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Network cable, Ethernet CAT5 (100 Mbps), Ethernet CAT5e (100 Mbps), 4-position, PUR, water blue RAL 5021, shielded, Plug Straight M12 SPEEDCON / IP67, Coding: D, on Plug Straight RJ45 Clip locking / IP67, Cable length: 2 m



Key commercial data

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

Technical data

Dimensions

Length of cable	2 m
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Ambient conditions

Degree of protection	IP65 (M12 connector)
	IP67 (M12 connector)
	IP67 (RJ45 connector)

General data

Rated current at 40°C	1 A
Rated voltage	50 V
Number of positions	4
Signal type/category	Ethernet CAT5 (IEC 11801:2002), 100 Mbps
	Ethernet CAT5e (TIA 568B:2001), 100 Mbps
Standards/regulations	M12 connector IEC 61076-2-101

Characteristics head 1

Head type	Plug Straight M12 SPEEDCON / IP67
No. of positions (pin connector pattern)	4



Technical data

Characteristics head 1

Coding	D (Data)
Color	black
Material (component)	CuZn (Contact)
	Ni/Au (Contact surface)
	PA (Contact carriers)
	TPU, hardly inflammable, self-extinguishing (Grip)
	Zinc die-cast, nickel-plated (Screw connection)
Contact resistance	$\leq 5 \text{ m}\Omega$
Insulation resistance	≥ 100 MΩ
Insertion/withdrawal cycles	≥ 100
Torque	0.4 Nm
Ambient temperature (operation)	-25 °C 90 °C

Characteristics head 2

Head type	Plug Straight RJ45 Clip locking / IP67
No. of positions (pin connector pattern)	4 (8)
Color	Gray
Material (component)	CuSn (Contact)
	Ni/Au (Contact surface)
	PC (Contact carriers)
	PA (Housing)
Insertion/withdrawal cycles	≥ 750
Ambient temperature (operation)	-20 °C 70 °C

Cable

Cable type	PUR ETHERNET 2x2 FLEX
Cable type (abbreviation)	93E
UL AWM style	20963 (80°C/30 V)
Signal type/category	Ethernet CAT5 (IEC 11801:2002), 100 Mbps
	Ethernet CAT5e (TIA 568B:2001), 100 Mbps
Cable structure	2x2xAWG26/7; SF/UTP
Conductor cross section	2x 2x 0.14 mm²
AWG signal line	26
Conductor structure signal line	7x 0.16 mm
Core diameter including insulation	0.98 mm
Wire colors	white/orange-orange, white/green-green
Twisted pairs	2 cores to the pair
Overall twist	Two pairs with two fillers to the core



