

## Bus system cable - NBC-R4ACR/1,0-93G/R4ACR - 1409006

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EtherCAT<sup>®</sup> patch cable, shielded, star quad, AWG 22 stranded (7-wire), green, RJ45 connector/IP 20, angled, to RJ45 connector/IP20, angled, length: 1.0 m

EtherCAT<sup>®</sup> patch cable



### Key commercial data

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

### Technical data

#### Dimensions

Length of cable	1 m
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#### Ambient conditions

Degree of protection	IP20 (RJ45 connector)
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#### General data

Rated current at 40°C	1 A
Rated voltage	50 V
Number of positions	4
Signal type/category	EtherCAT <sup>®</sup> CAT5 (IEC 11801:2002), 100 Mbps
	EtherCAT <sup>®</sup> 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/1,0-93G/R4ACR - 1409006

### 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

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### Technical data

#### Cable

Outer sheath, material	PVC
Material, inner sheath	PVC
Material conductor insulation	PE
Conductor material	Tin-plated Cu litz wires
Insulation resistance	$\geq 500 \text{ M}\Omega \cdot \text{km}$
Conductor resistance	$\leq 120000000 \text{ }\Omega/\text{km}$
Working capacitance	52 pF
Wave impedance	$100 \text{ }\Omega \pm 15 \text{ }\Omega$ (at 100 MHz)
Signal runtime	5.3 ns/m
Coupling resistance	$\leq 20.00 \text{ m}\Omega/\text{m}$
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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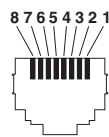
## Classifications

### UNSPSC

UNSPSC 12.01	31261501
UNSPSC 13.2	26121616

## Drawings

Schematic diagram



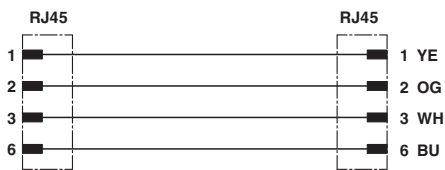
Connector pin assignment plug RJ45

Cable cross section



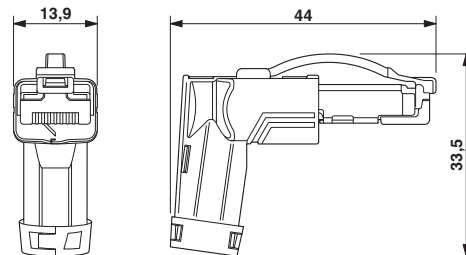
EtherCAT® [93G]

Circuit diagram



Contact assignment of RJ45 plugs

Dimensioned drawing



RJ45 connector, IP20, angled