

Data connectors and cables

Complex automation processes call for high volumes of data at ever-increasing transmission speeds. Transmit this data safely and reliably using connectors from Phoenix Contact which are suitable for industrial use.

When it comes to implementing networks, we offer solutions for Industrial Ethernet and PROFINET as well as EtherCAT®. Furthermore, we offer components for fieldbus systems such as PROFIBUS, CANopen®/DeviceNet™, and FOUNDATION Fieldbus.

The product range includes assembled cables, cable connectors, device connectors, and connectors for field assembly. For FO and copper-based cabling we also offer connector systems with innovative connection technologies. These can be wired quickly and securely without special tools.

Active components for networks and fieldbus systems can be found in Catalog 6.

Copper-based data connectors

- Future-proof high-speed cabling up to 10 Gbps
- Solutions for IP20, IP65/IP67, and IP69K
- IDC, Push-in, crimp, spring, or pierce connection

Fiber optic-based data connectors

- Transmission speeds of up to 40 Gbps
- Solutions for IP20 and IP65/IP67
- POF, PCF, and GOF fiber types (multi and single mode)

 Your web code: **#0296**

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	Ethernet  EtherCAT	Ethernet	Ethernet	Ethernet  EtherNet/IP	Ethernet																																																																																																												
Area of application	Ethernet M8 (4-pos.) All industrial environments	Ethernet M12 (4-pos.) All industrial environments	Ethernet M12 (8-pos.) All industrial environments	Ethernet M12/10G (8-pos.) All industrial environments	Ethernet hybrid M12 (8-pos.) All industrial environments																																																																																																												
Topology	Star, tree, or line topology	Star, tree, or line topology	Star, tree, or line topology	Star, tree, or line topology	Star, tree, or line topology																																																																																																												
Data transmission	Up to 100 Mbps	Up to 100 Mbps	Up to 1 Gbps	Up to 10 Gbps	Up to 100 Mbps																																																																																																												
Special connectors				M12 with shield crossover	M12 with Y-shield																																																																																																												
Pin assignment	<table><tr><th>Signal des.</th><th colspan="2">Connector</th></tr><tr><th></th><th>RJ45</th><th>M8</th></tr><tr><td>TD+</td><td>1</td><td>1</td></tr><tr><td>TD-</td><td>2</td><td>4</td></tr><tr><td>RD+</td><td>3</td><td>2</td></tr><tr><td>RD-</td><td>6</td><td>3</td></tr></table>	Signal des.	Connector			RJ45	M8	TD+	1	1	TD-	2	4	RD+	3	2	RD-	6	3	<table><tr><th>Signal des.</th><th colspan="2">Connector</th></tr><tr><th></th><th>RJ45</th><th>M12</th></tr><tr><td>TD+</td><td>1</td><td>1</td></tr><tr><td>TD-</td><td>2</td><td>3</td></tr><tr><td>RD+</td><td>3</td><td>2</td></tr><tr><td>RD-</td><td>6</td><td>4</td></tr></table>	Signal des.	Connector			RJ45	M12	TD+	1	1	TD-	2	3	RD+	3	2	RD-	6	4	<table><tr><th>Signal des.</th><th colspan="2">Connector</th></tr><tr><th></th><th>RJ45</th><th>M12</th></tr><tr><td>D1+</td><td>1</td><td>6</td></tr><tr><td>D1-</td><td>2</td><td>4</td></tr><tr><td>D3-</td><td>5</td><td>1</td></tr><tr><td>D3+</td><td>4</td><td>7</td></tr><tr><td>D2+</td><td>3</td><td>5</td></tr><tr><td>D2-</td><td>6</td><td>8</td></tr><tr><td>D4+</td><td>7</td><td>2</td></tr><tr><td>D4-</td><td>8</td><td>3</td></tr></table>	Signal des.	Connector			RJ45	M12	D1+	1	6	D1-	2	4	D3-	5	1	D3+	4	7	D2+	3	5	D2-	6	8	D4+	7	2	D4-	8	3	<table><tr><th>Signal des.</th><th colspan="2">Connector</th></tr><tr><th></th><th>RJ45</th><th>M12</th></tr><tr><td>D1+</td><td>1</td><td>1</td></tr><tr><td>D1-</td><td>2</td><td>2</td></tr><tr><td>D3-</td><td>5</td><td>7</td></tr><tr><td>D3+</td><td>4</td><td>8</td></tr><tr><td>D2+</td><td>3</td><td>3</td></tr><tr><td>D2-</td><td>6</td><td>4</td></tr><tr><td>D4+</td><td>7</td><td>5</td></tr><tr><td>D4-</td><td>8</td><td>6</td></tr></table>	Signal des.	Connector			RJ45	M12	D1+	1	1	D1-	2	2	D3-	5	7	D3+	4	8	D2+	3	3	D2-	6	4	D4+	7	5	D4-	8	6	<table><tr><th>Signal des.</th><th>Connector</th></tr><tr><th></th><th>M12</th></tr><tr><td>TD+</td><td>1</td></tr><tr><td>TD-</td><td>2</td></tr><tr><td>RD+</td><td>3</td></tr><tr><td>RD-</td><td>4</td></tr></table>	Signal des.	Connector		M12	TD+	1	TD-	2	RD+	3	RD-	4
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User organization			www.odva.org (EtherNet/IP™)	www.odva.org (EtherNet/IP™)																																																																																																													
Standardization of cabling	ISO/IEC 24702	ISO/IEC 24702	ISO/IEC 24702 (Ethernet) IEC 61784-5-2 (EtherNet/IP™)	ISO/IEC 24702 (Ethernet) IEC 61784-5-2 (EtherNet/IP™)																																																																																																													
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RJ45 connectors	-	Page 372	Page 372	Page 372	-																																																																																																												
M12 connectors	-	Page 343	Page 343	Page 342	-																																																																																																												
Cables	Page 394	Page 398	Page 400	Page 402	Page 405																																																																																																												
Web code	#0957	#0957	#0957	#0957	#0957																																																																																																												



Production, process automation in the automotive industry

Production, process automation in the automotive industry

Production, process automation in the automotive industry

Automation technology

Motion control applications

Automation technology

Typically active star topology

Star, line, tree, and ring structures. Hybrid forms also supported

Star, line, tree, and ring structures. Hybrid forms also supported

Line, tree, star, and combinations of these

Line, ring, and hierarchical, cascaded network structures

Tree, line, and star topology

Up to 10 Gbps

100 Mbps

1 Gbps to 10 Gbps

100 Mbps, upgrade to Gigabit Ethernet possible

Fast Ethernet with 100 Mbps

Up to Gigabit Ethernet

M12 with shield crossover

2+4 Power/Ethernet connection technology (IP65 and IP67)

Signal des.	Connector		Signal des.	Connector		Signal des.	Connector		Signal des.	Connector		Signal des.	Connector		Signal des.	Connector	
	RJ45	M12		RJ45	M12		RJ45	M12		RJ45	M12		RJ45	M12		RJ45	M12
D1+	1	1	TD+	1	1	D1+	1	1	TD+	1	1	TD+	1	1	TD+	2	2
D1-	2	2	TD-	2	3	D1-	2	2	TD-	2	3	TD-	2	3	TD-	1	3
D3-	5	7	RD+	3	2	D3-	5	7	RD+	3	2	RD+	3	5	RD+	3	5
D3+	4	8	RD-	6	4	D3+	4	8	RD-	6	4	RD-	6	8	RD-	6	8
D2+	3	3				D2+	3	3									
D2-	6	4				D2-	6	4									
D4+	7	5				D4+	7	5									
D4-	8	6				D4-	8	6									