Technical data

Cable

Optical shield covering 70 % External sheath, color water blue RAL 5021 External cable diameter D 6.4 mm ±0.2 mm Minimum bending radius, fixed installation 4 x D Minimum bending radius, fixed installation 8 x D Tensile strength short-term/long-term ≤ 80N Cable weight 42 kg/km Outer sheath, material PUR Material conductor insulation Foamed PE Conductor material Bare Cu litz wires Insulation resistance ≥ 500 MΩ*km (at 20 °C) Conductor esistance ≤ 290000000 Ω/km (at 20 °C) Working capacitance 45 nF (At 1 kHz) Wave impedance 100 Ω ±5 Ω (at 100 MHz) Signal runtime 5.3 ns/m Nominal voltage, cable ≤ 100 V 300 V (Outer cable sheath) Test voltage Core/Core 700 V (50 Hz, 1 min.) Test voltage Core/Shield 700 V (50 Hz, 1 min.) Flame resistance Halogen-free According to IEC 60754-1 Resistance to oil in accordance with DIN EN 60811-2-1 Ambient temperature (operation) -40 °C 80 °C (cable,	Aluminum-coated foil, tinned copper braided shield
External cable diameter D 6.4 mm ±0.2 mm Minimum bending radius, fixed installation 4 x D Minimum bending radius, flexible installation 8 x D Tensile strength short-term/long-term ≤ 80N Cable weight 42 kg/km Outer sheath, material PUR Material conductor insulation Foamed PE Conductor material Bare Cu litz wires Insulation resistance ≥ 500 MΩ*km (at 20 °C) Conductor resistance ≤ 290000000 Ω/km (at 20 °C) Working capacitance 45 nF (At 1 kHz) Wave impedance 100 Ω ±5 Ω (at 100 MHz) Signal runtime 5.3 ns/m Nominal voltage, cable ≤ 100 V 300 V (Outer cable sheath) 700 V (50 Hz, 1 min.) Test voltage Core/Core 700 V (50 Hz, 1 min.) Test voltage Core/Shield 700 V (50 Hz, 1 min.) Flame resistance IEC 60332-1-2 Halogen-free According to IEC 60754-1 Resistance to oil in accordance with DIN EN 60811-2-1 Ambient temperature (operation) -40 °C 80 °C (cable, fiexible installation) -20 °C 80 °C (cable, f	70 %
Minimum bending radius, fixed installation 4 x D Minimum bending radius, flexible installation 8 x D Tensile strength short-term/long-term ≤ 80N Cable weight 42 kg/km Outer sheath, material PUR Material conductor insulation Foamed PE Conductor material Bare Cu litz wires Insulation resistance ≥ 500 MΩ*km (at 20 °C) Conductor resistance ≤ 290000000 Ω/km (at 20 °C) Working capacitance 45 nF (At 1 kHz) Wave impedance 100 Ω ±5 Ω (at 100 MHz) Signal runtime 5.3 ns/m Nominal voltage, cable ≤ 100 V 300 V (Outer cable sheath) Test voltage Core/Core 700 V (50 Hz, 1 min.) Test voltage Core/Shield 700 V (50 Hz, 1 min.) Flame resistance Halogen-free According to IEC 60754-1 Resistance to oil in accordance with DIN EN 60811-2-1 Ambient temperature (operation) -40 °C 80 °C (cable, fixed installation) -20 °C 80 °C (cable, flexible installation)	water blue RAL 5021
Minimum bending radius, flexible installation 8 x D Tensile strength short-term/long-term ≤ 80N Cable weight 42 kg/km Outer sheath, material PUR Material conductor insulation Foamed PE Conductor material Bare Cu litz wires Insulation resistance ≥ 500 MΩ*km (at 20 °C) Conductor resistance ≤ 290000000 Ω/km (at 20 °C) Working capacitance 45 nF (At 1 kHz) Wave impedance 100 Ω ±5 Ω (at 100 MHz) Signal runtime 5.3 ns/m Nominal voltage, cable ≤ 100 V Test voltage Core/Core 700 V (50 Hz, 1 min.) Test voltage Core/Shield 700 V (50 Hz, 1 min.) Flame resistance IEC 60332-1-2 Halogen-free According to IEC 60754-1 Resistance to oil in accordance with DIN EN 60811-2-1 Ambient temperature (operation) -40 °C 80 °C (cable, fixed installation) -20 °C 80 °C (cable, flexible installation)	6.4 mm ±0.2 mm
Tensile strength short-term/long-term ≤ 80N Cable weight 42 kg/km Outer sheath, material PUR Material conductor insulation Foamed PE Conductor material Bare Cu litz wires Insulation resistance ≥ 500 MΩ*km (at 20 °C) Conductor resistance ≤ 290000000 Ω/km (at 20 °C) Working capacitance 45 nF (At 1 kHz) Wave impedance 100 Ω ±5 Ω (at 100 MHz) Signal runtime 5.3 ns/m Nominal voltage, cable ≤ 100 V Test voltage Core/Core 700 V (50 Hz, 1 min.) Test voltage Core/Shield 700 V (50 Hz, 1 min.) Flame resistance IEC 60332-1-2 Halogen-free According to IEC 60754-1 Resistance to oil in accordance with DIN EN 60811-2-1 Ambient temperature (operation) -40 °C 80 °C (cable, fixed installation) -20 °C 80 °C (cable, flexible installation)	4 x D
