132,00	01101089	40X0,25	11,8	106,00	200,00
01101043	44X0,14	10,0	59,00	145,00	01101091	44X0,25	12,0	115,00	225,00
01101045	48X0,14	10,7	65,00	161,00	01101093	48X0,25	12,2	125,00	245,00
01101178	50X0,14	10,4	67,50	170,90	01101095	50X0,25	12,7	125,00	245,00
01101047	52X0,14	11,0	70,00	173,00	01101096	52X0,25	12,9	134,00	263,00
01101049	56X0,14	11,2	75,00	187,00	01101098	56X0,25	14,4	146,40	280,00
01101050	61X0,14	11,5	82,00	204,00	01101101	61X0,25	14,9	158,00	305,00

Further dimensions available on request

Also available with black outer sheath



## Data cables

LiYY

flexible switch and control cable  
coloured cores to DIN VDE 47100

Part N°	N° of cores x cross-sec. mm <sup>2</sup>	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km	Part N°	N° of cores x cross-sec. mm <sup>2</sup>	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
01101103	2X0,34	4,3	6,50	28,00	01101129	2X0,5	4,9	9,60	25,00
01101104	3X0,34	4,5	9,80	30,00	01101130	3X0,5	5,3	14,40	35,00
01101105	4X0,34	5,0	13,10	40,00	01101131	4X0,5	6,0	19,20	42,00
01101106	5X0,34	5,7	16,30	44,00	01101132	5X0,5	6,5	24,00	49,00
01101107	6X0,34	6,1	19,60	53,00	01101133	6X0,5	6,8	28,80	1,00
01101108	7X0,34	6,1	22,80	60,00	01101134	7X0,5	7,0	34,00	73,00
01101109	8X0,34	6,6	26,10	65,00	01101135	8X0,5	8,0	38,00	83,00
01101110	10X0,34	7,6	32,60	77,00	01101136	10X0,5	9,2	48,00	120,00
01101111	12X0,34	8,2	39,20	97,00	01101137	12X0,5	9,5	58,00	130,00
01101112	14X0,34	8,4	45,70	101,00	01101138	16X0,5	10,5	77,00	152,00
01101113	16X0,34	8,9	52,20	114,00	01101139	20X0,5	11,5	96,00	180,00
01101114	18X0,34	9,5	59,00	135,00	01101140	24X0,5	13,0	115,20	250,00
01101115	20X0,34	9,5	59,00	135,00	01101141	25X0,5	13,2	120,00	255,00
01101116	21X0,34	10,2	69,00	151,00	01101142	30X0,5	14,1	144,00	275,00
01101117	24X0,34	11,0	78,30	171,00	01101143	32X0,5	14,4	153,60	261,00
01101118	25X0,34	11,4	81,60	171,00	01101144	40X0,5	16,0	192,00	358,00
01101119	27X0,34	11,9	88,10	188,00	01101179	80x0,5	21,3	384,00	780,00
01101120	30X0,34	12,0	98,00	207,00	01101165	2X0,75	5,0	14,40	47,00
01101121	32X0,34	12,3	104,40	223,00	01101145	3X0,75	5,5	21,60	54,00
01101122	36X0,34	12,7	117,50	244,00	01101146	4X0,75	6,2	29,00	66,00
01101123	40X0,34	13,3	131,00	266,00	01101147	5X0,75	6,8	36,00	80,00
01101124	44X0,34	14,4	144,00	292,00	01101148	6X0,75	7,1	43,20	90,00
01101125	48X0,34	14,6	157,00	315,00	01101149	7X0,75	7,7	50,00	110,00
01101174	50X0,34	15,0	163,00	407,00	01101150	8X0,75	8,3	58,00	125,00
01101126	52X0,34	15,0	170,00	337,00	01101151	10X0,75	9,6	72,00	148,00
01101127	56X0,34	15,5	183,00	360,00	01101152	12X0,75	10,3	86,00	176,00
01101128	61X0,34	15,9	199,10	392,00	01101153	16X0,75	11,5	115,00	220,00
					01101154	20X0,75	12,5	144,00	276,00
					01101155	2X1	5,8	19,20	56,00
					01101156	3X1	6,2	29,00	71,00
					01101158	4X1	6,8	38,00	81,00
					01101157	5X1	7,6	48,00	1,00
					01101160	2X1,5	6,9	29,00	75,00
					01101161	3X1,5	7,3	43,00	90,00
					01101166	3X1,5	7,3	43,00	90,00
					01101162	4X1,5	8,0	58,00	169,00
					01101159	7X1,5	9,6	101,00	210,00

Further dimensions available on request  
Also available with black outer sheath

## Data cables

### LiYY - twisted pair flexible switch and control cable coloured cores to DIN VDE 47100

#### Technical data

adapted to DIN VDE 0812, 0245

#### Temperature range

flexing -5° C to +80° C

fixed installation -30° C to +80° C

**Nominal voltage** 250 V

#### Test voltage

core/core = 1200 V

#### Application

For flexible use with free movements without tensile stress or forced movements in dry, moist and wet zones, but not suitable in the open, wherever the construction requires a minimum outer diameter. Especially for such areas as tool making and machine industries as well as in electronic, computer, measurement and control sectors.



Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km	Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
01117001	1X2X0,14	4,0	2,70	20,00	01117035	6X2X0,25	8,0	28,80	80,00
01117002	2X2X0,14	5,0	5,40	24,00	01117036	8X2X0,25	9,4	38,40	98,00
01117003	3X2X0,14	5,5	8,00	29,00	01117030	2X2X0,5	8,1	19,20	72,00
01117004	4X2X0,14	6,0	10,70	41,00	01117032	4X2X0,5	8,7	38,40	115,00
01117005	5X2X0,14	6,0	13,40	43,00	01117031	4X4X0,5	15,5	76,80	152,00
01117007	6X2X0,14	6,6	16,10	56,00					
01117008	7X2X0,14	7,2	21,50	60,00					
01117009	8X2X0,14	7,5	21,50	62,00					
01117010	10X2X0,14	8,0	26,90	76,00					
01117011	12X2X0,14	8,5	32,30	89,00					
01117012	14X2X0,14	9,5	37,60	98,00					
01117014	16X2X0,14	10,0	43,00	112,00					
01117015	18X2X0,14	10,5	48,40	119,00					
01117016	20X2X0,14	11,0	54,00	134,00					
01117017	22X2X0,14	11,4	59,00	154,00					
01117018	24X2X0,14	11,6	65,00	162,00					
01117019	25X2X0,14	12,0	67,00	173,00					
01117020	26X2X0,14	12,7	70,00	178,00					
01117021	28X2X0,14	12,8	76,00	184,00					
01117022	30X2X0,14	13,0	81,00	199,00					
01117023	32X2X0,14	13,2	86,00	221,00					
01117024	36X2X0,14	14,0	97,00	232,00					
01117025	38X2X0,14	14,6	102,00	244,00					
01117026	40X2X0,14	14,8	108,00	257,00					
01117027	46X2X0,14	16,0	124,00	294,00					
01117028	50X2X0,14	16,5	134,00	342,00					
01117029	52X2X0,14	17,0	140,00	359,00					

Further dimensions available on request

## Data cables

### LiYCY - EMC-type Cu-screened flexible switch and control cable coloured cores to DIN VDE 47100

#### Technical data

adapted to DIN VDE 0812, 0245

#### Temperature range

flexing -5° C to +80° C

fixed installation -40° C to +80° C

#### Operating voltage 350 V

(not for purposes of high current and power installation) for 0,34 mm<sup>2</sup>

**Nominal voltage** 0,14 mm<sup>2</sup> = 350 V, ≥ 0,25 mm<sup>2</sup> = 500 V

**Test voltage** core/core = 1200 V, core/screen = 800 V

#### Application

For flexible use with free movements without tensile stress or forced movements in dry, moist and wet zones, but not suitable in the open, wherever the construction requires a minimum outer diameter. Especially for such areas as tool making and machine industries as well as in electronic, computer, measurement and control sectors.



Part N°	N° of cores x cross-sec. mm <sup>2</sup>	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km	Part N°	N° of cores x cross-sec. mm <sup>2</sup>	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
01102190	1X0,14	2,5	5,00	22,00	01102034	1X0,25	3,0	8,00	27,00
01102003	2X0,14	3,8	12,60	20,00	01102035	2X0,25	4,5	17,20	31,00
01102004	3X0,14	3,9	14,10	25,00	01102036	3X0,25	4,7	20,20	35,00
01102006	4X0,14	4,2	15,90	29,00	01102038	4X0,25	5,1	24,00	40,00
01102001	5X0,14	4,5	19,50	35,00	01102041	5X0,25	5,4	29,00	50,00
01102007	6X0,14	4,9	22,00	39,00	01102042	6X0,25	5,9	30,00	58,00
01102008	7X0,14	4,9	24,00	41,00	01102043	7X0,25	5,9	32,80	60,00
01102009	8X0,14	5,2	26,00	45,00	01102044	8X0,25	6,6	35,00	72,00
01102011	9X0,14	5,5	27,50	50,00	01102045	10X0,25	7,6	54,00	81,00
01102012	10X0,14	5,9	29,00	56,00	01102046	12X0,25	7,8	59,40	90,00
01102014	12X0,14	6,1	32,00	61,00	01102047	14X0,25	8,2	64,60	116,00
01102015	14X0,14	6,5	35,00	67,00	01102049	16X0,25	8,7	80,40	124,00
01102016	16X0,14	6,9	49,00	81,00	01102050	18X0,25	9,4	95,70	137,00
01102017	18X0,14	7,6	54,00	92,00	01102051	20X0,25	9,4	105,00	185,00
01102018	20X0,14	7,7	58,00	104,00	01102052	21X0,25	9,5	113,40	152,00
01102019	21X0,14	7,7	60,00	108,00	01102053	24X0,25	10,4	135,80	163,00
01102020	24X0,14	8,6	74,00	115,00	01102054	25X0,25	10,3	114,00	170,00
01102021	25X0,14	8,6	85,00	120,00	01102055	27X0,25	10,6	143,80	176,00
01102022	27X0,14	8,7	85,00	126,00	01102056	28X0,25	10,8	154,00	178,00
01102023	30X0,14	9,0	98,00	138,00	01102057	30X0,25	11,0	157,00	189,00
01102024	32X0,14	9,3	108,00	142,00	01102058	32X0,25	11,3	174,20	204,00
01102025	36X0,14	9,6	117,00	157,00	01102059	36X0,25	11,7	186,40	219,00
01102026	40X0,14	9,9	126,00	166,00	01102060	40X0,25	12,6	201,10	247,00
01102027	42X0,14	10,6	132,00	173,00	01102061	42X0,25	13,5	211,40	269,00
01102028	44X0,14	10,6	138,00	182,00	01102062	44X0,25	13,5	220,70	292,00
01102029	48X0,14	10,8	145,00	196,00	01102063	48X0,25	13,7	242,30	310,00
01102030	50X0,14	1,0	155,00	212,00	01102064	50X0,25	13,9	248,10	320,00
01102031	52X0,14	11,1	155,00	210,00	01102065	52X0,25	14,1	252,00	330,00
01102032	56X0,14	11,5	166,00	221,00	01102066	56X0,25	14,4	259,00	343,00
01102033	61X0,14	11,9	176,00	267,00	01102067	61X0,25	14,8	287,00	365,00

Further dimensions available on request

## Data cables

### LiYCY - EMC-type Cu-screened flexible switch and control cable coloured cores to DIN VDE 47100

Part N°	N° of cores x cross-sec. mm <sup>2</sup>	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km	Part N°	N° of cores x cross-sec. mm <sup>2</sup>	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
01102186	1X0,34	3,0	12,00	27,00	01102098	1X0,5	3,6	15,00	37,00
01102068	2X0,34	4,8	17,00	30,00	01102099	2X0,5	5,9	36,00	45,00
01102070	3X0,34	5,0	31,00	37,00	01102100	3X0,5	6,2	43,00	55,00
01102072	4X0,34	5,5	25,00	48,00	01102102	4X0,5	6,6	49,00	61,00
01102073	5X0,34	6,2	30,00	54,00	01102103	5X0,5	7,1	57,00	76,00
01102074	6X0,34	6,5	39,00	65,00	01102104	6X0,5	7,6	66,00	89,00
01102075	7X0,34	7,1	42,00	67,00	01102178	7X0,5	7,8	69,00	98,00
01102076	8X0,34	7,4	45,00	81,00	01102105	8X0,5	8,1	82,00	110,00
01102077	10X0,34	8,4	63,00	103,00	01102107	10X0,5	9,3	93,00	131,00
01102078	12X0,34	8,6	70,00	110,00	01102108	12X0,5	9,6	107,00	147,00
01102079	14X0,34	9,2	78,00	153,00	01102109	16X0,5	10,5	129,00	184,00
01102080	16X0,34	9,5	87,00	147,00	01102110	18X0,5	11,0	152,00	203,00
01102081	18X0,34	10,1	108,00	172,00	01102111	20X0,5	11,0	173,00	220,00
01102082	20X0,34	10,3	124,00	189,00	01102112	21X0,5	11,9	185,00	228,00
01102083	21X0,34	10,6	127,00	196,00	01102113	24X0,5	13,3	236,00	274,00
01102084	24X0,34	11,6	140,00	229,00	01102114	25X0,5	14,2	250,00	310,00
01102085	25X0,34	11,7	111,00	180,00	01102115	27X0,5	14,0	265,00	318,00
01102086	27X0,34	11,8	138,00	235,00	01102116	30X0,5	14,1	277,00	350,00
01102087	28X0,34	12,2	151,00	250,00	01102117	32X0,5	14,4	285,00	341,00
01102088	30X0,34	12,7	162,00	260,00	01102208	36X0,5	15,7	320,00	445,00
01102089	32X0,34	13,0	171,00	275,00	01102197	40X0,5	16,5	345,00	470,00
01102090	36X0,34	13,4	188,00	295,00	01102118	42X0,5	17,3	298,00	490,00
01102091	40X0,34	14,0	208,00	330,00	01102119	50X0,5	18,5	408,00	555,00
01102092	42X0,34	15,1	215,00	353,00	01102200	100X0,5	24,3	645,00	995,00
01102093	44X0,34	15,1	223,00	360,00					
01102094	48X0,34	15,9	243,00	386,00					
01102095	52X0,34	16,2	273,00	410,00					
01102096	56X0,34	16,4	292,00	435,00					
01102097	61X0,34	16,6	316,00	455,00					

Further dimensions available on request

## Data cables

**LiYCY - EMC-type Cu-screened  
flexible switch and control cable  
coloured cores to DIN VDE 47100**

Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km		Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
01102124	1X0,75	3,7	18,00	41,00		01102141	1X1	5,0	23,00	42,00
01102120	2X0,75	5,9	43,00	50,00		01102142	2X1	7,4	51,00	74,00
01102121	3X0,75	6,2	52,00	64,00		01102143	3X1	7,9	70,00	89,00
01102122	4X0,75	7,1	61,00	77,00		01102144	4X1	8,7	80,00	107,00
01102125	5X0,75	7,7	72,00	93,00		01102145	5X1	9,2	95,00	132,00
01102126	6X0,75	8,3	85,00	113,00		01102146	6X1	10,0	105,00	151,00
01102127	7X0,75	8,6	90,00	130,00		01102147	7X1	10,0	120,00	158,00
01102128	8X0,75	8,8	110,00	140,00		01102148	8X1	11,2	130,00	179,00
01102129	10X0,75	10,0	131,00	170,00		01102149	9X1	12,1	148,00	186,00
01102130	12X0,75	10,5	154,00	187,00		01102150	10X1	13,5	165,00	215,00
01102131	16X0,75	12,0	183,00	249,00		01102151	12X1	13,3	185,00	254,00
01102132	18X0,75	12,5	211,00	274,00		01102152	16X1	15,5	220,00	330,00
01102133	20X0,75	12,9	238,00	298,00		01102153	18X1	16,0	268,00	366,00
01102134	21X0,75	14,5	250,00	349,00		01102154	20X1	16,2	290,00	399,00
01102179	24X0,75	14,8	270,00	349,00		01102155	24X1	17,5	344,00	450,00
01102135	25X0,75	14,8	285,00	361,00		01102156	25X1	18,9	354,00	478,00
01102136	27X0,75	15,0	299,00	420,00		01102157	32X1	20,0	430,00	570,00
01102181	30X0,75	16,2	312,00	486,00		01102158	34X1	22,0	450,00	630,00
01102137	32X0,75	15,9	330,00	445,00		01102159	42X1	24,0	533,00	796,00
01102138	34X0,75	17,8	350,00	498,00		01102160	50X1	25,0	625,00	923,00
01102139	42X0,75	20,0	440,00	680,00						
01102140	50X0,75	21,9	480,00	810,00						

Further dimensions available on request

## Data cables

### LiYCY - EMC-type Cu-screened flexible switch and control cable coloured cores to DIN VDE 47100

Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km	Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
01102161	1X1,5	5,3	29,00	48,00	01102201	1X2,5	5,9	28,00	50,00
01102162	2X1,5	8,0	65,00	86,00	01102203	1X4	6,5	60,00	79,00
01102163	3X1,5	8,5	90,00	107,00	01102206	1X6	7,5	79,00	122,80
01102164	4X1,5	9,2	110,00	129,00					
01102165	5X1,5	10,0	125,00	150,00					
01102166	6X1,5	10,8	154,00	185,00					
01102167	7X1,5	10,8	159,00	192,00					
01102168	8X1,5	12,3	175,00	219,00					
01102169	10X1,5	14,1	210,00	274,00					
01102170	12X1,5	15,0	268,00	315,00					
01102171	16X1,5	16,0	315,00	420,00					
01102172	18X1,5	16,8	373,00	450,00					
01102173	20X1,5	17,8	385,00	500,00					
01102174	25X1,5	20,6	530,00	618,00					
01102175	32X1,5	22,2	670,00	772,00					
01102176	42X1,5	26,2	780,00	1.020,00					
01102177	50X1,5	27,5	885,00	1.210,00					

Further dimensions available on request

## Data cables

### LiYCY - EMC-type twisted pair Cu-screened flexible switch and control cable coloured cores to DIN VDE 47100

#### Technical data

adapted to DIN VDE 0812, 0245

#### Temperature range

flexing -5° C to +80° C

fixed installation -30°C to +80°C

**Nominal voltage**  $U_0/U = 300/500 \text{ V} \geq 0,5 \text{ mm}^2$

**Operating voltage** 350 V (not for purposes of high current and power installation) for 0,34 mm<sup>2</sup>

**Test voltage** core/core = 1200 V, core/screen = 800 V

#### Application

For flexible use with free movements without tensile stress or forced movements in dry, moist and wet zones, but not suitable in the open, wherever the construction requires a minimum outer diameter. Especially for such areas as tool making and machine industries as well as in electronic, computer, measurement and control sectors.



Part N°	N° of cores x cross-sec. mm <sup>2</sup>	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km	Part N°	N° of cores x cross-sec. mm <sup>2</sup>	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
01103001	2X2X0,14	5,8	18,50	34,00	01103028	2X2X0,25	5,7	28,00	46,00
01103002	3X2X0,14	6,2	23,00	43,00	01103029	3X2X0,25	6,6	34,00	64,00
01103003	4X2X0,14	6,8	32,00	50,00	01103030	4X2X0,25	7,5	40,00	73,00
01103004	5X2X0,14	7,7	37,00	70,00	01103107	5X2X0,25	8,2	50,00	88,00
01103005	6X2X0,14	7,9	51,00	81,00	01103108	6X2X0,25	9,1	68,00	98,00
01103007	7X2X0,14	7,9	58,10	84,00	01103109	7X2X0,25	9,3	72,00	108,00
01103009	8X2X0,14	8,6	62,00	93,00	01103031	8X2X0,25	9,4	84,00	118,00
01103010	10X2X0,14	9,5	71,00	115,00	01103032	10X2X0,25	11,4	110,00	165,00
01103011	12X2X0,14	9,5	78,00	125,00	01103033	12X2X0,25	12,1	121,00	190,00
01103013	14X2X0,14	10,5	106,00	130,00	01103120	13X2X0,25	10,9	128,00	149,00
01103014	16X2X0,14	11,2	119,00	148,00	01103034	14X2X0,25	12,8	132,00	198,00
01103015	18X2X0,14	11,4	128,00	177,00	01103035	16X2X0,25	13,4	147,00	214,00
01103016	20X2X0,14	11,6	138,00	193,00	01103036	18X2X0,25	14,3	158,00	241,00
01103017	24X2X0,14	13,3	158,00	212,00	01103037	20X2X0,25	14,8	172,00	263,00
01103018	25X2X0,14	13,4	162,00	220,00	01103038	24X2X0,25	15,2	230,00	313,00
01103019	26X2X0,14	13,4	167,00	230,00	01103039	25X2X0,25	16,3	238,00	323,00
01103020	30X2X0,14	14,0	187,00	285,00	01103040	30X2X0,25	18,2	289,00	362,00
01103021	32X2X0,14	14,4	198,00	303,00	01103041	32X2X0,25	19,1	298,00	290,00
01103022	36X2X0,14	14,9	204,00	317,00	01103042	40X2X0,25	20,6	321,00	515,00
01103023	40X2X0,14	16,1	212,00	348,00	01103043	50X2X0,25	22,5	392,00	648,00
01103024	44X2X0,14	17,2	227,00	381,00					
01103025	50X2X0,14	17,6	258,00	388,00					
01103026	52X2X0,14	18,4	278,00	408,00					
01103027	55X2X0,14	18,8	310,00	428,00					

Further dimensions available on request

## Data cables

### LiYCY - EMC-type twisted pair Cu-screened flexible switch and control cable coloured cores to DIN VDE 47100

Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km	Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
01103069	2X2X0,34	6,0	37,00	64,00	01103119	1X2X0,75	6,0	43,00	50,00
01103044	3X2X0,34	8,1	46,00	78,00	01103082	2X2X0,75	9,0	67,00	105,00
01103045	4X2X0,34	8,2	61,00	90,00	01103083	3X2X0,75	10,0	84,00	130,00
01103046	5X2X0,34	8,5	66,00	110,00	01103085	4X2X0,75	10,4	115,00	148,00
01103047	6X2X0,34	9,6	78,00	130,00	01103087	5X2X0,75	12,3	126,00	185,00
01103048	7X2X0,34	9,9	86,00	145,00	01103088	6X2X0,75	12,8	146,00	224,00
01103049	8X2X0,34	10,5	97,00	150,00	01103084	7X2X0,75	13,3	168,00	247,00
01103050	10X2X0,34	11,5	131,00	190,00	01103086	8X2X0,75	13,8	180,00	276,00
01103051	12X2X0,34	12,8	148,00	220,00	01103089	10X2X0,75	16,3	220,00	343,00
01103052	14X2X0,34	13,2	159,00	245,00	01103090	12X2X0,75	17,0	261,00	384,00
01103053	16X2X0,34	13,7	191,00	250,00	01103091	14X2X0,75	18,1	294,00	442,00
01103054	18X2X0,34	14,9	193,00	275,00	01103092	16X2X0,75	19,0	328,00	503,00
01103055	20X2X0,34	15,4	236,00	290,00	01103093	18X2X0,75	19,9	390,00	554,00
01103056	24X2X0,34	16,8	270,00	380,00	01103094	20X2X0,75	21,0	420,00	615,00
01103057	25X2X0,34	17,3	279,00	400,00	01103095	24X2X0,75	23,6	480,00	732,00
01103058	30X2X0,34	21,0	316,00	440,00	01103096	25X2X0,75	24,3	525,00	802,00
01103059	32X2X0,34	21,7	336,00	490,00	01103097	30X2X0,75	26,0	580,00	894,00
01103060	40X2X0,34	24,2	428,00	590,00	01103098	32X2X0,75	26,9	701,00	1.058,00
01103061	50X2X0,34	27,3	517,00	650,00	01103099	40X2X0,75	34,2	838,00	1.267,00
01103062	2X2X0,5	8,3	54,00	74,00	01103100	50X2X0,75	49,0	1.019,00	1.520,00
01103063	3X2X0,5	8,8	70,00	98,00	01103101	2X2X1	10,5	84,00	135,00
01103064	4X2X0,5	9,5	91,00	118,00	01103102	3X2X1	10,6	103,00	160,00
01103065	5X2X0,5	10,8	105,00	155,00	01103103	4X2X1	11,0	132,00	197,00
01103066	6X2X0,5	11,3	120,00	162,00	01103104	5X2X1	12,0	161,00	253,00
01103067	7X2X0,5	11,8	128,00	178,00					
01103068	8X2X0,5	12,3	144,00	190,00					
01103070	10X2X0,5	13,8	178,00	256,00					
01103071	12X2X0,5	15,1	199,00	291,00					
01103072	14X2X0,5	15,8	210,00	331,00					
01103073	16X2X0,5	16,7	251,00	364,00					
01103074	18X2X0,5	17,2	280,00	404,00					
01103075	20X2X0,5	17,9	302,00	463,00					
01103076	24X2X0,5	21,1	360,00	556,00					
01103077	25X2X0,5	21,8	374,00	596,00					
01103078	30X2X0,5	23,6	450,00	685,00					
01103079	32X2X0,5	25,0	478,00	790,00					
01103080	40X2X0,5	27,0	570,00	925,00					
01103081	50X2X0,5	33,2	690,00	1.130,00					

Further dimensions available on request



## Data cables

### LiYCY-CY - EMC-type twisted pair Cu-screened and Cu-total screened flexible switch and control cable coloured cores to DIN VDE 47100

#### Technical data

adapted to DIN VDE 0812, 0245

#### Temperature range

flexing -5° C to +80° C

fixed installation -20° C to +80° C

**Nominal voltage** 500 V

**Test voltage** 2000 V

#### Application

For flexible use with free movements without tensile stress or forced movements in dry, moist and wet zones, but not suitable in the open, wherever the construction requires a minimum outer diameter. Especially for such areas as tool making and machine industries as well as in electronic, computer, measurement and control sectors.



Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km	Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
01107017	2X0,25	6,9	41,50	69,00	01107001	2X2X0,25	9,8	63,00	125,00
01107016	4X0,25	7,8	65,00	130,00	01107002	3X2X0,25	10,8	80,00	140,00
Further dimensions available on request					01107003	4X2X0,25	12,2	124,00	205,00
					01107004	6X2X0,25	15,3	149,00	275,00
					01107005	8X2X0,25	16,2	189,00	330,00
					01107006	10X2X0,25	19,3	267,00	420,00
					01107007	12X2X0,25	19,8	307,00	464,00
					01107008	16X2X0,25	22,4	363,00	590,00
					01107009	20X2X0,25	23,1	385,00	620,00
					01107010	24X2X0,25	25,7	463,00	690,00
					01107011	32X2X0,25	29,1	573,00	785,00
					01107018	4X2X0,34	12,4	137,20	213,00
					01107012	2X2X0,5	10,2	140,00	210,00
					01107013	3X2X0,5	11,3	147,00	209,00
					01107014	4X2X0,5	13,3	158,00	168,00
					01107015	6X2X0,5	16,3	231,00	370,00

## Data cables

### LiYCY/EB - EMC-type Cu-screened intrinsic safety flexible switch and control cable coloured cores to DIN VDE 47100

#### Technical data

adapted to DIN VDE 0165 part 1, EN 60079-14, IEC 60079-14  
sect. 12.2.2.6

#### Temperature range

flexing -5° C to +80° C

fixed installation -30° C to +80° C

**Nominal voltage**  $U_0/U = 300/500$  V

**Test voltage** 2000 V

#### Insulation resistance

min. 20 MOhm x km

#### Application

For hazardous areas. Cables with special marking (blue).  
Usable as flexible control and measuring cables to meet the requirements for the installation of electrical apparatus. These installations are not earthed and require a separate power circuit. Not suitable for laying below ground. The braided copper screen ensures the transmission of data signals and is free from interference. Extensively oil-resistant.



Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km	Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
01105001	2X0,5	5,9	36,00	49,00	01105027	2X1	7,4	51,00	74,00
01105002	3X0,5	6,2	43,00	58,00	01105029	3X1	7,9	70,00	89,00
01105003	4X0,5	6,6	49,00	70,00	01105031	4X1	8,7	80,00	107,00
01105004	5X0,5	7,1	57,00	80,00	01105073	5X1	9,2	95,00	132,00
01105006	7X0,5	7,6	69,00	99,00	01105032	7X1	10,0	120,00	158,00
01105007	12X0,5	9,6	107,00	147,00	01105033	10X1	13,5	165,00	215,00
01105008	16X0,5	10,5	129,00	184,00	01105034	12X1	13,3	185,00	254,00
01105009	18X0,5	11,0	141,00	203,00	01105035	16X1	15,5	220,00	330,00
01105010	20X0,5	11,4	161,00	220,00	01105036	18X1	16,0	268,00	366,00
01105011	24X0,5	13,3	190,00	274,00	01105037	20X1	16,2	290,00	399,00
01105078	34X0,5	15,8	287,00	500,00	01105038	24X1	18,8	334,00	541,00
01105012	2X0,75	5,9	43,00	50,00	01105039	25X1	18,9	354,00	551,00
01105013	3X0,75	6,2	52,00	64,00	01105040	2X1,5	8,0	65,00	86,00
01105014	4X0,75	7,1	61,00	77,00	01105042	3X1,5	8,5	90,00	107,00
01105015	5X0,75	7,7	72,00	93,00	01105075	4X1,5	9,2	110,00	129,00
01105017	6X0,75	8,3	85,00	113,00	01105081	5X1,5	10,0	125,00	150,00
01105080	7X0,75	8,6	90,00	130,00	01105046	7X1,5	10,8	159,00	192,00
01105085	8X0,75	9,4	110,00	145,00	01105047	12X1,5	15,0	268,00	315,00
01105019	12X0,75	10,5	154,00	187,00	01105048	16X1,5	16,0	345,00	420,00
01105020	16X0,75	12,0	183,00	249,00	01105049	18X1,5	16,8	373,00	450,00
01105021	18X0,75	12,5	211,00	274,00	01105050	20X1,5	17,8	385,00	500,00
01105022	20X0,75	12,9	220,00	298,00	01105051	24X1,5	20,4	465,00	675,00
01105023	24X0,75	14,5	250,00	349,00	01105077	25X1,5	21,0	530,00	690,00
01105074	25X0,75	14,8	285,00	361,00	01105052	34X1,5	20,5	683,00	885,00
01105025	27X0,75	15,0	299,00	420,00					
01105082	34X0,75	16,4	350,00	510,00					

Further dimensions available on request

## Data cables

### LiYCY/EB - EMC-type twisted pair

### Cu-screened intrinsic safety flexible switch and control cable coloured cores to DIN VDE 47100

#### Technical data

adapted to DIN VDE 0165 part 1, EN 60079-14, IEC 60079-14 sect. 12.2.2.6

#### Temperature range

flexing -5° C to +80° C

fixed installation -30° C to +70° C

**Nominal voltage**  $U_0/U = 300/500$  V

**Test voltage** 2000 V

**Insulation resistance**

min. 20 MOhm x km

#### Application

For hazardous areas. Cables with special marking (blue). Usable as flexible control and measuring cables to meet the requirements for the installation of electrical apparatus. These installations are not earthed and require a separate power circuit. Not suitable for laying below ground. The braided copper screen ensures the transmission of data signals and is free from interference. Extensively oil-resistant.



Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km	Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
01106001	2X2X0,5	8,0	46,00	86,00	01106021	1X2X0,75	6,0	43,00	50,00
01106002	3X2X0,5	8,4	70,00	100,00	01106011	2X2X0,75	8,7	67,00	105,00
01106003	4X2X0,5	9,1	82,00	118,00	01106012	3X2X0,75	9,2	87,00	128,00
01106004	6X2X0,5	10,7	111,00	168,00	01106013	4X2X0,75	10,0	110,00	148,00
01106005	8X2X0,5	13,0	137,00	228,00	01106014	6X2X0,75	11,1	146,00	224,00
01106006	12X2X0,5	14,4	186,00	291,00	01106015	8X2X0,75	14,6	180,00	276,00
01106007	16X2X0,5	17,7	242,00	364,00	01106016	12X2X0,75	16,4	267,00	384,00
01106008	20X2X0,5	19,2	300,00	463,00	01106017	16X2X0,75	20,0	330,00	503,00
01106009	24X2X0,5	20,7	360,00	556,00	01106018	20X2X0,75	21,6	425,00	615,00
01106010	25X2X0,5	20,9	374,00	596,00	01106019	24X2X0,75	24,3	488,00	732,00
					01106020	25X2X0,75	24,4	530,00	802,00

Further dimensions available on request

## Data cables

### TKSÖ

#### data transmission-cable for petrol stations and refineries

##### Technical data

###### Temperature range

-5° C to +70° C

**Nominal voltage**  $U_0/U = 200/500$  V

##### Application

For external and internal wiring at gas pumps under plaster.



Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
01112001	4x0,75 RM	7,0	36,00	145,00
01112005	7x0,75 RE	11,0	63,00	185,00
01112009	8x0,75 RM	12,7	65,00	220,00

Further dimensions available on request

## Industrial electronic cables

### JE-LiYY...Bd Si

##### Technical data

acc. to DIN VDE 0815/DIN 57815

###### Temperature range

flexing -5° C to +50° C

fixed installation -30° C to +70° C

**Nominal voltage** 225 V

###### Test voltage

core/core = 500 V, core/screen = 2000 V

##### Application

It is suitable for transmission of signals and measurements in the fields of electronics and for data transmission in computers. Also suitable for flexing and fixed installation in dry and moist zones in and under plaster as well as in the open for fixed installation on outer walls of buildings.



Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
01201002	4X1X0,5 Bd	6,0	20,00	50,00
01201003	8X1X0,5 Bd	7,5	40,00	75,00
01201004	16X1X0,5 Bd	10,5	80,00	145,00
01201005	24X1X0,5 Bd	12,0	120,00	199,00
01201006	32X1X0,5 Bd	13,5	160,00	260,00
01201007	40X1X0,5 Bd	15,0	200,00	318,00
01201008	80X1X0,5 Bd	21,0	400,00	655,00

Further dimensions available on request

## Industrial electronic cables

### JE-Y(St)Y, JE-Y(St)Yv, JE-Y(St)YY...Bd Si JE-LiY(St)Y

#### Technical data

DIN VDE 0815

**Nominal voltage** 250 V

#### Application

Universal instrumentation cable for signal transmission in industrial control and measurement systems. For fixed installation in dry and wet rooms.



#### JE-Y(St)Y

Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km	Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
01204001	2X2X0,8 Bd	6,0	25,00	57,00	01204002	2X2X0,8 Bd (blue)	6,0	25,00	57,00
01204003	4X2X0,8 Bd	8,0	45,00	93,00	01204004	4X2X0,8 Bd (blue)	8,0	45,00	93,00
01204005	8X2X0,8 Bd	11,0	85,00	160,00					
01204007	12X2X0,8 Bd	12,5	126,00	212,00					
01204009	16X2X0,8 Bd	14,0	166,00	278,00					
01204011	20X2X0,8 Bd	15,0	206,00	335,00					
01204013	24X2X0,8 Bd	17,0	246,00	385,00					
01204015	32X2X0,8 Bd	19,0	327,00	523,00					
01204017	40X2X0,8 Bd	21,5	407,00	632,00					
01204019	48X2X0,8 Bd	23,0	488,00	685,00					
01204021	80X2X0,8 Bd	o. r.	809,00	1.290,00					

Further dimensions available on request

#### JE-Y(St)Yv

Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
01205001	2X2X0,8 Bd	8,0	25,00	80,00
01205002	4X2X0,8 Bd	10,0	45,00	130,00
01205003	8X2X0,8 Bd	12,5	85,00	200,00
01205004	12X2X0,8 Bd	14,0	126,00	270,00
01205005	16X2X0,8 Bd	15,5	166,00	335,00
01205006	20X2X0,8 Bd	16,0	206,00	395,00
01205007	32X2X0,8 Bd	20,0	327,00	600,00
01205008	40X2X0,8 Bd	22,0	407,00	725,00
01205009	48X2X0,8 Bd	24,1	488,00	765,00
01205010	80X2X0,8 Bd	31,0	809,00	1.360,00

Further dimensions available on request

## Industrial electronic cables

**JE-Y(St)Y, JE-Y(St)Yv, JE-Y(St)YY...Bd Si  
JE-LiY(St)Y**

### Technical data

DIN VDE 0815

**Nominal voltage** 250 V

### Application

Universal instrumentation cable for signal transmission in industrial control and measurement systems. For fixed installation in dry and wet rooms.



### JE-Y(St)YY...Bd Si

Part N°	N° of cores x cross-sec. mm <sup>2</sup>	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
1206001	2X2X0,8 Bd	o. r.	25,00	90,00
1206002	4X2X0,8 Bd	o. r.	45,00	140,00
1206003	8X2X0,8 Bd	o. r.	85,00	215,00
1206004	12X2X0,8 Bd	o. r.	126,00	300,00
1206005	16X2X0,8 Bd	o. r.	166,00	370,00
1206006	20X2X0,8 Bd	o. r.	206,00	435,00
1206007	32X2X0,8 Bd	o. r.	327,00	650,00
1206008	40X2X0,8 Bd	o. r.	407,00	780,00
1206009	48X2X0,8 Bd	o. r.	488,00	820,00
1206010	80X2X0,8 Bd	o. r.	809,00	1.430,00

Further dimensions available on request

### JE-LiY(St)Y

Part N°	N° of cores x cross-sec. mm <sup>2</sup>	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
01203001	2X2X0,5 Bd	6,5	25,00	79,00
01203002	4X2X0,5 Bd	9,0	45,00	110,00
01203003	8X2X0,5 Bd	11,5	85,00	180,00
01203004	12X2X0,5 Bd	13,5	125,00	260,00
01203005	16X2X0,5 Bd	15,0	165,00	315,00
01203006	20X2X0,5 Bd	16,5	205,00	375,00
01203007	24X2X0,5 Bd	18,5	245,00	445,00
01203008	32X2X0,5 Bd	20,5	325,00	570,00
01203009	40X2X0,5 Bd	22,5	405,00	690,00

Further dimensions available on request

## Industrial electronic cables

### JE-LiYCY...Bd Si

Also available with blue outer jacket for intrinsic safe installations

#### Technical data

acc. to DIN VDE 0815/DIN 57815

#### Temperature range

flexing -5° C to +50° C

fixed installation -30° C to +70° C

**Nominal voltage** 225 V

#### Test voltage

core/core = 500 V, core/screen = 2000 V

#### Application

Especially suited for transmission of signals and measurements in the fields of electronics and for data transmission in computers. Also suitable for flexing and fixed installation in dry and moist zones in and under plaster as well as in the open for fixed installation on outer walls of buildings.



Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
01202001	2X2X0,5 Bd	7,0	51,00	81,00
01202002	4X2X0,5 Bd	9,5	87,00	137,00
01202003	8X2X0,5 Bd	13,0	144,00	248,00
01202004	12X2X0,5 Bd	15,0	196,00	307,00
01202005	16X2X0,5 Bd	16,5	249,00	375,00
01202006	20X2X0,5 Bd	18,5	299,00	461,00
01202007	24X2X0,5 Bd	20,5	348,00	595,00
01202008	32X2X0,5 Bd	23,0	444,00	719,00
01202009	40X2X0,5 Bd	25,0	537,00	831,00

Further dimensions available on request

## Industrial electronic cables

**BKRD-Y(St)Y, BKRD-Y(St)Yv, BKRD-Y(St)YY**  
**BKRE-2Y(St)Y, BKRE-2Y(St)Yv, BKRE-2Y(St)Yv PiMF**

Also available with blue outer jacket for intrinsic safe installations

### Technical data

adapted to DIN VDE 0815

### Temperature range

flexing -5° C to +50° C

fixed installation -30° C to +70° C

### Test voltage

core/core = 2000 V, core/screen = 1000 V

### Application

For use in measurement and control technology such as in control rooms of industrial plants and power stations. A static screen protects the transmission circuits against outer electrical interferences and the twisted pairs lead to good crosstalk attenuation values in a unit. These cables serve for transmission of analog and digital signals up to frequencies of approx. 10 kHz. Maxi-Termi-Point capable. Only suitable for fixed installation in buildings.



RD-Y(St)Y					RD-Y(St)Yv				
Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km	Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
01301026	2X2X0,5	6,0	25,00	60,00	01311001	2X2X0,5	9,0	25,00	95,00
01301027	4X2X0,5	8,0	45,00	95,00	01311002	8X2X0,5	13,0	85,00	202,00
01301028	8X2X0,5	11,5	85,00	157,00					
01301029	12X2X0,5	12,0	125,00	229,00					
01301030	16X2X0,5	13,7	165,00	290,00					
01301001	20X2X0,5 Bd	15,0	205,00	380,00					
01301002	24X2X0,5 Bd	16,3	245,00	422,00					
01301003	28X2X0,5 Bd	o. r.	285,00	530,00					
01301004	32X2X0,5 Bd	22,0	325,00	535,00					
01301005	36X2X0,5 Bd	o. r.	365,00	640,00					
01301006	40X2X0,5 Bd	21,8	405,00	700,00					
01301007	44X2X0,5 Bd	o. r.	445,00	760,00					
01301008	48X2X0,5 Bd	23,0	485,00	796,00					
01301009	52X2X0,5 Bd	o. r.	525,00	910,00					
01301010	56X2X0,5 Bd	o. r.	565,00	975,00					
01301011	60X2X0,5 Bd	o. r.	605,00	1.045,00					
01301012	64X2X0,5 Bd	o. r.	645,00	1.110,00					
01301013	80X2X0,5 Bd	28,8	805,00	1.340,00					
01301014	96X2X0,5 Bd	30,5	965,00	1.500,00					
01301015	2X2X1 Bd	10,0	51,00	120,00					
01301016	4X2X1 Bd	11,0	91,00	180,00					
01301017	8X2X1 Bd	15,0	171,00	310,00					
01301018	12X2X1 Bd	17,5	252,00	420,00					
01301019	16X2X1 Bd	20,5	332,00	560,00					
01301020	20X2X1 Bd	22,5	413,00	670,00					
01301021	24X2X1 Bd	24,5	493,00	810,00					
01301022	32X2X1 Bd	27,5	654,00	1.040,00					
01301023	40X2X1 Bd	31,0	816,00	1.290,00					
01301024	48X2X1 Bd	33,5	977,00	1.520,00					
01301025	80X2X1 Bd	42,0	1.617,00	2.440,00					

Further dimensions available on request



## Industrial electronic cables

**RD-Y(St)Y, RD-Y(St)Yv, RD-Y(St)YY RE-2Y(St)Y,  
RE-2Y(St)Yv, RE-2Y(St)Yv PiMF**

**Also available with blue outer  
jacket for intrinsic safe  
installations**

RD-Y(St)YY					RE-2Y(St)Y				
Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km	Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
01302001	2X2X0,5 Bd	6,0	25,00	55,00	01305001	1x2x0,5	8,2	15,00	80,00
01302003	4X2X0,5 Bd	8,0	45,00	91,00	01305026	2x2x0,5	10,2	30,00	122,00
01302005	8X2X0,5 Bd	11,5	85,00	158,00	01305018	4x2x0,5	10,8	50,00	135,00
01302007	12X2X0,5 Bd	12,0	125,00	210,00	01305043	6x2x0,5	12,6	70,00	190,00
01302009	16X2X0,5 Bd	13,7	165,00	280,00	01305027	8x2x0,5	13,3	90,00	200,00
01302011	20X2X0,5 Bd	15,0	205,00	340,00	01305028	10x2x0,5	14,4	110,00	225,00
01302013	24X2X0,5 Bd	16,3	245,00	392,00	01305029	12x2x0,5	15,0	130,00	260,00
01302015	28X2X0,5 Bd	18,2	285,00	425,00	01305030	16x2x0,5	16,8	170,00	320,00
01302017	32X2X0,5 Bd	20,5	325,00	453,00	01305031	20x2x0,5	18,7	210,00	380,00
01302019	36X2X0,5 Bd	21,8	365,00	510,00	01305032	24x2x0,5	20,5	250,00	465,00
01302021	40X2X0,5 Bd	21,8	405,00	640,00	01305033	36x2x0,5	24,3	370,00	650,00
01302023	44X2X0,5 Bd	22,5	445,00	690,00	01305034	48x2x0,5	27,5	490,00	840,00
01302025	48X2X0,5 Bd	23,0	485,00	750,00	01305014	2x2x0,75	11,5	31,50	140,00
01302027	52X2X0,5 Bd	23,8	525,00	795,00	01305035	1x2x1,3	10,0	34,00	67,00
01302029	56X2X0,5 Bd	24,5	565,00	845,00	01305036	2x2x1,3	11,7	62,00	161,00
01302031	60X2X0,5 Bd	25,4	605,00	899,00	01305037	4x2x1,3	13,5	114,00	230,00
01302033	64X2X0,5 Bd	26,5	645,00	959,00	01305038	8x2x1,3	17,5	218,00	343,00
01302035	80X2X0,5 Bd	28,8	805,00	1200,00	01305039	12x2x1,3	19,3	322,00	515,00
01302037	96X2X0,5 Bd	30,5	965,00	1.570,00	01305040	16x2x1,3	22,0	426,00	656,00
Further dimensions available on request					01305041	24x2x1,3	26,5	684,00	952,00
					01305042	1x3x1,3	9,7	44,00	116,00

RE-2Y(St)Yv					RE-2Y(St)Yv PiMF				
Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km	Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
01307001	1x2x0,5	7,3	15,00	60,00	01307015	1x3x1,3	7,7	44,00	66,00
01307007	2x2x0,5	9,8	30,00	110,00	01307014	4x2x1,3	13,3	114,00	230,00
01307008	4x2x0,5	11,5	50,00	150,00	01307013	8x2x1,3	16,8	218,00	375,00
01307009	8x2x0,5	15,0	90,00	191,00	01307019	12x2x1,3	20,5	322,00	488,00
01307028	20x2x0,5	18,5	210,00	385,00	01307021	24x2x1,3	29,4	697,00	1.104,00
01307029	24x2x0,5	20,2	250,00	468,00	01307017	48x2x1,3	34,2	1.368,00	1.834,00
01307010	1x2x0,75	7,7	25,00	70,00					
01307027	2x2x0,75	10,6	35,00	123,00					
01307011	4x2x0,75	11,8	70,00	170,00					
01307020	6x2x0,75	14,5	92,00	187,00					
01307025	8x2X0,75	14,6	125,00	258,00					
01307012	12x2x0,75	16,9	190,00	355,00					
01307030	50X2X0,75	28,0	710,00	1.200,00					
Further dimensions available on request									

## Telephone cables

### J-YY...Bd indoor cable

**Technical data**  
DIN VDE 0815

#### Application

For connection and installation of telecommunication and data transmission systems in dry and wet rooms.



Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km	Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
01501004	1X2X0,6	4,5	5,70	26,00	01501010	20X2X0,6	12,3	113,00	201,00
01501005	2X2X0,6	4,8	11,00	35,00	01501011	24X2X0,6	12,3	136,00	228,00
01501006	4X2X0,6	6,8	23,00	60,00	01501012	30X2X0,6	13,5	170,00	285,00
00000000	5X2X0,6	7,0	30,00	59,00	01501013	40X2X0,6	14,8	226,00	362,00
01501007	6X2X0,6	7,1	34,00	75,00	01501014	50X2X0,6	16,1	283,00	439,00
00000000	8X2X0,6	8,0	46,00	93,00	01501015	60X2X0,6	17,6	339,00	518,00
01501008	10X2X0,6	8,3	57,00	100,00	01501016	80X2X0,6	20,5	452,00	685,00
00000000	12X2X0,6	o. r.	71,00	129,00	01501017	100X2X0,6	22,5	656,00	840,00

Further dimensions available on request

## Telephone cables

### J-Y(St)Y...Bd indoor cable

**Technical data**  
DIN VDE 0815

#### Application

For connection and installation of telecommunication and data transmission systems in dry and wet rooms.



Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km	Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
01502001	1X2X0,6	4,5	7,00	26,00	01502041	1X2X0,8	5,5	11,00	38,00
01502002	2X2X0,6	4,9	13,00	35,00	01502021	2X2X0,8	6,1	21,00	54,00
01502003	3X2X0,6	6,2	18,00	49,00	01502023	3X2X0,8	8,0	31,00	77,00
01502004	4X2X0,6	6,6	24,00	58,00	01502024	4X2X0,8	8,7	41,00	94,00
01502005	5X2X0,6	7,1	30,00	59,00	01502025	5X2X0,8	9,4	52,00	114,00
01502006	6X2X0,6	7,6	35,00	61,00	01502026	6X2X0,8	10,1	62,00	135,00
01502007	8X2X0,6	8,1	46,00	93,00	01502027	8X2X0,8	10,2	82,00	154,00
01502008	10X2X0,6	9,3	58,00	113,00	01502028	10X2X0,8	13,1	102,00	205,00
01502009	12X2X0,6	9,5	71,00	129,00	01502029	12X2X0,8	13,5	123,00	235,00
01502011	16X2X0,6	10,4	93,00	163,00	01502031	16X2X0,8	14,8	164,00	299,00
01502012	20X2X0,6	10,9	116,00	191,00	01502032	20X2X0,8	15,6	204,00	352,00
01502013	24X2X0,6	13,0	139,00	239,00	01502033	24X2X0,8	18,4	244,00	437,00
01502014	30X2X0,6	13,7	172,00	284,00	01502034	30X2X0,8	19,4	304,00	522,00
01502015	40X2X0,6	14,5	229,00	258,00	01502035	40X2X0,8	20,9	405,00	663,00
01502016	50X2X0,6	16,5	286,00	438,00	01502037	50X2X0,8	23,7	506,00	832,00
01502017	60X2X0,6	17,5	342,00	512,00	01502038	60X2X0,8	25,8	606,00	978,00
01502018	80X2X0,6	19,6	455,00	676,00	01502039	80X2X0,8	28,8	807,00	1.288,00
01502019	100X2X0,6	22,1	568,00	829,00	01502040	100X2X0,8	36,5	1.008,00	1.900,00

Further dimensions available on request

## Telephone cables

### J-2Y(St)Y...St III Bd

#### Technical data

DIN VDE 0815

#### Application

For connection and installation of telecommunication and data transmission systems in dry and wet rooms.



Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
01509014	2x2x 0,6	5,6	13,00	35,00
01509015	3x2x0,6	1,0	18,00	55,00
01509016	4x2x0,6	7,9	24,00	70,00
01509017	6x2x0,6	7,7	35,00	80,00
01509018	8x2x0,6	1,0	45,00	95,00
01509019	10x2x0,6	9,0	58,00	110,00
01509020	20x2x0,6	14,1	116,00	185,00
01509021	30x2x0,6	14,9	172,00	270,00
01509022	40x2x0,6	1,0	229,00	345,00
01509023	50x2x0,6	18,4	286,00	430,00
01509024	60x2x0,6	20,1	342,00	500,00
01509025	80x2x0,6	26,1	455,00	650,00
01509026	100x2x0,6	27,0	568,00	820,00

Further dimensions available on request

## Telephone cables

### J-Y(St)Y...Lg - fire alarm cable indoor cable

**Technical data**  
DIN VDE 0815

#### Application

For connection and installation of telecommunication and data transmission systems in dry and wet rooms.



Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km	Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
01506001	1X2X0,8	50,0	11,00	38,00	01506010	16X2X0,8	14,8	164,00	299,00
01506002	2X2X0,8	10,0	21,00	54,00	01506011	20X2X0,8	15,6	204,00	352,00
01506003	3X2X0,8	8,0	31,00	77,00	01506012	24X2X0,8	18,4	244,00	437,00
01506004	4X2X0,8	8,7	41,00	94,00	01506013	30X2X0,8	19,4	304,00	522,00
01506005	5X2X0,8	9,4	52,00	114,00	01506014	40X2X0,8	20,9	405,00	663,00
01506006	6X2X0,8	10,1	62,00	135,00	01506015	50X2X0,8	23,7	506,00	832,00
01506007	8X2X0,8	10,2	82,00	154,00	01506016	60X2X0,8	25,8	606,00	978,00
01506008	10X2X0,8	13,1	102,00	205,00	01506017	80X2X0,8	31,0	807,00	1.050,00
01506009	12X2X0,8	13,5	123,00	235,00	01506018	100X2X0,8	36,5	1.008,00	1.900,00

Further dimensions available on request

## Telephone cables

### A-2Y(L)2Y outdoor cable

**Technical data**  
DIN VDE 0815

#### Application

For connection and installation of telecommunication and data transmission systems in dry and wet zones as well as direct laying below ground.



Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km	Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
01510001	2X2X0,6	10,5	11,00	80,00	01510016	2X2X0,8	12,5	20,00	100,00
01510002	4X2X0,6	11,0	23,00	125,00	01510017	4X2X0,8	13,0	40,00	160,00
01510003	6X2X0,6	11,5	34,00	130,00	01510018	6X2X0,8	13,5	60,00	175,00
01510004	10X2X0,6	13,0	57,00	165,00	01510019	10X2X0,8	15,0	101,00	235,00
01510005	20X2X0,6	16,0	113,00	265,00	01510020	20X2X0,8	18,0	201,00	390,00
01510006	30X2X0,6	18,0	170,00	355,00	01510021	30X2X0,8	21,0	302,00	540,00
01510007	40X2X0,6	19,5	226,00	440,00	01510022	40X2X0,8	23,5	402,00	680,00
01510008	50X2X0,6	21,0	283,00	525,00	01510023	50X2X0,8	25,0	503,00	835,00
01510009	70X2X0,6	23,5	396,00	705,00	01510024	70X2X0,8	28,5	704,00	1.110,00
01510011	100X2X0,6	27,0	565,00	950,00	01510025	100X2X0,8	32,5	1.005,00	1.515,00
01510012	150X2X0,6	33,0	848,00	1.345,00	01510026	150X2X0,8	40,0	1.508,00	2.200,00
01510013	200X2X0,6	38,0	1.131,00	1.755,00	01510027	200X2X0,8	47,0	2.011,00	2.900,00
01510014	250X2X0,6	41,5	1.414,00	2.150,00					
01510015	300X2X0,6	44,5	1.696,00	2.530,00					

Further dimensions available on request

## Telephone cables

### A-2YF(L)2Y

#### outdoor cable petroleum jelly filled

#### Technical data

DIN VDE 0815

#### Application

For connection and installation of telecommunication and data transmission systems in dry and wet zones as well as direct laying below ground.



Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km	Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
01511001	2X2X0,6	11,0	11,00	80,00	01511016	2X2X0,8	13,0	20,00	100,00
01511002	4X2X0,6	11,5	23,00	150,00	01511017	4X2X0,8	13,5	40,00	175,00
01511003	6X2X0,6	12,0	34,00	140,00	01511018	6X2X0,8	14,0	60,00	200,00
01511004	10X2X0,6	14,0	57,00	190,00	01511019	10X2X0,8	15,5	101,00	280,00
01511005	20X2X0,6	17,5	113,00	310,00	01511020	20X2X0,8	19,5	201,00	485,00
01511006	30X2X0,6	20,0	170,00	430,00	01511021	30X2X0,8	22,5	302,00	675,00
01511007	40X2X0,6	22,5	226,00	545,00	01511022	40X2X0,8	25,5	402,00	885,00
01511008	50X2X0,6	24,5	283,00	660,00	01511023	50X2X0,8	27,5	503,00	1.070,00
01511009	70X2X0,6	25,5	396,00	895,00	01511024	70X2X0,8	31,5	704,00	1.420,00
01511011	100X2X0,6	31,5	565,00	1.225,00	01511025	100X2X0,8	36,5	1.005,00	2.000,00
01511012	150X2X0,6	37,5	848,00	1.780,00	01511026	150X2X0,8	47,0	1.508,00	2.935,00
01511013	200X2X0,6	42,5	1.131,00	2.315,00	01511027	200X2X0,8	52,0	2.011,00	3.800,00
01511014	250X2X0,6	47,5	1.414,00	2.895,00					
01511015	300X2X0,6	52,0	1.696,00	3.480,00					

Further dimensions available on request

## Bus cables

### Application

For connection and installation of telecommunication and data transmission systems in dry and wet zones.

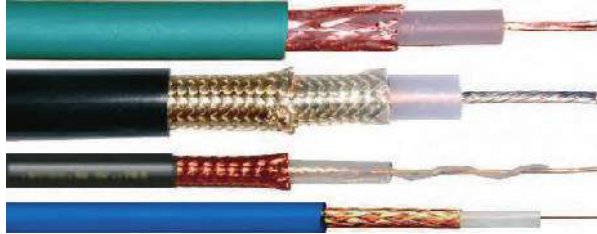


BUS cables	N° of cores x cross-sec. mm²	col	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
EIB-BUS	2X2X0,8	gn	6,3	21,00	55,00
EIB-BUS LSOH	2X2X0,8	gn	6,3	21,00	55,00
BUS L2 PROFIBUS	1X2X0,64	vt	7,8	26,00	57,00
BUS L2 PROFIBUS FAST CONNECT	1X2X0,64	vt	7,8	26,00	60,00
BUS L2 PROFIBUS OUTDOOR	1X2X0,64	bk	10,0	26,00	87,00
BUS L2 PROFIBUS CHAIN	1X2X0,64	vt	8,0	28,00	64,00
L2 UL/CSA FIP DP FMS Li2Y(ST)CY	1X2X0,64	vt	o. r.	26,00	57,00
L2 COMBI FIP DP FMS Li2Y(ST)CY	1X2X0,64 + 3X1	vt	9,8	49,00	92,00
BUS PA PROFIBUS	1X2X1	bu	7,4	45,00	73,00
BUS PA PROFIBUS INDOOR	1X2X1	bk	7,4	45,00	73,00
BUS L2 PROFIBUS INDOOR LSOH	1X2X0,64	gn	7,8	22,40	55,00
BUS INTERBUS S	3X2X0,22	vt	o. r.	37,00	72,00
INTERBUS IF-YV	3X2X0,22	bk	o. r.	60,00	128,00
BUS LiY + Li2Y	2X1,5 + 2X2X0,6	gn	o. r.	53,00	90,00
BUS LSOH	2X1,5 + 2X2X0,6	gn	o. r.	53,00	90,00
AS-INTERFACE BUS	2X1,5 TPE	ye	10x4	28,00	57,00
AS-INTERFACE BUS	2X1,5 TPE	sw	10x4	28,00	57,00
AS-INTERFACE BUS RUBBER	2X1,5	ye	10x4	29,00	57,00
AS-INTERFACE BUS RUBBER	2X1,5	bl	10x4	29,00	57,00
CAN-BUS LiO2YSC11Y UL/CSA	2X2X0,5	vt	o. r.	59,40	106,00
CAN-BUS LiO2YSC11Y UL/CSA	2X2X0,34	vt	o. r.	52,40	88,00
CAN-BUS LiO2YSCY UL/CSA	2X2X0,5				



## Coaxial cables

Video cable, RG coaxial cable  
RG coaxial cable - halogen-free  
RG multi coaxial cable  
IBM Type, CATV cable



RG	Part.-N°	Frequency range	Impedance	Attenuation $\alpha_{rem}$				Capacity	Rel. trans. speed.	Insulation resistance	Tension strength	Maximum permissible operating voltage	Permissible temp.	Outer diam.	Cu.-Weight	Weight
		f <sub>max</sub> GHz	Z <sub>0</sub> Ohm	1 MHz dB / 100 m	10 MHz dB / 100 m	100 MHz dB / 100 m	400 MHz dB / 100 m	C nF / km	V <sub>rel</sub> %	R <sub>iso</sub> MΩ x km	50 Hz kV <sub>eff</sub>	kVS	° C	ca. mm	kg/km	ca. kg/km
6 U	01401001	0	0	0,00	0,00	0,00	0,00	0	0		0	0	0	0,0	0	0
8 U	01401027	0	0	0,00	0,00	0,00	0,00	0	0		0	0	0	0,0	0	0
11 A/U	01401002	3	75 ± 3	0,65	2,00	6,80	14,00	68	67	>= 10 <sup>b</sup>	10	5,2	-35° - +80°	10,3	58	139
12 A/U	01401003	0	0	0,00	0,00	0,00	0,00	0	0		0	0	-35° - +80°	0,0	0	0
58 C/U	01401004	3	50 ± 2	2,00	6,00	17,00	34,00	100	67	>= 10 <sup>b</sup>	5	2,5	-35° - +80°	5,0	21	32
59 B/U	01401005	3	75 ± 3	1,50	4,00	12,00	23,00	68	67	>= 10 <sup>5</sup>	7	3,5	-35° - +80°	6,2	25	57
62 A/U	01401007	3	93 ± 3	0,95	3,00	9,00	18,00	43	83	>= 10 <sup>b</sup>	3	1,1	-35° - +80°	6,0	26	52
71 B/U	01401008	3	93 ± 3	0,95	3,00	9,00	18,00	43	83	>= 10 <sup>5</sup>	3	1,5	-35° - +80°	6,2	46	62
174 A/U	01401009	3	50 ± 2	0,00	0,00	0,00	0,00	0	0	>= 10 <sup>b</sup>	0	0	-35° - +80°	2,6	7	11
178 B/U	01401010	0	0	0,00	0,00	0,00	0,00	0	0	>= 10 <sup>5</sup>	0	0	0	0,0	0	0
179 B/U	01401023	0	0	0,00	0,00	0,00	0,00	0	0		0	0	0	0,0	0	0
187 B/U	01401012	0	0	0,00	0,00	0,00	0,00	0	0		0	0	0	0,0	0	0
196 A/U	01401013	0	0	0,00	0,00	0,00	0,00	0	0		0	0	0	0,0	0	0
213 U	01401014	3	50 ± 2	0,67	2,00	7,20	14,00	100	67	>= 10 <sup>5</sup>	10	5,2	-35° - +80°	10,3	82	155
214 U	01401015	3	50 ± 2	0,00	0,00	0,00	0,00	0	0	>= 10 <sup>b</sup>	0	0	-35° - +80°	10,8	119	198
217 U	01401026	0	0	0,00	0,00	0,00	0,00	0	0		0	0	0	0,0	0	0
223 U	01401016	3	50 ± 2	0,00	0,00	0,00	0,00	0	0	>= 10 <sup>b</sup>	0	0	-35° - +80°	5,5	39	55
316 U	01401017	0	0	0,00	0,00	0,00	0,00	0	0		0	0	0	0,0	0	0

## PVC single cores

**H05V-U, H07V-U/R, H05V-K\*, H07V-K\***

**\*Also UL/CSA approved available**

### Technical data

acc. to DIN VDE 0281-3

### H05V-K and H05V-U

acc. to DIN VDE 0281 part 3, HD 21.3 S3 and IEC 60227-3

### Temperature range

flexing -5° C to +70° C

fixed installation -30° C to +80° C

### Nominal voltage

U<sub>0</sub>/U H05... = 300/500 V, H07... = 450/750 V

**Test voltage** H05... = 2000 V, H07... = 2500 V

### Application

For installation inside apparatus as well as for laying to the lightings, in dry rooms, production facilities, switch and distributor boards, tubes, under and in plaster.