Wire color	Signal	Wire color	Signal	Wire color	Signal	Wire color	Signal	Wire color	Signal	Wire color	Signal	Wire color	Signal
WHOG	D1+	YE	TD+	WHOG	D1+	YE	TD+	YE	TD+	n. c.		n. c.	
OG	D1-	OG	TD-	OG	D1-	OG	TD-	OG	TD-	OG	TD-	OG	TD-
WHBU	D3-	WH	RD+	WHBU	D3-	WH	RD+	WH	RD+	WHOG	TD+	WHOG	TD+
BU	D3+	BU	RD-	BU	D3+	BU	RD-	BU	RD-	n. c.		n. c.	
WHGN	D2+	WHGN	D2+	WHGN	D2+	WHGN	D2+	WHGN	D2+	WHGN	RD+	WHGN	RD+
GN	D2-	GN	D2-	GN	D2-	GN	D2-	GN	D2-	BU		BU	
WHBN	D4+	WHBN	D4+	WHBN	D4+	WHBN	D4+	WHBN	D4+	BN		BN	
BN	D4-	BN	D4-	BN	D4-	BN	D4-	BN	D4-	GN	RD-	GN	RD-

Up to 100 m from hub/switch to terminal device

Up to 100 m from hub/switch to terminal device

Up to 100 m from hub/switch to terminal device

Up to 100 m from hub/switch to terminal device

Up to 100 m from hub/switch to terminal device

Up to 100 m from hub/switch to terminal device

www.cc-link.org

www.profinet.com

www.profinet.com

www.ethercat.org

www.sercos.de

www.varan-bus.net

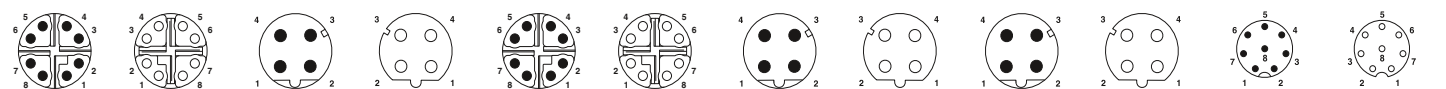
IEEE 802.3

IEC 61784-5-3

IEC 61784-5-3

IEC 61784-5-12

IEC 61784-5-16



Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
M12, 8-pos., X-coded		M12, 4-pos., D-coded		M12, 8-pos., X-coded		M12, 4-pos., D-coded		M12, 4-pos., D-coded		M12, 8-pos., A-coded		M12, 8-pos., A-coded	
Male		Male		Male		Male		Male		Male		Male	
Female		Female		Female		Female		Female		Female		Female	
RJ45, 8-pos.		RJ45, 8-pos.		RJ45, 8-pos.		RJ45, 8-pos.		RJ45, 8-pos.		RJ45, 8-pos.		RJ45, 8-pos.	

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Data connectors and cables

System overview – fieldbuses



Area of application	Sensor/actuator level, process automation, monitoring PC		Decentral I/O devices for networking several controllers	Process automation for potentially explosive areas (Ex zones 0 and 1)	Automation technology																																																																														
Topology	Active ring structure		Line, tree, ring, or star, depending on the physical network design	Line, tree, or ring	Line																																																																														
Data transmission	Between 500 kbps and 16 Mbps, depending on the segment length		Up to 12 Mbps	Up to 31.25 kbps	Up to 500 kBaud																																																																														
Special connectors																																																																																			
Pin assignment	<table><tr><th rowspan="2">Signal designation</th><th colspan="2">Connector</th></tr><tr><th>D-SUB 9</th><th>M12</th></tr><tr><td>DO</td><td>1</td><td>2</td></tr><tr><td>DO</td><td>6</td><td>1</td></tr><tr><td>DI</td><td>2</td><td>4</td></tr><tr><td>DI</td><td>7</td><td>3</td></tr><tr><td>GND</td><td>3</td><td>5</td></tr></table>	Signal designation	Connector		D-SUB 9	M12	DO	1	2	DO	6	1	DI	2	4	DI	7	3	GND	3	5	<table><tr><th rowspan="2">Signal designation</th><th colspan="2">Connector</th></tr><tr><th>D-SUB 9</th><th>M12</th></tr><tr><td>A cable</td><td>8</td><td>2</td></tr><tr><td>B cable</td><td>3</td><td>4</td></tr></table>	Signal designation	Connector		D-SUB 9	M12	A cable	8	2	B cable	3	4	<table><tr><th rowspan="2">Signal designation</th><th colspan="2">Connector</th></tr><tr><th>M12</th><th></th></tr><tr><td>DATA+</td><td>1</td><td></td></tr><tr><td>DATA-</td><td>3</td><td></td></tr><tr><td>Shield</td><td>4</td><td></td></tr></table>	Signal designation	Connector		M12		DATA+	1		DATA-	3		Shield	4		<table><tr><th rowspan="2">Signal designation</th><th colspan="4">Connector</th></tr><tr><th>COMBICON</th><th>M12</th><th>7/8"</th><th>M8</th></tr><tr><td>CAN_L</td><td>2</td><td>5</td><td>5</td><td>5</td></tr><tr><td>CAN_H</td><td>4</td><td>4</td><td>4</td><td>3</td></tr><tr><td>V+</td><td>5</td><td>2</td><td>2</td><td>2</td></tr><tr><td>V-</td><td>1</td><td>3</td><td>3</td><td>4</td></tr><tr><td>Drain</td><td>3</td><td>1</td><td>1</td><td>1</td></tr></table>	Signal designation	Connector				COMBICON	M12	7/8"	M8	CAN_L	2	5	5	5	CAN_H	4	4	4	3	V+	5	2	2	2	V-	1	3	3	4	Drain	3	1	1	1
Signal designation	Connector																																																																																		
	D-SUB 9	M12																																																																																	
DO	1	2																																																																																	
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V-	1	3	3	4																																																																															
Drain	3	1	1	1																																																																															
Signal designation, wire assignment	<table><tr><th>Wire color</th><th>Signal</th></tr><tr><td>YE</td><td>DO</td></tr><tr><td>GN</td><td>DO</td></tr><tr><td>GY</td><td>DI</td></tr><tr><td>PK</td><td>DI</td></tr><tr><td>BN</td><td>GND</td></tr><tr><td>WH</td><td>NC</td></tr></table>	Wire color	Signal	YE	DO	GN	DO	GY	DI	PK	DI	BN	GND	WH	NC	<table><tr><th>Wire color</th><th>Signal</th></tr><tr><td>GN</td><td>A cable</td></tr><tr><td>RD</td><td>B cable</td></tr></table>	Wire color	Signal	GN	A cable	RD	B cable	<table><tr><th>Wire color</th><th>Signal</th></tr><tr><td>OG</td><td>DATA+</td></tr><tr><td>BU</td><td>DATA-</td></tr><tr><td colspan="2">Flexible filler lead</td></tr></table>	Wire color	Signal	OG	DATA+	BU	DATA-	Flexible filler lead		<table><tr><th>Wire color</th><th>Signal</th></tr><tr><td>BU</td><td>CAN_L</td></tr><tr><td>WH</td><td>CAN_H</td></tr><tr><td>RD</td><td>V+</td></tr><tr><td>BK</td><td>V-</td></tr></table>	Wire color	Signal	BU	CAN_L	WH	CAN_H	RD	V+	BK	V-																																									
Wire color	Signal																																																																																		
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	Shield on housing	Shield on housing	Shield on pin	Shield on pin																																																																															
Segment length	400 m segment length between two devices; max. 13 km total length	Up to 1200 m with copper installation, up to 15 km with fiber optic installation	Max. 1900 m	Up to 500 m																																																																															
User organization	www.interbusclub.com	www.profibus.com	www.profibus.com	www.odva.org																																																																															
Standardization of cabling	IEC 61158	IEC 61158 / IEC 61784	IEC 61158 / IEC 61784	IEC 61158 IEC 61784-1 CPF2/3																																																																															
Connector pin assignments	<table><tr><td></td><td></td></tr><tr><td>Male</td><td>Female</td></tr><tr><td colspan="2">M12, 5-pos., B-coded</td></tr><tr><td></td><td></td></tr><tr><td>Male</td><td>Female</td></tr><tr><td colspan="2">D-SUB 9</td></tr></table>			Male	Female	M12, 5-pos., B-coded				Male	Female	D-SUB 9		<table><tr><td></td><td></td></tr><tr><td>Male</td><td>Female</td></tr><tr><td colspan="2">M12, 5-pos., B-coded</td></tr><tr><td></td><td></td></tr><tr><td>Male</td><td>Female</td></tr><tr><td colspan="2">D-SUB 9</td></tr></table>			Male	Female	M12, 5-pos., B-coded				Male	Female	D-SUB 9		<table><tr><td></td><td></td></tr><tr><td>Male</td><td>Female</td></tr><tr><td colspan="2">M12, 3-pos., A-coded</td></tr></table>			Male	Female	M12, 3-pos., A-coded		<table><tr><td></td><td></td></tr><tr><td>Male</td><td>Female</td></tr><tr><td colspan="2">M8, 5-pos., B-coded</td></tr><tr><td></td><td></td></tr><tr><td>Male</td><td>Female</td></tr><tr><td colspan="2">M12, 5-pos., A-coded</td></tr><tr><td></td><td></td></tr><tr><td>Male</td><td>Female</td></tr><tr><td colspan="2">7/8" 16UNF, 5-pos.</td></tr></table>			Male	Female	M8, 5-pos., B-coded				Male	Female	M12, 5-pos., A-coded				Male	Female	7/8" 16UNF, 5-pos.																																
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Connectors	Page 422	Page 422	Page 423	Page 423																																																																															
Cables	Page 428	Page 429	Page 430	Page 432																																																																															
Web code	#0957	#0957	#0957	#0957																																																																															



