

1440517

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Network cable, Ethernet CAT6 $_{\rm A}$  (10 Gbps), 8-position, PUR halogen-free, water blue RAL 5021 (Advanced Shielding Technology), Plug straight M12, coding: X / IP65, on Plug straight M12, coding: X / IP65, cable length: 15 m

## Commercial data

Item number	1440517
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	BF1CMJ
Product key	BF1CMJ
Catalog page	Page 305 (PC-2011)
GTIN	4046356504430
Weight per piece (including packing)	767.7 g
Weight per piece (excluding packing)	667.1 g
Customs tariff number	85444290
Country of origin	PL



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## Technical data

## Product properties

Product type	Data cable preassembled
Application	Standard
Sensor type	Ethernet
Number of positions	8
No. of cable outlets	1
Number of slots	1
Shielded	yes
Coding	X
Insulation characteristics	
Overvoltage category	II
Degree of pollution	3

### Interfaces

Signal type/category	Ethernet CAT6 <sub>A</sub> , 10 Gbps
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## Electrical properties

Insulation resistance	100 ΜΩ
Nominal voltage U <sub>N</sub>	48 V AC
	60 V DC
Nominal current I <sub>N</sub>	0.5 A
Transmission medium	Copper
Transmission characteristics (category)	CAT6 <sub>A</sub>

## Material specifications

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Flammability rating according to UL 94	НВ

### Connector

### Connection 1

Dimensional drawing	Pin assignment of M12 plug, 8-pos., X-coded, pin side view
Туре	M12, straight, 8-position, AST, Keying: X
Number of positions	8
Shielded	yes
Signal type/category	Ethernet CAT6 <sub>A</sub> , 10 Gbps
	CC-Link IE CAT6 <sub>A</sub> , 10 Gbps



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Insertion/withdrawal cycles	≥ 100
Insulation resistance	≥ 100 Ω
Overvoltage category	II .
Degree of pollution	3
Tightening torque	0.4 Nm (M12 connector)
Contact material	CuZn
Contact surface material	Ni/Au
Contact carrier material	PA 6.6
Material for screw connection	Zinc die-cast, nickel-plated
Seal material	FKM
Flammability rating according to UL 94	V0
Degree of protection	IP65
	IP67
Ambient temperature (operation)	-25 °C 85 °C
Standard designation	M12 connector
Standards/regulations	IEC 61076-2-109

Dimensional drawing  Pin assignment of M12 plug, 8-pos., X-i  Type  M12, straight, 8-position, AST, Keying:  Number of positions  8  Shielded  yes  Signal type/category  Ethernet CAT6 <sub>A</sub> , 10 Gbps  CC-Link IE CAT6 <sub>A</sub> , 10 Gbps  Insertion/withdrawal cycles  Insulation resistance  ≥ 100  Overvoltage category  II  Degree of pollution  3  Tightening torque  Contact material  Contact surface material  Contact surface material  Mi/Au  Contact carrier material  Material for screw connection  Seal material  FKM  Flammability rating according to UL 94  Degree of protection  IP65	
$\begin{array}{llllllllllllllllllllllllllllllllllll$	coded, pin side view
$\begin{array}{lll} \text{Shielded} & \text{yes} \\ \\ \text{Signal type/category} & \text{Ethernet CAT6}_{A}, \ 10 \ \text{Gbps} \\ \\ \text{CC-Link IE CAT6}_{A}, \ 10 \ \text{Gbps} \\ \\ \text{Insertion/withdrawal cycles} & \geq 100 \\ \\ \text{Insulation resistance} & \geq 100 \ \Omega \\ \\ \text{Overvoltage category} & \text{II} \\ \\ \text{Degree of pollution} & 3 \\ \\ \text{Tightening torque} & 0.4 \ \text{Nm (M12 connector)} \\ \\ \text{Contact material} & \text{CuZn} \\ \\ \text{Contact surface material} & \text{Ni/Au} \\ \\ \text{Contact carrier material} & \text{PA 6.6} \\ \\ \text{Material for screw connection} & \text{Zinc die-cast, nickel-plated} \\ \\ \text{Seal material} & \text{FKM} \\ \\ \text{Flammability rating according to UL 94} & \text{V0} \\ \\ \end{array}$	: X
Signal type/category       Ethernet CAT6 <sub>A</sub> , 10 Gbps         CC-Link IE CAT6 <sub>A</sub> , 10 Gbps         Insertion/withdrawal cycles       ≥ 100         Insulation resistance       ≥ 100 Ω         Overvoltage category       II         Degree of pollution       3         Tightening torque       0.4 Nm (M12 connector)         Contact material       CuZn         Contact surface material       Ni/Au         Contact carrier material       PA 6.6         Material for screw connection       Zinc die-cast, nickel-plated         Seal material       FKM         Flammability rating according to UL 94       V0	
Insertion/withdrawal cycles       ≥ 100         Insulation resistance       ≥ 100 Ω         Overvoltage category       II         Degree of pollution       3         Tightening torque       0.4 Nm (M12 connector)         Contact material       CuZn         Contact surface material       Ni/Au         Contact carrier material       PA 6.6         Material for screw connection       Zinc die-cast, nickel-plated         Seal material       FKM         Flammability rating according to UL 94       V0	
Insulation resistance       ≥ 100 Ω         Overvoltage category       II         Degree of pollution       3         Tightening torque       0.4 Nm (M12 connector)         Contact material       CuZn         Contact surface material       Ni/Au         Contact carrier material       PA 6.6         Material for screw connection       Zinc die-cast, nickel-plated         Seal material       FKM         Flammability rating according to UL 94       V0	
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Contact surface material  Contact carrier material  PA 6.6  Material for screw connection  Zinc die-cast, nickel-plated  Seal material  FKM  Flammability rating according to UL 94  V0	
Contact carrier material PA 6.6  Material for screw connection Zinc die-cast, nickel-plated  Seal material FKM  Flammability rating according to UL 94 V0	
Material for screw connection  Zinc die-cast, nickel-plated  Seal material  FKM  Flammability rating according to UL 94  V0	
Seal material FKM Flammability rating according to UL 94 V0	
Flammability rating according to UL 94 V0	
Degree of protection IP65	
IP67	
Ambient temperature (operation) -25 °C 85 °C	