### H05V-U

Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km	Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
01802001	0,5	2,2	4,80	8,00	01802032	1,5	2,8	14,40	20,00
01802011	0,75	2,2	7,20	11,00	01802048	2,5	3,4	24,00	31,00
01802024	1	2,4	9,60	14,00	01802058	4	3,9	38,00	46,00
01802032	1,5	2,8	14,40	20,00	01802072	6	4,4	58,00	67,00
01802048	2,5	3,4	24,00	31,00	01802080	10	5,6	96,00	109,00

Further dimensions and  
sheath colours available on request

### H07V-R

Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km	Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
01803003	16	7,2	154,00	185,00	01803020	120	17,4	1.152,00	1.260,00
01803005	25	8,9	240,00	290,00	01803023	150	19,4	1.440,00	1.540,00
01803008	35	10,0	336,00	390,00	01803025	185	22,0	1.776,00	1.940,00
01803011	50	12,1	480,00	525,00	01803028	240	25,0	2.304,00	2.550,00
01803014	70	13,5	672,00	735,00	01803029	300	27,0	2.880,00	3.180,00
01803017	95	15,8	912,00	1.010,00	01803040	400	o. r.	3.840,00	o. r.
					01803041	500	o. r.	4.800,00	o. r.

Further dimensions and  
sheath colours available on request

### standard core colours up to 2,5 mm²

o	blue RAL 5015
o	brown
o	darkblue RAL 5010
o	yellow*
o	grey
o	green*
o	green-yellow
o	orange
o	pink
o	red
o	black
o	violet
o	white

\* For these colours from 1,5 mm² no HAR approval

## PVC single cores

H05V-U, H07V-U/R, H05V-K\*, H07V-K\*

\*Also UL/CSA approved available

### H05V-K

Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
01801001	0,5	2,2	4,80	9,00
01801019	0,75	2,3	7,20	11,00
01801040	1	2,5	9,60	12,50

Further dimensions and  
sheath colours available on request

### H07V-K

Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km	Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
01801058	1,5	3,0	14,40	20,00	01801130	50	13,3	480,00	566,00
01801076	2,5	3,6	24,00	31,00	01801134	70	15,2	672,00	771,00
01801089	4	4,2	38,00	48,00	01801135	95	19,0	912,00	934,00
01801096	6	4,8	58,00	68,00	01801137	120	21,0	1.152,00	995,00
01801110	10	6,3	96,00	118,00	01801139	150	23,0	1.440,00	1.520,00
01801115	16	7,9	154,00	185,00	01801141	185	25,0	1.776,00	1.775,00
01801122	25	9,9	240,00	286,00	01801143	240	27,0	2.304,00	2.360,00
01801126	35	11,4	336,00	388,00	01801256	300	30,9	2.880,00	3.040,00

Further dimensions and  
sheath colours available on request

### standard core colours up to 2,5 mm²

o	blue RAL 5015
o	brown
o	darkblue RAL 5010
o	yellow**
o	grey
o	green**
o	green-yellow
o	orange
o	pink
o	red
o	black
o	violet
o	white

\* For these colours from 1,5 mm² no HAR approval

# Installation cables

## NYM-O/J

### multi core cable

#### Technical data

acc. to DIN VDE 0250

#### Temperature range

flexing -5° C to +70° C

fixed installation -40° C to +70° C

Nominal voltage  $U_0/U = 300/500$  V

#### Application

Applicable in the open and in dry, damp and wet zones. Not suitable for imbedding in concrete.



NYM-O					NYM-J				
Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km	Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
01701001	1X1,5	5,4	14,40	47,00	01701002	1X1,5	5,4	14,40	47,00
01701015	1X2,5	6,0	24,00	61,00	01701016	1X2,5	6,0	24,00	61,00
01701029	1X4	6,8	38,00	80,00	01701030	1X4	6,8	38,00	80,00
01701037	1X6	7,2	58,00	107,00	01701038	1X6	7,2	58,00	107,00
01701045	1X10	8,5	96,00	158,00	01701046	1X10	8,5	96,00	158,00
01701053	1X16	10,0	154,00	232,00	01701054	1X16	10,0	154,00	232,00
01701003	2X1,5	8,5	29,00	119,00	01701059	1X25	12,4	240,00	350,00
01701017	2X2,5	9,0	48,00	157,00	01701005	3X1,5	8,8	43,00	131,00
01701004	3X1,5	8,8	43,00	131,00	01701019	3X2,5	10,0	72,00	181,00
01701018	3X2,5	10,0	72,00	181,00	01701032	3X4	11,7	115,00	258,00
01701006	4X1,5	9,6	58,00	155,00	01701040	3X6	13,2	173,00	354,00
01701006	4X2,5	9,6	96,00	225,00	01701048	3X10	16,2	288,00	552,00
01701006	4X4	9,6	154,00	322,00	01701007	4X1,5	9,6	58,00	155,00
01701041	4X6	14,5	230,00	444,00	01701022	4X2,5	11,0	96,00	225,00
01701049	4X10	17,2	384,00	656,00	01701034	4X4	12,9	154,00	322,00
01701055	4X16	20,9	614,00	1.002,00	01701042	4X6	14,5	230,00	444,00
01701060	4X25	26,0	960,00	1.570,00	01701050	4X10	17,2	384,00	656,00
01701063	4X35	29,0	1.344,00	2.030,00	01701056	4X16	20,9	614,00	1.002,00
01701010	7X1,5	11,0	101,00	224,00	01701061	4X25	26,0	960,00	1.570,00
Further dimensions available on request					01701064	4X35	29,0	1.344,00	2.030,00
					01701009	5X1,5	10,2	72,00	180,00
					01701024	5X2,5	11,7	120,00	260,00
					01701036	5X4	14,2	192,00	479,00
					01701044	5X6	15,5	288,00	611,00
					01701052	5X10	18,9	480,00	880,00
					01701058	5X16	23,4	768,00	1.249,00
					01701062	5X25	28,8	1.200,00	1.930,00
					01701011	7X1,5	11,0	101,00	224,00
					01701025	7X2,5	13,0	168,00	331,00
					01701012	8X1,5	13,0	115,00	351,00
					01701013	10X1,5	13,3	144,00	380,00
					01701014	12X1,5	14,0	173,00	412,00

## Installation cables

### NYM(St)-J

#### multi core cable aluminium foil screened

##### Technical data

acc. to DIN VDE 0250

##### Temperature range

flexing -5° C to +70° C

fixed installation -40° C to +70° C

**Nominal voltage**  $U_0/U = 300/500$  V

##### Application

Applicable in the open and in dry, damp and wet zones. Not suitable for imbedding in concrete. Additional static screen for limitation of electromagnetic fields of current carrying conductors.



Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km	Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
01703001	3X1,5/1,5	10,5	51,00	154,00	01703008	3X4/1,5	13,5	120,00	290,00
01703002	4X1,5/1,5	11,5	63,00	184,00	01703009	4X4/1,5	14,5	159,00	359,00
01703003	5X1,5/1,5	12,0	80,00	212,00	01703010	5X4/1,5	16,5	197,00	479,00
01703004	7X1,5/1,5	13,0	106,00	266,00	01703011	3X6/1,5	15,0	178,00	379,00
01703005	3X2,5/1,5	12,0	77,00	205,00	01703012	4X6/1,5	16,5	235,00	477,00
01703006	4X2,5/1,5	13,0	101,00	256,00	01703013	5X6/1,5	17,5	293,00	567,00
01703007	5X2,5/1,5	13,5	125,00	292,00	01703014	5X10/1,5	21,5	485,00	863,00
Further dimensions available on request					01703015	5X16 RM/2,5	26,0	773,00	1.347,00
					01703016	5X25 RM/2,5	31,5	1.025,00	2.023,00

## Installation cables

### NYIF-O/J tape conduit

**Technical data**  
DIN VDE 0250 part 201  
**Nominal voltage** 230/400 V

**Application**  
For installation in and under plaster in dry rooms, cavities of walls and ceilings, only if these are inflammable.



NYIF-O					NYIF-J				
Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km	Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
01704001	2X1,5	12,0	29,00	102,00	01704002	3X1,5	19,0	43,00	115,00
01704003	3X1,5	19,0	43,00	115,00	01704006	3X2,5	21,5	72,00	160,00
Further dimensions available on request					01704004	4X1,5	26,0	58,00	160,00
					01704005	5X1,5	33,0	72,00	250,00
					01704007	5X2,5	37,0	120,00	120,00

## Installation cables

### YR bell cable

**Technical data**  
DIN VDE 0250 part 201  
**Nominal voltage** 230/400 V

**Application**  
For installation in and under plaster in dry rooms, cavities of walls and ceilings, only if these are inflammable.



Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km	Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
01706001	2X0,8	4,0	9,60	25,00	01706007	10X0,8	7,6	48,00	98,00
01706002	3X0,8	4,4	14,40	32,00	01706008	12X0,8	7,7	58,00	106,00
01706003	4X0,8	4,9	19,20	40,00	01706009	14X0,8	8,2	67,00	122,00
01706004	5X0,8	5,4	24,00	50,00	01706010	16X0,8	8,6	77,00	136,00
01706005	6X0,8	5,8	28,80	58,00	01706011	20X0,8	9,1	96,00	173,00
01706006	8X0,8	6,5	38,00	75,00	Further dimensions available on request				

## PVC cables for industrial application

### H03VH-H - HAR PVC twin cable

**Sheath colours** white, black

#### Technical data

DIN VDE 0281

#### Temperature range

flexing -5° C to +70° C

fixed installation -40° C to +70° C

**Nominal voltage**  $U_0/U = 300/300$  V

**Test voltage** 2000 V

#### Application

Especially suited for appliances with very low mechanical stress in households and offices to connect simple appliances, e.g. kitchen utensils, desk lamps, floor lamps, vacuum cleaners. Applicable for cooking and heating apparatus. The cable may not come in direct contact with hot parts of the apparatus and no other heat influences. Not for outdoor use.



Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
01805001	2X0,75	7,2	14,40	27,00

Further dimensions available on request

## PVC cables for industrial application

### H03VV-F - HAR PVC multi core cable

**Sheath colours** white, black

#### Technical data

acc. to DIN VDE 0281 part 5 and IEC 60227-5, HD 21.5 S3

#### Temperature range

flexing -5° C to +70° C

fixed installation -40° C to +70° C

**Nominal voltage**  $U_0/U = 300/300$  V

#### Max. permissible operating voltage

in three-phase and one-phase a. c. system  $U_0/U = 330/330$  V

in direct current-system  $U_0/U = 495/495$  V

**Test voltage** 2000 V

**Minimum bending radius** flexing 7,5 x cable diam.

#### Application

Especially suited for small appliances with very low mechanical stress in households and offices to connect simple appliances, e.g. kitchen utensils, desk lamps, floor lamps, vacuum cleaners, etc., as far as this cable meets the relevant equipment specifications. Not permitted to use with cooking or heating apparatus. Cables with cross-section 0,75 mm² are not suitable for outdoor use or use in industrial and agricultural machineries.



Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
01804018	2X0,75	5,5	14,40	43,00
01804006	3G0,75	5,9	21,60	53,00
01804011	4G0,75	6,4	29,00	64,00

Further dimensions available on request

## PVC cables for industrial application

### H03VVH2-F - HAR flat cable PVC multi core cable

Sheath colours white, black,

#### Technical data

##### Temperature range

flexing -5° C to +70° C

fixed installation -40° C to +70° C

**Nominal voltage**  $U_0/U = 300/300$  V

#### Application

Especially suited for small appliances with very low mechanical stress in households and offices to connect simple appliances, e.g. kitchen utensils, desk lamps, floor lamps, vacuum cleaners, etc., as far as this cable meets the relevant equipment specifications. Not permitted to use with cooking or heating apparatus. Cables with cross-section 0,75 mm<sup>2</sup> are not suitable for outdoor use or use in industrial and agricultural machineries.



Part N°	N° of cores x cross-sec. mm <sup>2</sup>	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
01806001	2X0,75	5,6	14,4	34,00

Further dimensions available on request

## PVC cables for industrial application

### A05VV-F, H05VV-F - HAR PVC multi core cable

Sheath colours white, black

#### Technical data

acc. to DIN VDE 0281 part 5 and IEC 60227-5, HD 21.5 S3

##### Temperature range

flexing -5° C to +70° C

fixed installation -40° C to +70° C

**Nominal voltage**  $U_0/U = 300/500$  V

max. permissible operating voltage

in three-phase and one-phase

AC system  $U_0/U = 330/550$  V

in direct current-system  $U_0/U = 495/825$  V

**Test voltage** 2000 V

#### Application

Especially suited for appliances with medium mechanical stress in households and offices, damp and wet zones, e.g. refrigerators and washing machines. Applicable for cooking and heating apparatus. The cable may not come in direct contact with hot parts of the apparatus and no other heat influences. Also suitable for fixed installation in furniture, decoration coverings and in hollow spaces of prefabricated building parts. Not for outdoor use or use in industrial and agricultural machineries.



A05VV-F					H05VV-F				
Part N°	N° of cores x cross-sec. mm <sup>2</sup>	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km	Part N°	N° of cores x cross-sec. mm <sup>2</sup>	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
01807037	7G1,5	11,5	101,00	209,00	01807039	2X2,5	9,3	48,00	126,00
					01807042	3G2,5	10,0	72,00	158,00
					01807043	4G2,5	11,0	96,00	196,00
					01807046	5G2,5	12,3	120,00	242,00

Further dimensions available on request



## Power cables 0,6/1 kV

### NYY-O/J

#### Technical data

DIN VDE 0276 part 603

#### Temperature range

flexing -5° C to +50° C

fixed installation -30° C to +70° C

Nominal voltage 0,6/1 kV

#### Application

Energy distribution cable for fixed installation in buildings, for direct laying in concrete, water and below ground.



#### NYY-O

Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
02001062	1X4 RE	8,0	38,00	130,00
02001190	1X6 RE	8,0	58,00	150,00
02001086	1X10 RE	9,0	96,00	200,00
02001095	1X16 RE	10,0	154,00	270,00
02001105	1X25 RM	12,0	240,00	400,00
02001115	1X35 RM	13,0	336,00	500,00
02001127	1X50 RM	15,0	480,00	650,00
02001137	1X70 RM	16,0	672,00	850,00
02001145	1X95 RM	19,0	912,00	1.150,00
02001152	1X120 RM	20,0	1.152,00	1.400,00
02001158	1X150 RM	22,0	1.440,00	1.700,00
02001163	1X185 RM	25,0	1.776,00	2.100,00
02001169	1X240 RM	27,0	2.304,00	2.650,00
02001175	1X300 RM	30,0	2.880,00	3.300,00
02001181	1X400 RM	34,0	3.840,00	4.150,00
02001182	1X500 RM	34,0	4.800,00	5.200,00
02001184	1X630 RM	44,0	6.048,00	6.650,00
02001001	2X1,5 RE	12,0	29,00	230,00
02001038	2X2,5 RE	13,0	48,00	270,00
02001064	2X4 RE	15,0	77,00	370,00
02001075	2X6 RE	16,0	115,00	450,00
02001087	2X10 RE	17,0	192,00	570,00
02001097	2X16 RE	19,0	307,00	720,00
02001107	2X25 RM	23,0	480,00	1.050,00
02001003	3X1,5 RE	13,0	43,00	250,00
02001042	3X2,5 RE	14,0	72,00	300,00
02001066	3X4 RE	15,0	115,00	400,00
02001088	3X10 RE	18,0	288,00	660,00
02001099	3X16 RE	20,0	461,00	880,00
02001110	3X25 RM	24,0	720,00	1.350,00
02001118	3X35 SM	25,0	1.008,00	1.500,00
02001130	3X50 SM	28,0	1.440,00	2.000,00
02001171	3X240 SM	50,0	6.912,00	8.300,00

Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
02001009	4X1,5 RE	13,0	58,00	300,00
02001187	4X2,5 RE	14,0	96,00	350,00
02001068	4X4 RE	16,0	154,00	480,00
02001079	4X6 RE	18,0	230,00	600,00
02001090	4X10 RE	20,0	384,00	800,00
02001101	4X16 RE	22,0	614,00	1.100,00
02001112	4X25 RM	26,0	960,00	1.600,00
02001191	4X35 SM	27,0	1.344,00	1.950,00
02001134	4X50 SM	31,0	1.920,00	2.550,00
02001142	4X70 SM	35,0	2.688,00	3.450,00
02001149	4X95 SM	40,0	3.648,00	4.600,00
02001156	4X120 SM	44,0	4.608,00	5.600,00
02001160	4X150 SM	48,0	5.760,00	7.000,00
02001167	4X185 SM	53,0	7.104,00	8.700,00
02001173	4X240 SM	60,0	9.216,00	11.300,00
02001014	7X1,5 RE	15,0	101,00	350,00
02001045	7X2,5 RE	16,0	168,00	420,00
02001017	10X1,5 RE	18,0	144,00	410,00
02001025	12X1,5 RE	19,0	173,00	460,00
02001033	14X1,5 RE	25,0	202,00	520,00

Further dimensions available on request

# Power cables 0,6/1 kV

## NYY-O/J

NYY-J									
Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km	Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
02001063	1X4 RE	8,0	38,00	130,00	02001004	3X1,5 RE	13,0	43,00	250,00
02001074	1X6 RE	8,0	58,00	150,00	02001040	3X2,5 RE	14,0	72,00	300,00
02001085	1X10 RE	9,0	96,00	200,00	02001067	3X4 RE	15,0	115,00	400,00
02001096	1X16 RE	10,0	154,00	270,00	02001078	3X6 RE	16,0	173,00	500,00
02001106	1X25 RM	12,0	240,00	400,00	02001089	3X10 RE	18,0	288,00	660,00
02001116	1X35 RM	13,0	336,00	500,00	02001100	3X16 RE	20,0	461,00	880,00
02001128	1X50 RM	15,0	480,00	650,00	02001109	3X25 RM	24,0	720,00	1.350,00
02001138	1X70 RM	16,0	672,00	850,00	02001111	3X25 RM/16 RE	26,0	874,00	1.560,00
02001146	1X95 RM	19,0	912,00	1.150,00	02001119	3X35 SM	25,0	1.008,00	1.500,00
02001153	1X120 RM	20,0	1.152,00	1.400,00	02001120	3X35 SM/16 RE	27,0	1.162,00	1.800,00
02001159	1X150 RM	22,0	1.440,00	1.700,00	02001131	3X50 SM	28,0	1.440,00	2.000,00
02001164	1X185 RM	25,0	1.776,00	2.100,00	02001132	3X50 SM/25 RM	31,0	1.680,00	2.400,00
02001170	1X240 RM	27,0	2.304,00	2.650,00	00000000	3X70 SM	31,0	2.016,00	2.400,00
02001176	1X300 RM	30,0	2.880,00	3.300,00	02001141	3X70 SM/35 SM	34,0	2.352,00	3.100,00
02001182	1X400 RM	34,0	3.840,00	4.150,00	00000000	3X95 SM	34,1	2.736,00	3.300,00
02001002	2X1,5 RE	12,0	29,000	160,00	02001148	3X95 SM/50 SM	39,0	3.216,00	4.100,00
02001039	2X2,5 RE	13,0	48,000	195,00	00000000	3X120 SM	36,8	3.456,00	4.000,00
02001065	2X4 RE	15,0	77,000	270,00	02001155	3X120 SM/70 SM	42,0	4.128,00	5.100,00
02001076	2X6 RE	16,0	115,000	342,00	00000000	3X150 SM	40,1	4.320,00	4.900,00
02001098	2X16 RE	19,0	307,000	720,00	02001162	3X150 SM/70 SM	46,0	4.992,00	6.100,00
02001108	2X25 RM	23,0	480,000	1.050,00	00000000	3X185 SM	46,0	5.328,00	6.500,00
Further dimensions available on request					02001166	3X185 SM/95 SM	51,0	6.240,00	7.500,00
					02001216	3X240 SM	50,0	6.912,00	8.300,00
					02001172	3X240 SM/120 SM	57,0	8.064,00	10.000,00
					02001178	3X300 SM/150 SM	63,0	10.080,00	12.200,00

## Power cables 0,6/1 kV

### NYY-O/J

#### NYY-J

Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km	Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
02001010	4X1,5 RE	13,0	58,00	300,00	02001015	7X1,5 RE	15,0	101,00	350,00
02001192	4X2,5 RE	14,0	96,00	350,00	02001046	7X2,5 RE	16,0	168,00	450,00
02001069	4X4 RE	16,0	154,00	480,00	02001073	7X4 RE	19,0	269,00	650,00
02001080	4X6 RE	18,0	230,00	600,00	02001083	7X6 RE	21,0	403,00	850,00
02001091	4X10 RE	20,0	384,00	800,00	02001094	7X10 RE	24,0	672,00	1.250,00
02001102	4X16 RE	22,0	614,00	1.100,00	02001016	8X1,5 RE	16,0	115,00	370,00
02001113	4X25 RM	26,0	960,00	1.600,00	02001023	10X1,5 RE	18,0	144,00	410,00
02001189	4X35 SM	27,0	1.344,00	1.950,00	02001050	10X2,5 RE	20,0	240,00	530,00
02001135	4X50 SM	31,0	1.920,00	2.550,00	02001024	12X1,5 RE	19,0	173,00	460,00
02001143	4X70 SM	35,0	2.688,00	3.450,00	02001051	12X2,5 RE	20,0	288,00	600,00
02001150	4X95 SM	40,0	3.648,00	4.600,00	02001027	14X1,5 RE	19,0	202,00	520,00
02001157	4X120 SM	44,0	4.608,00	5.600,00	02001029	19X1,5 RE	21,0	274,00	650,00
02001161	4X150 SM	48,0	5.760,00	7.000,00	02001054	19X2,5 RE	23,0	456,00	870,00
02001168	4X185 SM	53,0	7.104,00	8.700,00	02001030	21X1,5 RE	22,0	302,00	750,00
02001174	4X240 SM	60,0	9.216,00	11.300,00	02001055	21X2,5 RE	25,0	504,00	1.000,00
02001019	5X1,5 RE	13,0	72,00	330,00	02001031	24X1,5 RE	23,0	346,00	850,00
02001044	5X2,5 RE	15,0	120,00	400,00	02001057	24X2,5 RE	26,0	576,00	1.100,00
02001071	5X4 RE	18,0	192,00	550,00	02001033	30X1,5 RE	25,0	432,00	950,00
02001082	5X6 RE	19,0	288,00	700,00	02001058	30X2,5 RE	27,0	720,00	1.300,00
02001093	5X10 RE	21,0	480,00	950,00	02001035	40X1,5 RE	26,0	576,00	1.250,00
02001104	5X16 RE	24,0	768,00	1.300,00	02001060	40X2,5 RE	30,0	960,00	1.700,00
02001114	5X25 RM	29,0	1.200,00	2.150,00	02002016	52X1,5 RE	33,0	749,00	1.400,00
02001125	5X35 RM	33,0	1.680,00	2.700,00	02001037	61X1,5 RE	32,0	878,00	1.750,00
02001136	5X50 RM	37,0	2.400,00	3.500,00					

## Power cables 0,6/1 kV

### (N)YY-JZ-RF

#### green or black jacket

#### Technical data

Temperature range -5° C to +70° C

Nominal voltage 0,6/1 kV

#### Application

Energy distribution cable for fixed installation in buildings, for direct laying in concrete, water and below ground.



Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km	Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
02002001	3X1,50 RF	12,0	43,00	200,00	02002010	16X1,50 RF	20,0	230,00	580,00
02002002	4X1,50 RF	13,0	58,00	235,00	02002011	19X1,50 RF	21,0	274,00	650,00
02002003	5X1,50 RF	14,0	72,00	270,00	02002012	21X1,50 RF	22,0	302,00	770,00
02002004	7X1,50 RF	15,0	101,00	325,00	02002013	24X1,50 RF	24,0	346,00	860,00
02002005	8X1,50 RF	16,0	115,00	350,00	02002014	30X1,50 RF	26,0	432,00	1.020,00
02002007	10X1,50 RF	18,0	144,00	420,00	02002015	40X1,50 RF	29,0	576,00	1.300,00
02002008	12X1,50 RF	18,0	173,00	470,00	02002016	52X1,50 RF	33,0	749,00	1.650,00
02002009	14X1,50 RF	19,0	202,00	525,00	02002018	61X1,50 RE	35,0	878,00	1.950,00

Further dimensions available on request

## Power cables 0,6/1 kV

**NYCY**

**with concentric conductor**

### Technical data

DIN VDE 0276 part 603

### Temperature range

flexing -5° C to +50° C

fixed installation -30° C to +70° C

**Nominal voltage** 0,6/1 kV

### Application

Energy distribution cable for fixed installation in buildings, for direct laying in concrete, water and below ground.



Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km	Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
02003001	2X1,5 RE/1,5	13,0	52,00	230,00	02003060	12X6 RE/10	27,0	810,00	1.350,00
02003011	2X2,5 RE/2,5	14,0	80,00	300,00	02003029	1X10 RE/10	11,0	216,00	315,00
02003022	2X4 RE/4	16,0	123,00	380,00	02003044	2X10 RE/10	20,0	312,00	650,00
02003026	2X6 RE/6	18,0	182,00	480,00	02003036	3X10 Re/10	20,5	408,00	770,00
00000000	2X10 RE/10	22,0	312,00	520,00	02003047	4X10 RE/10	21,0	504,00	5.820,00
00000000	2X16 RE/16	25,3	489,00	720,00	02003030	1X16 RE/16	12,0	336,00	435,00
02003002	3X1,5 RE/1,5	14,0	66,00	300,00	02003045	2X16 RE/16	22,0	489,00	900,00
02003012	3X2,5 RE/2,5	14,0	104,00	350,00	02003046	3X16 RE/16	23,0	843,00	1.100,00
02003023	3X4 RE/4	16,0	161,00	470,00	02003048	4X16 RE/16	23,0	796,00	1.250,00
02003027	3X6 RE/6	18,0	240,00	580,00	02003043	10x2x1,5 RE/10	33,0	403,00	1.210,00
02003036	3X10 RE/10	20,5	408,00	680,00	02003061	20x2x1,5 RE/10	33,1	696,00	968,00
00000000	3X16 RE/16	24,6	643,00	1.010,00	02003034	20x2x2,5 RE/25	39,0	1.204,00	2.405,00
02003003	4X1,5 RE/1,5	14,0	81,00	330,00	02003035	50x2x1,5 RE/35	54,0	1.933,00	4.010,00
02003013	4X2,5 RE/2,5	16,0	128,00	400,00					
02003024	4X4 RE/4	18,0	200,00	550,00					
02003028	4X6 RE/6	19,0	297,00	650,00					
00000000	4X10 RE/10	23,5	504,00	504,00					
00000000	4X16 RE/16	25,9	796,00	1.060,00					
02003004	5X1,5 RE/1,5	15,0	95,00	330,00					
02003014	5X2,5 RE/2,5	16,0	152,00	400,00					
02003037	5X4 RE/4	19,0	238,00	550,00					
02003038	5X6 RE/6	20,0	355,00	4.700,00					
02003006	7X1,5 RE/2,5	16,0	133,00	430,00					
02003015	7X2,5 RE/2,5	17,0	200,00	530,00					
02003025	7X4 RE/4	21,0	315,00	730,00					
02003033	7X6 RE/6	22,0	470,00	790,00					

Further dimensions available on request

## Power cables 0,6/1 kV

### NYCWY

with concentric conductor corrugated Cu-wires

#### Technical data

DIN VDE 0276 part 603

#### Temperature range

flexing -5° C to +50° C

fixed installation -30° C to +70° C

**Nominal voltage** 0,6/1 kV

**Test voltage** 4 kV

#### Application

Energy distribution cable for fixed installation in buildings, for direct laying in concrete, water and below ground.



Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km	Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
02004032	3X6 RE/6	18,0	245,00	570,00	02004022	3X120 SM/70	41,0	4.236,00	5.000,00
02004001	2X10 RE/10	19,0	312,00	644,00	02004033	3X120 SM/120	43,0	4.786,00	5.700,00
02004002	3X10 RE/10	20,0	408,00	728,00	02004023	4X120 SM/70	46,0	5.388,00	6.400,00
02004030	3X10 RE/10 bl	20,0	408,00	728,00	02004024	3X150 SM/70	46,0	5.100,00	6.000,00
02004003	4X10 RE/10	21,0	504,00	864,00	02004034	3X150 SM/150	47,0	5.970,00	7.000,00
02004031	2X16 RE/16	21,0	489,00	884,00	02004025	4X150 SM/70	50,0	6.540,00	7.700,00
02004004	3X16 RE/16	22,0	643,00	1.006,00	02004026	3X185 SM/95	51,0	6.383,00	7.500,00
02004005	4X16 RE/16	23,0	796,00	1.220,00	02004028	3X240 SM/120	56,0	8.242,00	9.828,00
02004006	3X25 RM/16	26,0	902,00	1.443,00	02004029	4X240 SM/120	62,0	10.546,00	11.000,00
02004007	3X25 RM/25	26,0	1.003,00	1.516,00					
02004008	4X25 RM/16	28,0	1.142,00	1.730,00					
02004009	4X25 RM/25	29,0	1.243,00	1.900,00					
02004010	3X35 SM/16	27,0	1.190,00	1.737,00					
02004011	3X35 SM/35	27,0	1.402,00	1.850,00					
02004012	4X35 SM/16	28,0	1.526,00	2.100,00					
02004013	3X50 SM/25	30,0	1.723,00	2.200,00					
02004014	3X70 SM/35	33,0	2.410,00	3.000,00					
02004015	3X95 SM/50	38,0	3.296,00	4.000,00					
02004016	3X50 SM/50	30,0	2.000,00	2.400,00					
02004017	4X50 SM/25	32,0	2.203,00	2.750,00					
02004018	4X70 SM/35	36,0	3.082,00	3.750,00					
02004019	3X70 SM/70	33,0	2.796,00	3.300,00					
02004020	4X95 SM/50	42,0	4.208,00	5.100,00					
02004021	3X95 SM/95	38,0	3.791,00	4.500,00					

Further dimensions available on request

## Power cables 0,6/1 kV

NAYY-O/J

aluminium conductor

### Technical data

DIN VDE 0276 part 603

#### Temperature range

flexing -5° C to +50° C

fixed installation -30° C to +70° C

**Nominal voltage** 0,6/1 kV

**Test voltage** 4 kV

### Application

Energy distribution cable for fixed installation in buildings, for direct laying in concrete, water and below ground.



Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km	Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
02005025	1X185 RM	25,0	537,00	950,00	02005018	4X70 SM	34,0	812,00	1.750,00
02005026	1X240 RM	27,0	696,00	1.150,00	02005009	4X95 SE	38,0	1.102,00	2.200,00
02005027	1X300 RM	30,0	870,00	1.350,00	02005020	4X95 SM	38,0	1.102,00	2.200,00
02005037	1X400 RM	33,0	1.160,00	1.690,00	02005011	4X120 SE	41,0	1.392,00	2.700,00
02005031	3X240 SM	89,9	o. r.	o. r.	02005022	4X120 SM	41,0	1.392,00	2.700,00
02005032	3X300 SM	98,3	o. r.	o. r.	02005012	4X150 SE	45,0	1.740,00	3.250,00
02005001	4X25 RE	25,0	290,00	950,00	02005024	4X150 SM	45,0	1.740,00	3.250,00
02005003	4X35 RE	28,0	406,00	1.150,00	02005015	4X185 SE	50,0	2.146,00	4.000,00
02005034	4X35 SM	28,0	406,00	1.150,00	02005017	4X240 SE	56,0	2.784,00	5.000,00
02005004	4X50 SE	31,0	580,00	1.500,00	02005035	4X240 SM	56,0	2.784,00	5.000,00
02005006	4X70 SE	34,0	812,00	1.750,00					

Further dimensions available on request

## Power cables 0,6/1 kV

**NAYCWY**

**with concentric conductor**

### Technical data

DIN VDE 0276 part 603

#### Temperature range

flexing -5° C to +50° C

fixed installation -30° C to +70° C

**Nominal voltage** 0,6/1 kV

**Test voltage** 4 kV

### Application

Energy distribution cable for fixed installation in buildings, for direct laying in concrete, water and below ground.



Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Cu weight kg/km	Al weight kg/km	Weight ca. kg/km
02006001	3X35 SE/35	27,0	240,00	385,00	1.200,00
02006002	3X50 SE/50	28,0	340,00	435,00	1.350,00
02006003	3X70 SE/70	32,0	475,00	609,00	1.850,00
02006004	3X95 SE/95	36,0	640,00	827,00	2.400,00
02006005	3X120 SE/120	39,0	800,00	1.044,00	2.850,00
02006006	3X150 SE/150	43,0	1.000,00	1.305,00	3.400,00
02006007	3X185 SE/185	47,0	1.230,00	1.610,00	4.100,00

Further dimensions available on request



## Power cables 6/10 kV, 12/20 kV, 18/30 kV

N2XSY, N2XS2Y, N2XS(F)2Y, N2XSEY  
NA2XSY, NA2XS2Y, NA2XS(F)2Y  
XLPE-insulation

### Technical data

acc. to DIN VDE 0276

### Application

Energy distribution cable for fixed installation in buildings, for direct laying in concrete, water and below ground.



Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km	Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
02103001	1x25 RM/16	24,0	422,00	850,00	02103017	3x35 RM/16	45,0	1.209,00	2.460,00
02103002	1x35 RM/16	25,0	518,00	950,00	02104001	1x25 RM/16	24,0	422,00	800,00
02103003	1x50 RM/16	26,0	662,00	1.100,00	02104002	1x35 RM/16	25,0	518,00	900,00
02103004	1x70 RM/16	27,0	854,00	1.250,00	02104003	1x50 RM/16	26,0	662,00	1.050,00
02103005	1x95 RM/16	29,0	1.094,00	1.550,00	02104004	1x70 RM/16	27,0	854,00	1.200,00
02103006	1x120 RM/16	30,0	1.334,00	1.800,00	02104005	1x95 RM/16	29,0	1.094,00	1.500,00
02103007	1x150 RM/16	32,0	1.723,00	2.150,00	02104006	1x120 RM/16	30,0	1.334,00	1.750,00
02103016	1x150 RM/25	34,0	1.723,00	2.250,00	02104007	1x150 RM/16	32,0	1.622,00	2.000,00
02103008	1x185 RM/16	34,0	1.958,00	2.450,00	02104008	1x150 RM/25	32,0	1.723,00	2.100,00
02103009	1x185 RM/25	34,0	2.059,00	2.550,00	02104009	1x185 RM/16	34,0	1.958,00	2.350,00
02103010	1x240 RM/16	36,0	2.486,00	3.000,00	02104010	1x185 RM/25	34,0	2.059,00	2.450,00
02103011	1x240 RM/25	36,0	2.587,00	3.100,00	02104011	1x240 RM/16	36,0	2.486,00	2.900,00
02103012	1x300 RM/25	39,0	3.163,00	3.700,00	02104012	1x240 RM/25	36,0	2.587,00	3.000,00
02103013	1x400 RM/35	42,0	4.234,00	4.600,00	02104013	1x300 RM/25	39,0	3.163,00	3.600,00
02103014	1x500 RM/35	45,0	5.194,00	5.650,00	02104014	1x400 RM/35	42,0	4.234,00	4.500,00
02103015	1x500 RM/70	46,0	5.580,00	6.000,00	02104015	1x500 RM/35	45,0	5.194,00	5.500,00
Further dimensions available on request					02104016	1x630 RM/35	48,0	6.442,00	7.000,00

## Power cables 6/10 kV, 12/20 kV, 18/30 kV

### NYFGY

#### Technical data

**Permissible conductor temperature** +70° C

**Minimum laying temperature** -5° C

**Min. permissible bending radius** 15 x diam.

#### Application

Energy distribution cable for fixed installation in buildings, for direct laying in concrete, water and below ground.



Part N°	N° of cores x cross-sec. mm <sup>2</sup>	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
02101001	3,6/6kV 3X25 RM	37,0	720,00	2.500,00
02101002	3,6/6kV 3X35 RM	37,0	1.008,00	2.600,00
02101003	3,6/6kV 3X50 SM	39,0	1.440,00	3.100,00
02101004	3,6/6kV 3X70 SM	43,0	2.016,00	3.800,00
02101005	3,6/6kV 3X95 SM	46,0	2.736,00	4.700,00
02101006	3,6/6kV 3X120 SM	49,0	3.456,00	5.600,00
02101007	3,6/6kV 3X150 SM	52,0	4.320,00	6.500,00
02101008	3,6/6kV 3X185 SM	55,0	5.328,00	7.800,00
02101009	3,6/6kV 3X240 SM	59,0	6.912,00	9.900,00
02101010	3,6/6kV 3X300 SM	63,0	8.640,00	11.800,00

Further dimensions available on request

## Motor and feedback cables bohmflex Motor PUR-HF UL-CSA low capacity

### Technical data

acc. to DIN VDE 0245 and 0281

#### Temperature range

flexing -35° C to +80° C

fixed installation -50° C to +90° C

**Permissible operating temperature** at conductor +90° C

#### Nominal voltage

$U_0/U = 0,6/1$  kV

#### Test voltage

cond. cond.: 4000 V

cond. shield : 1500 V

**Minimum bending radius** for dynamic 7,5x c.d.

for static approx. 5 x cable diam.

### Application

Usable in dry, damp or wet areas, for shielded connection of motor cable with control cores for temperature sensors or brake for EMC-compatible connecting between drivers and frequency converter for high requirements in static or drag chain applications, moving drive systems and in the field of robotic . PUR version with resistance to oils, fat, petrol, ozone and oxygen, UV-radiation, hydrolysis, microbial attacks, water and weathering effects.



### Static application Low capacity

Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
05100015	4g1,5	8,6	94,00	131,00
05100025	4g2,5	10,7	135,00	196,00
05100040	4g4	10,7	205,50	278,00
05100060	4g6	14,40	315,00	374,00
05100100	4g10	17,5	488,00	648,00
05100160	4g16	21,20	769,00	1046,00
05100250	4g25	25,20	1110,00	1640,00
05100350	4g35	29,20	1510,00	2310,00

### Dynamic application Low capacity

Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km	Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
05101015	4g1,5	9,0	90,00	159,00	05111015	4g1,5+2x1	11,6	158,00	240,00
05101025	4g2,5	10,6	135,00	235,00	005111025	4g2,5+2x1,5	13,4	189,00	310,00
05101040	4g4	11,9	205,50	323,00	05111040	4g4+2x1,5	14,8	260,50	408,00
05101060	4g6	14,7	315,00	464,00	05111060	4g6+2x1,5	16,8	365,00	540,00
05101100	4g10	17,5	488,00	672,00	05111100	4g10+2x1,5	19,9	560,00	782,00
05101160	4g16	21,6	769,00	1089,00	05111160	4g16+2x1,5	22,5	816,00	1101,00
05101250	4g25	25,4	1100,00	1523,00	05111250	4g25+2x1,5	26,2	1172,00	1490,00
05101350	4g35	29,7	1510,00	2080,00	05111350	4g35+2x1,5	29,8	1595,00	2015,00

Further dimensions available on request

## Motor and feedback cables

### bohmflex Feedback PUR-HF UL-CSA

#### Technical data

adapted to DIN VDE 0245, 0821

#### Temperature range

flexing - 40° C to +80° C

fixed installation -50° C to +80° C

**Nominal voltage** 0,6/ 1 kV

**Test voltage** 1500 V

#### Insulation resistance

min. 20 Mohm x km

#### Minimum bending radius

7,5 x cable diameter

#### Application

Stranded pairs and overall screened built according to system manufacturer specifications. Ultraflexible data cables developed according to the newest state of technology improvement. Low capacity core insulation and adhesion-free and cut- resistant PUR-outer jacket. Used for permanent flexible operations in machineries, machine tools, robotics, movable automated machinery parts as a transmission-cable for BUS-systems.



Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km	Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
00405002	[8x2x0,18]	7,8	54,00	88,00	00405021	[3(2x0,14)+4x0,14+2x0,5+4x0,25]	9,5	86,00	136,00
00405003	[4x2x0,34+4x0,5]	8,9	83,00	123,00	00405022	[2x2x0,18]	5,0	24,00	40,00
00405004	[3x(2x0,14)+2x(0,5)]	9,0	74,00	109,00	00405023	[4x2x0,18]	6,4	35,00	57,00
00405005	[3x(2x0,14)+4x0,14+2x0,5]	8,9	74,00	106,00	00405024	[12x0,22]	6,9	65,00	79,00

Further dimensions available on request

## Halogen-free cables and wires

### H05Z-U, H07Z-U/R, H05Z-K, H07Z-K single cores

#### Technical data

**Temperature range** -40° C to + 90 °C

#### Nominal voltage

H05... = 300/500 V

H07... = 450/750 V

#### Application

Fire- and flame-resistant, halogen-free installation wires for internal wiring of tools and appliances as well as for installation in conduits and pipes on, in and under plaster.



H05Z-U					H05Z-K				
Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km	Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
01617001	0,5	2,6	5,00	9,00	01618114	0,5	2,6	4,80	9,00
01617002	0,75	2,8	7,50	11,00	01618105	0,75	2,8	7,20	11,00
01617003	1	3,0	10,00	13,00	01618011	1	2,9	9,60	14,00
H07Z-U/R					H07Z-K				
01617030	1,5	3,3	15,00	18,00	01618094	1,5	3,5	14,40	20,00
01617005	2,5	3,7	25,00	27,00	01618109	2,5	4,0	24,00	30,00
01617006	4	4,2	40,00	45,00	01618029	4	4,6	38,00	45,00
01617007	6	4,7	60,00	65,00	01618033	6	4,6	58,00	45,00
01617008	10	5,8	100,00	103,00	01618061	10	6,8	96,00	110,00
01617009	16	7,4	160,00	162,00	01618042	16	8,2	154,00	170,00
01617010	25	9,2	250,00	245,00	01618113	25	10,4	240,00	260,00
01617011	35	10,4	350,00	310,00	01618110	35	11,9	336,00	360,00
01617012	50	12,2	500,00	450,00	01618051	50	13,7	480,00	500,00
01617013	70	14,4	700,00	640,00	01618060	70	16,4	672,00	700,00
01617014	95	16,0	950,00	880,00	01618053	95	18,2	912,00	950,00
01617015	120	18,2	1.200,00	1.185,00	01618065	120	20,2	1.152,00	1.200,00
01617016	150	20,2	1.500,00	1.350,00	01618111	150	22,7	1.440,00	1.500,00
01617017	185	22,7	1.850,00	1.670,00	01618067	185	25,2	1.776,00	1.850,00
01617018	240	25,5	2.400,00	2.270,00	01618068	240	28,5	2.304,00	2.400,00
01617019	300	28,3	2.880,00	3.200,00	Further dimensions available on request				
01617020	400	32,3	3.840,00	4.200,00					

## Halogen-free cables and wires

### NSHXAFö - 1,8/3 kV - 3,6/6 kV special rubber-insulated cable

#### Technical data

Temperature range -25° C to + 80° C

#### Application

For use in means of transportation, e.g. in railway vehicles and buses. It has to be considered that electrical circuits up to 1000 V are short-circuit proof.



NSHXAFö - 1,8/3 kV					NSHXAFö - 3,6/6 kV				
Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km	Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
01623001	1,5	7,0	14,40	60,00	01647002	1X185	33,0	1.776,00	2.225,00
01623002	2,5	7,5	24,00	70,00	01647001	1X240	33,0	2.304,00	2.900,00
01623003	4	9,0	38,00	90,00					
01623004	6	9,5	58,00	120,00					
01623005	10	11,0	96,00	180,00					
01623006	16	13,0	154,00	250,00					
01623007	25	15,0	240,00	390,00					
01623008	35	16,5	336,00	470,00					
01623009	50	18,0	480,00	625,00					
01623010	70	20,5	672,00	880,00					
01623011	95	24,0	912,00	1.190,00					
01623012	120	26,0	1.152,00	1.430,00					
01623013	150	28,0	1.440,00	1.750,00					
01623014	185	31,0	1.776,00	2.160,00					
01623015	240	34,5	2.304,00	2.640,00					
01623016	300	38,0	2.880,00	3.178,00					

Further dimensions available on request

## Halogen-free cables and wires

### HMH-JZ

#### flexible control cable

#### Technical data

##### Temperature range

flexing -5° C to +70° C

fixed installation -40° C to +70° C

**Nominal voltage**  $U_0/U = 300/500$  V

#### Application

For fixed indoor installation in dry and wet zones, in, on and under plaster and in walls. Further use for outdoor installation, if the wire is protected against direct sun irradiation. Not suitable for direct laying below ground.



Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km	Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
01619029	2X1 OZ	6,3	19,20	66,00	01619048	2X1,5 OZ	7,2	29,00	100,00
01619108	3X1	6,7	29,00	90,00	01619049	3X1,5	7,9	43,00	120,00
01619031	4X1	7,3	38,40	120,00	01619050	4X1,5	8,6	58,00	155,00
01619032	5X1	8,0	48,00	146,00	01619051	5X1,5	9,4	72,00	200,00
01619033	7X1	10,0	67,00	210,00	01619052	7X1,5	11,6	101,00	208,00
01619034	8X1	11,0	77,00	225,00	01619053	8X1,5	12,9	115,00	340,00
01619035	10X1	12,3	96,00	270,00	01619054	10X1,5	14,2	144,00	360,00
01619036	12X1	12,4	115,00	303,00	01619055	12X1,5	14,5	173,00	375,00
01619103	14X1	11,9	134,00	249,00	01619056	16X1,5	15,2	230,00	440,00
01619037	16X1	13,6	154,00	406,00	01619057	18X1,5	17,5	259,00	590,00
01619038	18X1	15,0	173,00	425,00	01619058	20X1,5	18,6	288,00	680,00
01619039	20X1	16,0	192,00	505,00	01619059	25X1,5	21,5	360,00	801,00
01619040	25X1	18,0	240,00	600,00	01619060	30X1,5	19,0	432,00	940,00
01619041	30X1	19,0	308,00	732,00	01619061	34X1,5	24,3	490,00	1.050,00
01619042	34X1	20,8	326,00	776,00	01619062	37X1,5	24,3	533,00	1.140,00
01619043	37X1	20,8	355,00	833,00	01619063	41X1,5	26,5	590,00	1.280,00
01619044	41X1	22,7	394,00	925,00	01619064	42X1,5	23,6	605,00	1.340,00
01619045	42X1	22,7	403,00	950,00					
01619046	50X1	22,9	480,00	1.100,00					
01619047	52X1	24,0	499,00	1.300,00					

Further dimensions available on request

## Halogen-free cables and wires

### HMH-JZ

#### flexible control cable

Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km	Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
01619065	2X2,5 OZ	8,0	48,00	150,00	01619078	2X4 OZ	9,8	77,00	199,00
01619066	3X2,5	8,5	72,00	180,00	01619079	3X4	11,2	115,00	282,00
01619067	4X2,5	9,5	96,00	236,00	01619080	4X4	11,7	154,00	369,00
01619068	5X2,5	10,7	120,00	296,00	01619081	5X4	13,2	192,00	444,00
01619069	7X2,5	13,0	168,00	363,00	01619082	7X4	16,0	269,00	525,00
01619070	8X2,5	14,0	192,00	378,00	01619083	8X4	17,8	307,00	603,00
01619071	10X2,5	15,8	240,00	444,00	01619084	10X4	19,6	384,00	798,00
01619072	12X2,5	16,3	288,00	571,00	01619085	12X4	20,2	461,00	984,00
01619073	16X2,5	18,2	384,00	730,00	01619086	16X4	22,8	614,00	1.350,00
01619074	18X2,5	19,4	432,00	800,00	01619087	18X4	24,2	691,00	1.510,00
01619075	20X2,5	20,6	480,00	1.070,00	01619088	2X6 OZ	12,0	115,00	266,00
01619076	25X2,5	23,7	600,00	1.100,00	01619089	3X6	12,7	173,00	399,00
01619077	30X2,5	24,9	720,00	1.280,00	01619090	4X6	14,1	230,00	590,00
Further dimensions available on request					01619091	5X6	15,8	288,00	715,00
					01619092	7X6	17,6	403,00	963,00
					01619093	2X10 OZ	15,0	192,00	490,00
					01619094	3X10	16,2	288,00	750,00
					01619095	4X10	18,5	384,00	908,00
					01619096	5X10	20,6	480,00	1.120,00
					01619097	7X10	23,0	672,00	1.460,00
					01619098	2X16 OZ	17,3	307,00	665,00
					01619099	3X16	18,7	461,00	998,00
					01619100	4X16	22,3	614,00	1.338,00
					01619101	5X16	25,0	768,00	1.685,00
					01619117	4X25	27,7	960,00	1.660,00
					01619118	5X35	37,7	1.680,00	2.765,00
					01619107	4X50	37,6	1.920,00	2.811,00
					01619111	4X70	44,2	2.688,00	4.295,00
					01619112	4X95	51,2	3.648,00	5.817,00



# Halogen-free cables and wires

## HMH-C-JZ

### EMC-type Cu-screened flexible control cable

#### Technical data

##### Temperature range

flexing -5° C to +70° C

fixed installation -40° C to +70° C

**Nominal voltage**  $U_0/U = 300/500$  V

#### Application

For fixed indoor installation in dry and wet zones, in, on and under plaster and in walls. Further use for outdoor installation, if the wire is protected against direct sun irradiation. Not suitable for direct laying below ground.



Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km	Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
01620001	2X0,5 OZ	7,9	36,00	80,00	01620031	3X2,5	12,5	148,50	211,00
01620002	3X0,5	8,1	45,50	106,00	01620032	4X2,5	13,9	174,20	356,00
01620003	4X0,5	8,5	55,00	123,00	01620033	5X2,5	15,1	200,80	386,00
01620004	5X0,5	9,7	66,00	134,00	01620034	7X2,5	16,3	289,00	198,00
01620005	7X0,5	9,9	80,50	160,00	01620035	12X2,5	22,0	477,30	911,00
01620006	12X0,5	12,4	138,50	237,00	01620036	4X4	15,6	237,00	458,00
01620007	2X0,75 OZ	8,1	45,00	115,00	01620037	5X4	16,9	328,00	532,00
01620008	3X0,75	9,2	52,00	119,00	01620038	7X4	22,8	388,00	766,00
01620009	4X0,75	9,8	67,00	192,00	01620039	4X6	17,1	318,00	611,00
01620010	5X0,75	10,8	75,00	165,00	01620040	5X6	20,3	453,00	770,00
01620011	7X0,75	12,4	96,00	210,00	01620041	7X6	24,8	524,70	1.035,00
01620012	12X0,75	13,4	177,00	313,00	01620042	4X10	18,6	486,00	785,00
01620013	18X0,75	15,3	243,00	456,00	01620043	5X10	20,7	611,20	855,00
01620014	25X0,75	17,5	307,30	575,00	01620044	7X10	23,2	820,50	1.308,00
01620015	2X1 OZ	8,4	51,00	127,00	01620045	4X16	21,8	830,00	882,00
01620016	3X1	9,6	65,30	132,00	01620046	5X16	24,3	1.050,70	1.293,00
01620017	4X1	10,4	78,10	163,00	01620050	4X25	33,0	1.310,00	2.028,00
01620018	5X1	11,4	89,40	187,00	01620051	4X35	34,8	1.690,00	2.542,00
01620019	7X1	13,7	115,00	255,00	01620054	4X50	39,2	2.315,00	3.550,00
01620020	12X1	14,2	188,10	352,00	01620053	5X35	39,0	1.930,00	3.180,00
01620021	18X1	16,6	286,00	514,00	01620052	4x70	45,3	3.020,00	4.939,00
01620022	25X1	19,6	388,50	677,00					
01620023	2X1,5 OZ	9,9	77,00	172,00					
01620024	3X1,5	11,1	83,00	187,00					
01620025	4X1,5	12,1	102,00	217,00					
01620026	5X1,5	13,9	125,00	265,00					
01620027	7X1,5	16,7	196,00	392,00					
01620028	12X1,5	17,3	280,00	505,00					
01620029	18X1,5	20,0	389,00	671,00					
01620030	25X1,5	24,3	535,00	955,00					

Further dimensions available on request

## Halogen-free cables and wires

### JE-LiHCH...Bd Si

#### Technical data

acc. to DIN VDE 0815

#### Temperature range

flexing -5° C to +50° C

fixed installation -30° C to +70° C

#### Operating voltage

peak value 225 V

#### Test voltage

core/core = 500 V, core/screen = 2000 V

#### Application

Preferably use for telephone transmission, measuring and signal purposes, telecommunication indoor installations. In special cases the outdoor installation is permitted, if the cable is protected against direct sun irradiation.



Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
01207001	2x2x0,5	7,8	48,00	92,00
01207002	4x2x0,5	10,5	84,00	155,00
01207003	8x2x0,5	13,0	152,00	300,00
01645004	12x2x0,5	15,6	193,00	319,00
01645005	16x2x0,5	15,6	165,00	315,00
01645006	20x2x0,5	17,0	292,00	437,00

Further dimensions available on request

## Halogen-free cables and wires

### JE-H(St)H...Bd Si

#### Technical data

adapted to DIN VDE 0815

#### Temperature range

flexing -5° C to +50° C

fixed installation -30° C to +70° C

#### Operating voltage 225 V

#### Test voltage

core/core = 500 V, core/screen = 2000 V

#### Application

Suitable for fixed installation, where in case of fire human life and material need to be protected, e.g. in hospitals, industrial complexes, public buildings, hotels, airports, underground railway networks.



Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
01635001	2x2x0,8	7,0	25,00	70,00
01635002	4x2x0,8	9,0	45,00	110,00
01635003	8x2x0,8	12,0	85,00	195,00
01635004	12x2x0,8	12,5	126,00	270,00
01635005	16x2x0,8	15,0	166,00	330,00
01635006	20x2x0,8	16,0	206,00	410,00
01635007	32x2x0,8	20,0	327,00	620,00
01635008	40x2x0,8	22,5	407,00	760,00

Further dimensions available on request

## Halogen-free cables and wires

### J-H(St)H...Bd - installation cable

#### Technical data

acc. to DIN VDE 0815

**Flame-retardant** IEC 332-3

#### Application

Flame-resistant telecommunication cable for fixed installation in dry and wet zones.



Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km	Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
01610001	2X2X0,6	7,5	14,00	60,00	01610014	2X2X0,8	8,5	25,00	69,00
01610002	4X2X0,6	9,0	25,00	92,00	01610015	4X2X0,8	10,5	45,00	110,00
01610003	6X2X0,6	10,0	37,00	101,00	01610016	6X2X0,8	12,0	65,00	152,00
01610004	10X2X0,6	12,0	59,00	146,00	01610017	8X2X0,8	1,0	82,00	185,00
01610013	16X2X0,6	14,0	93,00	220,00	01610018	10X2X0,8	15,0	106,00	230,00
01610005	20X2X0,6	15,0	126,00	270,00	01610019	16X2X0,8	17,5	166,00	360,00
01610012	24X2X0,6	16,0	139,00	300,00	01610020	20X2X0,8	19,0	206,00	420,00
01610006	30X2X0,6	17,5	172,00	322,00	01610021	24X2X0,8	20,5	246,00	510,00
01610007	40X2X0,6	20,0	229,00	408,00	01610022	30X2X0,8	22,0	307,00	599,00
01610008	50X2X0,6	21,5	286,00	491,00	01610023	40X2X0,8	25,5	407,00	787,00
01610010	60X2X0,6	23,5	342,00	573,00	01610024	50X2X0,8	27,5	508,00	973,00
01610011	80X2X0,6	26,5	455,00	756,00	01610025	60X2X0,8	29,5	608,00	1.121,00
01610009	100X2X0,6	29,5	568,00	917,00	01610026	80X2X0,8	33,5	809,00	1.476,00
Further dimensions available on request					01610027	100X2X0,8	37,5	1.010,00	1.805,00

## Halogen-free cables and wires

### J-2Y(St)H...St III Bd

#### Technical data

acc. to DIN VDE 0815

**Flame-retardant** IEC 332-3

#### Application

Telecommunication and IT-components connection cable up to 16 MBit/s (category 3).



Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km	Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
01624001	2x2x0,6	5,6	14,00	37,00	01624007	40x2x0,6	15,8	229,00	340,00
01624002	4x2x0,6	8,0	25,00	61,00	01624008	50x2x0,6	18,2	286,00	440,00
01624003	6x2x0,6	7,5	37,00	65,00	01624011	60x2x0,6	20,1	342,00	500,00
01624004	10x2x0,6	8,8	69,00	100,00	01624009	80x2x0,6	21,9	455,00	650,00
01624005	20x2x0,6	10,0	116,00	215,00	01624010	100x2x0,6	24,3	568,00	805,00
01624006	30x2x0,6	14,0	172,00	254,00	Further dimensions available on request				

## Halogen-free cables and wires

### J-H(St)H...Bd - fire alarm cable

#### Technical data

acc. to DIN VDE 0815

**Flame-retardant** IEC 332-3

#### Application

Telecommunication and IT-components connection cable up to 16 MBit/s (category 3).



Part N°	N° of cores x cross-sec. mm <sup>2</sup>	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
01610031	2X2X0,8	8,5	25,00	69,00
01610032	4X2X0,8	10,5	45,00	110,00
01610033	6X2X0,8	12,0	65,00	152,00
01610034	10X2X0,8	15,0	106,00	230,00
01610035	16X2X0,8	17,5	166,00	360,00
01610036	20X2X0,8	19,0	206,00	420,00
01610037	24X2X0,8	20,5	246,00	510,00
01610038	30X2X0,8	22,0	307,00	599,00
01610039	40X2X0,8	25,5	407,00	787,00
01610040	50X2X0,8	27,5	508,00	973,00
01610042	80X2X0,8	33,5	809,00	1.476,00
01610043	100X2X0,8	37,5	1.010,00	1.805,00

Further dimensions available on request

# Halogen-free cables and wires

## JE-H(St)H...Bd - installation cable FE 180 E30 and E90 or E30/E90

### Technical data

acc. to DIN VDE 0815

Flame-retardant IEC 332-3

### Application

Flame-resistant telecommunication cable with 30 or 90 min. of circuit integrity in case of fire. For fixed installation with approved cable trays and clamps.



E30					E90				
Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km	Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
01611001	E30 2x2x0,8	7,5	25,00	65,00	01612001	E90 2x2x0,8	10,7	25,00	83,00
01611002	E30 4x2x0,8	12,5	45,00	103,00	01612002	E90 4x2x0,8	15,0	45,00	138,00
01611003	E30 8x2x0,8	15,0	85,00	165,00	01612003	E90 8x2x0,8	18,0	85,00	243,00
01611004	E30 12x2x0,8	18,0	126,00	235,00	01612004	E90 12x2x0,8	20,0	126,00	351,00
01611005	E30 16x2x0,8	20,0	166,00	300,00	01612005	E90 16x2x0,8	22,5	166,00	441,00
01611006	E30 20x2x0,8	22,0	206,00	361,00	01612006	E90 20x2x0,8	25,0	206,00	557,00
01611007	E30 32x2x0,8	24,5	327,00	553,00	01612007	E90 32x2x0,8	31,0	327,00	800,00
01611008	E30 40x2x0,8	28,5	407,00	671,00	01612008	E90 40x2x0,8	33,0	407,00	1.000,00
01611009	E30 52x2x0,8	30,5	528,00	865,00	01612009	E90 52x2x0,8	36,0	528,00	1.250,00

### E30/E90

Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
01613001	E30/E90 2x2x0,8	9,0	25,00	135,00
01613010	E30/E90 4x2x0,8	10,9	45,00	127,00
01613003	E30/E90 8x2x0,8	14,5	85,00	232,00
01613004	E30/E90 12x2x0,8	17,1	126,00	318,00
01613005	E30/E90 16x2x0,8	19,6	166,00	430,00
01613006	E30/E90 20x2x0,8	21,5	206,00	514,00
01613007	E30/E90 32x2x0,8	27,0	327,00	730,00
01613008	E30/E90 40x2x0,8	29,8	407,00	962,00
01613009	E30/E90 52x2x0,8	33,2	527,00	1.200,00

### FE 180: Insulation integrity for 180 minutes.

Test acc. to DIN VDE 0472 part 814 = IEC 60331. Insulation integrity under direct flame propagation for the test period of 180 minutes.