Automation technology and for networking within complex devices

Sensor/actuator level

Process automation

All industrial environments

Production level applications

Line or tree (when using repeaters)

Bus, star, ring, and tree structures

Point-to-point line (with branch lines), tree structure, combination of all topologies

Star topology; the connection is established at the star nodes via hubs

Bus, multi-drop, T-branching, star

10 kBaud to 1 Mbaud

167 kbps

H1: 31.25 kbps, IEC physical transmission channel, including Ex bus
H2: 1.0 and 2.5 Mbps data rate, via two-wire cable or fiber optics

Up to 480 Mbps

Up to 10 Mbps

Signal designation	Connector					Signal designation	Connector	Signal designation	Connector		Signal designation	Connector			Signal designation	Connector
	COMBICON	D-SUB 9	M12	RJ45	7/8"		M12		M12	7/8"		M12, MINI-USB	USB			M12
CAN_L	2	2	5	2	5	AS-ii	1	DATA+	2	2	V _{BUS}	1	1	SLD	1	
CAN_H	4	7	4	1	4	AS-i-	3	DATA-	1	1	D-	2	2	DB	2	
V+	5	9	2	8	2			Shield	3	3	D+	3	3	DG	3	
V-	1	3	3	3	3						ID	4	4	DA	4	
Drain	3	4	1	6	1						GND	5	4			

Wire color	Signal	Wire color	Signal	Wire color	Signal	Wire color	Signal	Wire color	Signal
BU	CAN_L	BN	AS-i-	OG	DATA+	WHOG	D-	Shield	SLD
WH	CAN_H	WH				WH	V _{BUS}	WH	DB
RD	V+	BU	AS-ii	BU	DATA-	OG	D+	YE	DG
BK	V-	BK		Flexible filler lead		n.c.	ID	BU	DA
						BK	GND		

Shield on pin

Shield on pin 3

Up to 1000 m depending on the transmission speed, can be increased by using repeaters

Max. 100 m cable length, 300 m with termination resistors, 500 m with repeaters

Max. 1900 m; max. 9500 m when using repeaters depending on the selected cable

5 m per segment

Max. 1200 m; max. 13.2 km with repeaters

www.can-cia.de

www.as-interface.net

www.fieldbus.org

www.usb.org

www.clpa-europe.com

EN 50325-4

EN 50295 and IEC 62026-2

IEC 1158 IEC 61158

Not specified

IEC 61784-1 CPF 8

Male	Female	Male	Female	Male	Female	Male, type A	Female, type B	Male	Female
M12, 5-pos., A-coded		M12, 4-pos., A-coded		M12, 4-pos., A-coded		USB, 4-pos.		M12, 4-pos., A-coded	
Male	Female	Male	Female	Male	Female	Male	Female		
7/8" 16UNF, 5-pos.		7/8" 16UNF, 4-pos.		7/8" 16UNF, 4-pos.		M12 mini-USB, 5-pos.			



Male Female
D-SUB 9

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Connectors and cable connectors, for assembly



Insulation displacement connection QUICKON



Piercecon® and crimp connection

ERC

Technical data

M12 circular connector in accordance with:

Degree of pollution
Degree of protection
Connection method
Connection cross section
External cable diameter
Electrical data
Rated voltage
Rated current
Insulation resistance
Transmission characteristics (category)
Material data
Contact material
Contact surface material
Contact carrier material
Flammability rating in accordance with UL 94
Coding
Number of positions
Temperature data
Male connector/female connector

Ethernet/PROFINET	Ethernet/PROFINET
IEC 61076-2-109	-
3	3
IP65 / IP67	IP65 / IP67
Insulation displacement connection	Insulation displacement connection
0.14 mm ² ... 0.34 mm ²	0.14 mm ² ... 0.34 mm ²
5 mm ... 9.7 mm	5 mm ... 9.7 mm
48 V AC / 60 V DC	50 V AC / 60 V DC
0.5 A	0.5 A (30 W)
≥ 100 MΩ	≥ 100 MΩ
CAT6 _A	CAT6 _A
CuSn	CuSn
Ni/Au	Ni/Au
PA 6.6	PA 6.6
V0	V0
X - data	-
8	8
-40 ... 85	-40 ... 85

ERC

Technical data

Ethernet	Ethernet/PROFINET
IEC 61076-2-109	IEC 61076-2-109
3	3
IP65	IP65 / IP67
Piercecon®	Crimp connection
0.14 mm ² ... 0.14 mm ²	0.14 mm ² ... 0.34 mm ²
4 mm ... 8 mm	6.5 mm ... 10 mm
50 V AC / 60 V DC	48 V AC / 60 V DC
0.5 A (30 W)	0.5 A
≥ 100 MΩ	≥ 100 Ω
CAT6 _A	CAT6 _A
CuSn	-
Ni/Au	-
PP	PA 6.6
V0	V0
X - data	X - data
8	8
-40 ... 85	-40 ... 85

