

# VS-IP20-OE-93G-LI/2,0 - Bus system cable



1419149

<https://www.phoenixcontact.com/pc/products/1419149>

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Assembled EtherCAT® cable, shielded, star quad, AWG 22 stranded (7-wire), RAL 6018 (yellow-green) RJ45 connector/IP20, 4-pos. on free cable end, line, length: 2 m

## Commercial data

|                                      |                                |
|--------------------------------------|--------------------------------|
| Item number                          | 1419149                        |
| Packing unit                         | 1 pc                           |
| Minimum order quantity               | 1 pc                           |
| Note                                 | Made to order (non-returnable) |
| Product key                          | ABNABA                         |
| Catalog page                         | Page 314 (PC-2011)             |
| GTIN                                 | 4046356540735                  |
| Weight per piece (including packing) | 146.9 g                        |
| Weight per piece (excluding packing) | 131.346 g                      |
| Customs tariff number                | 85444210                       |
| Country of origin                    | PL                             |

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## Technical data

### Product properties

|                      |                         |
|----------------------|-------------------------|
| Product type         | Data cable preassembled |
| Application          | Standard                |
| Sensor type          | EtherCAT®               |
| Number of positions  | 4                       |
| No. of cable outlets | 1                       |
| Shielded             | yes                     |

### Data management status

|                  |    |
|------------------|----|
| Article revision | 04 |
|------------------|----|

### Insulation characteristics

|                      |   |
|----------------------|---|
| Overvoltage category | I |
| Degree of pollution  | 1 |

### Signaling

|                |    |
|----------------|----|
| Status display | no |
|----------------|----|

### Electrical properties

|                                         |          |
|-----------------------------------------|----------|
| Transmission medium                     | Copper   |
| Transmission characteristics (category) | CAT5     |
| Transmission speed                      | 100 Mbps |

### Mechanical properties

#### Mechanical data

|                                     |         |
|-------------------------------------|---------|
| Insertion/withdrawal cycles         | ≥ 1000  |
| Insertion force per signal contact  | 50.00 N |
| Extraction force per signal contact | 30 N    |

### Material specifications

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

### Connector

#### Connection 1

|                             |                    |
|-----------------------------|--------------------|
| Type                        | Plug straight RJ45 |
| Shielded                    | yes                |
| Handle color                | black              |
| Insertion/withdrawal cycles | ≥ 750              |
| Degree of protection        | IP20               |

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## Connection 2

|      |                |
|------|----------------|
| Type | free cable end |
|------|----------------|

## Cable/line

|              |        |
|--------------|--------|
| Cable length | 2.00 m |
|--------------|--------|

## PROFINET PVC stranded CAT5 [93B]

|                                 |                                                                                    |
|---------------------------------|------------------------------------------------------------------------------------|
| Dimensional drawing             |  |
| Shielded                        | yes                                                                                |
| UL AWM Style                    | 21694                                                                              |
| Cable weight                    | 67 kg/km                                                                           |
| Cable type                      | PROFINET PVC stranded CAT5                                                         |
| Short symbol                    | 2YY(ST)CY                                                                          |
| Cable type (abbreviation)       | 93B                                                                                |
| 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          | PVC                                                                                |
| External sheath, color          | green RAL 6018                                                                     |
| Thickness, outer sheath         | approx. 0.90 mm                                                                    |
| Material, inner sheath          | PVC                                                                                |
| 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  | 1.55 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                                                                              |
| 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)                                                           |

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|                                               |                                                   |
|-----------------------------------------------|---------------------------------------------------|
| Wave impedance                                | 100 $\Omega$ $\pm$ 15 $\Omega$ (at 100 MHz)       |
| Loop resistance                               | $\leq$ 120.00 $\Omega$ /km                        |
| Signal runtime                                | 5.3 ns/m                                          |
| Signal speed                                  | 0.66 c                                            |
| Minimum bending radius, fixed installation    | 3 x D                                             |
| Minimum bending radius, flexible installation | 7 x D                                             |
| 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)                                |
| Resistance to oil                             | Resistant to oil to a limited extent              |
| Flame resistance                              | according to UL 1685 (CSA FT 4)                   |
| Other resistance                              | UV resistant (according to UL 1581, Section 1200) |
| 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                                            |
|                                 | IP20                                            |
| Ambient temperature (operation) | -10 °C ... 60 °C (cable, fixed installation)    |
|                                 | -10 °C ... 60 °C (Cable, flexible installation) |

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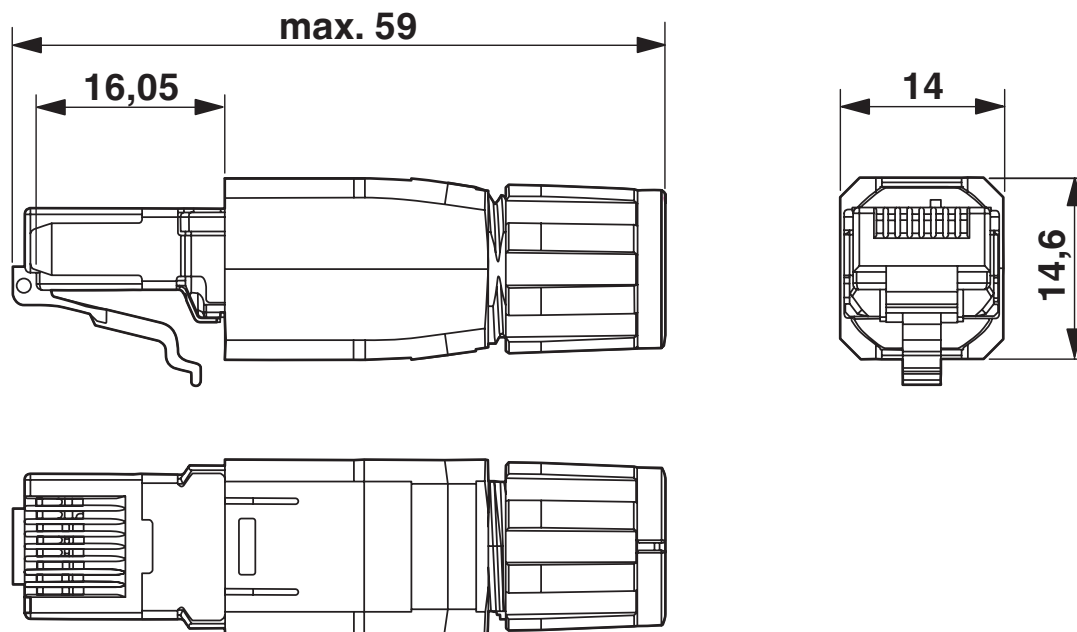
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## Drawings

### Dimensional drawing



RJ45 connector, IP20

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## Approvals

🔗 To download certificates, visit the product detail page: <https://www.phoenixcontact.com/pc/products/1419149>



**EAC**

Approval ID: 19060508

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## Classifications

### ECLASS

|             |          |
|-------------|----------|
| ECLASS-11.0 | 27060308 |
| ECLASS-12.0 | 27060308 |
| 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.)     | 2-(2H-benzotriazol-2-yl)-4-(1,1,3,3-tetramethylbutyl)phenol (UV-329)(CAS: 3147-75-9) |

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