Cable weight 42 kg/km Outer sheath, material PUR Material conductor insulation Foamed PE Conductor material Bare Cu litz wires Insulation resistance ≥ 500 MΩ*km (at 20 °C) Conductor resistance ≤ 290000000 Ω/km (at 20 °C) Working capacitance 45 nF (At 1 kHz) Wave impedance 100 Ω ±5 Ω (at 100 MHz) Signal runtime 5.3 ns/m Nominal voltage, cable ≤ 100 V Test voltage Core/Core 700 V (50 Hz, 1 min.) Test voltage Core/Shield 700 V (50 Hz, 1 min.) Flame resistance IEC 60332-1-2 Halogen-free According to IEC 60754-1 Resistance to oil in accordance with DIN EN 60811-2-1 Ambient temperature (operation) -40 °C 80 °C (cable, fixed installation) -20 °C 80 °C (cable, flexible installation) -20 °C 80 °C	on 8 x D
Outer sheath, material PUR Material conductor insulation Foamed PE Conductor material Bare Cu litz wires Insulation resistance ≥ 500 MΩ*km (at 20 °C) Conductor resistance ≤ 290000000 Ω/km (at 20 °C) Working capacitance 45 nF (At 1 kHz) Wave impedance 100 Ω ±5 Ω (at 100 MHz) Signal runtime 5.3 ns/m Nominal voltage, cable ≤ 100 V Test voltage Core/Core 700 V (50 Hz, 1 min.) Test voltage Core/Shield 700 V (50 Hz, 1 min.) Flame resistance IEC 60332-1-2 Halogen-free According to IEC 60754-1 Resistance to oil in accordance with DIN EN 60811-2-1 Ambient temperature (operation) -40 °C 80 °C (cable, fixed installation) -20 °C 80 °C (cable, flexible installation) -20 °C 80 °C	≤ 80N
Material conductor insulation Foamed PE Conductor material Bare Cu litz wires Insulation resistance ≥ 500 MΩ*km (at 20 °C) Conductor resistance ≤ 290000000 Ω/km (at 20 °C) Working capacitance 45 nF (At 1 kHz) Wave impedance 100 Ω ±5 Ω (at 100 MHz) Signal runtime 5.3 ns/m Nominal voltage, cable ≤ 100 V 300 V (Outer cable sheath) 700 V (50 Hz, 1 min.) Test voltage Core/Core 700 V (50 Hz, 1 min.) Flame resistance IEC 60332-1-2 Halogen-free According to IEC 60754-1 Resistance to oil in accordance with DIN EN 60811-2-1 Ambient temperature (operation) -40 °C 80 °C (cable, fixed installation) -20 °C 80 °C (cable, flexible installation)	42 kg/km
Conductor material Bare Cu litz wires Insulation resistance ≥ 500 MΩ*km (at 20 °C) Conductor resistance ≤ 290000000 Ω/km (at 20 °C) Working capacitance 45 nF (At 1 kHz) Wave impedance 100 Ω ±5 Ω (at 100 MHz) Signal runtime 5.3 ns/m Nominal voltage, cable ≤ 100 V Test voltage Core/Core 700 V (50 Hz, 1 min.) Test voltage Core/Shield 700 V (50 Hz, 1 min.) Flame resistance IEC 60332-1-2 Halogen-free According to IEC 60754-1 Resistance to oil in accordance with DIN EN 60811-2-1 Ambient temperature (operation) -40 °C 80 °C (cable, fixed installation) Ambient temperature (installation) -20 °C 80 °C	PUR
Insulation resistance $≥ 500 \text{ M}\Omega^*\text{km}$ (at 20 °C) Conductor resistance $≤ 290000000 \Omega/\text{km}$ (at 20 °C) Working capacitance 45 nF (At 1 kHz) Wave impedance $100 \Omega \pm 5 \Omega$ (at 100 MHz) Signal runtime 5.3 ns/m Nominal voltage, cable $≤ 100 \text{ V}$ 300 V (Outer cable sheath) Test voltage Core/Core 700 V (50 Hz, 1 min.) Test voltage Core/Shield 700 V (50 Hz, 1 min.) Flame resistance 100 EC (60332-1-2 Halogen-free According to IEC 60754-1 Resistance to oil in accordance with DIN EN 60811-2-1 Ambient temperature (operation) $-40 \text{ °C} \dots 80 \text{ °C}$ (cable, fixed installation) Ambient temperature (installation) $-20 \text{ °C} \dots 80 \text{ °C}$	Foamed PE
Conductor resistance $\leq 290000000 \Omega/km$ (at 20 °C) Working capacitance 45nF (At 1 kHz) Wave impedance $100 \Omega \pm 5 \Omega$ (at 100 MHz) Signal runtime 5.3ns/m Nominal voltage, cable $\leq 100 \text{V}$ 300V (Outer cable sheath) Test voltage Core/Core 700V (50 Hz, 1 min.) Test voltage Core/Shield 700V (50 Hz, 1 min.) Flame resistance 100EC (60332-1-2 Halogen-free According to IEC 60754-1 Resistance to oil in accordance with DIN EN 60811-2-1 Ambient temperature (operation) $-40 ^{\circ}\text{C} \dots 80 ^{\circ}\text{C}$ (cable, fixed installation) Ambient temperature (installation) $-20 ^{\circ}\text{C} \dots 80 ^{\circ}\text{C}$	Bare Cu litz wires