Ordering data

Description	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
Connector , shielded, color-coded and numbered connection area				
Male, straight	1411043	1		
Female, straight	1414586	1		
Cable connector , shielded, color-coded and numbered connection area			1414412	1
Connector , shielded, color-coded connection area				

Ordering data

Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
Ethernet		Ethernet/PROFINET	

Male, straight
Male, angled
Connector, without contacts, color-coded and numbered contact manager

Male, straight
Male, angled

1417430 1
1417443 1

1422844 1
1422845 1

Accessories

Crimp contacts , gold-plated Male, for X-coded, 0.14 mm ² ... 0.34 mm ²			
Crimping pliers , for turned contacts, universal cross section setting, up to a maximum of 2.5 mm ² , digital display with 0.01 mm increments, unlockable pressure lock, lateral entry, including positioning tool			
for turned contacts, four-mandrel crimping			
Stripping tool , for multiple-stage repositioning of shielded conductors	VS-CABLE-STRIP-VARIO	1657407	1

Accessories

CC0,6-TS-0,34M AU	1423643	100
CRIMPFOX-TC MP	1212510	1
VS-CABLE-STRIP-VARIO	1657407	1

Connectors and cable connectors,
for assembly

Insulation displacement connection QUICKON



Push-in connection

ERIC

ERIC

M12 circular connector in accordance with:

Degree of pollution
Degree of protection
Connection method

Electrical data

Insulation resistance
Transmission characteristics (category)

Material data

Contact material
Contact surface material
Flammability rating in accordance with UL 94
Temperature data

Male connector/female connector [°C]

Technical data

D-coded	A-coded
in accordance with IEC 61076-2-101	in accordance with IEC 61076-2-101
3	3
IP65 / IP67	IP65 / IP67
Insulation displacement connection	Insulation displacement connection
≥ 100 MΩ	≥ 100 MΩ
CAT5	CAT5
CuSn	CuSn
Ni/Au	Ni/Au
V0	V0
-40 ... 85	-40 ... 85

Technical data

D-coded
IEC 61076-2-101
3
IP65 / IP67
Push-in connection
≥ 100 MΩ
CAT5
CuSn
Ni/Au
V0
-40 ... 85

Ordering data

Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
D-coded		A-coded	

Ordering data

Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
D-coded			

Description

Connector, 100 Mbps, **Ethernet CAT5**, 4-pos., shielded,
color-coded connection area

Male, straight	1411066	1
Male, angled	1553624	1
Female, straight	1411069	1
Female, angled	1553637	1

Connector, 100 Mbps, **PROFINET CAT5**, 4-pos., shielded,
color-coded connection area

Male, straight	1411068	1
Male, angled	1554539	1
Female, straight	1411071	1
Female, angled	1554542	1

Connector, 1 Gbps, **Ethernet CAT5**, 8-pos., shielded,
color-coded connection area

Male, straight	1421679	1
Male, angled	1553653	1
Female, straight	1421680	1
Female, angled	1553666	1

Connector, **VARAN**, 6-pos., shielded,
color-coded connection area

Male, straight	1429130	1
Male, angled	1429156	1
Female, straight	1429143	1
Female, angled	1429169	1

Cable connector, 100 Mbps, **Ethernet CAT5**, 4-pos., shielded,
color-coded and numbered connection area

1414415 1

Cable connector, 100 Mbps, **PROFINET CAT5**, 4-pos., shielded,
color-coded and numbered connection area

1414416 1

Accessories

VS-CABLE-STRIP-VARIO	1657407	1
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Accessories

VS-CABLE-STRIP-VARIO	1657407	1
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Stripping tool, for multiple-stage repositioning of
shielded conductors

M12 push-pull connectors, for assembly

new



Ethernet



Crimp connection

ERC

Technical data

M12 circular connector in accordance with:

Degree of pollution

Degree of protection

Connection method

External cable diameter

Electrical data

Rated voltage

Rated current

Insulation resistance

Transmission characteristics (category)

Material data

Contact carrier material

Flammability rating in accordance with UL 94

Coding

Number of positions

Temperature data

Male connector/female connector

[°C]

PROFINET

Ethernet/PROFINET

-

-

3

3

IP65 / IP67 / IP68 / IP69K

IP65 / IP67 / IP68 / IP69K

Crimp connection

Crimp connection

4.5 mm ... 7.5 mm

6.5 mm ... 10 mm

48 V AC / 60 V DC

48 V AC / 60 V DC

4 A

0.5 A

≥ 100 Ω

≥ 100 Ω

CAT5

CAT6_A

PA 6.6

PA 6.6

V0

V0

D - data

X - data

4

8

-40 ... 85

-40 ... 85

Ordering data

Description

Order No.

Pcs./Pkt.

Order No.

Pcs./Pkt.

PROFINET

Ethernet/PROFINET

Push-pull connector, 100 Mbps, 4-pos., shielded

Male, straight

1021830

1

Male, angled

1021831

1

Push-pull connector, 8-pos., shielded

Male, straight

1021783

1

Male, angled

1021784

1

Accessories

Crimp contacts, gold-plated

Male, for A/D-coded, 0.14 mm² ... 0.34 mm²

Male, for A/D-coded, 0.34 mm² ... 1.0 mm²

Male, for X-coded, 0.14 mm² ... 0.34 mm²

Crimping pliers, for turned contacts, universal cross section setting, up to a maximum of 2.5 mm², digital display with 0.01 mm increments, unlockable pressure lock, lateral entry, including positioning tool

for turned contacts, four-mandrel crimping

Stripping tool, for multiple-stage repositioning of shielded conductors

CC1,0-TS-0,34M AU

1064040

100

CC1,0-TS-1,00M AU

1423645

100

CC0,6-TS-0,34M AU

1423643

100

CRIMPFOX-TC MP

1212510

1

VS-CABLE-STRIP-VARIO

1657407

1

**M12 push-pull locking,
with 0.5 m litz wires**

- Front mounting
- Manufacturer-independent M12 push-pull locking system

**4-pos.**

new

**5-pos.**

new

**Technical data****4-pos.**

General data	
M12 circular connector in accordance with:	
Degree of pollution	3
Degree of protection	IP65/IP67
Connection method	Individual wires
Electrical data	
Rated voltage	250 V
Rated current	4 A
Material data	
Material contact/contact surface	CuZn / Ni/Au
Contact carrier material	PA 6.6
Flammability rating in accordance with UL 94	V0
Cable type	TPE litz wire
Temperature data	
Male connector/female connector	-25 ... 85

Ordering data

Description	Coding
Device connectors	
Female	A-coded
Female	D-coded

Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
4-pos.			
1027686	1		

**Technical data****5-pos.**

General data	
M12 circular connector in accordance with:	
Degree of pollution	3
Degree of protection	IP65/IP67
Connection method	Individual wires
Electrical data	
Rated voltage	60 V
Rated current	4 A
Material data	
Material contact/contact surface	CuZn / Ni/Au
Contact carrier material	PA 6.6
Flammability rating in accordance with UL 94	V0
Cable type	TPE litz wire
Temperature data	
Male connector/female connector	-25 ... 85

Ordering data

Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
5-pos.			
1027683	1		

Data connectors and cables

Network components – M12 connectors

M12 push-pull locking, with 0.5 m litz wires

- Rear mounting
- Manufacturer-independent M12 push-pull locking system



Technical data

4-pos.

