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## Data and Computer Cables

## Data and Computer Cables

Due to the increasing data transfer between machines and equipment the higher standards in data and computer applications are necessary.







Besides standard processes the requirement of precise data transfer must be the first and foremost.

Depending on the requirement, the HELUKABEL® customer can choose the data or computer cable from an extensive stock, where almost all cable constructions are ex stock.

Depending on the required application, solid, flexible or highly flexible constructions with corresponding screening may be necessary. In this case our technical advisors are ready to inform you.

We can also manufacture cables according to your specific requirements with a minimum order quantity. For special enquiries please fill-in our attached enquiry form.

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# TRONIC (LiYY) flexible, colour coded to DIN 47100, meter marking



## Technical data

- Special PVC data cables, adapted to DIN VDE 0812
- **Temperature range**  
flexing -5 °C to +80 °C  
fixed installation -40 °C to +80 °C
- **Nominal voltage**  
(not for purposes of high current and power installation)  
0,14 mm<sup>2</sup> = 350 V  
≥0,25 mm<sup>2</sup> = 500 V
- **Test voltage**  
up to 0,25 mm<sup>2</sup> 1200 V  
from 0,34 mm<sup>2</sup> 2000 V
- **Breakdown voltage**  
up to 0,25 mm<sup>2</sup> 2400 V  
from 0,34 mm<sup>2</sup> 4000 V
- **Insulation resistance**  
min. 20 MOhm x km
- **Capacitance** (approx.-value) at 800 Hz  
0,14 mm<sup>2</sup> 120 pF/m  
≥0,25 mm<sup>2</sup> 150 pF/m
- **Inductance** approx. 0,65 mH/km
- **Impedance** approx. 78 Ohm
- **Minimum bending radius**  
flexing 7,5x cable ø  
fixed installation 4x cable ø
- **Radiation resistance**  
up to 80x10<sup>6</sup> cJ/kg (up to 80 Mrad)

## Cable structure

- Bare copper, fine wire conductors, bunch stranded to DIN VDE 0295 cl. 5 and IEC 60228 cl. 5
- Conductor make-up for  
0,14 mm<sup>2</sup> = 18x0,1 mm  
0,25 mm<sup>2</sup> = 14x0,15 mm  
0,34 mm<sup>2</sup> = 7x0,25 mm
- Special PVC core insulation Tl2, to DIN VDE 0281 part 1
- Colour coded to DIN 47100, but without colour repetition
- Cores stranded in layers with optimal lay-length
- Special PVC outer sheath TM2, to DIN VDE 0281 part 1
- Colour grey (RAL 7001)
- with meter marking, change-over in 2011

## Properties

- Extremely oil resistant, oil-/ chemical Resistance - see table Technical Informations
- PVC self-extinguishing and flame retardant according to VDE 0482-332-1-2, DIN EN 60332-1-2/ IEC 60332-1 (equivalent DIN VDE 0472 part 804 test method B)
- The materials used in manufacture are cadmium-free and contain no silicone and free from substances harmful to the wetting properties of lacquers

## Note

- AWG sizes are approximate equivalent values. The actual cross-section is in mm<sup>2</sup>.
- HELUKABEL®-TRONIC is also available in paired version (e.g. HELUKABEL®-PAAR-TRONIC 20x2x0,14 mm<sup>2</sup>).
- **screened analogue type:**  
**TRONIC-CY (LiY-CY)**, see page B 9

## Application

These cables are used for flexible use with free movement without tensile stress or forced movements in dry, moist and wet rooms but not suitable for open air, wherever the construction requirements call for a minimum outer diameter, TRONIC is the suitable cable to use. This applies especially to such areas as tool making and machine industries as well as electronic, computer, measurement and control sectors.

CE The product is conformed with the EC Low-Voltage Directive 2006/95/EG.

Part no.	No. cores x cross-sec. mm <sup>2</sup>	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.	Part no.	No. cores x cross-sec. mm <sup>2</sup>	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
18001	2 x 0,14	3,3	2,7	13,0	26	18029	2 x 0,25	3,8	4,8	18,0	24
18002	3 x 0,14	3,5	4,0	16,0	26	18030	3 x 0,25	3,9	7,2	22,0	24
18003	4 x 0,14	3,7	5,4	19,0	26	18031	4 x 0,25	4,3	9,6	26,0	24
18004	5 x 0,14	4,0	6,7	22,0	26	18032	5 x 0,25	4,7	12,0	30,0	24
18005	6 x 0,14	4,3	8,1	25,0	26	18033	6 x 0,25	5,3	14,4	36,0	24
18006	7 x 0,14	4,5	9,4	28,0	26	18034	7 x 0,25	5,3	16,8	42,0	24
18007	8 x 0,14	5,1	10,7	35,0	26	18035	8 x 0,25	5,7	19,2	49,0	24
18008	10 x 0,14	5,6	13,4	41,0	26	18036	10 x 0,25	6,6	24,0	57,0	24
18009	12 x 0,14	5,7	16,1	48,0	26	18037	12 x 0,25	6,8	28,8	66,0	24
18010	14 x 0,14	6,0	18,8	53,0	26	18038	14 x 0,25	7,2	33,6	75,0	24
18011	16 x 0,14	6,5	21,5	59,0	26	18039	16 x 0,25	7,6	38,4	84,0	24
18012	18 x 0,14	6,8	24,2	65,0	26	18040	18 x 0,25	8,1	43,2	92,0	24
18013	20 x 0,14	7,1	26,9	70,0	26	18114	19 x 0,25	8,1	46,0	84,0	24
18014	21 x 0,14	7,1	28,2	77,0	26	18041	20 x 0,25	8,6	48,0	101,0	24
18015	24 x 0,14	7,5	32,3	87,0	26	18042	21 x 0,25	8,6	50,0	107,0	24
18117	25 x 0,14	7,7	33,6	91,0	26	18043	24 x 0,25	9,4	60,0	120,0	24
18016	27 x 0,14	7,7	36,3	97,0	26	18118	25 x 0,25	9,5	61,0	132,0	24
18017	30 x 0,14	8,5	40,3	108,0	26	18044	27 x 0,25	9,5	65,0	140,0	24
18018	32 x 0,14	8,8	43,0	114,0	26	18045	30 x 0,25	10,3	72,0	156,0	24
18019	36 x 0,14	9,3	48,4	126,0	26	18046	32 x 0,25	10,9	77,0	164,0	24
18020	40 x 0,14	9,6	54,0	139,0	26	18047	36 x 0,25	11,3	86,0	182,0	24
18021	42 x 0,14	9,9	56,0	146,0	26	18115	37 x 0,25	11,3	89,0	190,0	24
18022	44 x 0,14	10,4	59,0	153,0	26	18048	40 x 0,25	11,6	96,0	200,0	24
18023	48 x 0,14	10,5	65,0	164,0	26	18049	42 x 0,25	12,0	101,0	211,0	24
18024	52 x 0,14	11,0	70,0	173,0	26	18050	44 x 0,25	12,6	106,0	225,0	24
18025	56 x 0,14	11,3	75,0	187,0	26	18051	48 x 0,25	12,7	115,0	245,0	24
18026	61 x 0,14	11,6	82,0	204,0	26	18052	52 x 0,25	13,3	125,0	263,0	24
18027	80 x 0,14	13,0	108,0	280,0	26	18053	56 x 0,25	13,9	134,0	280,0	24
18028	100 x 0,14	14,7	135,0	370,0	26	18054	61 x 0,25	14,3	146,0	305,0	24

Continuation ▶



# TRONIC (LiYY) flexible, colour coded to DIN 47100, meter marking



Part no.	No. cores x cross-sec. mm <sup>2</sup>	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
18055	80 x 0,25	16,5	192,0	450,0	24
18056	100 x 0,25	18,2	240,0	590,0	24
18057	2 x 0,34	4,2	6,5	22,0	22
18058	3 x 0,34	4,4	9,8	30,0	22
18059	4 x 0,34	4,8	13,1	43,0	22
18060	5 x 0,34	5,4	16,5	54,0	22
18061	6 x 0,34	5,9	19,6	58,0	22
18062	7 x 0,34	5,9	22,8	61,0	22
18063	8 x 0,34	7,0	26,1	73,0	22
18064	10 x 0,34	7,6	32,6	82,0	22
18065	12 x 0,34	7,7	39,2	102,0	22
18066	14 x 0,34	8,4	45,7	108,0	22
18067	16 x 0,34	8,8	52,0	126,0	22
18068	18 x 0,34	9,3	59,0	143,0	22
18069	20 x 0,34	9,9	65,0	160,0	22
18070	21 x 0,34	9,9	69,0	166,0	22
18071	24 x 0,34	10,5	78,0	186,0	22
18096	25 x 0,34	10,7	82,0	192,0	22
18072	27 x 0,34	10,7	88,0	206,0	22
18073	30 x 0,34	11,8	98,0	226,0	22
18074	32 x 0,34	11,8	104,0	245,0	22
18075	36 x 0,34	12,9	118,0	285,0	22
18116	37 x 0,34	12,9	121,0	292,0	22
18076	40 x 0,34	13,3	131,0	318,0	22
18077	42 x 0,34	14,0	137,0	330,0	22
18078	44 x 0,34	14,0	144,0	370,0	22
18079	48 x 0,34	14,7	157,0	405,0	22
18080	52 x 0,34	15,4	170,0	430,0	22
18081	53 x 0,34	15,4	183,0	440,0	22
18082	61 x 0,34	16,3	199,0	610,0	22
18083	80 x 0,34	18,8	264,0	880,0	22
18084	100 x 0,34	21,0	327,0	1050,0	22

Part no.	No. cores x cross-sec. mm <sup>2</sup>	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
18085	2 x 0,5	4,6	9,6	40,0	20
18086	3 x 0,5	4,8	14,4	46,0	20
18087	4 x 0,5	5,4	19,2	55,0	20
18088	5 x 0,5	5,9	24,0	64,0	20
18089	6 x 0,5	6,4	28,8	73,0	20
18090	7 x 0,5	6,4	33,6	81,0	20
18091	8 x 0,5	7,2	38,4	97,0	20
18092	10 x 0,5	8,4	48,0	116,0	20
18093	12 x 0,5	8,4	58,0	135,0	20
18103	16 x 0,5	10,0	77,0	168,0	20
18101	20 x 0,5	11,2	96,0	213,0	20
18094	24 x 0,5	11,8	116,0	241,0	20
18102	30 x 0,5	13,2	144,0	303,0	20
18095	40 x 0,5	15,2	192,0	391,0	20
18104	2 x 0,75	5,2	14,4	47,0	18
18097	3 x 0,75	5,4	21,6	54,0	18
18098	4 x 0,75	5,9	29,0	66,0	18
18099	5 x 0,75	6,7	36,0	80,0	18
18100	7 x 0,75	7,3	50,0	110,0	18
18105	8 x 0,75	8,6	58,0	125,0	18
18106	10 x 0,75	9,6	72,0	148,0	18
18107	12 x 0,75	9,7	86,0	176,0	18
18108	16 x 0,75	11,1	115,0	220,0	18
18109	20 x 0,75	12,4	144,0	276,0	18
18110	2 x 1	5,5	19,2	56,0	17
18111	3 x 1	5,8	29,0	71,0	17
18112	2 x 1,5	6,2	29,0	75,0	16
18113	3 x 1,5	6,7	43,0	90,0	16

Dimensions and specifications may be changed without prior notice. (RB01)



Standardised process control and visualisation of an extrusion system at our Windsbach factory.



# PAAR-TRONIC flexible, colour coded to DIN 47100, meter marking



B

## Technical data

- Special PVC data cables, adapted to DIN VDE 0812, 0814
- **Temperature range**  
flexing -5 °C to +80 °C  
fixed installation -30 °C to +80 °C
- **Nominal voltage** 250 V
- **Test voltage** 1200 V
- **Breakdown voltage** min. 2400 V
- **Insulation resistance**  
min. 20 MOhm x km
- **Capacitance** (approx. -value) at 800 Hz  
core/core 0,14 mm<sup>2</sup> = 120 pF/m  
core/core 0,25 mm<sup>2</sup> = 150 pF/m
- **Load** 0,14 mm<sup>2</sup> = 1,5 A  
0,25 mm<sup>2</sup> = 2,5 A
- **Inductance** approx. 0,65 mH/km
- **Impedance** approx. 78 Ohm
- **K<sub>1</sub>-coupling** approx. 300 pF/100 m
- **Minimum bending radius**  
flexing 7,5x cable ø  
fixed installation 4x cable ø
- **Radiation resistance**  
up to 80x10<sup>6</sup> cJ/kg (up to 80 Mrad)

## Cable structure

- Bare copper, fine wire conductors, bunch stranded to DIN VDE 0295 cl. 5 and IEC 60228 cl. 5
- Special PVC core insulation Y12, to DIN VDE 0207 part 4
- Colour coded to DIN 47100
- Cores stranded in pairs with optimal lay-length
- Pairs stranded in layers with optimal lay-length
- Core wrapping with foil
- Special PVC outer sheath YM2, to DIN VDE 0207 part 5
- Sheath colour grey (RAL 7032)
- with meter marking, change-over in 2011

## Properties

- Extensively oil resistant, oil-/ chemical Resistance - see table Technical Informations
- PVC self-extinguishing and flame retardant according to VDE 0482-332-1-2, DIN EN 60332-1-2/ IEC 60332-1 (equivalent DIN VDE 0472 part 804 test method B)
- The materials used in manufacture are cadmium-free and contain no silicone and free from substances harmful to the wetting properties of lacquers

## Note

- AWG sizes are approximate equivalent values. The actual cross-section is in mm<sup>2</sup>.
- **screened analogue type:**  
**PAAR-TRONIC-CY**, see page B 11

## Application

These data control cables are used for flexible use with free movement without tensile stress or forced movements in dry, moist and wet rooms but not suitable for open air. PAAR-TRONIC is the perfect cable for use in areas where a small diameter is essential to complete wiring. E. g. as a control and signal cable in measuring instruments, computers, signal transfer etc. This cable is suitable only for low load application. **CE** - The product is conformed with the EC Low-Voltage Directive 2006/95/EC.

Part no.	No.pairs x cross-sec. mm <sup>2</sup>	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.	Part no.	No.pairs x cross-sec. mm <sup>2</sup>	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
19001	1 x 2 x 0,14	3,5	2,7	20,0	26	19018	24 x 2 x 0,14	12,4	65,0	170,0	26
19002	2 x 2 x 0,14	5,1	5,4	25,0	26	19019	25 x 2 x 0,14	12,5	67,0	180,0	26
19003	3 x 2 x 0,14	5,2	8,0	31,0	26	19020	26 x 2 x 0,14	12,5	70,0	184,0	26
19004	4 x 2 x 0,14	5,6	10,7	38,0	26	19021	27 x 2 x 0,14	12,7	73,0	188,0	26
19005	5 x 2 x 0,14	6,6	13,4	45,0	26	19022	28 x 2 x 0,14	12,8	75,0	192,0	26
19006	6 x 2 x 0,14	6,9	16,1	50,0	26	19023	30 x 2 x 0,14	13,1	81,0	200,0	26
19007	7 x 2 x 0,14	6,9	18,8	57,0	26	19024	32 x 2 x 0,14	13,5	86,0	224,0	26
19008	8 x 2 x 0,14	7,5	21,5	64,0	26	19025	34 x 2 x 0,14	14,0	91,0	247,0	26
19009	10 x 2 x 0,14	8,6	26,9	78,0	26	19026	36 x 2 x 0,14	14,2	97,0	260,0	26
19010	11 x 2 x 0,14	8,7	29,5	86,0	26	19027	38 x 2 x 0,14	14,3	102,0	272,0	26
19011	12 x 2 x 0,14	8,9	32,3	94,0	26	19028	40 x 2 x 0,14	15,0	108,0	294,0	26
19012	14 x 2 x 0,14	9,6	37,6	105,0	26	19029	44 x 2 x 0,14	15,9	118,0	334,0	26
19013	15 x 2 x 0,14	9,8	40,3	108,0	26	19030	45 x 2 x 0,14	15,9	121,0	342,0	26
19014	16 x 2 x 0,14	10,1	43,0	110,0	26	19031	50 x 2 x 0,14	16,5	134,0	387,0	26
19015	18 x 2 x 0,14	10,4	48,4	119,0	26	19032	52 x 2 x 0,14	16,9	140,0	403,0	26
19016	20 x 2 x 0,14	10,8	54,0	130,0	26	19033	55 x 2 x 0,14	17,5	148,0	427,0	26
19017	22 x 2 x 0,14	11,6	59,0	150,0	26						

Continuation ▶



# PAAR-TRONIC flexible, colour coded to DIN 47100, meter marking



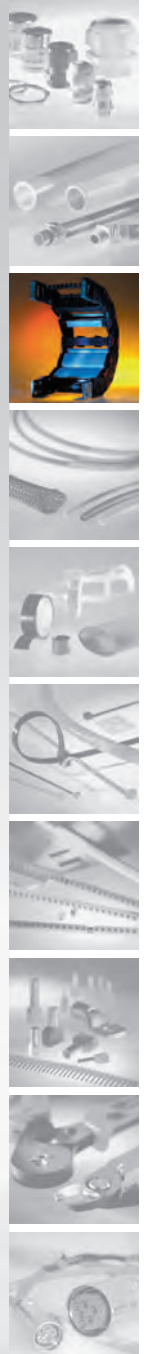
Part no.	No.pairs x cross-sec. mm²	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
19034	1 x 2 x 0,25	4,0	5,0	32,0	24
19035	2 x 2 x 0,25	6,0	10,0	37,0	24
19036	3 x 2 x 0,25	6,3	15,0	47,0	24
19037	4 x 2 x 0,25	6,8	20,0	58,0	24
19038	5 x 2 x 0,25	7,8	25,0	70,0	24
19039	6 x 2 x 0,25	8,3	30,0	80,0	24
19040	7 x 2 x 0,25	8,3	35,0	89,0	24
19041	8 x 2 x 0,25	9,3	40,0	99,0	24
19042	10 x 2 x 0,25	10,5	50,0	114,0	24
19043	11 x 2 x 0,25	10,6	55,0	126,0	24
19044	12 x 2 x 0,25	10,8	60,0	137,0	24
19045	14 x 2 x 0,25	11,6	70,0	161,0	24
19046	15 x 2 x 0,25	12,0	75,0	174,0	24
19047	16 x 2 x 0,25	12,5	80,0	187,0	24
19048	18 x 2 x 0,25	12,8	90,0	212,0	24
19049	20 x 2 x 0,25	13,3	100,0	234,0	24
19050	22 x 2 x 0,25	14,0	110,0	250,0	24
19051	24 x 2 x 0,25	15,0	120,0	280,0	24
19052	25 x 2 x 0,25	15,3	125,0	300,0	24
19053	26 x 2 x 0,25	15,3	130,0	320,0	24
19054	27 x 2 x 0,25	15,5	135,0	330,0	24
19055	28 x 2 x 0,25	15,7	140,0	345,0	24
19056	30 x 2 x 0,25	16,1	150,0	370,0	24

Part no.	No.pairs x cross-sec. mm²	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
19057	32 x 2 x 0,25	16,5	160,0	410,0	24
19058	34 x 2 x 0,25	17,2	170,0	425,0	24
19059	36 x 2 x 0,25	17,3	180,0	440,0	24
19060	38 x 2 x 0,25	17,6	190,0	480,0	24
19061	40 x 2 x 0,25	18,3	200,0	530,0	24
19062	44 x 2 x 0,25	19,7	220,0	580,0	24
19063	45 x 2 x 0,25	19,7	225,0	600,0	24
19064	50 x 2 x 0,25	20,4	250,0	650,0	24
19065	52 x 2 x 0,25	20,8	260,0	670,0	24
19066	55 x 2 x 0,25	21,5	275,0	790,0	24
19067	1 x 2 x 0,34	4,4	6,5	36,0	22
19068	2 x 2 x 0,34	6,9	13,1	42,0	22
19069	3 x 2 x 0,34	7,0	19,6	50,0	22
19070	4 x 2 x 0,34	7,8	26,1	61,0	22
19071	1 x 2 x 0,5	4,6	9,6	42,0	20
19072	2 x 2 x 0,5	7,6	19,2	51,0	20
19073	3 x 2 x 0,5	7,7	28,8	62,0	20
19074	4 x 2 x 0,5	8,6	38,4	73,0	20
19075	1 x 2 x 0,75	5,2	14,4	47,0	18
19076	2 x 2 x 0,75	8,5	28,8	59,0	18
19077	3 x 2 x 0,75	8,6	43,2	74,0	18
19078	4 x 2 x 0,75	9,6	57,6	93,0	18

Dimensions and specifications may be changed without prior notice. (RB01)

## Drag Chain Systems

- Open chains
- Closed chains
- Accessories
- Installation instructions
- Selection tables



You can find drag chain systems in our catalogue Cable Accessories.