### E 30: Functionality of electrical cable systems for minimum 30 minutes.

Test acc. to DIN VDE 4102 part 12. In case of fire the functionality for 30 minutes remains in order to save persons and animals from a building. The functionality for 30 minutes secures the functional performance of the fire warning and alarm systems, safety and spare lighting, passenger lifts with evacuation circuits, except the cables which are installed within the ladder shafts and engine rooms.

### E 90: Functionality of electrical cable systems for minimum 90 minutes.

Test method acc. to DIN VDE 4102 part 12. The functionality for 90 minutes assures the functional performance of water-pressure-rising stations for water supply, avoiding smoke and heat in safety-stairs and inner rooms, ladder shafts and engine rooms of fire department lifts, emergency lifts for sickbeds in hospitals and the fire department lifts.

## Halogen-free cables and wires

### JE-H(St)H...Bd - fire alarm cable FE 180 E30 and E90 or E30/E90

#### Technical data

acc. to DIN VDE 0815

**Flame-retardant** IEC 332-3

#### Application

Flame-resistant telecommunication cable with 30 or 90 min. of circuit integrity in case of fire. For fixed installation with approved cable trays and clamps.



E30					E90				
Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km	Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
01611010	E30 2x2x0,8	7,5	25,00	65,00	01612010	E90 2x2x0,8	10,7	25,00	83,00
01611011	E30 4x2x0,8	12,5	45,00	103,00	01612011	E90 4x2x0,8	15,0	45,00	138,00
01611012	E30 8x2x0,8	15,0	85,00	165,00	01612012	E90 8x2x0,8	18,0	85,00	243,00
01611013	E30 12x2x0,8	18,0	126,00	235,00	01612013	E90 12x2x0,8	20,0	126,00	351,00
01611014	E30 16x2x0,8	20,0	166,00	300,00	01612014	E90 16x2x0,8	22,5	166,00	441,00
01611015	E30 20x2x0,8	22,0	206,00	361,00	01612015	E90 20x2x0,8	25,0	206,00	557,00
01611016	E30 32x2x0,8	24,5	327,00	553,00	01612016	E90 32x2x0,8	31,0	327,00	800,00
01611017	E30 40x2x0,8	28,5	407,00	671,00	01612017	E90 40x2x0,8	33,0	407,00	1.000,00
01611018	E30 52x2x0,8	30,5	528,00	865,00	01612018	E90 52x2x0,8	36,0	528,00	1.250,00

E30/E90				
Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
01613020	E30/E90 1X2X0,8	6,6	15,00	52,00
01613019	E30/E90 2x2x0,8	9,0	25,00	135,00
01613011	E30/E90 4x2x0,8	10,9	45,00	127,00
01613012	E30/E90 8x2x0,8	14,5	85,00	232,00
01613013	E30/E90 12x2x0,8	17,1	126,00	318,00
01613014	E30/E90 16x2x0,8	19,6	166,00	430,00
01613015	E30/E90 20x2x0,8	21,5	206,00	514,00
01613016	E30/E90 32x2x0,8	27,0	327,00	730,00
01613017	E30/E90 40x2x0,8	29,8	407,00	962,00
01613018	E30/E90 52x2x0,8	33,2	527,00	1.200,00

## Halogen-free cables and wires

### JE-H(St)HQH...Bd - fire alarm cable FE 180 E30 and E90 or E30/E90 steel wire braid

#### Technical data

acc. to DIN VDE 0815

Flame-retardant IEC 332-3

#### Application

Flame-resistant telecommunication cable with 30 or 90 min. of circuit integrity in case of fire. For fixed installation with approved cable trays and clamps.



E30					E90				
Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km	Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
01614001	E30 2x2x0,8	10,4	25,00	152,00	01615001	E90 2x2x0,8	10,4	25,00	152,00
01614002	E30 4x2x0,8	14,7	45,00	277,00	01615002	E90 4x2x0,8	14,7	45,00	277,00
01614003	E30 8x2x0,8	21,2	85,00	544,00	01615003	E90 8x2x0,8	21,2	85,00	544,00
01614004	E30 12x2x0,8	22,8	126,00	600,00	01615004	E90 12x2x0,8	22,8	126,00	600,00
01614005	E30 16x2x0,8	23,6	166,00	696,00	01615005	E90 16x2x0,8	23,2	166,00	696,00
01614006	E30 20x2x0,8	26,9	206,00	868,00	01615006	E90 20x2x0,8	26,9	206,00	868,00
01614007	E30 32x2x0,8	34,6	327,00	1.359,00	01615007	E90 32x2x0,8	34,6	327,00	1.359,00
01614008	E30 40x2x0,8	40,6	407,00	1.798,00	01615008	E90 40x2x0,8	40,6	407,00	1.798,00
01614009	E30 52x2x0,8	43,7	527,00	2.040,00	01615009	E90 52x2x0,8	43,7	527,00	2.040,00

E30/E90				
Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
01616001	E30/E90 2x2x0,8	10,4	25,00	152,00
01616002	E30/E90 4x2x0,8	14,7	45,00	277,00
01616003	E30/E90 8x2x0,8	21,2	85,00	544,00
01616004	E30/E90 12x2x0,8	22,8	126,00	600,00
01616005	E30/E90 16x2x0,8	23,2	166,00	696,00
01616006	E30/E90 20x2x0,8	26,9	206,00	868,00
01616007	E30/E90 32x2x0,8	34,6	327,00	1.359,00
01616008	E30/E90 40x2x0,8	40,6	407,00	1.798,00
01616009	E30/E90 52x2x0,8	43,7	527,00	2.040,00

# Halogen-free cables and wires

## N2XH-O/J

### power cable

#### Technical data

acc. to DIN VDE 0276 part 604

**Nominal voltage**  $U_0/U = 0,6/1$  kV

**Flame-retardant** IEC 332-3

#### Application

For indoor installation in dry and wet zones, in, on and under plaster. Further use for outdoor installation. But not suitable for direct laying below ground.



N2XH-O					N2XH-J				
Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km	Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
01601008	1X6 RE	9,8	58,00	95,00	01601104	1X4 RE	9,0	39,00	75,00
01601010	1X10 RE	10,2	96,00	135,00	01601086	1X6 RE	9,8	58,00	95,00
01601012	1X16 RM	12,2	154,00	200,00	01601013	1X16 RM	12,2	154,00	200,00
01601005	1X4 RE	9,0	39,00	75,00	01601099	1X25 RM	14,3	240,00	295,00
01601015	1X25 RM	14,3	240,00	295,00	01601094	1X35 RM	15,4	336,00	385,00
01601018	1X35 RM	15,4	336,00	385,00	01601093	1X50 RM	15,8	480,00	510,00
01601019	1X50 RM	15,8	480,00	510,00	01601100	1X70 RM	17,7	672,00	715,00
01601020	1X70 RM	17,7	672,00	715,00	01601097	1X95 RM	20,2	912,00	960,00
01601021	1X95 RM	20,2	912,00	960,00	01601098	1X120 RM	22,4	1.152,00	1.190,00
01601022	1X120 RM	22,4	1.152,00	1.190,00	01601101	1X150 RM	24,4	1.440,00	1.470,00
01601023	1X150 RM	24,4	1.440,00	1.470,00	01601102	1X185 RM	25,8	1.776,00	1.810,00
01601024	1X185 RM	25,8	1.776,00	1.810,00	01601103	1X240 RM	28,6	2.304,00	2.360,00
01601025	1X240 RM	28,6	2.304,00	2.360,00	01601095	1X300 RM	32,8	2.880,00	2.420,00
01601026	1X300 RM	32,8	2.880,00	2.420,00	01601002	3X1,5 RE	11,0	43,00	129,00
01601001	2X1,5 RE	12,1	29,00	115,00	01601004	3X2,5 RE	12,0	72,00	165,00
01601003	2X2,5 RE	12,2	48,00	145,00	01601007	3X4 RE	13,0	115,00	225,00
01601006	2X4 RE	13,3	77,00	190,00	01601027	3X6 RE	14,0	173,00	295,00
01601009	2X6 RE	13,7	115,00	245,00	01601028	3X10 RE	16,0	288,00	440,00
01601011	2X10 RE	16,5	192,00	355,00	01601029	3X16 RE	19,0	461,00	660,00
01601014	2X16 RE	17,6	307,00	530,00	01601017	3X25 RM	24,0	720,00	1.010,00
01601016	2X25 RM	23,2	480,00	800,00	01601066	3X25/16 RE	o. r.	874,00	1.400,00
Further dimensions available on request					01601030	3X35 RM	27,0	1.008,00	1.330,00
					01601067	3X35/16 RE	o. r.	1.161,00	1.500,00
					01601031	3X50 RM	29,0	1.440,00	1.765,00
					01601038	3X50/25 RM	32,0	1.680,00	1.950,00
					01601032	3X70 RM	33,0	2.016,00	
					01601039	3X70/35 RM	37,0	2.352,00	2.700,00
					01601033	3X95 RM	37,0	2.736,00	3.300,00
					01601040	3X95/50 RM	41,0	3.216,00	3.550,00
					01601034	3X120 RM	41,0	3.456,00	4.050,00
					01601041	3X120/70 RM	45,0	4.128,00	4.550,00
					01601035	3X150 RM	45,0	4.320,00	4.900,00
					01601042	3X150/70 RM	49,0	4.992,00	5.450,00
					01601036	3X185 RM	50,0	5.328,00	5.100,00
					01601037	3X240 RM	56,0	6.912,00	7.800,00



Halogen-free cables and wires

N2XH-O/J  
power cable

N2XH-J									
Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km	Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
01601045	4X1,5 RE	12,0	58,00	155,00	01601060	5X1,5 RE	13,0	72,00	175,00
01601046	4X2,5 RE	13,0	96,00	200,00	01601061	5X2,5 RE	14,0	120,00	235,00
01601047	4X4 RE	14,0	154,00	270,00	01601062	5X4 RE	15,0	192,00	330,00
01601048	4X6 RE	15,0	230,00	375,00	01601063	5X6 RE	16,0	288,00	445,00
01601049	4X10 RE	17,0	384,00	550,00	01601064	5X10 RE	18,0	480,00	665,00
01601050	4X16 RE	20,0	614,00	835,00	01601065	5X16 RE	22,0	768,00	1.010,00
01601051	4X25 RM	24,0	960,00	1.265,00	01601068	5X25 RM	27,0	1.200,00	1.550,00
01601052	4X35 RM	27,0	1.344,00	1.685,00	01601069	7X1,5 RE	11,0	101,00	206,00
01601053	4X50 RM	31,0	1.920,00	2.150,00	01601076	7X2,5 RE	13,0	168,00	287,00
01601054	4X70 RM	35,0	2.688,00	3.050,00	01601083	7X4 RE	17,0	269,00	530,00
01601055	4X95 RM	40,0	3.648,00	4.050,00	01601070	10X1,5 RE	14,0	144,00	287,00
01601056	4X120 RM	45,0	4.608,00	5.150,00	01601077	10X2,5 RE	16,0	240,00	425,00
01601057	4X150 RM	50,0	5.760,00	6.250,00	01601071	12X1,5 RE	15,0	173,00	328,00
01601058	4X185 RM	55,0	7.104,00	7.750,00	01601078	12X2,5 RE	18,0	288,00	475,00
01601059	4X240 RM	62,0	9.216,00	9.950,00	01601084	12X4 RE	21,0	461,00	820,00
Further dimensions available on request					01601085	14X1,5 RE	16,0	202,00	383,00
					01601079	14X2,5 RE	20,0	336,00	670,00
					01601072	15X1,5 RE	16,0	202,00	383,00
					01601073	19X1,5 RE	18,0	274,00	484,00
					01601080	19X2,5 RE	22,0	456,00	840,00
					01601074	24X1,5 RE	20,0	346,00	603,00
					01601081	24X2,5 RE	25,0	576,00	1.050,00
					01601075	30X1,5 RE	22,0	432,00	730,00
					01601082	30X2,5 RE	27,0	720,00	1.230,00
					01601096	33X2,50 RE	28,0	792,00	1.302,00

# Halogen-free cables and wires

## N2XCH

### power cable concentric conductor

#### Technical data

DIN VDE 0276 part 604

**Nominal voltage**  $U_0/U = 0,6/1$  kV

**Flame-retardant** IEC 332-3

#### Application

For indoor installation in dry and wet zones, in, on and under plaster. Further use for outdoor installation. But not suitable for direct laying below ground.



Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km	Part N°	N° of cores x cross-sec. mm²	Outer diameter ca. mm	Copper weight kg/km	Weight ca. kg/km
01602001	2X1,5 RE/1,5	13,0	52,00	160,00	01602039	7X1,50 RE/2,5	15,0	133,00	314,00
01602002	2X2,5 RE/2,5	13,0	80,00	200,00	01602046	7X2,5 RE/2,5	17,0	200,00	400,00
01602003	2X4 RE/4	14,0	123,00	320,00	01602053	7X4 RE/4	18,0	315,00	555,00
01602004	2X6 RE/6	15,0	182,00	410,00	01602055	7X6 RE/6	19,0	470,00	725,00
01602005	2X10 RE/10	17,0	312,00	550,00	01602040	10X1,5 RE/2,5	17,0	176,00	464,00
01602006	2X16 RE/16	19,0	489,00	780,00	01602047	10X2,5 RE/4	19,0	286,00	600,00
01602007	3X1,5 RE/1,5	13,0	66,00	175,00	01602041	12X1,5 RE/2,5	19,0	205,00	460,00
01602008	3X2,5 RE/2,5	14,0	104,00	225,00	01602048	12X2,5 RE/4	21,0	334,00	610,00
01602009	3X4 RE/4	15,0	161,00	315,00	01602054	12X4 RE/6	o. r.	528,00	905,00
01602010	3X6 RE/6	16,0	240,00	410,00	01602042	16X1,5 RE/4	21,0	276,00	680,00
01602011	3X10 RE/10	18,0	408,00	640,00	01602049	16X2,5 RE/6	23,0	451,00	850,00
01602012	3X16 RE/16	20,0	643,00	930,00	01602043	21X1,5 RE/6	22,0	369,00	770,00
01602013	3X25 RM/16	25,0	1.003,00	1.380,00	01602050	21X2,5 RE/6	25,0	571,00	1.090,00
01602014	3X35 RM/16	28,0	1.402,00	1.650,00	01602044	24X1,5 RE/6	24,0	413,00	800,00
01602015	3X50 RM/50	32,0	2.000,00	2.160,00	01602051	24X2,5 RE/10	26,0	696,00	1.150,00
01602016	3X70 RM/70	36,0	2.796,00	3.050,00	01602045	30X1,5 RE/6	25,0	499,00	955,00
01602017	3X95 RM/95	41,0	3.791,00	4.200,00	01602052	30X2,5 RE/10	28,0	840,00	1.280,00
01602018	3X120 RM/120	45,0	4.786,00	5.200,00					
01602019	3X150 RM/70	48,0	5.100,00	5.450,00					
01602020	3X185 RM/95	53,0	6.383,00	6.800,00					
01602021	3X240 RM/120	60,0	8.242,00	8.900,00					
01602022	4X1,5 RE/1,5	13,0	81,00	200,00					
01602023	4X2,5 RE/2,5	14,0	128,00	260,00					
01602024	4X4 RE/4	15,0	200,00	370,00					
01602025	4X6 RE/6	17,0	297,00	485,00					
01602026	4X10 RE/10	19,0	504,00	755,00					
01602027	4X16 RE/16	22,0	796,00	1.100,00					
01602028	4X25 RM/16	27,0	1.142,00	1.565,00					
01602029	4X35 RM/16	29,0	1.526,00	2.010,00					
01602030	4X50 RM/25	33,0	2.203,00	2.450,00					
01602031	4X70 RM/35	40,0	3.082,00	3.400,00					
01602037	4X70 SM/35	40,0	3.082,00	3.400,00					
01602032	4X95 RM/50	45,0	4.208,00	4.550,00					
01602038	4X95 SM/50	45,0	4.208,00	4.550,00					
01602033	4X120 RM/70	48,0	5.388,00	5.900,00					
01602034	4X150 RM/70	53,0	6.540,00	7.000,00					
01602035	4X185 RM/95	60,0	8.159,00	8.750,00					

Further dimensions available on request

## Data cables LAN

### LAN FTP, Cat. 5e

4x2x24 AWG and 2x(4x2x24 AWG) **200 MHz**

#### Technical data

##### COMPLIANCE WITH:

- o ISO/IEC 11801:2002
- o CENELEC EN 50173:2002
- o ANSI/TIA/EIA-568-B.2

##### STANDARDS:

IEC 61156-5 Cat. 5e, EN 50288-5-1

#### Construction

**Conductor:** 24 AWG BC

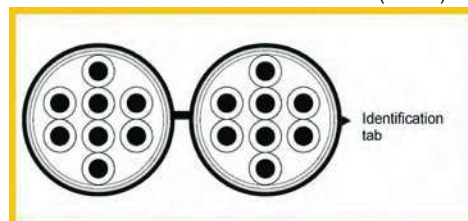
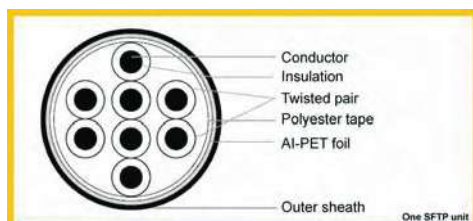
**Insulation:** foam-skin polyolefine, nominal diameter over insulation 1.0 mm

**Pairs:** twisted pairs are cabled together to form a cable core

**Pairs color code:** blue white, orange white, green white and brown white

**Shielding:** an overall shield of polyester/aluminium foil with 100 % coverage is applied with a tinned copper drain wire underneath

**Outer sheath material:** PVC or HFFR (LSZH)



#### High frequency transmission properties

Frequency  MHz	Attenuation dB/100m		NEXT pp dB		Return Loss dB
	Typical	Max.	Typical	Min.	Min.
1	2.0	2.1	73	67	23
4	4.1	4.3	63	58	23
10	6.4	6.6	58	52	23
16	8.05	8.2	57	49	23
20	9.0	9.2	55	47.5	23
31.25	11.5	11.8	50	44.6	21
62.5	16.8	17.1	48	40	18
100	21.5	22.0	45	37	16
200	30.5	31.0*	42	32.5	13*

\* extrapolated

NEXT Cat. 5 =  $64 - 15 \log (f/0.772)$  (ISO/IEC 11801)

NEXT Cat. 5+ =  $67 - 15 \log (f)$

Where f is the frequency in MHz

#### Notes

PSNEXT=pair to pair NEXT-3  
PSELFEXT=pair to pair ELFEXT-3

ACR=pair to pair NEXT-Attenuation [dB/100m]  
PSACR=pair to pair ACR-3 [dB/100m]

HIGH FREQUENCY ELECTRICAL PROPERTIES		
Input impedance	Ohm	100+/-15
VP @ 200 MHz		0.72c
Propagation delay @200 MHz	ns/100 m	<536
Delay skew	ns/100 m	<30
Transfer impedance at 30 MHz	Mohm m	<200
LOW FREQUENCY AND D.C. ELECTRICAL PROPERTIES		
Mutual capacitance at 1 kHz	NF/km	50
DC resistance	Ohm/km	96
Capacitance unable to ground	PF/km	3300
Resistance unbalance	%	2
Operating voltage	Volts	60
ENVIRONMENTAL AND OTHER PROPERTIES		
Operating temperature		-20° C to +60° C
Installation temperature		-5° C to +50° C
Flame retardance		IEC 60332-1
Halogen content		IEC 60754-2
Smoke emission		IEC 61034
Installation bending radius		12 x outer diam.
Long term bending radius		8 x outer diam.

#### Parameters

# of pairs	Weight	Dimension	Caloric
			value
	kg/km	mm	MJoule/km
4	48	7	500
8	98	7x14,2	1000

Further constructions on request

## Data cables LAN

### LAN SFTP, Cat. 5e

4x2x24 AWG and 2x(4x2x24 AWG) **200 MHz**

#### Technical data

##### COMPLIANCE WITH:

- o ISO/IEC 11801:2002
- o CENELEC EN 50173:2002
- o ANSI/TIA/EIA-568-B.2

##### STANDARDS:

IEC 61156-5 Cat. 5e, EN 50288-2-1

#### Construction

**Conductor:** 24 AWG BC

**Insulation:** solid polyolefine, nominal diameter over insulation 1.05 mm

**Pairs:** two wires twisted into pairs with different lays (lay direction left)

**Pairs color code:** blue white-blue, orange white-orange, green white-green and brown white-brown

**Unit cabling:** 4 twisted pairs cabled into one SFTP unit into the unit core

**Shielding:** common foil and braided copper wires over cabled unit

**Foil shielding:** polyester aluminum tape, aluminum side facing outwards

**Drain wire:** optional 0.5 mm TPC (between foil and braiding)

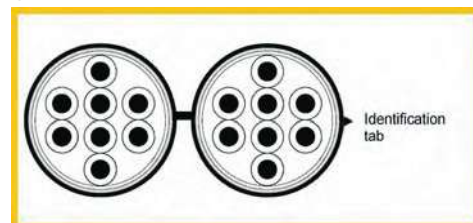
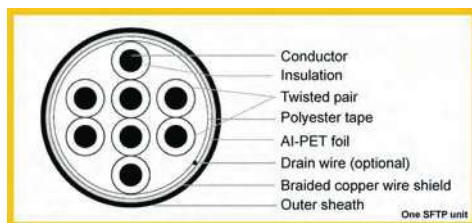
**Braided copper shielding:** TPC wires

**Unit jacket material:** PVC or HFFR (LSZH)

Each unit has an identification number printed on the unit jacket

**Cabling:** n units are cabled together

**Outer sheath:** HFFR



#### High frequency transmission properties

Frequency  MHz	Attenuation dB/100m		NEXT pp dB		ELFEXT pp dB/100m		Return Loss dB	
	Typical	Max.	Typical	Min.	Typical	Min.	Typical	Min.
1	2	2.1	71	65.3	70.0	64.0	28	n.def
4	3.9	4.1	62	56.3	58.0	52.0	28	23.0
10	5.8	6.5	56	50.3	50.0	44.0	28	25.0
16	7.6	8.3	53	47.2	45.9	39.9	28	25.0
20	8.3	9.3	51	45.8	44.0	38.0	28	25.0
31.25	10.8	11.7	49	42.9	40.1	34.1	28	23.6
62.5	15.2	17.0	44	38.4	34.1	28.1	23	21.5
100	19.5	22.0	41	35.3	30.0	24.0	23	20.1
200	27.8	28.1	36.5	31.4	25.0	19.0	18	15.3

#### Notes

PSNEXT = pair to pair NEXT-3  
ACR = pair to pair NEXT-Attenuation [dB/100m]

PSSELFEXT = pair to pair ELFEXT-3  
PSACR = pair to pair ACR-3 [dB/100m]

HIGH FREQUENCY ELECTRICAL PROPERTIES		
Input impedance	Ohm	100+/-15
VP @ 200 MHz		0.67c
Propagation delay @200 MHz	ns/100 m	<536
Delay skew	ns/100 m	<30
Transfer impedance at 30 kHz	Mohm/m	<30
LOW FREQUENCY AND D.C. ELECTRICAL PROPERTIES		
Mutual capacitance at 1 kHz	NF/km	52
DC resistance	Ohm/km	93,8
Capacitance unable to ground	PF/km	1500
Resistance unbalance	%	2
Insulation resistance	Mohm km	5000
Dielectric strength	KVDC/1 min.	1
Operating voltage	Volts	60
ENVIRONMENTAL AND OTHER PROPERTIES		
Operating temperature		-20° C to +60° C
Installation temperature		-5° C to +50° C
Installation tension	Newton/pair	20
Flame retardance		IEC 60332-1
Halogen content		IEC 60754-2
Smoke emission		IEC 61034
Installation bending radius		12 x outer diam.
Long term bending radius		8 x outer diam.

#### Parameters

# of pairs	Weight	Dimension	Caloric
	ca.	ca.	value
	kg/km	mm	MJoule/km
4	55	6,5	500
8	110	14,0x6,6	1000

Further constructions on request

## Data cables LAN

### LAN SSTP, Cat. 6

4x2x23 AWG and 2x(4x2x23 AWG) **300 MHz**

#### Technical data

##### COMPLIANCE WITH:

- o ISO/IEC 11801:2002
- o CENELEC EN 50173:2002
- o ANSI/TIA/EIA-568-B.2

##### STANDARDS:

IEC 61156-5 Cat. 5e, EN 50288-5-1

#### Construction

**Conductor:** 23 AWG BC

**Insulation:** foam-skin polyolefine, nominal diameter over insulation 1.38 mm

**Pairs:** two wires twisted into pairs with different lays (lay direction left)

**Pairs color code:** blue-white, orange-white, green-white and brown-white

**Cabling:** 4 twisted pairs cabled into the cable core

**Shielding:** individual foil over each pair and overall braided wires shield over the cabled pairs

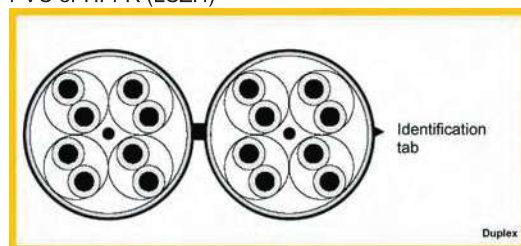
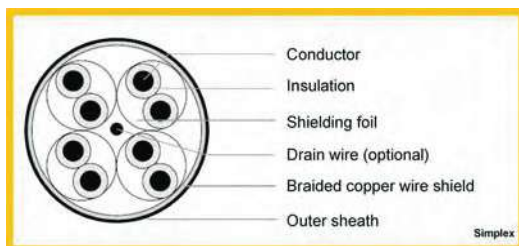
**Foil shielding:** polyester aluminum tape, aluminum side facing outwards

**Drain wire:** optional 0.5 mm TPC in the cable core center

**Braided copper shielding:** TPC wires, see parameter chart for coverage

**Outer sheath material:**

PVC or HFFR (LSZH)



#### High frequency transmission properties

Frequency  MHz	Attenuation dB/100m		NEXT pp dB		ELFEXT pp dB/100m		Return Loss dB	
	Typical	Max.	Typical	Min.	Typical	Min.	Typical	Min.
1	1.8	2.1	90.0	75.3	90.0	68.0	23.0	n.def.
4	3.5	3.8	90.0	66.3	90.0	56.0	23.0	23.0
10	5.5	6.0	90.0	60.3	90.0	48.0	25.0	25.0
16	7.0	7.6	90.0	57.2	90.0	43.9	25.0	25.0
20	7.9	8.5	90.0	55.8	90.0	42.0	25.0	25.0
31.25	9.9	10.7	90.0	52.9	90.0	38.1	23.6	23.6
62.5	14.2	15.5	90.0	48.4	90.0	32.1	23.0	21.5
100	17.9	19.9	85.0	45.3	85.0	28.0	23.0	20.1
200	26.2	29.1	80.0	40.8	80.0	22.0	21.0	18.0
250	29.3	33.0	80.0	39.3	80.0	20.0	20.0	17.3
300	31.3	34.2	80.0	65.2	80.0	44.5	19.0	17.2

#### Notes

PSNEXT=pair to pair NEXT-3  
PSELFEXT=pair to pair ELFEXT-3

ACR=pair to pair NEXT-Attenuation [dB/100m]  
PSACR=pair to pair ACR-3 [dB/100m]

HIGH FREQUENCY ELECTRICAL PROPERTIES		
Input impedance	Ohm	100+/-15
VP @ 200 MHz		0.75c
Propagation delay @200 MHz	ns/100 m	<536
Delay skew	ns/100 m	<30
Transfer impedance at 30 MHz	Mohm m	<30
LOW FREQUENCY AND D.C. ELECTRICAL PROPERTIES		
Mutual capacitance at 1 kHz	NF/km	45
DC resistance	Ohm/km	75
Capacitance unable to ground	PF/km	1500
Resistance unbalance	%	2
Insulation resistance	Mohm km	5000
Dielectric strength	KVDC/1 min.	1
Operating voltage	Volts	60
ENVIRONMENTAL AND OTHER PROPERTIES		
Operating temperature		-20° C to +60° C
Installation temperature		-5° C to +50° C
Installation tension	Newton / pair	20
Flame retardance		IEC 60332-1
Halogen content		IEC 60754-2
Smoke emission		IEC 61034
Installation bending radius		12 x outer diam.
Long term bending radius		8 x outer diam.

#### Parameters

# of pairs	Weight	Dimension	Caloric
			value
	kg/km	mm	MJoule/km
4	63	7,5	500
8	124	7,7x16	1000

Further constructions on request



# Data cables LAN

## LAN SSTP, Cat. 7

4x2x23 AWG and 2x(4x2x23 AWG) **600 MHz**

### Technical data

#### COMPLIANCE WITH:

- o ISO/IEC 11801:2002
- o CENELEC EN 50173:2002
- o ANSI/TIA/EIA-568-B.2

#### STANDARDS:

IEC 61156-5 Cat. 7, EN 50288-4-1

### Construction

**Conductor:** 23 AWG BC

**Insulation:** foamed polyolefine, nominal diameter over insulation 1.38 mm

**Pairs:** two wires twisted into pairs with different lays (lay direction left)

**Pairs color code:** blue-white, orange-white, green-white and brown-white

**Cabling:** 4 twisted pairs cabled into the cable core

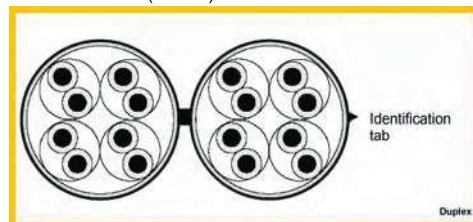
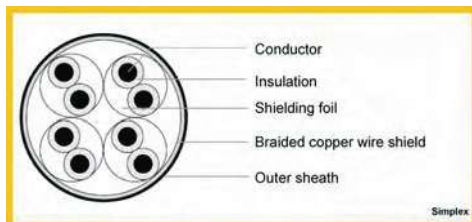
**Shielding:** individual foil over each pair and overall braided wires shield over the cabled pairs

**Foil shielding:** polyester aluminum tape, aluminum side facing outwards

**Braided copper shielding:** TPC wires, see parameter chart for coverage

**Outer sheath material:**

PVC or HFFR (LSZH)



### High frequency transmission properties

Frequency  MHz	Attenuation dB/100m		NEXT pp dB		ELFEXT pp dB/100m		Return Loss dB	
	Typical	Max.	Typical	Min.	Typical	Min.	Typical	Min.
1	1.8	2.0	90.0	78.0	90.0	78.0	23.0	n.def.
4	3.5	3.7	90.0	78.0	90.0	78.0	23.0	23.0
10	5.5	5.9	90.0	78.0	90.0	74.0	25.0	25.0
16	7.0	7.4	90.0	78.0	90.0	69.9	25.0	25.0
20	7.9	8.3	90.0	78.0	90.0	68.0	25.0	25.0
31.25	9.9	10.4	90.0	78.0	90.0	64.1	23.6	23.6
62.5	14.2	14.9	90.0	75.5	90.0	58.1	23.0	21.5
100	17.9	19.0	85.0	72.4	85.0	54.0	23.0	20.1
300	31.3	34.2	80.0	65.2	80.0	44.5	19.0	17.3
600	47.1	50.1	80.0	60.7	80.0	38.4	19.0	17.3
1000	64.0	n.def.	80.0	n.def.	80.0	n.def.	19.0	n.def.

### Notes

PSNEXT=pair to pair NEXT-3  
PSSELFEXT=pair to pair ELFEXT-3

ACR=pair to pair NEXT-Attenuation [dB/100m]  
PSACR=pair to pair ACR-3 [dB/100m]

HIGH FREQUENCY ELECTRICAL PROPERTIES		
Input impedance	Ohm	100+/-15
VP @ 200 MHz		0.78c
Propagation delay @200 MHz	ns/100 m	<536
Delay skew	ns/100 m	<30
Transfer impedance at 30 MHz	Mohm m	<30
LOW FREQUENCY AND D.C. ELECTRICAL PROPERTIES		
Mutual capacitance at 1 kHz	NF/km	45
DC resistance	Ohm/km	75
Capacitance unable to ground	PF/km	1500
Resistance unbalance	%	2
Insulation resistance	Mohm km	5000
Dielectric strength	KVDC/1 min.	1
Operating voltage	Volts	60
ENVIRONMENTAL AND OTHER PROPERTIES		
Operating temperature		-20° C to +60° C
Installation temperature		-5° C to +50° C
Installation tension	Newton / pair	20
Flame retardance		IEC 60332-1
Halogen content		IEC 60754-2
Smoke emission		IEC 61034
Installation bending radius		12 x outer diam.
Long term bending radius		8 x outer diam.

#### Parameters

# of pairs	Weight	Dimension	Caloric value
	kg/km	mm	MJoule/km
4	63	7.5	500
8	124	7.7x16.0	1000

Further constructions on request

# Data cables LAN

## LAN SSTP, Cat. 8

4x2x22 AWG and 2x(4x2x22 AWG) **1200 MHz**

### Technical data

#### COMPLIANCE WITH:

- o ISO/IEC 11801:2002
- o CENELEC EN 50173:2002
- o ANSI/TIA/EIA-568-B.2

#### STANDARDS:

IEC 61156-7

### Construction

**Conductor:** 22 AWG BC

**Insulation:** foam-skin polyolefine, nominal diameter over insulation 1.55 mm

**Pairs:** two wires twisted into pairs with different lays (lay direction left)

**Pairs color code:** blue-white, orange-white, green-white and brown-white

**Cabling:** 4 twisted pairs cabled into the cable core

**Shielding:** individual foil over each pair and overall braided wires shield over the cabled pairs

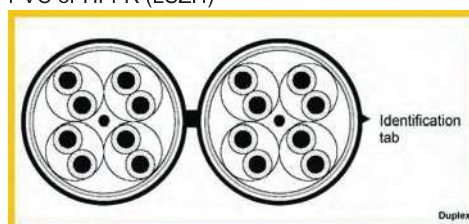
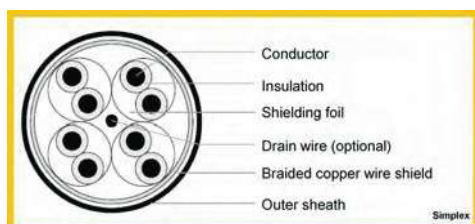
**Foil shielding:** polyester aluminum tape, aluminum side facing outwards

**Drain wire:** optional 0.5 mm TPC in the cable core center

**Braided copper shielding:** TPC wires, see parameter chart for coverage

**Outer sheath material:**

PVC or HFFR (LSZH)



### High frequency transmission properties

Frequency  MHz	Attenuation dB/100m		NEXT pp dB		ELFEXT pp dB/100m		Return Loss dB	
	Typical	Max.	Typical	Min.	Typical	Min.	Typical	Min.
1	1.8	n.def.	90.0	n.def.	90.0	n.def.	23.0	n.def.
4	3.3	3.5	90.0	78.0	90.0	78.0	23.0	23.0
10	5.0	5.4	90.0	78.0	90.0	74.0	25.0	25.0
16	6.5	6.8	90.0	78.0	90.0	69.9	25.0	25.0
20	7.2	7.6	90.0	78.0	90.0	68.0	25.0	25.0
31.25	9.2	9.6	90.0	78.0	90.0	64.1	23.6	23.6
62.5	13.3	13.7	90.0	78.0	90.0	58.1	23.0	21.5
100	17.0	17.5	85.0	76.0	85.0	54.0	23.0	20.1
300	31.3	31.5	80.0	68.8	80.0	44.5	19.0	17.3
600	43.1	46.3	80.0	64.3	80.0	38.4	19.0	17.3
1200	63.3	69.0	80.0	59.8	80.0	32.4	19.0	14.3

### Notes

PSNEXT=pair to pair NEXT-3  
PSSELFEXT=pair to pair ELFEXT-3

ACR=pair to pair NEXT-Attenuation [dB/100m]  
PSACR=pair to pair ACR-3 [dB/100m]

HIGH FREQUENCY ELECTRICAL PROPERTIES		
Input impedance	Ohm	100+/-15
VP @ 200 MHz		0.79c
Propagation delay @200 MHz	ns/100 m	<536
Delay skew	ns/100 m	<30
Transfer impedance at 30 MHz	Mohm m	<30
LOW FREQUENCY AND D.C. ELECTRICAL PROPERTIES		
Mutual capacitance at 1 kHz	NF/km	45
DC resistance	Ohm/km	59
Capacitance unable to ground	PF/km	1500
Resistance unbalance	%	2
Insulation resistance	Mohm km	5000
Dielectric strength	KVDC/1 min.	1
Operating voltage	Volts	60
ENVIRONMENTAL AND OTHER PROPERTIES		
Operating temperature		-20° C to +60° C
Installation temperature		-5° C to +50° C
Installation tension	Newton / pair	20
Flame retardance		IEC 60332-1
Halogen content		IEC 60754-2
Smoke emission		IEC 61034
Installation bending radius		12 x outer diam.
Long term bending radius		8 x outer diam.

#### Parameters

# of pairs	Weight	Dimension	Caloric value
	kg/km	mm	MJoule/km
4	75	8,5	500
8	155	8,5x17	1000

Further constructions on request

# Optical fibres

## Fibre I-VH

### Fibres

#### Graded index fibres

G50/125, G62,5/125, E9/125

### Application

For any application in IT, data and telecommunications, LAN, WAN, campus installations, single mode, multi mode, composite or hybrid cables. These indoor (mini-breakout) cables are particularly suitable for placing and pulling into cable conduits and shafts (building backbone and horizontal sub-systems), also under floor. Also applicable as jumper and adapter cables. They can also be used as inter-building cables laid in dry conduits. Usable as pigtail for splicing at fixed installed cable or as connection cable at patch panel. The small diameter and the high flexibility make this cable ideal for the application in patch panels as well as for connection of terminals. The 900 µm tight buffer design allows easy and direct infield connectorization.



### Temperature range

static	-25° C to +70° C
dynamic	-5° C to +50° C
fixed	-5° C to +70° C

### Mechanical characteristics

#### I-VH

N° of fibres	2	4	8	12
Outer diam. mm	4,7	5,4	5,9	6,8
Weight kg/km	14,0	21,0	30,0	38,0
Min. bending radius static mm	50,0	65,0	70,0	80,0
Max. tensile load N	800,0	800,0	1200,0	1200,0
Max. transverse pressure continual / dm	200,0	200,0	200,0	200,0

### Characteristics

- Especially suitable with field-installable UniCam-connectors
- Low-smoke acc. to IEC 61034 and zero-halogen (LS0H)
- Flame-retardant acc. to IEC 60332-3
- Non-corrosive acc. to IEC 60754-2 (FRNC)
- Non-metallic design
- No grounding or potential equalization problems
- Tight buffers of 900 µm diameter (TB3)

**Other constructions and sheath colours available on request**

# Optical fibres

## Fibre I-VHH

### Fibres

#### Graded index fibres

G50/125, G62,5/125, E9/125

### Application

For any application in IT, data and telecommunications, LAN, WAN, campus installations, single mode, multi mode, composite or hybrid cables. These cables are particularly suitable for placing and pulling into cable conduits and shafts (building backbone and horizontal sub-systems), also under floor. Also applicable as jumper and adapter cables. They can also be used as inter-building cables laid in dry conduits. Usable as pigtail for splicing at fixed installed cable or as connection cable at patch panels.

The small diameter and the high flexibility make this cable ideal for the application in patch panels as well as for connection of terminals. Easy and direct in-field connectorization is possible with enhanced strain relief.



Temperature range	
static	-25° C to +70° C
dynamic	-5° C to +50° C
fixed	-5° C to +70° C

Mechanical characteristics							
N° of fibres	2	4	6	8	10	12	24
Outer diam. mm	6,5	7,5	9,0	11,0	12,0	12,5	17,5
Weight kg/km	45,0	55,0	70,0	115,0	120,0	130,0	265,0
Min. bending radius static mm	65,0	75,0	100,0	110,0	120,0	125,0	175,0
Min. bending radius dynamic mm	100,0	115,0	150,0	170,0	180,0	190,0	260,0
Max. tensile load N	500,0	800,0	1200,0	1200,0	1200,0	1200,0	1200,0

Characteristics	
<ul style="list-style-type: none"><li>• Low-smoke acc. to IEC 61034 and zero-halogen (LS0H)</li><li>• Flame-retardant acc. to IEC 60332-3</li><li>• Non-corrosive acc. to IEC 60754-2 (FRNC)</li><li>• Non-metallic design</li><li>• No grounding or potential equalization problems</li><li>• Basic element of 2.9 mm diameter with additional strength members I-VHH cables are also available with basic elements of 2.2 mm diameter</li><li>• Tight buffers of 900 µm diameter (TB3)</li></ul>	

**Other constructions and sheath colours available on request**

## Optical fibres

### Fibre A-DQ(ZN)B2Y

#### Fibres

##### Graded index fibres

G50/125, G62,5/125, E9/125

#### Application

For any application in IT, data and telecommunications, LAN, WAN, campus installations, single mode, multi mode, composite or hybrid cables.

These (multi-purpose) universal cables can be employed both indoors and outdoors for campus backbone and building backbone (riser) cabling as well as for the cabling between floor distributors and the terminal equipments/workstations (fiber-to-the-desk). The cables can be installed in conduits, ducts and can also be laid directly below ground.



#### Temperature range

static	-25° C to +70° C
dynamic	-5° C to +50° C
fixed	-5° C to +60° C

#### Mechanical characteristics

N° of fibers	2	4	6	8	12	16	24
Outer diam. mm	8,0	8,0	8,0	8,0	8,0	8,0	8,0
Weight kg/km	58,0	58,0	58,0	58,0	58,0	58,0	58,0
Min. bending radius static mm	170,0	170,0	170,0	170,0	170,0	170,0	170,0
Max. tensile load N	1.000,0	1.000,0	1.000,0	1.000,0	1.000,0	1.000,0	1.000,0
Max. transverse pressure continual / dm	1.000	1.000	1.000	1.000	1.000	1.000	1.000

#### Characteristics

- Low-smoke acc. to IEC 61034 and zero-halogen (LS0H)\*
- Flame-retardant acc. to IEC 60332-1
- Non-corrosive acc. to IEC 60754-2 (FRNC)
- Non-metallic design
- Dry cable core
- Water blocking acc. to IEC 60749-1-F5
- UV-resistant
- Suitable for outdoor and indoor use
- Direct laying below ground possible

\* (Not valid for A-DQ(ZN)B2Y)

**Other constructions and sheath colours available on request**

## Optical fibres

### Fibre A-DQ(ZN)BH

#### Fibres

##### Graded index fibres

G50/125, G62,5/125, E9/125

#### Application

For any application in IT, data and telecommunications, LAN, WAN, campus installations, single mode, multi mode, composite or hybrid cables.

These (multi-purpose) universal cables can be employed both indoors and outdoors for campus backbone and building backbone (riser) cabling as well as for the cabling between floor distributors and the terminal equipments/workstations (fiber-to-the-desk). The cables can be installed in conduits, ducts and can also be laid directly below ground.



#### Temperature range

static	-25° C to +70° C
dynamic	-5° C to +50° C
fixed	-5° C to +60° C

#### Mechanical characteristics

N° of fibers	2	4	6	8	12	16	24
Outer diam. mm	8,0	8,0	8,0	8,0	8,0	8,0	8,0
Weight kg/km	58,0	58,0	58,0	58,0	58,0	58,0	58,0
Min. bending radius static mm	170,0	170,0	170,0	170,0	170,0	170,0	170,0
Max. tensile load N	1.000,0	1.000,0	1.000,0	1.000,0	1.000,0	1.000,0	1.000,0
Max. transverse pressure continual / dm	1.000	1.000	1.000	1.000	1.000	1.000	1.000

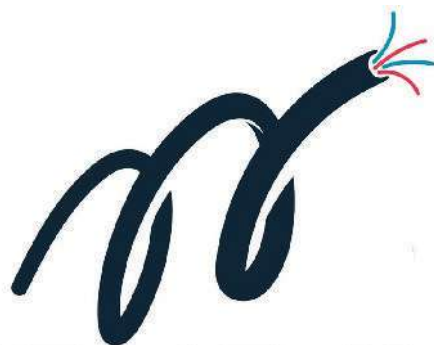
#### Characteristics

- Low-smoke acc. to IEC 61034 and zero-halogen (LS0H)\*
- Flame-retardant acc. to IEC 60332-1
- Non-corrosive acc. to IEC 60754-2 (FRNC)
- Non-metallic design
- Dry cable core
- Water blocking acc. to IEC 60749-1-F5
- UV-resistant
- Suitable for outdoor and indoor use
- Direct laying below ground possible

\* (Not valid for A-DQ(ZN)B2Y)

**Other constructions and sheath colours available on request**





**MONCAVI** S.R.L.  
CONNECTED TO THE FUTURE



CABLE TRUNKINGS



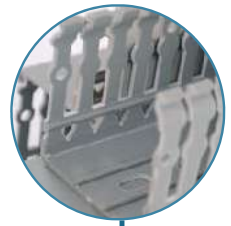


#### SIDE WALL HOLE DESIGN

The hole design on the side walls facilitates the use of cable ties, providing convenience in cable management.

#### NAIL WIDTH 6mm

With its wide spacing, it enables a much more robust cable management, resolving the issue of tight spaces during cable routing. Furthermore, it eliminates the uncontrolled cable swing resulting from the breaking of multiple clips when using multiple cables. In this regard, it offers a significantly more efficient solution compared to its counterparts.



#### The lines on the bottom, base, and side walls.

It enables seamless and burr-free integration when joining 90-degree channel corners. As a result, your panels will have a more elegant and rigid appearance.



#### NAIL BREAKAGE

There are nail lines that allow easy and tool-free breaking of the desired clips at a 90-degree angle. This way, you can achieve a neat and burr-free appearance.

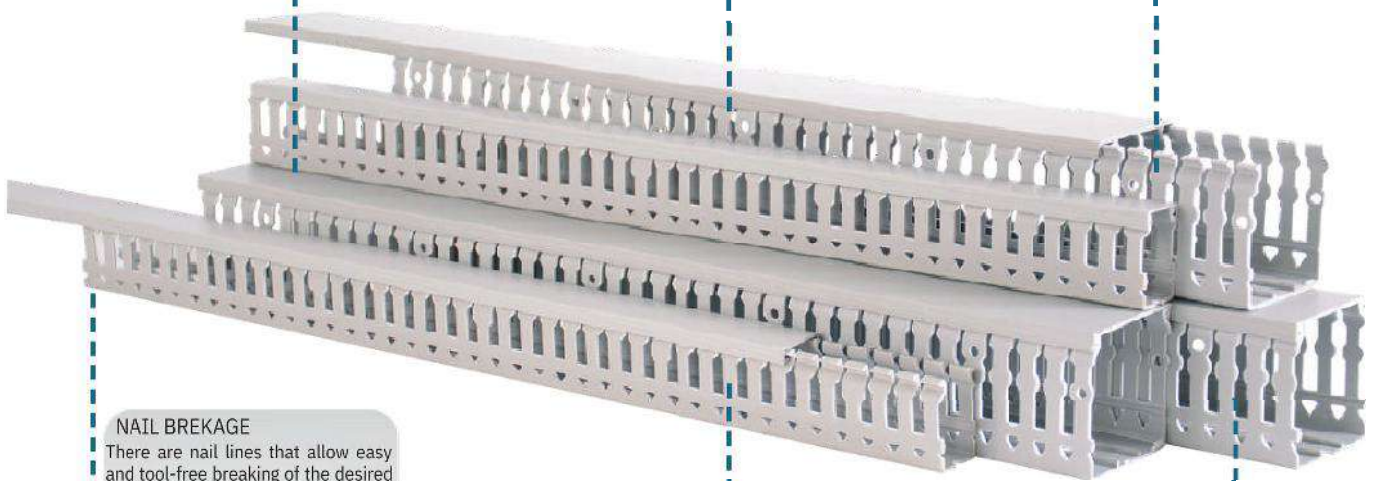


#### NAIL HOLE DESIGN

Thanks to the circular hole design on the clip, you can route your signal cables separately from other cables in the channel.

#### RAL-7030

It is compliant with international standards.





### 1 Nail Width – 6 mm



Due to the cable channel's 6mm nail widths, a single nail breakage will be sufficient for the passage of multiple or thicker cables through the gaps. This way, you can prevent cables from swinging between the nails by avoiding multiple nail breakages.

### 2 Bottom Base Lines



The "bottom base lines" are designed for the breakage of the side walls.

### 3 Elegant and Robust Design



It enables not only a rigid appearance in your panels but also facilitates secure connections.

### 4 Side Wall Lines



It provides a burr-free breaking of the nail structure.

### 5 Nail Hole Design



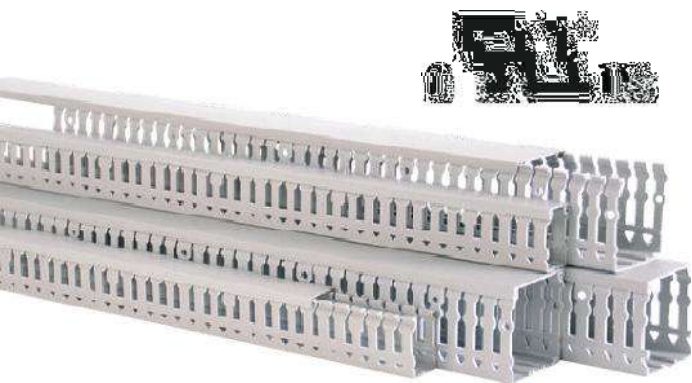
With the hole design under the clip, it facilitates the use of cable ties.

### 6 Compliance with International Standards



It complies with international standards RAL 7030, UL 94-V0, IEC60695-2-1, and EN50085-2-3.

# CABLE TRUNKING

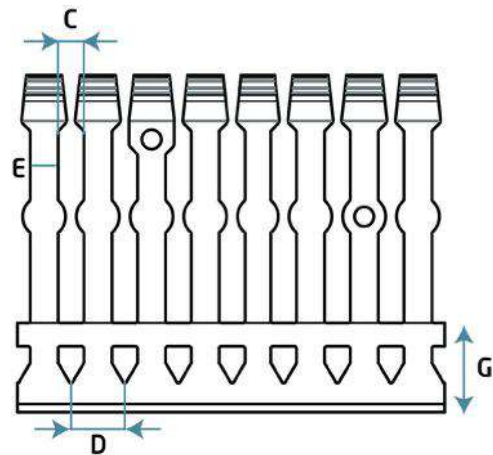
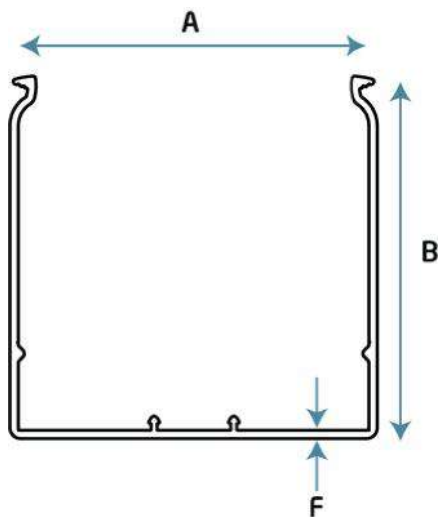


CABLE TRUNKING		
Product Code	Size & Description	Box Qty. / mt.
OCT2540G	25x40 Cable Trunking	100
OCT2560G	25x60 Cable Trunking	60
OCT2580G	25x80 Cable Trunking	56
OCT4040G	40x40 Cable Trunking	52
OCT4060G	40x60 Cable Trunking	36
OCT4080G	40x80 Cable Trunking	40
OCT4010G	40x100 Cable Trunking	28
OCT6040G	60x40 Cable Trunking	36
OCT6060G	60x60 Cable Trunking	24
OCT6080G	60x80 Cable Trunking	24
OCT6010G	60x100 Cable Trunking	36
OCT8040G	80x40 Cable Trunking	36
OCT8060G	80x60 Cable Trunking	28
OCT8080G	80x80 Cable Trunking	20
OCT8010G	80x100 Cable Trunking	24
OCT1060G	100x60 Cable Trunking	20
OCT1080G	100x80 Cable Trunking	16
OCT1010G	100x100 Cable Trunking	24



CABLE TRUNKING COVER			
Product Code	Size (mm.)	Colour	Box Qty. / mt.
OCTC 250	25	RAL7030 Grey	10x2
OCTC 400	40	RAL7030 Grey	10x3
OCTC 600	60	RAL7030 Grey	10x4
OCTC 800	80	RAL7030 Grey	10x5
OCTC 1000	100	RAL7030 Grey	10x6

# TECHNICAL DRAWINGS



	DIMENSIONS (mm.)						
Size	A	B	C	D	E	F	G
25x40	25	38.7	6	12.5	6	1.4	13.5
25x60	25	58.7	6	12.5	6	1.6	17.2
25x80	25	78.7	6	12.5	6	1.8	16.5
40x40	40	38.7	6	12.5	6	1.4	14.9
40x60	40	58.7	6	12.5	6	1.6	15.6
40x80	40	78.7	6	12.5	6	1.8	19
40x100	40	98.7	6	12.5	6	1.9	20.9
60x40	60	38.7	6	12.5	6	1.6	13.5
60x60	60	58.7	6	12.5	6	1.8	17.4
60x80	60	78.7	6	12.5	6	1.8	19
60x100	60	98.7	6	12.5	6	2	21
80x40	80	39.2	6	12.5	6	1.8	15.3
80x60	80	58.9	6	12.5	6	1.8	17.4
80x80	80	78.7	6	12.5	6	1.8	20.8
80x100	80	79	6	12.5	6	2.2	21.2
100x60	100	59	6	12.5	6	2	17.6
100x80	100	78.9	6	12.5	6	1.3	21
100x100	100	99	6	12.5	6	1.3	21.2



# Nylon Cable Glands

## PG Nylon Cable Glands

**Material::**PA6 Nylon)for Gland

TPV for Seal

NBR for o-ring (on request) TPV for washer (on request)

**TemperatureRange:** -20°to +100 permanent

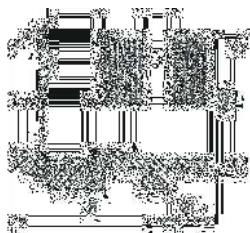
up to +150 intermittent

**Ingress Protection Rating:** IP68 5 bar when it is used with o-ring or washer

**Flame Reterdancy:** V2 according to UL94 / V0 (on request)

**Standards:** EEN50262 PG DIN40430

- \* Standard PG threaded nylon cable glands
- \* TPV sealing provide strong Cable Grip, Strain Relief and Superior Ingress Protection
- \* With its unique Anti-Click design, provides Anti-Vibration
- \* Easy Assembly
- \* Halogen Free
- \* Accessories such as locknut and o-ring must be ordered separately.



\* Long thread ones (15 mm.) is supplied on request. Please add 'Long' after Part Code!

\* Any other colors can be supplied as per request. Please add color name after Part Code!For example: PCG01-Black



\* Some approvals do not cover all sizes!



Entry Thread Size	Light Grey RAL7035 Code	Cable Range		H	GL	Wrench
		Inch	mm.	mm	mm	mm
PG7	PCG01-L	.12-.26	3-6,5	24	8	15
PG9	PCG02-L	.15-.32	4-8	28	8	19
PG11	PCG03-L	.19-.39	5-10	29	8	22
PG13,5	PCG04-L	.15-.39	4-10	29	9	24
PG13,5	PCG05-L	.23-.47	6-12	29	9	24
PG16	PCG06-L	.39-.55	10-14	33	9	27
PG21	PCG07-L	.35-.67	9-17	38	11	33
PG21	PCG08-L	.51-.71	13-18	38	11	33
PG29	PCG09-L	.70-.98	18-25	41	11	42
PG36	PCG10-L	.87-1.26	22-32	51	13	53
PG42	PCG11-L	1.18-1.49	30-38	55	13	60
PG48	PCG12-L	1.33-1.73	34-44	55	14	65

# Nylon Cable Glands

## MetricNylon Cable Glands

**Material:** PA6 Nylon for Gland

TPV for Seal

NBR for o-ring (on request) TPV for washer (on request)

**Temperature Range:** -20° to +100 permanent

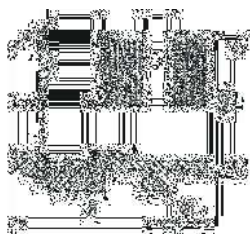
up to +150 intermittent

**Ingress Protection Rating:** IP68 5 bar when it is used with o-ring or washer

**Flame Retardancy:** V2 according to UL94 / V0 (on request)

**Standards:** EN50262 Metric EN60423

- \* Standard Metric threaded nylon cable glands
- \* TPV sealing provide strong Cable Grip, Strain Relief and Superior Ingress Protection
- \* With its unique Anti-Click design, provides Anti-Vibration
- \* Easy Assembly
- \* Halogen Free
- \* Accessories such as locknut and o-ring must be ordered separately.



\* Long thread ones (15 mm.) is supplied on request. Please add 'Long' after Part Code!

\* Any other color can be supplied on request. Please add color name after Part Code!

For example: MCG01-Black



\* Some approvals do not cover all sizes!



Entry Thread Size	Light Grey RAL7035 Code	Cable Range		H	GL	Wrench
		Inch	mm.	mm	mm	mm
M 12 x 1,5	MCG01-L	.12-.26	3-6,5	24	8	15
M 16 x 1,5	MCG02-L	.15-.32	4-8	28	8	19
M 16 x 1,5	MCG03-L	.19-.39	5-10	29	10	22
M 20 x 1,5	MCG04-L	.15-.39	4-10	29	10	24
M 20 x 1,5	MCG05-L	.23-.47	6-12	29	10	24
M 20 x 1,5	MCG06-L	.39-.55	10-14	33	10	27
M 25 x 1,5	MCG07-L	.35-.67	9-17	38	10	33
M 25 x 1,5	MCG08-L	.51-.71	13-18	38	10	33
M 25 x 1,5	MCG09-L	.43-.67	11-17	35	10	29
M 25 x 1,5	MCG10-L	.35-.55	9-14	35	10	29
M 25 x 1,5	MCG11-L	.15-.39	4-10	32	10	29
M 25 x 1,5	MCG12-L	.23-.47	6-12	32	10	29
M 32 x 1,5	MCG13-L	.70-.98	18-25	41	10	42
M 40 x 1,5	MCG14-L	.87-1.26	22-32	51	10	53
M 50 x 1,5	MCG15-L	1.18-1.49	30-38	53	18	60
M 63 x 1,5	MCG16-L	1.33-1.73	34-44	55	18	70

# Nylon Locknuts

## PG/Metric/NPTLocknuts

**Material:** PA6 Nylon +30% GF

**Temperature Range:** -20°to +100 permanent

**Flame Reterdancy:** V2 according to UL94

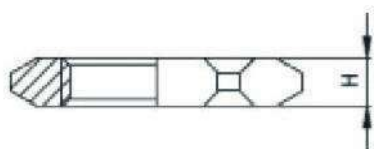
\* For tightening of cable glands

\* Halogen Free



\* Please add 'F' for Flanged ones after Part Code!!

For example: PLN01-L-F



\* Other colors can be supplied as per request.  
Please add color name after Part Code!!

For example: PLN01-Black

\* NPT Thread available on request!

Entry Thread Size	Light Grey RAL7035 Code	H	Wrench
		mm	mm
PG7	PLN01-L	5	19
PG9	PLN02-L	5	19
PG9	PLN03-L	5	22
PG11	PLN04-L	5	24
PG13,5	PLN05-L	6	27
PG16	PLN06-L	6	30
PG21	PLN07-L	7	36
PG29	PLN08-L	7	46
PG36	PLN09-L	8	60
PG42	PLN10-L	8	65
PG48	PLN11-L	8	70
M12x1,5	MLN01-L	5	18
M16x1,5	MLN02-L	5	22
M20x1,5	MLN03-L	6	26
M25x1,5	MLN04-L	6	32
M32x1,5	MLN05-L	7	41
M40x1,5	MLN06-L	7	50
M50x1,5	MLN07-L	8	60
M63x1,5	MLN08-L	8	75



# Metallic Stopper Plugs

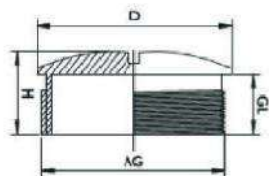
## PG/Metric/NPT Stopper Plugs

**Material:** Brass / Stainless Steel

NBR for O-ring

**Ingress Protection Rating:** IP68

\* For closing unused holes



\* Please add 'HEX' for Hexagonal plugs after Part Code!! For example: PBSP01-HEX

\* NPT Thread available on request!