General data	
M12 circular connector in accordance with:	IEC 61076-2-101
Degree of pollution	3
Degree of protection	IP67
Connection method	Individual wires
Electrical data	
Rated voltage	250 V
Rated current	4 A
Material data	
Material contact/contact surface	CuZn / Au
Contact carrier material	PA 6.6
Flammability rating in accordance with UL 94	V0
Cable type	TPE litz wire
Temperature data	
Male connector/female connector	-25 ... 85

Ordering data

Description	Coding
Device connectors	
Female	A-coded
Female	D-coded

Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
4-pos.			



Technical data

5-pos.

General data	
M12 circular connector in accordance with:	IEC 61076-2-101
Degree of pollution	3
Degree of protection	IP67
Connection method	Individual wires
Electrical data	
Rated voltage	60 V
Rated current	4 A
Material data	
Material contact/contact surface	CuZn / Au
Contact carrier material	PA 6.6
Flammability rating in accordance with UL 94	V0
Cable type	TPE litz wire
Temperature data	
Male connector/female connector	-25 ... 85

Ordering data

Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
5-pos.			

**Device connectors,
with 0.5 m litz wires**

**Front mounting,
4-pos.**

**Rear mounting,
4-pos.**


Technical data	
4-pos.	4-pos.
General data	
M12 circular connector in accordance with:	IEC 61076-2-101
Degree of pollution	3
Degree of protection	IP65/IP67
Connection method	Individual wires
Electrical data	
Rated voltage	250 V
Rated current	4 A
Material data	
Material contact/contact surface	CuZn / Ni/Au
Contact carrier material	PA 6.6
Flammability rating in accordance with UL 94	V0
Cable type	TPE litz wire
Temperature data	
Male connector/female connector	-25 ... 85

Ordering data	
Order No.	Pcs./Pkt.
4-pos.	



Technical data	
4-pos.	
General data	
M12 circular connector in accordance with:	IEC 61076-2-101
Degree of pollution	3
Degree of protection	IP65/IP67
Connection method	Individual wires
Electrical data	
Rated voltage	250 V
Rated current	4 A
Material data	
Material contact/contact surface	CuZn / Ni/Au
Contact carrier material	PA 6.6
Flammability rating in accordance with UL 94	V0
Cable type	TPE litz wire
Temperature data	
Male connector/female connector	-25 ... 85

Ordering data	
Order No.	Pcs./Pkt.
4-pos.	

Description Coding

Bus system flush-type socket, PROFINET, 4-pos.,
M12 SPEEDCON, D-coded, front/screw mounting with M16 thread,
with 0.5 m TPE litz wire, 4 x 0.34 mm²

Female D - data

1535202

1

Bus system flush-type socket, PROFINET, 4-pos.,
M12 SPEEDCON, D-coded, front/screw mounting with M16 thread,
can be positioned, with 0.5 m TPE litz wire, 4 x 0.34 mm²

Female D - data

1535215

1

Bus system flush-type socket, PROFINET, 4-pos.,
M12 SPEEDCON, D-coded, rear/screw mounting with Pg9 thread,
with 0.5 m TPE litz wire, 4 x 0.34 mm²

Female D - data

1551529

1

Control cabinet feed-throughs, bulkhead, M12 to RJ45 socket



**Bulkhead,
10 Gbps**



**Bulkhead,
100 Mbps and 1 Gbps**



Technical data

VS-BH-M12FSX-10G-RJ45...

Electrical data	
Nominal voltage U_N	60 V
Rated current	0.5 A
Transmission characteristics (category)	CAT6 _A
Contact material	Copper alloy
Material of grip body	PA
Flammability rating in accordance with UL 94	V0
Insertion/withdrawal cycles	≥ 100
Temperature data	
Male connector/female connector	[-25 ... 85] [°C]

Ordering data

Description
Control cabinet feed-through, CAT6_A, M12, 8-pos., X-coded to RJ45 socket
Female exit 90°
Female exit 180°
Control cabinet feed-through, M12, 8-pos., A-coded on RJ45 socket
Female exit 90°
Female exit 180°
Control cabinet feed-through, M12, 4-pos., D-coded on RJ45 socket
Female exit 90°
Female exit 180°

Type	Order No.	Pcs./Pkt.
VS-BH-M12FSX-10G-RJ45/90	1404548	1
VS-BH-M12FSX-10G-RJ45/180	1404549	1



Technical data

CUC-BH-M12A1PBK-A/R4BE CUC-BH-M12D1PBK-A/R4BE

60 V	60 V
0.5 A	0.5 A
CAT5 (IEC 11801:2002)	CAT5 (IEC 11801:2002)
Copper alloy	Copper alloy
PA	PA
V0	V0
≥ 100	≥ 100
-25 ... 85	-25 ... 85

Ordering data

Type	Order No.	Pcs./Pkt.
CUC-BH-M12A1PBK-A/R4BE	1414393	1
CUC-BH-M12A1PBK-S/R4BE	1414396	1
CUC-BH-M12D1PBK-A/R4BE	1414397	1
CUC-BH-M12D1PBK-S/R4BE	1414398	1

Terminal outlets, IP65/IP67

- Easy installation, thanks to captive cover screws
- Robust design
- Integrated cable management system



**Terminal outlet
with 2 x M12 slots**

EAC

Technical data				
Electrical data		VS-TO-RO-MCBK-F142...		
Transmission characteristics (category)		CAT5 (IEC 11801:2002)		
Material data				
Housing material		Aluminum cast alloy, powder-coated		
Mechanical data				
Color		black		
Degree of protection		IP65/IP67		
Ordering data				
Description		Type	Order No.	Pcs./Pkt.
Terminal outlet, M12, IP65/67, 2 slots, with protective plugs, 2 cable entries				
M12 with 2 x female, 8-pos., A-keyed		VS-TO-RO-MCBK-F1422/1422	1404304	1
M12 with 2 x female, 4-pos., D-coded		VS-TO-RO-MCBK-F1421/1421	1404294	1

RJ45 connectors, IP65/67



RJ45 connector



RJ45 connector
with field and crimp connection

Technical data	
Electrical data	
Rated voltage	72 V (DC)
Rated current	1.75 A
Overvoltage category	I
Material data	
Housing material	PA
Contact material	Copper alloy
Flammability rating in accordance with UL 94	V0
Degree of pollution	2
Connection data	
Connection method	IDC fast connection
Connection cross section AWG	26 ... 23 (rigid)
Connection cross section AWG	26 ... 23 (flexible)
External cable diameter	5 mm ... 8.5 mm
Insertion/withdrawal cycles	≥ 1000
Temperature data	
Ambient temperature (operation)	-20°C ... 70°C

Technical data	
VS-08-RJ45-5-Q/IP67...	CUC-V06-C1...-S/R4...8:1
72 V (DC)	72 V (DC)
1.75 A	1 A
I	I
PA	PA
Copper alloy	Phosphor bronze
V0	V0
2	2
IDC fast connection	Crimp connection
26 ... 23 (rigid)	27 ... 24 (flexible)
26 ... 23 (flexible)	-
5 mm ... 8.5 mm	5 mm ... 8.5 mm
≥ 1000	≥ 750
-20°C ... 70°C	-25°C ... 60°C

Technical data	
VS-08-T-H-RJ45...	VS-08-ST-H21P-RJ45
72 V (DC)	72 V (DC)
-	1 A
I	I
PA	-
-	Phosphor bronze
V0	V2
2	2
-	IDC connection technology
-	27 ... 24 (flexible)
-	-
5 mm ... 8.5 mm	-
≥ 1000	≥ 750
-40°C ... 80°C	-25°C ... 60°C