# DATAFLAMM halogen-free, meter marking



## Technical data

- Special data cable
- **Temperature range**  
flexing +5 °C to +70 °C  
fixed installation -40 °C to +70 °C
- **Nominal voltage**  
0,14 mm<sup>2</sup> = 350 V  
>0,14 mm<sup>2</sup> = 500 V
- **Test voltage**  
0,14 mm<sup>2</sup> = 800 V  
>0,14 mm<sup>2</sup> = 1200 V
- **Insulation resistance**  
min. 2 GOhm x km
- **Capacitance**  
core/core <70 nF/km
- **Minimum bending radius**  
approx. 7,5x cable ø
- **Radiation resistance**  
up to 100x10<sup>6</sup> cJ/kg (up to 100 Mrad)

## Cable structure

- Bare copper, fine wire conductors to DIN VDE 0812, conductor make-up for 0,34 mm<sup>2</sup> - 7x0,25 mm
- PE-insulation, compound type 2YJ1 to DIN VDE 0207 part 2
- Cores colour coded to DIN 47100
- Cores twisted in layers with optimal lay-length
- Halogen-free outer sheath, to DIN VDE 0207 part 24, compound type HM2
- Sheath colour grey, RAL 7005
- with meter marking, change-over in 2011

## Properties

- Halogen-free according to VDE 0482 part 267/ DIN EN 50267-2-1/ IEC 60754-1 (equivalent DIN VDE 0472 part 815)
- Corrosiveness of combustion gases according to VDE 0482 part 267/ DIN EN 50267-2-2/ IEC 60754-2 (equivalent DIN VDE 0472 part 813)
- Halogen-free sheath compound, self-extinguishing and flame retardant according to DIN VDE 0482 part 265-2-1/ EN 50265-2-1/ IEC 60332-1 (equivalent DIN VDE 0472 part 804 test method B)

## Note

- **screened analogue type:**  
**DATAFLAMM-C**, see page B 23

## Application

DATAFLAMM halogen-free data cables are used as connecting cable for signal, measuring, control, call-announcing and two-way intercom speaking systems, clock installations, electronic weighing equipment and electrical apparatus for office requirements. The cables are suitable for installation in dry, damp and wet environments as well as in masonry and concrete.

PE-insulated-cores, compared with the conventional PVC-insulated cores, assure a remarkable and more favourable capacitance values. These cables are generally installed in telecommunication apparatus and data transmission systems in public buildings, laboratories, trading centres where the freedom from halogen in case of fire and the flame propagation must be avoided.

The halogen-free thermoplastic sheath produce neither corrosive nor toxic gases.

CE= The product is conformed with the EC Low-Voltage Directive 2006/95/EG.

Part no.	No. cores x cross-sec. mm <sup>2</sup>	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.	Part no.	No. cores x cross-sec. mm <sup>2</sup>	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
52300	2 x 0,14	3,3	2,6	14,0	26	52330	4 x 0,34	4,9	13,0	35,0	22
52301	3 x 0,14	3,5	4,0	17,0	26	52331	5 x 0,34	5,4	16,4	43,0	22
52302	4 x 0,14	3,7	5,3	19,0	26	52332	7 x 0,34	5,9	22,7	58,0	22
52303	5 x 0,14	4,0	6,6	23,0	26	52333	10 x 0,34	7,8	32,4	80,0	22
52304	6 x 0,14	4,3	7,9	25,0	26	52334	12 x 0,34	8,0	39,1	91,0	22
52305	7 x 0,14	4,3	9,2	27,0	26	52335	15 x 0,34	9,0	49,1	115,0	22
52306	8 x 0,14	4,6	10,3	30,0	26	52336	18 x 0,34	9,6	59,1	135,0	22
52307	10 x 0,14	5,4	13,2	38,0	26	52337	21 x 0,34	10,1	68,3	154,0	22
52308	12 x 0,14	5,7	16,0	45,0	26	52338	25 x 0,34	11,9	81,4	180,0	22
52309	15 x 0,14	6,2	20,1	57,0	26	52339	34 x 0,34	13,3	111,1	233,0	22
52310	18 x 0,14	6,7	23,7	65,0	26	52340	40 x 0,34	14,4	130,5	272,0	22
52311	21 x 0,14	7,3	27,9	76,0	26	52341	2 x 0,5	4,6	9,5	30,0	20
52312	25 x 0,14	7,9	33,4	88,0	26	52342	3 x 0,5	4,9	14,2	36,0	20
52313	30 x 0,14	8,1	39,3	98,0	26	52343	4 x 0,5	5,3	19,2	43,0	20
52314	34 x 0,14	8,9	45,5	111,0	26	52344	5 x 0,5	5,9	24,0	56,0	20
52315	40 x 0,14	9,5	53,6	139,0	26	52345	7 x 0,5	6,4	33,7	70,0	20
52316	50 x 0,14	10,5	64,9	164,0	26	52346	10 x 0,5	8,4	48,0	101,0	20
52317	2 x 0,25	3,7	4,7	18,0	24	52347	12 x 0,5	8,6	57,4	117,0	20
52318	3 x 0,25	3,9	7,1	21,0	24	52348	15 x 0,5	9,8	72,0	145,0	20
52319	4 x 0,25	4,2	9,5	26,0	24	52349	18 x 0,5	10,5	86,4	171,0	20
52320	5 x 0,25	4,6	12,0	31,0	24	52350	21 x 0,5	11,1	101,0	197,0	20
52321	7 x 0,25	5,1	16,6	40,0	24	52351	25 x 0,5	12,6	120,0	230,0	20
52322	10 x 0,25	6,4	24,0	56,0	24	52352	30 x 0,5	13,3	142,6	269,0	20
52323	12 x 0,25	6,5	28,6	64,0	24	52353	34 x 0,5	14,5	163,1	301,0	20
52324	15 x 0,25	7,3	36,0	80,0	24	52354	40 x 0,5	15,8	192,0	365,0	20
52430	18 x 0,25	7,8	43,2	90,0	24	52355	2 x 0,75	5,2	14,3	40,0	18
52431	21 x 0,25	8,3	50,4	105,0	24	52356	3 x 0,75	5,5	21,5	51,0	18
52325	25 x 0,25	9,3	59,8	121,0	24	52357	4 x 0,75	6,0	28,6	61,0	18
52326	34 x 0,25	10,8	81,3	168,0	24	52358	5 x 0,75	6,7	36,1	76,0	18
52327	40 x 0,25	11,7	96,0	196,0	24	52359	7 x 0,75	7,3	50,3	97,0	18
52328	2 x 0,34	4,3	6,4	25,0	22	52360	10 x 0,75	9,8	72,0	137,0	18
52329	3 x 0,34	4,5	9,7	30,0	22	52361	12 x 0,75	10,0	86,2	167,0	18

Dimensions and specifications may be changed without prior notice. (RB01)





# TRONIC-CY (LiY-CY) flexible, Cu-screened, colour coded to DIN 47100, EMC-preferred type, meter marking



## Technical data

- Special PVC data screened cables, adapted to DIN VDE 0812
- **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**  
core/core 1200 V  
core/screen 800 V
- **Breakdown voltage** min. 2400 V
- **Insulation resistance**  
min. 200 MOhm x km
- **Capacitance** (approx. -value) at 800 Hz  
core/core at 0,14 mm<sup>2</sup> = 120 pF/m  
core/core ≥ 0,25 mm<sup>2</sup> = 150 pF/m  
core/screen at 0,14 mm<sup>2</sup> = 240 pF/m  
core/screen ≥ 0,25 mm<sup>2</sup> = 270 pF/m
- **Load** (A) According to different cross-sections, see table Technical Information
- **Inductance** approx. 0,65 mH/km
- **Impedance** approx. 78 Ohm
- **Coupling resistance** max. 250 Ohm/km
- **Minimum bending radius**  
flexing 10x cable ø  
fixed installation 5x cable ø
- **Radiation resistance**  
up to 80x10<sup>6</sup> cJ/kg (up to 80 Mrad)

## Cable structure

- Bare copper, fine wire conductors for 0,5 mm<sup>2</sup> to DIN VDE 0295 cl. 5 and IEC 60228 cl. 5
- Conductor make-up for  
0,14 mm<sup>2</sup> = 18x0,1 mm  
0,25 mm<sup>2</sup> = 14x0,15 mm  
0,34 mm<sup>2</sup> = 7x0,25 mm
- Special PVC core insulation TI2, to DIN VDE 0281 part 1
- Cores stranded in layers with optimal lay-length
- Colour coded to DIN 47100, but without colour repetition
- Core wrapping with foil
- Drain-wire, tinned
- Tinned, copper braided screen, approx. 85% coverage
- Special PVC outer sheath TM2, to DIN VDE 0281 part 1
- Colour grey (RAL 7001)
- with meter marking, change-over in 2011

## Properties

- Extensively oil resistant, oil-/ chemical Resistance - see table Technical Informations
- PVC self-extinguishing and flame retardant according to VDE 0482-332-1-2, DIN EN 60332-1-2/ IEC 60332-1 (equivalent DIN VDE 0472 part 804 test method B)
- The materials used in manufacture are cadmium-free and contain no silicone and free from substances harmful to the wetting properties of lacquers

## Note

- HELUKABEL®-TRONIC-CY is also available in paired version (e.g. HELUKABEL®-PAAR-TRONIC-CY 16x2x0,14 mm<sup>2</sup>).
- For 1 core cable screen of helically wound.
- **unscreened analogue type: TRONIC (LiYY)**, see page B 4

## Application

These screened cables are used for flexible use with free movement without tensile stress or forced movements in dry, moist and wet rooms but not suitable for open air, wherever the construction requirements call for a minimum outer diameter, TRONIC is the suitable cable to use. This applies especially to such areas as tool making and machine industries as well as electronic, computer, measurement and control sectors.

The extremely small outer diameter make suitable for miniature plugs etc.

**EMC** = Electromagnetic compatibility

To optimise the EMC features we recommend a large round contact of the copper braiding on both ends.

**CE** = The product is conformed with the EC Low-Voltage Directive 2006/95/EG.

Part no.	No.cores x cross-sec. mm <sup>2</sup>	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.	Part no.	No.cores x cross-sec. mm <sup>2</sup>	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
20139	1 x 0,14	2,5	6,1	16,0	26	20015	24 x 0,14	8,3	62,0	131,0	26
20001	2 x 0,14	3,7	12,0	20,0	26	20091	25 x 0,14	8,5	61,0	136,0	26
20002	3 x 0,14	3,9	13,0	27,0	26	20016	27 x 0,14	8,5	65,0	142,0	26
20003	4 x 0,14	4,1	14,5	32,0	26	20017	30 x 0,14	9,3	69,0	157,0	26
20004	5 x 0,14	4,4	15,5	37,0	26	20018	32 x 0,14	9,6	76,0	163,0	26
20005	6 x 0,14	4,9	18,2	42,0	26	20019	36 x 0,14	9,9	83,0	182,0	26
20006	7 x 0,14	4,9	19,0	48,0	26	20020	40 x 0,14	10,2	88,0	209,0	26
20007	8 x 0,14	5,2	21,3	55,0	26	20021	42 x 0,14	10,5	94,0	217,0	26
20008	10 x 0,14	6,2	28,7	65,0	26	20022	44 x 0,14	11,2	110,0	226,0	26
20009	12 x 0,14	6,2	30,5	77,0	26	20023	48 x 0,14	11,3	115,0	240,0	26
20010	14 x 0,14	6,6	32,0	79,0	26	20024	52 x 0,14	11,8	124,0	270,0	26
20011	16 x 0,14	6,9	43,2	89,0	26	20025	56 x 0,14	12,1	132,0	320,0	26
20012	18 x 0,14	7,2	51,0	103,0	26	20026	61 x 0,14	12,4	146,0	370,0	26
20013	20 x 0,14	7,7	55,0	116,0	26	20027	80 x 0,14	14,1	226,0	510,0	26
20014	21 x 0,14	7,9	56,0	120,0	26	20028	100 x 0,14	15,6	267,0	580,0	26

Continuation ▶

# TRONIC-CY (LiY-CY) flexible, Cu-screened, colour coded to DIN 47100, EMC-preferred type, meter marking



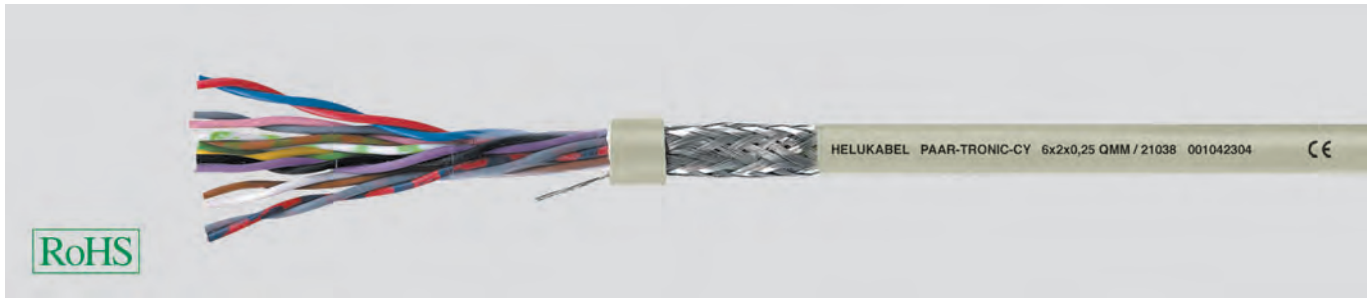
Part no.	No. cores x cross-sec. mm <sup>2</sup>	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
20084	1 x 0,25	2,9	7,2	27,0	24
20029	2 x 0,25	4,2	15,8	31,0	24
20030	3 x 0,25	4,3	18,6	36,0	24
20031	4 x 0,25	4,7	22,0	40,0	24
20032	5 x 0,25	5,3	26,5	51,0	24
20083	6 x 0,25	5,7	32,4	58,0	24
20033	7 x 0,25	5,7	35,0	64,0	24
20034	8 x 0,25	6,3	42,1	82,0	24
20035	10 x 0,25	7,2	49,9	85,0	24
20036	12 x 0,25	7,3	58,0	90,0	24
20037	14 x 0,25	7,9	62,0	144,0	24
20038	16 x 0,25	8,3	67,0	110,0	24
20039	18 x 0,25	9,1	78,0	142,0	24
20086	19 x 0,25	9,1	79,0	146,0	24
20040	20 x 0,25	9,4	88,0	152,0	24
20041	21 x 0,25	9,4	91,0	150,0	24
20042	24 x 0,25	10,0	96,0	163,0	24
20092	25 x 0,25	10,1	99,0	169,0	24
20043	27 x 0,25	10,1	122,0	176,0	24
20044	30 x 0,25	11,1	132,0	189,0	24
20045	32 x 0,25	11,5	138,0	204,0	24
20046	36 x 0,25	11,9	146,0	219,0	24
20087	37 x 0,25	11,9	152,0	230,0	24
20047	40 x 0,25	12,4	157,0	247,0	24
20048	42 x 0,25	12,8	160,0	269,0	24
20049	44 x 0,25	13,6	164,0	292,0	24
20050	48 x 0,25	13,7	164,0	317,0	24
20051	52 x 0,25	14,1	175,0	330,0	24
20052	56 x 0,25	14,5	189,0	343,0	24
20053	61 x 0,25	15,1	204,0	365,0	24
20054	80 x 0,25	17,1	387,0	480,0	24
20055	100 x 0,25	19,1	505,0	605,0	24
20088	1 x 0,34	3,2	13,5	24,0	22
20056	2 x 0,34	5,0	18,0	30,0	22
20057	3 x 0,34	5,2	22,0	37,0	22
20058	4 x 0,34	5,6	28,0	48,0	22
20059	5 x 0,34	6,0	31,0	54,0	22
20085	6 x 0,34	6,7	45,0	61,0	22
20060	7 x 0,34	6,7	51,0	67,0	22
20061	8 x 0,34	7,2	54,0	81,0	22
20062	10 x 0,34	8,4	65,0	103,0	22
20063	12 x 0,34	8,5	70,0	110,0	22
20064	14 x 0,34	9,0	81,0	153,0	22
20065	16 x 0,34	9,6	88,0	159,0	22
20066	18 x 0,34	10,1	103,0	172,0	22
20089	19 x 0,34	10,1	106,0	181,0	22
20067	20 x 0,34	10,7	112,0	191,0	22
20068	21 x 0,34	10,7	116,0	199,0	22
20069	24 x 0,34	11,3	129,0	229,0	22
20093	25 x 0,34	11,5	120,0	241,0	22
20070	27 x 0,34	11,5	138,0	258,0	22
20071	30 x 0,34	12,6	158,0	290,0	22
20072	32 x 0,34	13,0	163,0	305,0	22
20073	36 x 0,34	13,7	178,0	330,0	22
20090	37 x 0,34	13,7	192,0	348,0	22
20074	40 x 0,34	14,2	198,0	364,0	22
20075	42 x 0,34	14,8	203,0	389,0	22
20076	44 x 0,34	15,4	214,0	414,0	22
20077	48 x 0,34	15,6	227,0	420,0	22
20078	52 x 0,34	16,2	242,0	450,0	22
20079	56 x 0,34	16,6	267,0	480,0	22
20080	61 x 0,34	17,1	295,0	520,0	22
20081	80 x 0,34	19,4	524,0	580,0	22
20082	100 x 0,34	21,7	620,0	694,0	22
16001	1 x 0,5	3,6	15,0	40,0	20
16002	2 x 0,5	5,5	29,0	45,0	20
16003	3 x 0,5	5,7	39,0	55,0	20
16004	4 x 0,5	6,3	46,0	61,0	20
16005	5 x 0,5	6,8	52,0	76,0	20
16006	6 x 0,5	7,3	66,0	89,0	20
16007	7 x 0,5	7,3	68,0	98,0	20
16008	8 x 0,5	8,0	80,0	117,0	20
16009	10 x 0,5	9,4	93,0	135,0	20
16010	12 x 0,5	9,6	117,0	157,0	20
16011	14 x 0,5	10,1	122,0	190,0	20

Part no.	No. cores x cross-sec. mm <sup>2</sup>	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
16012	16 x 0,5	10,6	129,0	210,0	20
16013	18 x 0,5	10,7	152,0	217,0	20
16526	19 x 0,5	11,2	156,0	246,0	20
16014	20 x 0,5	11,7	173,0	275,0	20
16015	24 x 0,5	12,6	236,0	337,0	20
16016	25 x 0,5	12,7	250,0	351,0	20
16527	27 x 0,5	12,7	265,0	373,0	20
16017	30 x 0,5	14,1	297,0	396,0	20
16018	32 x 0,5	14,6	301,0	431,0	20
16164	34 x 0,5	15,3	312,0	440,0	20
16019	36 x 0,5	15,3	320,0	445,0	20
16528	37 x 0,5	15,3	325,0	458,0	20
16020	40 x 0,5	15,8	345,0	470,0	20
16021	50 x 0,5	18,1	407,0	570,0	20
16022	61 x 0,5	19,1	508,0	650,0	20
16023	80 x 0,5	21,9	690,0	780,0	20
16024	100 x 0,5	24,3	814,0	990,0	20
16025	1 x 0,75	3,8	19,0	41,0	18
16026	2 x 0,75	5,8	38,0	59,0	18
16027	3 x 0,75	6,3	50,0	66,0	18
16028	4 x 0,75	6,8	57,0	77,0	18
16029	5 x 0,75	7,3	70,0	93,0	18
16030	6 x 0,75	8,1	87,0	113,0	18
16031	7 x 0,75	8,2	96,0	130,0	18
16032	8 x 0,75	9,0	110,0	145,0	18
16033	10 x 0,75	10,3	140,0	180,0	18
16034	12 x 0,75	10,5	151,0	202,0	18
16035	14 x 0,75	11,3	167,0	225,0	18
16036	16 x 0,75	11,8	183,0	275,0	18
16037	18 x 0,75	12,6	207,0	292,0	18
16529	19 x 0,75	12,6	221,0	322,0	18
16038	20 x 0,75	13,4	238,0	362,0	18
16039	24 x 0,75	14,1	270,0	435,0	18
16040	25 x 0,75	14,3	278,0	415,0	18
16041	27 x 0,75	14,3	287,0	467,0	18
16042	30 x 0,75	15,8	315,0	486,0	18
16043	32 x 0,75	16,3	330,0	530,0	18
16163	34 x 0,75	17,1	350,0	570,0	18
16044	36 x 0,75	17,1	370,0	600,0	18
16530	37 x 0,75	17,9	386,0	640,0	18
16045	40 x 0,75	17,9	395,0	680,0	18
16120	42 x 0,75	18,4	408,0	714,0	18
16047	61 x 0,75	21,5	555,0	900,0	18
16048	80 x 0,75	24,6	715,0	1200,0	18
16049	100 x 0,75	27,2	910,0	1440,0	18
16475	2 x 1	6,4	46,0	65,0	17
16476	3 x 1	6,7	56,0	80,0	17
16477	4 x 1	7,2	69,0	98,0	17
16478	5 x 1	8,0	89,0	127,0	17
16479	6 x 1	8,6	105,0	144,0	17
16480	7 x 1	8,6	111,0	158,0	17
16481	8 x 1	9,4	130,0	197,0	17
16482	10 x 1	11,2	140,0	232,0	17
16483	12 x 1	11,4	168,0	260,0	17
16484	14 x 1	12,0	198,0	302,0	17
16485	16 x 1	12,8	218,0	346,0	17
16486	19 x 1	13,6	268,0	412,0	17
16487	24 x 1	15,2	320,0	493,0	17
16488	27 x 1	15,4	360,0	562,0	17
16489	37 x 1	18,3	485,0	790,0	17
16500	2 x 1,5	7,3	63,0	88,0	16
16501	3 x 1,5	7,6	76,0	100,0	16
16502	4 x 1,5	8,3	98,0	126,0	16
16503	5 x 1,5	9,2	116,0	160,0	16
16504	6 x 1,5	9,9	140,0	192,0	16
16505	7 x 1,5	9,9	152,0	208,0	16
16506	8 x 1,5	10,8	172,0	244,0	16
16507	10 x 1,5	13,0	193,0	315,0	16
16508	12 x 1,5	13,0	254,0	338,0	16
16509	14 x 1,5	13,9	272,0	383,0	16
16510	16 x 1,5	14,9	285,0	424,0	16
16511	19 x 1,5	15,6	387,0	506,0	16
16512	24 x 1,5	17,7	448,0	690,0	16
16513	27 x 1,5	17,9	506,0	781,0	16
16514	37 x 1,5	21,2	682,0	941,0	16

Dimensions and specifications may be changed without prior notice. (RB01)