Entry Thread Size	Code Brass	Code Stainless Steel	H	GL	D
			mm	mm	mm
PG7	PBSP01	PSSSP01	8	5	14
PG9	PBSP02	PSSSP02	9	6	17
PG11	PBSP03	PSSSP03	9	6	20
PG13,5	PBSP04	PSSSP04	9,5	6,5	22
PG16	PBSP05	PSSSP05	9,5	6,5	24
PG21	PBSP06	PSSSP06	11	7	30
PG29	PBSP07	PSSSP07	12	8	39
PG36	PBSP08	PSSSP08	15	9	50
PG42	PBSP09	PSSSP09	16	10	57
PG48	PBSP10	PSSSP10	16	10	64
M12x1,5	MBSP01	MSSSP01	7,5	5	14
M16x1,5	MBSP02	MSSSP02	8	5	18
M20x1,5	MBSP03	MSSSP03	9,5	6,5	22
M25x1,5	MBSP04	MSSSP04	11	7	28
M32x1,5	MBSP05	MSSSP05	12	8	35
M40x1,5	MBSP06	MSSSP06	13	8,5	44
M50x1,5	MBSP07	MSSSP07	15	9	54
M63x1,5	MBSP08	MSSSP08	16	10	67

# Metallic EMC Cable Glands

## EMC Cable Glands

**Material:** Nickel Plated Brass / AISI303 or 316L SS for Gland  
TPV for Seal, AISI301 SS for EMC Spring  
PA6 Nylon for Clamping Insert  
NBR for o-ring

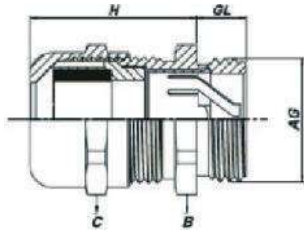
**Temperature Range:** -20° to +100 permanent  
-40° to +150 intermittent

**Ingress Protection Rating:** IP68 5 bar

**Flame Retardancy:** V2 according to UL94

**Standards:** DIN EN 62444/50262 Metric EN 60423

- \* PG / Metric / NPT threaded EMC cable glands
- \* TPV sealing provides strong Cable Grip, Strain Relief and Superior Ingress Protection
- \* Long-lasting contact by high definition contact spring
- \* Easy Assembly
- \* Excellent Shielding
- \* Accessories such as locknut must be ordered separately



\* For AISI 316L Stainless Steel ones Please add '316' after Part Code! For example: PBCG01-25

\* Long thread options available upon request



\* Some approvals do not cover all sizes!

\* PG & NPT Thread available on request!

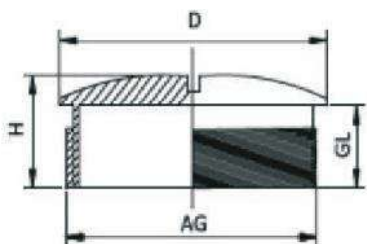
Entry Thread Size	Code Brass	Code Stainless Steel	Cable Range		H	GL	Wrench Size	
			Inch	mm.	mm	mm	B mm.	C mm.
M12x1,5	MBEMCG12	MSSEMCG12	.12-.26	3-6,5	26	6	17	17
M16x1,5	MBEMCG13	MSSEMCG13	.15-.32	4-8	23	7	18	17
M20x1,5	MBEMCG14	MSSEMCG14	.23-.47	6-12	26,5	8	22	22
M25x1,5	MBEMCG15	MSSEMCG15	.39-.55	10-14	28	8	27	24
M32x1,5	MBEMCG16	MSSEMCG16	.51-.71	13-18	31,5	9	34	30
M40x1,5	MBEMCG17	MSSEMCG17	.70-.98	18-25	38	9	43	40
M50x1,5	MBEMCG18	MSSEMCG18	.87-1.26	22-32	43	9	55	50
M63x1,5	MBEMCG19	MSSEMCG19	1.30-1.73	33-44	48	14	68	64
M75x1,5	MBEMCG20	MSSEMCG20	1.97-2.48	50-63	58	20	90	90
M80x2	MBEMCG21	MSSEMCG21	1.97-2.48	50-63	58	20	90	90
M90x2	MBEMCG22	MSSEMCG22	2.36-2.76	60-70	61	20	100	100

# Nylon Stopper Plugs

## PG/Metric Stopper Plugs

**Material:** PA6 Nylon  
**Temperature Range:** -20°to +100 permanent  
**Flame Retardancy:** V2 according to UL94  
**Ingress Protection Rating:** IP54 / IP68 with o-ring

- \* For closing unused holes
- \* Halogen Free



\* Other colors can be supplied as per request. Please add color name after Part Code!!  
For example: PSP01-Black

Entry Thread Size	Light Grey RAL7035 Code	H	GL	D
		mm	mm	mm
PG7	PSP01-L	8	6	15
PG9	PSP02-L	8,2	6	19
PG11	PSP03-L	8,5	6	22
PG13,5	PSP04-L	8,5	6	25
PG16	PSP05-L	8,5	6	27
PG21	PSP06-L	12	8	33
PG29	PSP07-L	11,3	8	44
PG36	PSP08-L	14,3	10	55
M12x1,5	MSP01-L	8,5	6	15
M16x1,5	MSP02-L	10	7	20
M20x1,5	MSP03-L	10	7	24
M25x1,5	MSP04-L	14	10	30
M32x1,5	MSP05-L	14	10	37
M40x1,5	MSP06-L	15	10	46

# Nylon Cable Glands

## PG/Metric/NPT Strain Relief Cable Glands

**Material:** PA6 Nylon for Gland

TPV for Seal

NBR for o-ring (on request) TPV for washer (on request))

**Temperature Range:** -20°to +100 permanent

up to +150 intermittent

**Ingress Protection Rating:** IP68 5 bar when it is used with o-ring or washer

**Flame Reterdancy:** V2 according to UL94 / V0 (on request)

**Standards:** EN50262 PG DIN40430

- \* Standard PG/Metric/NPT threaded nylon cable glands
- \* TPV sealing provide strong Cable Grip, Strain Relief and Superior Ingress Protection
- \* With its unique design, provides excellent cable bending protection
- \* Easy Assembly
- \* Halogen Free
- \* Accessories such as locknut and o-ring must be ordered separately.



\* Long thread ones (15 mm.) is supplied on request. Please add 'Long' after Part Code!

\* Any other colors can be supplied as per request. Please add color name after Part Code! For example: PSCG01-Black



\* NPT Thread available on request!

Entry Thread Size	Light Grey RAL7035 Code	Cable Range		H	GL	Wrench
		Inch	mm.	mm	mm	mm
PG7	PSCG01-L	.12-.26	3-6,5	57	8	15
PG9	PSCG02-L	.15-.32	4-8	70	8	19
PG11	PSCG03-L	.19-.39	5-10	81	8	22
PG13,5	PSCG04-L	.15-.39	4-10	89	9	24
PG13,5	PSCG05-L	.23-.47	6-12	89	9	24
PG16	PSCG06-L	.39-.55	10-14	107	9	27
PG21	PSCG07-L	.35-.67	9-17	124	11	33
PG21	PSCG08-L	.51-.71	13-18	124	11	33
M12x1,5	MSCG01-L	.12-.26	3-6,5	57	8	15
M16x1,5	MSCG02-L	.15-.32	4-8	70	8	19
M16x1,5	MSCG03-L	.19-.39	5-10	81	10	22
M20x1,5	MSCG04-L	.15-.39	4-10	89	10	24
M20x1,5	MSCG05-L	.23-.47	6-12	89	10	24
M20x1,5	MSCG06-L	.39-.55	10-14	107	10	27
M25x1,5	MSCG07-L	.35-.67	9-17	124	10	33
M25x1,5	MSCG08-L	.51-.71	13-18	124	10	33



WREXHAM  
MINERAL  
CABLES



THE **ONLY** TRUE FIRE **SURVIVAL** CABLE



# The only TRUE Fire Survival Cable

Mineral Insulated Copper Cable (MICC Cable) is the only true fire survival cable and exceeds over three hours testing in temperatures above 950°C. MICC Cables utilise two key elements: Copper and Magnesium oxide. Neither release toxins; neither will burn.



Wrexham Mineral Cables are the UK's only manufacturer of MICC Fire survival cables. Our facility utilises continuous production technology to manufacture mineral insulated cables meaning longer lengths and shorter lead times than any of our global competitors.

Back in 1989 Wrexham Mineral Cables developed a totally unique process for the manufacturing of MICC cables. This method allows 100% continuous monitoring of the manufacturing process and ensures a 100% conforming product. In over 30 years of manufacturing, Wrexham Mineral Cables have had zero in-field failures.

Our cables are installed in some of the world's largest and most important buildings, and are recognised throughout the electrical industry as the best choice for fire survival.

The quality and reliability of our MICC cables meets and exceeds British, European and Australian standards, and maintains certifications from BRE-LPCB, Warrington Fire Research Centre, and London Underground with our termination glands approved by SIRA-for ATEX and IECEx certification.

Wrexham Mineral Cable is proven to safely carry a load for over 3 hours at 950°C and survive direct impact and exposure to water similar to a full fire hose, all on one cable sample.

INORGANIC CONSTRUCTION NOTHING TO BURN	> >	Nothing to Burn Zero toxic emissions or smoke
INORGANIC MATERIALS HOLISTIC FIRE SURVIVAL	> >	Last a lifetime Zero combustion or heat release
NATURALLY ARMoured SELF MONITORING	> >	No risk of rodent damage No False alarms
FURNACE TESTED	>	Passes the only true lifelike fire test







# 10 minutes?

## IN CASE OF EMERGENCY

1) Sound the alarm:  
But if the cable is burnt and not connected how can you?

2) Dial 999:  
Inform reception/security  
Impossible if the communication cables are burnt.

3) Attack the fire with extinguishers:  
But how can you if the lights are not working and you can't find them?

4) Follow exit signs:  
You can't because plastic sheathing around the emergency systems' cabling is emitting toxic smoke and you cannot see or breathe.

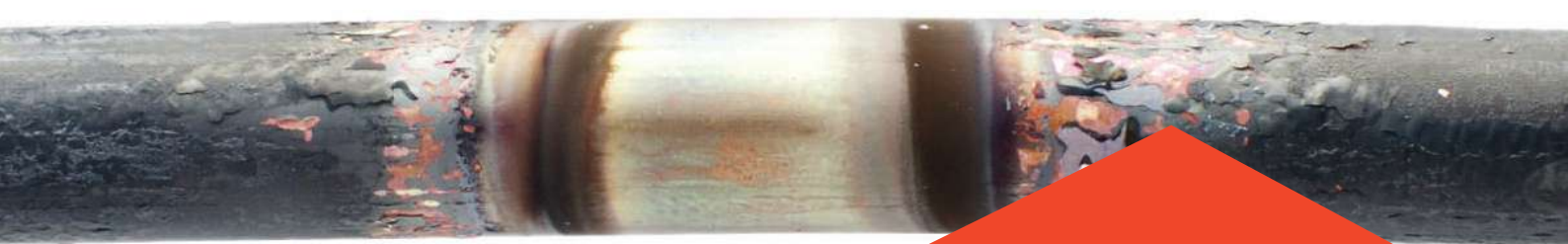
5) Contain the fire:  
Close windows and doors - A bit difficult if you have NO lights and you cannot see because of smoke.

6) Use the exit stairwells:  
Fine, but you can't find them because emergency lights have failed and smoke extraction fans have stopped due to cables burnt.

The image above is a polymeric 'fire resistant' cable after just 10 minutes when exposed to temperatures of 850°C. (This is the testing temperature of BS EN 50200 pH120 Enhanced) which requires 2 hours fire resistance. In independent testing several leading brands of polymeric cables failed at 950°C (The test temperature of BS 6387)

**Competitor  
cable after just  
10 minutes at 850°C**

# or 3 hours?



MICC Cable easily withstands temperatures exceeding 950°C for over 3 hours right up to the melting point of copper (1083°C) and its composition means there is NOTHING to burn!

**Our cable after  
3 hours at 950°C**

# Explosive Environments

Unlike any other type of hazardous area cable system, MICC Cables do not require conduits, curing resins, expensive fittings, or complicated terminating processes for use in Ex environments. WMC cable systems are approved to the latest EExd ATEX & IECEx standards for use in explosive atmospheres, and one simple twist of our cable gland locking nut produces a total seal to Zone 1 and 2 hazardous area applications within 5 minutes. This greatly reduces the installation risk, and the cost and installation space required. Our cable system also comes with a 30 years system warranty, and our UK manufacturing excellence has recorded zero in-field failures in our 30+ years manufacturing. The risk free, cost effective Ex cable solution from the UK's only manufacturer of MICC fire survival cables.

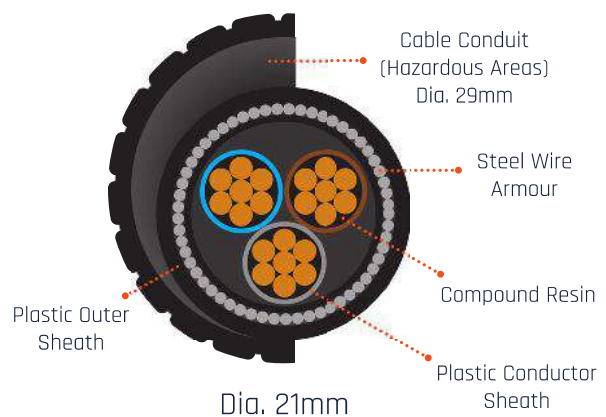
## Benefits of MICC Cable

- ✗ **NO** conduit required
- ✗ **NO** curing time for resin
- ✗ **NO** additional glanding system
- ✗ **NO** risk of poor Ex insulation techniques

### 3 Core MICC Cable

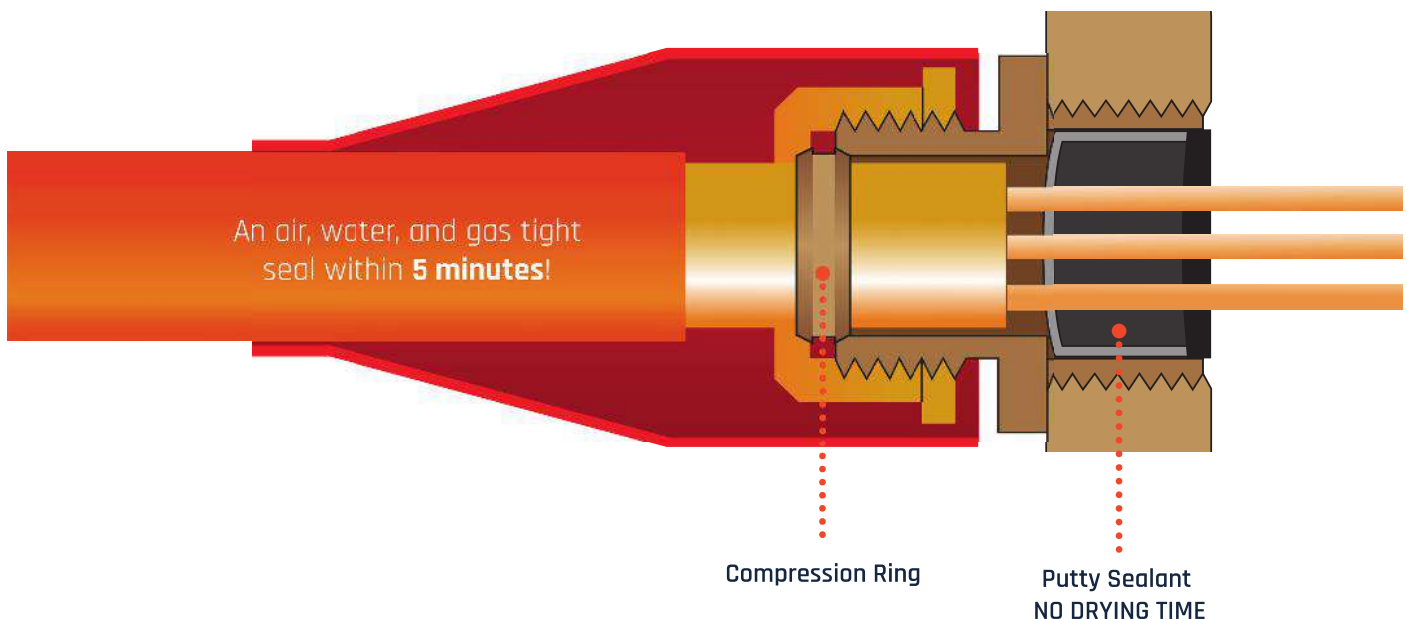


### 3 Core SWA Cable



## The Wrexham Mineral Cables (WMC) Ex Cable system

The cost effective Ex cable solution from WMC can also greatly reduce the installation space. In most cases the MICC cable system can be over ONE THIRD smaller than other Ex cable options.





# Applications and Industries

MICC Cables have been designed specifically for critical and lifesaving systems where continuity is required in the event of a fire.

## Critical and Life Saving Systems:

<b>EMERGENCY SHUTDOWN SYSTEMS</b>	Stop/Start Controls	<b>EMERGENCY LIGHTING</b>	Fire Alarm Systems
<b>FIRE PUMPS</b>	Fume & Smoke Extraction	<b>FIRE DETECTION &amp; PROTECTION SYSTEMS</b>	Theatre/Life Support Systems
<b>SPRINKLER SYSTEMS</b>	Instrument/Monitoring Systems	<b>COMMUNICATION SYSTEMS</b>	Lifts
<b>RECESS &amp; HANDRAIL ILLUMINATION</b>	Public Address Systems	<b>MAINS DISTRIBUTION</b>	Motor Operated Valves

## Industries



Multi-Storey Car Parks



Travelators/Escalators



Airports



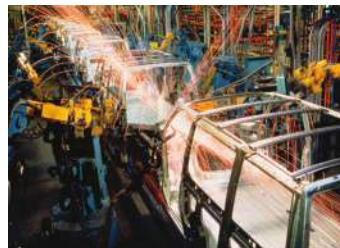
Hospitals



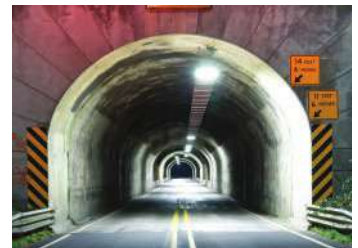
Shopping Centres



Rail Networks/Metrolinks



Industrial/Manufacturing



Mining/Tunnels



Hotels/Catering



Skyscrapers/Tower Blocks



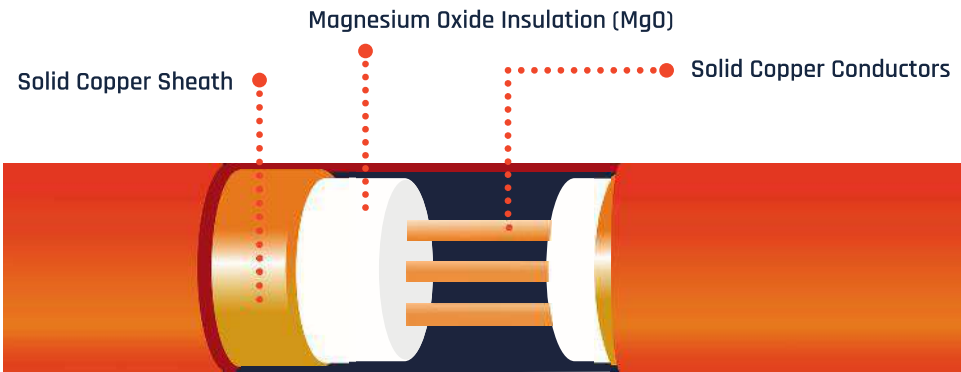
Gas/Oil Refineries







Nuclear/Power Stations

# Fire Resistant Cable and Accessories








Available in 2 voltage ranges, commonly known as Light (L) and Heavy Duty (H) cables. Exceeds 3 hours at 930°C survival time. This impressive performance can add vital time to escape a fire, and makes it ideal for use in large developments such as hospitals, shopping centres, airports, schools, underground rail systems, factories and high rise buildings which house large numbers of people.



## 500V Light Duty Cable

TECHNICAL												ACCESSORIES							
CORE	CABLE SIZE	CONDUCTORS		CURRENT RATINGS		VOLT DROP	SHEATH CROSS SECTION AREA (EFFECTIVE mm <sup>2</sup> )	EARTH FAULT LOOP IMPEDANCE @ 70 °C (R1+R2) Ohms / km	MAXIMUM CONDUCTOR RESISTANCE Ohms PER 1000 METRES 20 °C	CABLE DIAMETER		APPROX WEIGHT PER 1000 METRES		GLAND SIZE REF: WRGM		CABLE FIXINGS			
																ONE HOLE CLIPS		TWO WAY SADDLES	
		NO X SQ mm	BARE (AMPS)	COVERED (AMPS)	PER AMP/ PER METRE mV	BARE (mm)				LSZH COVERED (mm)	BARE (kg)	LSZH COVERED (kg)	PLAIN SEAL (mm) REF: WRPS	EARTH TAIL SEAL (mm) REF: WRPSL	BARE COPPER REF: WRC	LSZH COATED REF: WRCHL	BARE COPPER REF: WRS	LSZH COATED REF: WRSFL	
	2L 1.0	2	1.0	16.5	18.5	42	5.4	25.590	18.1	5.1	6.6	105	124	20	20	20	26	202	272
	2L 1.5	2	1.5	20.5	23	28	6.3	18.627	12.1	5.7	7.2	132	156	20	20	22	28	222	302
	2L 2.5	2	2.5	28	31	17	8.2	11.980	7.41	6.6	8.1	184	207	20	20	26	32	272	342
	2L 4.0	2	4.0	36	40	10	10.7	7.915	4.61	7.7	9.4	253	290	20	20	30	37	302	382
	3L 1.0	3	1.0	13.5	15	36	6.7	25.637	18.1	5.8	7.3	132	159	20	20	22	28	242	302
	3L 1.5	3	1.5	17	19	24	7.8	17.823	12.1	6.4	7.9	172	199	20	20	24	30	272	342
	3L 2.5	3	2.5	23.5	26	14	9.5	11.621	7.41	7.3	9.0	234	270	20	20	28	34	302	342
	4L 1.0	4	1.0	13.5	15	36	7.7	25.111	18.1	6.3	7.8	164	191	20	20	24	30	272	342
	4L 1.5	4	1.5	17.5	19.5	24	9.1	17.416	12.1	7.0	8.5	209	243	20	20	28	34	302	342
	4L 2.5	4	2.5	23.5	26	14	11.3	11.166	7.41	8.1	9.8	288	333	20	20	32	37	342	422
	7L 1.0	7	1.0	9	10	42	10.2	24.333	18.1	7.6	9.3	237	271	25	25	30	37	302	382
	7L 1.5	7	1.5	11.5	13	28	11.8	16.758	12.1	8.4	10.1	310	351	25	25	32	40	342	422
	7L 2.5	7	2.5	15.5	17.5	17	15.4	10.580	7.41	9.7	11.4	433	475	25	25	37	43	382	462

# 750V Heavy Duty Cable

TECHNICAL												ACCESSORIES							
Core	Cable Size	CONDUCTORS		CURRENT RATINGS		VOLT DROP	SHEATH CROSS SECTION AREA (EFFECTIVE mm²)	EARTH FAULT LOOP IMPEDANCE @ 70 °C (R1+R2) Ohms / km	MAXIMUM CONDUCTOR RESISTANCE Ohms PER 1000 METRES 20 °C	CABLE DIAMETER		APPROX WEIGHT PER 1000 METRES		GLAND SIZE REF: WRGM		CABLE FIXINGS			
		NO X SQ mm		CABLES EXPOSED TO TOUCH						BARE (mm)	LSZH COVERED (mm)	BARE (kg)	LSZH COVERED (kg)	PLAIN SEAL (mm) REF: WRPS	EARTH TAIL SEAL (mm) REF: WRPSL	ONE HOLE CLIPS		TWO WAY SADDLES	
				BARE (AMPS)	COVERED (AMPS)	PER AMP/ PER METRE mV										BARE COPPER REF: WRC	LSZH COATED REF: WRCHL	BARE COPPER REF: WRS	LSZH COATED REF: WRSFL
	1H2.5	1	2.5	39	43	13.5	6.44	3.71	7.41	5.3	6.6	111	128	20	20	20	26	202	272
	1H4	1	4	51	56	8.3	7.7	3.09	4.61	5.9	7.2	143	166	20	20	22	28	222	272
	1H6	1	6	47	52	6	8	5.318	3.08	6.4	7.9	173	213	20	20	24	30	272	342
	1H10	1	10	63	70	3.6	9	3.545	1.83	7.3	9.0	241	274	20	25	28	34	302	342
	1H16	1	16	83	92	2.3	12	2.471	1.15	8.3	10.0	327	364	20	25	32	37	342	422
	1H25	1	25	108	120	1.45	15	1.715	0.727	9.6	11.3	458	500	20	32	37	43	382	462
	1H35	1	35	132	147	1.05	18	1.329	0.524	10.7	12.4	600	650	20	32	40	47	422	502
	1H50	1	50	163	181	0.79	22	1.040	0.387	12.1	13.8	760	812	25	40	47	54	502	542
	1H70	1	70	199	221	0.55	27	0.781	0.268	13.7	15.4	1019	1080	25	-	54	59	542	632
	1H95	1	95	237.5	265	0.41	32	0.619	0.193	15.4	17.7	1326	1416	25	-	59	67	632	702
	1H120	1	120	272.5	303	0.33	37	0.516	0.153	16.8	19.1	1615	1713	32	-	63	75	702	752
	1H150	1	150	311	346	0.29	44	0.435	0.124	18.4	20.7	1952	2059	32	-	71	79	752	812
	1H185	1	185	353	392	0.25	54	0.368	0.101	20.4	23.2	2425	2570	32	-	79	88	812	932
	1H240	1	240	411	457	0.21	70	0.297	0.0775	23.3	26.1	3146	3312	40	-	88	101	932	1042
	1H300	1	300	795	883	0.31	84.6	0.28	0.0775	26	28.8	3791	3972	-	-	101	USE WRSHL 18 OR WRSZL 18 AS REQUIRED		
	1H400	1	400	948	1053	0.28	105	0.22	0.044	30	32.8	5004	5211	-	-	-			
	2H1.5	2	1.5	22.5	25	28	11	16.902	12.1	7.9	9.6	247	284	20	20	30	37	342	382
	2H2.5	2	2.5	30.5	34	17	13	10.903	7.41	8.7	10.4	280	335	20	20	34	40	342	422
	2H4	2	4	40.5	45	10	16	7.185	4.16	9.8	11.5	365	415	20	25	37	43	422	462
	2H6	2	6	51	57	7	18	5.073	3.08	10.9	12.6	463	510	20	25	43	47	462	502
	2H10	2	10	69	77	4.2	24	3.272	1.83	12.7	14.4	635	725	25	32	47	54	502	592
	2H16	2	16	92	102	2.6	30	2.220	1.15	14.7	16.4	855	918	25	40	54	63	592	702
	2H25	2	25	119.5	135	1.65	38	1.537	0.727	17.1	19.4	1185	1285	32	40	67	75	702	752
	3H1.5	3	1.5	19	21	24	12	16.722	12.1	8.3	10.0	265	310	20	20	32	37	342	422
	3H2.5	3	2.5	25	28	14	14	10.711	7.41	9.3	11.0	345	390	20	25	37	43	382	462
	3H4	3	4	33	37	9.1	17	7.041	4.61	10.4	12.1	452	495	20	25	40	47	422	502
	3H6	3	6	43	48	6	20	4.953	3.08	11.5	13.2	562	602	25	25	43	51	462	542
	3H10	3	10	58.5	65	3.6	27	3.147	1.83	13.6	15.3	758	817	25	32	54	59	542	632
	3H16	3	16	77	86	2.3	34	2.133	1.15	15.6	17.9	1039	1130	25	40	59	71	632	752
	3H25	3	25	101	112	1.45	42	1.476	0.727	18.2	20.5	1451	1557	40	40	71	79	752	812
	4H1.5	4	1.5	19	21	24	14	16.435	12.1	9.1	10.8	330	370	20	20	37	43	382	462
	4H2.5	4	2.5	25	28	14	16	10.496	7.41	10.1	11.8	412	445	20	25	40	47	422	462
	4H4	4	4	33	37	9.1	20	6.814	4.61	11.4	13.1	530	608	25	25	43	51	462	542
	4H6	4	6	43	48	6	24	4.782	3.08	12.7	14.4	740	790	25	32	47	54	502	592
	4H10	4	10	58.5	65	3.6	30	3.036	1.83	14.8	16.5	916	979	25	32	54	63	592	702
	4H16	4	16	77	86	2.3	39	2.026	1.15	17.3	19.6	1292	1393	32	40	67	75	702	752
	4H25	4	25	101	112	1.45	49	1.384	0.727	20.1	22.9	1813	1956	40	40	79	88	812	932
	7H1.5	7	1.5	13	14.5	28	18	16.004	12.1	10.8	12.5	435	482	25	25	43	47	472	502
	7H2.5	7	2.5	17.5	19.5	17	22	10.100	7.41	12.1	13.8	563	616	25	25	47	54	502	542
	12H1.5	12	1.5	10.5	12	28	29	15.519	12.1	14.1	15.8	710	770	32	-	54	59	592	632
	12H2.5	12	2.5	14.5	16	17	34	9.706	7.41	15.6	17.9	910	1001	32	-	59	71	632	752
	19H1.5	19	1.5	9	10	28	37	15.310	12.1	16.6	18.9	989	1086	40	-	63	71	702	752

# Voltage Drop

Conductor operating temperature 70°C.

CONDUCTOR CROSS- SECTIONAL AREA	1 TWO-CORE CABLE						THREE-PHASE AC											
	2 SINGLE-CORE CABLES TOUCHING			1 TWO-CORE CABLE			1 THREE OR FOUR CORE CABLE			3 SINGLE-CORE CABLES IN TREFOIL FORMATION			3 SINGLE-CORE CABLES FLAT and TOUCHING			CABLES FLAT and SPACED BY ONE CABLE DIAMETER*		
(mm <sup>2</sup> )	(mV/A/m)			(mV/A/m)			(mV/A/m)			(mV/A/m)			(mV/A/m)			(mV/A/m)		
2.5	17			17			14			14			14			14		
4	10			10			9.1			9.1			9.1			9.1		
6	7			7			6.0			6.0			6.0			6.0		
10	4.2			4.2			3.6			3.6			3.6			3.6		
16	2.6			2.6			2.3			2.3			2.3			2.3		
	R	X	Z	R	X	Z	R	X	Z	R	X	Z	R	X	Z	R	X	Z
25	1.65	0.200	1.65	1.65	0.145	1.65	1.45	0.125	1.45	1.45	0.170	1.45	1.45	0.25	1.45	1.45	0.32	1.50
35	1.20	0.195	1.20	-	-	-	-	-	-	1.05	0.165	1.05	1.05	0.24	1.10	1.05	0.31	1.10
50	0.89	0.185	0.91	-	-	-	-	-	-	0.78	0.160	0.80	0.79	0.24	0.83	0.82	0.31	0.87
70	0.62	0.180	0.64	-	-	-	-	-	-	0.54	0.155	0.56	0.55	0.23	0.60	0.58	0.30	0.65
95	0.46	0.175	0.49	-	-	-	-	-	-	0.40	0.150	0.43	0.41	0.22	0.47	0.44	0.29	0.53
120	0.37	0.170	0.41	-	-	-	-	-	-	0.32	0.150	0.36	0.33	0.22	0.40	0.36	0.28	0.46
150	0.30	0.170	0.34	-	-	-	-	-	-	0.26	0.145	0.30	0.29	0.21	0.36	0.32	0.27	0.42
185	0.25	0.165	0.29	-	-	-	-	-	-	0.21	0.140	0.26	0.25	0.21	0.32	0.28	0.26	0.39
240	0.190	0.160	0.25	-	-	-	-	-	-	0.165	0.140	0.22	0.21	0.20	0.29	0.26	0.25	0.36

Notes:

- Ambient temperature: 30°C
- Sheath operating temperature: 70°C
- For single-core cables, the sheaths of the circuit are assumed to be connected together at both ends.
- For bare cables exposed to touch, the tabulated values should be multiplied by 0.9

# Current-Carrying Capacity

LSZH Covered or bare and exposed to touch (Copper conductors and sheath).

REFERENCE METHOD C						REFERENCE METHODS E, F, AND G		
CONDUCTOR CROSS- SECTIONAL AREA	SINGLE PHASE AC OR DC	THREE-PHASE AC		SINGLE PHASE AC OR DC	THREE-PHASE AC			
	2 SINGLE- CORE CABLES TOUCHING OR 1 TWO- CORE CABLE	3 SINGLE- CORE CABLES IN TREFOIL OR 1 THREE- CORE OR FOUR-CORE CABLE	3 SINGLE- CORE CABLES FLAT AND TOUCHING, HORIZONTAL OR VERTICAL	2 SINGLE- CORE CABLES TOUCHING OR 1 TWO- CORE CABLE	3 SINGLE- CORE CABLES IN TREFOIL OR 1 THREE- CORE OR FOUR-CORE CABLE	3 SINGLE- CORE CABLES FLAT AND TOUCHING	3 SINGLE-CORE CABLES FLAT & SPACED BY ONE CABLE DIAMETER	
							VERTICAL	HORIZONTAL
(mm²)	(AMPS)	(AMPS)	(AMPS)	(AMPS)	(AMPS)	(AMPS)	(AMPS)	(AMPS)
LIGHT DUTY CABLE (500 volts)								
1	18.5	15	17	19.5	16.5	18	20	23
1.5	23	19	21	25	21	23	26	29
2.5	31	26	29	33	28	31	34	39
4	40	35	38	44	37	41	45	51
HEAVY DUTY CABLE (750 volts)								
1.5	25	21	23	26	22	26	28	32
2.5	34	28	31	36	30	34	37	43
4	45	37	41	47	40	45	49	56
6	57	48	52	60	51	57	62	71
10	77	65	70	82	69	77	84	95
16	102	86	92	109	92	102	110	125
25	133	112	120	142	120	132	142	162
35	163	137	147	174	147	161	173	197
50	202	169	181	215	182	198	213	242
70	247	207	221	264	223	241	259	294
95	296	249	264	317	267	289	309	351
120	340	286	303	364	308	331	353	402
150	388	327	346	416	352	377	400	454
185	440	371	392	472	399	426	446	507
240	514	434	457	552	466	496	497	565

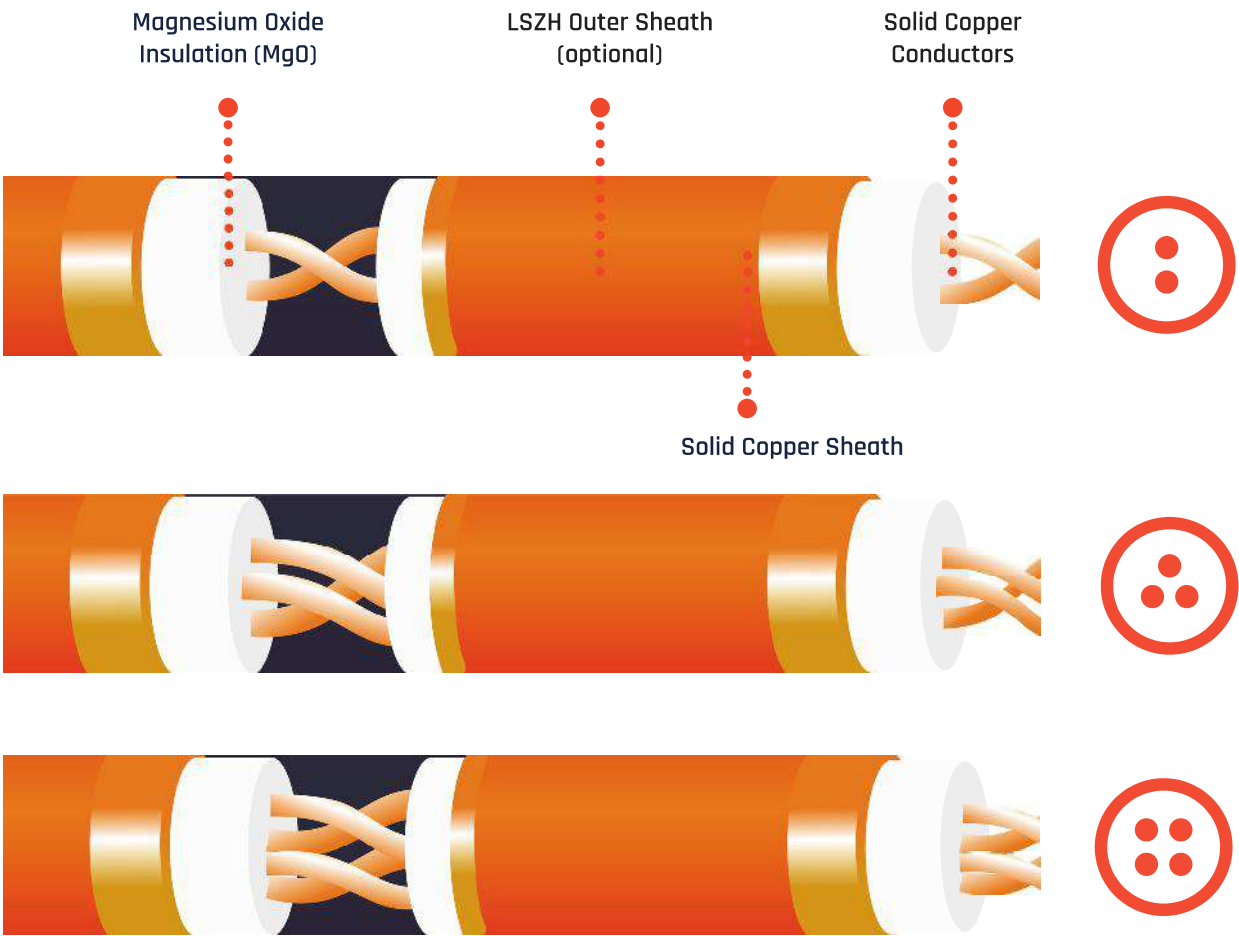
Notes:

- Ambient temperature: 30°C
- Sheath operating temperature: 70°C
- For single-core cables, the sheaths of the circuit are assumed to be connected together at both ends
- For bare cables exposed to touch, the tabulated values should be multiplied by 0.9

# Twisted Conductor Cable

Our Twisted Conductor Cables are designed for use where enhanced fire survival is required such as fire alarm and detection systems. Other applications include fire telephone systems, CCTV, and public address systems. Our Twisted Conductor Cables have reduced electromagnetic interference and signal corruption, reducing system malfunction and improved electrostatic screening.

CABLE SIZE REFERENCE	CONDUCTORS	CONDUCTOR RESISTANCE	MAX SHEATH RESISTANCE @20°C 0hm/km	CAP-C/C @10k-Hz	CAP-C/SH @10kHz	IND-LOOP @10kHz	CHARACTER IMP	DIAMETER OVER SHEATH	DIAMETER OVER LSZH	COND AREA	FREQUENCY OF TWIST (PER METRE)
2T1.5	2	12.1 ohms/Km	3.35	164 pF/m	243 pF/m	436 uH/Km	52 ohms	5.7mm	7.2mm	1.5mm <sup>2</sup>	20
2T2.5	2	7.4 ohms/Km	2.53	170 pF/m	270 pF/m	410 uH/Km	49 ohms	6.6mm	8.1mm	2.5mm <sup>2</sup>	20
3T1.5	3	12.1 ohms/Km	2.67	160 pF/m	260 pF/m	450 uH/Km	50 ohms	6.4mm	7.9mm	1.5mm <sup>2</sup>	20
4T1.5	4	12.1 ohms/Km	2.33	180-216 pF/m	290 pF/m	520 uH/Km	48 ohms	7.0mm	8.5mm	1.5mm <sup>2</sup>	20





# Approvals and Standards:

<b>CABLES MANUFACTURED AND TESTED UNDER LPCB LICENCE 333A/01</b>	To BS EN 60702 -1: 2002+A1:2015
<b>ISO 9001 APPROVED MANUFACTURING FACILITY</b>	LPCB cert 333

<b>EX PRODUCTION QUALITY ASSURANCE NOTIFICATION</b>	No. SIRA 02 ATEX M170
<b>ATEX EU-TYPE EXAMINATION CERTIFICATE</b>	No. SIRA 02 ATEX 1305X Equipment intended for use in Potentially Explosive Atmospheres Directive 2014/34/EU
<b>IECEX CERTIFICATE OF CONFORMITY</b>	No. SIRA IECEx 19.0051X



VISIT OUR WEBSITE FOR A FULL LIST OF STANDARDS AND APPROVALS.

WMC are also compliant with:

## LPCB Cable standards

<b>LPCB</b>	BS 5839-1:2013 ENHANCED to clause 26.2	Fire detection and fire alarm systems for buildings. Code of practice for system design, installation, commissioning and maintenance
<b>LPCB</b>	BS EN 50200 Class Ph120	Resistance to fire of unprotected small cables for use in emergency circuit
<b>LPCB</b>	BS 8434-2:2003+A2:2009	Test for unprotected small cables for use in emergency circuits. BS EN 50200 with a 930° flame and with water spray
<b>LPCB</b>	C, W & Z of BS 6387: 2013	Requirements for cables to maintain circuit integrity under fire conditions.
<b>LPCB</b>	BS 8491	Method for assessment of fire integrity of large diameter power cables
<b>LPCB</b>	BS 8519 CAT 3 POWER	Selection and installation of fire-resistant power and control cable systems for life safety, fire-fighting and other critical application

## SIRA Hazardous area cable gland system approvals

<b>ENCLOSURE TYPES</b>	Brass Compression Ring Type Glands hold ATEX & IECEx approval for use with suitable Certified Apparatus in Zone Classification 1 and 2 in potentially explosive atmospheres.
<b>EN / IEC 60079-1</b>	Explosive atmospheres – Part 1: Equipment protection by flameproof enclosure "d"
<b>EN / IEC 60079-31</b>	Explosive atmospheres – Part 31. Equipment dust ignition protection by enclosure "t"

## Other approvals

<b>LONDON UNDERGROUND (LUL)</b>	LU standard 1-085	Product Registration Certificate number 1567 The cable is compliant with LU standard 1-085, and suitable for installations in surface and sub-surface locations
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# High-rise Buildings



**Golden Bay Tower**



**Park Plaza**



**Harrods**

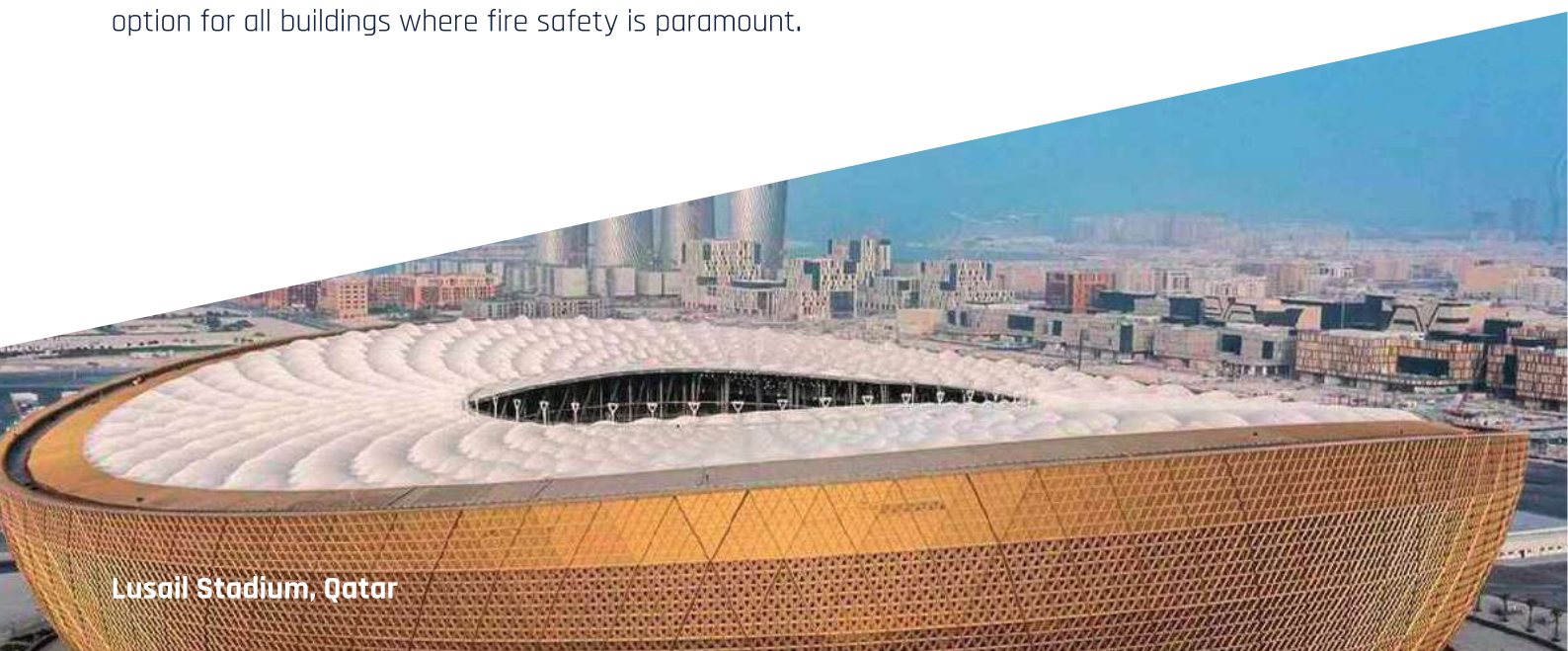
A high-rise building undergoes many risk assessments. Their aim is to not only reduce the probability of a fire occurring, but also how the core of the building will function when it's needed to save lives during evacuation.

The critical circuits need to function for extended periods due to evacuation time for large buildings. The areas of consideration include the fire alarm, sprinkler, smoke extraction and P.A. systems. Within these systems, emergency scenarios can be made worse when they fail to work. These include:

- Fire alarm cable stops working after several minutes.
- The sprinkler system did not activate which allowed the spread of fire rapidly.
- Communication systems fail to reach all levels, leaving residents uninformed on what actions to take.
- Extraction fans fail to work, meaning stairwells fill quickly with smoke.
- Emergency lights fail to work, meaning escape routes are not found.

MICC copper sheath has its own built-in conduit and does not require any additional mechanical protection. MICC cables can reduce inspection times saving further annual costs.

Fire resistant cables supply critical circuits to high rise buildings during a fire, or incident, where circuit integrity is essential for extended periods. It is the unique properties of MICC which make it the only cable option for all buildings where fire safety is paramount.



**Lusail Stadium, Qatar**



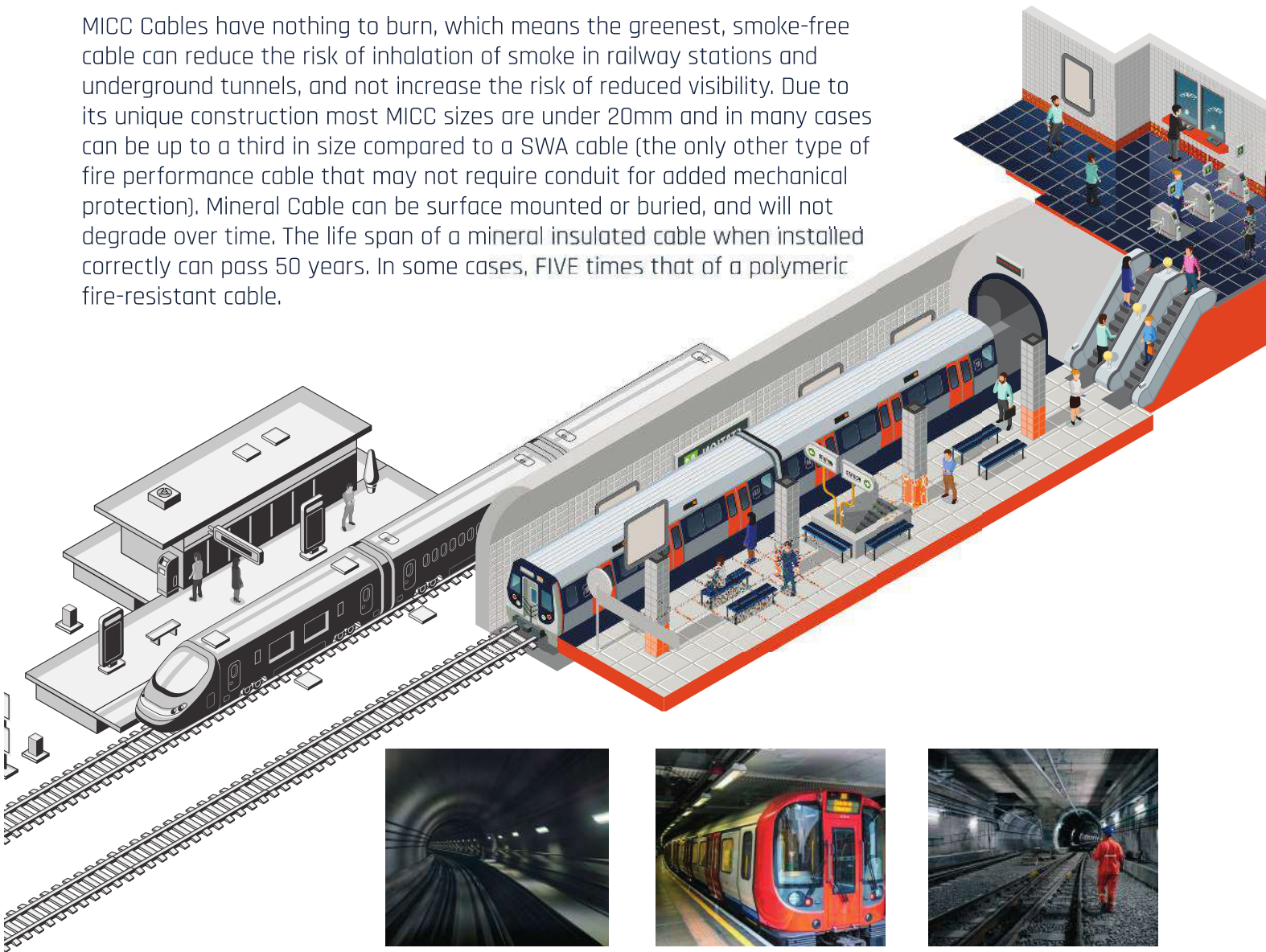
# Rail and Underground Tunnel Networks

Most underground cable installations are found in tunnels which are usually either roadways or railways. These tunnels carry significant cable services, where the highest standard of safety is demanded.

It is essential that the cables specified for critical applications have 'fire survival' capability. That is, the ability to survive in an emergency situation, to provide the power to the vital services such as alarms, emergency lighting and smoke extraction, to name but some.

The cable must also reduce the risk of flame spread. MICC cables are the ONLY type of FP cable that does not require any plastics or polymers to aid fire protection. Stations and underground tunnels are specially designed to include firewalls that should eliminate the risk of flame spread. Polymeric cables aid flame spread, and conduits spread flammable gases through the fire walls, increasing the risk of inhalation. Extraction within these systems may also be poor, meaning the FP cable must not produce dense toxic smoke, which increases the risk of inhalation and reduces visibility for escape.

MICC Cables have nothing to burn, which means the greenest, smoke-free cable can reduce the risk of inhalation of smoke in railway stations and underground tunnels, and not increase the risk of reduced visibility. Due to its unique construction most MICC sizes are under 20mm and in many cases can be up to a third in size compared to a SWA cable (the only other type of fire performance cable that may not require conduit for added mechanical protection). Mineral Cable can be surface mounted or buried, and will not degrade over time. The life span of a mineral insulated cable when installed correctly can pass 50 years. In some cases, FIVE times that of a polymeric fire-resistant cable.



**Delhi Metro Rail**



**London Underground**



**Manchester Victoria**

# Testing of Fire Survival Cables

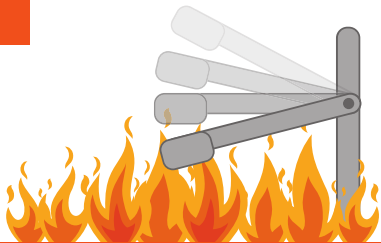
When testing to comply with the BS 6387:2013 fire, water and mechanical shock requirements, assessors will select a new sample of cable to be used for each category of testing, instead of the same cable for each one.

For any cable to be classed as Fire Survival it should undergo TRUE fire scenario testing involving fire, water and DIRECT impact on one single sample of cable. Our MICC did just that...

## London Underground Limited Test For Fire Survival Cables.

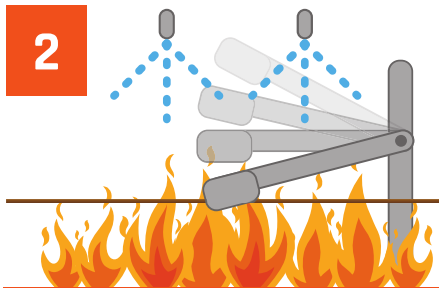
In order to satisfy one of the most globally recognised standards, London Underground devised a test for fire survival cables. The aim of the test was to extend the conditions of BS 6387 to effectively recreate a more realistic fire scenario, demonstrating what the cables may be subjected to in the event of a fire. This involved thermal shock and DIRECT impact on the cable sample. In a true fire scenario, cables have to survive not only the extremes of high temperature, but also the impact from falling debris together with water and foam exposure. In the resulting aftermath of a fire, a cable may be required to withstand bending, impact and water immersion whilst remaining operational. The London Underground Limited Test for Fire Survival Cables involved the following:

1



Cable was to be struck at the centre of the burner directly with a steel bar every 5 minutes during a 3 hours test at 950°C.

2



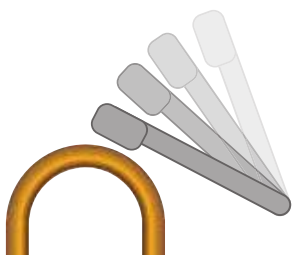
The cable would then be sprayed with water for 15 minutes whilst still being struck by the bar.

3



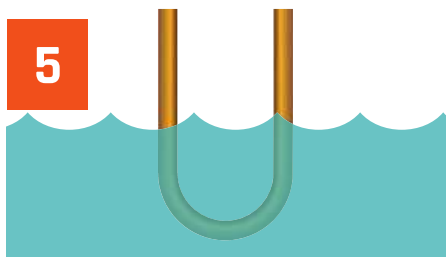
The cable would then be bent at point of impact around a mandrel through 180°. The bend radius would be equal to mineral cables' minimum bend radius which is six times the diameter of the bare cable.

4



The cable was then struck repeatedly and directly on the bend radius. The instrument used to strike the cable sample was a hammer.

5



The cable was then immersed in water and successfully energised at its rated voltage.

The Actual sample that underwent historical London Underground testing is still powering lighting today at WMC HQ.



# Accessories

Our cable fixings are fire rated and meet the requirements of BS 7671 fire resistant cable fixings in escape routes.

To complement the cable, Wrexham Mineral Cables have developed a range of accessories and tools, and can therefore supply a complete wiring system to suit the requirements of a wide variety of installations and applications where only MICC cables are suitable.

## Fixing Clips & Saddles



A full range of clips and saddles are available in Bare Copper, Red, Orange, Black, & White. Other colours available on request.

PRODUCT CODE: WRCHL (clips)

PRODUCT CODE: WRSFL (saddles)

## Brass Glands



ATEX and IECEx certified brass compression glands for EExd and general applications. Sizes: 20mm, 25mm, 32mm, 40mm.

PRODUCT CODE:

WRGM + cable size in mm

## Earth Tail Kit



Termination seals with built in earth tail for easy use. Kit comprises of E/T pots, WRMX sealing compound, Stub caps, Conductor and earth sleeving. Sizes: 20, 25, 32, 40mm

PRODUCT CODE: WRPSL

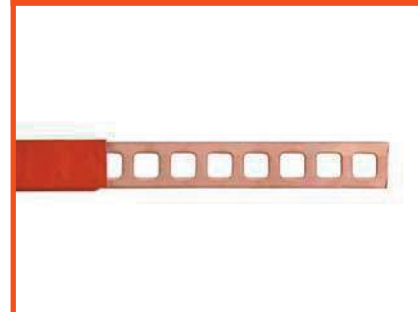
## Seal Kit



Termination seals without built in earth tail. Kit comprises Seal pots, WRMX sealing compound, Stub caps, Conductor sleeving. Sizes: 20mm, 25mm, 32mm, 40mm.

PRODUCT CODE: WRPS

## Pre punched Copper fixing strap



For use when making your own special size cable groupings. All colours available. Size: 12mm, 18mm. Sold as 5 metres Roll.

PRODUCT CODE: WRSH - WRSHL (covered)

PRODUCT CODE: WRSZ - WRSH (bare strap)

## Gland Shrouds



LSZH / PVC\* shroud available in all standard colours, with special colours available on request. Sizes: 20mm, 25mm, 32mm, 40mm.

PRODUCT CODE: WRHGMM - (LSZH), WRHG - (PVC) \*Available in 20mm & 25mm only

## Brass Locknuts



For use with the WRGM glands to secure the gland to the power supply box. Sizes: 20mm, 25mm, 32mm, 40mm.

PRODUCT CODE: WRLM

## Serrated Washers



For use with the installation of the gland. Sizes: 20mm, 25mm, 32mm, 40mm.

PRODUCT CODE: WRLWS

# Tools

For further information on our tools and components please call our sales team on +44 (0)1978 810789

## Plate Type Crimper



Uses a 3 point crimping plate to lock the stub cap into the pot.

PRODUCT CODE: WZDD + 20mm, 25mm, 32mm, 40mm

## Bending Lever



To assist in the dressing of cables, or when using the larger cables. The bending lever will help save time.

PRODUCT CODE: WZBLA (cables 10-16mm)  
WZBLB (cables 16-27mm)

## Rotary Stripper



Strips cables' sheaths

PRODUCT CODE: WZSUS (<8mm dia. cable)  
WZSU (>8mm dia. cable)  
SPARE BLADES: WZSUB (pack of 5)  
WZSUB (pack of 5)

## Joistripper



Easy to set tool for fast and efficient stripping of: 2L1, 2L1.5, 2L2.5, 3L1, 3L1.5, 4L1, 4L1.5

PRODUCT CODE: WZSJ  
SPARE BLADES: WZSJB (sold individually)

## Ring Tool



Used to score a light groove around the cable sheath to neatly stop the stripping action.

PRODUCT CODE: WZR

## 20mm Pot Wrench



Quick and easy ratchet tool for screwing on 20mm brass pots to the cable.

PRODUCT CODE: WZRP

## T Bar Hand Crimper



A quick and easy tool for crimping the stub caps into the pots. The 'T' bar avoids the need for spanner and is available in 20mm & 25mm.

PRODUCT CODE: WZDC

## Pot Wrench



Tool ensures quick and accurate screwing on of the brass pot. Sizes: 20mm, 25mm, 32mm, 40mm.