Ordering data	
Description	
RJ45 connector , 8-pos., CAT5, with QUICKON fast connection technology, for 26 ... 24 AWG	
Military gray RAL 7042 deep black RAL 9005	
RJ45 connector , 8-pos., CAT6, 1 Gbps, with crimp connection, for 27 ... 24 AWG	
Military gray RAL 7042 deep black RAL 9005	
RJ45 connector , 8-pos., CAT6 _A , 10 Gbps, with crimp connection, for 27 ... 24 AWG	
Military gray RAL 7042 deep black RAL 9005	
Sleeve housing , for VS-08-ST-H...-RJ45 male insert, for cable diameter of 5.0 mm ... 8.5 mm	
Military gray RAL 7042 deep black RAL 9005	
RJ45 male insert , 8-pos., shielded, IDC connection technology, for 27 ... 26 AWG litz wires, with strain relief	
CAT5	
CAT6	
RJ45 male insert , 8-pos., shielded, IDC pierce connection, for litz wires AWG 27 ... 24, with strain relief	
CAT6	
RJ45 male insert , CAT6 _A , 10 Gbps	

Ordering data		
Type	Order No.	Pcs./Pkt
VS-08-RJ45-5-Q/IP67	1656990	1
VS-08-RJ45-5-Q/IP67-BK	1658493	1
CUC-V06-C1PGY-S/R4CE8:1	1414383	1
CUC-V06-C1PBK-S/R4CE8:1	1414408	1
CUC-V06-C1PGY-S/R4CEA:1	1414406	1
CUC-V06-C1PBK-S/R4CEA:1	1414410	1

Ordering data		
Type	Order No.	Pcs./Pkt
VS-08-T-H-RJ45/IP67	1652732	5
VS-08-T-H-RJ45/IP67-BK	1658671	5
VS-08-ST-H11-RJ45	1652716	5
VS-08-ST-H21-RJ45	1652729	5
VS-08-ST-H21P-RJ45	1404388	5
VS-08-RJ45-10G/C	1418853	5

Accessories	
Stripping tool , for multiple-stage repositioning of shielded conductors	
Crimp tool , pliers with die, for VS-08-ST-H...-RJ45	

Accessories		
VS-CABLE-STRIP-VARIO	1657407	1

Accessories		
VS-CABLE-STRIP-VARIO	1657407	1
VS-CT-RJ45-H	1653265	1

RJ45 panel mounting frames and Freenet socket inserts, IP20



Keystone panel mounting frames and keystones



Freenet panel mounting frames and modules

	Technical data			Technical data		
	VS-08-...-RJ45-...			CUC-F-...-S/R4IDC8		VS-08-BU-RJ45-5-F/PK
Electrical data						
Nominal voltage U _N	-			72 V (DC)	50 V	
Rated current	-			1.5 A	1 A	
Housing material	Zinc die-cast			Zinc die-cast	Copper alloy	
Contact material	Phosphor bronze			CuSn	Copper alloy	
Flammability rating in accordance with UL 94	V0			V0	V0	
Number of positions	8			8	8	
Connection method	2x RJ45			IDC connection	IDC	
Insertion/withdrawal cycles	≥ 750			≥ 750	≥ 750	
Temperature data						
Ambient temperature (operation)	-10°C ... 60°C			-25°C ... 70°C		-20°C ... 70°C
	Ordering data			Ordering data		
Description	Type	Order No.	Pcs./Pkt.	Type	Order No.	Pcs./Pkt.
RJ45 socket insert , 8-pos., shielded, female to female						
CAT5	VS-08-BU-RJ45/BU	1689064	5			
CAT6	VS-08-BU-RJ45-6-MOD/BU	1653155	5			
RJ45 keystone panel mounting frame , Version 6, for round mounting cutout, with seal and central nut						
Military gray RAL 7042	VS-08-A-RJ45/MOD-1-R-IP67	1689844	1			
deep black RAL 9005	VS-08-A-RJ45/MOD-1-R-IP67 BK	1658053	5			
RJ45 keystone panel mounting frame , Version 6, with rectangular mounting cutout, with seal, without mounting screws						
Military gray RAL 7042	VS-08-A-RJ45/MOD-1-IP67	1689080	5			
deep black RAL 9005	VS-08-A-RJ45/MOD-1-IP67-BK	1658642	5			
RJ45 Freenet socket insert , 8-pos., shielded, with cable connection						
10 Gbps, CAT6 _A				CUC-F-J1ZNI-S/R4IDC8	1418984	1
RJ45 Freenet socket insert , 8-pos., shielded, with cable connection						
1 Gbps, CAT5				VS-08-BU-RJ45-5-F/PK	1652936	1
RJ45 Freenet socket insert , 8-pos., shielded, female to female						
1 Gbps, CAT6				CUC-F-D1ZNI-S/R4GC8	1419022	1
Freenet panel mounting frame , Version 6, for round mounting cutout, with seal, without mounting screws						
Military gray RAL 7042				VS-A-F-IP67	1653744	5
deep black RAL 9005				VS-A-F-IP67-BK	1658668	5
	Accessories			Accessories		
Protective cover for Version 6 panel mounting frame						
Military gray RAL 7042	VS-08-SD-F	1652606	5	VS-08-SD-F	1652606	5
deep black RAL 9005	VS-08-SD-F-BK	1658066	5	VS-08-SD-F-BK	1658066	5
Stripping tool , for multiple-stage repositioning of shielded conductors	VS-CABLE-STRIP-VARIO	1657407	1	VS-CABLE-STRIP-VARIO	1657407	1

RJ45 terminal outlets,
IP65/IP67

- Robust design
- Including covers to protect against environmental influences
- Integrated cable management system



Terminal outlet
with 2 x RJ45 slots

ERC

Electrical data
Transmission characteristics (category)
Material data
Housing material
Mechanical data
Color

Technical data
VS-TO-RO-MCBK-F141...
CAT6
Aluminum cast alloy, powder-coated
black

Description
Terminal outlet RJ45 IP65/67, 2 slots version 6, with protective plugs, 2 cable entries
2x RJ45

Ordering data		
Type	Order No.	Pcs./Pkt.
VS-TO-RO-MCBK-F1418/1418	1404278	1

Field couplings, IP65/67

- Fixed mounting is also an option
- Including covers to protect against environmental influences



Field coupling
with RJ45



Technical data

VS-08-KU-IP67
72 V (DC)
1 A
CAT5 (IEC 11801:2002)

Electrical data

Rated voltage
Rated current
Transmission characteristics (category)

Material data

Housing material
Contact material
Flammability rating in accordance with UL 94

Mechanical data

Number of positions

Temperature data

Ambient temperature (operation)

PBT
Copper alloy
V0

8

-10°C ... 60°C

Ordering data

Description

RJ45 coupling, IP67, CAT5, with protective cover

Military gray RAL 7042
deep black RAL 9005

Type

Order No.

Pcs./Pkt.