# PAAR-TRONIC-CY flexible, Cu-screened, colour coded to DIN 47100, EMC-preferred type, meter marking



## Technical data

- Special PVC data cables, adapted to DIN VDE 0812, 0814
- **Temperature range**  
flexing -5 °C to +80 °C  
fixed installation -30 °C to +80 °C
- **Operating voltage** 350 V  
(not for purposes of high current and power installation)
- **Test voltage**  
core/core 1200 V  
core/screen 800 V
- **Breakdown voltage** min. 2400 V
- **Insulation resistance**  
min. 20 MΩm x km
- **Conductor resistance**  
at 0,14 mm<sup>2</sup> ≤ 138 Ωm/km  
at 0,25 mm<sup>2</sup> ≤ 75,5 Ωm/km  
at 0,34 mm<sup>2</sup> ≤ 57,5 Ωm/km  
at 0,50 mm<sup>2</sup> ≤ 39 Ωm/km  
at 0,75 mm<sup>2</sup> ≤ 26 Ωm/km
- **Capacitance** (approx. -value) at 800 Hz  
core/core 0,14 mm<sup>2</sup> = 120 pF/m  
core/core ≥ 0,25 mm<sup>2</sup> = 150 pF/m  
core/screen 0,14 mm<sup>2</sup> = 240 pF/m  
core/screen ≥ 0,25 mm<sup>2</sup> = 270 pF/m
- **Load**  
at 0,14 mm<sup>2</sup> = 1,5 A  
at 0,25 mm<sup>2</sup> = 2,5 A  
at 0,34 mm<sup>2</sup> = 4,5 A  
at 0,50 mm<sup>2</sup> = 6 A  
at 0,75 mm<sup>2</sup> = 9 A
- **Inductance** approx. 0,65 mH/km
- **Impedance** approx. 78 Ωm
- **K<sub>1</sub>-coupling** approx. 300 pF/100 m
- **Coupling resistance**  
max. 250 Ωm/km
- **Minimum bending radius**  
flexing 10x cable ø  
fixed installation 5x cable ø
- **Radiation resistance**  
up to 80x10<sup>6</sup> cJ/kg (up to 80 Mrad)

## Cable structure

- Bare copper, fine wire conductors, bunch stranded to DIN VDE 0295 cl. 5, 0245 and IEC 60228 cl. 5
- Conductor make-up for  
0,14 mm<sup>2</sup> = 18x0,1 mm  
0,25 mm<sup>2</sup> = 14x0,15 mm  
0,34 mm<sup>2</sup> = 7x0,25 mm
- Special PVC core insulation YI2, to DIN VDE 0207 part 4
- Colours coded to DIN 47100 with colour repetition
- Cores stranded in pairs with optimal lay-length
- Pairs stranded in layers with optimal lay-length
- Core wrapping with foil
- Tinned copper braided screening, coverage approx. 85%
- Special PVC outer sheath YM2, to DIN VDE 0207 part 5
- Sheath colour grey (RAL 7032)
- with meter marking, change-over in 2011

## Properties

- Extensively oil resistant, oil-/ chemical Resistance - see table Technical Informations
- PVC self-extinguishing and flame retardant according to VDE 0482-332-1-2, DIN EN 60332-1-2/ IEC 60332-1 (equivalent DIN VDE 0472 part 804 test method B)
- The materials used in manufacture are cadmium-free and contain no silicone and free from substances harmful to the wetting properties of lacquers

## Note

- Also available in other sheath colours.
- **unscreened analogue type:**  
**PAAR-TRONIC**, see page B 6

## Application

These data control cables are used for flexible use with free movement without tensile stress or forced movements in dry, moist and wet rooms but not suitable for open air.

PAAR-TRONIC-CY is well suited for use in areas subject to signal interference. The high level of screening reduces substantially the effects of electrical disturbances from parallel running wiring etc. The copper screening is also often used as an "earth".

The twisted pairs conform favourable cross-talk attenuation values. These cables are suitable for dry and wet rooms, yet not for open air.

**EMC** = Electromagnetic compatibility

**CE** = The product is conformed with the EC Low-Voltage Directive 2006/95/EG.

Part no.	No.pairs x cross-sec. mm <sup>2</sup>	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.	Part no.	No.pairs x cross-sec. mm <sup>2</sup>	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
21001	1 x 2 x 0,14	4,1	15,6	34,0	26	21006	6 x 2 x 0,14	7,2	48,5	86,0	26
21002	2 x 2 x 0,14	5,6	18,5	40,0	26	21007	7 x 2 x 0,14	7,2	51,1	91,0	26
21003	3 x 2 x 0,14	5,6	23,0	49,0	26	21008	8 x 2 x 0,14	8,4	53,7	97,0	26
21004	4 x 2 x 0,14	6,0	26,6	55,0	26	21009	10 x 2 x 0,14	9,1	59,0	109,0	26
21005	5 x 2 x 0,14	6,7	30,7	66,0	26	21010	12 x 2 x 0,14	9,2	66,0	141,0	26

Continuation ▶

# PAAR-TRONIC-CY flexible, Cu-screened, colour coded to DIN 47100, EMC-preferred type, meter marking



Part no.	No.pairs x cross-sec. mm²	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
21011	14 x 2 x 0,14	9,9	74,0	148,0	26
21012	15 x 2 x 0,14	10,4	76,0	152,0	26
21013	16 x 2 x 0,14	10,4	79,0	155,0	26
21014	18 x 2 x 0,14	11,0	83,0	171,0	26
21015	20 x 2 x 0,14	11,5	97,0	183,0	26
21016	22 x 2 x 0,14	12,3	103,0	205,0	26
21017	24 x 2 x 0,14	12,3	111,0	228,0	26
21018	25 x 2 x 0,14	12,5	113,0	239,0	26
21019	26 x 2 x 0,14	12,5	122,0	245,0	26
21020	27 x 2 x 0,14	12,5	125,0	251,0	26
21021	28 x 2 x 0,14	13,7	128,0	258,0	26
21022	30 x 2 x 0,14	13,7	140,0	270,0	26
21023	32 x 2 x 0,14	14,2	145,0	284,0	26
21024	34 x 2 x 0,14	14,7	150,0	300,0	26
21025	36 x 2 x 0,14	14,9	156,0	316,0	26
21026	38 x 2 x 0,14	15,6	162,0	350,0	26
21027	40 x 2 x 0,14	16,1	177,0	370,0	26
21028	44 x 2 x 0,14	16,8	181,0	390,0	26
21029	46 x 2 x 0,14	17,0	195,0	430,0	26
21030	50 x 2 x 0,14	17,7	202,0	440,0	26
21031	52 x 2 x 0,14	17,7	206,0	460,0	26
21032	55 x 2 x 0,14	18,2	210,0	480,0	26
21033	1 x 2 x 0,25	4,6	15,0	45,0	24
21034	2 x 2 x 0,25	6,3	28,0	53,0	24
21035	3 x 2 x 0,25	6,6	32,0	65,0	24
21036	4 x 2 x 0,25	7,0	38,0	80,0	24
21037	5 x 2 x 0,25	7,8	55,0	98,0	24
21038	6 x 2 x 0,25	8,6	65,0	114,0	24
21039	7 x 2 x 0,25	8,6	70,0	121,0	24
21040	8 x 2 x 0,25	9,8	75,0	129,0	24
21041	10 x 2 x 0,25	11,0	110,0	157,0	24
21042	12 x 2 x 0,25	11,2	117,0	189,0	24
21043	14 x 2 x 0,25	12,2	122,0	213,0	24
21044	15 x 2 x 0,25	12,8	134,0	225,0	24
21045	16 x 2 x 0,25	12,8	143,0	237,0	24
21046	18 x 2 x 0,25	13,5	148,0	248,0	24
21047	20 x 2 x 0,25	14,1	162,0	275,0	24
21048	22 x 2 x 0,25	14,9	172,0	303,0	24
21049	24 x 2 x 0,25	15,3	223,0	330,0	24
21050	25 x 2 x 0,25	15,5	233,0	343,0	24
21051	26 x 2 x 0,25	15,5	238,0	345,0	24
21052	27 x 2 x 0,25	15,5	244,0	350,0	24
21053	28 x 2 x 0,25	17,0	249,0	360,0	24
21054	30 x 2 x 0,25	17,0	254,0	375,0	24
21055	32 x 2 x 0,25	17,6	290,0	400,0	24
21056	34 x 2 x 0,25	18,2	312,0	410,0	24
21057	36 x 2 x 0,25	18,2	322,0	420,0	24
21058	38 x 2 x 0,25	19,0	339,0	450,0	24
21059	40 x 2 x 0,25	19,7	349,0	485,0	24
21060	44 x 2 x 0,25	20,5	359,0	500,0	24
21061	46 x 2 x 0,25	20,7	398,0	540,0	24
21062	50 x 2 x 0,25	21,5	403,0	550,0	24
21063	52 x 2 x 0,25	21,5	435,0	580,0	24
21064	55 x 2 x 0,25	22,1	464,0	630,0	24
19970	1 x 2 x 0,34	5,2	16,0	58,0	22
19971	2 x 2 x 0,34	7,0	36,9	65,0	22

Part no.	No.pairs x cross-sec. mm²	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
19972	3 x 2 x 0,34	7,3	44,9	78,0	22
19973	4 x 2 x 0,34	8,1	54,2	90,0	22
19974	5 x 2 x 0,34	8,8	63,5	110,0	22
19975	6 x 2 x 0,34	9,8	73,1	130,0	22
19976	7 x 2 x 0,34	9,8	79,5	145,0	22
19977	8 x 2 x 0,34	11,2	88,4	150,0	22
19978	9 x 2 x 0,34	12,6	99,3	170,0	22
19979	10 x 2 x 0,34	12,6	106,9	190,0	22
19980	12 x 2 x 0,34	12,8	122,1	220,0	22
19981	14 x 2 x 0,34	13,3	138,2	245,0	22
19982	16 x 2 x 0,34	14,3	154,2	250,0	22
19983	18 x 2 x 0,34	15,2	197,9	275,0	22
19984	21 x 2 x 0,34	15,9	214,4	300,0	22
19985	25 x 2 x 0,34	17,5	238,5	400,0	22
19986	27 x 2 x 0,34	17,5	262,5	410,0	22
19987	30 x 2 x 0,34	19,1	286,6	440,0	22
19988	34 x 2 x 0,34	20,8	310,1	510,0	22
19989	37 x 2 x 0,34	21,5	368,7	550,0	22
19990	40 x 2 x 0,34	22,4	392,6	590,0	22
19991	44 x 2 x 0,34	23,6	424,3	600,0	22
19992	50 x 2 x 0,34	24,8	455,9	650,0	22
19993	52 x 2 x 0,34	24,8	487,6	680,0	22
19994	56 x 2 x 0,34	25,4	518,5	750,0	22
19995	61 x 2 x 0,34	26,2	557,2	840,0	22
17047	1 x 2 x 0,5	5,6	24,0	60,0	20
17001	2 x 2 x 0,5	7,8	54,0	89,0	20
17002	3 x 2 x 0,5	8,2	70,0	104,0	20
17003	4 x 2 x 0,5	9,1	91,0	126,0	20
17004	5 x 2 x 0,5	9,9	105,0	148,0	20
17005	6 x 2 x 0,5	10,7	120,0	171,0	20
17006	8 x 2 x 0,5	12,8	144,0	290,0	20
17007	10 x 2 x 0,5	14,0	178,0	320,0	20
17008	12 x 2 x 0,5	14,3	199,0	361,0	20
17009	16 x 2 x 0,5	16,1	254,0	421,0	20
17010	20 x 2 x 0,5	17,2	302,0	580,0	20
17011	25 x 2 x 0,5	19,7	344,0	740,0	20
17048	1 x 2 x 0,75	6,0	28,0	71,0	19
17012	2 x 2 x 0,75	8,4	58,0	105,0	19
17013	3 x 2 x 0,75	8,9	84,0	128,0	19
17014	4 x 2 x 0,75	9,8	108,0	156,0	19
17015	5 x 2 x 0,75	10,8	126,0	189,0	19
17016	6 x 2 x 0,75	12,1	146,0	216,0	19
17017	8 x 2 x 0,75	13,4	180,0	309,0	19
17018	10 x 2 x 0,75	15,5	220,0	355,0	19
17019	12 x 2 x 0,75	15,8	261,0	405,0	19
17020	16 x 2 x 0,75	18,0	328,0	565,0	19
17021	20 x 2 x 0,75	19,2	392,0	700,0	19
17022	25 x 2 x 0,75	21,8	470,0	950,0	19
17049	1 x 2 x 1	6,3	46,0	75,0	18
17050	2 x 2 x 1	8,9	82,0	116,0	18
17051	3 x 2 x 1	9,4	103,0	140,0	18
17052	4 x 2 x 1	10,4	132,0	191,0	18
17053	1 x 2 x 1,5	7,2	63,0	84,0	16
17054	2 x 2 x 1,5	10,2	111,0	122,0	16
17055	3 x 2 x 1,5	10,8	136,0	194,0	16
17056	4 x 2 x 1,5	12,0	172,0	240,0	16

Dimensions and specifications may be changed without prior notice. (RB01)





# PAAR-CY-OZ flexible, Cu-screened, EMC-preferred type, meter marking



## Technical data

- Special PVC data cables, screened, adapted to DIN VDE 0812, 0814
- **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**  
core/core 1200 V  
core/screen 800 V
- **Breakdown voltage** min. 2400 V
- **Insulation resistance**  
min. 20 MΩm x km
- **Mutual capacitance** according to different cross-sections  
0,5 mm<sup>2</sup> to 1,5 mm<sup>2</sup>:  
core/core approx. 150 nF/km  
core/screen approx. 270 nF/km
- **Inductance** approx. 0,67 mH/km
- **Coupling resistance**  
max. 250 Ωm/km
- **Minimum bending radius**  
flexing 10x cable ø  
fixed installation 5x cable ø
- **Radiation resistance**  
up to 80x10<sup>6</sup> cJ/kg (up to 80 Mrad)

## Cable structure

- Bare copper, fine wire conductors, bunch stranded to DIN VDE 0295 cl. 5, BS 6360 cl. 5 and IEC 60228 cl. 5
- Special PVC core insulation TI2, to DIN VDE 0281 part 1
- Black cores with continuous numbering in white according to DIN VDE 0293
- Cores laid up in pairs
- Pairs stranded in layers with optimal lay-length
- Foil wrap
- Tinned copper screened braiding, approx. 85% coverage
- Special PVC outer sheath TM2, to DIN VDE 0281 part 1
- Colour grey (RAL 7032)
- with meter marking, change-over in 2011

## Properties

- Extensively oil resistant, oil-/ chemical Resistance - see table Technical Informations
- PVC self-extinguishing and flame retardant according to VDE 0482-332-1-2, DIN EN 60332-1-2/ IEC 60332-1 (equivalent DIN VDE 0472 part 804 test method B)
- The materials used in manufacture are cadmium-free and contain no silicone and free from substances harmful to the wetting properties of lacquers

## Note

- x = without green-yellow earth core (OZ).
- AWG sizes are approximate equivalent values. The actual cross-section is in mm<sup>2</sup>.
- We deliver other dimensions and other colours of outer jackets on request.

## Application

PAAR-CY is ideal for use as a connecting cable for all areas involving measuring, control, regulation and signal transfer as well as for use in all fields of data and impulse transmission.

Especially suited for all areas of high electromagnetic activity, e. g. disturbances through parallel circuits.

**EMC** = Electromagnetic compatibility

To optimise the EMC features we recommend a large round contact of the copper braiding on both ends.

CE= The product is conformed with the EC Low-Voltage Directive 2006/95/EG.

Part no.	No.pairs x cross-sec. mm <sup>2</sup>	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
17023	2 x 2 x 1	9,5	82,0	135,0	17
17024	3 x 2 x 1	10,0	103,0	160,0	17
17025	4 x 2 x 1	11,0	132,0	197,0	17
17026	5 x 2 x 1	12,3	161,0	253,0	17
17027	6 x 2 x 1	13,4	188,0	295,0	17
17028	8 x 2 x 1	14,7	240,0	410,0	17
17029	10 x 2 x 1	16,4	282,0	518,0	17
17030	12 x 2 x 1	18,2	324,0	601,0	17
17031	16 x 2 x 1	19,0	412,0	990,0	17
17032	20 x 2 x 1	19,8	505,0	1400,0	17
17033	25 x 2 x 1	23,5	610,0	1600,0	17

Part no.	No.pairs x cross-sec. mm <sup>2</sup>	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
17034	2 x 2 x 1,5	11,3	112,0	168,0	16
17035	3 x 2 x 1,5	12,2	139,0	221,0	16
17036	4 x 2 x 1,5	13,5	176,0	269,0	16
17037	5 x 2 x 1,5	14,5	212,0	314,0	16
17038	6 x 2 x 1,5	17,2	255,0	550,0	16
17039	8 x 2 x 1,5	18,2	322,0	650,0	16
17040	10 x 2 x 1,5	20,1	380,0	900,0	16
17041	12 x 2 x 1,5	21,8	442,0	950,0	16
17042	16 x 2 x 1,5	25,0	572,0	1100,0	16
17043	20 x 2 x 1,5	27,0	705,0	1700,0	16
17044	25 x 2 x 1,5	29,5	862,0	1900,0	16

Dimensions and specifications may be changed without prior notice. (RB01)

# PAAR-TRONIC-CY-CY (LiYCY-CY) EMC-preferred type, meter marking



B

## Technical data

- Special PVC data transmission cable adapted to DIN VDE 0812 and 0814
- **Temperature range**  
flexing -5 °C to +80 °C  
fixed installation -40 °C to +80 °C
- **Conductor resistance**  
0,14 mm<sup>2</sup> = max. 138 Ohm/km  
0,25 mm<sup>2</sup> = max. 77,8 Ohm/km
- **Nominal voltage**  
0,14 mm<sup>2</sup> = max. 350 V  
0,25 mm<sup>2</sup> = max. 500 V
- **Test voltage**  
0,14 mm<sup>2</sup> = 1200 V  
0,25 mm<sup>2</sup> = 2000 V
- **Breakdown voltage**  
0,14 mm<sup>2</sup> = 2400 V  
0,25 mm<sup>2</sup> = 4000 V
- **Mutual capacitance**  
core/core  
0,14 mm<sup>2</sup> = 147 pF/m  
0,25 mm<sup>2</sup> = 152,5 pF/m  
core/screen  
0,14 mm<sup>2</sup> = 147 pF/m  
0,25 mm<sup>2</sup> = 263 pF/m
- **Impedance**  
0,14 mm<sup>2</sup> = 536 Ohm/1 kHz/20 °C  
0,25 mm<sup>2</sup> = 396 Ohm/1 kHz/20 °C
- **Coupling** 250 pF/100 m/1 kHz
- **Screen resistance**  
0,14 mm<sup>2</sup> = 36 Ohm/km  
0,25 mm<sup>2</sup> = 18 Ohm/km
- **Attenuation**  
0,14 mm<sup>2</sup> = 3,6 dB/1 kHz/km  
0,25 mm<sup>2</sup> = 2,2 dB/1 kHz/km
- **Minimum bending radius**  
flexing 12x cable ø  
fixed installation 6x cable ø
- **Radiation resistance**  
up to 80x10<sup>6</sup> cJ/kg (bis 80 Mrad)

## Cable structure

- Bare copper, fine wire conductors, to DIN VDE 0812
- Strand make-up  
0,14 mm<sup>2</sup> = 18x0,10 mm  
0,25 mm<sup>2</sup> = 14x0,15 mm  
0,34 mm<sup>2</sup> = 7x0,25 mm
- Special PVC core insulation Y12, to DIN VDE 0207 part 4
- Core colours to DIN 47100 with colour repetition
- Cores stranded in pairs with optimal lay-length
- Pairs screened individually, tinned copper, coverage approx. 85%
- Special PVC coating over individual screened pairs
- All pairs-CY stranded together
- Core wrapping with polyester foil, overlapped
- Overall braid-screening, tinned copper coverage approx. 85%
- Special PVC outer sheath YM2, to DIN VDE 0207 part 5
- Colour grey (RAL 7001)
- with meter marking, change-over in 2011

## Properties

- Extensively oil resistant, oil-/ chemical Resistance - see table Technical Informations
- PVC self-extinguishing and flame retardant according to VDE 0482-332-1-2, DIN EN 60332-1-2/ IEC 60332-1 (equivalent DIN VDE 0472 part 804 test method B)
- The materials used in manufacture are cadmium-free and contain no silicone and free from substances harmful to the wetting properties of lacquers

## Note

- As of 0,75 mm<sup>2</sup> cross-sec. see type L-EDV-PiMF-CY.
- AWG sizes are approximate equivalent values. The actual cross-section is in mm<sup>2</sup>.

## Application

This cable type offers total interference-free data transfer and is ideal for use as a signal and control cable in combination with computers and external units. The screening properties also make this cable type well suited for use as a connecting cable in sound studio equipment, measuring and control sectors as well as proving a highly reliable cable for process-control and security systems. The copper screening assures a disturbance-free data and signal transmission for measuring and control systems.

**EMC** = Electromagnetic compatibility

To optimise the EMC features we recommend a large round contact of the copper braiding on both ends.

CE= The product is conformed with the EC Low-Voltage Directive 2006/95/EG.