PRODUCT CODE: WZPM + Pot Size in mm



# Product Summary

## Connection technology for devices, control cabinets and systems



# Ethernet terminal blocks

	DESCRIPTION	COLOR	FEATURE	P/N
	IT02304HMNU000 PROFINET	white/blue/ yellow/orange	insulation displacement connector for PROFINET centerline 3.50 mm, direction of connection 90° solderable	AIT0230499-000
	SP02504HMNC000 PROFINET	white/blue/black/ yellow/orange	spring clamp terminal block for PROFINET centerline 5.0 mm, direction of connection 90° pluggable	ASP0250599-000
	PR015xxVBHC	black	Pin header centerline 5.00 mm, direction of connection 0° solderable (THR)	310171xx
	PM035xxVBHC	black	Pin header centerline 5.00 mm, direction of connection 0° solderable (SMT)	314171xx
	SP06605VAPC000 DeviceNet	black	spring clamp terminal block for DeviceNet centerline 5.08 mm, direction of connection 0° pluggable	SP06605VAPC000
	PR066xxVBEC	black	Pin header centerline 5.08 mm, direction of connection 0° solderable (THR)	314791xx
	PR066xxHBEC	black	Pin header centerline 5.08 mm, direction of connection 90° solderable (THR)	314781xx
	EP31S04ZDNN00A1	gray	insulation displacement connector conductor assignment to T568A pluggable	EP31S04ZDNN00A1
	EP31S04ZDNN00B1	gray	insulation displacement connector conductor assignment to T568B pluggable	EP31S04ZDNN00B1
	EP31S04ZDNN00I1	gray	insulation displacement connector conductor assignment to PROFINET pluggable	EP31S04ZDNN00I1
	PM31S04ZDNN02G2	lightgray	Socket installation position: verticale solderable (SMT) type of packaging: Tape & Reel	PM31S04ZDNN02G2
	PM31S04ZDNN01G2	lightgray	Socket installation position: horizontal solderable (SMT) type of packaging: Tape & Reel	PM31S04ZDNN01G2

## RJ45 PC board jacks for the device connection

	DESCRIPTION	HOUSINGS	FEATURE	P/N
	Jack RJ45 THT, Magnetics	shielded	PC board jack RJ45, single port, side entry, with 8 contacts solderable	AJT92B8813
	Jack RJ45 THT, Magnetics	shielded	PC board jack RJ45, single port, side entry, with 8 contacts solderable	AJT92BC813
	Jack RJ45, THT	unshielded	PC board jack RJ45, single port, top entry, with 8 contacts solderable	AJP92A8813
	AJT34L8813-011	shielded	PC board jack RJ45, single port, side entry, with 8 contacts solderable	AJT34L8813-011
	AJT34L8814-031	shielded	PC board jack RJ45, single port, side entry, with 8 contacts solderable	AJT34L8814-031
	AJT18L8813-010	unshielded	PC board jack RJ45, single port, side entry, with 8 contacts solderable	AJT18L8813-010
	AJT65B8813	shielded	PC board jack RJ45, single port, side entry, with 8 contacts solderable	AJT65B8813
	AJT48D8824	shielded	PC board jack RJ45, multi port 2x1, side entry, with 8 contacts solderable	AJT48D8824
	AJT35L8824-031	shielded	PC board jack RJ45, multi port 1x2, side entry, with 8 contacts solderable	AJT35L8824-031
	AJT74B8813	shielded	PC board jack RJ45, single port, top entry, with 8 contacts solderable	AJT74B8813

# M12 circular connector


PC board jacks – 4 pole, D-coded

	DESCRIPTION	FEATURE 1	FEATURE 2	P/N
	Jack M12	solderable, angled 90°	<2.5 mm wall thickness, rear wall mounting	MMT471A115
	Jack M12	solderable, angled 90°	<4 mm wall thickness, rear wall mounting	MMT471A115-0001
	Jack M12	solderable, angled 90°	<5 mm wall thickness, rear wall mounting	MMT471A115-0002
	Jack M12	solderable	rear wall mounting	MMW370A1A1
	Jack M12	solderable	frontside mounting	MMW360A1A1
	M12 insert for PC boards	solderable	green	MMT060A115
	Jack M12	solderable	IP67, frontside mounting	MMT361A115
	Jack M12	solderable	in set IP67, frontside mounting	MMT361A115-0001
	Jack M12	solderable, potted	IP67 in unmated condition, frontside mounting	MMT361A115-0009
	Jack M12	solderable	IP67, rear wall mounting	MMT371A115
	Jack M12	solderable	in set IP67, rear wall mounting	MMT371A115-0001
	Jack M12	solderable, potted	IP67 in unmated condition, rear wall mounting	MMT371A115-0009







# M12 circular connector

## PC board jacks – 4 pole, D-coded

	DESCRIPTION	FEATURE 1	FEATURE 2	P/N
	Jack M12	solderable, angled 90°	<2.5 mm wall thickness, rear wall mounting	MMT471A115
	Jack M12	solderable, angled 90°	<4 mm wall thickness, rear wall mounting	MMT471A115-0001
	Jack M12	solderable, angled 90°	<5 mm wall thickness, rear wall mounting	MMT471A115-0002
	Jack M12	solderable	rear wall mounting	MMW370A1A1
	Jack M12	solderable	frontside mounting	MMW360A1A1
	M12 insert for PC boards	solderable	green	MMT060A115
	Jack M12	solderable	IP67, frontside mounting	MMT361A115
	Jack M12	solderable	in set IP67, frontside mounting	MMT361A115-0001
	Jack M12	solderable, potted	IP67 in unmated condition, frontside mounting	MMT361A115-0009
	Jack M12	solderable	IP67, rear wall mounting	MMT371A115
	Jack M12	solderable	in set IP67, rear wall mounting	MMT371A115-0001
	Jack M12	solderable, potted	IP67 in unmated condition, rear wall mounting	MMT371A115-0009







## M12 circular connector

### Panel feed through M12

	DESCRIPTION	FEATURE 1	FEATURE 2	P/N
	Panel feed through M12	4 pole	D-coded on RJ45 straight	MWN811A115
	Panel feed through M12	4 pole	D-coded on RJ45 angled	MWN911A115
	Panel feed through M12	8 pole	X-coded on RJ45 straight	MWN811A415
	Panel feed through M12	8 pole	X-coded on RJ45 angled	MWN911A415

## M12 circular connector

### Field assembly jacks and plugs

	DESCRIPTION	FEATURE 1	FEATURE 2	P/N
	Jack M12	4 pole, D-coded	IP67, straight, Cat.5e	MMF881A115
	Jack M12	4 pole, D-coded	IP67, straight, Cat.5e with flange	MMF881A115-0001
	Plug M12	4 pole, D-coded	IP67, field assembly	MNF881A115
	Jack M12	8 pole, X-coded	IP67, field assembly	MMF881A315
	Jack M12	8 pole, X-coded	with flange, IP67 field assembly	MMF881A315-0001
	Plug M12	8 pole, X-coded	straight, IP67, field assembly	MNF881A315-0001

## Ethernet M12 Product Family

The Ethernet M12 product family consists of X or D-coded PC board jacks, plugs and jacks to be assembled in the field, pre-terminated cables and panel feed through adapters. The X-coded components are suitable for data transmission up to 10 gigabits in accordance with category 6A and the D-coded components are suitable for data transmission up to 10/100 megabits in accordance with category 5 (e.g. for Fast Ethernet or PROFINET).



In addition, they are a connecting link for the system cabling and free line connection. Thanks to the complete metallic shielding, they can also be used without any problems in difficult transmission conditions.

- > for industrially used communication cabling, automation and control systems as well as plant and machine construction
- > compact, fully shielded and robust housing made of die-cast zinc for harsh environmental conditions
- > available with and without flange
- > transmission characteristics for up to 10Gbit/s
- > IP67 protection class in mated condition
- > approved for railway applications



# M12 circular connector



## Cables and wires – D-coded

	DESCRIPTION	FEATURE 1	FEATURE 2	FEATURE 3	P/N
	Connection cable M12 plug straight - free line end, 4 pole, D-coded	D-coded	1.0 m	free line end	142M1D10010
	Connection cable M12 plug straight - free line end, 4 pole, D-coded	D-coded	2.0 m	free line end	142M1D10020
	Connection cable M12 plug straight - free line end, 4 pole, D-coded	D-coded	5.0 m	free line end	142M1D10050
	Connection cable M12 plug straight - free line end, 4 pole, D-coded	D-coded	10.0 m	free line end	142M1D10100
	Connection line M12 plug straight, 4 pole, D-coded	D-coded - D-coded	1.0 m	drag chain suitable	142M1D11010
	Connection line M12 plug straight, 4 pole, D-coded	D-coded - D-coded	2.0 m	drag chain suitable	142M1D11020
	Connection line M12 plug straight, 4 pole, D-coded	D-coded - D-coded	5.0 m	drag chain suitable	142M1D11050
	Connection line M12 plug straight, 4 pole, D-coded	D-coded - D-coded	10.0 m	drag chain suitable	142M1D11100
	Connection line M12 plug straight - RJ45 plug straight, AWG 26 4 pole, D-coded	D-coded - RJ45	1.0 m		142M4D15010
	Connection line M12 plug straight - RJ45 plug straight, AWG 26 4 pole, D-coded	D-coded - RJ45	2.0 m		142M4D15020
	Connection line M12 plug straight - RJ45 plug straight, AWG 26 4 pole, D-coded	D-coded - RJ45	5.0 m		142M4D15050
	Connection line M12 plug straight - RJ45 plug straight, AWG 26 4 pole, D-coded	D-coded - RJ45	10.0 m		142M4D15100
	Connection cable M12 plug angled - free line end, 4 pole, D-coded	D-coded	1.0 m	free line end	142M1D90010
	Connection cable M12 plug angled - free line end, 4 pole, D-coded	D-coded	2.0 m	free line end	142M1D90020
	Connection cable M12 plug angled - free line end, 4 pole, D-coded	D-coded	5.0 m	free line end	142M1D90050
	Connection cable M12 plug angled - free line end, 4 pole, D-coded	D-coded	10.0 m	free line end	142M1D90100
	Connection line M12 plug straight - M12 plug angled, 4 pole, D-coded	D-coded - D-coded	1.0 m		142M1D19010
	Connection line M12 plug straight - M12 plug angled, 4 pole, D-coded	D-coded - D-coded	2.0 m		142M1D19020
	Connection line M12 plug straight - M12 plug angled, 4 pole, D-coded	D-coded - D-coded	5.0 m		142M1D19050
	Connection line M12 plug straight - M12 plug angled, 4 pole, D-coded	D-coded - D-coded	10.0 m		142M1D19100

	DESCRIPTION	FEATURE 1	FEATURE 2	FEATURE 3	P/N
	Connection line M12 plug straight - RJ45 plug straight, 4 pole, D-coded	D-coded - RJ45	1.0 m		142M4D25010
	Connection line M12 plug straight - RJ45 plug straight, 4 pole, D-coded	D-coded - RJ45	2.0 m		142M4D25020
	Connection line M12 plug straight - RJ45 plug straight, 4 pole, D-coded	D-coded - RJ45	5.0 m		142M4D25050
	Connection line M12 plug straight - RJ45 plug straight, 4 pole, D-coded	D-coded - RJ45	10.0 m		142M4D25100
	Connection line M12 plug angled - RJ45 plug straight, 4 pole, D-coded	D-coded - RJ45	1.0 m	drag chain suitable, capable of torsion	142M4D95010
	Connection line M12 plug angled - RJ45 plug straight, 4 pole, D-coded	D-coded - RJ45	2.0 m	drag chain suitable, capable of torsion	142M4D95020
	Connection line M12 plug angled - RJ45 plug straight, 4 pole, D-coded	D-coded - RJ45	5.0 m	drag chain suitable, capable of torsion	142M4D95050
	Connection line M12 plug angled - RJ45 plug straight, 4 pole, D-coded	D-coded - RJ45	10.0 m	drag chain suitable, capable of torsion	142M4D95100




## M12 circular connector






### Cables and wires – X-coded

	DESCRIPTION	FEATURE 1	FEATURE 2	FEATURE 3	P/N
	Connection cable M12 plug straight - free line end, 8 pole, X-coded	X-coded	1.0 m	free line end	142M2X10010
	Connection cable M12 plug straight - free line end, 8 pole, X-coded	X-coded	2.0 m	free line end	142M2X10020
	Connection cable M12 plug straight - free line end, 8 pole, X-coded	X-coded	5.0 m	free line end	142M2X10050
	Connection cable M12 plug straight - free line end, 8 pole, X-coded	X-coded	10.0 m	free line end	142M2X10100
	Connection line M12 plug straight - M12 plug straight, 8 pole, X-coded	X-coded	1.0 m		142M2X11010
	Connection line M12 plug straight - M12 plug straight, 8 pole, X-coded	X-coded	2.0 m		142M2X11020
	Connection line M12 plug straight - M12 plug straight, 8 pole, X-coded	X-coded	5.0 m		142M2X11050
	Connection line M12 plug straight - M12 plug straight, 8 pole, X-coded	X-coded	10.0 m		142M2X11100

# M12 circular connector






## Cables and wires – X-coded

	DESCRIPTION	FEATURE 1	FEATURE 2	FEATURE 3	P/N
	Connection line M12 plug straight - RJ45 plug straight, 8 pole, X-coded	X-coded	1.0 m		142M2X15010
	Connection line M12 plug straight - RJ45 plug straight, 8 pole, X-coded	X-coded	2.0 m		142M2X15020
	Connection line M12 plug straight - RJ45 plug straight, 8 pole, X-coded	X-coded	5.0 m		142M2X15050
	Connection line M12 plug straight - RJ45 plug straight, 8 pole, X-coded	X-coded	10.0 m		142M2X15100
	Connection cable M12 X-coded, M12 plug angled - free line end, 8 pole	X-coded	1.0 m	Position of coding 315°	142M2X90010
	Connection cable M12 X-coded, M12 plug angled - free line end, 8 pole	X-coded	2.0 m	Position of coding 315°	142M2X90020
	Connection cable M12 X-coded, M12 plug angled - free line end, 8 pole	X-coded	5.0 m	Position of coding 315°	142M2X90050
	Connection cable M12 X-coded, M12 plug angled - free line end, 8 pole	X-coded	10.0 m	Position of coding 315°	142M2X90100
	Connection cable M12 X-coded, M12 plug angled - free line end, 8 pole	X-coded	1.0 m	Position of coding 45°	142M2XA0010
	Connection cable M12 X-coded, M12 plug angled - free line end, 8 pole	X-coded	2.0 m	Position of coding 45°	142M2XA0020
	Connection cable M12 X-coded, M12 plug angled - free line end, 8 pole	X-coded	5.0 m	Position of coding 45°	142M2XA0050
	Connection cable M12 X-coded, M12 plug angled - free line end, 8 pole	X-coded	10.0 m	Position of coding 45°	142M2XA0100
	Connection cable M12 X-coded, M12 plug angled - free line end, 8 pole	X-coded	1.0 m	Position of coding 135°	142M2XB0010
	Connection cable M12 X-coded, M12 plug angled - free line end, 8 pole	X-coded	2.0 m	Position of coding 135°	142M2XB0020
	Connection cable M12 X-coded, M12 plug angled - free line end, 8 pole	X-coded	5.0 m	Position of coding 135°	142M2XB0050
	Connection cable M12 X-coded, M12 plug angled - free line end, 8 pole	X-coded	10.0 m	Position of coding 135°	142M2XB0100
	Connection cable M12 X-coded, M12 plug angled - free line end, 8 pole	X-coded	1.0 m	Position of coding 225°	142M2XC0010
	Connection cable M12 X-coded, M12 plug angled - free line end, 8 pole	X-coded	2.0 m	Position of coding 225°	142M2XC0020
	Connection cable M12 X-coded, M12 plug angled - free line end, 8 pole	X-coded	5.0 m	Position of coding 225°	142M2XC0050
	Connection cable M12 X-coded, M12 plug angled - free line end, 8 pole	X-coded	10.0 m	Position of coding 225°	142M2XC0100


	DESCRIPTION	FEATURE 1	FEATURE 2	FEATURE 3	P/N
	Connection line M12 plug straight - M12 plug angled, 8 pole, X-coded	X-coded	1.0 m	Position of coding 315°	142M2X19010
	Connection line M12 plug straight - M12 plug angled, 8 pole, X-coded	X-coded	2.0 m	Position of coding 315°	142M2X19020
	Connection line M12 plug straight - M12 plug angled, 8 pole, X-coded	X-coded	5.0 m	Position of coding 315°	142M2X19050
	Connection line M12 plug straight - M12 plug angled, 8 pole, X-coded	X-coded	10.0 m	Position of coding 315°	142M2X19100
	Connection line M12 plug straight - M12 plug angled, 8 pole, X-coded	X-coded	1.0 m	Position of coding 45°	142M2X1A010
	Connection line M12 plug straight - M12 plug angled, 8 pole, X-coded	X-coded	2.0 m	Position of coding 45°	142M2X1A020
	Connection line M12 plug straight - M12 plug angled, 8 pole, X-coded	X-coded	5.0 m	Position of coding 45°	142M2X1A050
	Connection line M12 plug straight - M12 plug angled, 8 pole, X-coded	X-coded	10.0 m	Position of coding 45°	142M2X1A100
	Connection line M12 plug straight - M12 plug angled, 8 pole, X-coded	X-coded	1.0 m	Position of coding 135°	142M2X1B010
	Connection line M12 plug straight - M12 plug angled, 8 pole, X-coded	X-coded	2.0 m	Position of coding 135°	142M2X1B020
	Connection line M12 plug straight - M12 plug angled, 8 pole, X-coded	X-coded	5.0 m	Position of coding 135°	142M2X1B050
	Connection line M12 plug straight - M12 plug angled, 8 pole, X-coded	X-coded	10.0 m	Position of coding 135°	142M2X1B100
	Connection line M12 plug straight - M12 plug angled, 8 pole, X-coded	X-coded	1.0 m	Position of coding 225°	142M2X1C010
	Connection line M12 plug straight - M12 plug angled, 8 pole, X-coded	X-coded	2.0 m	Position of coding 225°	142M2X1C020
	Connection line M12 plug straight - M12 plug angled, 8 pole, X-coded	X-coded	5.0 m	Position of coding 225°	142M2X1C050
	Connection line M12 plug straight - M12 plug angled, 8 pole, X-coded	X-coded	10.0 m	Position of coding 225°	142M2X1C100
	Connection line M12 X-coded, M12 plug angled - RJ45 plug straight, 8 pole	X-coded - RJ45	1.0 m	Position of coding 315°	142M2X95010
	Connection line M12 X-coded, M12 plug angled - RJ45 plug straight, 8 pole	X-coded - RJ45	2.0 m	Position of coding 315°	142M2X95020
	Connection line M12 X-coded, M12 plug angled - RJ45 plug straight, 8 pole	X-coded - RJ45	5.0 m	Position of coding 315°	142M2X95050
	Connection line M12 X-coded, M12 plug angled - RJ45 plug straight, 8 pole	X-coded - RJ45	10.0 m	Position of coding 315°	142M2X95100

# M12 circular connector

## Cables and wires – X-coded






	DESCRIPTION	FEATURE 1	FEATURE 2	FEATURE 3	P/N
	Connection line M12 X-coded, M12 plug angled - RJ45 plug straight, 8 pole	X-coded - RJ45	1.0 m	Position of coding 45°	142M2XA5010
	Connection line M12 X-coded, M12 plug angled - RJ45 plug straight, 8 pole	X-coded - RJ45	2.0 m	Position of coding 45°	142M2XA5020
	Connection line M12 X-coded, M12 plug angled - RJ45 plug straight, 8 pole	X-coded - RJ45	5.0 m	Position of coding 45°	142M2XA5050
	Connection line M12 X-coded, M12 plug angled - RJ45 plug straight, 8 pole	X-coded - RJ45	10.0 m	Position of coding 45°	142M2XA5100
	Connection line M12 X-coded, M12 plug angled - RJ45 plug straight, 8 pole	X-coded - RJ45	1.0 m	Position of coding 135°	142M2XB5010
	Connection line M12 X-coded, M12 plug angled - RJ45 plug straight, 8 pole	X-coded - RJ45	2.0 m	Position of coding 135°	142M2XB5020
	Connection line M12 X-coded, M12 plug angled - RJ45 plug straight, 8 pole	X-coded - RJ45	5.0 m	Position of coding 135°	142M2XB5050
	Connection line M12 X-coded, M12 plug angled - RJ45 plug straight, 8 pole	X-coded - RJ45	10.0 m	Position of coding 135°	142M2XB5100
	Connection line M12 X-coded, M12 plug angled - RJ45 plug straight, 8 pole	X-coded - RJ45	1.0 m	Position of coding 225°	142M2XC5010
	Connection line M12 X-coded, M12 plug angled - RJ45 plug straight, 8 pole	X-coded - RJ45	2.0 m	Position of coding 225°	142M2XC5020
	Connection line M12 X-coded, M12 plug angled - RJ45 plug straight, 8 pole	X-coded - RJ45	5.0 m	Position of coding 225°	142M2XC5050
	Connection line M12 X-coded, M12 plug angled - RJ45 plug straight, 8 pole	X-coded - RJ45	10.0 m	Position of coding 225°	142M2XC5100
	Connection cable M12 jack straight - free line end, 8 pole, X-coded	X-coded	1.0 m	free line end	142M2X20010
	Connection cable M12 jack straight - free line end, 8 pole, X-coded	X-coded	2.0 m	free line end	142M2X20020
	Connection cable M12 jack straight - free line end, 8 pole, X-coded	X-coded	5.0 m	free line end	142M2X20050
	Connection cable M12 jack straight - free line end, 8 pole, X-coded	X-coded	10.0 m	free line end	142M2X20100
	Connection line M12 jack straight - RJ45 plug straight, 8 pole, X-coded	X-coded - RJ45	1.0 m		142M2X25010
	Connection line M12 jack straight - RJ45 plug straight, 8 pole, X-coded	X-coded - RJ45	2.0 m		142M2X25020
	Connection line M12 jack straight - RJ45 plug straight, 8 pole, X-coded	X-coded - RJ45	5.0 m		142M2X25050
	Connection line M12 jack straight - RJ45 plug straight, 8 pole, X-coded	X-coded - RJ45	10.0 m		142M2X25100



	DESCRIPTION	FEATURE 1	FEATURE 2	FEATURE 3	P/N
	Connection line M12 plug straight - M12 jack straight, 8 pole, X-coded	X-coded - X-coded	1.0 m		142M2X12010
	Connection line M12 plug straight - M12 jack straight, 8 pole, X-coded	X-coded - X-coded	2.0 m		142M2X12020
	Connection line M12 plug straight - M12 jack straight, 8 pole, X-coded	X-coded - X-coded	5.0 m		142M2X12050
	Connection line M12 plug straight - M12 jack straight, 8 pole, X-coded	X-coded - X-coded	10.0 m		142M2X12100
	Connection cable M12 plug straight - free line end, 8 pole, X-coded	X-coded	1.0 m	free line end, drag chain suitable	142M6X10010
	Connection cable M12 plug straight - free line end, 8 pole, X-coded	X-coded	2.0 m	free line end, drag chain suitable	142M6X10020
	Connection cable M12 plug straight - free line end, 8 pole, X-coded	X-coded	5.0 m	free line end, drag chain suitable	142M6X10050
	Connection cable M12 plug straight - free line end, 8 pole, X-coded	X-coded	10.0 m	free line end, drag chain suitable	142M6X10100
	Connection line M12 plug straight - M12 plug straight, 8 pole, X-coded	X-coded	1.0 m	drag chain suitable	142M6X11010
	Connection line M12 plug straight - M12 plug straight, 8 pole, X-coded	X-coded	2.0 m	drag chain suitable	142M6X11020
	Connection line M12 plug straight - M12 plug straight, 8 pole, X-coded	X-coded	5.0 m	drag chain suitable	142M6X11050
	Connection line M12 plug straight - M12 plug straight, 8 pole, X-coded	X-coded	10.0 m	drag chain suitable	142M6X11100
	Connection cable M12 jack straight - free line end, 8 pole, X-coded	X-coded	1.0 m	free line end, drag chain suitable	142M6X20010
	Connection cable M12 jack straight - free line end, 8 pole, X-coded	X-coded	2.0 m	free line end, drag chain suitable	142M6X20020
	Connection cable M12 jack straight - free line end, 8 pole, X-coded	X-coded	5.0 m	free line end, drag chain suitable	142M6X20050
	Connection cable M12 jack straight - free line end, 8 pole, X-coded	X-coded	10.0 m	free line end, drag chain suitable	142M6X20100
	Connection line M12 plug straight - M12 jack straight, 8 pole, X-coded	X-coded - X-coded	1.0 m	drag chain suitable	142M6X21010
	Connection line M12 plug straight - M12 jack straight, 8 pole, X-coded	X-coded - X-coded	2.0 m	drag chain suitable	142M6X21020
	Connection line M12 plug straight - M12 jack straight, 8 pole, X-coded	X-coded - X-coded	5.0 m	drag chain suitable	142M6X21050
	Connection line M12 plug straight - M12 jack straight, 8 pole, X-coded	X-coded - X-coded	10.0 m	drag chain suitable	142M6X21100



# M12 circular connector

## Cables and wires – X-coded

	DESCRIPTION	FEATURE 1	FEATURE 2	FEATURE 3	P/N
	Connection line M12 X-coded, M12 plug straight - RJ45 plug straight, 8 pole	X-coded - RJ45	1.0 m	drag chain suitable	142M6X18010
	Connection line M12 X-coded, M12 plug straight - RJ45 plug straight, 8 pole	X-coded - RJ45	2.0 m	drag chain suitable	142M6X18020
	Connection line M12 X-coded, M12 plug straight - RJ45 plug straight, 8 pole	X-coded - RJ45	5.0 m	drag chain suitable	142M6X18050
	Connection line M12 X-coded, M12 plug straight - RJ45 plug straight, 8 pole	X-coded - RJ45	10.0 m	drag chain suitable	142M6X18100
	Connection cable M12 plug straight - free line end, 8 pole, X-coded	X-coded	1.0 m	free line end, capable of torsion	142M7X10010
	Connection cable M12 plug straight - free line end, 8 pole, X-coded	X-coded	2.0 m	free line end, capable of torsion	142M7X10020
	Connection cable M12 plug straight - free line end, 8 pole, X-coded	X-coded	5.0 m	free line end, capable of torsion	142M7X10050
	Connection cable M12 plug straight - free line end, 8 pole, X-coded	X-coded	10.0 m	free line end, capable of torsion	142M7X10100
	Connection line M12 plug straight - M12 plug straight, 8 pole, X-coded	X-coded	1.0 m	capable of torsion	142M7X11010
	Connection line M12 plug straight - M12 plug straight, 8 pole, X-coded	X-coded	2.0 m	capable of torsion	142M7X11020
	Connection line M12 plug straight - M12 plug straight, 8 pole, X-coded	X-coded	5.0 m	capable of torsion	142M7X11050
	Connection line M12 plug straight - M12 plug straight, 8 pole, X-coded	X-coded	10.0 m	capable of torsion	142M7X11100
	Connection cable M12 jack straight - free line end, 8 pole, X-coded	X-coded	1.0 m	free line end, capable of torsion	142M7X20010
	Connection cable M12 jack straight - free line end, 8 pole, X-coded	X-coded	2.0 m	free line end, capable of torsion	142M7X20020
	Connection cable M12 jack straight - free line end, 8 pole, X-coded	X-coded	5.0 m	free line end, capable of torsion	142M7X20050
	Connection cable M12 jack straight - free line end, 8 pole, X-coded	X-coded	10.0 m	free line end, capable of torsion	142M7X20100
	Connection line M12 plug straight - M12 jack straight, 8 pole, X-coded	X-coded - X-coded	1.0 m	capable of torsion	142M7X21010
	Connection line M12 plug straight - M12 jack straight, 8 pole, X-coded	X-coded - X-coded	2.0 m	capable of torsion	142M7X21020
	Connection line M12 plug straight - M12 jack straight, 8 pole, X-coded	X-coded - X-coded	5.0 m	capable of torsion	142M7X21050
	Connection line M12 plug straight - M12 jack straight, 8 pole, X-coded	X-coded - X-coded	10.0 m	capable of torsion	142M7X21100

# M12 circular connector

## Accessories

	DESCRIPTION	FEATURE 1	FEATURE 2	FEATURE 3	P/N
	M12 plug protection cap IP54	for M12-plug	screwable	black, similar RAL9005	700669
	M12 screw plug for jacks IP54	for M12-jack	screwable	black, similar RAL9005	700701

### LEGEND


Standard cable length

xxx = 010 (1.0 m)

xxx = 020 (2.0 m)

xxx = 050 (5.0 m)

xxx = 100 (10.0 m)



Position of coding at X-coded P/N with:

9 = 315°

A = 45°



B = 135°

C = 225°

Other cable lengths on request.

# RJ45 Connection line

## for industrial applications

	DESCRIPTION	FEATURE 1	FEATURE 2	FEATURE 3	P/N
	Connection line RJ45 plug straight - RJ45 plug straight, 8 pole	RJ45 - RJ45	1.0 m		142M2X55010
	Connection line RJ45 plug straight - RJ45 plug straight, 8 pole	RJ45 - RJ45	2.0 m		142M2X55020
	Connection line RJ45 plug straight - RJ45 plug straight, 8 pole	RJ45 - RJ45	5.0 m		142M2X55050
	Connection line RJ45 plug straight - RJ45 plug straight, 8 pole	RJ45 - RJ45	10.0 m		142M2X55100
	Connection line RJ45 plug straight - RJ45 plug straight PROFINET, 8 pole	RJ45 - RJ45 PROFINET	1.0 m		142M1P55010
	Connection line RJ45 plug straight - RJ45 plug straight PROFINET, 8 pole	RJ45 - RJ45 PROFINET	2.0 m		142M1P55020
	Connection line RJ45 plug straight - RJ45 plug straight PROFINET, 8 pole	RJ45 - RJ45 PROFINET	5.0 m		142M1P55050
	Connection line RJ45 plug straight - RJ45 plug straight PROFINET, 8 pole	RJ45 - RJ45 PROFINET	10.0 m		142M1P55100

# RJ45 patch cord Cat.6A AWG 26/7

for up to 10 GBit Ethernet, PoE, PoE+, UPoE



black

LENGTH	P/N	LENGTH	P/N
0.5 m	1308450500-E	5.0 m	1308455000-E
1.0 m	1308451000-E	7.0 m	1308457000-E
1.5 m	1308451500-E	10.0 m	130845A000-E
2.0 m	1308452000-E	15.0 m	130845A500-E
3.0 m	1308453000-E	20.0 m	130845B000-E



gray

LENGTH	P/N	LENGTH	P/N
0.5 m	1308450533-E	5.0 m	1308455033-E
1.0 m	1308451033-E	7.0 m	1308457033-E
1.5 m	1308451533-E	10.0 m	130845A033-E
2.0 m	1308452033-E	15.0 m	130845A533-E
3.0 m	1308453033-E	20.0 m	130845B033-E



blue

LENGTH	P/N	LENGTH	P/N
0.5 m	1308450544-E	5.0 m	1308455044-E
1.0 m	1308451044-E	7.0 m	1308457044-E
1.5 m	1308451544-E	10.0 m	130845A044-E
2.0 m	1308452044-E	15.0 m	130845A544-E
3.0 m	1308453044-E	20.0 m	130845B044-E



green

LENGTH	P/N	LENGTH	P/N
0.5 m	1308450555-E	5.0 m	1308455055-E
1.0 m	1308451055-E	7.0 m	1308457055-E
1.5 m	1308451555-E	10.0 m	130845A055-E
2.0 m	1308452055-E	15.0 m	130845A555-E
3.0 m	1308453055-E	20.0 m	130845B055-E

# RJ45 patch cord Cat.6<sub>A</sub> AWG 26/7

for up to 10 GBit Ethernet, PoE, PoE+, UPoE



black

LENGTH	P/N	LENGTH	P/N
0.5 m	1308450500-E	5.0 m	1308455000-E
1.0 m	1308451000-E	7.0 m	1308457000-E
1.5 m	1308451500-E	10.0 m	130845A000-E
2.0 m	1308452000-E	15.0 m	130845A500-E
3.0 m	1308453000-E	20.0 m	130845B000-E



gray

LENGTH	P/N	LENGTH	P/N
0.5 m	1308450533-E	5.0 m	1308455033-E
1.0 m	1308451033-E	7.0 m	1308457033-E
1.5 m	1308451533-E	10.0 m	130845A033-E
2.0 m	1308452033-E	15.0 m	130845A533-E
3.0 m	1308453033-E	20.0 m	130845B033-E



blue

LENGTH	P/N	LENGTH	P/N
0.5 m	1308450544-E	5.0 m	1308455044-E
1.0 m	1308451044-E	7.0 m	1308457044-E
1.5 m	1308451544-E	10.0 m	130845A044-E
2.0 m	1308452044-E	15.0 m	130845A544-E
3.0 m	1308453044-E	20.0 m	130845B044-E



green

LENGTH	P/N	LENGTH	P/N
0.5 m	1308450555-E	5.0 m	1308455055-E
1.0 m	1308451055-E	7.0 m	1308457055-E
1.5 m	1308451555-E	10.0 m	130845A055-E
2.0 m	1308452055-E	15.0 m	130845A555-E
3.0 m	1308453055-E	20.0 m	130845B055-E

# RJ45 patch cord Cat.6A AWG 26/7

for up to 10 GBit Ethernet, PoE, PoE+, UPoE



orange

LENGTH	P/N	LENGTH	P/N
0.5 m	1308450501-E	5.0 m	1308455001-E
1.0 m	1308451001-E	7.0 m	1308457001-E
1.5 m	1308451501-E	10.0 m	130845A001-E
2.0 m	1308452001-E	15.0 m	130845A501-E
3.0 m	1308453001-E	20.0 m	130845B001-E



violet

LENGTH	P/N	LENGTH	P/N
0.5 m	1308450502-E	5.0 m	1308455002-E
1.0 m	1308451002-E	7.0 m	1308457002-E
1.5 m	1308451502-E	10.0 m	130845A002-E
2.0 m	1308452002-E	15.0 m	130845A502-E
3.0 m	1308453002-E	20.0 m	130845B002-E



purple

LENGTH	P/N	LENGTH	P/N
0.5 m	1308450509-E	5.0 m	1308455009-E
1.0 m	1308451009-E	7.0 m	1308457009-E
1.5 m	1308451509-E	10.0 m	130845A009-E
2.0 m	1308452009-E	15.0 m	130845A509-E
3.0 m	1308453009-E	20.0 m	130845B009-E

# RJ45 patch cord Cat.6

Ultraflex500 VoIP AWG 26 for control cabinet applications with limited space and many more



LENGTH	P/N	LENGTH	P/N
0.5 m	13084V0500-E	5.0 m	13084V5000-E
1.0 m	13084V1000-E	7.5 m	13084V7500-E
1.5 m	13084V1500-E	10.0 m	13084VA000-E
2.0 m	13084V2000-E	15.0 m	13084VA500-E
3.0 m	13084V3000-E	20.0 m	13084VB000-E



LENGTH	P/N	LENGTH	P/N
0.3 m	13084V0388-E	5.0 m	13084V5088-E
0.5 m	13084V0588-E	7.5 m	13084V7588-E
1.0 m	13084V1088-E	10.0 m	13084VA088-E
1.5 m	13084V1588-E	15.0 m	13084VA588-E
2.0 m	13084V2088-E	20.0 m	13084VB088-E
3.0 m	13084V3088-E		

# RJ45 plug





Field assembly RJ45 plug

	DESCRIPTION	VARIANTS	COLOR	FEATURE	WIRES	P/N
	C6 <sub>A</sub> RJ45 field plug pro	180° straight	black	Ethernet	8 wire	130E405032-E
	C6 <sub>A</sub> RJ45 field plug pro 360	360° angled	black	Ethernet	8 wire	130E405042-E
	C5 RJ45 field plug pro 2P PROFINET	180° straight	green	Industrial Ethernet, PROFINET	4 wire	130E405032PE
	C5 RJ45 field plug pro 2P 360 PROFINET	360° angled	green	Industrial Ethernet, PROFINET	4 wire	130E405042PE
	E-DAT Industry IP20 RJ45 field plug black	180° straight	black	Ethernet	8 wire	1401405012-I
	E-DAT Industry RJ45 field plug PROFINET	180° straight	green	Industrial Ethernet, PROFINET	4 wire	1401405012PI



## RJ45 jacks & couplers

Modular RJ45 connectors - METZ CONNECT Module or Keystone design

	DESCRIPTION	VARIANTS	FEATURE 1	FEATURE 2	P/N
	C6 <sub>A</sub> modul 180° Jack	Module design	180° straight	RJ45 jack	130B11-E
	C6 <sub>A</sub> modul K 180° Jack	Keystone design	180° straight	RJ45 jack	130B21-E
	C6 <sub>A</sub> modul 270° Jack	Module design	270° angled	RJ45 jack	130B12-E
	C6 <sub>A</sub> modul K 270° Jack	Keystone design	270° angled	RJ45 jack	130B22-E
	C6 <sub>A</sub> modul 90° Jack	Module design	90° angled	RJ45 jack	130B13-E
	C6 <sub>A</sub> modul K 90° Jack	Keystone design	90° angled	RJ45 jack	130B23-E
	E-DAT modul coupler 8(8) 180° Cat.6	Module/Keystone design	180° straight	RJ45 coupler	1309A0-I
	E-DAT modul coupler 8(8) 90° Cat.6	Module/Keystone design	90° angled	RJ45 coupler	1309A1-I









## Cable connector

for Twisted Pair installation cable

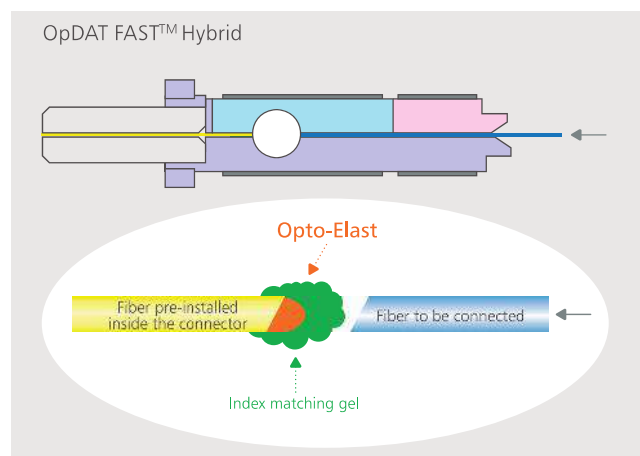
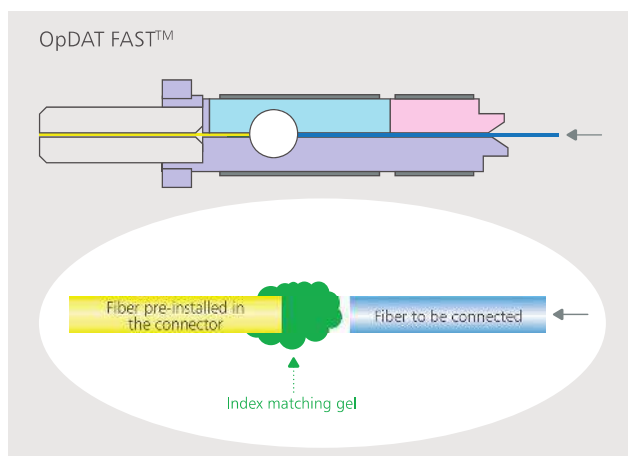
	DESCRIPTION	VARIANTS	IP PROTECTION	P/N
	Cable connector Class E <sub>A</sub> 180°	180° straight	IP20	130863-04-E
	Cable connector Class E <sub>A</sub> 270°	270° angled	IP20	130863-05-E
	Cable connector Class E <sub>A</sub> 360°	360° angled	IP20	130863-06-E
	Cable connector Class F <sub>A</sub>	180° straight	IP67	130863-02-E

# Fiber optic connector

Field installable connectors & optional accessories/spare parts




	DESCRIPTION	CABLE TYPE	SCOPE OF DELIVERY	P/N
	LC APC	0.25 + 0.9 mm	10 Connector kits	1509QAJA0010-E
	LC APC	0.25 + 0.9 mm	20 Connector kits	1509QAJA002C-E
	LC APC	0.25 + 0.9 mm	100 Connector kits	1509QAJA010C-E
	LC APC	2.0 + 3.0 mm	10 Connector kits	1509QKJA0010-E
	LC APC	2.0 + 3.0 mm	20 Connector kits	1509QKJA002C-E
	LC APC	2.0 + 3.0 mm	100 Connector kits	1509QKJA010C-E
	LC UPC	0.25 + 0.9 mm	10 Connector kits	1509QAJ00010-E
	LC UPC	0.25 + 0.9 mm	20 Connector kits	1509QAJ0002C-E
	LC UPC	0.25 + 0.9 mm	100 Connector kits	1509QAJ0010C-E
	LC UPC	2.0 + 3.0 mm	10 Connector kits	1509QKJ00010-E
	LC UPC	2.0 + 3.0 mm	20 Connector kits	1509QKJ0002C-E
	LC UPC	2.0 + 3.0 mm	100 Connector kits	1509QKJ0010C-E
	LC PC	0.25 + 0.9 mm	10 Connector kits	1509MAJ00010-F
	LC PC	0.25 + 0.9 mm	20 Connector kits	1509MAJ0002C-F
	LC PC	0.25 + 0.9 mm	100 Connector kits	1509MAJ0010C-F
	LC PC	2.0 + 3.0 mm	10 Connector kits	1509MKJ00010-F
	LC PC	2.0 + 3.0 mm	20 Connector kits	1509MKJ0002C-F
	LC PC	2.0 + 3.0 mm	100 Connector kits	1509MKJ0010C-F
	SC APC	0.25 + 0.9 mm	10 Connector kits	1509QAEA0010-E
	SC APC	0.25 + 0.9 mm	20 Connector kits	1509QAEA002C-E
	SC APC	0.25 + 0.9 mm	100 Connector kits	1509QAEA010C-E
	SC APC	2.0 + 3.0 mm	10 Connector kits	1509QKEA0010-E
	SC APC	2.0 + 3.0 mm	20 Connector kits	1509QKEA002C-E
	SC APC	2.0 + 3.0 mm	100 Connector kits	1509QKEA010C-E

	DESCRIPTION	CABLE TYPE	SCOPE OF DELIVERY	P/N
	SC UPC	0.25 + 0.9 mm	10 Connector kits	1509QAE00010-E
	SC UPC	0.25 + 0.9 mm	20 Connector kits	1509QAE0002C-E
	SC UPC	0.25 + 0.9 mm	100 Connector kits	1509QAE0010C-E
	SC UPC	2.0 + 3.0 mm	10 Connector kits	1509QKE00010-E
	SC UPC	2.0 + 3.0 mm	20 Connector kits	1509QKE0002C-E
	SC UPC	2.0 + 3.0 mm	100 Connector kits	1509QKE0010C-E
	SC PC	0.25 + 0.9 mm	10 Connector kits	1509MAE00010-F
	SC PC	0.25 + 0.9 mm	20 Connector kits	1509MAE0002C-F
	SC PC	0.25 + 0.9 mm	100 Connector kits	1509MAE0010C-F
	SC PC	2.0 + 3.0 mm	10 Connector kits	1509MKE00010-F
	SC PC	2.0 + 3.0 mm	20 Connector kits	1509MKE0002C-F
	SC PC	2.0 + 3.0 mm	100 Connector kits	1509MKE0010C-F
	Cable assembly set for LC		LC assembling tool Cable clamp for Ø 2 mm Cable clamp for Ø 3 mm	15080020KJO-E
	Cable assembly set for SC		SC assembling tool Cable clamp for Ø 2 mm Cable clamp for Ø 3 mm	15080020KEO-E
	Fiber optic tool bag		Kevlar scissors, Red light source, Stripping pliers, Cleaning cloths, Cleaning fluid, 2 ferrule cleaners, Tweezers, Container for residual fibers, Screwdrivers	150800200-E







# Fiber optic adapters

## Module design

	DESCRIPTION	FEATURE	VARIANTS	COLOR	P/N
	OpDAT modul LC-Duplex OS2 PC	SM (ceramic)	OS2	blue	15091071-I
	OpDAT modul LC-Duplex OS2 APC	SM APC (ceramic)	OS2	green	15091076-I
	OpDAT modul LC-Duplex OM5	MM (ceramic)	OM5	lime green	1509107M-I
	OpDAT modul LC-Duplex OM4	MM (ceramic)	OM4	heather violet	15091075-I
	OpDAT modul LC-Duplex OM3	MM (ceramic)	OM3	aqua	15091072-I
	OpDAT modul LC-Duplex OM2	MM (Ph-Br)	OM2	beige	15091070-I
	OpDAT modul ST	SM (ceramic)	SM + MM	lightgray	15091001-I




## Housing and wall outlets

### Lockable wall outlet – 2 port






	DESCRIPTION	HOUSINGS	COLOR	DESIGN	P/N
	Module IP44SG AP housing unequipped	Surface mount housing	gray	for module design	1309460003-I
	Keystone IP44SG AP housing unequipped	Surface mount housing	gray	for keystone design	1309460003KI
	E-DAT modul IP44SG UP housing	Flush mount housing	pure white	for module design	1309461002-I
	E-DAT modul IP44SG UP housing	Flush mount housing	gray	for module design	1309461003-I

## Housing and wall outlets

### Wall outlet with protection cover – 2 port

	DESCRIPTION	HOUSINGS	COLOR	DESIGN	P/N
	Module IP20 AP housing unequipped	Surface mount housing	gray	for module design	1309450003-E
	Module IP 44 AP housing unequipped	Surface mount housing	gray	for module design	1309430003-E
	Keystone IP44 AP housing unequipped	Surface mount housing	gray	for keystone design	1309430003KE







# DIN rail housing

	DESCRIPTION	FEATURE 1	FEATURE 2	FEATURE 3	COLOR	P/N
	REGplus IP20 C6 <sub>A</sub> modul 180°M	Top cable outlet	1 port	equipped	light gray	130B117003-E
	REGplus IP20 C6 <sub>A</sub> modul 270°M	Bottom cable outlet	1 port	equipped	light gray	130B127003-E
	REGplus IP20 E-DAT modul	Top cable outlet	1 port	equipped	light gray	1309107003-E
	REGplus IP20 E-DAT modul coupler 90°	Bottom cable outlet	1 port	equipped	light gray	1309A17003-E
	REGplus IP20 E-DAT modul coupler 180°	Top cable outlet	1 port	equipped	light gray	1309A07003-E
	Module REGplus IP20 light gray unequipped	Module design	1 port	unequipped for module design	light gray	1309427103-E
	Keystone REGplus IP20 light gray unequipped	Keystone design	1 port	unequipped for keystone design	light gray	1309428103-E
	REG plus IP20 E2000	E2000 DC	SM		light gray	130F5B7003-E
	REG plus IP20 E2000	E2000 DC	SM APC		light gray	130F5C7003-E
	REG plus IP20 E2000	E2000 DC	MM		light gray	130F5A7003-E
	Dust protection cover for Module REG yellow				yellow	816979-0105-I
	Dust protection cover for Module REG blue				blue	816979-0106-I
	Dust protection cover for Module REG green				green	816979-0107-I
	Dust protection cover for Module REG red				red	816979-0108-I


Other fiber types are possible through the selection of REGplus empty enclosures and fiber optic couplings.

	DESCRIPTION	FEATURE 1	FEATURE 2	FEATURE 3	COLOR	P/N
	E-DAT Industry terminal rail TS35 field jack insert	8(8) T568A			light gray	1401106113KE
	E-DAT Industry terminal rail TS35 field jack insert	8(8) T568B			light gray	1401806113KE
	E-DAT Industry terminal rail TS35 field jack insert	PROFINET			light gray	1401906113KE
	E-DAT Industry terminal rail TS35 coupler insert	8(8) coupler			light gray	1401206113KE
	OpDAT Industry terminal rail TS35 fiber LC-D	LC-Duplex (ceramic)	SM		light gray	1402L06113KE
	OpDAT Industry terminal rail TS35 fiber LC-D	LC-Duplex (Ph-Br)	MM		light gray	1402306113KE
	OpDAT Industry terminal rail TS35 fiber SC-D	SC-Duplex (ceramic)	SM		light gray	1402Q06113KE
	OpDAT Industry terminal rail TS35 fiber SC-D	SC-Duplex (PH-Br)	MM		light gray	1402P06113KE
	OpDAT Industry terminal rail TS35 fiber SC-RJ/2SC	SC-RJ/2SC	SM		light gray	1402K06113KE
	OpDAT Industry terminal rail TS35 fiber SC-RJ/2SC	SC-RJ/2SC	MM		light gray	1402106113KE
	E-DAT Industry terminal rail TS35 USB 2.0	USB A coupler	USB 2.0		light gray	1401U06113KE
	E-DAT Industry terminal rail TS35 USB 3.0	USB A coupler	USB 3.0		light gray	1401U16113KE
	DIN rail adapter for 6 port modules	for 6 port modules frame		unequipped	light gray	1308990110-E
	C6 <sub>A</sub> modul 6 port 180°M 1RU	6 port frame equipped	6 port	with C6 <sub>A</sub> modul	stainless steel	130B11P2-E
	E-DAT modul 6 port 1RU (Field in DIN rail adapter)	6 port frame equipped	6 port	with E-DAT modul	stainless steel	130922-03-E
	Module frame 6 port 1RU unequipped	6 port frame unequipped	6 port	for module design	stainless steel	130922-00-E

## DIN rail housing




	DESCRIPTION	FEATURE 1	FEATURE 2	FEATURE 3	COLOR	P/N
	OpDAT REGpro24 splice distributor	without splice tray		unequipped	gray	15024A10-24-E
	OpDAT REGpro splice distributor	without splice tray		unequipped	gray	15024A10-E
	OpDAT REGpro splice distributor	with splice tray		unequipped	gray	15024A10S-E
	OpDAT REG S housing for pre-terminated installation cable	for 6 port frame 3RU 7HP		unequipped	gray	15024B10-E
	OpDAT REG S housing for shrink splice holder	for 6 port frame 3RU 7HP		unequipped	gray	15024B10S-S
	OpDAT REG S housing for crimp splice holder	for 6 port frame 3RU 7HP		unequipped	gray	15024B10S-E
	Module frame 6 port 3RU 7HP unequipped	6 port frame 3RU 7HP	6 port	for module design	stainless steel	130B10E2E-E
	Module frame 6 port 3RU 7HP unequipped for keystone	6 port frame 3RU 7HP	6 port	for keystone design	stainless steel	130B20E2E-E
	Front cover OpDAT REGpro LC-Q	6xLC-Q (ceramic)	9/125 (OS2)		blue	15024A7106-E
	Front cover OpDAT REGpro LC-Q	3xLC-Q (ceramic)	50/125 (OM4)		heather violet	15024A7903-E
	Front cover OpDAT REGpro LC-Q	6xLC-Q (ceramic)	50/125 (OM4)		heather violet	15024A7906-E
	Front cover OpDAT REGpro LC-Q	6xLC-Q (ceramic)	50/125 (OM3)		aqua	15024A7806-E
	Front cover OpDAT REGpro LC-Q	3xLC-Q APC (ceramic)	9/125 (OS2) APC		green	15024A7A03-E
	Front cover OpDAT REGpro LC-Q	6xLC-Q APC (ceramic)	9/125 (OS2) APC		green	15024A7A06-E
	Front cover OpDAT REGpro 6xSC-D	6xSC-D (ceramic)	SM + MM		metal	15024AD206-E
	Front cover OpDAT REGpro 12xST	12xST (ceramic)	SM + MM		metal	15024A0112-E



	DESCRIPTION	FEATURE 1	FEATURE 2	FEATURE 3	COLOR	P/N
	Front cover OpDAT REGpro 12xE2000	12xE2000 SM (ceramic)	9/125 (OS2)		blue	15024A5812-E
	Front cover OpDAT REGpro 12xE2000	12xE2000 SM APC (ceramic)	9/125 (OS2) APC		green	15024A5912-E

# DIN rail housing

## Accessories

	DESCRIPTION	FEATURE 1	FEATURE 2	FEATURE 3	COLOR	P/N
	DIN rail adapter mini (Accessories)	Accessories			metal	1308990111-I
	DIN rail adapter mini FS (Accessories)	Accessories			metal	1308990112-I
	OpDAT REGpro splice distribu- tor with crimp splice holder	Splice tray for crimp splice			light gray	15024ASK-E
	OpDAT REG strain relief				gray	150240M20Z-E

The technology brand **STEADYTEC®** stands for pioneering connection technology in the field of data, energy and signal transmission. Created by the industry's top three companies, it provides the foundation for reliable, user-oriented and standard-compliant solutions, both in the office as well as in the harsh environment of industry.

Pursuant to the fit-for-all principle, you simply select the required housing and the desired material! You can choose between plastic and metal. Same color point = possible combination ■ ▲ ● ◆

## PLUG INSERTS



E-DAT Industry RJ45  
plug insert\*  
1401500810-I



E-DAT Industry RJ45  
field plug insert PROFINET\*  
1401400810PI



E-DAT Industry RJ45  
field plug insert\*  
1401400810-I



OpDAT Industry 25C  
plug insert\*  
1402500822-I (MM)  
1402600822-I (SM)  
1402700822-I (POF)



OpDAT Industry 2LC  
plug insert\*  
1402800820-I (MM)  
1402900820-I (SM)

\* Components with  
**STEADYTEC®**  
reliable technology

## PLUG HOUSINGS



Industry IP67 V1 metal  
plug housing\*  
1401015000ME  
1401025000ME (bp)



Industry IP67 V1 plug  
housing\*  
1401015002KE  
1401025002KE (bp)



Industry IP67 V4  
plug housing\*  
1401045002KE  
1401055002KE (bp)



Industry IP67 V5  
metal plug housing\*  
1401065000ME



Industry IP67 V14  
plug housing\*  
RJ45 – 14010850C0ME  
FO – 14010850F0ME

## FLANGE HOUSINGS



Industry IP67 V1  
metal bulkhead\*  
1401013300ME



Industry IP67 V1  
bulkhead\*  
1401013302KE



Industry IP67 V4  
bulkhead\*  
1401043302KE



Industry IP67 V5  
metal bulkhead\*  
1401063300ME



Industry IP67 V14  
bulkhead\*  
14010833C0MN

## FLANGE INSERTS



E-DAT Industry RJ45 coupler insert\*  
1401200810MI



E-DAT Industry RJ45 field jack\*  
1401100810MI (TIA-A)  
1401800810MI (TIA-B)



OpDAT Industry SC-RJ/25C adapter insert\*  
1402100820MI (MM)  
1402K00820MI (SM)



OpDAT Industry LC-D adapter insert\*  
1402300820MI (Ph-Br) MM  
1402L00820MI (Keramik) SM







E-DAT Industry USB 3.0 A coupler insert\*  
1401U10812KI



E-DAT Industry USB A coupler insert\*  
1401U00812KI



# IP protected connectors

## Plug inserts

	DESCRIPTION	FEATURE 1	FEATURE 2	COLOR	P/N
	E-DAT Industry RJ45 plug insert Cat.6 Class E <sub>A</sub>	8(8) plug		metallike	1401500810-I
	E-DAT Industry RJ45 field plug insert Cat.5 Class D PROFINET	8(8) field plug	for plug PROFINET	green	1401400810PI
	E-DAT Industry RJ45 field plug insert Cat.6 Class E <sub>A</sub>	8(8) field plug	for plug	metallike	1401400810-I
	OpDAT Industry 2SC plug insert	2SC (MM)		black	1402500822-I
	OpDAT Industry 2SC plug insert	2SC (SM)		black	1402600822-I
	OpDAT Industry 2LC plug insert	2LC (MM)		beige	1402800820-I
	OpDAT Industry 2LC plug insert	2LC (SM)		blue	1402900820-I


# IP protected connectors

## Jack inserts

	DESCRIPTION	FEATURE 1	FEATURE 2	COLOR	P/N
	E-DAT Industry RJ45 coupler insert Cat.6 Class E <sub>A</sub>	8(8) coupler		metallike	1401200810MI
	E-DAT Industry RJ45 field jack insert Cat.6 Class E <sub>A</sub>	8(8) T568A		metallike	1401100810MI
	E-DAT Industry RJ45 field jack insert Cat.6 Class E <sub>A</sub>	8(8) T568B		metallike	1401800810MI
	OpDAT Industry, adapter insert	SC-RJ/2SC (MM)		beige	1402100820MI
	OpDAT Industry, adapter insert	SC-RJ/2SC (SM)		blue	1402K00820MI
	OpDAT Industry LC-D adapter insert	LC-D (MM)		beige	1402300820MI
	OpDAT Industry LC-D adapter insert	LC-D (ceramic)	SM	blue	1402L00820MI
	E-DAT Industry USB 3.0 A coupler insert	USB A coupler	USB 3.0	black	1401U10812KI
	E-DAT Industry USB A coupler insert	USB A coupler	USB 2.0	black	1401U00812KI

# IP protected connectors

## V1 - Bayonet lock

	DESCRIPTION	FEATURE 1	FEATURE 2	COLOR	P/N
	Industry IP67 V1 metal plug housing	unequipped		metallike	1401015000ME
	Industry IP67 V1 metal plug housing	unequipped	Bend protection	metallike	1401025000ME
	Industry IP67 V1 metal bulkhead	unequipped	metal	metallike	1401013300ME
	Industry IP67 V1 plug housing	unequipped		black	1401015002KE
	Industry IP67 V1 plug housing	unequipped	Bend protection	black	1401025002KE
	Industry IP67 V1 bulkhead	unequipped	Plastics	black	1401013302KE
	E-DAT Industry IP67 V1 AP	8(8) field jack T568A	surface-mount	black	1401110012KE
	E-DAT Industry IP67 V1 AP	8(8) field jack T568B	surface-mount	black	1401810012KE
	E-DAT Industry IP67 V1 KK	8(8) field jack T568A	Cable coupler	black	1401115512KE
	E-DAT Industry IP67 V1 metal outlet 2 port	2 port straight	unequipped	gray	1401010620ME
	IP67 protective cap variant 1	Plastics	for plug	black	1401018002KI
	IP67 protective cap variant 1	Plastics	for flange	black	1401018102KI





# IP protected connectors

## V4 - Push-pull-cover (plastics)

	DESCRIPTION	FEATURE 1	FEATURE 2	COLOR	P/N
	Industry IP67 V4 plug housing	unequipped		black	1401045002KE
	Industry IP67 V4 plug housing	unequipped	Bend protection	black	1401055002KE
	Industry IP67 V4 bulkhead	unequipped		black	1401043302KE
	E-DAT Industry IP67 V4 AP	8(8) field jack T568A	Surface-mount	black	1401140012KE
	E-DAT Industry IP67 V4 KK	8(8) field jack T568A	Cable coupler	black	1401145512KE
	E-DAT Industry IP67 V4 KK T568B	8(8) field jack T568B	Cable coupler	black	1401845512KE
	E-DAT Industry IP67 V4 metal outlet 2 port	2 port straight	unequipped	gray	1401040620ME
	IP67 Protective cap variant 4	Plastics	for plug	black	1401048002KI
	IP67 Protective cap variant 4	Plastics	for flange	black	1401048102KI






# IP protected connectors

## V5 - Locking lock

	DESCRIPTION	FEATURE 1	FEATURE 2	COLOR	P/N
	Industry IP67 V5 metal plug housing	unequipped		gray	1401065000ME
	Industry IP67 V5 metal bulkhead	unequipped		gray	1401063300ME
	E-DAT Industry IP67 V5 metal outlet 2 Port	2 port straight	unequipped	gray	1401060320ME
	IP67 protective cap variant 5	metal	for plug	gray	1401068000MI
	IP67 protective cap variant 5	metal	for flange	gray	1401068100MI

# IP protected connectors

## V6 - Lock with locking clamp

	DESCRIPTION	FEATURE 1	FEATURE 2	COLOR	P/N
	E-DAT Industry IP67 V6 plug	8(8)		light gray	130906-03-E
	E-DAT Industry patch cable V6 IP67-IP67	1.0 m	IP67-IP67	yellow	141N113K13K10
	E-DAT Industry patch cable V6 IP67-IP67	2.0 m	IP67-IP67	yellow	141N113K13K20
	E-DAT Industry patch cable V6 IP67-IP67	5.0 m	IP67-IP67	yellow	141N113K13K50
	E-DAT Industry patch cable V6 IP67-IP67	10.0 m	IP67-IP67	yellow	141N113K13KA0
	E-DAT Industry patch cable V6 IP67-IP67	15.0 m	IP67-IP67	yellow	141N113K13KA5
	E-DAT Industry patch cable V6 IP67-IP67	20.0 m	IP67-IP67	yellow	141N113K13KB0
	E-DAT Industry patch cable V6 IP67-RJ45	1.0 m	IP67-RJ45	yellow	141N113K10010
	E-DAT Industry patch cable V6 IP67-RJ45	2.0 m	IP67-RJ45	yellow	141N113K10020
	E-DAT Industry patch cable V6 IP67-RJ45	5.0 m	IP67-RJ45	yellow	141N113K10050
	E-DAT Industry patch cable V6 IP67-RJ45	10.0 m	IP67-RJ45	yellow	141N113K100A0
	E-DAT Industry patch cable V6 IP67-RJ45	15.0 m	IP67-RJ45	yellow	141N113K100A5
	E-DAT Industry patch cable V6 IP67-RJ45	20.0 m	IP67-RJ45	yellow	141N113K100B0
	E-DAT Industry IP67 V6 EbM	without mounting set	Module design	light gray	1309413003-E
	E-DAT Industry IP67 V6 EbM	with mounting set	Module design	light gray	1309413203-E
	E-DAT Industry IP67 V6 EbK	without mounting set	Keystone design	light gray	1309413103-E
	E-DAT Industry IP67 V6 EbK	with mounting set	Keystone design	light gray	1309413303-E
	E-DAT Industry IP67 V6 AP Cat.6A	8(8) Module T568A	Surface-mount	light gray	1309510003-E
	E-DAT Industry IP67 V6 KK Cat.6A	8(8) Module T568A	Cable coupler	light gray	1309515003-E
	Locking clamp for IP67 V6 plug	Plastics		light gray	130906-V3-I
	Locking clamp for IP67 V6 plug	Plastics		yellow	130906-V5-I
	Locking clamp for IP67 V6 plug	Plastics		blue	130906-V6-I
	Locking clamp for IP67 V6 plug	Plastics		green	130906-V7-I
	Locking clamp for IP67 V6 plug	Plastics		red	130906-V8-I

## IP protected connectors

### V14 - Push-pull-cover (metal)

	DESCRIPTION	FEATURE 1	FEATURE 2	COLOR	P/N
	E-DAT Industry IP67 V14 plug housing for RJ45	unequipped for RJ45		metallike	14010850C0ME
	E-DAT Industry IP67 V14 plug housing for FO unequipped	unequipped for FO		metallike	14010850F0ME
	E-DAT Industry IP67 V14 bulkhead Normative mounting	unequipped for RJ45		metallike	14010833C0MN
	OpDAT Industry IP67 V14 bulkhead Normative mounting	LC-D (ceramic) SM		metallike	1402L93320ME
	OpDAT Industry IP67 V14 bulkhead Normative mounting	2SC (SM)		metallike	1402K93320ME
	OpDAT Industry IP67 V14 bulkhead Normative mounting	LC-D (MM)		metallike	1402393320ME
	OpDAT Industry IP67 V14 bulkhead Normative mounting	2SC (MM)		metallike	1402193320ME
	OpDAT Industry IP67 V14 bulkhead Central screw mounting	LC-D (ceramic) SM		metallike	1402L83320ME
	OpDAT Industry IP67 V14 bulkhead Central screw mounting	2SC (SM)		metallike	1402K83320ME
	OpDAT Industry IP67 V14 bulkhead Central screw mounting	LC-D (MM)		metallike	1402383320ME
	OpDAT Industry IP67 V14 bulkhead Central screw mounting	2SC (MM)		metallike	1402183320ME
	IP67 Dust protection cover variant 14	Plastics	for plug	black	1401088002KI
	IP67 Dust protection cover variant 14	Plastics	for flange	black	1401088102KI

## IP protected connectors

### Universal test jack

	DESCRIPTION	FEATURE 1	FEATURE 2	COLOR	P/N
	Universal test jack IP65	unequipped		black	140UPB-E

# M12 sensor/actuator extension/connection cables, A coded

## PUR shielded / unshielded; 4, 5, 8 buffers

### CABLE TYPES:

4 x 0.34 mm<sup>2</sup>; 42 x 0.10 mm

5 x 0.34 mm<sup>2</sup>; 42 x 0.10 mm

8 x 0.25 mm<sup>2</sup>; 32 x 0.10 mm

### CABLE PROPERTIES:

Material: PUR

moving: -30°C to +90°C

Permanently installed: -40°C to +80°C

In drag chain & torsion mode: -25°C to +60°C

Torsion-capable: +/-360°/m, ≥ 2 million cycles

Drag chain-compatible: max. 5m/s<sup>2</sup> 5 million cycles

### SPECIFIC PROPERTIES:

flame-retardant, seawater-resistant, recyclable, PWIS-free, RoHS-compliant, acid- and alkali-resistant, ozone-resistant, UV-resistant, hydrolysis-resistant, drag chain-compatible, torsion-resistant, welding spark-resistant, halogen-free, silicone-free, oil-resistant.