VS-08-KU-IP67
VS-08-KU-IP67-BK

1689268
1658684

1
1

FO connectors, IP65/67

Notes:

For further technical data, see:
phoenixcontact.net/products



SC-RJ connector
for polymer fiber 980/1000 µm



SC-RJ connector
for PCF fibers 200 / 230 µm and
polymer fibers 980 / 1000 µm

ERC

Technical data

Material data	
Housing material	PA
Ferrule material	Copper alloy
Flammability rating in accordance with UL 94	V0
Color	gray
Degree of protection	IP67
External cable diameter	5 mm ... 8.5 mm
Wire diameter	2.2 mm
Ferrule diameter	2.50 mm
Insertion/withdrawal cycles	≥ 1000
Temperature data	
Ambient temperature (operation)	-20°C ... 70°C

Ordering data

Description	Type	Order No.	Pcs./Pkt.
FO connector SC-RJ , duplex, with fast connection			
POF fiber 980/1000 µm SC-RJ socket insert , duplex, for VARIOSUB IP67 panel mounting frame, can be used for GOF multimode, GOF single mode, PCF, and POF fiber types	VS-SCRJ-POF-FA-IP67	1657009	1
1x SC-RJ/SC-RJ (duplex) VS-SC-RJ panel mounting frame , for use with an AVAGO transceiver, type: AFBR 5978Z			
Freenet panel mounting frame , Version 6, for round mounting cutout, with seal, without mounting screws			
Military gray RAL 7042 deep black RAL 9005			

Accessories

Protective cover SC-RJ/IP67 , for covering the SC-RJ male insert on the SC-RJ/IP67 sleeve housing	VS-SCRJ-PC	1653757	5
Protective cover for Version 6 panel mounting frame Military gray RAL 7042 deep black RAL 9005			
Tool set for POF assembly , for field installation of SC connectors.	TF-SCRJ-POF KONF SET	1405246	1

ERC

Technical data

PBT
Zirconia ceramics
V0
black
IP20
-
2.50 mm
≥ 500

-25°C ... 70°C

Ordering data

Type	Order No.	Pcs./Pkt.
VS-SCRJ-GOF-BU/BU	1652978	1
VS-SCRJ-A-TC-IP67	1658545	1
VS-A-F-IP67	1653744	5
VS-A-F-IP67-BK	1658668	5

Accessories

VS-08-SD-F	1652606	5
VS-08-SD-F-BK	1658066	5

SC-RJ terminal outlets, IP65/67

- Easy installation, thanks to captive cover screws
- Robust design
- Including covers to protect against environmental influences
- Integrated cable management system



Terminal outlet, IP67,
with 2 x SC-RJ slots

EAC

Technical data

Material data	
Housing material	Aluminum cast alloy, powder-coated
Ferrule material	Zirconia ceramics
Mechanical data	
Color	black
Degree of protection	IP65/IP67
Fiber type	GOF, PCF, POF
Connection profile	SCRJ in accordance with DIN EN 50377-6-1
Insertion/withdrawal cycles	≥ 500

Ordering data

Description	Type	Order No.	Pcs./Pkt.
SC-RJ terminal outlet, IP65/IP67, 2 slots, Version 6, with protective plugs, 2 cable entries	VS-TO-RO-MCBK-F1420/1420	1404317	1

SC-RJ couplings,
IP65/67

- Fixed mounting is also an option
- Including covers to protect against environmental influences
- Can be used for all fiber types



SC-RJ field coupling

ERC

Technical data		
Material data		
Housing material	PBT	
Contact material	-	
Ferrule material	Zirconia ceramics	
Flammability rating in accordance with UL 94	V0	
Mechanical data		
Number of positions	2	
Color	gray	
Degree of protection	IP65/IP67	
Temperature data		
Ambient temperature (operation)	-10°C ... 60°C	
Ordering data		
Type	Order No.	Pcs./Pkt.
SC-RJ coupling, IP67, duplex, can be used for GOF (multimode and single mode), PCF, and polymer fiber types		
FOC-V06-D1PGY-S/SJBE4	1410050	1

Push-Pull ADVANCE connectors, IP65/IP67

- High resistance to ESD and EMI for reliable transmission
- Easy handling, thanks to one-piece design
- Locking system to prevent unintentional removal
- Consistent 360° shielding concept



RJ45 connector,
straight cable outlet



RJ45 connector,
cable outlet at the top

ERC

Degree of protection
Connection cross section AWG
Transmission speed
Housing material
External cable diameter
Insertion/withdrawal cycles
Temperature data
Ambient temperature (operation)

Technical data			
Ethernet		PROFINET	
IP65/IP67		IP65/IP67	
26 ... 24 (rigid)		23 ... 22 (rigid)	
1 Gbps		1 Gbps	
Zinc die-cast		Zinc die-cast	
5.5 mm ... 10 mm		5.5 mm ... 10 mm	
≥ 750		≥ 750	
-40°C ... 70°C		-40°C ... 70°C	

Ordering data			
Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
Ethernet		PROFINET	

Push-pull ADVANCE, RJ45 industrial connector, IP67, 8-pos.

Single pack

1422661 1 1422664 1

Stripping tool, for multiple-stage repositioning of shielded conductors

Electronic diagonal cutter, tapered head, without chamfer, with opening spring, non-reflective phosphate-treated surface, punched version

Accessories		
VS-CABLE-STRIP-VARIO	1657407	1
MICROFOX-SP-1	1212487	1

Technical data			
Ethernet		PROFINET	
IP65/IP67		IP65/IP67	
26 ... 24 (rigid)		23 ... 22 (rigid)	
1 Gbps		1 Gbps	
Zinc die-cast		Zinc die-cast	
5.5 mm ... 10 mm		5.5 mm ... 10 mm	
≥ 750		≥ 750	
-40°C ... 70°C		-40°C ... 70°C	

Ordering data			
Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
Ethernet		PROFINET	

1422663 1 1422667 1

Accessories		
VS-CABLE-STRIP-VARIO	1657407	1
MICROFOX-SP-1	1212487	1

Push-Pull ADVANCE connectors, IP65/IP67



RJ45 connector,
cable outlet at the bottom



RJ45 connector,
straight cable outlet

ERC

Degree of protection
Connection cross section AWG
Transmission speed
Housing material
External cable diameter
Insertion/withdrawal cycles
Temperature data
Ambient temperature (operation)

Technical data			
Ethernet IP65/IP67		PROFINET IP65/IP67	
26 ... 24 (rigid)		23 ... 22 (rigid)	
1 Gbps		1 Gbps	
Zinc die-cast		Zinc die-cast	
5.5 mm ... 10 mm		5.5 mm ... 10 mm	
≥ 750		≥ 750	
-40°C ... 70°C		-40°C ... 70°C	

Technical data			
Ethernet IP65/IP67		PROFINET IP65/IP67	
27 ... 24 (flexible)		26 ... 22 (rigid)	
10 Gbps		-	
Plastic		PA-GF	
5 mm ... 8 mm		5 mm ... 8 mm	
≥ 200		≥ 500	
-25°C ... 60°C		-10°C ... 60°C	

Description

Push-pull ADVANCE, RJ45 industrial connector, IP67, 8-pos.