Part no.	No.pairs x cross-sec. mm <sup>2</sup>	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.	Part no.	No.pairs x cross-sec. mm <sup>2</sup>	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
21065	2 x 2 x 0,14	7,4	31,0	95,0	26	21071	8 x 2 x 0,14	13,2	97,0	245,0	26
21066	3 x 2 x 0,14	8,5	34,0	105,0	26	21072	9 x 2 x 0,14	14,1	101,0	280,0	26
21067	4 x 2 x 0,14	10,0	45,0	140,0	26	21073	10 x 2 x 0,14	15,1	108,0	325,0	26
21068	5 x 2 x 0,14	10,5	58,0	160,0	26	21074	12 x 2 x 0,14	15,3	134,0	380,0	26
21069	6 x 2 x 0,14	11,6	67,0	185,0	26	21075	16 x 2 x 0,14	17,0	179,0	440,0	26
21070	7 x 2 x 0,14	12,1	78,0	230,0	26	21076	20 x 2 x 0,14	17,8	225,0	520,0	26

Continuation ▶

## PAAR-TRONIC-CY-CY (LiYCY-CY) EMC-preferred type, meter marking

Part no.	No.pairs x cross-sec. mm²	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
21077	2 x 2 x 0,25	8,1	62,0	125,0	24
21078	3 x 2 x 0,25	9,5	78,2	140,0	24
21079	4 x 2 x 0,25	10,5	124,1	205,0	24
21080	5 x 2 x 0,25	11,9	137,6	230,0	24
21081	6 x 2 x 0,25	12,6	148,1	275,0	24
21082	7 x 2 x 0,25	13,9	159,1	295,0	24
21083	8 x 2 x 0,25	14,2	178,7	350,0	24
21084	10 x 2 x 0,25	15,2	213,9	420,0	24
21085	12 x 2 x 0,25	17,5	238,3	465,0	24
21086	16 x 2 x 0,25	22,0	291,4	590,0	24
21087	20 x 2 x 0,25	22,6	325,0	620,0	24
21088	24 x 2 x 0,25	27,5	367,5	690,0	24
21089	32 x 2 x 0,25	29,8	588,0	785,0	24
21090	48 x 2 x 0,25	34,5	840,5	970,0	24
21091	2 x 2 x 0,34	9,5	73,1	139,0	22
21092	3 x 2 x 0,34	11,6	88,1	157,0	22
21093	4 x 2 x 0,34	12,4	137,2	213,0	22
21094	6 x 2 x 0,34	15,0	174,8	308,0	22
21095	8 x 2 x 0,34	16,5	247,2	385,0	22
21096	10 x 2 x 0,34	19,0	288,7	433,0	22
21097	12 x 2 x 0,34	19,5	321,0	495,0	22
21098	14 x 2 x 0,34	20,7	388,4	600,0	22
21099	16 x 2 x 0,34	22,5	425,5	637,0	22
21100	24 x 2 x 0,34	28,0	577,1	781,0	22

Part no.	No.pairs x cross-sec. mm²	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
21101	2 x 2 x 0,5	10,4	83,1	143,0	20
21102	3 x 2 x 0,5	11,6	106,4	179,0	20
21103	4 x 2 x 0,5	13,0	158,0	241,0	20
21104	6 x 2 x 0,5	15,6	201,4	319,0	20
21105	8 x 2 x 0,5	18,0	311,5	441,0	20
21106	10 x 2 x 0,5	20,8	334,5	464,0	20
21107	12 x 2 x 0,5	21,5	394,1	529,0	20
21108	14 x 2 x 0,5	21,6	446,0	641,0	20
21109	16 x 2 x 0,5	23,8	501,2	694,0	20
21110	24 x 2 x 0,5	28,4	712,4	930,0	20

Dimensions and specifications may be changed without prior notice. (RB01)

## Insulating, shrinking, braided and temperature protection tubes

**Braided hoses**  
**High temperature protection**  
**Insulation tubes**  
**Heat-shrink tubes**  
**End caps**



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# PAAR-TRONIC-LI-2YCYV PE-insulated, low capacitance, Termi-Point®, EMC-preferred type, meter marking



B

## Technical data

- PE-insulated data cable
- **Temperature range**  
flexing -5 °C to +70 °C  
fixed installation -30 °C to +80 °C
- **Conductor resistance** (loop) at 20 °C  
0,22 mm<sup>2</sup> max. 186 Ohm/km  
0,34 mm<sup>2</sup> max. 115 Ohm/km  
0,5 mm<sup>2</sup> max. 78,5 Ohm/km  
1,0 mm<sup>2</sup> max. 39,2 Ohm/km
- **Operating top level voltage**  
max. 250 V (not for purposes of high current and power installation)
- **Test voltage**  
core/core 2000 V  
core/screen 1000 V
- **Insulation resistance** min. 5 GOhm x km
- **Mutual capacitance** at 800 Hz  
>4 pairs max. 60 nF/km  
≤4 pairs values extended by 20%
- **Impedance** 100 Ohm ±15
- **Line attenuation** (approx. value)  
0,22 mm<sup>2</sup> at 100 kHz 9,0 dB/km  
0,34 mm<sup>2</sup> at 100 kHz 6,6 dB/km  
0,50 mm<sup>2</sup> at 100 kHz 6,0 dB/km  
0,22 mm<sup>2</sup> at 1 MHz 25,0 dB/km  
0,34 mm<sup>2</sup> at 1 MHz 20,0 dB/km  
0,50 mm<sup>2</sup> at 1 MHz 18,0 dB/km
- **Inductance** approx. 0,66 mH/km
- **Cross-talk attenuation**  
up 1 MHz min. 50 dB  
up 10 MHz min. 40 dB
- **Minimum bending radius**  
flexing 12x cable ø  
fixed installation 7,5x cable ø

## Cable structure

- Bare copper stranded wires, 7-wires, adapted to DIN VDE 0881, suitable for Termi-Point® and solder-free connection technique
- Conductor make-up  
0,22 mm<sup>2</sup> = 7x0,20 mm  
0,34 mm<sup>2</sup> = 7x0,25 mm  
0,5 mm<sup>2</sup> = 7x0,30 mm
- Core insulation of PE, compound type2Y11 to DIN VDE 0207 part 2
- Core colours to DIN 47100 with colour repetition
- Cores stranded in pairs with optimal lay-length
- Pairs stranded in layers with optimal lay-length
- Core wrapping with foil
- Tinned copper braided screening, coverage approx. 85%
- Special PVC outer sheath YM2 black, to DIN VDE 0207 part 5
- Type . . . Yv with reinforced outer sheath
- with meter marking, change-over in 2011

## Properties

- PVC outer sheath self-extinguishing and flame retardant according to VDE 0482-332-1-2, DIN EN 60332-1-2/ IEC 60332-1 (equivalent DIN VDE 0472 part 804 test method B)
- These cables make enormous advantages possible for fast and cost-effective contact-making using the Termi-Point® connection technique. With this solder-free connection technique, the stranded conductor is crimped together with a sleeve onto a contact pin without prior stripping of the insulation material
- The twisted-pair lay-up prevents electrical unbalances within the cable and this thus effectively suppresses cross-talking effects
- The materials used in manufacture are cadmium-free and contain no silicone and free from substances harmful to the wetting properties of lacquers

## Note

- At 0,22 mm<sup>2</sup> is designed for applications with Sub-D connectors.
- AWG sizes are approximate equivalent values. The actual cross-section is in mm<sup>2</sup>.
- Termi-Point® registered trade mark AMP.
- To optimise the EMC features we recommend a large round contact of the copper braiding on both ends.

## Application

These PE-insulated data cables with twisted pairs are used in particular for the interference-free transmission of data and signals over longer distances. The high transmission rates are particularly suitable for RS 422 and RS 485 interfaces. These cables are suitable for fixed installations as well as for flexing applications, for free movement without forced motion and without tensile stress, in dry and moist environments. Yv black with reinforced outer sheath, is suitable for installation in the ground and in open air.

**EMC** = Electromagnetic compatibility

**CE** = The product is conformed with the EC Low-Voltage Directive 2006/95/EG.

Part no.	No.pairs x cross-sec. mm <sup>2</sup>	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.	Part no.	No.pairs x cross-sec. mm <sup>2</sup>	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
21129	2 x 2 x 0,22	8,0	26,0	60,0	24	21141	2 x 2 x 0,5	10,0	49,0	90,0	20
21130	3 x 2 x 0,22	8,3	31,0	79,0	24	21142	3 x 2 x 0,5	10,4	60,0	126,0	20
21131	4 x 2 x 0,22	8,9	38,0	96,0	24	21143	4 x 2 x 0,5	11,2	73,0	146,0	20
21132	8 x 2 x 0,22	10,6	62,0	140,0	24	21144	8 x 2 x 0,5	13,9	124,0	246,0	20
21133	10 x 2 x 0,22	12,1	79,0	184,0	24	21145	10 x 2 x 0,5	16,0	155,0	292,0	20
21135	2 x 2 x 0,34	9,2	35,0	83,0	22	21146	2 x 2 x 1	10,8	81,0	141,0	17
21136	3 x 2 x 0,34	9,6	44,0	92,0	22	21147	3 x 2 x 1	11,5	102,0	170,0	17
21137	4 x 2 x 0,34	10,2	53,0	112,0	22	21148	4 x 2 x 1	12,0	130,0	203,0	17
21138	8 x 2 x 0,34	12,8	86,0	179,0	22	21149	8 x 2 x 1	14,9	240,0	261,0	17
21139	10 x 2 x 0,34	14,1	104,0	219,0	22	21150	10 x 2 x 1	17,2	282,0	287,0	17

Dimensions and specifications may be changed without prior notice.





# PAAR-TRONIC-LI-2YCY PE-insulated, low capacitance, Termi-Point®, EMC-preferred type, meter marking



## Technical data

- PE-insulated data cable
- **Temperature range**  
flexing -5 °C to +70 °C  
fixed installation -30 °C to +80 °C
- **Conductor resistance** (loop) at 20 °C  
0,22 mm<sup>2</sup> max. 186 Ohm/km  
0,34 mm<sup>2</sup> max. 115 Ohm/km  
0,5 mm<sup>2</sup> max. 78,5 Ohm/km
- **Operating top level voltage**  
max. 250 V (not for purposes of high current and power installation)
- **Test voltage**  
core/core 2000 V  
core/screen 1000 V
- **Insulation resistance** min. 5 GOhm x km
- **Mutual capacitance** at 800 Hz  
>4 pairs max. 60 nF/km  
≤4 pairs values extended by 20%
- **Impedance** 100 Ohm ±15
- **Line attenuation** (approx. value)  
0,22 mm<sup>2</sup> at 100 kHz 9,0 dB/km  
0,34 mm<sup>2</sup> at 100 kHz 6,6 dB/km  
0,50 mm<sup>2</sup> at 100 kHz 6,0 dB/km  
0,22 mm<sup>2</sup> at 1 MHz 25,0 dB/km  
0,34 mm<sup>2</sup> at 1 MHz 20,0 dB/km  
0,50 mm<sup>2</sup> at 1 MHz 18,0 dB/km
- **Inductance** approx. 0,66 mH/km
- **Cross-talk attenuation**  
up 1 MHz min. 50 dB  
up 10 MHz min. 40 dB
- **Minimum bending radius**  
flexing 12x cable ø  
fixed installation 7,5x cable ø

## Cable structure

- Bare copper stranded wires, 7-wires, adapted to DIN VDE 0881, suitable for Termi-Point® and solder-free connection technique
- Conductor make-up  
0,22 mm<sup>2</sup> = 7x0,20 mm  
0,34 mm<sup>2</sup> = 7x0,25 mm  
0,5 mm<sup>2</sup> = 7x0,30 mm
- Core insulation of PE, compound type2Y11 to DIN VDE 0207 part 2
- Core colours to DIN 47100 with colour repetition
- Cores stranded in pairs with optimal lay-length
- Pairs stranded in layers with optimal lay-length
- Core wrapping with foil
- Tinned copper braided screening, coverage approx. 85%
- Special PVC outer sheath YM2 grey, to DIN VDE 0207 part 5
- with meter marking, change-over in 2011

## Properties

- PVC outer sheath self-extinguishing and flame retardant according to VDE 0482-332-1-2, DIN EN 60332-1-2/ IEC 60332-1 (equivalent DIN VDE 0472 part 804 test method B)
- These cables make enormous advantages possible for fast and cost-effective contact-making using the Termi-Point® connection technique. With this solder-free connection technique, the stranded conductor is crimped together with a sleeve onto a contact pin without prior stripping of the insulation material
- The twisted-pair lay-up prevents electrical unbalances within the cable and this thus effectively suppresses cross-talking effects
- The materials used in manufacture are cadmium-free and contain no silicone and free from substances harmful to the wetting properties of lacquers

## Note

- At 0,22 mm<sup>2</sup> is designed for applications with Sub-D connectors.
- AWG sizes are approximate equivalent values. The actual cross-section is in mm<sup>2</sup>.
- Termi-Point® registered trade mark AMP.
- To optimise the EMC features we recommend a large round contact of the copper braiding on both ends.

## Application

These PE-insulated data cables with twisted pairs are used in particular for the interference-free transmission of data and signals over longer distances. The high transmission rates are particularly suitable for RS 422 and RS 485 interfaces. These cables are suitable for fixed installations as well as for flexing applications, for free movement without forced motion and without tensile stress, in dry and moist environments but not in open air (Type grey).

**EMC** = Electromagnetic compatibility

**CE** = The product is conformed with the EC Low-Voltage Directive 2006/95/EG.

Part no.	No.pairs x cross-sec. mm <sup>2</sup>	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
21111	2 x 2 x 0,22	6,4	26,0	48,0	24
21112	3 x 2 x 0,22	6,7	31,0	66,0	24
21113	4 x 2 x 0,22	7,3	38,0	82,0	24
21114	8 x 2 x 0,22	9,0	62,0	123,0	24
21115	10 x 2 x 0,22	10,5	79,0	165,0	24
21117	2 x 2 x 0,34	7,6	35,0	68,0	22
21118	3 x 2 x 0,34	8,0	44,0	77,0	22
21119	4 x 2 x 0,34	8,6	53,0	95,0	22
21120	8 x 2 x 0,34	11,2	86,0	158,0	22
21121	10 x 2 x 0,34	12,5	104,0	195,0	22
21123	2 x 2 x 0,5	8,4	49,0	74,0	20
21124	3 x 2 x 0,5	8,8	60,0	109,0	20
21125	4 x 2 x 0,5	9,6	73,0	128,0	20
21126	8 x 2 x 0,5	12,3	124,0	223,0	20
21127	10 x 2 x 0,5	14,5	155,0	265,0	20

Dimensions and specifications may be changed without prior notice. (RB01)

## LifYCY high flexible, paired, screened, EMC-preferred type, meter marking



B

### Technical data

- Special PVC connecting cable, adapted to DIN VDE 0812, 0814
- **Temperature range**  
flexing -5 °C to +70 °C  
fixed installation -40 °C to +70 °C
- **Nominal voltage** 350 V
- **Test voltage** 1200 V
- **Breakdown voltage** min. 2400 V
- **Insulation resistance**  
min. 10 MOhm x km
- **Minimum bending radius**  
flexing 10x cable ø  
fixed installation 5x cable ø
- **Radiation resistance**  
up to 80x10<sup>6</sup> cJ/kg (up to 80 Mrad)
- **Coupling resistance**  
max. 250 Ohm/km

### Cable structure

- Bare copper, extra fine conductors (102x0,05 = 0,2 mm<sup>2</sup>)
- Special PVC core insulation Y12, to DIN VDE 0207 part 4
- Core identification to DIN 47100
- Cores twisted in pairs, pairs twisted in layers
- Core wrapping with polyester tape
- Tinned copper, screened braiding, approx. 85% coverage
- Special PVC outer sheath YM2, to DIN VDE 0207 part 5
- Colour grey (RAL 7032)
- with meter marking, change-over in 2011

### Properties

- Extensively oil resistant, oil-/ chemical Resistance - see table Technical Informations
- PVC self-extinguishing and flame retardant according to VDE 0482-332-1-2, DIN EN 60332-1-2/ IEC 60332-1 (equivalent DIN VDE 0472 part 804 test method B)
- The materials used in manufacture are cadmium-free and contain no silicone and free from substances harmful to the wetting properties of lacquers

### Note

- AWG sizes are approximate equivalent values. The actual cross-section is in mm<sup>2</sup>.

### Application

These screened cables are used as connecting cable for signal, measuring, control and speaking purposes for example in Intercom systems, weighing instruments, equipment for office works, computers and telecommunication equipment etc. The cable offers a flexible handling and installation. Due to pair-twisting, the electrical unbalances of the cable itself can be reduced and cross-talk effects are avoided.

The tinned copper screened braiding serves as protection against outer high frequency influences (capacitance unbalance). The drain wire ensure an exact connection to the earth clamp.

The cables are suitable for fixed installation and flexible application, free-moving without tensile stress and without forced guiding operation in dry, damp and wet places for medium mechanical stress.

**EMC** = Electromagnetic compatibility

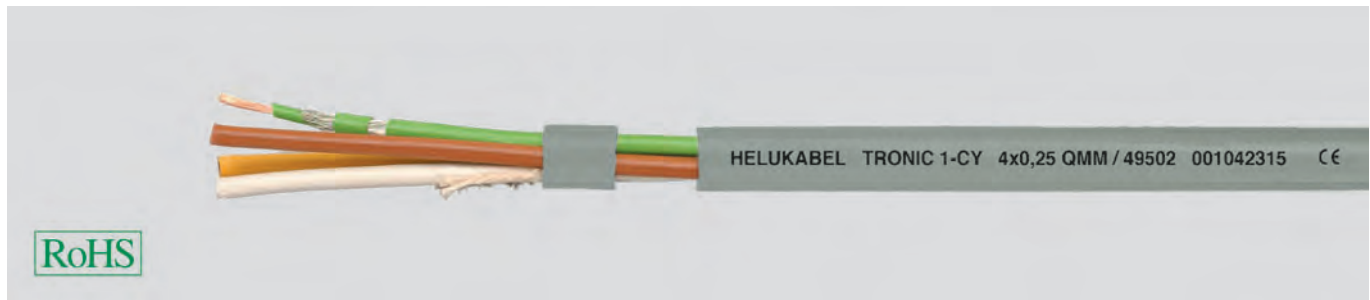
To optimise the EMC features we recommend a large round contact of the copper braiding on both ends.

CE = The product is conformed with the EC Low-Voltage Directive 2006/95/EG.

Part no.	No.pairs x cross-sec. mm <sup>2</sup>	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.	Part no.	No.pairs x cross-sec. mm <sup>2</sup>	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
15987	2 x 2 x 0,2	5,9	24,0	60,0	-	15994	10 x 2 x 0,2	9,9	108,0	150,0	-
15988	3 x 2 x 0,2	6,1	35,0	70,0	-	15995	12 x 2 x 0,2	10,9	125,0	180,0	-
15989	4 x 2 x 0,2	6,6	45,0	80,0	-	15996	16 x 2 x 0,2	12,5	144,0	210,0	-
15990	5 x 2 x 0,2	7,9	54,0	90,0	-	15997	18 x 2 x 0,2	13,1	155,0	230,0	-
15991	6 x 2 x 0,2	8,6	56,0	100,0	-	15998	20 x 2 x 0,2	13,9	216,0	250,0	-
15992	7 x 2 x 0,2	8,9	68,0	120,0	-	15999	24 x 2 x 0,2	13,2	228,0	330,0	-
15993	8 x 2 x 0,2	9,4	72,0	130,0	-	16000	32 x 2 x 0,2	16,6	269,0	400,0	-

Dimensions and specifications may be changed without prior notice. (RB01)

# TRONIC 1-CY each core individually screened, EMC-preferred type, meter marking



## Technical data

- Special PVC core insulation, adapted to DIN VDE 0812
- **Temperature range**  
flexing -5 °C to +80 °C  
fixed installation -40 °C to +80 °C
- **Nominal voltage**  
0,25 mm<sup>2</sup> 250 V  
0,50 mm<sup>2</sup> 350 V
- **Test voltage** (core/screen)  
0,25 mm<sup>2</sup> 800 V  
0,50 mm<sup>2</sup> 1200 V
- **Insulation resistance**  
min. 20 MΩm x km
- **Minimum bending radius**  
flexing 10x cable ø  
fixed installation 5x cable ø
- **Radiation resistance**  
up to 80x10<sup>6</sup> cJ/kg (up to 80 Mrad)

## Cable structure

- Bare copper, fine wire conductors, to DIN VDE 0295 cl. 5, BS 6360 cl. 5 (for 0,5 mm<sup>2</sup> 0,25 mm<sup>2</sup> to DIN VDE 0812
- Strand make-up  
0,25 mm<sup>2</sup> 14x0,15 mm  
0,50 mm<sup>2</sup> 16x0,20 mm
- Special PVC core insulation Y12, to DIN VDE 0207 part 4
- Colour coded to DIN 47100
- Each core individually copper spirally screened, approx. 85% coverage
- Cores stranded in layers with optimal lay-length
- Special PVC outer sheath YM2, to DIN VDE 0207 part 5
- Colour grey (RAL 7001)
- with meter marking, change-over in 2011

## Properties

- Extensively oil resistant, oil-/ chemical Resistance - see table Technical Informations
- PVC self-extinguishing and flame retardant according to VDE 0482-332-1-2, DIN EN 60332-1-2/ IEC 60332-1 (equivalent DIN VDE 0472 part 804 test method B)
- The materials used in manufacture are cadmium-free and contain no silicone and free from substances harmful to the wetting properties of lacquers

## Note

- AWG sizes are approximate equivalent values. The actual cross-section is in mm<sup>2</sup>.

## Application

The individually screened, flexible cable is ideal for use in data and impulse transfer in computers, communication systems and external units and offers interference-free data flow for all measuring and command functions. This cable type is widely used in the machine and steel producing industries as well as for traffic signals and data processing areas.

**EMC** = Electromagnetic compatibility

To optimise the EMC features we recommend a large round contact of the copper braiding on both ends.

