

# Global Business Unit Electronics

## Product Information



### Technical Data Sheet - HARTING RJ Industrial® Trailing Cable

p/n : 09 45 600 0101

#### Design:

##### **Wire:**

Stranded tinned wire 7 X 0.25  
Insulation of Polyethylen (PE)

ø 0.75 mm  
ø 1.5 mm

##### **Core:**

Filler as central element  
1. layer: 4 wires 2Y 0.75/1.5 LI  
Sequence of colors: WH-YE-BU-OG  
Plastic laminate, overlapped  
Inner jacket: Thermoplastic copolymer (FRNC) NF  
Alulamine foil overlapped  
Shield braiding of tinned copper wires 0.13 mm dia  
Coverage about 85%

ø 3.9 mm

ø 4.7 mm

##### **Jacket:**

Polyurethane (PUR) GN  
Wall thickness about 0.9 mm

ø (6.5 ±0.2) mm

##### **Electrical data at 20°C:**

|                                               |                     |
|-----------------------------------------------|---------------------|
| Loop resistance                               | ≤ 120 Ohm/km        |
| Resistance difference                         | 5 %                 |
| Signal run time                               | ≤ 5.3 ns/m          |
| Insulation resistance                         | ≥ 500 MOhm*km       |
| Characteristic impedance 1 – 100 MHz          | (100 ±15) Ohm       |
| Near-end crosstalk attenuation                | s. table            |
| Far-end crosstalk attenuation                 | s. table            |
| Attenuation                                   | s. table            |
| Ground unbalance attenuation at 64 kHz        | ≥ 43 dB             |
| Capacity unbalanced to ground at 1 kHz        | ≤ 3300 pF/km        |
| Return loss (dB)                              | 20 + 5 log (f)      |
| 1 ≤ f ≤ 10 MHz                                | 25                  |
| 10 ≤ f ≤ 20 MHz                               | 25 - 8.6 log (f/20) |
| 20 ≤ f ≤ 100 MHz                              | ≤ 10 mOhm/m         |
| Surface transfer impedance of screen 10 MHz   | = 700 V             |
| Test voltage (wire/wire/screen rms 50Hz 1min) |                     |

##### **Near-end crosstalk attenuation**

| Frequency (MHz)                      | 0.772 | 1    | 4    | 10   | 16   | 20   | 31.25 | 62.5 | 100 |
|--------------------------------------|-------|------|------|------|------|------|-------|------|-----|
| CAT 5E requirements<br>(dB – 100m) ≥ | 67    | 65.3 | 56.3 | 50.3 | 47.3 | 45.8 | 42.9  | 38.4 | 35  |
| typ. Value<br>(dB – 100m)            | ≥ 80  | ≥ 80 | 76   | 70   | 65   | 63   | 60    | 55   | 50  |

**Far-end crosstalk attenuation**

| Frequency (MHz)                      | 0.772 | 1    | 4    | 10   | 16   | 20   | 31.25 | 62.5 | 100  |
|--------------------------------------|-------|------|------|------|------|------|-------|------|------|
| CAT 5E requirements<br>(dB – 100m) ≥ | 66    | 63.8 | 51.7 | 43.8 | 39.7 | 37.7 | 33.9  | 27.8 | 23.8 |
| typ. Value<br>(dB – 100m)            | ≥ 80  | ≥ 80 | 75   | 65   | 59   | 55   | 50    | 47   | 45   |

**Attenuation**

| Frequency (MHz)                      | 0.256 | 0.512 | 0.772 | 1   | 4   | 10  | 16  | 20   | 31.25 | 62.5 | 100  |
|--------------------------------------|-------|-------|-------|-----|-----|-----|-----|------|-------|------|------|
| CAT 5E requirements<br>(dB – 100m) ≥ | 1.3   | 1.8   | 2.2   | 2.4 | 4.9 | 7.8 | 9.8 | 11.1 | 14    | 20.4 | 26.4 |
| typ. Value<br>(dB – 100m)            | 0.9   | 1.1   | 1.4   | 1.8 | 3.6 | 6.0 | 7.6 | 8.7  | 11.2  | 17   | 22   |

**Mechanical and thermal characteristic:**

Conductor material acc. to DIN 40500 part 5, E-Cu58 F21-V2

Screen material acc. to DIN 40500 part 5, E-Cu58 F21-V2

Insulating material acc. to DIN VDE 0819, part 103, table 1-L/MD

Jacket material acc. F45052-F5100 (similar to DIN VDE 0282)

Flame test acc. to IEC 60332-1

Oil resistance VDE 0473 part 811-2-1

UL-File E119100 Vol.1 Sec.13

UL-File E119100 Vol.2 Sec. 5 Verified CAT 5E

Electrical requirements acc. to . prEN 50288 (Juni 1999) Category 6

**Application / Special feature:**

UV-Resistant

Tensile strength

≤ 150N

Trailing cable for following requirements (in work)

- 5 million bending cycles  
- diameter 200 mm

Permissible temperature range:

-40°C up to +70°C

During laying:

-20°C up to +60°C

Transport temperature range:

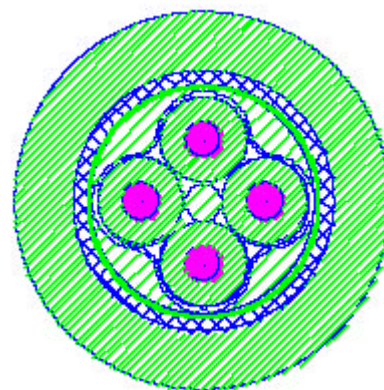
-50°C up to +70°C

min. bending diameter allowed:

multiple 15X ø  
single 10X ø

Weight about:

61 Kg/km (40,9 lb/1000ft)



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Version 1.1 - 28.07.2003

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