

# VS-PPC/PL-IP20-93C-LI/5,0 - Network cable



1416195

<https://www.phoenixcontact.com/us/products/1416195>

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Assembled PROFINET cable, CAT5e, shielded, star quad, AWG 22 flexible cable conduit capable (7-wire), RAL 6018 (yellow-green), RJ45 plug/IP67 push-pull plastic housing on RJ45 plug/IP20, line, length 5 m

## Commercial data

|                                      |                                |
|--------------------------------------|--------------------------------|
| Item number                          | 1416195                        |
| Packing unit                         | 1 pc                           |
| Minimum order quantity               | 1 pc                           |
| Note                                 | Made to order (non-returnable) |
| Product key                          | ABNABA                         |
| Catalog page                         | Page 309 (PC-2011)             |
| GTIN                                 | 4046356474696                  |
| Weight per piece (including packing) | 360.1 g                        |
| Weight per piece (excluding packing) | 360.1 g                        |
| Country of origin                    | PL                             |

## Technical data

### Product properties

|                      |                         |
|----------------------|-------------------------|
| Product type         | Data cable preassembled |
| Sensor type          | PROFINET                |
| Number of positions  | 4                       |
| No. of cable outlets | 1                       |
| Shielded             | yes                     |
| Cable outlet         | straight                |

### Insulation characteristics

|                      |   |
|----------------------|---|
| Overvoltage category | I |
| Degree of pollution  | 2 |

### Electrical properties

|                                         |                       |
|-----------------------------------------|-----------------------|
| Transmission medium                     | Copper                |
| Transmission characteristics (category) | CAT5 (IEC 11801:2002) |
| Transmission speed                      | 100 Mbps              |
| Wave impedance                          | 100 $\Omega$          |

### Mechanical properties

#### Mechanical data

|                             |            |
|-----------------------------|------------|
| Insertion/withdrawal cycles | $\geq 250$ |
| Max. bending cycles         | 3000000    |

### Material specifications

|                                        |                          |
|----------------------------------------|--------------------------|
| Flammability rating according to UL 94 | V0                       |
| Outer sheath, material                 | PUR                      |
| Conductor material                     | Tin-plated Cu litz wires |

### Connector

#### Connection 1

|                      |                    |
|----------------------|--------------------|
| Type                 | Plug straight RJ45 |
| Locking type         | Push Pull          |
| Material             | Plastic            |
| Degree of protection | IP67               |

#### Connection 2

|                      |                    |
|----------------------|--------------------|
| Type                 | Plug straight RJ45 |
| Material             | Plastic            |
| Degree of protection | IP20               |

### Cable/line

|              |        |
|--------------|--------|
| Cable length | 5.00 m |
|--------------|--------|

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## PROFINET drag chain CAT5 [93C]

|                                            |                                                                             |
|--------------------------------------------|-----------------------------------------------------------------------------|
| Dimensional drawing                        |                                                                             |
| Shielded                                   | yes                                                                         |
| Cable weight                               | 61 kg/km                                                                    |
| Cable type                                 | PROFINET drag chain CAT5                                                    |
| Short symbol                               | 2YH(ST)C11Y                                                                 |
| Cable type (abbreviation)                  | 93C                                                                         |
| Signal type/category                       | PROFINET CAT5 (IEC 11801), 100 Mbps<br>EtherCAT® CAT5 (IEC 11801), 100 Mbps |
| Cable structure                            | 1x4xAWG22/7, SF/TQ                                                          |
| External cable diameter                    | 6.50 mm ±0.2 mm                                                             |
| Outer sheath, material                     | PUR                                                                         |
| External sheath, color                     | green RAL 6018                                                              |
| Thickness, outer sheath                    | approx. 0.90 mm                                                             |
| Material, inner sheath                     | FRNC                                                                        |
| Conductor material                         | Tin-plated Cu litz wires                                                    |
| Conductor structure signal line            | 7x 0.25 mm                                                                  |
| AWG signal line                            | 22                                                                          |
| Conductor cross section                    | 4x 0.34 mm²                                                                 |
| Material wire insulation                   | PE                                                                          |
| Wire diameter incl. insulation             | 1.5 mm                                                                      |
| Single wire, color                         | white, yellow, blue, orange                                                 |
| Overall twist                              | Star quad                                                                   |
| Shielding                                  | Aluminum-coated foil, tinned copper braided shield                          |
| Optical shield covering                    | 85 %                                                                        |
| Nominal voltage, cable                     | 600 V (UL rating)                                                           |
| Test voltage Core/Core                     | 2000 V (50 Hz, 1 min.)                                                      |
| Test voltage Core/Shield                   | 2000.00 V (50 Hz, 1 min.)                                                   |
| Cable insulation resistance                | ≥ 500 MΩ*km                                                                 |
| Coupling resistance                        | ≤ 20.00 mΩ/m (at 10 MHz)                                                    |
| Wave impedance                             | 100 Ω ±15 Ω (at 1 ... 100 MHz)                                              |
| Loop resistance                            | ≤ 120.00 Ω/km                                                               |
| Signal runtime                             | 5.3 ns/m                                                                    |
| Signal speed                               | 0.66 c                                                                      |
| Tensile strength                           | ≤ 150 N                                                                     |
| Minimum bending radius, fixed installation | 5 x D                                                                       |