PRODUCT NAME	CODING POSITION	P/N
M12 connector straight - free cable end	4-pole	142MCA10xxx
	5-pole	142MDA10xxx
	8-pole	142MEA10xxx



M12 jack straight - free cable end	4-pole	142MCA20xxx
	5-pole	142MDA20xxx
	8-pole	142MEA20010

Standard versions available in the following lengths: 1.0 m, 2.0 m, 5.0 m, 10.0 m. Further lengths can be found on our website or in the configurator.

## PVC shielded / unshielded; 4, 5, 8 buffers

### CABLE TYPES:

4 x 0.34 mm<sup>2</sup>; 19 x 0.15 mm

5 x 0.34 mm<sup>2</sup>; 19 x 0.15 mm

8 x 0.25 mm<sup>2</sup>; 14 x 0.15 mm

### CABLE PROPERTIES:

Material: PVC;

Buffer insulation material: PVC

Temperature range:

- moving: -0°C to +80°C

- Permanently installed: -25°C to +80°C

### SPECIFIC PROPERTIES:

seawater-resistant, recyclable, PWIS-free, RoHS-compliant, acid- and alkali-resistant, ozone-resistant, UV-resistant.



PRODUCT NAME	FEATURES	P/N
M12 connector straight - free cable end	4-pole	142MIA10xxx
	5-pole	142MJA10xxx
	8-pole	142MKA10xxx



M12 jack straight - free cable end	4-pole	142MIA20xxx
	5-pole	142MJA20xxx
	8-pole	142MKA20xxx

Standard versions available in the following lengths: 1.0 m, 2.0 m, 5.0 m, 10.0 m. Further lengths can be found on our website or in the configurator.



Coding position on angled connector

Part number with: 9 = M12 connector angled, bottom cable outlet, top left coding 315°  
A = M12 connector angled, bottom cable outlet, top right coding 45°  
A = M12 connector angled, bottom cable outlet, bottom right coding 135°  
A = M12 connector straight, bottom cable outlet, bottom left coding 225°



# Product overview

## Connectors for applications in bus and rail vehicles



# M12/RJ45 cable assemblies and connectors from METZ CONNECT for applications in bus and rail vehicles

The latest generation of modern passenger transport vehicles (buses and rail vehicles) now have Ethernet networks that connect active network devices (ETBN, repeaters, switches) and end devices such as cameras, digital entertainment systems, WiFi access points, and displays for status information and supply them with power and data.

Passive components such as cables and connectors that meet the unique needs of the respective place of application are used to make the physical connection. For this purpose, cables with increased protection requirements against fires and their effects in bus and rail vehicles, as well as connectors with increased mechanical load and protection class, which still function perfectly even under strong vibrations and mechanical vibrations, are used.

The product range for bus and rail vehicle applications includes M12 plugs and jacks (D and X coded) for field assembly, as well as cable assemblies with different transmission properties (Cat.5, Cat.7) and lengths. These can be combined with a variety of connectors, including RJ45 and M12 connectors. Choosing the right Ethernet connector for bus and rail vehicles depends on the specific requirements of the application.

METZ CONNECT provides you with the appropriate cable assemblies and connectors to the highest quality standards, which are manufactured and tested in accordance with current standards and regulations. Connectors from the product range establish a secure connection to Ethernet networks.



## Relevant standards for bus applications

- > ECE R118 (fire behavior of wire)
- > IEC 60529; 2009-09 | Protection classes due to housing (IP code)
- > IEC 61076-2-109 or IEC 61076-2-101 (connector type testing)



## Relevant standards for rail vehicle applications

- > DIN EN 45545-1 and DIN EN 45545-2 | Fire behavior
- > DIN EN 50155 | Mechanical load
- > IEC 60529; 2009-09 | Protection classes due to housing (IP code)
- > IEC 61076-2-109 or IEC 61076-2-101 (connector type testing)

# Cable assembly for bus vehicles



## Cable type: AWG 22/19 PUR Cat.5e

Shielded PUR wire for secure data transmission in buses. The wire is UL-verified and fulfills the requirements of Cat.5e (electrical properties based on EN50288-2-1). The materials and design of the wire allow for increased mechanical stress (abrasion, bending, vibrations, etc.). The requirements of UN/ECE-R 118 Fire safety in buses and coaches are met. The wire with high fire protection is particularly suitable for use in buses, e.g., for passenger entertainment and information systems and ticket or stop signaling systems.

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### WIRE PROPERTIES:

- > Outer coat diameter:  $\varnothing (6.5 \pm 0.2)$  mm
- > Material: PUR
- > Buffer diameter/strand structure: AWG22/19
- > Buffer insulation material: PE
- > Buffer colors: 1 YE, 2 WH, 3 OG, 4 BU
- > Temperature range: permanently installed -40 to +80°C, moving -20 to +80°C
- > Torsion:  $\pm 180^\circ/\text{m}$ ,  $\geq 5$  million cycles
- > Drag-chain compatible: max. 20m/s<sup>2</sup> 5 million cycles
- > Category: Cat.5e
- > Shielding: yes

### SPECIFIC PROPERTIES:

Flame-retardant, seawater-resistant, recyclable, PWIS-free, RoHS-compliant, acid- and alkali-resistant, ozone-resistant, UV-resistant, hydrolysis-resistant, drag chain-compatible, torsion-capable, halogen-free, oil-resistant, high flexibility, microbe-resistant, PROFINET Type R, UN ECER118



### FIRE PROTECTION:

- > Fire safety in buses and coaches according to UN/ECE R118
- > Flame-retarding according to IEC 60332-1-2

### POSSIBLE CONNECTOR HEADS:

- > M12 connector, D coded
- > M12 connector, D coded angled
- > M12 connector, D coded with flange
- > M12 connector, D coded with flange angled
- > RJ45 connector, molded

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Standard versions available in the following lengths: 1.0 m, 2.0 m, 5.0 m, 10.0 m. Further lengths can be found on our website or in the configurator: [www.metz-connect.com/configurator](http://www.metz-connect.com/configurator)



### Cable type: AWG 22/7 PUR Cat.5e

Shielded PUR wire for secure data transmission in buses. The wire is CMX-verified and fulfills the requirements of Cat.5e (electrical properties based on EN50288-2-1). The materials and design of the wire allow for increased mechanical stress (abrasion, bending, vibrations, etc.). Use in drag chains with up to 3 million bending cycles is possible without risk. The requirements of UN/ECE-R 118 Fire safety in buses and coaches are met. The wire with high fire protection is particularly suitable for use in buses, e.g., for passenger entertainment and information systems and ticket or stop signaling systems.

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#### WIRE PROPERTIES:

- > Outer coat diameter:  $\varnothing (6.5 \pm 0.2)$  mm
- > Material: PUR
- > Buffer diameter/strand structure: AWG22/7
- > Buffer insulation material: FRNC
- > Temperature range: permanently installed -40 to +70°C, moving -20 to +60°C
- > Drag-chain compatible: max. 4m/s<sup>2</sup> 3 million cycles
- > Category: Cat.5e
- > Shielding: yes

#### SPECIFIC PROPERTIES:

Flame-retardant, seawater-resistant, recyclable, PWIS-free, RoHs-compliant, acid- and alkali-resistant, ozone-resistant, UV-resistant, hydrolysis-resistant, drag chain-compatible, halogen-free, oil-resistant, high flexibility, microbe-resistant, UN/ECE-R 118, PROFINET Type C



#### FIRE PROTECTION:

- > Fire safety in buses and coaches according to UN/ECE R118
- > Flame-retarding according to IEC 60332-1-2

#### POSSIBLE CONNECTOR HEADS:

- > M12 connector, D coded
- > M12 connector, D coded angled
- > M12 connector, D coded with flange
- > M12 connector, D coded with flange angled
- > RJ45 connector, molded

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Standard versions available in the following lengths: 1.0 m, 2.0 m, 5.0 m, 10.0 m. Further lengths can be found on our website or in the configurator: [www.metz-connect.com/configurator](http://www.metz-connect.com/configurator)

# Cable assembly for bus and rail vehicles



## Cable type: AWG 24 EM 104 Cat.5

Halogen-free, electron-beam cross-linked Cat.5 wire with improved fire resistance. Very good properties in terms of NEXT, damping and shield design. This wire is used in fixed and protected installations in rail vehicles and buses and fulfills the fire protection requirements in accordance with EN 45545-2 (HL1 - HL3). It is ideally suited to Ethernet applications of class D (ECN) according to IEEE 802.3. For installation, the instructions according to EN 50355 and EN 50343 must be observed. Due to the thin diameter, this wire is particularly suitable for connecting the molded RJ45 connectors. RADOX® is a registered trademark of HUBER+SUHNER AG, Switzerland

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### WIRE PROPERTIES:

- > Outer coat diameter: Ø (6.6 ± 0.2) mm
- > Material: RADOX® EM 104
- > Coat color: blue
- > Buffer diameter/strand structure: AWG24 1x4 star quad
- > Buffer insulation material: RADOX® FOAM
- > Buffer colors: 1 WH,2 BU,3 OG,4 YE
- > Bending radius: permanent: 6 x Ø wire
- > Temperature range: permanently installed -50 to 90°C
- > Halogen-free: yes
- > Category: Cat.5
- > Shielding: yes

### SPECIFIC PROPERTIES:

Flame-retardant, RoHS-compliant, halogen-free, increased thermal resistance, low smoke emission, oil- and fuel-resistant, UN/ECE R118

### FIRE PROTECTION:

- > Fire protection DIN EN 45545-2 HL1-3
- > DIN 5510 fire protection levels 1-4
- > NF F16-101 category A1, A2, B, UNI CEI 11170
- > Risk level LR1-LR4
- > Fire protection in coaches UN/ECE R118

### POSSIBLE CONNECTOR HEADS:

- > M12 connector, D coded
- > M12 connector, D coded angled
- > M12 connector, D coded with and without flange
- > M12 connector, D coded with and without flange angled
- > RJ45 connector, molded





### Cable type: AWG22 Polyolefin copolymer Cat.5

Halogen-free, electron-beam cross-linked Cat.5 data wire with improved behavior in the event of fire and increased temperature resistance. This wire is used in fixed and protected installations in rail vehicles and buses and fulfills the fire protection requirements in accordance with EN 45545-2 (HL1 - HL3). It is ideally suited to applications of class D (ECN) according to IEEE 802.3. For installation, the instructions according to EN 50355 and EN 50343 must be observed. Due to the thin wall thicknesses, this wire is particularly suitable for connecting the molded RJ45 connectors. BETAtans<sup>®</sup> is a registered trademark of LEONI Studer AG, Switzerland.

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#### WIRE PROPERTIES:

- > Outer coat diameter:  $\varnothing (6.6 \pm 0.2)$  mm
- > Material: BETAtans<sup>®</sup> Polyolefin copolymer
- > Coat color: blue
- > Buffer diameter/strand structure: AWG22/7 1x4 star quad
- > Buffer insulation material: BETAtans<sup>®</sup> cell PE
- > Buffer colors: 1 YE, 2 WH, 3 OG, 4 BU
- > Bending radius: permanent: 5 x  $\varnothing$  wire, moving: 6 x  $\varnothing$  wire
- > Temperature range: permanently installed -40 to +85°C
- > Halogen-free: yes
- > Category: Cat.5
- > Shielding: yes

#### SPECIFIC PROPERTIES:

Flame-retardant, PWIS-free, RoHS-compliant, halogen-free, increased thermal resistance, low smoke emission, oil- and fuel-resistant, UN/ECE R118

#### FIRE PROTECTION:

- > Fire protection DIN EN 45545-2 HL1-3
- > DIN 5510 fire protection levels 1-4
- > NF F16-101 category A1, A2, B, UNI CEI 11170
- > Risk level LR1-LR4
- > Fire protection in coaches UN/ECE R118

#### POSSIBLE CONNECTOR HEADS:

- > M12 connector, D coded
- > M12 connector, D coded angled
- > M12 connector, D coded with and without flange
- > M12 connector, D coded with and without flange angled
- > RJ45 connector, molded





### Cable type: AWG24 EM 104 Cat.7

Halogen-free, electron-beam cross-linked 1200 MHz data bus wire with improved behavior in the event of fire. It is better than category 7 according to EN 50288 and IEC 61156 and has an outstanding NEXT, low damping and excellent shielding properties (pair and overall shielding) as well as a low skew. This wire fulfills the fire protection requirements according to EN 45545-2 (HL1 - HL3). The coat corresponds to the requirements of EM 104 according to EN 50264-1, EN 50306-1 and class M according to EN 50306-4. In the harsh environment of railway vehicles, this wire proves itself with its excellent resistance to oils and fuels.

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#### WIRE PROPERTIES:

- > Outer coat diameter:  $\varnothing (8.1 \pm 0.2)$  mm
- > Material: RADOX<sup>®</sup> EM 104
- > Coat color: blue
- > Buffer diameter/strand structure: AWG24 4x2
- > Buffer insulation material: RADOX<sup>®</sup> FOAM
- > Buffer colors: 1 WHOG, 2 OG; 3 WHGN, 4 GN; 5 WHBN, 6 BN; 7 WHBU, 8 BU
- > Bending radius: permanent: 4 x  $\varnothing$  wire
- > Temperature range: permanently installed -50 to +70°C
- > Halogen-free: yes
- > Category: Cat.7
- > Shielding: yes

#### SPECIFIC PROPERTIES:

Flame-retardant, RoHs-compliant, halogen-free, increased thermal resistance, low smoke emission, oil- and fuel-resistant, uv-resistant

#### FIRE PROTECTION:

- > Fire protection in rail vehicles EN 45545-2
- > Fire protection in rail vehicles 50264-1, EN 50306-1
- > Fire safety in buses and coaches UN/ECE R118
- > Material properties of the coat EN 50264-1 EM 104 EN 50306-1

#### POSSIBLE CONNECTOR HEADS:

- > M12 connector, X coded
- > M12 jack, X coded with flange



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Standard versions available in the following lengths: 1.0 m, 2.0 m, 5.0 m, 10.0 m. Further lengths can be found on our website or in the configurator: [www.metz-connect.com/configurator](http://www.metz-connect.com/configurator)



# MNS05F

## 5port 10/100BASE-TX Industrial Ethernet Switch Din



### Product description

MNS05F is a hardened 5-port Industrial Ethernet Switch, providing non-blocking wire-speed performance in harsh industrial environments. It also provides 5-port 10/100BASE-TX RJ45 copper interfaces delivered in an IP40 rugged, strong case with a redundant power system. Its slim case is suitable for such applications as surveillance system deployments, control management and wireless service in climatically demanding environments with a wide temperature range from -40°C to 80°C.

The MNS05F series provides the flexibility to all kinds of 10/100Mbps Ethernet Media on RJ-45 port and performs highly stable fiber performance.

The MNS05F series is packaged in a compact IP40 case that allows either DIN rail or panel mounting to have efficient usage of cabinet space. It provides an integrated power supply with a wide range of voltages for worldwide operation. It also offers dual-redundant, reversible polarity 12V DC to 52V DC power supply inputs for high availability applications requiring dual or backup power inputs.

### Interface

- 4-port 10/100Base-Tx RJ45 with auto negotiation and auto-MDI/MDI-X function
- 1-port 10/100Base-TX RJ45 uplink

### Industrial conformance

- 12V to 52V DC, redundant power input
- -40°C to 80°C operating temperature
- IP40 Aluminum housing
- Supports 6KV DC Ethernet ESD protection
- Supports 6KV DC EFT protection for power line
- Free Fall, Shock and Vibration Stability
- DIN-rail and wall-mountable hardware design

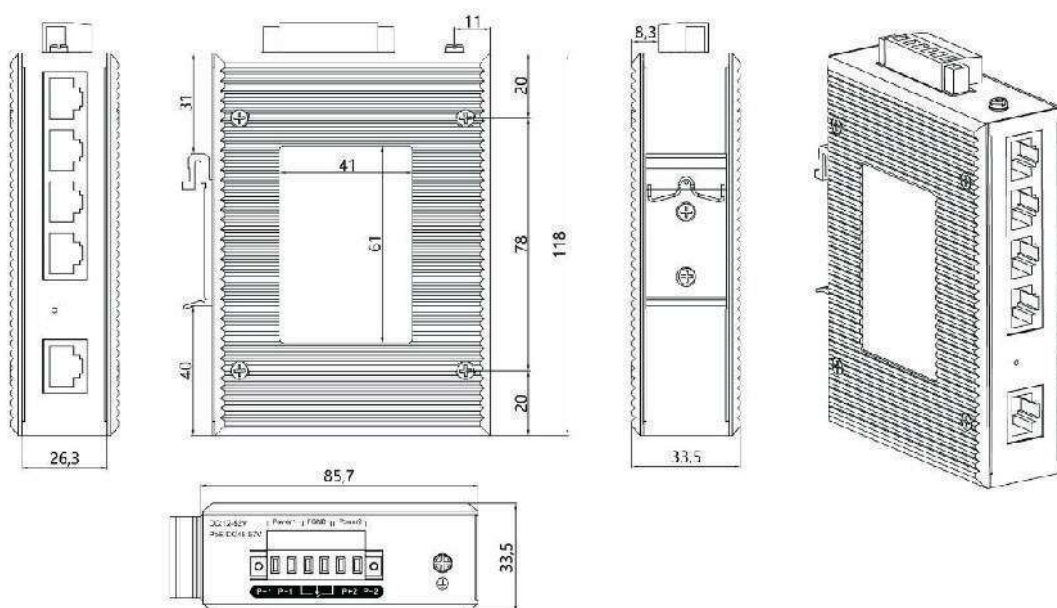


## Specifications:

Model No.	<b>MNS05F</b>
10/100BASE-TX Port	4 port RJ45 auto-MDI / MDI-X  1 port RJ45 uplink
Performance Specification	Bandwidth: 1.8Gbps  Packet Buffer Memory:1.25Mbit  Packet Forwarding Rate:1.4Mpps  MAC Address Table: 4K
Installation	DIN rail
Maximum Frame Size	9000bytes packet size
Flow Control	Back pressure for half duplex, IEEE 802.3x pause frame for full duplex
Enclosure	IP40 aluminum housing
LED Indicator	Power: Red  Ethernet: Yellow
Power Input	12 to 52V DC redundant power
Power Consumption	3 watts max
Surge protection	±4KV
Network Protocols	IEEE802.3 10BASE-T;  IEEE802.3i 10Base-T;  IEEE802.3u;100Base-TX/FX;  IEEE802.3ab 1000Base-T;  IEEE802.3z 1000Base-X;  IEEE802.3x;
Network cables	10BASE-T: Cat3,4,5 UTP(≤100 meter)  100BASE-TX: Cat5 or later UTP(≤100 meter)
Industry Standard	FCC CFR47 Part 15,EN55022/CISPR22, Class A  IEC61000-4-2 (ESD): ±8kV (contact), ±12kV (air)  IEC61000-4-3 (RS): 10V/m (80~1000MHz)  IEC61000-4-4 (EFT): Power Port: ±4kV; Data Port: ±2kV

	<p>IEC61000-4-5 (Surge): Power Port: <math>\pm 2\text{kV}/\text{DM}</math>, <math>\pm 4\text{kV}/\text{CM}</math>; Data Port: <math>\pm 2\text{kV}</math></p> <p>IEC61000-4-6 (CS): 3V (10kHz-150kHz); 10V (150kHz-80MHz)</p> <p>IEC61000-4-16 (Common mode conduction): 30V (cont.), 300V (1s)</p>
Certification	CE FCC Rohs compliance
MTBF	>300,000hours
Dimensions (W x D x H)	143.7 x 103.8 x 47.7 mm
Weight	<p>Product Weight: 0.52KG</p> <p>Packing Weight: 0.62KG</p>
Working Environment	<p>Working temperature: <math>-40\sim 80^{\circ}\text{C}</math> ;</p> <p>Storage temperature: <math>-40\sim 80^{\circ}\text{C}</math></p> <p>Relative Humidity: 5%~95 % (no condensation)</p>
Warranty	1-year replacement with new item; 3-years for main parts.

## Dimensions



# MNS08F

## 8-port 10/100BASE-TX Industrial Ethernet Switch



### Product description

MNS08F is an hardened 8-port Industrial Ethernet Switch, provides non-blocking wire-speed performance in harsh industrial environment. It also provides 8-port 10/100BASE-TX RJ45 copper interfaces delivered in an IP40 rugged, strong case with redundant power system. Its slim case is suitable for such applications as surveillance system deployments, control management and wireless service in climatically demanding environments with wide temperature range from -40°C. to 80°C.

The MNS08F series provides the flexibility to all kinds of 10/100Mbps Ethernet Media on RJ-45 port and performs highly stable fiber performance.

The MNS08F series is packaged in a compact IP40 case that allows either DIN rail or panel mounting to have efficient usage of cabinet space. It provides an integrated power supply with a wide range of voltages for worldwide operation. It also offers dual-redundant, reversible polarity 12V DC to 52V DC power supply inputs for high availability applications requiring dual or backup power inputs.

### Interface

- 8-port 10/100Base-Tx RJ45 with auto negotiation and auto-MDI/MDI-X function

### Industrial conformance

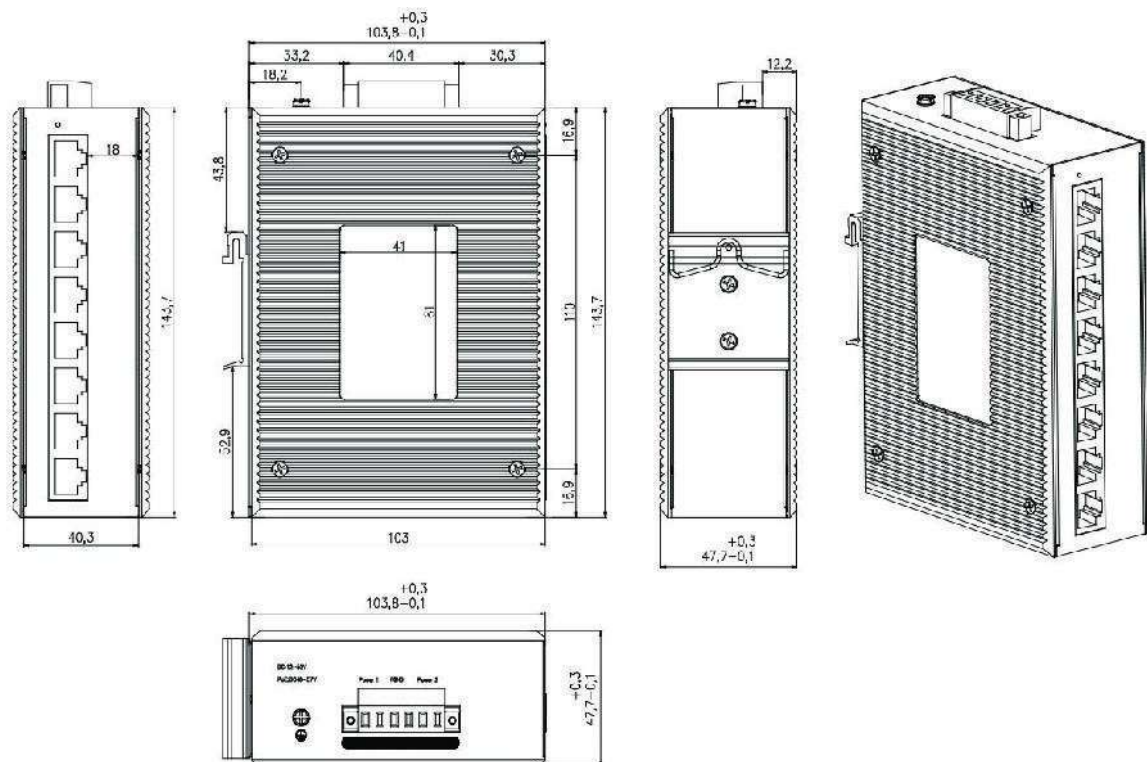
- 12V to 52V DC, redundant power input
- -40°C to 80°C operating temperature
- IP40 Aluminum housing
- Supports 6KV DC Ethernet ESD protection
- Supports 6KV DC EFT protection for power line
- Free Fall, Shock and Vibration Stability
- DIN-rail and wall-mountable hardware design

## Specifications:

Model No.	<b>MNS08F</b>
10/100BASE-TX Port	8 port RJ45 auto-MDI / MDI-X
Performance Specification	Bandwidth: 1.8Gbps Packet Buffer Memory:1.25Mbit Packet Forwarding Rate:1.4Mpps MAC Address Table: 4K
Installation	DIN rail
Maximum Frame Size	9000bytes packet size
Flow Control	Back pressure for half duplex, IEEE 802.3x pause frame for full duplex
Enclosure	IP40 aluminum housing
LED Indicator	Power: Red Ethernet: Yellow
Power Input	12 to 52V DC redundant power
Power Consumption	3 watts max
Surge protection	±4KV
Network Protocols	IEEE802.3 10BASE-T; IEEE802.3i 10Base-T; IEEE802.3u;100Base-TX/FX; IEEE802.3x;
Network cables	10BASE-T: Cat3,4,5 UTP(≤100 meter) 100BASE-TX: Cat5 or later UTP(≤100meter)
Industry Standard	FCC CFR47 Part 15,EN55022/CISPR22, Class A IEC61000-4-2 (ESD): ±8kV (contact), ±12kV (air) IEC61000-4-3 (RS): 10V/m (80~1000MHz) IEC61000-4-4 (EFT): Power Port: ±4kV; Data Port: ±2kV IEC61000-4-5 (Surge): Power Port: ±2kV/DM, ±4kV/CM; Data Port: ±2kV IEC61000-4-6 (CS): 3V (10kHz-150kHz); 10V (150kHz-80MHz) IEC61000-4-16 (Common mode conduction): 30V (cont.), 300V (1s)

Certification	CE FCC Rohs compliance
MTBF	>300,000hours
Dimensions (W x D x H)	143.7 x 103.8 x 47.7 mm
Weight	Product Weight: 0.52KG Packing Weight: 0.62KG
Working Environment	Working temperature: -40~80℃ ; Storage temperature: -40~80℃ Relative Humidity: 5%~95 %( no condensation)
Warranty	1-year replacement with new item; 3-years for main parts.

## Dimensions



# MNS05G

## 5-port 10/100/1000BASE-TX Industrial Ethernet Switch



MNS05G is a hardened 5-port Industrial Ethernet Switch, providing non-blocking wire-speed performance in harsh industrial environments. It also provides 5-port 10/100/1000BASE-TX RJ45 copper interfaces delivered in an IP40 rugged, strong case with a redundant power system. Its slim case is suitable for such applications as surveillance system deployments, control management and wireless service in climatically demanding environments with a wide temperature range from -40°C to 80°C.

The MNS05G series provides the flexibility to all kinds of 10/100/1000Mbps Ethernet Media on RJ-45 port and performs highly stable fiber performance.

The MNS05G series is packaged in a compact IP40 case that allows either DIN rail or panel mounting to have efficient usage of cabinet space. It provides an integrated power supply with a wide range of voltages for worldwide operation. It also offers dual-redundant, reversible polarity 12V DC to 52V DC power supply inputs for high availability applications requiring dual or backup power inputs.

### Interface

- 4-port 10/100/1000Base-Tx RJ45 with auto negotiation and auto-MDI/MDI-X function
- 1-port 10/100/1000Base-TX RJ45 uplink

### Industrial conformance

- 12V to 52V DC, redundant power input
- -40°C to 85°C operating temperature
- IP40 aluminum housing
- Supports 6KV DC Ethernet ESD protection
- Supports 6KV DC EFT protection for power line
- Free Fall, Shock and Vibration Stability
- DIN-rail and wall-mountable hardware design

## Specifications:

Model No.	<b>MNS05G</b>
10/100/1000BASE-TX Port	5 port RJ-45 auto-MDI / MDI-X
Performance Specification	Bandwidth: 14Gbps Packet Buffer Memory:1.2Mbit Packet Forwarding Rate:10.5Mpps MAC Address Table: 2K
Installation	DIN rail
Maximum Frame Size	9000bytes packet size
Flow Control	Back pressure for half duplex, IEEE 802.3x pause frame for full duplex
Enclosure	IP40 aluminum housing
LED Indicator	Power: Red Ethernet: Yellow
Power Input	12 to 52V DC
Power Consumption	3 watts
Surge protection	±4KV
Network Protocols	IEEE802.3 10BASE-T; IEEE802.3i 10Base-T; IEEE802.3u;100Base-TX/FX; IEEE802.3ab 1000Base-T; IEEE802.3z 1000Base-X; IEEE802.3x;
Network cables	10BASE-T: Cat3,4,5 UTP(≤100 meter) 100BASE-TX: Cat5 or later UTP(≤100meter) 1000BASE-TX: Cat6 or later UTP(≤100 meter)
Industry Standard	FCC CFR47 Part 15,EN55022/CISPR22, Class A IEC61000-4-2 (ESD): ±8kV (contact), ±12kV (air) IEC61000-4-3 (RS): 10V/m (80~1000MHz) IEC61000-4-4 (EFT): Power Port: ±4kV; Data Port: ±2kV





# MNS08G

## 8-port 10/100/1000BASE-TX Industrial Ethernet Switch



### Product description

MNS08G is a hardened 8-port Industrial Ethernet Switch, providing non-blocking wire-speed performance in harsh industrial environments. It also provides 8-port 10/100/1000BASE-TX RJ45 copper interfaces delivered in an IP40 rugged, strong case with a redundant power system. Its slim case is suitable for such applications as surveillance system deployments, control management and wireless service in climatically demanding environments with a wide temperature range from -40°C to 80°C.

The MNS08G series provides the flexibility to all kinds of 10/100/1000Mbps Ethernet Media on RJ-45 port and performs highly stable fiber performance.

The MNS08G series is packaged in a compact IP40 case that allows either DIN rail or panel mounting to have efficient usage of cabinet space. It provides an integrated power supply with a wide range of voltages for worldwide operation. It also offers dual-redundant, reversible polarity 12V DC to 52V DC power supply inputs for high availability applications requiring dual or backup power inputs.

### Interface

- 8-port 10/100/1000Base-Tx RJ45 with auto negotiation and auto-MDI/MDI-X function

### Industrial conformance

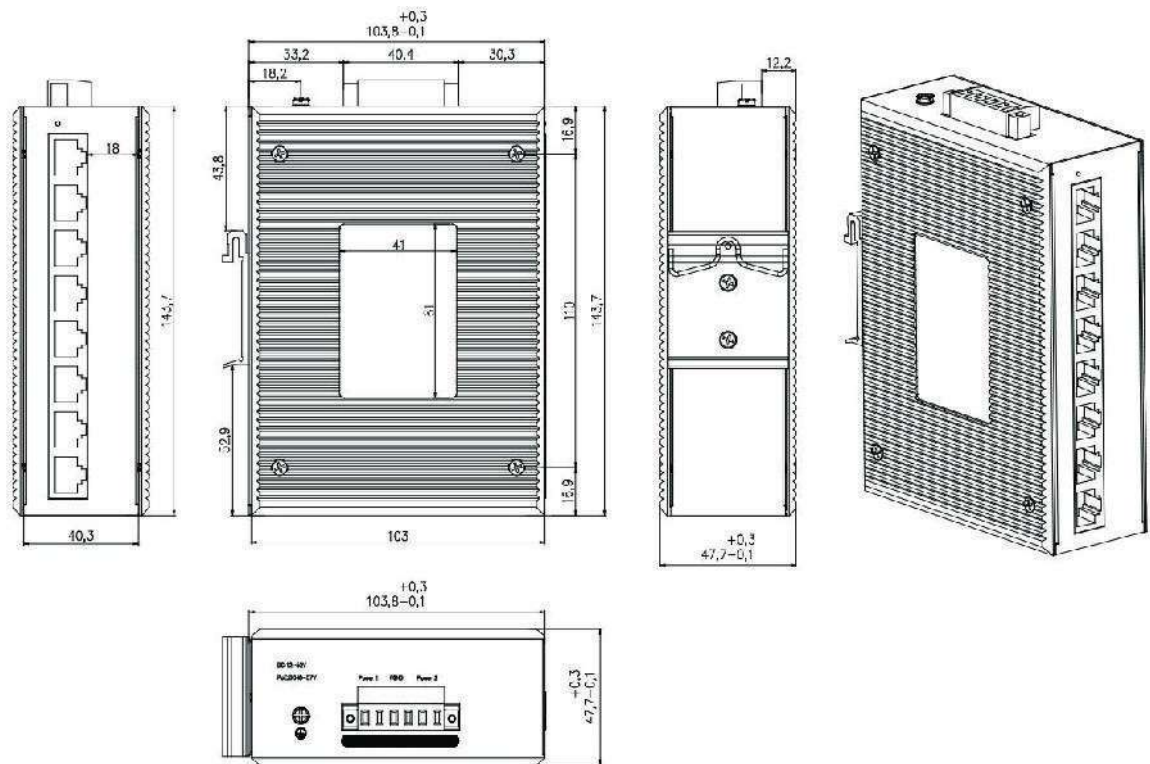
- 12V to 52V DC, redundant power input
- -40°C to 80°C operating temperature
- IP40 Aluminum housing
- Supports 6KV DC Ethernet ESD protection
- Supports 6KV DC EFT protection for power line
- Free Fall, Shock and Vibration Stability
- DIN-rail and wall-mountable hardware design

## Specifications:

Model No.	<b>MNS08G</b>
10/100/1000BASE-TX Port	8 port RJ45 auto-MDI / MDI-X
Performance Specification	Bandwidth: 20Gbps Packet Buffer Memory:2Mbit Packet Forwarding Rate:15Mpps MAC Address Table: 8K
Installation	DIN rail
Maximum Frame Size	9000bytes packet size
Flow Control	Back pressure for half duplex, IEEE 802.3x pause frame for full duplex
Enclosure	IP40 aluminum housing
LED Indicator	Power: Red Ethernet: Yellow POE: Green
Power Input	12 to 52V DC redundant power
Power Consumption	3 watts max
Surge protection	±4KV
Network Protocols	IEEE802.3 10BASE-T; IEEE802.3i 10Base-T; IEEE802.3u;100Base-TX/FX; IEEE802.3ab 1000Base-T; IEEE802.3z 1000Base-X; IEEE802.3x;
Network cables	10BASE-T: Cat3,4,5 UTP(≤100 meter) 100BASE-TX: Cat5 or later UTP(≤100 meter) 1000BASE-TX: Cat6 or later UTP(≤100 meter)
	FCC CFR47 Part 15,EN55022/CISPR22, Class A IEC61000-4-2 (ESD): ±8kV (contact), ±12kV (air) IEC61000-4-3 (RS): 10V/m (80~1000MHz)

Industry Standard	<p>IEC61000-4-4 (EFT): Power Port: <math>\pm 4\text{kV}</math>; Data Port: <math>\pm 2\text{kV}</math></p> <p>IEC61000-4-5 (Surge): Power Port: <math>\pm 2\text{kV/DM}</math>, <math>\pm 4\text{kV/CM}</math>; Data Port: <math>\pm 2\text{kV}</math></p> <p>IEC61000-4-6 (CS): 3V (10kHz-150kHz); 10V (150kHz-80MHz)</p> <p>IEC61000-4-16 (Common mode conduction): 30V (cont.), 300V (1s)</p>
Certification	CE FCC Rohs compliance
MTBF	>300,000hours
Dimensions (W x D x H)	143.7 x 103.8 x 47.7 mm
Weight	<p>Product Weight: 0.52KG</p> <p>Packing Weight: 0.62KG</p>
Working Environment	<p>Working temperature: <math>-40\sim 80^{\circ}\text{C}</math> ;</p> <p>Storage temperature: <math>-40\sim 80^{\circ}\text{C}</math></p> <p>Relative Humidity: 5%~95 % ( no condensation)</p>
Warranty	1-year replacement with new item; 3-years for main parts.

## Dimensions



# MNS016G

## 16-port 10/100/1000BASE-TX Industrial Ethernet Switch



### Product Description

MNS016G is a hardened 16-port Industrial Ethernet Switch, provides non-blocking wire-speed performance in harsh industrial environment. It also provides 16-port 10/100/1000BASE-TX RJ45 copper interfaces delivered in an IP40 rugged, strong case with redundant power system. Its slim case is suitable for such applications as surveillance system deployments, control management and wireless service in climatically demanding environments with wide temperature range from -40°C. to 85°C.

The MNS016G series provides the flexibility to all kinds of 10/100/1000Mbps Ethernet Media on RJ-45 port and performs highly stable fiber performance.

The MNS016G series is packaged in a compact IP40 case that allows either DIN rail or panel mounting to have efficient usage of cabinet space. It provides an integrated power supply with a wide range of voltages for worldwide operation. It also offers dual-redundant, reversible polarity 12V DC to 52V DC power supply inputs for high availability applications requiring dual or backup power inputs.

### Interface

- 16-port 10/100/1000Base-Tx RJ-45 with auto negotiation and auto-MDI/MDI-X function

### Industrial conformance

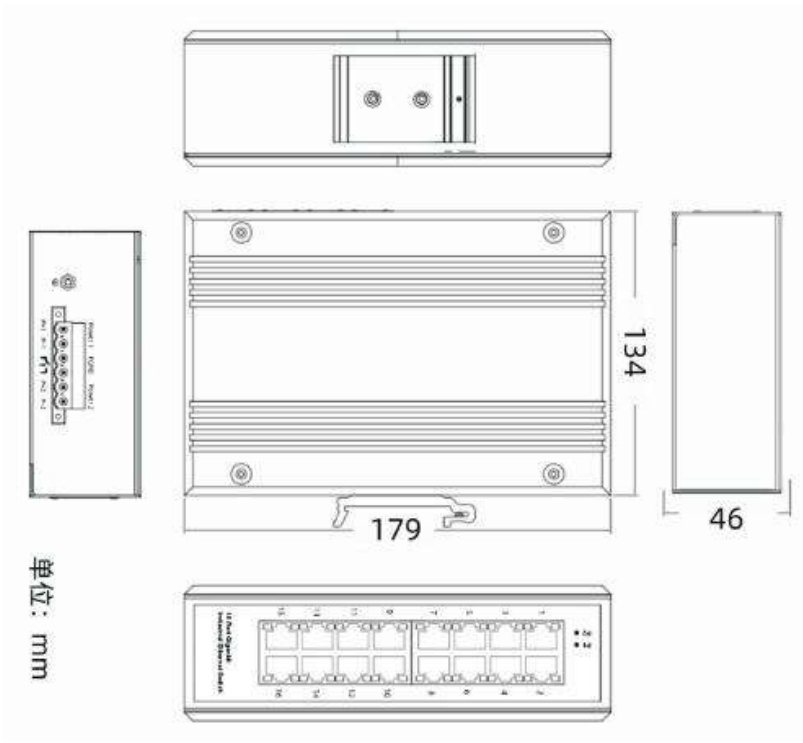
- 12V to 52V DC, redundant power input
- -40°C to 85°C operating temperature
- IP40 aluminum housing
- Supports 6KV DC Ethernet ESD protection
- Supports 6KV DC EFT protection for power line
- Free Fall, Shock and Vibration Stability

## Specifications:

Model No.	<b>MNS016G</b>
10/100/1000BASE-TX Port	16 port RJ-45 auto-MDI / MDI-X
Performance Specification	Bandwidth: 56Gbps Packet Buffer Memory: 12Mbit Packet Forwarding Rate: 42Mpps MAC Address Table: 8K
Installation	DIN rail
Maximum Frame Size	9000bytes packet size
Flow Control	Back pressure for half duplex, IEEE 802.3x pause frame for full duplex
Enclosure	IP40 aluminum housing
LED Indicator	Power: Red Ethernet: Yellow POE: Green
Power Input	12 to 52V DC redundant power
Power Consumption	< 10 watts
Surge protection	±4KV
Network Protocols	IEEE802.3 10BASE-T; IEEE802.3i 10Base-T; IEEE802.3u; 100Base-TX/FX; IEEE802.3ab 1000Base-T; IEEE802.3z 1000Base-X; IEEE802.3x;
Network cables	10BASE-T: Cat3,4,5 UTP(≤100 meter) 100BASE-TX: Cat5 or later UTP(≤100 meter) 1000BASE-TX: Cat6 or later UTP(≤100 meter)
Industry Standard	FCC CFR47 Part 15, EN55022/CISPR22, Class A IEC61000-4-2 (ESD): ±8kV (contact), ±12kV (air) IEC61000-4-3 (RS): 10V/m (80~1000MHz) IEC61000-4-4 (EFT): Power Port: ±4kV; Data Port: ±2kV

	IEC61000-4-5 (Surge): Power Port: ±2kV/DM, ±4kV/CM; Data Port: ±2kV IEC61000-4-6 (CS): 3V (10kHz-150kHz); 10V (150kHz-80MHz) IEC61000-4-16 (Common mode conduction): 30V (cont.), 300V (1s)
MTBF	>300,000hours
Certification	CE FCC Rohs compliance
Dimensions (W x D x H)	179 x 134 x 46 mm
Weight	Product Weight: 0.6KG Packing Weight: 0.7KG
Working Environment	Working temperature: -40~85℃ ; Storage temperature: -40~85℃ Relative Humidity: 5%~95 %( no condensation)
Warranty	1-year replacement with new item; 3-years for main parts.

Dimensions



# INDUSTRIAL

## 600V UL harsh enviroments

code	type
PIHV5E003	P. IND. 600V UL2463 80C 5E SF/UTP AWG24 0,3M R6018
PIHV5E005	P. IND. 600V UL2463 80C 5E SF/UTP AWG24 0,5M R6018
PIHV5E010	P. IND. 600V UL2463 80C 5E SF/UTP AWG24 1,0M R6018
PIHV5E015	P. IND. 600V UL2463 80C 5E SF/UTP AWG24 1,5M R6018
PIHV5E020	P. IND. 600V UL2463 80C 5E SF/UTP AWG24 2,0M R6018
PIHV5E030	P. IND. 600V UL2463 80C 5E SF/UTP AWG24 3,0M R6018
PIHV5E050	P. IND. 600V UL2463 80C 5E SF/UTP AWG24 5,0M R6018
PIHV5E075	P. IND. 600V UL2463 80C 5E SF/UTP AWG24 7,5M R6018
PIHV5E100	P. IND. 600V UL2463 80C 5E SF/UTP AWG24 10M R6018
PIHV5E150	P. IND. 600V UL2463 80C 5E SF/UTP AWG24 15M R6018
PIHV5E200	P. IND. 600V UL2463 80C 5E SF/UTP AWG24 50M R6018
PIHV5E300	P. IND. 600V UL2463 80C 5E SF/UTP AWG24 50M R6018
PIHV5E400	P. IND. 600V UL2463 80C 5E SF/UTP AWG24 40M R6018
PIHV5E500	P. IND. 600V UL2463 80C 5E SF/UTP AWG24 50M R6018

green RAL6018 , other colours available on request



### Industrial conformance

- UL2463 600V UL VW1 FT2
- copper stranded conductors
- 4X2X24AWG
- SF/UTP construction
- CAT 5E data transmission
- TIA/EIA 568.2



# PREMIUM

UL flexible & reliable



code	type
PPUL6003	PATCH PREMIUM 6 SF/UTP UL2835 80C AWG24 0,3M R6018
PPUL6005	PATCH PREMIUM 6 SF/UTP UL2835 80C AWG24 0,5M R6018
PPUL6010	PATCH PREMIUM 6 SF/UTP UL2835 80C AWG24 1,0M R6018
PPUL6015	PATCH PREMIUM 6 SF/UTP UL2835 80C AWG24 1,5M R6018
PPUL6020	PATCH PREMIUM 6 SF/UTP UL2835 80C AWG24 2,0M R6018
PPUL6030	PATCH PREMIUM 6 SF/UTP UL2835 80C AWG24 3,0M R6018
PPUL6050	PATCH PREMIUM 6 SF/UTP UL2835 80C AWG24 5,0M R6018
PPUL6075	PATCH PREMIUM 6 SF/UTP UL2835 80C AWG24 7,5M R6018
PPUL6100	PATCH PREMIUM 6 SF/UTP UL2835 80C AWG24 10M R6018
PPUL6150	PATCH PREMIUM 6 SF/UTP UL2835 80C AWG24 15M R6018
PPUL6200	PATCH PREMIUM 6 SF/UTP UL2835 80C AWG24 20M R6018
PPUL6300	PATCH PREMIUM 6 SF/UTP UL2835 80C AWG24 30M R6018
PPUL6400	PATCH PREMIUM 6 SF/UTP UL2835 80C AWG24 40M R6018
PPUL6500	PATCH PREMIUM 6 SF/UTP UL2835 80C AWG24 50M R6018

green RAL6018 , other colours available on request



## Industrial conformance

- UL2835 VW1 FT2
- copper stranded conductors
- 4X2X24AWG
- SF/UTP construction
- CAT 6 data transmission
- TIA/EIA 568.2



# ENTERPRISE

UL entry enterprise quality



code	col	length		code	col	length		code	col	length
SPUL6A003V	GREEN	0,3M		SPUL6A003G	GREY	0,3M		SPUL6A003R	RED	0,3M
SPUL6A005V	GREEN	0,5M		SPUL6A005G	GREY	0,5M		SPUL6A005R	RED	0,5M
SPUL6A010V	GREEN	1,0M		SPUL6A010G	GREY	1,0M		SPUL6A010R	RED	1,0M
SPUL6A015V	GREEN	1,5M		SPUL6A015G	GREY	1,5M		SPUL6A015R	RED	1,5M
SPUL6A020V	GREEN	2,0M		SPUL6A020G	GREY	2,0M		SPUL6A020R	RED	2,0M
SPUL6A030V	GREEN	3,0M		SPUL6A030G	GREY	3,0M		SPUL6A030R	RED	3,0M
SPUL6A050V	GREEN	5,0M		SPUL6A050G	GREY	5,0M		SPUL6A050R	RED	5,0M
SPUL6A075V	GREEN	7,5M		SPUL6A075G	GREY	7,5M		SPUL6A075R	RED	7,5M
SPUL6A100V	GREEN	10M		SPUL6A100G	GREY	10M		SPUL6A100R	RED	10M
SPUL6A150V	GREEN	15M		SPUL6A150G	GREY	15M		SPUL6A150R	RED	15M
SPUL6A200V	GREEN	20M		SPUL6A200G	GREY	20M		SPUL6A200R	RED	20M
SPUL6A300V	GREEN	30M		SPUL6A300G	GREY	30M		SPUL6A300R	RED	30M
SPUL6A400V	GREEN	40M		SPUL6A400G	GREY	40M		SPUL6A400R	RED	40M
SPUL6A500V	GREEN	50M		SPUL6A500G	GREY	50M		SPUL6A500R	RED	50M

other colours available on request

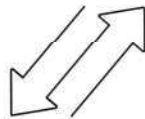


## Industrial conformance

- UL
- copper stranded conductors
- 4X2X26AWG
- SF/FTP construction
- CAT 6A data transmission
- TIA/EIA 568.2



INTERNET



FIREWALL





## M21 Industrial 4G Router Spec

### Description

M21 Industrial Grade 4G Router is a kind of internet of things wireless communication router, use LTE-FDD/TDD 4G mobile broadband network type, to provide convenient and high speed network transmission function.

This series of products use high performance industrial 32 bit communication processor, use embedded real-time operation system as software support platform, to provide security, high-speed, stable 4G wireless network for clients. It's a wireless router with 2 Ethernet RJ45 ports and communication serial port.

It can be used in finance, postal, smart power grids, smart transportation, environment monitor, fire protection monitor, security, water conservancy, public safety, advertising release, industrial control, earth quake monitor, meteorological watch, instrument monitor etc.



## Features

### Industrial grade design

- Use high performance industrial wireless module
- Use high performance industrial 32bit processor
- Support low power consumption mode, customized
- Use plate metal CRS shell with good heat dissipation
- Power supply: +7.5V~+30V DC

### Network characteristic

- Port flow detection
- Link real-time monitoring
- Multiple VPN protocol (PPTP、L2TP、IPSec、VPN...)
- Support serial port DTU function
- Support dialing as required (voice, SMS or data trigger)
- Support UPnP

### Stability

- Use soft/hardware watchdog and multi-level link detection, with capability of fault automatic diagnosis, automatic recovery, ensure equipment working in stable and security way
- Multiple equipment self-checking mechanism, ensure smooth link and alarm
- ESD protection for each port, prevent static shock

### Remote management

- Remote parameters configuration
- Remote parameters backup
- Remote restart and log query
- Remote equipment upgrading
- Equipment online monitoring



### Functions

- Down compatible to HSPA+、EVDO、TD-Scdma、EDGE、GPRS network
- Support 1 x LAN and 1 x WAN (2 x LAN)
- Provide standard RS-232/485 serial port, support serial port DTU (data transmission terminal) function
- Support hardware WDT, provide anti-log off mechanism, ensure data terminal online forever
- Support multiple VPN protocol (PPTP, L2TP or GRE etc.)
- Support multiple functions (DHCP, DDNS, firewall, NAT, DMZ host etc.)
- Support wired and wireless mutual backup
- Support multiple network protocol (ICMP、TCP、UDP、Telnet、SSH、FTP、HTTP、HTTPS etc.)
- Support industrial SIM/UIM card design

### Extend functions

- Support WAN port, wired and wireless mutual backup (optional)
- Support dual LAN port function (optional)
- Support 802.11n (optional)
- Support extend GPS (optional)
- Support SMS (optional)
- Support OpenVPN, OpenWRT(optional)

## Wireless parameter

Wireless module:	Industrial grade wireless module
Band:	LTE (MIMO) : Band 1/3/5/7/8/20 UMTS(WCDMA): 2100MHz / 1900MHz / 900MHz / 850MHz GSM/GPRS/EDGE: 1900MHz / 1800MHz / 900MHz / 850MHz MAX DL: 100Mbps ; MAX UL:50Mbps (Category 3, MIMO)
Theory bandwidth:	
Transmit power:	23dBm+/-1dB @25°C
Consumption:	Data mode <300mA/12V; Idle modem <45mA/12V
Receive sensitivity:	-97dBm @10MHz QPSK

## Interface type

LAN:	1 Ethernet interface(RJ45), self-adaption MDI/MDIX, built-in electromagnetic isolation protection
WAN/LAN:	1 WAN/LAN port multiplex, suitable for wired dialing or used as LAN port hung on two terminals
Console:	Equipment monitoring port, standard RJ45 interface, support hardware flow control RS232 communication mode
Indicator:	Six indicator lights, 3 "Signal strength LED", "Power", "WLAN", "Error". 3 signal strength indicator lights (1: poor. 2: general. 3: good.)
Antenna interface:	1 Main antenna interface (3G/4G), characteristic impedance 50Ω; 1 Aux/GPS antenna interface, used as 3G/4G AUX antenna or GPS function active antenna; 1 WiFi 802.11n antenna interface
SIM/UIM interface:	SIM/UIM engineering card cover, protect the card from falling. 1.8V/3V automatic detection, support dual SIM card.
Power interface:	+7.5V~30V (standard DC 12V/1.5A), built-in power instantaneous overvoltage protection and opposite connection protection
Reset:	Press this button, the parameters will return to factory setting

## Power supply

- Standard power: DC 12V/1.5A

## Appearance

- Housing: Metal
- Dimension: 102×100×42mm
- Weight: 450g

## Other features

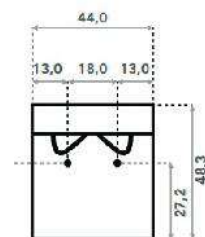
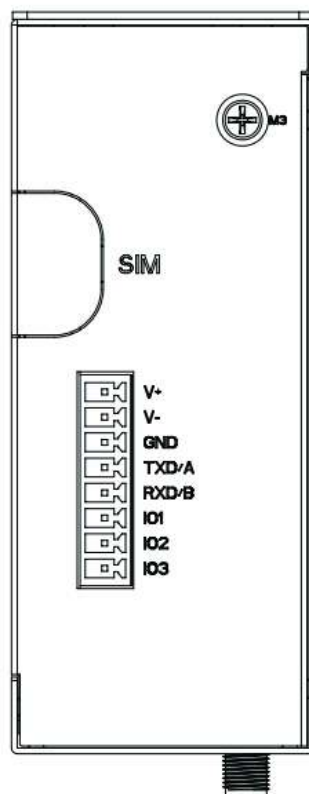
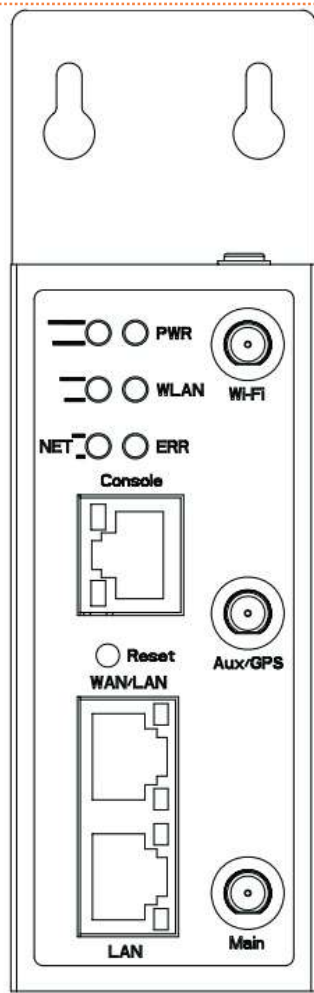
- CPU: MIPS32 74K Core. 333MHz/560DMIPs
- Flash/RAM: 64Mb / 512Mb
- Working temperature: -30 ~ +75°C (can be extended)
- Storage temperature: -40 ~ +85°C
- Relative humidity: <95% ( No condensation )

## M21 serial interface drawing

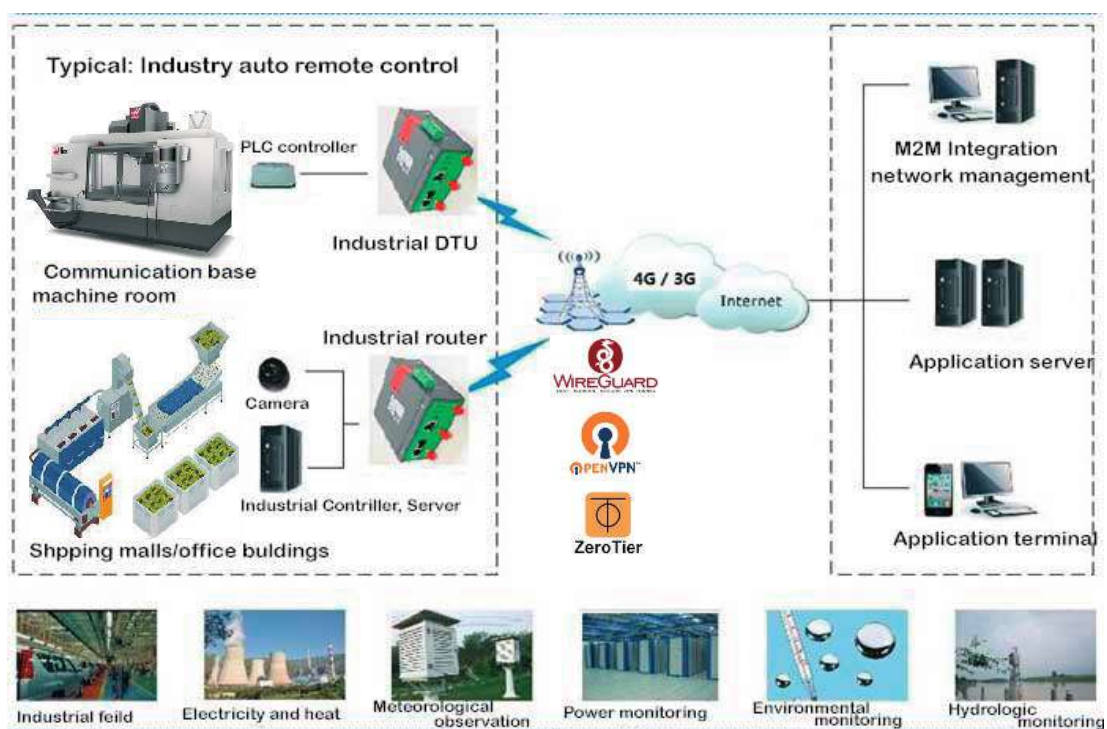
Front panel:

Top panel:

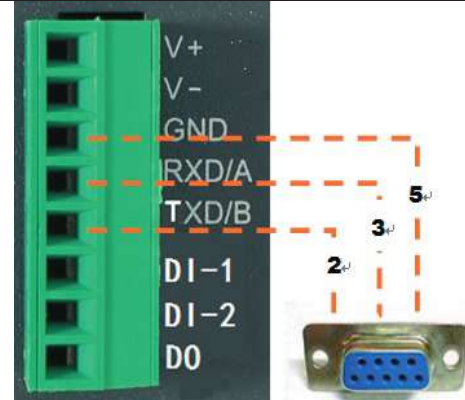




(Din-rail),



RJ45 (Console)			Terminal Strip		
1	CTS	Input	1	V+	Power input +
2	RTS	Output	2	V-	Power output -
3	RXD	Input	3	GND	Signal ground
4	TXD	Output	4	RXD/A	RS232 input/485-A
5	GND	Signal ground	5	TXD/B	RS232 output/485-B
6	DSR	Input	6	DI- 1	Digital switch input
7	DCD	Output	7	DI- 2	Digital switch input
8	DTR	Output	8	DO 3	Digital switch output



<p>Digital output: (used to control and drive external equipment, such as relay switch)</p> <ul style="list-style-type: none"> <li>High level: +5V</li> <li>Low level: 0V</li> <li>Pulse (definable frequency) or status level</li> </ul>	<p>DO setting:</p>
<p>Digital input: (used to detect signal status of external switch, to trigger the alarm etc.)</p> <ul style="list-style-type: none"> <li>47K <math>\Omega</math> ohm</li> <li>NPN base, 4.7K <math>\Omega</math> resistance +5V pull up</li> <li>ON: +3.0V ~ +5.0V DC</li> <li>OFF: 0 ~ 0.6V</li> <li>Count mode</li> <li>Share DC GND</li> </ul>	<p>(DI) OFF mode:</p> <p>(DI) ON mode</p> <p>(DI) Count mode Judge ON – OFF times</p>
<p>Isolation protection:</p> <ul style="list-style-type: none"> <li>3K VDC or 2K Vrms</li> </ul>	

# WACHENDORFF

The Encoder Experts



## Encoder and Systems

DEVELOPED AND  
MADE IN GERMANY  
5 YEARS WARRANTY



Incremental and absolute encoders  
Length measurement systems and draw-wire systems

Digital shaft copying

Made in Germany

NFC



Industrie **ROBUST**





**We are one of the world's most innovative medium-sized manufacturers of encoders**

Take advantage of our more than 45 years of experience and the robust technologies of our intelligent sensors to find efficient solutions for your applications.

