

# NBC-R4AC/2,0-93F/R4AC - Network cable



1199412

<https://www.phoenixcontact.com/us/products/1199412>

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Network cable, Ethernet CAT5e, 4-position, TPE, Teal, shielded, Plug straight RJ45 / IP20, on Plug straight RJ45 / IP20, cable length: 2 m

## Commercial data

|                                      |               |
|--------------------------------------|---------------|
| Item number                          | 1199412       |
| Packing unit                         | 1 pc          |
| Sales key                            | AB11          |
| Product key                          | ABNABA        |
| GTIN                                 | 4063151262112 |
| Weight per piece (including packing) | 22.22 g       |
| Weight per piece (excluding packing) | 22.22 g       |
| Country of origin                    | US            |

## Technical data

### Product properties

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

### Interfaces

|                      |                |
|----------------------|----------------|
| Signal type/category | Ethernet CAT5e |
|----------------------|----------------|

### Electrical properties

|                       |         |
|-----------------------|---------|
| Nominal voltage $U_N$ | 30 V AC |
|                       | 57 V DC |
| Nominal current $I_N$ | 1.5 A   |

### Mechanical properties

#### Mechanical data

|                             |            |
|-----------------------------|------------|
| Insertion/withdrawal cycles | $\geq 750$ |
|-----------------------------|------------|

### Material specifications

|                                        |     |
|----------------------------------------|-----|
| Flammability rating according to UL 94 | V0  |
| Outer sheath, material                 | TPE |

### Connector

#### Connection 1

|                             |                           |
|-----------------------------|---------------------------|
| Type                        | Plug straight RJ45 / IP20 |
| Number of positions         | 4 (8)                     |
| Handle color                | black                     |
| Material                    | (Contact)                 |
|                             | Gold (Contact surface)    |
|                             | PVC (Housing)             |
| Insertion/withdrawal cycles | $\geq 750$                |
| Degree of protection        | IP20                      |
| Number of positions         | 4                         |
| Insertion/withdrawal cycles | 750                       |

#### Connection 2

|                     |                           |
|---------------------|---------------------------|
| Type                | Plug straight RJ45 / IP20 |
| Number of positions | 4 (8)                     |

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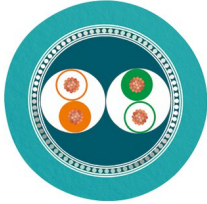
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|                                 |                        |
|---------------------------------|------------------------|
| Handle color                    | black                  |
| Material                        | (Contact)              |
|                                 | Gold (Contact surface) |
|                                 | PVC (Housing)          |
| Insertion/withdrawal cycles     | ≥ 750                  |
| Ambient temperature (operation) | -40 °C ... 85 °C       |
| Number of positions             | 4                      |
| Degree of protection            | IP20                   |

## Cable/line

|              |     |
|--------------|-----|
| Cable length | 2 m |
|--------------|-----|

### Highly flexible Ethernet CAT5e [93F]

|                                 |                                                                                     |
|---------------------------------|-------------------------------------------------------------------------------------|
| Dimensional drawing             |  |
| Shielded                        | yes                                                                                 |
| UL AWM Style                    | 2463 (80 °C / 600 V)                                                                |
| Cable type                      | Highly flexible Ethernet CAT5e                                                      |
| Cable type (abbreviation)       | 93F                                                                                 |
| Signal type/category            | Ethernet CAT5e (TIA 568B)                                                           |
| Cable structure                 | 2x2xAWG24/7, SF/UTP                                                                 |
| External cable diameter         | 6.7 mm ±0.25 mm                                                                     |
| Outer sheath, material          | TPE                                                                                 |
| External sheath, color          | Teal                                                                                |
| Conductor material              | Tin-plated Cu litz wires                                                            |
| Conductor structure signal line | 7x 0.20 mm (7x32)                                                                   |
| AWG signal line                 | 24                                                                                  |
| Conductor cross section         | 2x 2x 0.2 mm²                                                                       |
| Material wire insulation        | PE                                                                                  |
| Wire diameter incl. insulation  | 1.2 mm                                                                              |
| Single wire, color              | white/orange-orange, white/green-green                                              |
| Twisted pairs                   | 2 cores to the pair                                                                 |
| Overall twist                   | 2 pairs to the core                                                                 |
| Shielding                       | Aluminum-lined polyester foil, tinned copper braided shield                         |
| Optical shield covering         | 75 %                                                                                |
| Nominal voltage, cable          | 600 V                                                                               |
| Test voltage, cable             | 2000 V                                                                              |
| Wave impedance                  | 100 Ω ±15 Ω (at 100 MHz)                                                            |

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|                                                 |                                                           |
|-------------------------------------------------|-----------------------------------------------------------|
| Cable impedance                                 | 100 $\Omega$ $\pm$ 15 $\Omega$ (at 1 ... 100 MHz)         |
| Number of bending cycles                        | 1000000                                                   |
| Minimum bending radius, drag chain applications | 10 x D                                                    |
| Traversing path                                 | 0.23 m                                                    |
| Traversing rate                                 | 1.5 m/s                                                   |
| Acceleration                                    | 20.5 m/s <sup>2</sup>                                     |
| Number of bending cycles                        | 20000000                                                  |
| Minimum bending radius, drag chain applications | 20 X D                                                    |
| Torsion force                                   | 360 °/m (1 lb. load)                                      |
| Torsion cycles                                  | 3000000                                                   |
| Torsional frequency                             | 71 (cycles/min)                                           |
| Ambient temperature (operation)                 | 20 °C                                                     |
| Near end crosstalk attenuation (NEXT)           | 50 dB (with 100 MHz (IEC 62153-4-9))                      |
| Return loss (RL)                                | 20 dB (at 10 MHz (+6LOG))                                 |
|                                                 | 26 dB (at 20 MHz)                                         |
|                                                 | 26 dB (at 100 MHz (-5LOG))                                |
| Flame resistance                                | VW-1                                                      |
| Other resistance                                | Resistant to welding splashes Abrasion and oil resistance |
|                                                 | UV resistant CMX outdoor                                  |
| Ambient temperature (operation)                 | -40 °C ... 80 °C (Cable, flexible installation)           |