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Standard designation	M12 connector
Standards/regulations	IEC 61076-2-109

### Cable/line

Cable length 15 m	
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## Ethernet 10 Gbit [94F]

Dimensional drawing



Cable weight	42 kg/km
UL AWM Style	20963 (80°C/30 V)
Number of positions	8
Shielded	yes
Cable type	Ethernet 10 Gbit [94F]
Conductor structure	4x2xAWG26/7; S/FTP
Signal runtime	5.13 ns/m
Conductor structure signal line	7x 0.16 mm
AWG signal line	26
Conductor cross section	4x 2x 0.14 mm²
Wire diameter incl. insulation	1.04 mm
External cable diameter	6.40 mm ±0.2 mm
Outer sheath, material	PUR
External sheath, color	water blue RAL 5021
Conductor material	Bare Cu litz wires
Material wire insulation	Foamed PE
Single wire, color	white/blue-blue, white/orange-orange, white/green-green, white/brown-brown
Thickness, outer sheath	0.65 mm
Twisted pairs	2 cores to the pair
Type of pair shielding	Aluminum-lined foil
Overall twist	4 pairs for core
Optical shield covering	70 %
Insulation resistance	≥ 500 MΩ*km
Loop resistance	≤ 290.00 Ω/km
Wave impedance	100 Ω ±5 Ω (at 100 MHz)
Cable capacity	47 nF/km
Nominal voltage, cable	≤ 100 V
Test voltage Core/Core	700 V (50 Hz, 1 min.)



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Test voltage Core/Shield	700.00 V (50 Hz, 1 min.)
Minimum bending radius, fixed installation	4 x D
Minimum bending radius, flexible installation	8 x D
Smallest bending radius, fixed installation	26 mm
Smallest bending radius, movable installation	52 mm
Tensile strength	≤ 100 N
Near end crosstalk attenuation (NEXT)	75.3 dB (with 1 MHz)
	66.3 dB (at 4 MHz)
	61.8 dB (at 8 MHz)
	60.3 dB (at 10 MHz)
	57.2 dB (at 16 MHz)
	55.8 dB (at 20 MHz)
	54.3 dB (at 25 MHz)
	52.8 dB (at 31.25 MHz)
	48.4 dB (at 62.5 MHz)
	45.3 dB (at 100 MHz)
	40.8 dB (at 200 MHz)
	39.3 dB (at 250 MHz)
	38.1 dB (at 300 MHz)
	38.1 dB (at 400 MHz)
	38.1 dB (at 500 MHz)
Power-summated near end crosstalk attenuation (PSNEXT)	72.3 dB (with 1 MHz)
	63.3 dB (at 4 MHz)
	58.8 dB (at 8 MHz)
	57.3 dB (at 10 MHz)
	54.2 dB (at 16 MHz)
	52.8 dB (at 20 MHz)
	51.3 dB (at 25 MHz)
	49.9 dB (at 31.25 MHz)
	45.4 dB (at 62.5 MHz)
	42.3 dB (at 100 MHz)
	37.8 dB (at 200 MHz)
	36.3 dB (at 250 MHz)
	35.1 dB (at 300 MHz)
	33.3 dB (at 400 MHz)
	31.8 dB (at 500 MHz)
Return attenuation (RL)	20 dB (with 1 MHz)
	23 dB (at 4 MHz)
	24.5 dB (at 8 MHz)
	25 dB (at 10 MHz)
	25 dB (at 16 MHz)
	25 dB (at 20 MHz)
	24.2 dB (at 25 MHz)
	23.3 dB (at 31.25 MHz)



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	20.7 dB (at 62.5 MHz)
	19 dB (at 100 MHz)
	16.4 dB (at 200 MHz)
	15.6 dB (at 250 MHz)
	15.6 dB (at 300 MHz)
	15.6 dB (at 400 MHz)
	15.6 dB (at 500 MHz)
Shield attenuation	3.1 dB (with 1 MHz)
	5.7 dB (at 4 MHz)
	8 dB (at 8 MHz)
	8.9 dB (at 10 MHz)
	11.2 dB (at 16 MHz)
	12.6 dB (at 20 MHz)
	14.1 dB (at 25 MHz)
	15.8 dB (at 31.25 MHz)
	22.5 dB (at 62.5 MHz)
	28.7 dB (at 100 MHz)
	41.4 dB (at 200 MHz)
	46.6 dB (at 250 MHz)
	51.4 dB (at 300 MHz)
	60.1 dB (at 400 MHz)
	67.9 dB (at 500 MHz)
	≥ 80.00 dB (at 30 100 MHz)
Halogen-free	according to IEC 60754-1
Flame resistance	according to IEC 60332-1-2
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

## Environmental and real-life conditions

### Ambient conditions

Degree of protection	IP65
	IP67
	IP65/IP67

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