**CE** = The product is conformed with the EC Low-Voltage Directive 2006/95/EG.

Part no.	No. cores x cross-sec. mm <sup>2</sup>	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.	Part no.	No. cores x cross-sec. mm <sup>2</sup>	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
49501	3 x 0,25	6,5	18,0	40,0	24	49512	3 x 0,5	7,3	28,8	71,0	20
49502	4 x 0,25	7,2	24,0	45,0	24	49513	4 x 0,5	8,2	38,5	81,0	20
49503	5 x 0,25	8,0	30,0	56,0	24	49514	5 x 0,5	9,2	48,0	95,0	20
49504	7 x 0,25	8,8	42,0	70,0	24	49515	7 x 0,5	10,0	67,0	115,0	20
49505	8 x 0,25	10,0	48,0	87,0	24	49516	8 x 0,5	11,0	77,0	145,0	20
49506	10 x 0,25	11,3	60,0	90,0	24	49517	10 x 0,5	13,2	96,0	169,0	20
49507	12 x 0,25	12,0	72,0	95,0	24	49518	12 x 0,5	14,0	114,6	185,0	20
49508	16 x 0,25	13,1	96,0	115,0	24	49519	16 x 0,5	15,5	154,0	225,0	20
49509	24 x 0,25	16,0	144,0	170,0	24	49520	32 x 0,5	21,5	308,0	440,0	20
49510	32 x 0,25	18,5	192,0	210,0	24						
49511	48 x 0,25	23,5	288,0	320,0	24						

Dimensions and specifications may be changed without prior notice. (RB01)

## TRONIC 2-CY 2 cores screened, meter marking



### Technical data

- Special PVC core insulation adapted to DIN VDE 0812
- **Temperature range**  
flexing -5 °C to +80 °C  
fixed installation -40 °C to +80 °C
- **Conductor resistance**  
0,14 mm<sup>2</sup> = max. 138 Ohm/km  
0,25 mm<sup>2</sup> = max. 77,8 Ohm/km  
0,50 mm<sup>2</sup> = max. 37,8 Ohm/km
- **Nominal voltage** (50 Hz)  
0,14 mm<sup>2</sup> = max. 350 V  
0,25 mm<sup>2</sup> = max. 500 V  
0,50 mm<sup>2</sup> = max. 500 V
- **Test voltage** (50 Hz eff)  
0,14 mm<sup>2</sup> = 800 V  
0,25 mm<sup>2</sup> = 800 V  
0,50 mm<sup>2</sup> = 1200 V
- **Breakdown voltage**  
0,14 mm<sup>2</sup> = 1600 V  
0,25 mm<sup>2</sup> = 1600 V  
0,50 mm<sup>2</sup> = 2400 V
- **Insulation resistance**  
min. 200 MOhm x km
- **Mutual capacitance** (approx.-value)  
core/core  
0,14 mm<sup>2</sup> = 70 pF/m  
0,25 mm<sup>2</sup> = 80 pF/m  
0,50 mm<sup>2</sup> = 80 pF/m  
core/screen  
0,14 mm<sup>2</sup> = 270 pF/m  
0,25 mm<sup>2</sup> = 350 pF/m  
0,50 mm<sup>2</sup> = 400 pF/m
- **Minimum bending radius**  
flexing 10x cable ø  
fixed installation 5x cable ø
- **Radiation resistance**  
up to 80x10<sup>6</sup> cJ/kg (bis 80 Mrad)

### Cable structure

- Bare copper, fine wire conductors, bunch stranded to DIN VDE 0295 cl. 5, BS 6360 cl. 5 (for 0,5 mm<sup>2</sup> 0,14 and 0,25 mm<sup>2</sup> to DIN VDE 0812
- Strand make-up  
0,14 mm<sup>2</sup> 18x0,10 mm  
0,25 mm<sup>2</sup> 14x0,15 mm  
0,50 mm<sup>2</sup> 16x0,20 mm
- Special PVC core insulation Y12, to DIN VDE 0207 part 4
- White and brown cores each individually screened
- Colour coded to DIN 47100
- Cores stranded in layers with optimal lay-length
- Copper screened braiding, approx. 85% coverage
- Special PVC outer sheath YM2, to DIN VDE 0207 part 5
- Colour grey (RAL 7001)
- with meter marking, change-over in 2011

### Properties

- Extensively oil resistant, oil-/ chemical Resistance - see table Technical Informations
- PVC self-extinguishing and flame retardant according to VDE 0482-332-1-2, DIN EN 60332-1-2/ IEC 60332-1 (equivalent DIN VDE 0472 part 804 test method B)
- The materials used in manufacture are cadmium-free and contain no silicone and free from substances harmful to the wetting properties of lacquers

### Note

- AWG sizes are approximate equivalent values. The actual cross-section is in mm<sup>2</sup>.

### Application

TRONIC 2-CY is used in all areas of measuring and control technology requiring only 2 impulse transfer cores. This cable type is used mainly in the machinery and industrial equipment fields as well as in the steel industry and in electronics.

CE= The product is conformed with the EC Low-Voltage Directive 2006/95/EG.

Part no.	No. cores x cross-sec. mm <sup>2</sup>	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.	Part no.	No. cores x cross-sec. mm <sup>2</sup>	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
49521	4 x 0,14	6,2	14,6	40,0	26	49531	4 x 0,5	7,6	34,0	100,0	20
49522	8 x 0,14	7,2	20,3	50,0	26	49532	8 x 0,5	11,6	53,2	150,0	20
49523	12 x 0,14	8,4	26,8	70,0	26	49533	12 x 0,5	11,9	72,4	190,0	20
49524	16 x 0,14	8,6	32,0	80,0	26	49534	16 x 0,5	12,5	91,6	240,0	20
49525	24 x 0,14	9,0	43,4	110,0	26	49535	24 x 0,5	15,3	130,0	310,0	20
49526	4 x 0,25	6,5	21,3	60,0	24						
49527	8 x 0,25	8,0	31,0	90,0	24						
49528	12 x 0,25	9,2	40,5	120,0	24						
49529	16 x 0,25	9,6	50,1	140,0	24						
49530	24 x 0,25	12,0	69,3	200,0	24						

Dimensions and specifications may be changed without prior notice. (RB01)



## LIY-TPC-Y pairs screened, EMC-preferred type, meter marking



### Technical data

- Pair screened special PVC data transmission cable adapted to DIN VDE 0812 and 0814
- **Temperature range**  
flexing -5 °C to +70 °C  
fixed installation -30 °C to +70 °C
- **Operating top level voltage**  
500 V (not for purposes of high current and power installation)
- **Test voltage** 1200 V
- **Breakdown voltage** min. 2400 V
- **Insulation resistance**  
min. 20 MΩm x km
- **Radiation resistance**  
up to 80x10<sup>6</sup> cJ/kg (up to 80 Mrad)

### Cable structure

- Bare copper, fine wire conductors, bunch stranded to DIN VDE 0295 cl. 5, BS 6360 cl. 5 and IEC 228 cl. 5 (for ≥0,5 mm<sup>2</sup>) 0,25 and 0,34 mm<sup>2</sup> to DIN VDE 0812
- Strand make up  
0,25 mm<sup>2</sup> = 14x0,15 mm  
0,34 mm<sup>2</sup> = 7x0,25 mm
- Special PVC core insulation Y12, to DIN VDE 0207 part 4
- Core colours to DIN 47100
- Cores stranded in pairs with optimal lay-length
- Each pair with foil wrapping
- Pairs individually screened, tinned copper coverage approx. 85%
- All pairs-C stranded in layers with optimal lay-length
- Foil separator Special PVC outer sheath YM2, to DIN VDE 0207 part 5
- Colour grey (RAL 7032)
- with meter marking, change-over in 2011

### Properties

- Extensively oil resistant, oil-/ chemical Resistance - see table Technical Informations
- PVC self-extinguishing and flame retardant according to VDE 0482-332-1-2, DIN EN 60332-1-2/ IEC 60332-1 (equivalent DIN VDE 0472 part 804 test method B)
- The materials used in manufacture are cadmium-free and contain no silicone and free from substances harmful to the wetting properties of lacquers

### Note

- AWG sizes are approximate equivalent values. The actual cross-section is in mm<sup>2</sup>.

### Application

This pair screened table type offers total interference-free data transfer and is ideal for use as a signal and control cable in combination with computers and external units. The screening properties also make this cable type well suited for use as a connecting cable in sound studio equipment, measuring and control sectors as well as proving a highly reliable cable for process-control and security systems. The copper screening assures a disturbance-free data and signal transmission for measuring and control systems.

**EMC** = Electromagnetic compatibility

To optimise the EMC features we recommend a large round contact of the copper braiding on both ends.

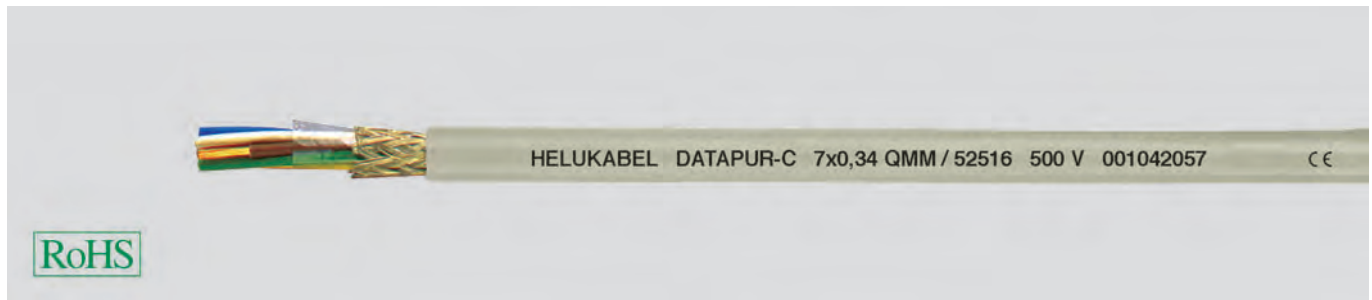
**C€** = The product is conformed with the EC Low-Voltage Directive 2006/95/EG.

Part no.	No.pairs x cross-sec. mm <sup>2</sup>	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
21323	2 x 2 x 0,25	6,2	32,0	60,0	24
21324	3 x 2 x 0,25	6,8	48,0	80,0	24
21325	4 x 2 x 0,25	8,1	64,0	112,0	24
21326	5 x 2 x 0,25	9,1	80,0	142,0	24
21327	6 x 2 x 0,25	9,0	96,0	159,0	24
21328	7 x 2 x 0,25	9,6	112,0	177,0	24
21329	10 x 2 x 0,25	11,7	160,0	250,0	24
21340	2 x 2 x 0,34	7,1	42,0	78,0	22
21341	3 x 2 x 0,34	7,9	63,0	104,0	22
21342	4 x 2 x 0,34	9,6	84,0	155,0	22
21343	5 x 2 x 0,34	10,6	105,0	189,0	22
21344	7 x 2 x 0,34	11,3	147,0	238,0	22
21345	10 x 2 x 0,34	13,4	210,0	322,0	22

Part no.	No.pairs x cross-sec. mm <sup>2</sup>	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
21355	2 x 2 x 0,5	8,3	58,0	96,0	20
21356	3 x 2 x 0,5	8,8	87,0	136,0	20
21357	4 x 2 x 0,5	10,2	116,0	187,0	20
21370	2 x 2 x 0,75	8,9	76,0	132,0	18
21371	3 x 2 x 0,75	9,8	114,0	178,0	18
21372	4 x 2 x 0,75	11,2	152,0	243,0	18
21373	5 x 2 x 0,75	12,7	190,0	312,0	18
21385	2 x 2 x 1	9,3	86,0	142,0	17
21386	3 x 2 x 1	10,1	130,0	189,0	17
21387	4 x 2 x 1	11,9	149,0	275,0	17

Dimensions and specifications may be changed without prior notice. (RB01)

# DATAPUR-C EMC-preferred type, Cu-screened, PUR-outer jacket, meter marking



B

## Technical data

- Special PVC/PUR control cable, adapted to DIN VDE 0281
- **Temperature range**  
flexing -5 °C to +80 °C  
fixed installation -40 °C to +80 °C
- **Operating top level voltage**  
(not for purposes of high current and power installation)  
0,14 mm<sup>2</sup> 350 V  
as of 0,25 mm<sup>2</sup> 500 V
- **Test voltage**  
0,14 mm<sup>2</sup> 800 V  
as of 0,25 mm<sup>2</sup> 1200 V
- **Insulation resistance**  
min. 20 MΩm x km
- **Mutual capacitance** core/core:  
up to 0,34 mm<sup>2</sup> approx. 120 nF/km  
as of 0,5 mm<sup>2</sup> approx. 160 nF/km
- **Minimum bending radius**  
flexing 10x cable ø  
fixed installation 5x cable ø
- **Radiation resistance**  
up to 100x10<sup>6</sup> cJ/kg (up to 100 Mrad)
- **Coupling resistance**  
max. 250 Ωm/km

## Cable structure

- Bare copper, fine wire conductors, bunch stranded to DIN VDE 0295 cl. 5, BS 6360 cl. 5 and IEC 60228 cl. 5
- structure of conductors bei 0,35 mm<sup>2</sup> = 7 x 0,25 mm<sup>2</sup>
- Special PVC core insulation T12, to DIN VDE 0281 part 1
- Cores colour coded to DIN 47100
- Cores stranded in layers with optimal lay-length
- Foil taped
- Tinned copper braided screen, approx. 85% coverage
- PUR outer sheath TPU to DIN VDE 0282 part 1, appendix A
- Sheath colour grey (RAL 7032)
- with meter marking, change-over in 2011

## Properties

- Chemical resistance: good against acids, lyes, hydraulic liquids
- High flexibility at low temperature
- High abrasion resistance
- **Resistant to**  
Oils and fats  
Non-alcoholic fuels and kerosene  
Atmospheric influences  
UV-radiation  
Oxygene and ozone  
Microbes and rotting  
Sea and waste water  
Vibrations
- The materials used in manufacture are cadmium-free and contain no silicone and free from substances harmful to the wetting properties of lacquers

## Note

- AWG sizes are approximate equivalent values. The actual cross-section is in mm<sup>2</sup>.

## Application

The specific construction of DATAPUR-C makes this cable type ideal for use in all types of computer systems, office machinery, signal and control units.

DATAPUR-C has uses that go beyond this for example in the field of acoustics, e.g. in telephone systems, intercoms as well as in all areas involving accurate control of weights and measurements. This cable type is noted for its excellent mechanical performance in humid to wet conditions. External high frequency interference is screened out by the tinned copper braiding. These cables are extremely tear and abrasive resistant.

**EMC** = Electromagnetic compatibility

To optimise the EMC features we recommend a large round contact of the copper braiding on both ends.

**CE** = The product is conformed with the EC Low-Voltage Directive 2006/95/EG.

Part no.	No. cores x cross-sec. mm <sup>2</sup>	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.	Part no.	No. cores x cross-sec. mm <sup>2</sup>	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
52490	2 x 0,14	4,0	12,3	21,0	26	52512	2 x 0,34	5,0	17,0	33,0	22
52491	3 x 0,14	4,1	14,0	25,0	26	52513	3 x 0,34	5,2	20,7	42,0	22
52492	4 x 0,14	4,4	15,7	29,0	26	52514	4 x 0,34	5,6	24,7	48,0	22
52493	5 x 0,14	4,8	19,5	35,0	26	52515	5 x 0,34	6,2	30,1	57,0	22
52494	7 x 0,14	5,1	23,4	41,0	26	52516	7 x 0,34	6,7	38,2	77,0	22
52495	10 x 0,14	6,2	28,5	54,0	26	52517	10 x 0,34	8,4	63,1	111,0	22
52496	12 x 0,14	6,5	34,3	64,0	26	52518	12 x 0,34	8,9	74,2	128,0	22
52497	14 x 0,14	6,8	39,9	74,0	26	52519	14 x 0,34	9,3	85,3	144,0	22
52498	18 x 0,14	7,7	51,5	93,0	26	52520	18 x 0,34	10,2	107,4	175,0	22
52499	21 x 0,14	8,0	60,1	108,0	26	52521	21 x 0,34	10,9	124,1	200,0	22
52500	25 x 0,14	8,8	71,9	128,0	26	52522	25 x 0,34	11,9	147,0	233,0	22
52501	2 x 0,25	4,5	14,7	26,0	24	52523	2 x 0,5	5,4	23,2	38,0	20
52502	3 x 0,25	4,7	17,1	33,0	24	52524	3 x 0,5	5,6	30,1	51,0	20
52503	4 x 0,25	5,0	20,6	38,0	24	52525	4 x 0,5	6,2	35,4	58,0	20
52504	5 x 0,25	5,4	24,8	44,0	24	52526	5 x 0,5	6,7	52,6	77,0	20
52505	7 x 0,25	5,8	31,1	53,0	24	52527	7 x 0,5	7,2	65,3	93,0	20
52506	10 x 0,25	7,2	42,0	79,0	24	52528	10 x 0,5	9,3	88,8	134,0	20
52507	12 x 0,25	7,7	51,0	92,0	24	52529	12 x 0,5	9,7	101,9	155,0	20
52508	14 x 0,25	8,1	60,1	105,0	24	52530	14 x 0,5	10,2	115,1	175,0	20
52509	18 x 0,25	9,0	77,9	128,0	24	52531	18 x 0,5	11,4	141,2	214,0	20
52510	21 x 0,25	9,6	91,4	148,0	24	52532	21 x 0,5	11,9	161,1	245,0	20
52511	25 x 0,25	10,7	110,8	175,0	24	52533	25 x 0,5	13,1	187,9	285,0	20

Dimensions and specifications may be changed without prior notice. (RB01)



# DATAFLAMM-C EMC-preferred type, halogen-free, screened, meter marking



## Technical data

- Special data cable
- **Temperature range**  
flexing +5 °C to +70 °C  
fixed installation -40 °C to +70 °C
- **Operating top level voltage**  
(not for purposes of high current and power installation)  
0,14 mm<sup>2</sup> = 350 V  
>0,14 mm<sup>2</sup> = 500 V
- **Test voltage**  
0,14 mm<sup>2</sup> = 800 V  
>0,14 mm<sup>2</sup> = 1200 V
- **Insulation resistance**  
min. 2 GOhm x km
- **Capacitance**  
core/core <70 nF/km
- **Minimum bending radius**  
approx. 7,5x cable ø
- **Coupling resistance**  
max. 250 Ohm/km
- **Radiation resistance**  
up to 100x10<sup>6</sup> cJ/kg (up to 100 Mrad)

## Cable structure

- Bare copper, fine wire conductors to DIN VDE 0812, conductor make-up for 0,34 mm<sup>2</sup> - 7x0,25 mm
- PE-insulation, compound type 2YJ1 to DIN VDE 0207 part 2
- Cores colour coded to DIN 47100
- Cores twisted in layers with optimal lay-length
- Core wrapping with polyester (PETP) foil
- Tinned copper screened braiding, approx. 85% coverage
- Halogen-free outer sheath, to DIN VDE 0207 part 24, compound type HM2
- Sheath colour grey (RAL 7005)
- with meter marking, change-over in 2011

## Properties

- Halogen-free according to VDE 0482 part 267/ DIN EN 50267-2-1/ IEC 60754-1 (equivalent DIN VDE 0472 part 815)
- Corrosiveness of combustion gases according to VDE 0482 part 267/ DIN EN 50267-2-2/ IEC 60754-2 (equivalent DIN VDE 0472 part 813)
- Halogen-free sheath compound, self-extinguishing and flame retardant according to VDE 0482 part 265-2-1/ DIN EN 50265-2-1/ IEC 60332-1 (equivalent DIN VDE 0472 part 804 test method B)
- PE-insulated cores, compared with the conventional PVC-insulated cores, assure a remarkable and more favourable capacitance values
- The halogen-free thermoplastic sheath produce neither corrosive nor toxic gases

## Note

- **unscreened analogue type:**  
**DATAFLAMM** see page B 8

## Application

Are used as connecting cable for signal, measuring, control, call-announcing and two-way intercom speaking systems, clock installations, electronic weighing equipment and electrical apparatus for office requirements. The cables are suitable for installation in dry, damp and wet environments as well as in masonry and concrete. These cables are generally installed in telecommunication apparatus and data transmission systems in public buildings, laboratories, trading centres where the freedom from halogen in case of fire and the flame propagation must be avoided. With screened braiding offers interference-free signal transfer.

CE= The product is conformed with the EC Low-Voltage Directive 2006/95/EG.