## Environmental and real-life conditions

### Ambient conditions

|                                 |                                   |
|---------------------------------|-----------------------------------|
| Degree of protection            | IP20 (RJ45 connector)             |
|                                 | IP20                              |
| Ambient temperature (operation) | -40 °C ... 85 °C (RJ45 connector) |

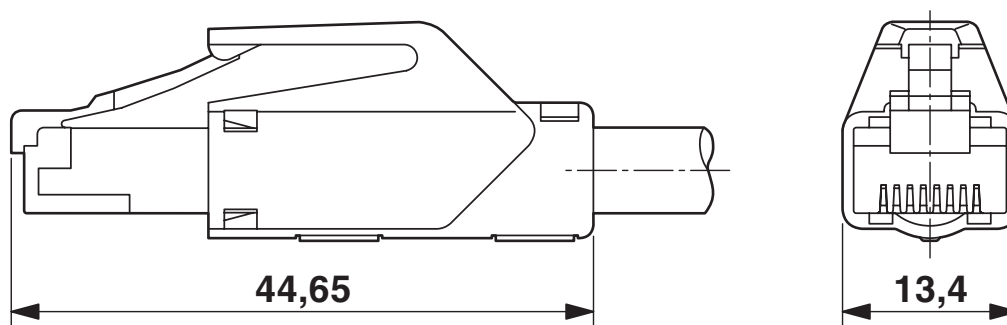
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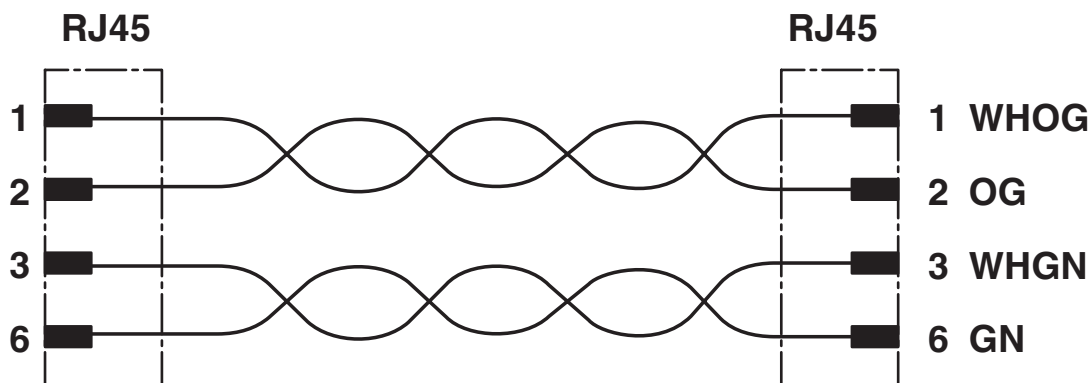
## Drawings

Dimensional drawing

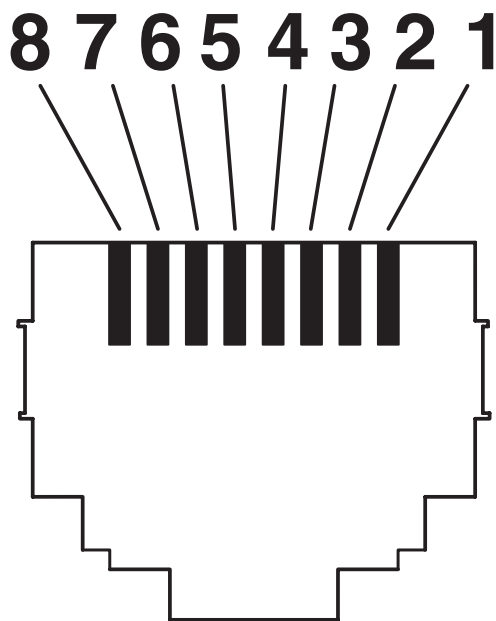


RJ45 connector, IP20

Circuit diagram



## Schematic diagram



Connector pin assignment plug RJ45

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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/1199412>



### UL Listed

Approval ID: File E335024

|  | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $\text{mm}^2$ |
|--|-----------------------|-----------------------|-------------------|-----------------------------|
|  | 60 V                  | 0.5 A                 | -                 | -                           |



### cUL Listed

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|--|-----------------------|-----------------------|-------------------|-----------------------------|
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### cULus Listed

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## Classifications

### ECLASS

|             |          |
|-------------|----------|
| ECLASS-11.0 | 27469090 |
| ECLASS-12.0 | 27469090 |
| ECLASS-13.0 | 27469090 |

### ETIM

|          |          |
|----------|----------|
| ETIM 8.0 | EC002943 |
|----------|----------|

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## Environmental product compliance

|            |                                                         |
|------------|---------------------------------------------------------|
| China RoHS | Environmentally friendly use period: unlimited = EFUP-e |
|            | No hazardous substances above threshold values          |

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