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|                                               |                                                       |
|-----------------------------------------------|-------------------------------------------------------|
| Minimum bending radius, flexible installation | 7.5 x D                                               |
| Number of bending cycles                      | 3000000                                               |
| Bending radius                                | 100 mm                                                |
| Traversing path                               | 10 m                                                  |
| Traversing rate                               | 4 m/s                                                 |
| Acceleration                                  | 4 m/s <sup>2</sup>                                    |
| Torsion force                                 | ± 30 °/m                                              |
| Near end crosstalk attenuation (NEXT)         | 80 dB (with 1 MHz)                                    |
|                                               | 76 dB (at 4 MHz)                                      |
|                                               | 70 dB (at 10 MHz)                                     |
|                                               | 65 dB (at 16 MHz)                                     |
|                                               | 63 dB (at 20 MHz)                                     |
|                                               | 60 dB (at 31.25 MHz)                                  |
|                                               | 55 dB (at 62.5 MHz)                                   |
|                                               | 50 dB (at 100 MHz)                                    |
| Halogen-free                                  | yes                                                   |
| Resistance to oil                             | in accordance with DIN EN 60811-2-1                   |
| Flame resistance                              | according to IEC 60332-1-2                            |
| Other resistance                              | UV resistant                                          |
| Special properties                            | Electrical properties in accordance with EN 50288-2-2 |
| Ambient temperature (operation)               | -40 °C ... 70 °C (Cable, flexible installation)       |
|                                               | -40 °C ... 70 °C (cable, fixed installation)          |

## Environmental and real-life conditions

### Ambient conditions

|                      |           |
|----------------------|-----------|
| Degree of protection | IP20      |
|                      | IP67      |
|                      | IP67/IP20 |

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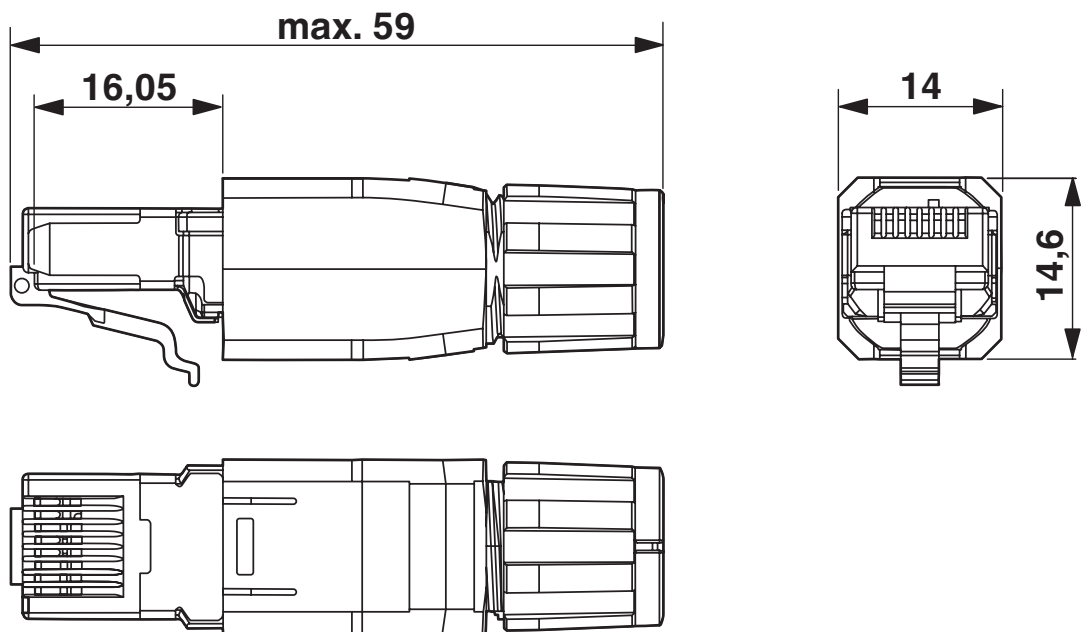