Part no.	No. cores x cross-sec. mm <sup>2</sup>	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.	Part no.	No. cores x cross-sec. mm <sup>2</sup>	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
52365	2 x 0,14	3,7	12,4	21,0	26	52398	4 x 0,34	5,5	24,5	47,0	22
52366	3 x 0,14	3,9	14,0	25,0	26	52399	5 x 0,34	6,0	30,0	58,0	22
52367	4 x 0,14	4,1	15,8	26,0	26	52400	7 x 0,34	6,5	38,2	76,0	22
52368	5 x 0,14	4,4	19,5	32,0	26	52401	10 x 0,34	8,4	62,2	110,0	22
52369	7 x 0,14	4,7	23,4	39,0	26	52402	12 x 0,34	8,7	69,4	123,0	22
52370	10 x 0,14	5,9	28,4	54,0	26	52403	14 x 0,34	9,0	82,1	140,0	22
52371	12 x 0,14	6,0	31,4	69,0	26	52404	16 x 0,34	9,7	95,0	157,0	22
52372	14 x 0,14	6,4	37,5	76,0	26	52405	18 x 0,34	10,4	107,3	172,0	22
52373	16 x 0,14	6,7	43,4	82,0	26	52406	21 x 0,34	10,8	122,4	195,0	22
52374	18 x 0,14	7,0	51,4	90,0	26	52407	25 x 0,34	12,4	142,2	226,0	22
52375	21 x 0,14	7,8	61,8	102,0	26	52408	30 x 0,34	12,9	162,6	261,0	22
52376	25 x 0,14	8,4	76,0	121,0	26	52409	34 x 0,34	13,8	178,9	285,0	22
52377	30 x 0,14	8,6	92,7	146,0	26	52410	40 x 0,34	15,1	203,3	330,0	22
52378	34 x 0,14	9,4	121,0	167,0	26	52411	2 x 0,5	5,1	23,0	37,0	20
52379	40 x 0,14	10,2	126,1	170,0	26	52412	3 x 0,5	5,5	30,0	46,0	20
52380	2 x 0,25	4,2	14,6	23,0	24	52413	4 x 0,5	5,9	35,3	57,0	20
52381	3 x 0,25	4,4	17,0	28,0	24	52414	5 x 0,5	6,6	52,5	77,0	20
52382	4 x 0,25	4,7	20,6	34,0	24	52415	7 x 0,5	7,1	65,3	92,0	20
52384	5 x 0,25	5,1	24,7	42,0	24	52416	10 x 0,5	9,3	88,7	135,0	20
52385	7 x 0,25	5,6	31,2	49,0	24	52417	12 x 0,5	9,4	98,7	148,0	20
52386	10 x 0,25	7,1	42,1	81,0	24	52418	18 x 0,5	11,1	141,2	210,0	20
52387	12 x 0,25	7,3	47,5	88,0	24	52419	21 x 0,5	12,3	161,0	242,0	20
52388	14 x 0,25	7,7	52,7	100,0	24	52420	25 x 0,5	13,4	187,2	285,0	20
52389	16 x 0,25	8,1	58,1	113,0	24	52421	30 x 0,5	14,1	223,2	340,0	20
52390	18 x 0,25	8,9	78,0	126,0	24	52422	40 x 0,5	16,4	294,9	445,0	20
52391	21 x 0,25	9,2	94,3	144,0	24	52423	2 x 0,75	5,9	30,6	45,0	18
52392	25 x 0,25	10,3	116,5	164,0	24	52424	3 x 0,75	6,2	38,1	60,0	18
52393	30 x 0,25	10,8	132,2	191,0	24	52425	4 x 0,75	6,9	58,0	80,0	18
52394	34 x 0,25	11,6	144,6	214,0	24	52426	5 x 0,75	7,5	68,4	97,0	18
52395	40 x 0,25	12,5	163,3	245,0	24	52427	7 x 0,75	8,1	88,4	127,0	18
52396	2 x 0,34	4,8	16,9	31,0	22	52428	10 x 0,75	10,6	122,5	175,0	18
52397	3 x 0,34	5,1	20,6	38,0	22	52429	12 x 0,75	10,9	137,2	196,0	18

Dimensions and specifications may be changed without prior notice. (RB01)

# DATAFLAMM-C-PAAR EMC-preferred type, halogen-free, screened, meter marking



## Technical data

- Special data cable
- **Temperature range**  
flexing +5 °C to +70 °C  
fixed installation -40 °C to +70 °C
- **Operating top level voltage**  
(not for purposes of high current and power installation)  
0,14 mm<sup>2</sup> = 350 V  
>0,14 mm<sup>2</sup> = 500 V
- **Test voltage**  
0,14 mm<sup>2</sup> = 800 V  
>0,14 mm<sup>2</sup> = 1200 V
- **Insulation resistance**  
min. 2 GOhm x km
- **Capacitance**  
core/core <70 nF/km
- **Minimum bending radius**  
approx. 7,5x cable ø
- **Coupling resistance**  
max. 250 Ohm/km
- **Radiation resistance**  
up to 100x10<sup>6</sup> cJ/kg (up to 100 Mrad)

## Cable structure

- Bare copper, fine wire conductors to DIN VDE 0812, conductor make-up for 0,34 mm<sup>2</sup> - 7x0,25 mm
- PE-insulation, compound type 2YJ1 to DIN VDE 0207 part 2
- Cores colour coded to DIN 47100
- Cores twisted in layers
- Core wrapping with polyester (PETP) foil
- Tinned copper screened braiding, approx. 85% coverage
- Halogen-free outer sheath, to DIN VDE 0207 part 24, compound type HM2
- Sheath colour grey (RAL 7005)
- with meter marking, change-over in 2011

## Properties

- Halogen-free according to VDE 0482 part 267/ DIN EN 50267-2-1/ IEC 60754-1 (equivalent DIN VDE 0472 part 815)
- Corrosiveness of combustion gases according to VDE 0482 part 267/ DIN EN 50267-2-2/ IEC 60754-2 (equivalent DIN VDE 0472 part 813)
- Halogen-free sheath compound, self-extinguishing and flame retardant according to VDE 0482 part 265-2-1/ DIN EN 50265-2-1/ IEC 60332-1 (equivalent DIN VDE 0472 part 804 test method B)

## Note

- AWG sizes are approximate equivalent values. The actual cross-section is in mm<sup>2</sup>.

## Application

Are used as connecting cable for signal, measuring, control, call-announcing and two-way intercom speaking systems, clock installations, electronic weighing equipment and electrical apparatus for office requirements. The cables are suitable for installation in dry, damp and wet environments as well as in masonry and concrete. PE-insulated cores, compared with the conventional PVC-insulated cores, assure a remarkable and more favourable capacitance values. These cables are generally installed in telecommunication apparatus and data transmission systems in public buildings, laboratories, trading centres where the freedom from halogen in case of fire and the flame propagation must be avoided. With screened braiding offers interference-free signal transfer. The halogen-free thermoplastic sheath produce neither corrosive nor toxic gases.

**EMC** = Electromagnetic compatibility

To optimise the EMC features we recommend a large round contact of the copper braiding on both ends.

CE The product is conformed with the EC Low-Voltage Directive 2006/95/EG.

Part no.	No.pairs x cross-sec. mm <sup>2</sup>	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.	Part no.	No.pairs x cross-sec. mm <sup>2</sup>	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
52435	2 x 2 x 0,14	5,1	22,5	37,0	26	52460	7 x 2 x 0,34	10,4	89,8	154,0	22
52436	3 x 2 x 0,14	6,1	25,6	47,0	26	52461	10 x 2 x 0,34	11,5	119,8	209,0	22
52437	4 x 2 x 0,14	6,3	39,1	66,0	26	52462	12 x 2 x 0,34	12,6	139,4	245,0	22
52438	5 x 2 x 0,14	7,4	45,3	76,0	26	52463	15 x 2 x 0,34	14,3	160,0	279,0	22
52439	6 x 2 x 0,14	8,0	51,4	87,0	26	52464	18 x 2 x 0,34	15,5	207,2	363,0	22
52440	7 x 2 x 0,14	8,2	54,2	94,0	26	52465	2 x 2 x 0,5	7,6	50,2	76,0	20
52441	10 x 2 x 0,14	8,6	68,7	119,0	26	52466	3 x 2 x 0,5	9,1	64,5	107,0	20
52442	12 x 2 x 0,14	9,6	78,3	135,0	26	52467	4 x 2 x 0,5	9,8	77,2	134,0	20
52443	15 x 2 x 0,14	10,0	79,9	157,0	26	52468	5 x 2 x 0,5	11,0	96,2	150,0	20
52444	18 x 2 x 0,14	10,4	99,2	190,0	26	52469	6 x 2 x 0,5	11,5	107,4	176,0	20
52445	2 x 2 x 0,25	5,8	27,1	44,0	24	52470	7 x 2 x 0,5	11,8	117,3	185,0	20
52446	3 x 2 x 0,25	7,0	42,4	66,0	24	52471	10 x 2 x 0,5	13,4	158,2	275,0	20
52447	4 x 2 x 0,25	7,6	54,5	81,0	24	52472	12 x 2 x 0,5	14,8	177,8	330,0	20
52448	5 x 2 x 0,25	8,3	59,8	98,0	24	52473	15 x 2 x 0,5	16,1	236,4	380,0	20
52449	6 x 2 x 0,25	9,2	64,6	116,0	24	52474	18 x 2 x 0,5	17,4	265,4	450,0	20
52450	7 x 2 x 0,25	9,4	71,3	120,0	24	52475	2 x 2 x 0,75	9,0	64,6	105,0	18
52451	10 x 2 x 0,25	10,7	93,3	153,0	24	52476	3 x 2 x 0,75	10,2	81,7	137,0	18
52452	12 x 2 x 0,25	11,2	108,0	175,0	24	52477	4 x 2 x 0,75	11,2	107,6	166,0	18
52453	15 x 2 x 0,25	11,7	123,4	213,0	24	52478	5 x 2 x 0,75	12,2	126,1	200,0	18
52454	18 x 2 x 0,25	12,9	139,7	248,0	24	52479	6 x 2 x 0,75	13,1	138,6	236,0	18
52455	2 x 2 x 0,34	6,8	43,3	68,0	22	52480	7 x 2 x 0,75	13,5	153,7	255,0	18
52456	3 x 2 x 0,34	7,7	55,0	92,0	22	52481	10 x 2 x 0,75	15,0	220,0	363,0	18
52457	4 x 2 x 0,34	8,4	64,0	110,0	22	52482	12 x 2 x 0,75	17,0	265,5	434,0	18
52458	5 x 2 x 0,34	9,4	74,5	128,0	22	52483	15 x 2 x 0,75	18,3	327,6	500,0	18
52459	6 x 2 x 0,34	10,1	85,0	147,0	22	52484	18 x 2 x 0,75	19,6	374,6	580,0	18

Dimensions and specifications may be changed without prior notice. (RB01)





## EDV-PiMF-CY PE-insulated, low capacitance, EMC-preferred type, meter marking



### Technical data

- Special PE data cable for computer application
- **Temperature range**  
flexing -5 °C to +80 °C  
fixed installation -20 °C to +80 °C
- **Operating top level voltage**  
max. 300 V  
(not for purposes of high current and power installation)
- **Test voltage**  
core/core 2000 V  
core/screen 1000 V
- **Insulation resistance**  
approx. 5 GOhm x km
- **Mutual capacitance**  
core/core approx. 75pF/m
- **Inductance** approx. 0,4 mH/km
- **Cross-talk attenuation**  
min. 60 dB at 100 kHz
- **Impedance** (approx. value)  
at 1 kHz approx. 360 Ohm  
at 10 kHz approx. 125 Ohm  
at 100 kHz approx. 87 Ohm  
at 1000 kHz approx. 70 Ohm
- **Line attenuation** (approx. value)  
at 1 kHz approx. 1,1 dB  
at 10 kHz approx. 2,7 dB  
at 100 kHz approx. 6,8 dB  
at 1000 kHz approx. 35 dB
- **Minimum bending radius**  
flexing 10x cable ø  
fixed installation 6x cable ø
- **Radiation resistance**  
up to 80x10<sup>6</sup> cJ/kg (up to 80 Mrad)

### Cable structure

- Bare copper, fine wire conductors, according to DIN VDE 0295 cl. 5, BS 6360 cl. 5 and IEC 60228 cl. 5
- PE core insulation
- Colour code as per DIN 47100
- PiMF: (pair in metal foil) cores twisted in pairs; foil wrapped, plastic coated aluminium foil and copper drain-wire tinned, 100% coverage
- PiMFs are stranded in layer
- Core wrapping with plastic tapes
- Overall copper screened braiding, 85% coverage
- Outer jacket, TM2 in adapted to VDE 0281 part 1
- Colour grey (RAL 7032)
- with meter marking, change-over in 2011

### Properties

- PVC outer sheath self-extinguishing and flame retardant according to VDE 0482-332-1-2, DIN EN 60332-1-2/IEC 60332-1 (equivalent DIN VDE 0472 part 804 test method B)
- The materials used in manufacture are cadmium-free and contain no silicone and free from substances harmful to the wetting properties of lacquers

### Note

- AWG sizes are approximate equivalent values. The actual cross-section is in mm<sup>2</sup>.

### Application

Absolute disturbance-free data transfer both for installed terminals in all areas of medicine and data technology. Also suitable for use in machine tool and steel producing industries, traffic signal systems, assembly lines and food processing.

**EMC** = Electromagnetic compatibility

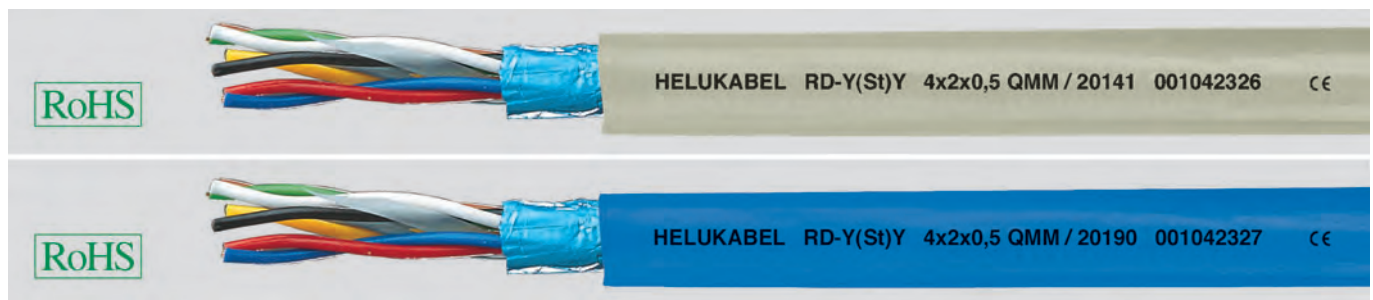
To optimise the EMC features we recommend a large round contact of the copper braiding on both ends.

CE = The product is conformed with the EC Low-Voltage Directive 2006/95/EG.

Part no.	No.pairs x cross-sec. mm <sup>2</sup>	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.	Part no.	No.pairs x cross-sec. mm <sup>2</sup>	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
43553	2 x 2 x 0,5	9,5	50,0	101,0	20	43539	30 x 2 x 0,75	30,9	765,0	1210,0	18
43554	3 x 2 x 0,5	10,0	66,0	120,0	20	43559	2 x 2 x 1	12,0	72,0	130,0	17
43524	4 x 2 x 0,5	11,0	108,0	196,0	20	43560	3 x 2 x 1	12,3	104,0	161,0	17
43555	5 x 2 x 0,5	11,5	120,0	201,0	20	43540	4 x 2 x 1	14,4	186,0	360,0	17
43525	6 x 2 x 0,5	13,2	148,0	260,0	20	43561	5 x 2 x 1	17,4	231,0	412,0	17
43526	8 x 2 x 0,5	13,9	180,0	310,0	20	43541	6 x 2 x 1	17,1	260,0	472,0	17
43527	10 x 2 x 0,5	15,5	236,0	398,0	20	43542	8 x 2 x 1	19,2	322,0	540,0	17
43528	16 x 2 x 0,5	21,2	338,0	515,0	20	43543	10 x 2 x 1	19,8	382,0	670,0	17
43529	20 x 2 x 0,5	22,9	394,0	688,0	20	43544	16 x 2 x 1	23,5	578,0	982,0	17
43530	30 x 2 x 0,5	27,9	577,0	980,0	20	43545	20 x 2 x 1	29,4	710,0	1240,0	17
43531	40 x 2 x 0,5	38,3	684,0	1390,0	20	43546	30 x 2 x 1	35,4	1050,0	1720,0	17
43532	50 x 2 x 0,5	43,2	834,0	1860,0	20	43562	2 x 2 x 1,5	14,0	81,0	164,0	16
43556	2 x 2 x 0,75	10,6	61,0	117,0	18	43563	3 x 2 x 1,5	14,7	141,0	197,0	16
43557	3 x 2 x 0,75	11,7	97,0	142,0	18	43547	4 x 2 x 1,5	16,1	261,0	480,0	16
43533	4 x 2 x 0,75	13,5	141,0	240,0	18	43564	5 x 2 x 1,5	18,4	284,0	516,0	16
43558	5 x 2 x 0,75	13,6	163,0	304,0	18	43548	6 x 2 x 1,5	19,5	355,0	590,0	16
43534	6 x 2 x 0,75	15,5	198,0	352,0	18	43549	8 x 2 x 1,5	20,7	448,0	696,0	16
43535	8 x 2 x 0,75	16,4	246,0	415,0	18	43550	10 x 2 x 1,5	23,9	551,0	874,0	16
43536	10 x 2 x 0,75	19,8	305,0	505,0	18	43551	16 x 2 x 1,5	29,7	838,0	1340,0	16
43537	16 x 2 x 0,75	22,7	446,0	732,0	18	43552	20 x 2 x 1,5	31,7	1030,0	1620,0	16
43538	20 x 2 x 0,75	23,9	530,0	860,0	18						

Dimensions and specifications may be changed without prior notice. (RB01)

## RD-Y(St)Y Instrumentation Cable suitable for Maxi-Term-Point®-connection, meter marking



### Technical data

- Special PVC data transmission cable adapted to DIN VDE 0815
- **Conductor resistance** (loop) max. 73,6 Ohm/km
- **Temperature range** flexing -5 °C to +50 °C fixed installation -40 °C to +70 °C
- **Operating top level voltage** max. 600 V (not for purposes of power installation)
- **Test voltage** core/core 2000 V core/screen 2000 V
- **Insulation resistance** core/core min. 100 MOhm x km core/screen min. 100 MOhm x km
- **Mutual capacitance** at 800 Hz max. 100 nF/km (this value may be exceeded by 20% with a make-up to 4 pairs)
- **Impedance** at 1 kHz approx. 370 Ohm at 10 kHz approx. 130 Ohm
- **Capacity unbalance** at 800 Hz max. 200 pF/100 m (20% of the values, but one value up to 400 pF is allowed)
- **Line attenuation** at 1 kHz approx. 1,2 dB/km at 10 kHz approx. 3,0 dB/km
- **Cross-talk attenuation** at 10 kHz and cable length of 500 m min. 60 dB
- **Minimum bending radius** approx. 7,5x cable ø

### Cable structure

- Bare copper stranded wires 0,5 mm<sup>2</sup> (7x0,3 mm)
  - PVC core insulation
  - Cores colour coded
  - Cores twisted in pairs (approx. 20 pitch/m ±50 mm) 4 pairs stranded to a unit
  - Units stranded in concentric layers
  - Electrostatic screen of plastic coated aluminium foil and drain-wire tinned, 0,5 mm<sup>2</sup> (7x0,3 mm)
  - PVC outer jacket
  - Colour grey (RAL 7032) or blue (RAL 5015)
  - with meter marking, change-over in 2011
- Core colours:  
 pair-no.1, a-core=blue, b-core=red  
 pair-no.2, a-core=grey, b-core=yellow  
 pair-no.3, a-core=green, b-core=brown  
 pair-no.4, a-core=white, b-core=black  
 (4 pairs = 1 unit)

### Properties

- PVC self-extinguishing and flame retardant according to VDE 0482-332-1-2, DIN EN 60332-1-2/ IEC 60332-1 (equivalent DIN VDE 0472 part 804 test method B)
- The pairs are twisted with short pitches and different lay-lengths which lead to good crosstalk attenuation values in a unit
- The static screen protects the transmission circuits against outer electrical interferences
- The materials used in manufacture are cadmium-free and contain no silicone and free from substances harmful to the wetting properties of lacquers

### Note

- AWG sizes are approximate equivalent values. The actual cross-section is in mm<sup>2</sup>.
- Cop.weight including drain-wire.
- Also available halogen-free type RD-H(St)H on request.
- Maxi-Termi-Point® = registered trade mark AMP.

### Application

The data transmission cables RD-Y(St)Y are used in measurement and control technology such as in control rooms of industrial plants and power stations. The cables serves for transmission of analog and digital signals up to frequencies of approx. 10 kHz. These cables offer considerable advantages by using the quick and economical connecting possibilities in Maxi-Term-Point® technique. This solderless connecting technique is defined by a compression termination that employs a spring-clip for the connection of the cable to a square rigid post without pre-stripping. For this technique it is necessary to have an exact 7-core stranded conductor and a Semi-Rigid-PVC. Suitable for fixed installation only inside of buildings. Cable with a blue outer jacket is used for intrinsic safe installation.

CE= The product is conformed with the EC Low-Voltage Directive 2006/95/EG.