As your partner, we want to ensure your long-term success.

**Quality**

- 5-year warranty
- DIN/ISO 9001:2015
- UL certification

**Agile**

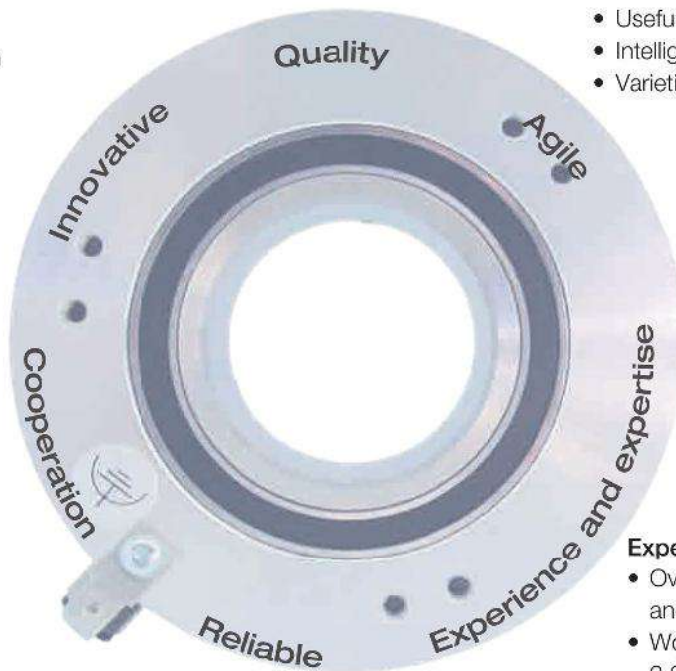
- Modular system
- Useful accessories
- Intelligent systems
- Varieties for your application

**Innovative**

- Joint successful construction
- Key technologies

**Cooperation**

- Intensive partnership
- 24-hour delivery
- Worldwide access



**Experience and expertise**

- Over 45 years of development and manufacturing
- Worldwide more than 3,000 customer solutions

**Reliable**

- Selective component choice
- Long service life
- Seamless traceability



# Industry solutions

- o Proven in many industries worldwide
- o Modular solutions for your application
- o Robustness opens up many possibilities
- o Special properties for specific industries

## Benefit from our extensive industry knowledge

Because of our extensive experience in the most diverse applications we have developed specific industry solutions over time. Here are a few examples: Food-grade devices for food production, salt spray-resistant housings for onshore/off-shore, small dimensions and high vibration resistance for mobile machinery and AGVs, shaft copy systems with incremental or absolute CANopen Lift interface, length measuring systems for inline markers and quality assurance systems, encoders for speed measurement and pitch control on wind turbines and many details that are helpful for other industries. We are sure to have a solution for your application. Give us a call.



# Online configurator

- All information in one place
- Your questions answered with just a few clicks
- In just a few minutes you find your encoder with our online configuration tool

## It couldn't be easier

On our homepage you will quickly and clearly find all the information you need to make a decision about our products and solutions. Are you looking for an incremental or absolute encoder, but don't know which one really fits your application? Then simply go to:

[www.wachendorff-automation.com/configurator](http://www.wachendorff-automation.com/configurator)

You can put together your configuration in any order and receive a data sheet as a PDF with all the specifications and drawings of exactly the device you have configured, just in time.

Of course, you will also find your contact person here, who is looking forward to hearing from you. Let us advise you and configure together with our application consultants.



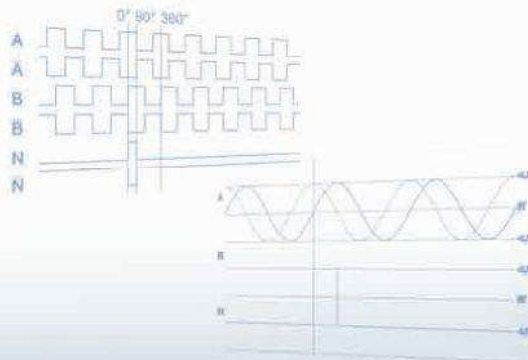


# Incremental encoders WDG1

- Up to 25,000 ppr, TTL, HTL, sin/cos
- Optical or magnetic
- High shaft load up to 500 N
- Preventive maintenance with early warning output
- Copes with tough industry and automotive conditions

## The right technology for every application

With the large selection of pulse numbers, output circuits, connector and cable varieties, protection classes and temperature ranges, you will find precisely the right incremental encoder from our extensive range.



# Incremental encoders WDGN

- Any number of pulses up to 16,384 ppr
- Configurable via smartphone
- HTL/TTL and other parameters
- Protection class up to IP67/IP69K
- High output frequency up to 1 MHz
- Reverse polarity and short circuit protection at 4.75 VDC to 32 VDC

## Always the right incremental encoder at hand

Using your smartphone, you can configure the number of pulses from 1 ppr to 16,384 ppr, ABN and inverted, HTL or TTL via our app and then load them onto the WDGN encoder without contact or voltage. Load an existing configuration or share a configuration to use on another WDGN encoder. With the Advanced version, you can also configure a fourth channel and set the number of pulses, the pulse width and the pulse position separately for all 4 outputs. The zero pulse can be set via the smartphone or a signal line.





# Absolute encoders WDGA

- EnDra® multi-turn technology: wear- and maintenance-free
- QuattroMag® single-turn technology: up to 16 bit, dynamics of 50 µs
- High shaft load up to 500 N
- Protection class up to IP67/IP69K

## Single- or multi-turn: latest technologies

Whether you realise your application with a single-turn or multi-turn, you can expect practical innovations in either case.

### QuattroMag®

The single-turn field with QuattroMag® technology provides a high resolution of up to 16 bit, precision of  $\pm 0.0878^\circ$  (12 bit) and dynamics of 50 µs.

### EnDra® Technologie

The unique and distinguished EnDra® multi-turn technology reduces construction space and is extremely environmentally friendly; it operates without batteries or gear boxes.

Robust and long-lasting magnetic technology from Wachendorff can now be used in many areas that once required highly precise and sensitive optical measuring equipment.

**CANopen** LIFT

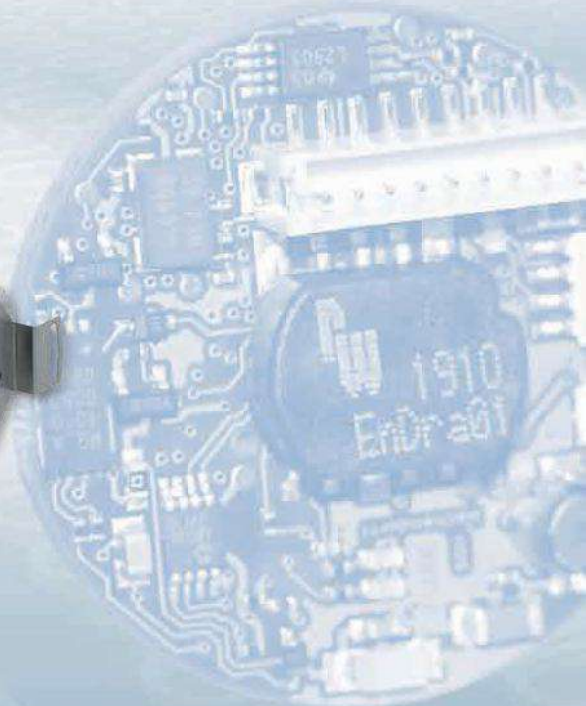
**SAE J1939**

**RS485**

**CANopen**

**SSI**  
Synchronous Serial Interface

**PROFI**  
**BUS**



# WDGA Industrial Ethernet

- o Industrial Ethernet: PROFINET, EtherCAT, EtherNet/IP
- o Integrated web server
- o Universal IE: 3 protocols in one unit
- o Robust with IP67 and up to 500 N bearing load

## Comprehensive series for Industrial Ethernet applications

The absolute encoder series Industrial Ethernet WDGA IE consists of solid shaft encoders, hollow shaft encoders and the WDGA 58F, the most compact IE encoder in the world. The mechanics are identical for each protocol. The encoder can be configured or updated easily by a web browser. Depending on the protocol, the encoders are simply integrated and configured in the TIA Portal, in TwinCat, in other project planning tools or via the integrated web browser.

Reduce your stock, simplify service operations and remain absolutely flexible - the WDGA Universal-IE is the right choice for this. By web server, you can choose between the three most important Industrial Ethernet interfaces.

**PROFI**  
**NET**

**EtherCAT**

**EtherNet/IP**





# Redundant encoders WDGR

- o Two independent encoders
- o Incremental and/or absolute in one housing
- o Security for your machine
- o Diversity through 2 measuring principles
- o High performance level achievable

## High performance levels and lower costs

For the implementation of a safety function in accordance with e.g. Performance Level d or SIL 3, not all components necessarily have to meet the safety requirements directly. Often the required safety level can be achieved with redundant information and the appropriate control system. In concrete terms, our redundant standard encoders provide diverse (magnetic and optical) signals that are generated completely independently, but can still be correlated with each other. Even the supply voltage is available separately for each sensor unit. Almost all safety-related control or monitoring systems have conventional inputs. This makes it possible to use inexpensive standard components with high-quality redundant encoders from a process-controlled assembly and to achieve the required safety level cost-effectively.





# Digital shaft copying

- Up to 4 m/s and up to 120 m high
- Precise measuring of position and speed
- Very easy assembly
- Pre-mounted assembly kits for every installation situation
- Incremental, CANopen, CANopen Lift, SSI

## Silent Move, the world's quietest belt system

Whether hydraulic or motor-driven elevators, we always supply you with the right system. The maintenance-free copying systems are available as circumferential or guided, with the unique nubbed belt or a quality tooth belt, as a complete assembly kit or measuring unit. They leave nothing to be desired.



# Draw-wire systems SZG

- o Robust and compact up to 40 m
- o High-precision mechanics with high linearity
- o Long lifetime in harsh environment
- o Quick assembly
- o Incremental and absolute

## Large measuring range in a compact design

The series of draw-wire systems is equipped with incremental or absolute encoders. The extremely robust and precise mechanics, in combination with a stainless steel cable, have a very long life expectancy. Cable lengths of 1.25 m to 40 m and a wide range of usable resolutions and interfaces give us the opportunity to determine the right draw-wire system for you. Our team will be happy to advise you.



# Length measurement systems LMS

- o Space-saving and robust complete system
- o For position, speed and length
- o Suitable for almost any surface
- o Quickly mounted and adjusted
- o Patented grid for safe adjustment of the pre-tensioning force

## Measurement of speeds and travel lengths

With the LMS length measuring systems, consisting of a spring arm, a rotary encoder and the appropriate measuring wheel for the corresponding surface (e.g. wood, plastic, foil, cardboard, textiles, rubber, metal), you can precisely measure the speed and position in your application. Ideally suited for e.g. measurements on continuous linear or rotary movements. You can choose between different designs, mounting directions, signal outputs and measuring wheels. We will be happy to advise you on the optimal solution.





## Accessories

- Couplings for every application
- Mounting accessories for quicker installation
- Pre-assembled cables and connectors
- Torque supports and shaft adapters

Our accessories complete your solution

You will recognise our many years of experience in the large selection of useful accessories. Nothing is left to chance. Here, you will find everything you need for efficient encoder installation. If you can't find something at first glance, give us a call and we will be happy to help.



# **Flexible non-metallic conduit systems**

Innovative and efficient cable protection solutions for critical applications




# Polyamide 6 Standard Weight non-metallic conduit systems

## Type PA - S conduit

PA conduit systems, manufactured from the versatile PA6, provide an efficient solution to applications where flexibility and durability is required, together with the tough property of the polyamide. Ideal for general purpose applications: lighting systems / industrial commercial wiring, public buildings, machine tools and marine.

Type PA - S

Standard weight conduit / Materials: Polyamide (nylon) 6 / Colour: Black (BL), Grey (GR)


	Part no.	Nominal conduit size (mm)	NW conduit size	Conduit pitch	Outside diameter (mm)	Inside diameter (mm)	Minimum bend radius (mm)	Reel length (m)
	PAFS10/BL/50M*	10	7.5	Fine	10.0	6.5	15	50
	PAFS13/BL/50M*	13	10	Fine	13.0	9.6	25	50
	PAFS16/BL/50M	16	13	Fine	15.8	11.8	35	50
	PAFS21/BL/50M	21	17	Fine	21.2	16.5	45	50
	PAFS28/BL/50M	28	23	Fine	28.5	22.6	50	50
	PACS28/BL/50M	28	23	Coarse	28.5	21.7	50	50
	PAFS34/BL/50M	34	29	Fine	34.5	28.8	60	50
	PACS34/BL/50M	34	29	Coarse	34.5	27.7	60	50
	PACS42/BL/25M	42	36	Coarse	42.5	35.2	65	25
	PACS48/BL/25M	48	42	Coarse	48.2	40.9	70	25
	PACS54/BL/25M	54	48	Coarse	54.5	46.5	75	25
	PACS80/BL/10M	80	70	Coarse	79.3	67.0	160	10
	PACS106/BL/10M	106	95	Coarse	106.0	91.5	210	10

### Approvals



IP rating	Appropriate fitting
<b>For use with:</b> PC / ATS / Adaptalok AL / Adaptaseal / Adaptaring	
IP40	Adaptaring & Jumbo
IP65	Adaptalok AL Jumbo + SK Seal
IP66	PC, ATS, Adaptalok AL, Adaptaseal
IP67	PC, ATS, Adaptalok AL + ALS Seal, Adaptaseal
IP68	PC, ATS, Adaptalok AL + ALS Seal, Adaptaseal
IP69	PC, ATS, Adaptalok AL + ALS Seal, Adaptaseal

Temperature range	UV resistance
Static applications: -40°C to +120°C	Very high
Moving applications: -25°C to +150°C	
Flexibility & fatigue life	
High flexibility – High fatigue life	
Fire performance & EMI screen	
Self extinguishing	
Halogen free	






# Polyamide 6 Slit non-metallic conduit systems




## Type PAL & PA-Slit conduits

### Type PAL conduit

Lightweight conduit / Materials: Polyamide (nylon) 6 / Colour: Black (BL), Grey (GR)


	Part no.	Nominal conduit size (mm)	NW conduit size (mm)	Conduit pitch	Outside diameter (mm)	Inside diameter (mm)	Min. bend radius (mm)	Reel length (m)
	PAFL13/BL/50M	13	10	Fine	13.0	10.0	25	50
	PAFL16/BL/50M	16	13	Fine	15.8	11.9	35	50
	PAFL21/BL/50M	21	17	Fine	21.2	16.8	45	50
	PACL28/BL/50M	28	23	Coarse	28.5	22.2	50	50
	PACL34/BL/50M	34	29	Coarse	34.5	27.9	60	50
	PACL42/BL/50M	42	36	Coarse	42.5	35.2	65	50
	PACL54 /BL/50M	54	48	Coarse	54.5	46.9	75	50

To order quote part number, colour & reel length, e.g. PAFL10/BL/50M  
For grey color version state "GR" instead of "BL" in Part no.


Approvals	IP rating	Appropriate fitting	Temperature range	UV resistance
  	For use with: ATS / Adaptalok AL / Adaptaseal / Adaptaring		Static applications: -40°C to +120°C	Very high
			Moving applications: -5°C to +120°C	
	IP40	Adaptaring & Jumbo	Flexibility & fatigue life	High flexibility – High fatigue life
	IP66	ATS, Adaptalok AL, Adaptaseal		
	IP67	ATS, Adaptalok AL + ALS Seal, Adaptaseal		
	IP68	ATS, Adaptalok AL + ALS Seal, Adaptaseal	Fire performance & EMI screen	Self extinguishing
			Halogen free	

### Type PA-Slit

Slit conduit / Materials: Polyamide (nylon) 6 / Colour: Black (BL) only

	Part no.	Nominal conduit size (mm)	NW conduit size (mm)	Conduit pitch	Outside diameter (mm)	Inside diameter (mm)	Minimum bend radius (mm)	Reel length (m)
	PAFL13-S/BL/50M	13	10	Fine	13.0	10.0	25	50
	PAFL16-S/BL/50M	16	13	Fine	15.8	11.9	35	50
	PAFL21-S/BL/50M	21	17	Fine	21.2	16.8	45	50
	PACL28-S/BL/50M	28	23	Coarse	28.5	22.2	50	50
	PACL34-S/BL/50M	34	29	Coarse	34.5	27.9	60	50
	PACL42-S/BL/25M	42	36	Coarse	42.5	35.2	65	25
	PACL54-S/BL/25M	54	48	Coarse	54.5	46.9	75	25

If interested in different coil lengths, do not hesitate to inquire

Approvals	IP rating	Appropriate fitting	Temperature range	UV resistance
 KIMOS161	N/A		Static applications: -40°C to +120°C	Very high
			Moving applications: -5°C to +120°C	
			<b>Flexibility &amp; fatigue life</b>	High flexibility – High fatigue life
			<b>Fire performance &amp; EMI screen</b>	Self extinguishing
	Halogen free			



# Non-metallic conduit systems

## Introduction to Adaptalok ATS™

Adaptalok ATS™ represents a unique and innovative solution in flexible conduit systems. Until now, manufacturers have produced fittings and seals separately, and assembled them together, or had the customer assemble them. This increases assembly time and introduces the possibility for errors.

Adaptalok ATS™ uses a sophisticated moulding process to mould an internal conduit seal and a face seal washer. This makes installation times very fast, and extremely reliable, because the seals cannot be left out. The conduit system also benefits from the highest IP rating possible.

- Additional key features:
- Nylon 66 body
- Lighter in weight
- Quicker to install (cut & assemble fittings)
- Wide variety of fittings - much larger solution choice
- Better fatigue life
- Return to shape




# Non-metallic conduit systems

## ATS™ Type A fittings (yellow elastomer)






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Type A fitting - yellow elastomer

Straight fitting - Fixed external male thread / Materials: Polyamide (nylon) 66/TPE / Colour: Black (BL) / Yellow (Y) Elastomer

	Part no.	Nominal conduit size		Metric thread	Part no.	Nominal conduit size		PF thread (in)	Part no.	Nominal conduit size		NPT thread (in)
		(mm)				(mm)				(mm)		
	AT13/M16/A/BLY	13		M16	AT13/PF038/A/BLY	13		3/8	AT13/038/A/BLY	13		3/8
	AT16/M16/A/BLY	16		M16	AT16/PF038/A/BLY	16		3/8	AT16/038/A/BLY	16		3/8
	AT16/M20/A/BLY	16		M20	AT16/PF050/A/BLY	16		1/2	AT16/050/A/BLY	16		1/2
	AT21/M20/A/BLY	21		M20	AT21/PF050/A/BLY	21		1/2	AT21/050/A/BLY	21		1/2
	AT21/M25/A/BLY	21		M25	—	—		—	—	—		—
	AT28/M25/A/BLY	28		M25	AT28/PF075/A/BLY	28		3/4	AT28/075/A/BLY	28		3/4
	AT28/M32/A/BLY	28		M32	—	—		—	—	—		—
	AT34/M32/A/BLY	34		M32	AT34/PF100/A/BLY	34		1	AT34/100/A/BLY	34		1
	AT34/M40/A/BLY	34		M40	—	—		—	—	—		—
	AT42/M40/A/BLY	42		M40	AT42/PF125/A/BLY	42		1 1/4	AT42/125/A/BLY	42		1 1/4
	AT54/M50/A/BLY	54		M50	—	—		—	—	—		—
	AT54/M63/A/BLY	54		M63	AT54/PF200/A/BLY	48		2	AT54/200/A/BLY	54		2

For insertion into knockouts using a locknut. Locknut supplied with METRIC thread

Approvals	IP rating	Appropriate conduit	Temperature range
    	For use with: Type PA / PR / PF		Static applications: -50°C to +120°C
	IP40	Yes	Moving applications: -45°C to +120°C
	IP65	Yes	
	IP68	Yes	
	4 bar 30mins with Heavy Weight Conduits 2 bar 30mins with Standard Weight Conduits		
	IP69	Yes	

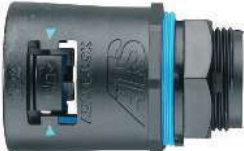
# Non-metallic conduit systems

## ATS™ Type A fittings (blue elastomer)








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Type A fitting - blue elastomer

Straight fitting - Fixed external male thread / Materials: Polyamide (nylon) 66/TPE / Colour: Black (BL) / Blue (B) Elastomer

	Part no.	Nominal conduit size		Metric thread	Part no.	Nominal conduit size		NPT thread (in)
		(mm)				(mm)		
	AT13/M16/A/BLB	13		M16	AT13/038/A/BLB	13		3/8
	AT16/M16/A/BLB	16		M16	AT16/038/A/BLB	16		3/8
	AT16/M20/A/BLB	16		M20	AT16/050/A/BLB	16		1/2
	AT21/M20/A/BLB	21		M20	AT21/050/A/BLB	21		1/2
	AT21/M25/A/BLB	21		M25	—	—		—
	AT28/M25/A/BLB	28		M25	AT28/075/A/BLB	28		3/4
	AT34/M32/A/BLB	34		M32	AT34/100/A/BLB	34		1
	AT34/M40/A/BLB	34		M40	—	—		—
	AT42/M40/A/BLB	42		M40	AT42/125/A/BLB	42		1 1/4
	—	—		—	AT48/150/A/BLB	48		1 1/2
	AT54/M50/A/BLB	54		M50	—	—		—
	AT54/M63/A/BLB	54		M63	AT54/200/A/BLB	54		2

For insertion into knockouts using a locknut. Locknut supplied with METRIC thread

Approvals	IP rating	Appropriate conduit	Temperature range
      	For use with: Type PA / PR / PF		Static applications: -50°C to +120°C
	IP40	Yes	Moving applications: -45°C to +120°C
	IP65	Yes	
	IP68	Yes	
	4 bar 30mins with Heavy Weight Conduits 2 bar 30mins with Standard Weight Conduits		


Non-metallic conduit systems


ATS™ Type C90 fittings

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Type C90 - yellow elastomer

90° Elbow fitting - Fixed external male thread / Materials: Polyamide (nylon) 66/TPE / Colour: Black (BL) / Yellow (Y) Elastomer


	Nominal conduit size			Metric thread	Nominal conduit size			PF thread (in)	Nominal conduit size			NPT thread (in)
	Part no.	(mm)			Part no.	(mm)			Part no.	(mm)		
	AT13/M16/C90/BLY	13		M16	AT13/PF038/C90/BLY	13		3⁄8	AT13/038/C90/BLY	13		3⁄8
	AT16/M16/C90/BLY	16		M16	AT16/PF038/C90/BLY	16		3⁄8	AT16/038/C90/BLY	16		3⁄8
	AT16/M20/C90/BLY	16		M20	AT16/PF050/C90/BLY	16		1⁄2	AT16/050/C90/BLY	16		1⁄2
	AT21/M20/C90/BLY	21		M20	AT21/PF050/C90/BLY	21		1⁄2	AT21/050/C90/BLY	21		1⁄2
	AT28/M25/C90/BLY	28		M25	AT28/PF075/C90/BLY	28		3⁄4	AT28/075/C90/BLY	28		3⁄4
	AT34/M32/C90/BLY	34		M32	AT34/PF100/C90/BLY	34		1	AT34/100/C90/BLY	34		1
	AT42/M40/C90/BLY	42		M40	AT42/PF125/C90/BLY	42		1 1⁄4	AT42/125/C90/BLY	42		1 1⁄4
	AT54/M50/C90/BLY	54		M50	AT54/PF150/C90/BLY	54		1 1⁄2	AT54/150/C90/BLY	54		1 1⁄2
	AT54/M63/C90/BLY	54		M63	AT54/PF200/C90/BLY	54		2	AT54/200/C90/BLY	54		2
	For insertion into knockouts using a locknut. Locknut supplied with METRIC thread											


Approvals	IP rating	Appropriate conduit	Temperature range
	For use with:	Type PA / PR / PF	Static applications: -50°C to +120°C
	IP40	Yes	Moving applications: -45°C to +120°C
	IP65	Yes	
	IP68	Yes	
		4 bar 30mins with Heavy Weight Conduits 2 bar 30mins with Standard Weight Conduits	
	IP69	Yes	

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Type C90 - blue elastomer

90° Elbow fitting - Fixed external male thread / Materials: Polyamide (nylon) 66/TPE / Colour: Black (BL) / Blue (B) Elastomer

	Nominal conduit size			Metric thread	Nominal conduit size			PF thread (in)
	Part no.	(mm)			Part no.	(mm)		
	AT13/M16/C90/BLB	13		M16	AT13/PF038/C90/BLB	13		3⁄8
	AT16/M16/C90/BLB	16		M16	AT16/PF038/C90/BLB	16		3⁄8
	AT16/M20/C90/BLB	16		M20	AT16/PF050/C90/BLB	16		1⁄2
	AT21/M20/C90/BLB	21		M20	AT21/PF050/C90/BLB	21		1⁄2
	AT28/M25/C90/BLB	28		M25	AT28/PF075/C90/BLB	28		3⁄4
	AT34/M32/C90/BLB	34		M32	AT34/PF100/C90/BLB	34		1
	AT42/M40/C90/BLB	42		M40	AT42/PF125/C90/BLB	42		1 1⁄4
	AT54/M50/C90/BLB	54		M50	AT54/PF150/C90/BLB	54		1 1⁄2
	AT54/M63/C90/BLB	54		M63	AT54/PF200/C90/BLB	54		2
	For insertion into knockouts using a locknut. Locknut supplied with METRIC thread							

Approvals	IP rating	Appropriate conduit	Temperature range
	For use with:	Type PA / PR / PF	Static applications: -50°C to +120°C
	IP40	Yes	Moving applications: -45°C to +120°C
	IP65	Yes	
	IP68	Yes	
		4 bar 30mins with Heavy Weight Conduits 2 bar 30mins with Standard Weight Conduits	
	IP69	Yes	


Non-metallic conduit systems


ATS™ Type 45 fittings

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Type 45 - yellow elastomer

45° Elbow fitting - Fixed external male thread / Materials: Polyamide (nylon) 66/TPE /  
Colour: Black (BL) / Yellow (Y) Elastomer


	Nominal conduit size			Nominal conduit size			PF thread (in)	Nominal conduit size	
	Part no.	(mm)	Metric thread	Part no.	(mm)	(in)		(mm)	NPT thread (in)
	AT13/M16/45/BLY	13	M16	AT13/PF038/45/BLY	13	3⁄8	AT13/038/45/BLY	13	3⁄8
	AT16/M16/45/BLY	16	M16	AT16/PF038/45/BLY	16	3⁄8	AT16/038/45/BLY	16	3⁄8
	AT16/M20/45/BLY	16	M20	AT16/PF050/45/BLY	16	1⁄2	AT16/050/45/BLY	16	1⁄2
	AT21/M20/45/BLY	21	M20	AT21/PF050/45/BLY	21	1⁄2	AT21/050/45/BLY	21	1⁄2
	AT28/M25/45/BLY	28	M25	AT28/PF075/45/BLY	28	3⁄4	AT28/075/45/BLY	28	3⁄4
	AT34/M32/45/BLY	34	M32	AT34/PF100/45/BLY	34	1	AT34/100/45/BLY	34	1
	AT42/M40/45/BLY	42	M40	AT42/PF125/45/BLY	42	1 1⁄4	AT42/125/45/BLY	42	1 1⁄4
	—	—	—	AT48/PF150/45/BLY	48	1 1⁄2	AT48/150/45/BLY	48	1 1⁄2
AT54/M50/45/BLY	54	M50	—	—	—	—	—	—	


Approvals	IP rating	Appropriate conduit	Temperature range
	For use with: Type PA / PR / PF		Static applications: -50°C to +120°C
	IP40	Yes	Moving applications: -45°C to +120°C
	IP65	Yes	
	IP68	Yes	
	4 bar 30mins with Heavy Weight Conduits 2 bar 30mins with Standard Weight Conduits		
	IP69	Yes	

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Type 45 - blue elastomer

45° Elbow fitting - Fixed external male thread / Materials: Polyamide (nylon) 66/TPE /  
Colour: Black (BL) / Blue (B) Elastomer

	Nominal conduit size			Nominal conduit size			PF thread
	Part no.	(mm)	Metric thread	Part no.	(mm)	(in)	
	AT13/M16/45/BLB	13	M16	AT13/PF038/45/BLB	13	3⁄8	
	AT16/M16/45/BLB	16	M16	AT16/PF038/45/BLB	16	3⁄8	
	AT16/M20/45/BLB	16	M20	AT16/PF050/45/BLB	16	1⁄2	
	AT21/M20/45/BLB	21	M20	AT21/PF050/45/BLB	21	1⁄2	
	AT28/M25/45/BLB	28	M25	AT28/PF075/45/BLB	28	3⁄4	
	AT34/M32/45/BLB	34	M32	AT34/PF100/45/BLB	34	1	
	AT42/M40/45/BLB	42	M40	AT42/PF125/45/BLB	42	1 1⁄4	
	—	—	—	AT48/PF150/45/BLB	48	1 1⁄2	
	AT54/M50/45/BLB	54	M50	—	—	—	
	For insertion into knockouts using a locknut. Locknut supplied with METRIC thread						


Approvals	IP rating	Appropriate conduit	Temperature range
	For use with: Type PA / PR / PF		Static applications: -50°C to +120°C
	IP40	Yes	Moving applications: -45°C to +120°C
	IP65	Yes	
	IP68	Yes	
	4 bar 30mins with Heavy Weight Conduits 2 bar 30mins with Standard Weight Conduits		
	IP69	Yes	







# Non-metallic conduit systems

## ATS™ Type SA & Type CS90 fittings

### — Type SA


**Straight fitting - Metal swivel external male thread / Materials: Polyamide (nylon) 66, nickel plated brass thread/TPE / Colour: Black (BL) / Yellow (Y), Blue (B) Elastomer**







	Part no.	Nominal conduit size		Metric thread	Part no.	Nominal conduit size		NPT thread (in)	Part no.	Nominal conduit size		PG thread
		(mm)				(mm)				(mm)		
	AT13/M16/SA/BL*	13		M16	AT13/038/SA/BL*	13		3/8	AT13/PG9/SA/BL*	13		PG9
	AT16/M16/SA/BL*	16		M16	AT16/038/SA/BL*	16		3/8	AT16/PG11/SA/BL*	16		PG11
	AT21/M20/SA/BL*	21		M20	AT21/050/SA/BL*	21		1/2	AT21/PG16/SA/BL*	21		PG16
	AT28/M25/SA/BL*	28		M25	AT28/075/SA/BL*	28		3/4	AT28/PG21/SA/BL*	28		PG21
	AT34/M32/SA/BL*	34		M32	AT34/100/SA/BL*	34		1	AT34/PG29/SA/BL*	34		PG29
	AT42/M40/SA/BL*	42		M40	AT42/125/SA/BL*	42		1 1/4	AT42/PG36/SA/BL*	42		PG36
	—	—		—	AT48/150/SA/BL*	48		1 1/2	—	—		—
	AT54/M50/SA/BL*	54		M50	AT54/150/SA/BL*	54		1 1/2	AT54/PG48/SA/BL*	54		PG48
	AT54/M63/SA/BL*	54		M63	AT54/200/SA/BL*	54		2	—	—		—
	For insertion into threaded entries & knockouts. Order locknuts separately * = Y (yellow elastomer); B (blue elastomer)											

Approvals	Blue Elastomer version only	IP rating	Appropriate conduit	Temperature range	
  	 	<b>For use with:</b> Type PA / PR / PF		Static applications: -50°C to +120°C	
		IP40	Yes	Moving applications: -45°C to +120°C	
		IP65	Yes	<b>Fitting characteristics</b>	
		IP68	Yes 4 bar 30mins with Heavy Weight Conduits 2 bar 30mins with Standard Weight Conduits		
		IP69	Yes		

### — Type CS90

**90° Elbow fitting - Swivel external male thread / Materials: Polyamide (nylon) 66, nickel plated brass thread/TPE / Colour: Black (BL) / Yellow (Y), Blue (B) Elastomer**

	Part no.	Nominal conduit size		Metric thread	Part no.	Nominal conduit size		NPT thread (in)
		(mm)				(mm)		
	AT13/M16/CS90/BL*	13		M16	AT13/038/CS90/BL*	13		3/8
	AT16/M16/CS90/BL*	16		M16	AT16/038/CS90/BL*	16		3/8
	AT21/M20/CS90/BL*	21		M20	AT21/050/CS90/BL*	21		1/2
	AT28/M25/CS90/BL*	28		M25	AT28/075/CS90/BL*	28		3/4
	AT34/M32/CS90/BL*	34		M32	AT34/100/CS90/BL*	34		1
	AT42/M40/CS90/BL*	42		M40	AT42/125/CS90/BL*	42		1 1/4
	—	—		—	AT48/150/CS90/BL*	48		1 1/2
	AT54/M50/CS90/BLY	54		M50	AT54/150/CS90/BL*	54		1 1/2
	AT54/M63/CS90/BL*	54		M63	AT54/200/CS90/BL*	54		2
	For insertion into threaded entries & knockouts. Order locknuts separately * = Y (yellow elastomer); B (blue elastomer)							

Approvals	Blue Elastomer version only	IP rating	Appropriate conduit	Temperature range	
  	 	<b>For use with:</b> Type PA / PR / PF		Static applications: -50°C to +120°C	
		IP40	Yes	Moving applications: -45°C to +120°C	
		IP65	Yes	<b>Fitting characteristics</b>	
		IP68	Yes 4 bar 30mins with Heavy Weight Conduits 2 bar 30mins with Standard Weight Conduits		
		IP69	Yes		




# Non-metallic conduit systems



## ATS™ Type SA & Type CS90 fittings


### — Type SA

**Straight fitting - Metal swivel external male thread / Materials: Polyamide (nylon) 66, nickel plated brass thread/TPE / Colour: Black (BL) / Yellow (Y), Blue (B) Elastomer**

	Part no.	Nominal conduit size		Metric thread	Part no.	Nominal conduit size		NPT thread (in)	Part no.	Nominal conduit size		PG thread
		(mm)				(mm)				(mm)		
	AT13/M16/SA/BL*	13		M16	AT13/038/SA/BL*	13		3/8	AT13/PG9/SA/BL*	13		PG9
	AT16/M16/SA/BL*	16		M16	AT16/038/SA/BL*	16		3/8	AT16/PG11/SA/BL*	16		PG11
	AT21/M20/SA/BL*	21		M20	AT21/050/SA/BL*	21		1/2	AT21/PG16/SA/BL*	21		PG16
	AT28/M25/SA/BL*	28		M25	AT28/075/SA/BL*	28		3/4	AT28/PG21/SA/BL*	28		PG21
	AT34/M32/SA/BL*	34		M32	AT34/100/SA/BL*	34		1	AT34/PG29/SA/BL*	34		PG29
	AT42/M40/SA/BL*	42		M40	AT42/125/SA/BL*	42		1 1/4	AT42/PG36/SA/BL*	42		PG36
	—	—		—	AT48/150/SA/BL*	48		1 1/2	—	—		—
	AT54/M50/SA/BL*	54		M50	AT54/150/SA/BL*	54		1 1/2	AT54/PG48/SA/BL*	54		PG48
	AT54/M63/SA/BL*	54		M63	AT54/200/SA/BL*	54		2	—	—		—
	For insertion into threaded entries & knockouts. Order locknuts separately											

\* = Y (yellow elastomer); B (blue elastomer)


Approvals	Blue Elastomer version only	IP rating	Appropriate conduit	Temperature range
		For use with: Type PA / PR / PF		Static applications: -50°C to +120°C
		IP40	Yes	Moving applications: -45°C to +120°C
		IP65	Yes	Fitting characteristics
		IP68	Yes	
		4 bar 30mins with Heavy Weight Conduits 2 bar 30mins with Standard Weight Conduits		
		IP69	Yes	








### — Type CS90

**90° Elbow fitting - Swivel external male thread / Materials: Polyamide (nylon) 66, nickel plated brass thread/TPE / Colour: Black (BL) / Yellow (Y), Blue (B) Elastomer**

	Part no.	Nominal conduit size		Metric thread	Part no.	Nominal conduit size		NPT thread (in)
		(mm)				(mm)		
	AT13/M16/CS90/BL*	13		M16	AT13/038/CS90/BL*	13		3/8
	AT16/M16/CS90/BL*	16		M16	AT16/038/CS90/BL*	16		3/8
	AT21/M20/CS90/BL*	21		M20	AT21/050/CS90/BL*	21		1/2
	AT28/M25/CS90/BL*	28		M25	AT28/075/CS90/BL*	28		3/4
	AT34/M32/CS90/BL*	34		M32	AT34/100/CS90/BL*	34		1
	AT42/M40/CS90/BL*	42		M40	AT42/125/CS90/BL*	42		1 1/4
	—	—		—	AT48/150/CS90/BL*	48		1 1/2
	AT54/M50/CS90/BL*	54		M50	AT54/150/CS90/BL*	54		1 1/2
	AT54/M63/CS90/BL*	54		M63	AT54/200/CS90/BL*	54		2
	For insertion into threaded entries & knockouts. Order locknuts separately							

\* = Y (yellow elastomer); B (blue elastomer)

Approvals	Blue Elastomer version only	IP rating	Appropriate conduit	Temperature range
		For use with: Type PA / PR / PF		Static applications: -50°C to +120°C
		IP40	Yes	Moving applications: -45°C to +120°C
		IP65	Yes	Fitting characteristics
		IP68	Yes	
		4 bar 30mins with Heavy Weight Conduits 2 bar 30mins with Standard Weight Conduits		
		IP69	Yes	













# Non-metallic conduit systems

## ATS™ Type S45 & Type SFA fittings

—  
Type S45


45° Elbow body - Swivel external male thread / Materials: Polyamide (nylon) 66,  
nickel plated brass thread/TPE / Colour: Black (BL) / Yellow (Y), Blue (B) Elastomer








	Part no.	Nominal conduit size (mm)	Metric thread		Part no.	Nominal conduit size (mm)	NPT thread (in)
	AT13/M16/S45/BL*	13	M16		AT13/038/S45/BL*	13	3/8
	AT16/M16/S45/BL*	16	M16		AT16/038/S45/BL*	16	3/8
	AT21/M20/S45/BL*	21	M20		AT21/050/S45/BL*	21	1/2
	AT28/M25/S45/BL*	28	M25		AT28/075/S45/BL*	28	3/4
	AT34/M32/S45/BL*	34	M32		AT34/100/S45/BL*	34	1
	AT42/M40/S45/BL*	42	M40		AT42/125/S45/BL*	42	1 1/4
	—	—	—		AT48/150/S45/BL*	48	1 1/2
	AT54/M50/S45/BLY	54	M50		AT54/150/S45/BL*	54	1 1/2
	AT54/M63/S45/BLY	54	M63		AT54/200/S45/BL*	54	2
	For insertion into threaded entries & knockouts. Order locknuts separately * = Y (yellow elastomer); B (blue elastomer)						

Approvals	Blue Elastomer version only	IP rating	Appropriate conduit	Temperature range	
     	Intertek	For use with: Type PA / PR / PF		Static applications: -50°C to +120°C	
		IP40	Yes	Moving applications: -45°C to +120°C	
		IP65	Yes	Fitting characteristics	
		IP68	Yes 4 bar 30mins with Heavy Weight Conduits 2 bar 30mins with Standard Weight Conduits		
		IP69	Yes		

—  
Type SFA

Straight fitting - Swivel internal female thread / Materials: Polyamide (nylon) 66,  
nickel plated brass thread/TPE / Colour: Black (BL) / Yellow (Y), Blue (B) Elastomer

	Part no.	Nominal conduit size (mm)	Metric thread		Part no.	Nominal conduit size (mm)	NPT thread (in)
	AT13/M16/SFA/BL*	13	M16		AT13/038/SFA/BL*	13	3/8
	AT16/M16/SFA/BL*	16	M16		AT16/038/SFA/BL*	16	3/8
	AT21/M20/SFA/BL*	21	M20		AT21/050/SFA/BL*	21	1/2
	AT28/M25/SFA/BL*	28	M25		AT28/075/SFA/BL*	28	3/4
	AT34/M32/SFA/BL*	34	M32		AT34/100/SFA/BL*	34	1
	AT42/M40/SFA/BL*	42	M40		AT42/125/SFA/BL*	42	1 1/4
	—	—	—		AT48/150/SFA/BL*	48	1 1/2
	AT54/M50/SFA/BLY	54	M50		—	—	—
	AT54/M63/SFA/BLY	54	M63		AT54/200/SFA/BL*	54	2
	For attachments to external threads & other fittings * = Y (yellow elastomer); B (blue elastomer)						

Approvals	Blue Elastomer version only	IP rating	Appropriate conduit	Temperature range	
     	Intertek	For use with: Type PA / PR / PF		Static applications: -50°C to +120°C	
		IP40	Yes	Moving applications: -45°C to +120°C	
		IP65	Yes	Fitting characteristics	
		IP68	Yes 4 bar 30mins with Heavy Weight Conduits 2 bar 30mins with Standard Weight Conduits		
		IP69	Yes		










# Non-metallic conduit systems

## ATS™ Type CSF90 & Type SF45 fittings

### — Type CSF90


90° Elbow body - Swivel internal female thread / Materials: Polyamide (nylon) 66, nickel plated brass thread/TPE / Colour: Black (BL) / Yellow (Y), Blue (B) Elastomer







	Part no.	Nominal conduit size (mm)	Metric thread		Part no.	Nominal conduit size (mm)	NPT thread (in)
	AT13/M16/CSF90/BL*	13	M16		AT13/038/CSF90/BL*	13	3/8
	AT16/M16/CSF90/BL*	16	M16		AT16/038/CSF90/BL*	16	3/8
	AT21/M20/CSF90/BL*	21	M20		AT21/050/CSF90/BL*	21	1/2
	AT28/M25/CSF90/BL*	28	M25		AT28/075/CSF90/BL*	28	3/4
	AT34/M32/CSF90/BL*	34	M32		AT34/100/CSF90/BL*	34	1
	AT42/M40/CSF90/BL*	42	M40		AT42/125/CSF90/BL*	42	1 1/4
	—	—	—		AT48/150/CSF90/BL*	48	1 1/2
	AT54/M50/CSF90/BL*	54	M50		—	—	—
	AT54/M63/CSF90/BL*	54	M63		AT54/200/CSF90/BL*	54	2
	For insertion into threaded entries & knockouts. Order locknuts separately * = Y (yellow elastomer); B (blue elastomer)						

Approvals	Blue Elastomer version only	IP rating	Appropriate conduit	Temperature range	
  KIM35161      LOW VOLTAGE DIRECTIVE  	 C      US intertek	For use with: Type PA / PR / PF		Static applications: -50°C to +120°C	
		IP66	Yes	Moving applications: -45°C to +120°C	
		IP67	Yes	Fitting characteristics	
		IP68	Yes		
		4 bar 30mins with Heavy Weight Conduits 2 bar 30mins with Standard Weight Conduits			
IP69	Yes				

### — Type SF45

45° Elbow body - Swivel internal female thread / Materials: Polyamide (nylon) 66, nickel plated brass thread/TPE / Colour: Black (BL) / Yellow (Y), Blue (B) Elastomer

	Part no.	Nominal conduit size (mm)	Metric thread		Part no.	Nominal conduit size (mm)	NPT thread (in)
	AT13/M16/SF45/BL*	13	M16		AT13/038/SF45/BL*	13	3/8
	AT16/M16/SF45/BL*	16	M16		AT16/038/SF45/BL*	16	3/8
	AT21/M20/SF45/BL*	21	M20		AT21/050/SF45/BL*	21	1/2
	AT28/M25/SF45/BL*	28	M25		AT28/075/SF45/BL*	28	3/4
	AT34/M32/SF45/BL*	34	M32		AT34/100/SF45/BL*	34	1
	AT42/M40/SF45/BL*	42	M40		AT42/125/SF45/BL*	42	1 1/4
	—	—	—		AT48/150/SF45/BL*	48	1 1/2
	AT54/M50/SF45/BL*	54	M50		—	—	—
	AT54/M63/SF45/BL*	54	M63		AT54/200/SF45/BL*	54	2
	For attaching to external threads & other fittings * = Y (yellow elastomer); B (blue elastomer)						


Approvals	Blue Elastomer version only	IP rating	Appropriate conduit	Temperature range	
   	 Intertek	For use with: Type PA / PR / PF		Static applications: -50°C to +120°C	
		IP66	Yes	Moving applications: -45°C to +120°C	
		IP67	Yes	Fitting characteristics	
		IP68	Yes		
		4 bar 30mins with Heavy Weight Conduits 2 bar 30mins with Standard Weight Conduits			
IP69	Yes				

Non-metallic conduit systems

ATS™ Types SFAJ, CSF90J & SF45J swivel housing fittings


—  
Type SFAJ

Straight fitting - Swivel housing / Materials: Polyamide (nylon) 66,  
nickel plated brass thread/TPE / Colour: Black (BL) / Yellow (Y) Elastomer

	Part no.	Nominal conduit size (mm)	Metric thread
	AT16/M16/SFAJ/BLY	16	M16
	AT21/M20/SFAJ/BLY	21	M20
	AT28/M25/SFAJ/BLY	28	M25
	AT34/M32/SFAJ/BLY	34	M32
	AT42/M40/SFAJ/BLY	42	M40
	AT54/M50/SFAJ/BLY	54	M50
	AT54/M63/SFAJ/BLY	54	M63
Swivel metal housing for use with Jacob PERFECT cable glands			


—  
Type CSF90J







90° Elbow body - Swivel Housing / Materials: Polyamide (nylon) 66,  
nickel plated brass thread/TPE / Colour: Black (BL) / Yellow (Y) Elastomer

	Part no.	Nominal conduit size (mm)	Metric thread
	AT16/M16/CSF90J/BLY	16	M16
	AT21/M20/CSF90J/BLY	21	M20
	AT28/M25/CSF90J/BLY	28	M25
	AT34/M32/CSF90J/BLY	34	M32
	AT42/M40/CSF90J/BLY	42	M40
	AT54/M50/CSF90J/BLY	54	M50
	AT54/M63/CSF90J/BLY	54	M63

—  
Type SF45

45° Elbow body - Swivel housing / Materials: Polyamide (nylon) 66,  
nickel plated brass thread/TPE / Colour: Black (BL) / Yellow (Y) Elastomer


	Part no.	Nominal conduit size (mm)	Metric thread
	AT16/M16/SF45J/BLY	16	M16
	AT21/M20/SF45J/BLY	21	M20
	AT28/M25/SF45J/BLY	28	M25
	AT34/M32/SF45J/BLY	34	M32
	AT42/M40/SF45J/BLY	42	M40
	AT54/M50/SF45J/BLY	54	M50
	AT54/M63/SF45J/BLY	54	M63
Swivel metal housing for use with Jacob PERFECT cable glands			

Approvals	IP rating	Appropriate conduit	Temperature range	
    	For use with: Type PA /PR / PF		Static applications: -50°C to +120°C	
	IP40	Yes	Moving applications: -45°C to +120°C	
	IP65	Yes	Fitting characteristics	
	IP68	Yes		
		4 bar 30mins with Heavy Weight Conduits 2 bar 30mins with Standard Weight Conduits		
	IP69	N/A		







# Non-metallic conduit systems

## ATS™ Type SFA - UNEF fittings

— Straight body - Swivel internal female thread / Materials: Polyamide (nylon) 66, aluminium/TPE /  
Type SFA - UNEF Colour: Black (BL) / Yellow (Y) Elastomer

	Part no.	Nominal conduit size (mm)	Connector UNEF thread		Part no.	Nominal conduit size (mm)	Connector UNEF thread
	AT13/U063/SFA/BL*	13	5/8" - 24		AT21/U144/SFA/BL*	21	1 7/16" - 18
	AT13/U075/SFA/BL*	13	3/4" - 20		AT21/U175/SFA/BL*	21	1 3/4" - 18
	AT13/U088/SFA/BL*	13	7/8" - 20		AT28/U088/SFA/BL*	28	7/8" - 20
	AT16/U063/SFA/BL*	16	5/8" - 24		AT28/U094/SFA/BL*	28	1 5/16" - 20
	AT16/U075/SFA/BL*	16	3/4" - 20		AT28/U100/SFA/BL*	28	1" - 20
	AT16/U081/SFA/BL*	16	1 3/16" - 20		AT28/U119/SFA/BL*	28	1 3/16" - 18
	AT16/U088/SFA/BL*	16	7/8" - 20		AT28/U138/SFA/BL*	28	1 3/8" - 18
	AT16/U094/SFA/BL*	16	1 5/16" - 20		AT28/U144/SFA/BL*	28	1 7/16" - 18
	AT16/U100/SFA/BL*	16	1" - 20		AT28/U175/SFA/BL*	28	1 3/4" - 18
	AT16/U119/SFA/BL*	16	1 3/16" - 18		AT28/U200/SFA/BL*	28	2" - 16
	AT16/U131/SFA/BL*	16	1 5/16" - 18		AT28/U225/SFA/BL*	28	2 1/4" - 16
	AT21/U075/SFA/BL*	21	3/4" - 20		AT34/U100/SFA/BL*	34	1" - 20
	AT21/U088/SFA/BL*	21	7/8" - 20		AT34/U119/SFA/BL*	34	1 3/16" - 18
	AT21/U094/SFA/BL*	21	1 5/16" - 20		AT34/U144/SFA/BL*	34	1 7/16" - 18
	AT21/U100/SFA/BL*	21	1" - 20		AT34/U175/SFA/BL*	34	1 3/4" - 18
	AT21/U113/SFA/BL*	21	1 1/8" - 18		AT34/U200/SFA/BL*	34	2" - 16
	AT21/U119/SFA/BL*	21	1 3/16" - 18		AT42/U175/SFA/BL*	42	1 3/4" - 18
	AT21/U131/SFA/BL*	21	1 5/16" - 18		AT42/U200/SFA/BL*	42	2" - 16
	AT21/U138/SFA/BL*	21	1 3/8" - 18		—	—	—


For coupling to UNEF circular connectors  
\* = Y (yellow elastomer); B (blue elastomer)  
Blue version MTO, subject to MOQ

Approvals	Blue Elastomer version only	IP rating	Appropriate conduit	Temperature range	
 K8325161	 LOW VOLTAGE DIRECTIVE	 Intertek	For use with: Type PA / PR / PF	Static applications: -50°C to +120°C	
				Moving applications: -45°C to +120°C	
  RoHS			IP40	Yes	
			IP65	Yes	
			IP68	Yes	
			IP69	Yes	




# Non-metallic conduit systems

## ATS™ Type CSF90 - UNEF fittings

— 90° Elbow body - Swivel internal female thread / Materials: Polyamide (nylon) 66, Type CSF90 - UNEF nickel plated brass thread/TPE / Colour: Black (BL) / Yellow (Y) Elastomer

	Part no.	Nominal conduit size (mm)	Connector UNEF thread		Part no.	Nominal conduit size (mm)	Connector UNEF thread
	AT13/U063/CSF90/BL*	13	5/8" - 24		AT21/U144/CSF90/BL*	21	1 7/16" - 18
	AT13/U075/CSF90/BL*	13	3/4" - 20		AT21/U175/CSF90/BL*	21	1 3/4" - 18
	AT13/U088/CSF90/BL*	13	7/8" - 20		AT28/U088/CSF90/BL*	28	7/8" - 20
	AT16/U063/CSF90/BL*	16	5/8" - 24		AT28/U094/CSF90/BL*	28	1 5/16" - 20
	AT16/U075/CSF90/BL*	16	3/4" - 20		AT28/U100/CSF90/BL*	28	1" - 20
	AT16/U081/CSF90/BL*	16	1 3/16" - 20		AT28/U119/CSF90/BL*	28	1 3/16" - 18
	AT16/U088/CSF90/BL*	16	7/8" - 20		AT28/U138/CSF90/BL*	28	1 3/8" - 18
	AT16/U094/CSF90/BL*	16	1 5/16" - 20		AT28/U144/CSF90/BL*	28	1 7/16" - 18
	AT16/U100/CSF90/BL*	16	1" - 20		AT28/U175/CSF90/BL*	28	1 3/4" - 18
	AT16/U119/CSF90/BL*	16	1 3/16" - 18		AT28/U200/CSF90/BL*	28	2" - 16
	AT16/U131/CSF90/BL*	16	1 5/16" - 18		AT28/U225/CSF90/BL*	28	2 1/4" - 16
	AT21/U075/CSF90/BL*	21	3/4" - 20		AT34/U100/CSF90/BL*	34	1" - 20
	AT21/U088/CSF90/BL*	21	7/8" - 20		AT34/U119/CSF90/BL*	34	1 3/16" - 18
	AT21/U094/CSF90/BL*	21	1 5/16" - 20		AT34/U144/CSF90/BL*	34	1 7/16" - 18
	AT21/U100/CSF90/BL*	21	1" - 20		AT34/U175/CSF90/BL*	34	1 3/4" - 18
	AT21/U113/CSF90/BL*	21	1 1/8" - 18		AT34/U200/CSF90/BL*	34	2" - 16
	AT21/U119/CSF90/BL*	21	1 3/16" - 18		AT42/U175/CSF90/BL*	42	1 3/4" - 18
	AT21/U131/CSF90/BL*	21	1 5/16" - 18		AT42/U200/CSF90/BL*	42	2" - 16
	AT21/U138/CSF90/BL*	21	1 3/8" - 18		—	—	—

For coupling to UNEF circular connectors  
\* = Y (yellow elastomer); B (blue elastomer)  
Blue version MTO, subject to MOQ


Approvals	Blue Elastomer version only	IP rating	Appropriate conduit	Temperature range	Fitting characteristics
		For use with: Type PA / PR / PF		Static applications: -50°C to +120°C	
		IP40	Yes	Moving applications: -45°C to +120°C	
		IP65	Yes		
		IP68	Yes		
		4 bar 30mins with Heavy Weight Conduits 2 bar 30mins with Standard Weight Conduits			
		IP69	Yes		

# Non-metallic conduit systems








## ATS™ Type CSF90 - UNEF fittings

—  
Type CSF90 - UNEF

90° Elbow body - Swivel internal female thread / Materials: Polyamide (nylon) 66,  
nickel plated brass thread/TPE / Colour: Black (BL) / Yellow (Y) Elastomer

	Part no.	Nominal conduit size (mm)	Connector UNEF thread		Part no.	Nominal conduit size (mm)	Connector UNEF thread
	AT13/U063/CSF90/BL*	13	5/8" - 24		AT21/U144/CSF90/BL*	21	1 7/16" - 18
	AT13/U075/CSF90/BL*	13	3/4" - 20		AT21/U175/CSF90/BL*	21	1 3/4" - 18
	AT13/U088/CSF90/BL*	13	7/8" - 20		AT28/U088/CSF90/BL*	28	7/8" - 20
	AT16/U063/CSF90/BL*	16	5/8" - 24		AT28/U094/CSF90/BL*	28	1 5/16" - 20
	AT16/U075/CSF90/BL*	16	3/4" - 20		AT28/U100/CSF90/BL*	28	1" - 20
	AT16/U081/CSF90/BL*	16	1 3/16" - 20		AT28/U119/CSF90/BL*	28	1 3/16" - 18
	AT16/U088/CSF90/BL*	16	7/8" - 20		AT28/U138/CSF90/BL*	28	1 3/8" - 18
	AT16/U094/CSF90/BL*	16	1 5/16" - 20		AT28/U144/CSF90/BL*	28	1 7/16" - 18
	AT16/U100/CSF90/BL*	16	1" - 20		AT28/U175/CSF90/BL*	28	1 3/4" - 18
	AT16/U119/CSF90/BL*	16	1 3/16" - 18		AT28/U200/CSF90/BL*	28	2" - 16
	AT16/U131/CSF90/BL*	16	1 5/16" - 18		AT28/U225/CSF90/BL*	28	2 1/4" - 16
	AT21/U075/CSF90/BL*	21	3/4" - 20		AT34/U100/CSF90/BL*	34	1" - 20
	AT21/U088/CSF90/BL*	21	7/8" - 20		AT34/U119/CSF90/BL*	34	1 3/16" - 18
	AT21/U094/CSF90/BL*	21	1 5/16" - 20		AT34/U144/CSF90/BL*	34	1 7/16" - 18
	AT21/U100/CSF90/BL*	21	1" - 20		AT34/U175/CSF90/BL*	34	1 3/4" - 18
	AT21/U113/CSF90/BL*	21	1 1/8" - 18		AT34/U200/CSF90/BL*	34	2" - 16
	AT21/U119/CSF90/BL*	21	1 3/16" - 18		AT42/U175/CSF90/BL*	42	1 3/4" - 18
	AT21/U131/CSF90/BL*	21	1 5/16" - 18		AT42/U200/CSF90/BL*	42	2" - 16
	AT21/U138/CSF90/BL*	21	1 3/8" - 18		—	—	—

For coupling to UNEF circular connectors  
\* = Y (yellow elastomer); B (blue elastomer)  
Blue version MTO, subject to MOQ


Approvals	Blue Elastomer version only	IP rating	Appropriate conduit	Temperature range	Fitting characteristics
     	Intertek	For use with: Type PA / PR / PF		Static applications: -50°C to +120°C	
		IP40	Yes	Moving applications: -45°C to +120°C	
		IP65	Yes		
		IP68	Yes 4 bar 30mins with Heavy Weight Conduits 2 bar 30mins with Standard Weight Conduits		
		IP69	Yes		

# Non-metallic conduit systems






## ATS™ Type SF45 - UNEF fittings

—  
Type SF45 - UNEF

45° Elbow body - Swivel internal female thread / Materials: Polyamide (nylon) 66, aluminium/TPE /  
Colour: Black (BL) / Yellow (Y), Blue (B) Elastomer

	Part no.	Nominal conduit size (mm)	Metric thread		Part no.	Nominal conduit size (mm)	NPT thread
	AT13/U063/SF45/BL*	13	5/8" - 24		AT21/U144/SF45/BL*	21	1 7/16" - 18
	AT13/U075/SF45/BL*	13	3/4" - 20		AT21/U175/SF45/BL*	21	1 3/4" - 18
	AT13/U088/SF45/BL*	13	7/8" - 20		AT28/U088/SF45/BL*	28	7/8" - 20
	AT16/U063/SF45/BL*	16	5/8" - 24		AT28/U094/SF45/BL*	28	1 5/16" - 20
	AT16/U075/SF45/BL*	16	3/4" - 20		AT28/U100/SF45/BL*	28	1" - 20
	AT16/U081/SF45/BL*	16	1 3/16" - 20		AT28/U119/SF45/BL*	28	1 3/16" - 18
	AT16/U088/SF45/BL*	16	7/8" - 20		AT28/U138/SF45/BL*	28	1 3/8" - 18
	AT16/U094/SF45/BL*	16	1 5/16" - 20		AT28/U144/SF45/BL*	28	1 7/16" - 18
	AT16/U100/SF45/BL*	16	1" - 20		AT28/U175/SF45/BL*	28	1 3/4" - 18
	AT16/U119/SF45/BL*	16	1 3/16" - 18		AT28/U200/SF45/BL*	28	2" - 16
	AT16/U131/SF45/BL*	16	1 5/16" - 18		AT28/U225/SF45/BL*	28	2 1/4" - 16
	AT21/U075/SF45/BL*	21	3/4" - 20		AT34/U100/SF45/BL*	34	1" - 20
	AT21/U088/SF45/BL*	21	7/8" - 20		AT34/U119/SF45/BL*	34	1 3/16" - 18
	AT21/U094/SF45/BL*	21	1 5/16" - 20		AT34/U144/SF45/BL*	34	1 7/16" - 18
	AT21/U100/SF45/BL*	21	1" - 20		AT34/U175/SF45/BL*	34	1 3/4" - 18
	AT21/U113/SF45/BL*	21	1 1/8" - 18		AT34/U200/SF45/BL*	34	2" - 16
	AT21/U119/SF45/BL*	21	1 3/16" - 18		AT42/U175/SF45/BL*	42	1 3/4" - 18
	AT21/U131/SF45/BL*	21	1 5/16" - 18		AT42/U200/SF45/BL*	42	2" - 16
	AT21/U138/SF45/BL*	21	1 3/8" - 18		—	—	—

For coupling to UNEF circular connectors  
\* = Y (yellow elastomer); B (blue elastomer)  
Blue version MTO, subject to MOQ