Working capacitance 45 nF (At 1 kHz) Wave impedance $100 \Omega \pm 5 \Omega$ (at 100 MHz)Signal runtime 5.3 ns/m Nominal voltage, cable≤ 100 V300 V (Outer cable sheath)Test voltage Core/Core $700 \text{ V (50 Hz, 1 min.)}$ Test voltage Core/Shield $700 \text{ V (50 Hz, 1 min.)}$ Flame resistanceIEC 60332-1-2Halogen-freeAccording to IEC 60754-1Resistance to oilin accordance with DIN EN 60811-2-1Ambient temperature (operation) $-40 ^{\circ}\text{C} \dots 80 ^{\circ}\text{C}$ (cable, fixed installation)Ambient temperature (installation) $-20 ^{\circ}\text{C} \dots 80 ^{\circ}\text{C}$	\geq 500 M Ω *km (at 20 °C)
Wave impedance $100 Ω ±5 Ω (at 100 MHz)$ Signal runtime 5.3 ns/m Nominal voltage, cable $≤ 100 V$ 300 V (Outer cable sheath)Test voltage Core/Core $700 V (50 \text{ Hz}, 1 \text{ min.})$ Test voltage Core/Shield $700 V (50 \text{ Hz}, 1 \text{ min.})$ Flame resistanceIEC $60332-1-2$ Halogen-freeAccording to IEC $60754-1$ Resistance to oilin accordance with DIN EN $60811-2-1$ Ambient temperature (operation) $-40 °C 80 °C (cable, fixed installation)$ Ambient temperature (installation) $-20 °C 80 °C$	≤ 290000000 Ω/km (at 20 °C)
Signal runtime 5.3 ns/m Nominal voltage, cable ≤ 100 V 300 V (Outer cable sheath) 300 V (50 Hz, 1 min.) Test voltage Core/Core 700 V (50 Hz, 1 min.) Test voltage Core/Shield 700 V (50 Hz, 1 min.) Flame resistance IEC 60332-1-2 Halogen-free According to IEC 60754-1 Resistance to oil in accordance with DIN EN 60811-2-1 Ambient temperature (operation) -40 °C 80 °C (cable, fixed installation) -20 °C 80 °C (cable, flexible installation) -20 °C 80 °C	45 nF (At 1 kHz)
Nominal voltage, cable ≤ 100 V 300 V (Outer cable sheath) Test voltage Core/Core 700 V (50 Hz, 1 min.) Test voltage Core/Shield 700 V (50 Hz, 1 min.) Flame resistance IEC 60332-1-2 Halogen-free According to IEC 60754-1 Resistance to oil in accordance with DIN EN 60811-2-1 Ambient temperature (operation) -40 °C 80 °C (cable, fixed installation) -20 °C 80 °C (cable, flexible installation) -20 °C 80 °C	100 Ω ±5 Ω (at 100 MHz)
300 V (Outer cable sheath) Test voltage Core/Core 700 V (50 Hz, 1 min.) Test voltage Core/Shield 700 V (50 Hz, 1 min.) Flame resistance IEC 60332-1-2 Halogen-free According to IEC 60754-1 Resistance to oil in accordance with DIN EN 60811-2-1 Ambient temperature (operation) -40 °C 80 °C (cable, fixed installation) -20 °C 80 °C (cable, flexible installation) Ambient temperature (installation) -20 °C 80 °C	5.3 ns/m
Test voltage Core/Core 700 V (50 Hz, 1 min.) Test voltage Core/Shield 700 V (50 Hz, 1 min.) Flame resistance IEC 60332-1-2 Halogen-free According to IEC 60754-1 Resistance to oil in accordance with DIN EN 60811-2-1 Ambient temperature (operation) -40 °C 80 °C (cable, fixed installation) -20 °C 80 °C (cable, flexible installation) Ambient temperature (installation) -20 °C 80 °C	≤ 100 V
Test voltage Core/Shield 700 V (50 Hz, 1 min.) Flame resistance IEC 60332-1-2 Halogen-free According to IEC 60754-1 Resistance to oil in accordance with DIN EN 60811-2-1 Ambient temperature (operation) -40 °C 80 °C (cable, fixed installation) -20 °C 80 °C (cable, flexible installation) Ambient temperature (installation) -20 °C 80 °C	300 V (Outer cable sheath)
Flame resistance IEC 60332-1-2 Halogen-free According to IEC 60754-1 Resistance to oil in accordance with DIN EN 60811-2-1 Ambient temperature (operation) -40 °C 80 °C (cable, fixed installation) -20 °C 80 °C Ambient temperature (installation) -20 °C 80 °C	700 V (50 Hz, 1 min.)
Halogen-free According to IEC 60754-1 Resistance to oil in accordance with DIN EN 60811-2-1 Ambient temperature (operation) -40 °C 80 °C (cable, fixed installation) -20 °C 80 °C Ambient temperature (installation) -20 °C 80 °C	700 V (50 Hz, 1 min.)
Resistance to oil in accordance with DIN EN 60811-2-1 Ambient temperature (operation) -40 °C 80 °C (cable, fixed installation) -20 °C 80 °C (cable, flexible installation) Ambient temperature (installation) -20 °C 80 °C	IEC 60332-1-2
Ambient temperature (operation) -40 °C 80 °C (cable, fixed installation) -20 °C 80 °C (cable, flexible installation) Ambient temperature (installation) -20 °C 80 °C	According to IEC 60754-1
-20 °C 80 °C (cable, flexible installation) Ambient temperature (installation) -20 °C 80 °C	in accordance with DIN EN 60811-2-1
Ambient temperature (installation) -20 °C 80 °C	-40 °C 80 °C (cable, fixed installation)
	-20 °C 80 °C (cable, flexible installation)
	-20 °C 80 °C
Ambient temperature (storage/transport) -20 °C 80 °C	-20 °C 80 °C

