

## Bus system cable - NBC-R4ACR/2,0-93G/R4ACR - 1409007

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EtherCAT® patch cable, shielded, star quad, 22 AWG stranded (7-wire), green, angled RJ45 plug/IP20 to angled RJ45 plug/IP20, length: 2 m

EtherCAT® patch cable



### Key commercial data

|                      |          |
|----------------------|----------|
| Packing unit         | 1 pc     |
| Custom tariff number | 85444210 |
| Country of origin    | Poland   |

### Technical data

#### Dimensions

|                 |     |
|-----------------|-----|
| Length of cable | 2 m |
|-----------------|-----|

#### Ambient conditions

|                      |                       |
|----------------------|-----------------------|
| Degree of protection | IP20 (RJ45 connector) |
|----------------------|-----------------------|

#### General data

|                       |   |
|-----------------------|---|
| Rated current at 40°C | 1 A                                       |
| Rated voltage         | 50 V                                      |
| Number of positions   | 4   |
| Signal type/category  | EtherCAT® CAT5 (IEC 11801:2002), 100 Mbps |
|                       | EtherCAT® CAT5e (TIA 568B:2001), 100 Mbps |

#### Characteristics head 1

|  |                         |
|--|-------------------------|
| Head type                                | Plug angled RJ45 / IP20 |
| No. of positions (pin connector pattern) | 4 (8)                   |
| Color                                    | black                   |
| Material (component)                     | CuSn (Contact)          |

## Bus system cable - NBC-R4ACR/2,0-93G/R4ACR - 1409007

### Technical data

#### Characteristics head 1

|                                 |                         |
|---------------------------------|-------------------------|
|                                 | Ni/Au (Contact surface) |
|                                 | PA (Contact carriers)   |
|                                 | PA (Housing)            |
| Insertion/withdrawal cycles     | ≥ 750                   |
| Ambient temperature (operation) | -25 °C ... 80 °C        |

#### Characteristics head 2

|  |                         |
|--|-------------------------|
| Head type                                | Plug angled RJ45 / IP20 |
| No. of positions (pin connector pattern) | 4 (8)                   |
| Color                                    | black                   |
| Material (component)                     | CuSn (Contact)          |
|  | Ni/Au (Contact surface) |
|  | PA (Contact carriers)   |
|  | PA (Housing)            |
| Insertion/withdrawal cycles              | ≥ 750                   |
| Ambient temperature (operation)          | -25 °C ... 80 °C        |

#### Cable

|   |  |
|---|--|
| Cable type                                    | EtherCAT®  |
| Cable type (abbreviation)                     | 93G  |
| UL AWM style                                  | 21694  |
| Signal type/category                          | EtherCAT® CAT5 (IEC 11801:2002)                    |
|   | EtherCAT® CAT5e (TIA 568B:2001)                    |
| Cable structure                               | 1x4xAWG22/7; SF/TQ                                 |
| Conductor cross section                       | 4x 0.34 mm <sup>2</sup>                            |
| AWG signal line                               | 22   |
| Conductor structure signal line               | 7x 0.25 mm   |
| Core diameter including insulation            | approx. 1.5 mm                                     |
| Wire colors                                   | White, yellow, blue, orange                        |
| Overall twist                                 | Star quad  |
| Shielding                                     | Aluminum-coated foil, tinned copper braided shield |
| Optical shield covering                       | 85 %   |
| External sheath, color                        | Green RAL 6018                                     |
| Outer sheath thickness                        | approx. 0.9 mm                                     |
| External cable diameter D                     | 6.5 mm ±0.2 mm                                     |
| Minimum bending radius, fixed installation    | 3 x D  |
| Minimum bending radius, flexible installation | 7 x D  |
| Cable weight                                  | 67 kg/km   |

## Bus system cable - NBC-R4ACR/2,0-93G/R4ACR - 1409007

### Technical data

#### Cable

|   |   |
|---|---|
| Outer sheath, material                  | PVC   |
| Material, inner sheath                  | PVC   |
| Material conductor insulation           | PE  |
| Conductor material                      | Tin-plated Cu litz wires                        |
| Insulation resistance                   | ≥ 500 MΩ*km                                     |
| Conductor resistance                    | ≤ 120000000 Ω/km                                |
| Working capacitance                     | 52 pF   |
| Wave impedance                          | 100 Ω ±15 Ω (at 100 MHz)                        |
| Signal runtime                          | 5.3 ns/m  |
| Coupling resistance                     | ≤ 20.00 mΩ/m                                    |
| Nominal voltage, cable                  | 600 V   |
| Test voltage Core/Core                  | 2000 V (50 Hz, 1 min.)                          |
| Test voltage Core/Shield                | 2000 V (50 Hz, 1 min.)                          |
| Flame resistance                        | According to UL 1685 (CSA FT 4)                 |
| Ambient temperature (operation)         | -40 °C ... 70 °C (cable, fixed installation)    |
|   | -40 °C ... 70 °C (cable, flexible installation) |
| Ambient temperature (installation)      | -20 °C ... 60 °C                                |
| Ambient temperature (storage/transport) | -50 °C ... 70 °C                                |

### Classifications

#### eCl@ss

|            |          |
|------------|----------|
| eCl@ss 4.0 | 272607xx |
| eCl@ss 4.1 | 27260701 |
| eCl@ss 5.0 | 27260701 |
| eCl@ss 5.1 | 27060307 |
| eCl@ss 6.0 | 27061801 |
| eCl@ss 7.0 | 27061801 |
| eCl@ss 8.0 | 27061801 |

#### ETIM

|          |          |
|----------|----------|
| ETIM 4.0 | EC002599 |
| ETIM 5.0 | EC002599 |

#### UNSPSC

|               |          |
|---------------|----------|
| UNSPSC 6.01   | 26121616 |
| UNSPSC 7.0901 | 26121616 |
| UNSPSC 11     | 26121604 |

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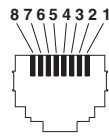
## Classifications

### UNSPSC

|              |          |
|--------------|----------|
| UNSPSC 12.01 | 31261501 |
| UNSPSC 13.2  | 26121616 |

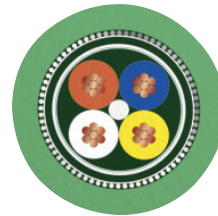
## Drawings

Schematic diagram



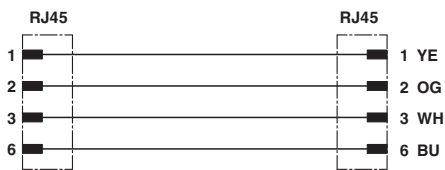
Connector pin assignment plug RJ45

Cable cross section



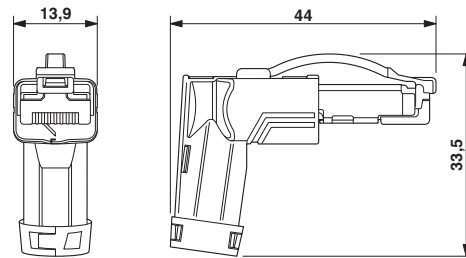
EtherCAT® [93G]

Circuit diagram



Contact assignment of RJ45 plugs

Dimensioned drawing



RJ45 connector, IP20, angled