Approvals	Blue Elastomer version only	IP rating	Appropriate conduit	Temperature range	Fitting characteristics
 KMS5161	 LOW VOLTAGE DIRECTIVE	 C Intertek	For use with: Type PA / PR / PF		
			IP40	Yes	
			IP65	Yes	
			IP68	Yes	
			4 bar 30mins with Heavy Weight Conduits 2 bar 30mins with Standard Weight Conduits		
		IP69	Yes		


Non-metallic conduit systems




ATSTM Type U swivel couplers

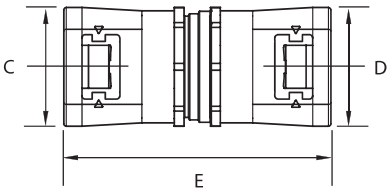
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Type U

Straight PA66 body - Swivel coupler / Materials: Polyamide (nylon) 66/TPE / Colour: Black (BL) / Yellow (Y), Blue (B) Elastomer

	Part no.	Nominal conduit size (mm)	Nominal dimensions / Conduit size (mm)		
			C	D	E
	AT13/A/U/BL*	13	21.2	21.2	70.0
	AT16/A/U/BL*	16	23.2	23.2	76.0
	AT21/A/U/BL*	21	30.2	30.2	82.0
	AT28/A/U/BL*	28	37.2	37.2	86.5
	AT34/A/U/BL*	34	44.2	44.2	89.0
	AT42/A/U/BL*	42	54.2	54.2	110.4
	AT48/A/U/BL*	48	65.0	65.0	118.2
	AT54/A/U/BL*	54	66.2	66.2	125.0
	For coupling to corrugated flexible conduit * = Y (yellow elastomer); B (blue elastomer) Blue version MTO, subject to MOQ				

Approvals		Blue Elastomer version only		IP rating	Appropriate conduit	Temperature range	
			For use with: Type PA / PR / PF		Static applications: -50°C to +120°C		
			IP40	Yes	Moving applications: -45°C to +120°C		
			IP65	Yes	Fitting characteristics		
			IP68	Yes			
			4 bar 30mins with Heavy Weight Conduits 2 bar 30mins with Standard Weight Conduits				
		IP69	Yes				




Non-metallic conduit systems



ATSTM Type FL/A panel mounting fittings


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Type FL/A

Straight panel mounting-swivel flange / Materials: Polyamide (nylon) 66/TPE / Colour: Black (BL) / Yellow (Y), Blue (B) Elastomer

	Part no.	Nominal conduit size (mm)
	AT16/FL/A/BL*	16
	AT21/FL/A/BL*	21
	AT28/FL/A/BL*	28
	With integral face seal * = Y (yellow elastomer); B (blue elastomer) Blue version MTO, subject to MOQ	

Approvals		Blue Elastomer version only		IP rating	Appropriate conduit	Temperature range		
				For use with: Type PA / PR / PF		Static applications: -50°C to +120°C		
				IP40	Yes	Moving applications: -45°C to +120°C		
				IP65	Yes	Fitting characteristics		
						IP68	Yes	
						4 bar 30mins with Heavy Weight Conduits 2 bar 30mins with Standard Weight Conduits		






# Non-metallic conduit systems







## ATSTM Types FL/C90 and FL/45 panel mounting fittings

—

Panel mounting Type FL/C90

90° Elbow body - Panel mounting swivel flange / Materials: Polyamide (nylon) 66/TPE / Colour: Black (BL) / Yellow (Y), Blue (B) Elastomer


		Nominal conduit size (mm)
	Part no.	
	AT13/FL/C90/BL*	13
	AT16/FL/C90/BL*	16
	AT21/FL/C90/BL*	21
	AT28/FL/C90/BL*	28
For panel mounting via 2 hole fixing & integral face seal * = Y (yellow elastomer); B (blue elastomer) Blue version MTO, subject to MOQ		







Approvals	Blue Elastomer version only	IP rating	Appropriate conduit	Temperature range	
    		For use with: Type PA / PR / PF		Static applications: -50°C to +120°C	
		IP40	Yes	Moving applications: -45°C to +120°C	
		IP65	Yes	Fitting characteristics	
		IP68	Yes		
		4 bar 30mins with Heavy Weight Conduits 2 bar 30mins with Standard Weight Conduits			
		IP69	Yes		

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Panel mounting Type FL45

45° Elbow body - Panel mounting swivel flange / Materials: Polyamide (nylon) 66/TPE / Colour: Black (BL) / Yellow (W), Blue (B) Elastomer

		Nominal conduit size (mm)
	Part no.	
	AT16/FL/45/BL*	16
	AT21/FL/45/BL*	21
	AT28/FL/45/BL*	28
With integral face seal * = Y (yellow elastomer); B (blue elastomer) Blue version MTO, subject to MOQ		


Approvals	Blue Elastomer version only	IP rating	Appropriate conduit	Temperature range	
    		For use with: Type PA / PR / PF		Static applications: -50°C to +120°C	
		IP40	Yes	Moving applications: -45°C to +120°C	
		IP65	Yes	Fitting characteristics	
		IP68	Yes		
		4 bar 30mins with Heavy Weight Conduits 2 bar 30mins with Standard Weight Conduits			
		IP69	Yes		







Non-metallic conduit systems

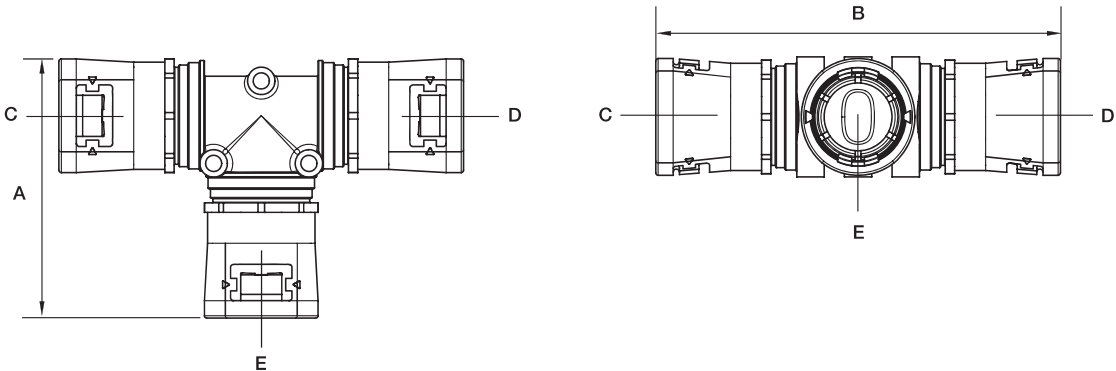
ATS™ Type T fittings

Type T

3 Way 'T' piece / Materials: Polyamide (nylon) 66 / Colour: Black (BL), Grey (GR) / Yellow (Y) Elastomer

Nominal dimensions / Conduit size (mm)						
	Part no.	A	B	C	D	E
	21T	AT211316/T/BLY	82	129	21	16
		AT211321/T/BLY	82	122	21	21
		AT211613/T/BLY	83	129	21	13
		AT211616/T/BLY	83	129	21	16
		AT211621/T/BLY	83	122	21	21
		AT212113/T/BLY	75	129	21	21
		AT211616/T/BLY	83	129	21	16
		AT212121/T/BLY	75	122	21	21
	28T	AT212821/T/BLY	82	152	21	21
		AT281321/T/BLY	88	141	28	21
		AT281328/T/BLY	88	129	28	28
		AT281621/T/BLY	90	141	28	21
		AT281628/T/BLY	90	129	28	28
		AT282121/T/BLY	93	141	28	21
		AT282128/T/BLY	93	129	28	28
		AT282828/T/BLY	82	129	28	28
	34T	AT341634/T/BLY	98	139	34	34
		AT342128/T/BLY	104	150	34	28
		AT342134/T/BLY	104	139	34	34
		AT343434/T/BLY	91	139	34	34

Approvals	IP rating	Appropriate conduit	Temperature range	Fitting characteristics
    	For use with: Type PA / PR / PF		Static applications: -50°C to +120°C	
	IP66	Yes	Moving applications: -45°C to +120°C	
	IP67	Yes		
	IP68	Yes		
	4 bar 30mins with Heavy Weight Conduits 2 bar 30mins with Standard Weight Conduits			
	IP69	Yes		




# Non-metallic conduit systems

## ATS™ Type Y fittings

Type Y

3 Way 'T' piece / Materials: Polyamide (nylon) 66, / Colour: Black (BL), Grey (GR) / Yellow (Y) Elastomer

					Nominal dimensions/conduit size (mm)		
		Part no.	A	B	C	D	E
	28Y	AT282113/Y/BLY	107.1	117.8	28	21	13
		AT282116/Y/BLY	110.6	117.8	28	21	16
		AT282121/Y/BLY	116.4	129.9	28	21	21
		AT282813/Y/BLY	108.7	124.6	28	28	13
		AT282816/Y/BLY	112.2	124.6	28	28	16
		AT282821/Y/BLY	116.6	124.6	28	28	21
		AT282828/Y/BLY	165.0	119.0	28	28	28

### Approvals



### IP rating

### Appropriate conduit

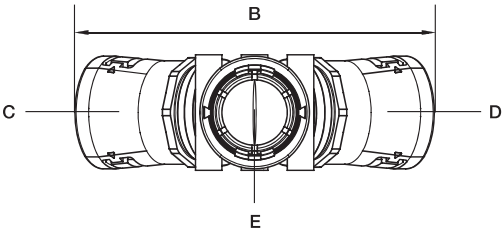
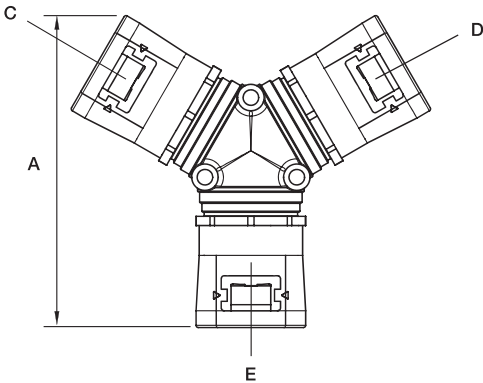
For use with: Type PA / PR / PF

IP40	Yes
IP65	Yes
IP68	Yes
4 bar 30mins with Heavy Weight Conduits	
2 bar 30mins with Standard Weight Conduits	
IP69	Yes

### Temperature range

Static applications: -50°C to +120°C  
Moving applications: -45°C to +120°C

### Fitting characteristics



# Non-metallic conduit systems

## Adaptalok AL Type A fittings

Type A

Straight fitting - Fixed external male thread / Materials: Polyamide (nylon) 66 / Colour: Black (BL)



Part no.	Nominal conduit size (mm)	Metric thread
AL10/M12/A/BL*	10	M12
–	–	–
AL13/M16/A/BL	13	M16
AL13/M20/A/BL*	13	M20
–	–	–
AL16/M16/A/BL	16	M16
AL16/M20/A/BL	16	M20
–	–	–
–	–	–
AL21/M20/A/BL	21	M20
–	–	–
AL21/M25/A/BL	21	M25
AL28/M25/A/BL	28	M25
AL28/M32/A/BL	28	M32
AL34/M32/A/BL	34	M32
AL34/M40/A/BL	34	M40
AL42/M40/A/BL	42	M40
AL42/M50/A/BL	42	M50
AL54/M50/A/BL	54	M50
AL54/M63/A/BL	54	M63

Part no.	Nominal conduit size (mm)	PF thread
AL10/PF025/A/BL*	10	1/4"
AL13/PF038/A/BL*	13	3/8"
AL16/PF038/A/BL	16	3/8"
AL16/PF050/A/BL	16	1/2"
AL21/PF050/A/BL	21	1/2"
AL28/PF075/A/BL	28	3/4"
AL34/PF100/A/BL	34	1"
AL42/PF125/A/BL	42	1 1/4"
AL54/PF150/A/BL	54	1 1/2"
AL54/PF200/A/BL	54	2"

For insertion into knockouts using a locknut. Locknut supplied with METRIC THREAD ONLY  
 \*These parts are not covered by the UR certification

Part no.	Nominal conduit size (mm)	PG thread
AL10/PG7/A/BL*	10	PG7
AL10/PG9/A/BL*	10	PG9
AL13/PG9/A/BL*	13	PG9
AL13/PG11/A/BL*	13	PG11
AL13/PG13/A/BL*	13	PG13,5
AL16/PG9/A/BL	16	PG9
AL16/PG11/A/BL	16	PG11
AL16/PG13/A/BL	16	PG13,5
AL16/PG16/A/BL	16	PG16
AL21/PG11/A/BL	21	PG11
AL21/PG13/A/BL	21	PG13,5
AL21/PG16/A/BL	21	PG16
AL28/PG21/A/BL	28	PG21
–	–	–
AL34/PG29/A/BL	34	PG29
–	–	–
AL42/PG36/A/BL	42	PG36
–	–	–
AL54/PG48/A/BL	54	PG48
–	–	–

Part no.	Nominal conduit size (mm)	NPT thread (in)
–	–	–
AL13/038/A/BL*	13	3/8
AL16/038/A/BL	16	3/8
AL16/050/A/BL	16	1/2
AL21/050/A/BL	21	1/2
AL28/075/A/BL	28	3/4
AL34/100/A/BL	34	1
AL42/125/A/BL	42	1 1/4
AL54/150/A/BL	54	1 1/2
–	–	–

### Approvals



For ALS Seal see page 79

### IP rating

### Appropriate conduit

For use with: Type PA / CP / PR / PF

IP66	Yes
IP67	Yes + ALS Seal
IP68	Yes + ALS Seal
IP69	Yes + ALS Seal

### Temperature range

Static applications: -50°C to +120°C

Moving applications: -45°C to +120°C

### Fitting characteristics



# Non-metallic conduit systems

## Adaptalok AL Type C90 fittings

### Type C90

90° elbow fitting - Fixed external male thread / Materials: Polyamide (nylon) 66 / Colour: Black (BL)



Part no.	Nominal conduit size (mm)	Metric thread
AL10/M12/C90/BL*	10	M12
AL13/M16/C90/BL*	13	M16
AL16/M16/C90/BL	16	M16
AL16/M20/C90/BL	16	M20
–	–	–
AL21/M20/C90/BL	21	M20
–	–	–
AL28/M25/C90/BL	28	M25
AL34/M32/C90/BL	34	M32
AL42/M40/C90/BL	42	M40
AL54/M50/C90/BL	54	M50
AL54/M63/C90/BL	54	M63

Part no.	Nominal conduit size (mm)	PG thread
AL10/PG7/C90/BL*	10	PG7
AL13/PG9/C90/BL*	13	PG9
AL16/PG9/C90/BL	16	PG9
AL16/PG11/C90/BL	16	PG11
AL16/PG13/C90/BL	16	PG13,5
AL21/PG13/C90/BL	21	PG31,5
AL21/PG16/C90/BL	21	PG16
AL28/PG21/C90/BL	28	PG21
AL34/PG29/C90/BL	34	PG29
AL42/PG36/C90/BL	42	PG36
AL54/PG48/C90/BL	54	PG48
–	–	–

Part no.	Nominal conduit size (mm)	PF thread (in)
AL13/PFO38/C90/BL*	13	3/8
AL16/PFO38/C90/BL	16	3/8
AL16/PFO50/C90/BL	16	1/2
AL21/PFO50/C90/BL	21	1/2
AL28/PFO75/C90/BL	28	3/4
AL34/PF100/C90/BL	34	1
AL42/PF125/C90/BL	42	1 1/4
AL54/PF150/C90/BL	54	1 1/2
AL54/PF200/C90/BL	54	2

Part no.	Nominal conduit size (mm)	NPT thread (in)
AL13/038/C90/BL*	13	3/8
–	–	–
AL16/050/C90/BL	16	1/2
AL21/050/C90/BL	21	1/2
AL28/075/C90/BL	28	3/4
AL34/100/C90/BL	34	1
AL42/125/C90/BL	42	1 1/4
AL54/150/C90/BL	54	1 1/2
AL54/200/C90/BL	54	2

For insertion into knockouts using a locknut. Locknut supplied with METRIC THREAD ONLY

\*These parts are not covered by the UR certification

### Approvals



For ALS Seal see page 79

### IP rating

### Appropriate conduit

For use with: Type PA / CP / PR / PF

IP66	Yes
IP67	Yes + ALS Seal
IP68	Yes + ALS Seal
IP69	Yes + ALS Seal

### Temperature range

Static applications: -50°C to +120°C


Moving applications: -45°C to +120°C

# Non-metallic conduit systems

## Adaptalok AL Type 45 and push-in fittings

### Type 45

45° Elbow fitting - Fixed external male thread / Materials: Polyamide (nylon) 66 / Colour: Black (BL)

	Part no.	Nominal conduit size (mm)	Metric thread		Part no.	Nominal conduit size (mm)	PG thread
	AL13/M16/45/BL*	13	M16		AL13/PG9/45/BL*	13	PG9
	AL16/M16/45/BL	16	M16		AL16/PG11/45/BL	16	PG11
	AL16/M20/45/BL	16	M20		AL16/PG13/45/BL	16	PG13,5
	AL21/M20/45/BL	21	M20		AL21/PG13/45/BL	21	PG13,5
	—	—	—		AL21/PG16/45/BL	21	PG16
	AL28/M25/45/BL	28	M25		AL28/PG21/45/BL	28	PG21
	AL34/M32/45/BL	34	M32		AL34/PG29/45/BL	34	PG29
	AL42/M50/45/BL	42	M40		AL42/PG36/45/BL	42	PG36
	AL54/M50/45/BL	54	M50		AL54/PG48/45/BL	54	PG48
	AL54/M63/45/BL	54	M63		—	—	—
	For insertion into knockouts using a locknut. Locknut supplied with METRIC THREAD ONLY						
	*These parts are not covered by the UR certification						

### Approvals



### IP rating

### Appropriate conduit

For use with: Type PA / CP / PR / PF

IP66	Yes
IP67	Yes + ALS Seal
IP68	Yes + ALS Seal
IP69	Yes + ALS Seal


### Temperature range

Static applications: -50°C to +120°C

Moving applications: -45°C to +120°C

### Push-in

Straight fitting - Fixed external male thread / Materials: Polyamide (nylon) 66 / Colour: Black (BL)

	Part no.	Nominal conduit size (mm)
	AL16/KM20/A/BL	16
	AL21/KM20/A/BL	21
Inserts into a 20mm knockout, panel thickness up to 4mm, no locknut required		

### Approvals



### IP rating

### Appropriate conduit

For use with: Type PA / CP / PR / PF

IP40 More offered when fitted with ALS Seal Yes

### Temperature range

Static applications: -50°C to +120°C

Moving applications: -45°C to +120°C


For ALS Seal see page 79

# Non-metallic conduit systems





## Adaptalok AL 3 way couplers and swivel couplers

### 3-Way Coupler

3-Way PA66 fitting / Materials: Polyamide (nylon) 66 / Colour: Black (BL)


	Part no.	Nominal conduit size combination (mm)
	AL131010/Y/BL	13x10x10
	AL161313/Y/BL	16x13x13
	AL211616/Y/BL	21x16x16
	AL282121/Y/BL	28x21x21

For coupling three corrugated flexible conduits






Approvals	IP rating	Appropriate conduit	Temperature range
   	For use with: Type PA / CP / PR / PF / PK		Static applications: -50°C to +120°C
	IP66	Yes	Moving applications: -45°C to +120°C
	IP67	Yes + ALS Seal	
	IP68	Yes + ALS Seal	
	IP69	Yes + ALS Seal	

### Swivel coupler

Straight PA66 body swivel coupler / Materials: Polyamide (nylon) 66 + aluminium / Colour: Black (BL)

	Part no.	Nominal conduit size (mm)
	AL13/A/U/BL	13
	AL16/A/U/BL	16
	AL21/A/U/BL	21
	AL28/A/U/BL	28
	AL34/A/U/BL	34
	AL42/A/U/BL	42
	AL54/A/U/BL	54

For coupling two corrugated flexible conduits

Approvals	IP rating	Appropriate conduit	Temperature range
   	For use with: Type PA / CP / PR / PF		Static applications: -50°C to +120°C
	IP66	Yes	Moving applications: -45°C to +120°C
	IP67	Yes + ALS Seal	<b>Fitting characteristics</b> 
	IP68	Yes + ALS Seal	
	IP69	Yes + ALS Seal	

For ALS Seal see page 79




# Non-metallic conduit systems

## Adaptalok AL Types FL/A, FL/C90 and FL/90 panel mounting fittings

### Type FL/A

Straight panel mounting swivel flange / Materials: Polyamide (nylon) 66 / Colour: Black (BL)

	Part no.	Nominal conduit size (mm)
	AL16/FL/A/BL	16
	AL21/FL/A/BL	21
	AL28/FL/A/BL	28
	AL54/FL/A/BL	54

With integral face seal

### Approvals



### IP rating

### Appropriate conduit

For use with: Type PA / CP / PR / PF

IP66	Yes
IP67	Yes + ALS Seal
IP68	Yes + ALS Seal
IP69	Yes + ALS Seal

### Temperature range

Static applications: -50°C to +120°C


Moving applications: -45°C to +120°C

### Fitting characteristics



### Type FL/C90


90° Elbow body - Panel mount swivel flange / Materials: Polyamide (nylon) 66 / Colour: Black (BL)

	Part no.	Nominal conduit size (mm)
	AL13/FL/C90/BL	13
	AL16/FL/C90/BL	16
	AL21/FL/C90/BL	21
	AL28/FL/C90/BL	28

For panel mounting via 2 hole fixing & integral face seal

### Type FL/90

90° Elbow body - Panel mount flange / Materials: Polyamide (nylon) 66 / Colour: Black (BL), Grey (GR)

	Part no.	Nominal conduit size (mm)
	AL34/FL/90/BL	34
	AL42/FL/90/BL	42
	AL54/FL/90/BL	54

For panel mounting via 4 hole fixing & integral face seal

### Approvals



### IP rating

### Appropriate conduit

For use with: Type PA / CP / PR / PF

IP66	Yes
IP67	Yes + ALS Seal
IP68	Yes + ALS Seal
IP69	Yes + ALS Seal

### Temperature range

Static applications: -50°C to +120°C

Moving applications: -45°C to +120°C

### Fitting characteristics (FLC/90 ONLY)









For ALS Seal see page 79

# Non-metallic conduit systems


## Adaptalok AL Types FL/45 and jumbo panel mounting fittings


Type FL/45 45° Panel mounting swivel flange / Materials: Polyamide (nylon) 66 / Colour: Black (BL)

	Part no.	Nominal conduit size (mm)
	AL16/FL/45/BL	16
	AL21/FL/45/BL	21
	AL28/FL/45/BL	28
	AL54/FL/45/BL	54
	With integral face seal	

Approvals	IP rating	Appropriate conduit	Temperature range	
   	For use with: Type PA / CP / PR / PF		Static applications: -50°C to +120°C	
	IP66	Yes	Moving applications: -45°C to +120°C	
	IP67	Yes + ALS Seal		
	IP68	Yes + ALS Seal		
	IP69	Yes + ALS Seal		
		Fitting characteristics		

Jumbo Type FL/A Straight panel mounting swivel flange / Materials: Polyamide (nylon) 66 / Colour: Black (BL)

	Part no.	Nominal conduit size (mm)
	ADC80/FL/A/BL	80
	ADC106/FL/A/BL	106
	For coupling to UNEF circular connectors	


Approvals	IP rating	Appropriate conduit	Temperature range
 KM35161	For use with: Type PA / CP / PR / PF		Static applications: -50°C to +120°C
	IP40	Yes	Moving applications: -45°C to +120°C
	IP65	Yes + ALS Seal	

# Non-metallic conduit systems

## Adaptalok AL Types S45 & SFA fittings

### Type S45 - Adaptalok

45° Elbow body - Swivel external male thread / Materials: Polyamide (nylon) 66, nickel plated brass thread / Colour: Black (BL)

	Nominal conduit size			Nominal conduit size		
	Part no.	(mm)	Metric thread	Part no.	(mm)	PG thread
	AL13/M16/S45/BL*	13	M16	AL13/PG9/S45/BL*	13	PG9
	AL16/M16/S45/BL	16	M16	AL16/PG11/S45/BL	16	PG11
	AL21/M20/S45/BL	21	M20	AL21/PG13/S45/BL	21	PG13,5
	–	–	–	AL21/PG16/S45/BL	21	PG16
	AL28/M25/S45/BL	28	M25	AL28/PG21/S45/BL	28	PG21
	AL34/M32/S45/BL	34	M32	AL34/PG29/S45/BL	34	PG29
	AL42/M40/S45/BL	42	M40	AL42/PG36/S45/BL	42	PG36
	AL54/M50/S45/BL	54	M50	AL54/PG48/S45/BL	54	PG48
AL54/M63/S45/BL	54	M63	–	–	–	
For insertion into threaded entries & knockouts using a locknut. Order locknut separately						
*These parts are not covered by the UR certification						

### Approvals



### IP rating

### Appropriate conduit

For use with: Type PA / CP / PR / PF

IP66	Yes
IP67	Yes + ALS Seal
IP68	Yes + ALS Seal
IP69	Yes + ALS Seal

### Temperature range

Static applications: -50°C to +120°C


Moving applications: -45°C to +120°C

### Fitting characteristics



### Type SFA - Adaptalok

Straight body - Swivel internal female thread / Materials: Polyamide (nylon) 66, nickel plated brass thread / Colour: Black (BL)

						
		Nominal conduit size (mm)	Metric thread		Nominal conduit size (mm)	PG thread
	Part no.			Part no.		
	AL13/M16/SFA/BL	13	M16	AL13/PG9/SFA/BL	13	PG9
	AL16/M16/SFA/BL	16	M16	AL16/PG11/SFA/BL	16	PG11
	AL21/M20/SFA/BL	21	M20	AL21/PG13/SFA/BL	21	PG13,5
	–	–	–	AL21/PG16/SFA/BL	21	PG16
	AL28/M25/SFA/BL	28	M25	AL28/PG21/SFA/BL	28	PG21
	AL34/M32/SFA/BL	34	M32	AL34/PG29/SFA/BL	34	PG29
	AL42/M40/SFA/BL	42	M40	AL42/PG36/SFA/BL	42	PG36
AL54/M50/SFA/BL	54	M50	AL54/PG48/SFA/BL	54	PG48	
AL54/M63/SFA/BL	54	M63	–	–	–	
For attaching to external threads & other fittings						
Swivel internal female thread Black (BL) as standard or Grey (GR) - RAL 7031						

### Approvals



### IP rating

### Appropriate conduit

For use with: Type PA / CP / PR / PF

IP66	Yes
IP67	Yes + ALS Seal
IP68	Yes + ALS Seal
IP69	Yes + ALS Seal

### Temperature range

Static applications: -50°C to +120°C

Moving applications: -45°C to +120°C

### Fitting characteristics




For ALS Seal see page 79

# Non-metallic conduit systems

## Adaptalok AL Types CSF90 & SF45 fittings

### Type CSF90

90° Elbow fitting - Swivel internal female thread / Materials: Polyamide (nylon) 66, nickel plated brass thread / Colour: Black (BL)

	Nominal conduit size (mm)			Metric thread	Nominal conduit size (mm)			PG thread
	Part no.				Part no.			
	AL13/M16/CSF90/BL	13		M16	AL13/PG9/CSF90/BL	13		PG9
	AL16/M16/CSF90/BL	16		M16	AL16/PG11/CSF90/BL	16		PG11
	AL21/M20/CSF90/BL	21		M20	AL21/PG13/CSF90/BL	16		PG13,5
	—	—		—	AL21/PG16/CSF90/BL	21		PG16
	AL28/M25/CSF90/BL	28		M25	AL28/PG21/CSF90/BL	28		PG21
	AL34/M32/CSF90/BL	34		M32	AL34/PG29/CSF90/BL	34		PG29
	AL42/M40/CSF90/BL	42		M40	AL42/PG36/CSF90/BL	42		PG36
	AL54/M50/CSF90/BL	54		M50	AL54/PG48/CSF90/BL	54		PG48
	For attachment to external threads & other fittings							

### Approvals



### IP rating

### Appropriate conduit

For use with: Type PA / CP / PR / PF

IP66	Yes
IP67	Yes + ALS Seal
IP68	Yes + ALS Seal
IP69	Yes + ALS Seal

### Temperature range

Static applications: -50°C to +120°C


Moving applications: -45°C to +120°C

### Fitting characteristics



### Type SF45

45° Elbow fitting - Swivel internal female thread / Materials: Polyamide (nylon) 66, nickel plated brass thread / Colour: Black (BL)

	Nominal conduit size (mm)			Metric thread	Nominal conduit size (mm)			PG thread
	Part no.				Part no.			
	AL13/M16/SF45/BL	13		M16	AL13/PG9/SF45/BL	13		PG9
	AL16/M16/SF45/BL	16		M16	AL16/PG11/SF45/BL	16		PG11
	AL21/M20/SF45/BL	21		M20	AL21/PG13/SF45/BL	16		PG13,5
	—	—		—	AL21/PG16/SF45/BL	21		PG16
	AL28/M25/SF45/BL	28		M25	AL28/PG21/SF45/BL	28		PG21
	AL34/M32/SF45/BL	34		M32	AL34/PG29/SF45/BL	42		PG29
	AL42/M40/SF45/BL	40		M40	AL42/PG36/SF45/BL	48		PG36
	AL54/M50/SF45/BL	50		M50	AL54/PG48/SF45/BL	54		PG48
	AL54/M63/SF45/BL	63		M63	—	—		—

For attachment to external threads & other fittings

\*These parts are not covered by the UR certification

### Approvals



### IP rating

### Appropriate conduit

For use with: Type PA / CP / PR / PF

IP66	Yes
IP67	Yes + ALS Seal
IP68	Yes + ALS Seal
IP69	Yes + ALS Seal

### Temperature range

Static applications: -50°C to +120°C

Moving applications: -45°C to +120°C

### Fitting characteristics



For ALS Seal see page 79

# Non-metallic conduit systems






## Adaptalok AL Type A - UNEF fittings

Type AL Straight body - Swivel internal female thread / Materials: Polyamide (nylon) 66 & aluminium / Colour: Black (BL) only



Part no.	Nominal conduit size (mm)	Connector UNEF thread	Part no.	Nominal conduit size (mm)	Connector UNEF thread
AL13/U063/A/000620	13	5/8" - 24	AL21/U144/A/000620	21	1 7/16" - 18
AL13/U075/A/000620	13	3/4" - 20	AL21/U175/A/000620	21	1 3/4" - 18
AL13/U088/A/000620	13	7/8" - 20	AL28/U094/A/000620	28	1 5/16" - 20
AL16/U063/A/000620	16	5/8" - 24	AL28/U100/A/000620	28	1" - 20
AL16/U075/A/000620	16	3/4" - 20	AL28/U119/A/000620	28	1 3/16" - 18
AL16/U081/A/000620	16	1 3/16" - 20	AL28/U138/A/000620	28	1 3/8" - 18
AL16/U088/A/000620	16	7/8" - 20	AL28/U144/A/000620	28	1 7/16" - 18
AL16/U094/A/000620	16	1 5/16" - 20	AL28/U175/A/000620	28	1 3/4" - 18
AL16/U100/A/000620	16	1" - 20	AL34/U100/A/000620	34	1" - 20
AL16/U119/A/000620	16	1 3/16" - 18	AL34/U119/A/000620	34	1 3/16" - 18
AL16/U131/A/000620	16	1 5/16" - 18	AL34/U144/A/000620	34	1 7/16" - 18
AL21/U075/A/000620	21	3/4" - 20	AL34/U175/A/000620	34	1 3/4" - 18
AL21/U088/A/000620	21	7/8" - 20	AL34/U200/A/000620	34	2" - 16
AL21/U094/A/000620	21	1 5/16" - 20	AL42/U200/A/000620	42	2" - 16
AL21/U100/A/000620	21	1" - 20			
AL21/U113/A/000620	21	1 1/8" - 18			
AL21/U119/A/000620	21	1 3/16" - 18			
AL21/U131/A/000620	21	1 5/16" - 18			

For coupling to UNEF circular connectors


Approvals		IP rating	Appropriate conduit	Temperature range	
   	For use with: Type PA / CP / PR / PF			Static applications: -50°C to +120°C	
	IP66	Yes		Moving applications: -45°C to +120°C	
	IP67	Yes + ALS Seal			
	IP68	Yes + ALS Seal			
	IP69	Yes + ALS Seal			
				Fitting characteristics	

For ALS Seal see page 79






# Non-metallic conduit systems

## Adaptalok AL Type C90 - UNEF fittings

Type AL 90° Elbow fitting - Swivel internal female thread / Materials: Polyamide (nylon) 66 & aluminium / Colour: Black (BL) only

	Part no.	Nominal conduit size (mm)	Connector UNEF thread		Part no.	Nominal conduit size (mm)	Connector UNEF thread
	AL13/U063/C90/000620	13	5/8" - 24		AL21/U144/C90/000620	21	1 7/16" - 18
	AL13/U075/C90/000620	13	3/4" - 20		AL21/U175/C90/000620	21	1 3/4" - 18
	AL13/U088/C90/000620	16	7/8" - 20		AL28/U088/C90/000620	28	7/8" - 20
	AL16/U063/C90/000620	16	5/8" - 24		AL28/U094/C90/000620	28	1 5/16" - 20
	AL16/U075/C90/000620	16	3/4" - 20		AL28/U100/C90/000620	28	1" - 20
	AL16/U081/C90/000620	16	1 3/16" - 20		AL28/U119/C90/000620	28	1 3/16" - 18
	AL16/U088/C90/000620	16	7/8" - 20		AL28/U138/C90/000620	28	1 3/8" - 18
	AL16/U094/C90/000620	16	1 5/16" - 20		AL28/U144/C90/000620	28	1 7/16" - 18
	AL16/U100/C90/000620	16	1" - 20		AL28/U175/C90/000620	28	1 3/4" - 18
	AL16/U119/C90/000620	16	1 3/16" - 18		AL28/U200/C90/000620	28	2" - 16
	AL16/U131/C90/000620	16	1 5/16" - 18		AL28/U225/C90/000620	28	2 1/4" - 16
	AL21/U075/C90/000620	21	3/4" - 20		AL34/U100/C90/000620	34	1" - 20
	AL21/U088/C90/000620	21	7/8" - 20		AL34/U119/C90/000620	34	1 3/16" - 18
	AL21/U094/C90/000620	21	1 5/16" - 20		AL34/U144/C90/000620	34	1 7/16" - 18
	AL21/U100/C90/000620	21	1" - 20		AL34/U175/C90/000620	34	1 3/4" - 18
	AL21/U113/C90/000620	21	1 1/8" - 18		AL34/U200/C90/000620	34	2" - 16
	AL21/U119/C90/000620	21	1 3/16" - 18		AL42/U175/C90/000620	42	1 3/4" - 18
	AL21/U131/C90/000620	21	1 5/16" - 18		AL42/U200/C90/000620	42	2" - 16
	AL21/U138/C90/000620	21	1 3/8" - 18		-	-	-

For coupling to UNEF circular connectors

Approvals	IP rating	Appropriate conduit	Temperature range
   	For use with: Type PA / CP / PR / PF		Static applications: -50°C to +120°C
	IP66	Yes	Moving applications: -45°C to +120°C
	IP67	Yes + ALS Seal	Fitting characteristics
	IP68	Yes + ALS Seal	
	IP69	Yes + ALS Seal	


For ALS Seal see page 79






# Non-metallic conduit systems

## Adaptalok AL Type 45 - UNEF fittings

Type AL

45° Elbow fitting - Swivel internal female thread / Materials: Polyamide (nylon) 66 & aluminium / Colour: Black (BL) only

	Part no.	Nominal conduit size (mm)	Connector UNEF thread
	AL13/U063/45/000620	13	5/8" - 24
	AL13/U075/45/000620	13	3/4" - 20
	AL16/U081/45/000620	16	13/16" - 20
	AL16/U094/45/000620	16	15/16" - 20
	AL16/U131/45/000620	16	1 5/16" - 18
	AL21/U100/45/000620	21	1" - 20
	AL21/U119/45/000620	21	1 3/16" - 18
	AL21/U138/45/000620	21	1 3/8" - 18
	AL21/U144/45/000620	21	1 7/16" - 18
	AL21/U175/45/000620	21	1 3/4" - 18
	AL28/U088/45/000620	28	7/8" - 20
	AL28/U094/45/000620	28	15/16" - 20
	AL28/U144/45/000620	28	1 7/16" - 18
	AL34/U144/45/000620	34	1 7/16" - 18
	AL34/U175/45/000620	34	1 3/4" - 18
For coupling to UNEF circular connectors			

Approvals	IP rating	Appropriate conduit	Temperature range	
   	For use with: Type PA / CP / PR / PF		Static applications: -50°C to +120°C	
	IP66	Yes	Moving applications: -45°C to +120°C	
	IP67	Yes + ALS Seal	Fitting characteristics	
	IP68	Yes + ALS Seal		
	IP69	Yes + ALS Seal		

For ALS Seal see page 79




# Non-metallic conduit systems

## Accessories


Type LNP

Nylon locknuts / Materials: Polyamide (nylon) 6 / Colour: Black (BL), Grey (GR)

	Part no.		Metric thread	Part no.		PG thread
	Black	Grey		Black	Grey	
	LNPB/M12	–	M12	LNPB/PG7	LNPG/PG7	PG7
	LNPB/M16	LNPG/M16	M16	LNPB/PG9	LNPG/PG9	PG9
	LNPB/M20	LNPG/M20	M20	LNPB/PG11	LNPG/PG11	PG11
	LNPB/M25	LNPG/M25	M25	LNPB/PG13	LNPG/PG13	PG13
	LNPB/M32	LNPG/M32	M32	LNPB/PG16	LNPG/PG16	PG16
	LNPB/M40	LNPG/M40	M40	LNPB/PG21		PG21
	LNPB/M50	LNPG/M50	M50	LNPB/PG29	LNPG/PG29	PG29
	LNPB/M63		M63	LNPB/PG36	LNPG/PG36	PG36
				LNPB/PG48	LNPG/PG48	PG48

Type SW


Thread sealing washer

	Part no.		Metric thread	Part no.		PG thread	Part no.		NPT & PF thread
	SWM12*		M12	SWPG07		PG07	SW038		3/8"
	SWM16		M16	SWPG09		PG09	SW050		1/2"
	SWM20		M20	SWPG11		PG11	SW075		3/4"
	SWM25		M25	SWPG13		PG13	SW100		1"
	SWM32		M32	SWPG16		PG16	SW125		1 1/4"
	SWM40		M40	SWPG21		PG21	SW150		1 1/2"
	SWM50		M50	SWPG29		PG29	SW200		2"
	SWM63		M63	SWPG36		PG36			

TPE - For use with Nylon threaded fittings. Nylon - For use with swivel metal threaded fittings  
To order quote part number & body colour, TPE Black only, e.g. SWM12,  
Nylon (N) - Black (BL), Blue (B) & Yellow (Y) Metric and NPT threads only, e.g. SWM32NB  
\*Not available in Nylon

Type AC

Conduit clips / Materials: Polyamide (nylon) 66, Impact modified nylon - ST version only / Colour: Black (BL), Grey (GR)

	Part no.			Nominal conduit size (mm)
	Black	Grey	Impact modified (black only)	
	ACB10	ACG10	–	10
	ACB13	ACG13	ACB13/ST	13
	ACB16	ACG16	ACB16/ST	16
	ACB21	ACG21	ACB21/ST	21
	ACB28	ACG28	ACB28/ST	28
	ACB34	ACG34	ACB34/ST	34
	ACB42	ACG42	ACB42/ST	42
	ACB54	ACG54	ACB54/ST	54

With integral lid


# Non-metallic conduit systems

## Accessories

—

Type GZ

End sleeves / Materials: Polyamide (nylon) 66 / Colour: Black (BL) only


	Part no.	Nominal conduit size (mm)
	GZ09	13
	GZ11	16
	GZ13	21
	GZ21	28
	GZ29	34
	GZ36	42

For sealing cables to non-metallic conduit

—

Type EC

End caps / Materials: Acetal (POM) / Colour: Black (BL) only

	Part no.	Nominal conduit size (mm)
	ECB13	13
	ECB16	16
	ECB21	21
	ECB28	28
	ECB34	34
	ECB42	42
	ECB54	54


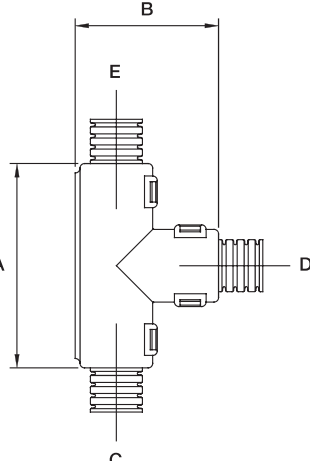
Provides a smooth finish to conduit preventing any damage to cables when not terminated with a fitting



Non-metallic conduit systems

Accessories

Type T

Hinged T-piece / Materials: Polyamide (nylon) 66 / Colour: Black (BL)

		Nominal dimensions / conduit size (mm)					
		Part no.	A	B	C	D	E
 	10T	T101010/BL	45.2	31.1	10	10	10
		T101310/BL	45.2	31.1	10	13	10
		T101613/BL	45.2	31.1	10	16	13
	13T	T131010/BL	45.2	31.1	13	10	10
		T131013/BL	45.2	31.1	13	10	13
		T131310/BL	45.2	31.1	13	13	10
		T131313/BL	45.2	31.1	13	13	13
		T131613/BL	45.2	31.1	13	16	13
	16T	T161013/BL	49.1	34.8	16	10	13
		T161313/BL	49.1	34.8	16	13	13
		T161316/BL	49.1	34.8	16	13	16
		T161613/BL	49.1	34.8	16	16	13
		T161616/BL	49.1	34.8	16	16	16
		T162116/BL	49.1	34.8	16	21	16
	21T	T211016/BL	56.5	41.0	21	10	16
		T211021/BL	56.5	41.0	21	10	21
		T211316/BL	56.5	41.0	21	13	16
		T211321/BL	56.5	41.0	21	13	21
		T211613/BL	56.5	41.0	21	16	13
		T211616/BL	56.5	41.0	21	16	16
		T211621/BL	56.5	41.0	21	16	21
		T212113/BL	56.5	41.0	21	21	13
		T212116/BL	56.5	41.0	21	21	16
		T212121/BL	56.5	41.0	21	21	21
	28T	T281021/BL	64.5	48.5	28	10	21
		T281028/BL	64.5	48.6	28	10	28
		T281321/BL	64.5	48.6	28	13	21
		T281328/BL	64.5	48.6	28	13	28
		T281621/BL	64.5	48.6	28	16	21
		T281628/BL	64.5	48.6	28	16	28
		T282121/BL	64.5	48.6	28	21	21
		T282128/BL	64.5	48.6	28	21	28
		T282828/BL	64.5	48.6	28	28	28
	34T	T341634/BL	72.0	55.3	34	16	34
		T342128/BL	72.0	55.3	34	21	28
		T342134/BL	72.0	55.3	34	21	34
		T343434/BL	72.0	55.3	34	34	34


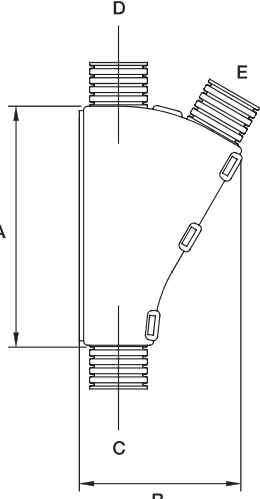
Approvals		IP rating	Appropriate conduit	Temperature range	
 		For use with: Type PA / PR / PF		Static applications: -40°C to +120°C	
		IP40	Yes	Moving applications: -5°C to +120°C	
				Fitting characteristics	
				Snap fit	



# Non-metallic conduit systems

## Accessories

—  
Type Y

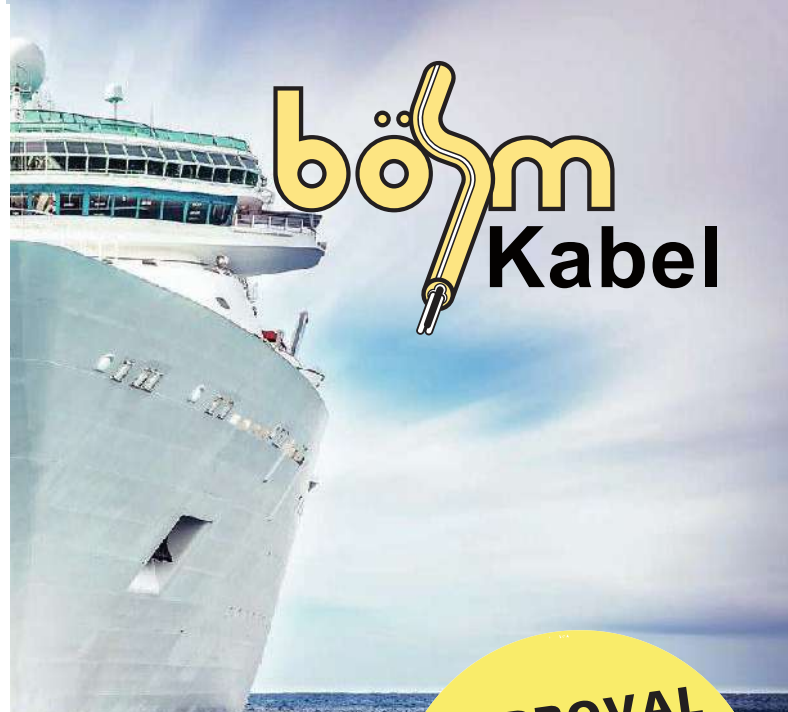
Hinged Y-piece / Materials: Polyamide (nylon) 66 / Colour: Black (BL)

		Nominal dimensions / conduit size (mm)					
		Part no.	A	B	C	D	E
	10Y	Y101010/BL	54.6	37.1	10	10	10
		Y101013/BL	54.6	37.1	10	10	13
	13Y	Y131010/BL	54.6	37.1	13	10	10
		Y131310/BL	54.6	37.1	13	13	10
		Y131313/BL	54.6	37.1	13	13	13
	16Y	Y161310/BL	54.9	39.8	16	13	10
		Y161313/BL	54.9	39.8	16	13	13
		Y161610/BL	54.9	39.8	16	16	10
		Y161613/BL	54.9	39.8	16	16	13
	21Y	Y211010/BL	42.8	41.0	21	10	10
		Y211310/BL	42.8	41.0	21	13	10
		Y211313/BL	42.8	41.0	21	13	13
		Y211610/BL	48.2	39.8	21	16	10
		Y211613/BL	48.2	39.6	21	16	13
		Y211616/BL	63.6	47.5	21	16	16
		Y212110/BL	57.9	44.9	21	21	10
		Y212113/BL	57.9	44.9	21	21	13
	28Y	Y212116/BL	63.6	47.5	21	21	16
		Y282113/BL	54.0	48.8	28	21	13
		Y282116/BL	54.0	48.8	28	21	16
		Y282121/BL	76.5	60.0	28	21	21
		Y282813/BL	67.3	55.9	28	28	13
		Y282816/BL	67.3	55.9	28	28	16
		Y282821/BL	76.5	60.0	28	28	21
	34Y	Y282828/BL	90.7	67.0	28	28	28
		Y343416/BL	100.6	75.0	34	34	16
		Y343421/BL	100.6	76.0	34	34	21
		Y343434/BL	100.6	82.1	34	34	34

Approvals	IP rating	Appropriate conduit	Temperature range
 	For use with: Type PA / PR / PF		Static applications: -40°C to +120°C
	IP40	Yes	Moving applications: -5°C to +120°C
	Fitting characteristics		
	Snap fit		



CABLES CONNECT



**böhm**  
Kabel



**APPROVAL**

**VG 95218**  
BAAINBw parts 60-66  
German Military

**Marine | Navy | Offshore | Ship-to-Shore Cables**



**International  
approvals**





## Products | In stock

### Navy cables according to VG 95218

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**MGSGO | VG 95218-60**  
power cable, halogen-free,  
flame-retardant, fully screened



**LMGSGO | VG 95218-61**  
power cable, halogen-free,  
flame-retardant, fully screened



**FMGSGO | VG 95218-62**  
telecommunication cable, halogen-free,  
flame-retardant, fully screened



**FMSGSGO | VG 95218-63**  
telecommunication cable, halogen-free,  
flame-retardant, paired, fully screened



**LFMGSSGO/LFMGSGO | VG 95218-64**  
telecommunication cable, halogen-free,  
flame-retardant, double fully screened



**LFMSGSGO | VG 95218-65**  
telecommunication cable, halogen-free,  
flame-retardant, paired, fully screened



**LFMSGSSGO | VG 95218-66**  
telecommunication cable, halogen-free,  
flame-retardant, paired, double fully  
screened



### Marine | Offshore cables according to IEC 60092

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**FM2XCH 150/250 V |** communication and  
telecommunication cable, fully screened



**FM2XCH-FFR 150/250 V |** communication and  
telecommunication cable, flame-retardant,  
fully screened



**FM2XCCH 150/250 V |** communication and  
telecommunication cable, paired, fully  
screened



**FM2XCCH-FFR 150/250 V |** communication and  
telecommunication cable, flame-retardant,  
paired, fully screened



**M2XCH 0.6/1 kV |** power cable,  
screened



**M2XCH-FFR 0.6/1 kV |** power cable,  
flame-retardant, screened



**M2XCH EMC 0.6/1 kV |** power cable,  
screened



**M2XCH EMC 1.8/3 kV |** power cable,  
screened



M2XCH VFD 0.6/1 kV | power cable, screened



M2XH 0.6/1 kV | power cable



M2XH-FFR 0.6/1 kV | power cable, flame-retardant



M2X 0.6/1 kV | wiring and core cable



MVCECH 3.6/6 kV | medium voltage cable



MVCECH 6/10 kV | medium voltage cable



## Conductors

Different options are available: Electrolytic, stranded, annealed or sector shaped Cu-wire according to IEC 60228 class 5 (class 2 and/or tinned on request). Cables are produced as NOFI with separating foil or as FI with extruded bedding compound. SHF 1 or SHF 2 on request, colour code for communication cables also available white/blue numbered.

## Marine data cables

CAT 7 S/FTP 4x2xAWG23/7 FLEX HFFR |  
CAT 7 S/FTP 4x2xAWG23/1 HFFR



## Ship-to-Shore cables

böhmflex Reeling PUR-HF 0.6/1 kV |



NSHTÖU 0,6/1 kV |  
reeling rubber cable



(N)TSCGEWÖU 3,6/6 kV - 18/30 kV |  
mining cable | power reeling cable



NSSHÖU 0,6/1 kV |  
heavy duty rubber cable



H07RN-F 450/750 V |  
rubber cable



H07BQ-F 450/750 V |  
PUR cable



## More cables available on request

Offshore cable | BFOU | RFOU | NEK606 | ...

Marine | fiber optic cable

Marine | bus cable

RG | coaxial cable



## DNV Location Classes – METZ CONNECT products

The DNV Location Classes are classification levels defined by DNV (Det Norske Veritas) to determine the environmental conditions and stresses to which various systems, equipment and structures on vessels, offshore installations and industrial facilities are exposed. This classification helps to define technical

specifications for equipment and materials according to their intended installation location and the prevailing conditions.

Requirements according to DNV classification:

- › DNV-RU-SHIP Pt.4 Ch.9 Control and monitoring
- › on electrical, electronic and programmable devices and systems

The requirements and environmental test specifications for a particular product are defined according to the area of application and the intended location on board.

DNV certificate

## Validity

This certificate is valid until 2026-01-24

## Application area

The product(s) approved by this certificate is/are approved for installation on all vessels classified by DNV GL.

Temperature: B,  
Air humidity: B,  
Vibration: A,  
EMC: (not applicable),  
IP protection class: A

### Performed tests

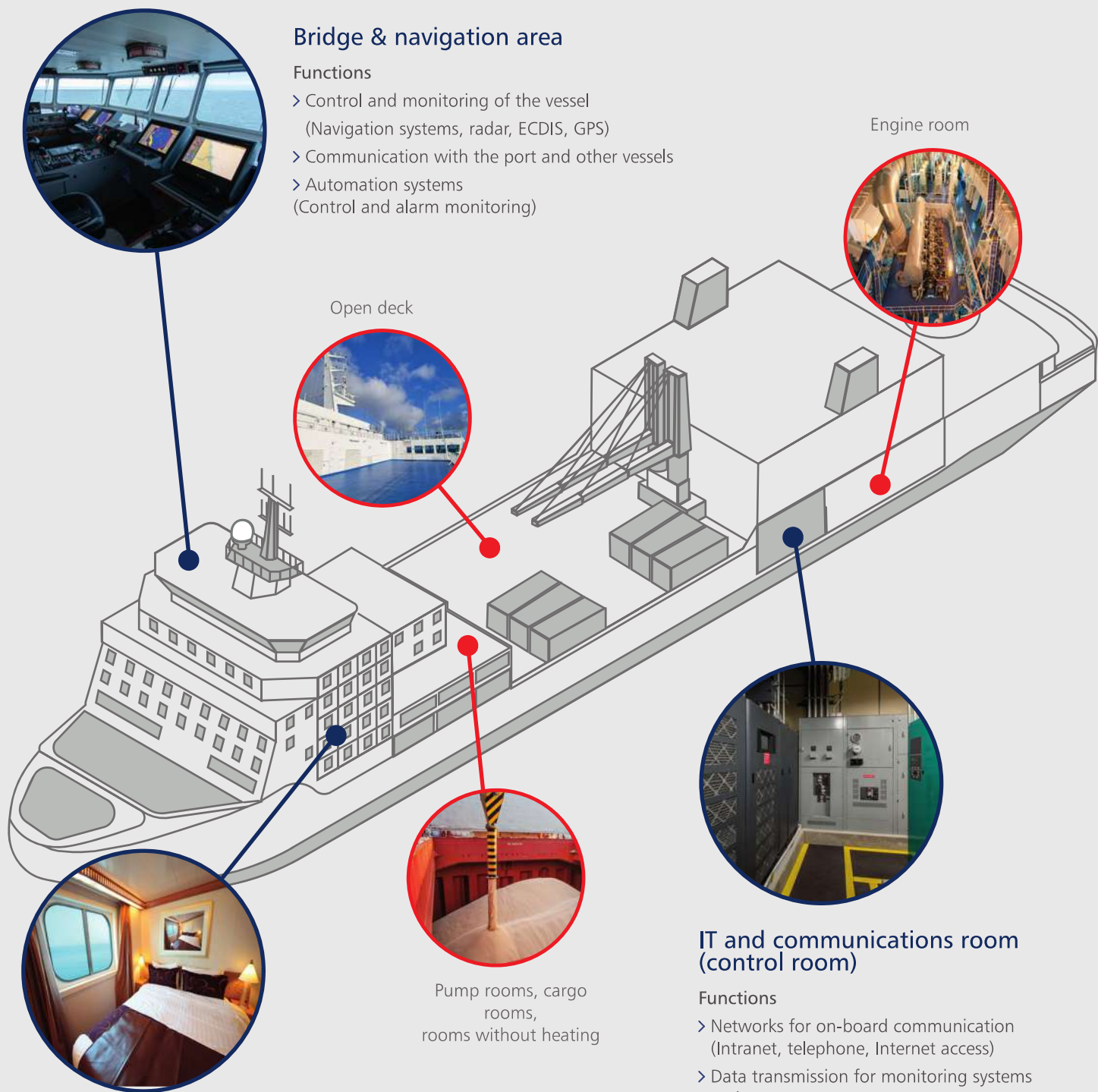
Environmental tests according to DNVGL-CG-0339

### Application/limitation of location classes

# Certificate



# Application areas of DNV-certified products from METZ CONNECT







● Suitable locations





● Unsuitable locations

# Product overview – METZ CONNECT – DNV-certified products

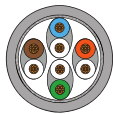
## CAT.6<sub>A</sub> / CLASS E<sub>A</sub> | FORMAT MODULE

	DESCRIPTION	VARIANT	P/N
	C6 <sub>A</sub> module 180° jack DNV	180° module version, Cat.6 <sub>A</sub> /class E <sub>A</sub> , on-site mounting, AWG 26/7-22/7, AWG 26/1-22/1	130B11-DNV
	C6 <sub>A</sub> module 270° jack DNV	270° module version, Cat.6 <sub>A</sub> /class E <sub>A</sub> , on-site mounting, AWG 26/7-22/7, AWG 26/1-22/1	130B12-DNV
	C6 <sub>A</sub> module 90° jack DNV	90° module version, Cat.6 <sub>A</sub> /class E <sub>A</sub> , on-site mounting, AWG 26/7-22/7, AWG 26/1-22/1	130B13-DNV
	E-DAT RJ45 Cat.6 <sub>A</sub> jack DNV	Cat.6 <sub>A</sub> T568A/B, format module, Cat.6 <sub>A</sub> /class E <sub>A</sub> , on-site mounting, AWG 26/7-22/7, AWG 26/1-22/1	130910-DNV

## CAT.6<sub>A</sub> / CLASS E<sub>A</sub> | KEYSTONE FORMAT



	DESCRIPTION	VARIANT	P/N
	C6 <sub>A</sub> RJ45 K 180° jack DNV	180° keystone version, Cat.6 <sub>A</sub> /class E <sub>A</sub> , on-site mounting, AWG 26/7-22/7, AWG 26/1-22/1	130B21-DNV
	C6 <sub>A</sub> RJ45 K 270° jack	270° keystone version, Cat.6 <sub>A</sub> /class E <sub>A</sub> , on-site mounting, AWG 26/7-22/7, AWG 26/1-22/1	130B22-DNV
	C6 <sub>A</sub> RJ45 K 90° jack DNV	90° keystone version, Cat.6 <sub>A</sub> /class E <sub>A</sub> , on-site mounting, AWG 26/7-22/7, AWG 26/1-22/1	130B23-DNV
	E-DAT module Cat.6 <sub>A</sub> jack K DNV	Cat.6 <sub>A</sub> T568A and B, keystone format, Cat.6 <sub>A</sub> /class E <sub>A</sub> , on-site mounting, AWG 26/7-22/7, AWG 26/1-22/1	130910K-DNV

## CAT.7 SHF1 OCEANLINE 900



	DESCRIPTION	VARIANT	P/N
	OCEANLINE C7 S/FTP 4P AWG23 LSHF-FR GN (Product type: installation cables)	C7 S/FTP AWG23 LSHF	130842D7SFDMDNV

## Product overview

### CAT.6<sub>A</sub> / CLASS E<sub>A</sub> | RJ45 + M12 CONNECTOR

	DESCRIPTION	VARIANT	P/N
	C6 <sub>A</sub> RJ45 field plug pro 180° DNV	Cable feed 180°, cat.6 <sub>A</sub> /class E <sub>A</sub> , on-site mounting, AWG 27/7-22/7, AWG 26/1-22/1, two-part IP20	130E405032-DNV
	C6 <sub>A</sub> RJ45 field plug pro 360° DNV	Cable feed 360°, Cat.6 <sub>A</sub> / class E <sub>A</sub> , on-site mounting, AWG 27/7-22/7, AWG 26/1-22/1	130E405042-DNV

### CAT.6<sub>A</sub> / CLASS E<sub>A</sub> | CONNECTORS

	DESCRIPTION	VARIANT	P/N
	E-DAT Industry IP20 RJ45 DNV	Cat.6 <sub>A</sub> /class E <sub>A</sub> , on-site mounting, AWG 26/7-22/7, AWG 26/1-22/1, two-part IP20	1401405012-DNV
	E-DAT Industry IP20 RJ45 DNV	For IP67 connector housing , Cat.6 <sub>A</sub> /class E <sub>A</sub> , on-site mounting, AWG 26/7-22/7, AWG 26/1-22/1, two-part IP20	1401400810-DNV

### X-CODED | M12 CONNECTOR

	DESCRIPTION	VARIANT	P/N
	M12 On-site mounting DNV	X-coded, IP67, M12 Cat.6 <sub>A</sub> , AWG 26-22/7; 26-22/1, wire thickness 1.6 mm, cable thickness 5.0–9.7 mm	MMF881A315-DNV
	M12 X-coded On-site mounting , DNV flange	X-coded, IP67, flange, M12 Cat.6 <sub>A</sub> , AWG 26-22/7; 26-22/1, wire thickness 1.6 mm, cable thickness 5.0–9.7 mm	MMF881A315-DNV1

### X-CODED | M12 CONNECTOR

	DESCRIPTION	VARIANT	P/N
	M12 connector on-site mounting DNV	M12 Cat.6 <sub>A</sub> connector, IP67 AWG 26-22/7; 26-22/1 Wire thickness up to 1.6 mm, cable thickness 5.0–9.7 mm	MNF881A315-DNV1

### ADDITIONAL ACCESSORIES

	DESCRIPTION	VARIANT	P/N
	Cable connector Class F <sub>A</sub> DNV	For cable repair, class F <sub>A</sub> connector, AWG 26-22/7; 26-22/1, wire thickness up to 1.6 mm, cable thickness 5.0–9.7 mm	130863-02-DNV





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