Classifications

eCl@ss

eCl@ss 4.0	27060306
eCl@ss 4.1	27060306
eCl@ss 5.0	27061801
eCl@ss 5.1	27061801
eCl@ss 6.0	27061801
eCl@ss 7.0	27061801



Classifications

eCl@ss

eCl@ss 8.0	27061801
ETIM	
ETIM 3.0	EC001855
ETIM 4.0	EC001855
ETIM 5.0	EC001855

UNSPSC

UNSPSC 6.01	31251501
UNSPSC 7.0901	31251501
UNSPSC 11	31251501
UNSPSC 12.01	31251501
UNSPSC 13.2	31251501

Drawings

Schematic diagram



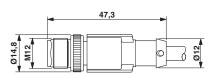
Pin assignment M12 male connector, 4-pos., D-coded, male side

Schematic diagram



Connector pin assignment plug RJ45

Dimensioned drawing



Plug, M12 x 1, straight, shielded

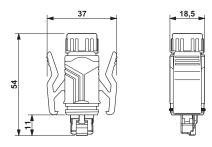
Cable cross section



PUR ETHERNET 2x2 FLEX [93E]

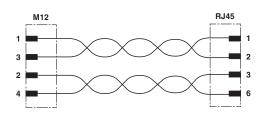


Dimensioned drawing



RJ45-connector, IP67

Circuit diagram



Contact assignment of the M12 and RJ45 plug

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