

PAAR-TRONIC-LI-2YCYV

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 mm² max. 186 Ohm/km
0,34 mm² max. 115 Ohm/km
0,5 mm² max. 78,5 Ohm/km
1,0 mm² 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 mm² at 100 kHz 9,0 dB/km
0,34 mm² at 100 kHz 6,6 dB/km
0,50 mm² at 100 kHz 6,0 dB/km
0,22 mm² at 1 MHz 25,0 dB/km
0,34 mm² at 1 MHz 20,0 dB/km
0,50 mm² 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 mm² = 7x0,20 mm
0,34 mm² = 7x0,25 mm
0,5 mm² = 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 mm² is designed for applications with Sub-D connectors.
- AWG sizes are approximate equivalent values. The actual cross-section is in mm².
- Thermi-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. mm²	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
21130	3 x 2 x 0,22	8,3	31,0	79,0	24
21131	4 x 2 x 0,22	8,9	38,0	96,0	24
21132	8 x 2 x 0,22	10,6	62,0	140,0	24
21133	10 x 2 x 0,22	12,1	79,0	184,0	24
21135	2 x 2 x 0,34	9,2	35,0	83,0	22
21136	3 x 2 x 0,34	9,6	44,0	92,0	22
21137	4 x 2 x 0,34	10,2	53,0	112,0	22
21138	8 x 2 x 0,34	12,8	86,0	179,0	22
21139	10 x 2 x 0,34	14,1	104,0	219,0	22

Part no.	No.pairs x cross-sec. mm²	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
21141	2 x 2 x 0,5	10,0	49,0	90,0	20
21142	3 x 2 x 0,5	10,4	60,0	126,0	20
21143	4 x 2 x 0,5	11,2	73,0	146,0	20
21144	8 x 2 x 0,5	13,9	124,0	246,0	20
21145	10 x 2 x 0,5	16,0	155,0	292,0	20
21146	2 x 2 x 1	10,8	81,0	141,0	17
21147	3 x 2 x 1	11,5	102,0	170,0	17
21148	4 x 2 x 1	12,0	130,0	203,0	17
21149	8 x 2 x 1	14,9	240,0	261,0	17
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



HELUKABEL PAAR-TRONIC-LI-2YCY 4x2x0,34 QMM / 21119 001042321 C€



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 mm² max. 186 Ohm/km
0,34 mm² max. 115 Ohm/km
0,5 mm² 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 mm² at 100 kHz 9,0 dB/km
0,34 mm² at 100 kHz 6,6 dB/km
0,50 mm² at 100 kHz 6,0 dB/km
0,22 mm² at 1 MHz 25,0 dB/km
0,34 mm² at 1 MHz 20,0 dB/km
0,50 mm² 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 mm² = 7x0,20 mm
0,34 mm² = 7x0,25 mm
0,5 mm² = 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 mm² is designed for applications
with Sub-D connectors.
- AWG sizes are approximate equivalent
values. The actual cross-section is in mm².
- 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

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

Part no.	No.pairs x cross-sec. mm ²	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)