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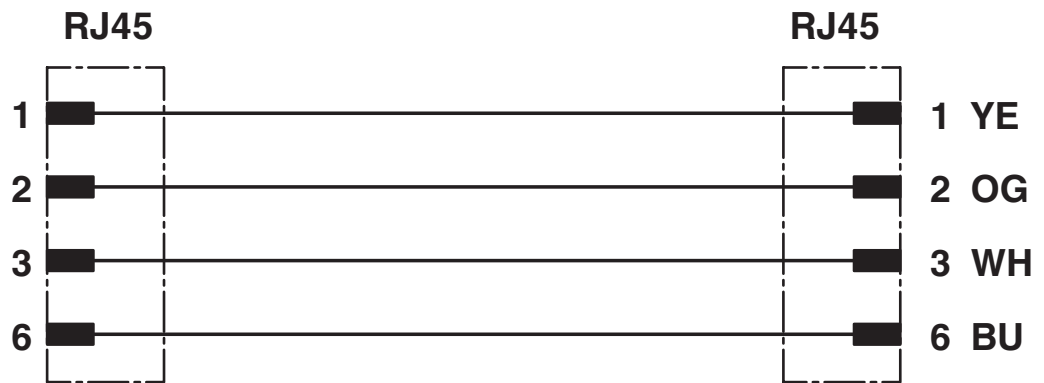
Drawings

Dimensional drawing



RJ45 connector, IP20

Circuit diagram



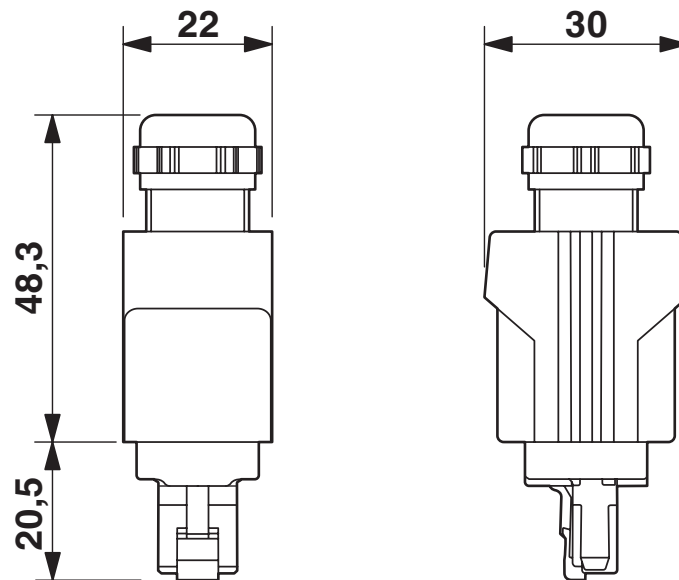
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Dimensional drawing



Push-pull RJ45 connector IP65/67

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## Approvals

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**EAC**

Approval ID: 19060508

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## Classifications

### ECLASS

|             |          |
|-------------|----------|
| ECLASS-11.0 | 27060307 |
| ECLASS-12.0 | 27060307 |
| ECLASS-13.0 | 27060307 |

### ETIM

|          |          |
|----------|----------|
| ETIM 9.0 | EC001855 |
|----------|----------|

### UNSPSC

|             |          |
|-------------|----------|
| UNSPSC 21.0 | 26121600 |
|-------------|----------|

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## Environmental product compliance

|                                         |                                                             |
|-----------------------------------------|-------------------------------------------------------------|
| EU RoHS                                 |                                                             |
| Fulfills EU RoHS substance requirements | Yes, No exemptions                                          |
| China RoHS                              |                                                             |
| Environment friendly use period (EFUP)  | EFUP-E                                                      |
|                                         | No hazardous substances above the limits                    |
| EU REACH SVHC                           |                                                             |
| REACH candidate substance (CAS No.)     | 6,6'-di-tert-butyl-2,2'-methylenedi-p-cresol(CAS: 119-47-1) |
| SCIP                                    | 62b3666e-7db0-46c9-9390-ca3def0e0825                        |

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