Part no.	No.pairs x cross-sec. mm <sup>2</sup>	Jacket colour	Core Ø approx. mm	No. units	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
20140	2 x 2 x 0,5	grey	1,5	-	6,0	25,0	61,0	20
20141	4 x 2 x 0,5	grey	1,5	1	8,0	45,0	96,0	20
20142	8 x 2 x 0,5	grey	1,5	2	11,5	85,0	160,0	20
20143	12 x 2 x 0,5	grey	1,5	3	12,0	125,0	210,0	20
20144	16 x 2 x 0,5	grey	1,5	4	13,7	165,0	282,0	20
20145	24 x 2 x 0,5	grey	1,5	6	16,3	245,0	330,0	20
20146	32 x 2 x 0,5	grey	1,5	8	21,0	325,0	530,0	20
20147	48 x 2 x 0,5	grey	1,5	12	23,0	485,0	730,0	20
20148	96 x 2 x 0,5	grey	1,5	24	30,5	965,0	1400,0	20
20189	2 x 2 x 0,5	blue	1,5	-	6,0	25,0	61,0	20
20190	4 x 2 x 0,5	blue	1,5	1	8,0	45,0	96,0	20
20191	8 x 2 x 0,5	blue	1,5	2	11,5	85,0	160,0	20
20192	12 x 2 x 0,5	blue	1,5	3	12,0	125,0	210,0	20
20193	16 x 2 x 0,5	blue	1,5	4	13,7	165,0	282,0	20
20194	24 x 2 x 0,5	blue	1,5	6	16,3	245,0	330,0	20
20195	32 x 2 x 0,5	blue	1,5	8	21,0	325,0	530,0	20
20196	48 x 2 x 0,5	blue	1,5	12	23,0	485,0	730,0	20
20197	96 x 2 x 0,5	blue	1,5	24	30,5	965,0	1400,0	20

Dimensions and specifications may be changed without prior notice. (RB01)



## RD-Y(St)Yv / RD-Y(St)YY reinforced (double) outer jacket, instrumentation cable, Maxi-Termi-Point®, meter marking



### Technical data

- Special PVC data transmission cable adapted to DIN VDE 0815 and 0816
- **Conductor resistance** (loop) max. 73,6 Ohm/km
- **Temperature range** flexing -5 °C to +50 °C fixed installation -40 °C to +70 °C
- **Operating top level voltage** max. 600 V (not for purposes of high current and power installation)
- **Test voltage** core/core 2000 V core/screen 2000 V
- **Insulation resistance** core/core min. 100 MOhm x km core/screen min. 100 MOhm x km
- **Mutual capacitance** at 800 Hz max. 100 nF/km (this value may be exceeded by 20% with a make-up to 4 pairs)
- **Impedance** at 1 kHz approx. 370 Ohm at 10 kHz approx. 130 Ohm
- **Capacity unbalance** at 800 Hz max. 200 pF/100 m (20% of the values, but one value up to 400 pF is allowed)
- **Line attenuation** at 1 kHz approx. 1,2 dB/km at 10 kHz approx. 3,0 dB/km
- **Cross-talk attenuation** at 10 kHz and cable length of 500 m min. 60 dB
- **Minimum bending radius** approx. 7,5x cable Ø

### Cable structure

- Bare copper stranded wires 0,5 mm<sup>2</sup> (7x0,3 mm)
- PVC core insulation
- Cores colour coded
- Cores twisted in pairs (approx. 20 pitch/m ±50 mm)
- 4 pairs stranded to a unit, units stranded in concentric layers
- Static screen (St) of plastic coated metal foil with stranded tinned drain wire, 0,5 mm<sup>2</sup> (7x0,3 mm)
- PVC outer jacket
- Colour grey (RAL 7032)
- with meter marking, change-over in 2011  
Core colours:  
pair-no.1, a-core=blue, b-core=red  
pair-no.2, a-core=grey, b-core=yellow  
pair-no.3, a-core=green, b-core=brown  
pair-no.4, a-core=white, b-core=black  
(4 pairs = 1 unit)

### Properties

- PVC self-extinguishing and flame retardant according to VDE 0482-332-1-2, DIN EN 60332-1-2/ IEC 60332-1 (equivalent DIN VDE 0472 part 804 test method B)
- The static screen protects the transmission circuits against outer electrical interferences
- The materials used in manufacture are cadmium-free and contain no silicone and free from substances harmful to the wetting properties of lacquers

### Note

- AWG sizes are approximate equivalent values. The actual cross-section is in mm<sup>2</sup>.
- Cop.Weight including drain-wire.
- Maxi-Termi-Point® = registered trade mark AMP.

### Application

The data transmission cables RD-Y(St)Yv are used in measurement and control technology such as in control rooms of industrial plants and power stations. The pairs are twisted with short pitches and different lay-lengths which lead to good crosstalk attenuation values in a unit. The cables serves for transmission of analog and digital signals up to frequencies of approx. 10 kHz. These cables offer considerable advantages by using the quick and economical connecting possibilities in Maxi-Termi-Point® technique. This solderless connecting technique is defined by a compression termination that employs a spring-clip for the connection of the cable to a square rigid post without pre-stripping. For this technique it is necessary to have an exact 7-core stranded conductor and a Semi-Rigid-PVC. Suitable for fixed installation only inside of buildings. With the reinforced PVC(-Yv) outer jacket these cables are suitable for fixed installation in inside buildings and also in open air and in underground.

CE = The product is conformed with the EC Low-Voltage Directive 2006/95/EG.

#### RD-Y(St)Yv

Part no.	No.pairs x cross-sec. mm <sup>2</sup>	Core Ø approx. mm	No. units	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
20160	2 x 2 x 0,5	2	-	7,0	25,0	80,0	20
20161	4 x 2 x 0,5	2	1	9,0	45,0	125,0	20
20162	8 x 2 x 0,5	2	2	12,5	85,0	200,0	20
20163	12 x 2 x 0,5	2	3	13,0	125,0	255,0	20
20164	16 x 2 x 0,5	2	4	14,7	165,0	315,0	20
20165	24 x 2 x 0,5	2	6	16,3	245,0	370,0	20
20166	32 x 2 x 0,5	2	8	21,0	325,0	555,0	20
20167	48 x 2 x 0,5	2	12	23,0	485,0	170,0	20
20168	96 x 2 x 0,5	2	24	35,5	965,0	1300,0	20

#### RD-Y(St)YY

Part no.	No.pairs x cross-sec. mm <sup>2</sup>	Core Ø approx. mm	No. units	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
20180	2 x 2 x 0,5	2	-	7,5	25,0	90,0	20
20181	4 x 2 x 0,5	2	1	9,5	45,0	140,0	20
20182	8 x 2 x 0,5	2	2	13,0	85,0	220,0	20
20183	12 x 2 x 0,5	2	3	14,0	125,0	275,0	20
20184	16 x 2 x 0,5	2	4	15,7	165,0	350,0	20
20185	24 x 2 x 0,5	2	6	17,3	245,0	470,0	20
20186	32 x 2 x 0,5	2	8	28,0	325,0	620,0	20
20187	48 x 2 x 0,5	2	12	24,0	485,0	850,0	20
20188	96 x 2 x 0,5	2	24	36,5	965,0	1450,0	20

Dimensions and specifications may be changed without prior notice. (RB01)



# RE-2Y(St)YV instrumentation cable, reinforced outer jacket, meter marking



## Technical data

- Special core insulation of PE
- **Conductor resistance**  
 0,5 mm<sup>2</sup>: max. 39,2 Ohm/km  
 0,75 mm<sup>2</sup>: max. 24,6 Ohm/km  
 1,3 mm<sup>2</sup>: max. 14,2 Ohm/km
- **Temperature range**  
 flexing -5 °C to +50 °C  
 fixed installation -40 °C to +70 °C
- **Operating top level voltage**  
 max. 300 V (not for purposes of high current and power installation)
- **Test voltage**  
 core/core 2000 V  
 core/screen 1000 V
- **Insulation resistance**  
 min. 5 GOhm x km
- **Mutual capacitance** at 800 Hz  
 core/core 0,5 mm<sup>2</sup>: 60 nF/km  
 for 1 and 2 pairs: 75 nF/km  
 core/core 0,75 mm<sup>2</sup>: 65 nF/km  
 for 1 and 2 pairs: 110 nF/km  
 core/core 1,3 mm<sup>2</sup>: 75 nF/km  
 for 1 and 2 pairs: 100 nF/km
- **Inductance** max. 0,75 mH/km
- **Cross-talk attenuation**  
 min. 0,88 dB/km at 60 kHz
- **Minimum bending radius**  
 approx. 7,5x cable ø

## Cable structure

- Bare copper stranded wires  
 0,5 mm<sup>2</sup> (7x0,3 mm)  
 0,75 mm<sup>2</sup> (7x0,37 mm)  
 1,3 mm<sup>2</sup> (7x0,49 mm)
- Core insulation of PE
- Cores colours with numbering pair: a-core black, b-core white  
 triple: a-core black, b-core white, c-core red with number print 1/1, 2/2, etc.
- Cores twisted to pairs with optimum pitch
- Pairs stranded in layer + 1 communication core 0,5 mm<sup>2</sup>, PE-insulated, orange (communication core for multicore version)
- Core wrapping with foil
- Electrostatic screen (St) of plastics-coated metal foil and tinned drain-wire 0,5 mm<sup>2</sup> (7x0,3 mm)
- PVC outer jacket, reinforced
- Colour black (RAL 9005) or blue (RAL 5015)
- with blue outer jacket for hazardous areas to hazard type -i- for intrinsically safe installation according to DIN EN 60079-14 and IEC 60079-14 section 12.2.2 (VDE 0165 part 1)
- with meter marking, change-over in 2011
- Wall-thickness to DIN VDE 0816 part 1, table 7, col. 1

## Properties

- Self-extinguishing and flame retardant according to VDE 0482-332-1-2, DIN EN 60332-1-2/ IEC 60332-1 (equivalent DIN VDE 0472 part 804 test method B)
- The electrostatic screen protect the screened pairs against outer electrostatic interference fields
- Low level of line attenuations and low mutual capacitances enable long transmission distances and fast pulse acceleration
- The materials used in manufacture are cadmium-free and contain no silicone and free from substances harmful to the wetting properties of lacquers

## Note

- AWG sizes are approximate equivalent values. The actual cross-section is in mm<sup>2</sup>.
- Cop.Weight including communication core and drain-wire.
- Control cable with blue outer jacket, see catalog part A.

## Application

Instrumentation cables are used in data processing and process control.

Instrumentation cables are suitable for fixed installations in damp locations, in open spaces and for underground laying.

CE= The product is conformed with the EC Low-Voltage Directive 2006/95/EG.

Part no.	No.pairs x cross-sec. mm <sup>2</sup>	Jacket colour	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
20099	1 x 2 x 0,5	black	8,2	15,0	74,0	20
20100	2 x 2 x 0,5	black	10,2	30,0	117,0	20
20101	4 x 2 x 0,5	black	11,5	50,0	140,0	20
20233	6 x 2 x 0,5	black	12,6	70,0	190,0	20
20102	8 x 2 x 0,5	black	13,8	90,0	215,0	20
20103	10 x 2 x 0,5	black	14,9	110,0	220,0	20
20104	12 x 2 x 0,5	black	15,7	130,0	280,0	20
20105	16 x 2 x 0,5	black	17,5	170,0	352,0	20
20106	20 x 2 x 0,5	black	18,8	210,0	385,0	20
20107	24 x 2 x 0,5	black	20,2	250,0	468,0	20
20108	36 x 2 x 0,5	black	24,1	370,0	656,0	20
20109	48 x 2 x 0,5	black	27,5	490,0	854,0	20
20149	1 x 2 x 0,75	black	7,9	20,0	74,0	18
20150	2 x 2 x 0,75	black	10,6	35,0	123,0	18
20151	4 x 2 x 0,75	black	11,8	65,0	164,0	18
20152	8 x 2 x 0,75	black	14,6	125,0	258,0	18
20153	10 x 2 x 0,75	black	16,1	154,0	305,0	18
20154	12 x 2 x 0,75	black	17,0	185,0	350,0	18
20155	16 x 2 x 0,75	black	19,0	245,0	445,0	18
20156	20 x 2 x 0,75	black	21,5	298,0	520,0	18
20157	24 x 2 x 0,75	black	23,2	365,0	620,0	18
20158	36 x 2 x 0,75	black	28,2	532,0	940,0	18
20159	48 x 2 x 0,75	black	32,0	708,0	1250,0	18
20125	1 x 2 x 1,3	black	9,4	31,0	102,0	-
20132	1 x 3 x 1,3	black	9,7	44,0	116,0	-
20126	2 x 2 x 1,3	black	11,7	62,0	161,0	-
20127	4 x 2 x 1,3	black	13,5	114,0	230,0	-
20234	6 x 2 x 1,3	black	16,0	168,0	310,0	-
20128	8 x 2 x 1,3	black	17,1	218,0	377,0	-
20129	12 x 2 x 1,3	black	19,3	322,0	515,0	-
20130	16 x 2 x 1,3	black	22,0	426,0	656,0	-
20131	24 x 2 x 1,3	black	26,5	684,0	952,0	-

Part no.	No.pairs x cross-sec. mm <sup>2</sup>	Jacket colour	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
20235	1 x 2 x 0,5	blue	8,2	15,0	74,0	20
20236	2 x 2 x 0,5	blue	10,2	30,0	117,0	20
20237	4 x 2 x 0,5	blue	11,5	50,0	140,0	20
20238	6 x 2 x 0,5	blue	12,6	70,0	190,0	20
20239	8 x 2 x 0,5	blue	13,8	90,0	215,0	20
20240	10 x 2 x 0,5	blue	14,9	110,0	220,0	20
20241	12 x 2 x 0,5	blue	15,7	130,0	280,0	20
20242	16 x 2 x 0,5	blue	17,5	170,0	352,0	20
20243	20 x 2 x 0,5	blue	18,8	210,0	385,0	20
20244	24 x 2 x 0,5	blue	20,2	250,0	468,0	20
20245	36 x 2 x 0,5	blue	24,1	370,0	656,0	20
20246	48 x 2 x 0,5	blue	27,5	490,0	854,0	20
20169	1 x 2 x 0,75	blue	7,9	20,0	74,0	18
20170	2 x 2 x 0,75	blue	10,6	35,0	123,0	18
20171	4 x 2 x 0,75	blue	11,8	65,0	164,0	18
20172	8 x 2 x 0,75	blue	14,6	125,0	258,0	18
20173	10 x 2 x 0,75	blue	16,1	154,0	305,0	18
20174	12 x 2 x 0,75	blue	17,0	185,0	350,0	18
20175	16 x 2 x 0,75	blue	19,0	245,0	445,0	18
20176	20 x 2 x 0,75	blue	21,5	298,0	520,0	18
20177	24 x 2 x 0,75	blue	23,2	365,0	620,0	18
20178	36 x 2 x 0,75	blue	28,2	532,0	940,0	18
20179	48 x 2 x 0,75	blue	32,0	708,0	1250,0	18
20247	1 x 2 x 1,3	blue	9,4	31,0	102,0	-
20255	1 x 3 x 1,3	blue	9,7	44,0	116,0	-
20248	2 x 2 x 1,3	blue	11,7	62,0	161,0	-
20249	4 x 2 x 1,3	blue	13,5	114,0	230,0	-
20250	6 x 2 x 1,3	blue	16,0	168,0	310,0	-
20251	8 x 2 x 1,3	blue	17,1	218,0	377,0	-
20252	12 x 2 x 1,3	blue	19,3	322,0	515,0	-
20253	16 x 2 x 1,3	blue	22,0	426,0	656,0	-
20254	24 x 2 x 1,3	blue	26,5	684,0	952,0	-

Dimensions and specifications may be changed without prior notice. (RB01)





# RE-2Y(St)Yv PiMF Instrumentation cable, pairs screened, reinforced outer jacket, meter marking



## Technical data

- Special core insulation of PE
- **Conductor resistance**  
0,5 mm<sup>2</sup>: max. 39,2 Ohm/km  
1,3 mm<sup>2</sup>: max. 14,2 Ohm/km
- **Temperature range**  
flexing -5 °C to +50 °C  
fixed installation -40 °C to +70 °C
- **Operating top level voltage**  
max. 300 V (not for purposes of high current and power installation)
- **Test voltage**  
core/core 2000 V  
core/screen 1000 V
- **Insulation resistance**  
min. 5 GOhm x km
- **Mutual capacitance**  
(nominal value at 800 Hz)  
core/core 0,5 mm<sup>2</sup>: 75 nF/km  
core/core 1,3 mm<sup>2</sup>: 100 nF/km
- **Inductance** max. 0,75 mH/km
- **Cross-talk attenuation**  
min. 1,02 dB/km at 60 kHz
- **Minimum bending radius**  
approx. 7,5x cable ø

## Cable structure

- Bare copper stranded wires  
0,5 mm<sup>2</sup> (7x0,3 mm)  
1,3 mm<sup>2</sup> (7x0,49 mm)
- Core insulation of PE
- Cores colours with numbering  
a-core black  
b-core white  
with number print 1/1, 2/2, etc.
- Cores twisted in pairs with optimum pitch
- PiMF (pair in metal foil):  
foil taping, drain-wire
- Cu-bare 0,6 mm ø, plastic coated alu-foil and plastic foil
- PiMFe stranded in layer,  
1 communication core 0,5 mm<sup>2</sup>,
- PE-insulated orange (communication core for multicore version)
- Electrostatic screen (St) of plastics-coated metal foil and tinned drain-wire 0,5 mm<sup>2</sup> (7x0,3 mm)
- PVC outer jacket, reinforced, black (RAL 9005) or blue (RAL 5015)
- with meter marking, change-over in 2011
- Wall-thickness to DIN VDE 0816 part 1, table 7, col. 1
- with blue outer jacket for hazardous areas to hazard type -i- for intrinsically safe installation according to DIN EN 60079-14 and IEC 60079-14 section 12.2.2 (VDE 0165 part 1)

## Properties

- self-extinguishing and flame retardant according to VDE 0482-332-1-2, DIN EN 60332-1-2/ IEC 60332-1 (equivalent DIN VDE 0472 part 804 test method B)
- The materials used in manufacture are cadmium-free and contain no silicone and free from substances harmful to the wetting properties of lacquers.

## Note

- AWG sizes are approximate equivalent values. The actual cross-section is in mm<sup>2</sup>.
- Cop. weight including communication core and drain-wire.
- Control cable with blue outer jacket, see catalog part A.

## Application

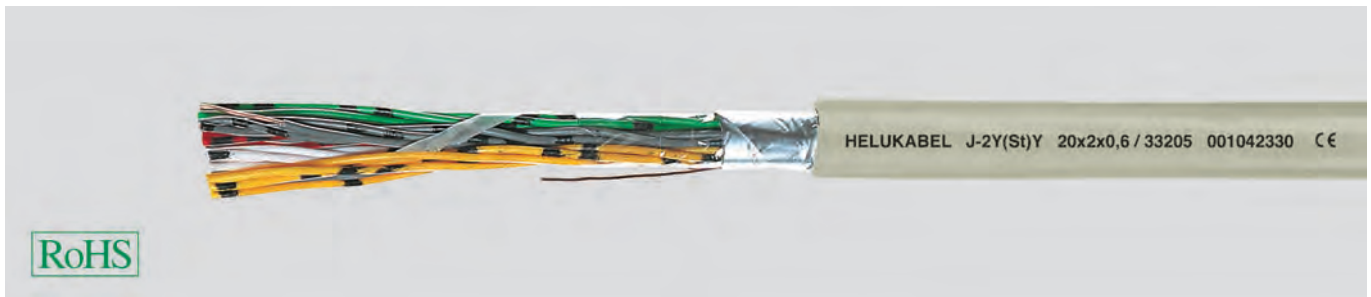
Instrumentation cables are used in data processing and process control. The individual screening of the pairs guarantee high cross-talk attenuation. The electrostatic screen protect the screened pairs against outer electrostatic interference fields. Low level of line attenuations and low mutual capacitances enable long transmission distances and fast pulse acceleration. Instrumentation cables are suitable for fixed installations in damp locations, in open spaces and for underground laying.

CE – The product is conformed with the EC Low-Voltage Directive 2006/95/EG.

Part no.	No.pairs x cross-sec. mm <sup>2</sup>	Jacket colour	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.	Part no.	No.pairs x cross-sec. mm <sup>2</sup>	Jacket colour	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
20115	2 x 2 x 0,5	black	12,0	35,0	128,0	20	21537	2 x 2 x 0,5	blue	12,0	35,0	128,0	20
20116	4 x 2 x 0,5	black	13,2	60,0	170,0	20	21538	4 x 2 x 0,5	blue	13,2	60,0	170,0	20
21535	6 x 2 x 0,5	black	14,0	82,0	215,0	20	21539	6 x 2 x 0,5	blue	14,0	82,0	215,0	20
20117	8 x 2 x 0,5	black	14,9	121,0	246,0	20	21540	8 x 2 x 0,5	blue	14,9	121,0	246,0	20
20118	10 x 2 x 0,5	black	16,7	136,0	261,0	20	21541	10 x 2 x 0,5	blue	16,7	136,0	261,0	20
20119	12 x 2 x 0,5	black	17,6	161,0	351,0	20	21542	12 x 2 x 0,5	blue	17,6	161,0	351,0	20
20120	16 x 2 x 0,5	black	19,8	212,0	430,0	20	21543	16 x 2 x 0,5	blue	19,8	212,0	430,0	20
20121	20 x 2 x 0,5	black	21,5	262,0	496,0	20	21544	20 x 2 x 0,5	blue	21,5	262,0	496,0	20
20122	24 x 2 x 0,5	black	23,6	313,0	604,0	20	21545	24 x 2 x 0,5	blue	23,6	313,0	604,0	20
20123	36 x 2 x 0,5	black	27,0	465,0	850,0	20	21546	36 x 2 x 0,5	blue	27,0	465,0	850,0	20
20124	48 x 2 x 0,5	black	32,3	616,0	1115,0	20	21547	48 x 2 x 0,5	blue	32,3	616,0	1115,0	20
20133	2 x 2 x 1,3	black	12,7	68,0	184,0	-	21548	2 x 2 x 1,3	blue	12,7	68,0	184,0	-
20134	4 x 2 x 1,3	black	15,2	124,0	269,0	-	21549	4 x 2 x 1,3	blue	15,2	124,0	269,0	-
21536	6 x 2 x 1,3	black	16,7	178,0	370,0	-	21550	6 x 2 x 1,3	blue	16,7	178,0	370,0	-
20135	8 x 2 x 1,3	black	19,1	239,0	442,0	-	21551	8 x 2 x 1,3	blue	19,1	239,0	442,0	-
20136	12 x 2 x 1,3	black	21,4	353,0	593,0	-	21552	12 x 2 x 1,3	blue	21,4	353,0	593,0	-
20137	16 x 2 x 1,3	black	24,7	468,0	789,0	-	21553	16 x 2 x 1,3	blue	24,7	468,0	789,0	-
20138	24 x 2 x 1,3	black	29,4	697,0	1104,0	-	21554	24 x 2 x 1,3	blue	29,4	697,0	1104,0	-

Dimensions and specifications may be changed without prior notice. (RB01)

## J-2Y(St)Y St III Bd 16 Mbits/s (Kat. 3) ISDN/EDV (Z = 100 Ohm), meter marking



### Technical data

- Special core insulation of PE Adapted to DIN VDE 0815 and 0816
- **Conductor loop-resistance**  
max. 130 Ohm/km
- **Temperature range**  
flexing -5 °C to +70 °C  
fixed installation -40 °C to +70 °C
- **Operating peak voltage** 300 V  
(not for purposes of high current and power installation)
- **Test voltage** 800 V
- **Insulation resistance**  
min. 5 GOhm x km
- **Mutual capacitance** 48 nF/km
- **Characteristic impedance (Z)**  
at 4-16 MHz: 100 Ohm 15%
- **Capacitance unbalance**  
K<sub>1</sub> max. 400 pF/300 m  
K<sub>9</sub>-K<sub>12</sub> max. 100 pF/300 m
- **Rel. velocity ratio** approx. 0,66
- **Attenuation** at  
1 MHz: 28 dB/km  
4 MHz: 47 dB/km  
5 MHz: 51 dB/km  
10 MHz: 65 dB/km  
15 MHz: 76 dB/km  
16 MHz: 78 dB/km  
20 MHz: 89 dB/km
- **Cross-talk attenuation**  
from 4 MHz up to 16 MHz  
for 2 pairs: min. 40 dB  
4 pairs and above: min. 25 dB
- **Minimum bending radius**  
stationary approx. 10x cable ø

### Cable structure

- Bare, solid copper conductor 0,6 mm ø
- Core insulation of PE Colour coding to DIN VDE 0815
- Conductors twisted to quads
- 5 quads twisted to units
- Static screen of plastics coated alu foil with drain wire 0,6 mm ø
- PVC outer sheath, to DIN VDE 0207 part 5
- Colour grey (RAL 7032)
- with meter marking, change-over in 2011

### Properties

- PVC sheath:  
self-extinguishing and flame retardant according to VDE 0482-332-1-2, DIN EN 60332-1-2/ IEC 60332-1 (equivalent DIN VDE 0472 part 804 test method B)
- The materials used in manufacture are cadmium-free and contain no silicone and free from substances harmful to the wetting properties of lacquers.

