

# 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 CE



## 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 peak voltage** max. 250 V  
(not for heavy current installation purposes)
- **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%
- **Inductance** approx. 0,66 mH/km
- **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
- **Cross-talk attenuation**  
up to 1 MHz min. 50 dB  
up to 10 MHz min. 40 dB
- **Minimum bending radius**  
flexing 12x cable Ø  
fixed installation 7,5x cable Ø

## Cable structure

- Bare copper-conductor, 7-wires, adapted to DIN VDE 0881, suitable for Termi-Point® and solder-free connection technique
- Conductor construction:  
0,22 mm<sup>2</sup> = 7x0,2 mm  
0,34 mm<sup>2</sup> = 7x0,25 mm  
0,5 mm<sup>2</sup> = 7x0,3 mm
- Core insulation of PE compound type L/MD to DIN VDE 0819-103/DIN EN 50290-2-23
- Core identification (pair) to DIN 47100
- Cores stranded in pairs with optimal lay-length
- Pairs stranded in layers with optimal lay-length
- Foil wrapping
- Tinned copper braided screen, approx. 85% coverage
- Outer sheath of special PVC compound type TM2 to DIN VDE 0207-363-4-1/DIN EN 50363-4-1
- Sheath colour grey
- with meter marking

## Properties

- 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

## Tests

- PVC outer sheath self-extinguishing and flame retardant acc. to DIN VDE 0482-332-1-2, DIN EN 60332-1-2, IEC 60332-1 (equivalent DIN VDE 0472 part 804 test method B)

## Note

- At 0,22 mm<sup>2</sup> is designed for applications with Sub-D connectors.
- Termi-Point® registered trade mark AMP.
- AWG sizes are approximate equivalent values. The actual cross-section is in mm<sup>2</sup>.

## 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

To optimize 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/EC.

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

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