### Application

Used as data transmission and connection cable suitable for fixed installation in and under plaster, for data transmission applications, for periphery instrument data processing computers.

Suitable for transmission of analog- and digital signals up to 16 Mbit/s. High cross-talk attenuation values.

Suitable as connecting cable for periphery equipment, data processing systems, monitors, Printers and cash register systems.

The static screen (St) screen assures a disturbance-free data and signal transmission for measuring and control systems.

These cables are not allowed for purposes of high current and power installation.

CE= The product is conformed with the EC Low-Voltage Directive 2006/95/EG.

Part no.	No.pairs x cross-sec. mm	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
33200	2 x 2 x 0,6	6,1	13,0	44,0
33201	4 x 2 x 0,6	7,5	24,0	80,0
33202	6 x 2 x 0,6	7,7	35,0	86,0
33203	8 x 2 x 0,6	8,8	46,0	105,0
33204	10 x 2 x 0,6	8,9	58,0	112,0
33205	20 x 2 x 0,6	12,7	116,0	218,0

Part no.	No.pairs x cross-sec. mm	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
33206	30 x 2 x 0,6	14,0	172,0	302,0
33207	40 x 2 x 0,6	16,8	229,0	376,0
33208	50 x 2 x 0,6	17,5	266,0	480,0
33209	60 x 2 x 0,6	17,9	342,0	560,0
33210	80 x 2 x 0,6	24,4	455,0	748,0
33211	100 x 2 x 0,6	26,0	588,0	940,0

Dimensions and specifications may be changed without prior notice. (RB01)

# JE-Y(St)Y Bd Si Industry-Elektronik Cable according to DIN VDE 0815



## Technical data

- Special core insulation to DIN VDE 0815/DIN 57815
- **Conductor resistance** at 20 °C 36,6 Ohm/km
- **Temperature range** flexing -5 °C to +50 °C fixed installation -30 °C to +70 °C
- **Nominal voltage** 225 V (not for purposes of high current and power installation)
- **Test voltage** core/core 500 V core/screen 2000 V
- **Insulation resistance** min. 100 MOhm x km
- **Mutual capacitance** max. 100 pF/m (the value can exceed of 20% by cables up to 4 pairs)
- **Capacitance unbalance** max. 200 pF/100 m
- **Inductance** approx. 0,70 mH/km
- **Attenuation** at 800 Hz approx. 1,1 dB/km
- **Radiation resistance** up to 80x10<sup>6</sup> cJ/kg (up to 80 Mrad)
- **Minimum bending radius** stationary approx. 6x cable ø
- **Caloric load values** see table Technical Informations

## Cable structure

- Solid plain copper conductor wire 0,8 mm ø
- Special PVC core insulation Y13, to DIN VDE 0207 part 4
- Simatic colour coded to DIN VDE 0815
- Cores stranded in pairs with optimal lay-length
- 4 pairs stranded to a unit
- Units stranded in layer
- Polyester foil wrap
- PVC coated aluminium foil screen
- Copper drain-wire, bare
- Special PVC outer sheath YM1, to DIN VDE 0207 part 5
- Colour grey (RAL 7032) or blue (RAL 5015)
- with blue outer jacket for hazardous areas to hazard type -i- for intrinsically safe installation according to DIN EN 60079-14 and IEC 60079-14 section 12.2.2 (VDE 0165 part 1)

## Properties

- PVC self-extinguishing and flame retardant according to VDE 0482-332-1-2, DIN EN 60332-1-2/ IEC 60332-1 (equivalent DIN VDE 0472 part 804 test method B)
- The materials used in manufacture are cadmium-free and contain no silicone and free from substances harmful to the wetting properties of lacquers

## Note

- Also available in a halogen-free version. (see also content "Halogen-free Security Cables and Wires".)
- Control cable with blue outer jacket, see catalog part A.

## Application

This cable type is especially suited for transmission of signals and measurements in the fields of electronics and for data transmission in computers. Suitable for fixed installation in and under plaster, in dry and moist environments as well as in the open. These cables are not allowed for purposes of high current and power installation.

CE= The product is conformed with the EC Low-Voltage Directive 2006/95/EG.

Part no.	No.pairs x cross-sec. mm	Jacket colour	Outer ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
48500	1 x 2 x 0,8	grey	5,2	20,0	43,0
48501	2 x 2 x 0,8	grey	5,8	25,0	60,0
48502	4 x 2 x 0,8	grey	7,7	45,0	95,0
48503	8 x 2 x 0,8	grey	10,5	85,0	157,0
48504	12 x 2 x 0,8	grey	11,5	126,0	224,0
48505	16 x 2 x 0,8	grey	12,4	166,0	290,0
48506	20 x 2 x 0,8	grey	14,3	206,0	350,0
48507	32 x 2 x 0,8	grey	18,0	327,0	545,0
48508	40 x 2 x 0,8	grey	19,5	407,0	660,0
48509	80 x 2 x 0,8	grey	28,1	809,0	1160,0

Part no.	No.pairs x cross-sec. mm	Jacket colour	Outer ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
48519	1 x 2 x 0,8	blue	5,2	20,0	43,0
48520	2 x 2 x 0,8	blue	5,8	25,0	60,0
48521	4 x 2 x 0,8	blue	7,7	45,0	95,0
48522	8 x 2 x 0,8	blue	10,5	85,0	157,0
48523	12 x 2 x 0,8	blue	11,5	126,0	224,0
48524	16 x 2 x 0,8	blue	12,4	166,0	290,0
48525	20 x 2 x 0,8	blue	14,3	206,0	350,0
48526	32 x 2 x 0,8	blue	18,0	327,0	545,0
48527	40 x 2 x 0,8	blue	20,3	407,0	660,0
48528	80 x 2 x 0,8	blue	28,1	809,0	1160,0

Dimensions and specifications may be changed without prior notice. (RB01)

# JE-LiYCY Bd Si Industry-Elektronik Cable according to DIN VDE 0815



B

## Technical data

- Special PVC core insulation to DIN VDE 0815/DIN 57815
- **Conductor resistance** at 20 °C 39,2 Ohm/km
- **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
- **Insulation resistance** min. 100 MOhm x km
- **Mutual capacitance** max. 100 pF/m (the value can exceed of 20% by cables up to 4 pairs)
- **Capacitance unbalance** max. 200 pF/100 m
- **Inductance** approx. 0,70 mH/km
- **Attenuation** at 800 Hz approx. 1,1 dB/km
- **Radiation resistance** up to 80x10<sup>6</sup> cJ/kg (up to 80 Mrad)
- **Minimum bending radius** stationary approx. 5xcable ø

## Cable structure

- Bare copper strands 7x0,30 mm
- Special PVC core insulation Y13, to DIN VDE 0207 part 4
- Simatic colour coded to DIN VDE 0815
- Cores stranded in pairs with optimal lay-length
- 4 pairs laid up to a unit
- Units stranded in layer
- Polyester foil wrap
- Bare or tinned copper wire braided, 0,2 mm ø screening, approx. 85% coverage
- Special PVC outer sheath YM1, to DIN VDE 0207 part 5
- Colour grey (RAL 7032) or blue (RAL 5015)
- with blue outer jacket for hazardous areas to hazard type -i- for intrinsically safe installation according to DIN EN 60079-14 and IEC 60079-14 section 12.2.2 (VDE 0165 part 1)

## Properties

- PVC self-extinguishing and flame retardant according to VDE 0482-332-1-2, DIN EN 60332-1-2/ IEC 60332-1 (equivalent DIN VDE 0472 part 804 test method B)
- Features Suitable for cut-clamp technics
- The materials used in manufacture are cadmium-free and contain no silicone and free from substances harmful to the wetting properties of lacquers

## Note

- AWG sizes are approximate equivalent values. The actual cross-section is in mm<sup>2</sup>.
- Also available in a halogen-free version. (see also content "Halogen-free Security Cables and Wires")
- Control cable with blue outer jacket, see catalog part A.

## Application

This cable type is especially suited for transmission of signals and measurements in the fields of electronics and for data transmission in computers. Suitable for flexing and fixed installation in dry and moist environments in and under plaster as well as in the open for fixed installation on outer walls of buildings.

These cables are not allowed for purposes of high current and power installation.

CE= The product is conformed with the EC Low-Voltage Directive 2006/95/EG.

Part no.	No. pairs x cross-sec. mm <sup>2</sup>	Jacket colour	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.	Part no.	No. pairs x cross-sec. mm <sup>2</sup>	Jacket colour	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
48510	2 x 2 x 0,5	grey	6,9	51,0	94,0	20	48529	2 x 2 x 0,5	blue	6,9	51,0	94,0	20
48511	4 x 2 x 0,5	grey	9,2	87,0	154,0	20	48530	4 x 2 x 0,5	blue	9,2	87,0	154,0	20
48512	8 x 2 x 0,5	grey	13,8	144,0	259,0	20	48531	8 x 2 x 0,5	blue	13,8	144,0	259,0	20
48513	12 x 2 x 0,5	grey	14,6	196,0	340,0	20	48532	12 x 2 x 0,5	blue	14,6	196,0	340,0	20
48514	16 x 2 x 0,5	grey	15,9	249,0	431,0	20	48533	16 x 2 x 0,5	blue	15,9	249,0	431,0	20
48515	20 x 2 x 0,5	grey	17,4	299,0	494,0	20	48534	20 x 2 x 0,5	blue	17,4	299,0	494,0	20
48516	24 x 2 x 0,5	grey	19,4	348,0	604,0	20	48535	24 x 2 x 0,5	blue	19,4	348,0	604,0	20
48517	32 x 2 x 0,5	grey	24,9	444,0	737,0	20	48536	32 x 2 x 0,5	blue	24,9	444,0	737,0	20
48518	40 x 2 x 0,5	grey	25,2	537,0	844,0	20	48537	40 x 2 x 0,5	blue	25,2	537,0	844,0	20

Dimensions and specifications may be changed without prior notice. (RB01)



# JE-LiHCH Bd industry electronic cable, halogen-free, according to VDE 0815



## Technical data

- Industry-Electronic cable according to DIN VDE 0815
- **Loop resistance** at 20 °C  
39,2 Ohm/km
- **Temperature range**  
flexing -5 °C to +50 °C  
fixed installation -30 °C to +70 °C
- **Operating top level voltage**  
225 V (not for purposes of high current and power installation)
- **Test voltage** U eff.  
core/core 500 V  
core/screen 2000 V
- **Insulation resistance**  
min. 100 MOhm x km
- **Mutual capacitance**  
max. 120 nF/km at 800 Hz (this values may be extended at 20% with a make-up up to 4 pairs)
- **Capacitance unbalance**  
max. 200 pF/100 m (20% of the values, but one value up to 400 pF is allowed)
- **Minimum bending radius**  
approx. 7,5x cabel ø
- **Radiation resistance**  
up to 100x10<sup>6</sup> cJ/kg (up to 100 Mrad)
- **Caloric load values**  
see Technical Informations

## Cable structure

- Bare copper, 7x0,3 mm ±0,5 mm<sup>2</sup>
- Halogen-free core insulation, compound type HI1 or HI2 to DIN VDE 0207 part 23, insulation wall thickness 0,3 mm
- Core identification to DIN VDE 0815 (with ring colours and ring groups)
- 2 cores twisted in pair, 4 pairs to a unit and several units stranded in layers (for 2 pairs cable, 4 cores stranded to a quad)
- Core wrapping with plastic tape
- Copper braided screening, wire 0,2 mm, approx. 85% coverage
- Outer jacket halogen-free, grey RAL 7032, compound type HM1 or HM2 to DIN VDE 0207 part 24
- Jacket wall-thickness to DIN VDE 0815

## Properties

- Not for purposes of high current and power installation as well as underground laying

## Tests

- Flame test to VDE 0482-332-3 ,BS 4066 part 3/ DIN EN 60332-3/ IEC 60332-3 (equivalent DIN VDE 0472 part 804 test method C)
- Corrosiveness of combustion gases according to VDE 0482 part 267/ DIN EN 50267-2-2/ IEC 60754-2 (equivalent DIN VDE 0472 part 813)
- Smoke density according to VDE 0482 part 1034-1+2 / IEC 61034-1+2 / DIN EN 61034-1+2 / BS 7622 part 1+2 (equivalent DIN VDE 0472 part 816)

## Note

- AWG sizes are approximate equivalent values. The actual cross-section is in mm<sup>2</sup>.
- **LSOH** = Low Smoke Zero Halogen-free.

## Application

Halogen-free installation cables with improved characteristics in the case of fire are used for telephone transmission, measuring and signal purposes.

The copper screened design (C) protects the transmission circuits against electrical interferences.

A fire propagation is prevented through high oxygen index of the insulation material and produce no corrosive gases in case of fire. Those are preferably used for telecommunication indoor installations and in special cases the outdoor installation is permitted under protection against sunlight.

These cables are suitable for fixed installation in areas with danger of fire, in dry and damp environments as well as on and under plaster.

☞ The product is conformed with the EC Low-Voltage Directive 2006/95/EG.

Part no.	No.pairs x cross-sec. mm <sup>2</sup>	Core Ø approx. mm	No. units	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
34350	2 x 2 x 0,5	1,6	-	7,6	44,0	102,0	20
34351	4 x 2 x 0,5	1,6	1	10,0	80,0	168,0	20
34352	8 x 2 x 0,5	1,6	2	11,8	152,0	297,0	20
34353	12 x 2 x 0,5	1,6	3	13,5	192,0	357,0	20

Part no.	No.pairs x cross-sec. mm <sup>2</sup>	Core Ø approx. mm	No. units	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
34354	20 x 2 x 0,5	1,6	5	17,0	288,0	555,0	20
34355	32 x 2 x 0,5	1,6	8	18,0	439,0	852,0	20
34356	40 x 2 x 0,5	1,6	10	21,7	531,0	1005,0	20

Dimensions and specifications may be changed without prior notice. (RB01)

## RD-H(ST)H Bd instrumentation cable, halogen-free



### Technical data

- Halogen-free data transmission cable adapted to DIN VDE 0815
- **Conductor resistance**  
max. 73,6 Ohm/km (0,5 mm<sup>2</sup>)  
max. 36,8 Ohm/km (1,0 mm<sup>2</sup>)
- **Temperature range**  
flexing -5 °C to +50 °C  
fixed installation to +70 °C
- **Operating top level voltage**  
(not for purposes of high current and power installation)  
max. 225 V
- **Test voltage**  
core/core 500 V  
core/screen 2000 V
- **Insulation resistance**  
min. 100 MOhm x km
- **Mutual capacitance**  
at 800 Hz max. 100 nF/km  
(this value may be exceeded by 20% with a make-up up to 4 pairs)
- **Impedance** at 1 kHz (nominal values)  
450 Ohm (0,5 mm<sup>2</sup>)  
320 Ohm (1,0 mm<sup>2</sup>)
- **Capacity unbalance**  
at 800 Hz max. 200 pF/100 m  
(20% of the values, but one value up to 200 pF is allowed)
- **Cross-talk attenuation**  
at min. 10 kHz, 60 dB/500 m
- **Line attenuation** at 1 kHz (nominal values)  
1,2 dB/km (0,5 mm<sup>2</sup>)  
0,9 dB/km (1,0 mm<sup>2</sup>)
- **Bending radius**  
approx. 7,5x cable ø

### Cable structure

- Bare copper stranded wires 0,5 mm<sup>2</sup> (7x0,3) or 1,0 mm<sup>2</sup> (7x0,43)
- Core insulation, halogen-free polymer compound
- Cores twisted in pairs, with short lay-length (approx. 20 pitch/m ± 50 mm)
- 4 pairs stranded to a unit
- Holding tape units with number coding
- Units stranded in concentric layers
- Core wrapping
- Electrostatic screen of plastic coated aluminium foil and drain wire tinned, 0,5 mm<sup>2</sup>
- Outer jacket, halogen-free, polymer compound, flame resistant
- Colour grey (RAL 7032)
- Core colours  
pair no./a-core/b-core  
1/blue/red  
2/grey/yellow  
3/green/brown  
4/white/black  
(4 pairs 1 unit)

### Properties

- The static screen protects the transmission circuits against outer electrical interferences
- The halogen-free cables prevent the fire propagation and compared to PVC cables exist only a low smoke density under flame influence
- This results no decomposition products which destroy equipments, machines and buildings by corrosion

### Tests

- Flame test to VDE 0482-332-3, BS 4066 part 3/ DIN EN 60332-3/ IEC 60332-3 (equivalent DIN VDE 0472 part 804 test method C)
- Corrosiveness of combustion gases according to VDE 0482 part 267/ DIN EN 50267-2-2/ IEC 60754-2 (equivalent DIN VDE 0472 part 813)
- Smoke density according to VDE 0482 part 1034-1+2, IEC 61034-1+2/ DIN EN 61034-1+2 BS 7622 part 1+2 (equivalent DIN VDE 0472 part 816)

### Note

- AWG sizes are approximate equivalent values. The actual cross-section is in mm<sup>2</sup>.

### Application

The halogen-free data transmission cable RD-H(ST)H are used for measurement and control technology for transmission of analog and digital signals up to frequencies of approx. 10 kHz. The twisted pairs with short pitches (<50 mm for 0,5 mm<sup>2</sup>) and different lay-lengths which lead good cross-talk attenuation values in a unit.

These cables are used in inside buildings (in special cases in open air, but with sufficient protection against sunlight is necessary).

CE The product is conformed with the EC Low-Voltage Directive 2006/95/EG.

Part no.	No.pairs x cross-sec. mm <sup>2</sup>	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.	Part no.	No.pairs x cross-sec. mm <sup>2</sup>	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
20200	2 x 2 x 0,5	7,0	26,0	70,0	20	20216	2 x 2 x 1	9,0	47,0	110,0	17
20201	4 x 2 x 0,5	9,0	46,0	110,0	20	20217	4 x 2 x 1	12,0	89,0	190,0	17
20202	8 x 2 x 0,5	11,6	86,0	190,0	20	20218	8 x 2 x 1	16,5	172,0	320,0	17
20203	12 x 2 x 0,5	13,5	127,0	240,0	20	20219	12 x 2 x 1	17,5	255,0	435,0	17
20204	16 x 2 x 0,5	14,0	167,0	300,0	20	20220	16 x 2 x 1	19,5	338,0	560,0	17
20205	20 x 2 x 0,5	16,0	209,0	360,0	20	20221	20 x 2 x 1	21,0	423,0	680,0	17
20206	24 x 2 x 0,5	17,5	250,0	420,0	20	20222	24 x 2 x 1	23,0	507,0	800,0	17
20207	28 x 2 x 0,5	19,0	290,0	480,0	20	20223	28 x 2 x 1	27,0	590,0	905,0	17
20208	32 x 2 x 0,5	21,0	331,0	570,0	20	20225	32 x 2 x 1	29,0	674,0	1080,0	17
20209	36 x 2 x 0,5	21,5	372,0	614,0	20	20226	36 x 2 x 1	30,0	757,0	1260,0	17
20210	40 x 2 x 0,5	22,5	412,0	680,0	20	20227	40 x 2 x 1	31,0	841,0	1330,0	17
20211	44 x 2 x 0,5	23,5	453,0	700,0	20	20228	44 x 2 x 1	34,0	924,0	1410,0	17
20212	48 x 2 x 0,5	24,0	494,0	790,0	20	20229	48 x 2 x 1	32,5	1008,0	1550,0	17
20213	64 x 2 x 0,5	30,0	658,0	1040,0	20	20230	64 x 2 x 1	39,0	1342,0	2000,0	17
20214	80 x 2 x 0,5	33,0	821,0	1300,0	20	20231	80 x 2 x 1	43,0	1676,0	2470,0	17
20215	96 x 2 x 0,5	36,0	986,0	1510,0	20	20232	96 x 2 x 1	47,0	2016,0	2970,0	17

Dimensions and specifications may be changed without prior notice. (RB01)