Single pack

Push/pull connector (version 14) for 10 Gbps,
with RJ45 crimp connection, for 26 ... 24 AWG flexible conductors,
5.0 mm ... 8.0 mm cable diameter

8-pos., 10 Gbps

Push-pull connector (version 14) for PROFINET with
RJ45 QUICKON fast connection technology, for 22 AWG 1 and
7-wire conductors, cable diameter of 5.0 mm ... 8.0 mm

4-pos., 100 Mbps

4-pos., 1 Gbps

8-pos., 1 Gbps

Ordering data			
Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
Ethernet		PROFINET	

1422662

1

1422665

1

Ordering data			
Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
Ethernet		PROFINET	

1422205

1

1608126

1

1404142

1

1657834

1

Stripping tool, for multiple-stage repositioning of
shielded conductors

Electronic diagonal cutter, tapered head, without chamfer,
with opening spring, non-reflective phosphate-treated surface,
punched version

Protective cover, IP65, with push/pull locking, for covering
the contact insert in the push/pull connector for RJ45 and SC-RJ,
plastic

Shielding foil set, 25 pcs., replacement for VS-PN-RJ45-5-Q/IP20

Accessories		
VS-CABLE-STRIP-VARIO	1657407	1
MICROFOX-SP-1	1212487	1

Accessories		
VS-CABLE-STRIP-VARIO	1657407	1
VS-PPC-F1-PC-POBK	1405316	1
VS-08-RJ45-FOLIEN-SET	1417184	1

Push-pull connectors, IP65/IP67



RJ45 connector,
straight cable outlet



RJ45 connectors, EMC,
straight cable outlet



Degree of protection
Connection cross section AWG
Transmission speed
Housing material
External cable diameter
Insertion/withdrawal cycles
Temperature data
Ambient temperature (operation)

Technical data

PROFINET
IP65/IP67
26 ... 22 (rigid)
100 Mbps
Zinc die-cast
5 mm ... 8 mm
≥ 500

PROFINET
IP65/IP67
26 ... 22 (rigid)
-
Zinc die-cast
5 mm ... 8 mm
≥ 500

-40°C ... 70°C

-40°C ... 70°C

Ordering data

Order No. **Pcs./Pkt.**

PROFINET

Order No. **Pcs./Pkt.**

PROFINET

Description

Push-pull connector (version 14) for PROFINET with RJ45 QUICKON fast connection technology, for 22 AWG 1 and 7-wire conductors, cable diameter of 5.0 mm ... 8.0 mm

4-pos., 100 Mbps
8-pos., 100 Mbps

1608100 1
1608016 1

Push-pull connector (version 14) for PROFINET with RJ45 QUICKON fast connection technology, for 22 AWG 1 and 7-wire conductors, cable diameter of 5.0 mm ... 8.0 mm

4-pos., 1 Gbps
8-pos., 1 Gbps

1405141 1
1404126 1

Push/pull connector (Version 14) optimized for use in environments subject to EMI, with RJ45 QUICKON fast connection technology, for 5.0 mm ... 8.0 mm cable diameter

4-pos., 100 Mbps
8-pos., 100 Mbps



Technical data

PROFINET
IP65/IP67
22 ... 22 (rigid)
-
Zinc die-cast
5 mm ... 8 mm
≥ 500

-40°C ... 70°C

Ordering data

Order No. **Pcs./Pkt.**

PROFINET

Order No. **Pcs./Pkt.**

PROFINET

1403366 1
1403367 1

Accessories

VS-CABLE-STRIP-VARIO **1657407** 1

Accessories

VS-CABLE-STRIP-VARIO **1657407** 1

Stripping tool, for multiple-stage repositioning of shielded conductors

RJ45 panel mounting frames and Freenet socket inserts, IP20



Panel mounting frame and modules



Freenet panel mounting frame with central nut and modules

	Technical data			Technical data		
	Type	Order No.	Pcs./Pkt.	Type	Order No.	Pcs./Pkt.
Electrical data	VS-08-BU-RJ45-5-F/PK			CUC-F-...-S/R4IDC8		
Nominal voltage U_N	50 V			-		
Rated current	1 A			-		
Housing material	Copper alloy			Zinc die-cast		
Contact material	Copper alloy			Spring steel		
Flammability rating in accordance with UL 94	V0			-		
Number of positions	8			8		
Connection method	IDC			Female		
Insertion/withdrawal cycles	≥ 750			≥ 750		
Temperature data						
Ambient temperature (operation)	-20°C ... 70°C			-10°C ... 60°C		
	Ordering data			Ordering data		
	Type	Order No.	Pcs./Pkt.	Type	Order No.	Pcs./Pkt.
Description						
RJ45 Freenet socket insert , 8-pos., shielded, with cable connection						
10 Gbps, CAT6 _A	CUC-F-J1ZNI-S/R4IDC8	1418984	1	CUC-F-J1ZNI-S/R4IDC8	1418984	1
RJ45 Freenet socket insert , 8-pos., shielded, with cable connection						
1 Gbps, CAT5	VS-08-BU-RJ45-5-F/PK	1652936	1	VS-08-BU-RJ45-5-F/PK	1652936	1
RJ45 Freenet socket insert , 8-pos., shielded, female to female						
1 Gbps, CAT6	CUC-F-D1ZNI-S/R4GC8	1419022	1	CUC-F-D1ZNI-S/R4GC8	1419022	1
RJ45 Freenet panel mounting frame , Version 14, IP65/IP67, for rectangular mounting cutout, with seal, without mounting screws						
Metal housing	VS-PPC-F1-RJ45-MNNA-1R-F	1405358	1			
RJ45 Freenet panel mounting frame , Version 14, IP65/IP67, for round mounting cutout, with seal and central nut						
Metal housing				VS-PPC-F1-RJ45-MNNA-1C-F	1405222	1
RJ45 panel mounting frame with socket insert, Version 14, IP65/IP67, for rectangular mounting cutout, with seal and mounting screws, 8-pos., shielded, with cable connection, CAT6 _A						
Zinc die-cast housing	CUC-V14-F1ZNI-EM/R4F8	1413961	1			
RJ45 panel mounting frame with socket insert, Version 14, IP65/IP67, for rectangular mounting cutout, with seal and mounting screws, 8-pos., shielded, female to female, CAT6						
Zinc die-cast housing	CUC-V14-F1ZNI-EM/R4B8	1413962	1			
Adapter , zinc die-cast						
45°	CUC-V14-A1ZNI-R45	1413988	1			
180°	CUC-V14-A1ZNI-S180	1413989	1			
	Accessories			Accessories		
	Type	Order No.	Pcs./Pkt.	Type	Order No.	Pcs./Pkt.
Protective cover , for data port	VS-PPC-C1-PC-ROBK-L	1405293	1	VS-PPC-C1-PC-ROBK-L	1405293	1
Stripping tool , for multiple-stage repositioning of shielded conductors	VS-CABLE-STRIP-VARIO	1657407	1	VS-CABLE-STRIP-VARIO	1657407	1
Adapter , with filler plug and marking element	CUC-V14-A1RBK-PC	1413985	1			
Marking element , without filler plug	CUC-V14-A1PBK-BA:50	1413979	50			
Protective cover , with spring lid	CUC-V14-A1PBK-PC	1413970	1			
Screw set , M3x20 V2A, including plastic washers, toothed lock washers, and nuts	CUC-V14-A-SCREW-M3:20	1413987	20			
Strain relief plate	CUC-V14-A3ST-SR	1413990	1			

Field couplings, IP65/67



RJ45 and power field coupling
with cable connection



RJ45 field coupling
with cable connection

Electrical data
Transmission characteristics (category)
Material data
Housing material
Connection data
Connection method
Connection cross section AWG
Cable diameter
Insertion/withdrawal cycles
Temperature data
Ambient temperature (operation)

Technical data		
VS-MP-PPC/CG-PO/10G		
CAT6 _A		
Aluminum press-drawn section / die-cast zinc		
Spring connection / IDC		
-		
5 mm ... 8 mm (Data cable gland)		
> 1000 (Data)		
-40°C ... 70°C		

Description
Multi-port connection , for passive PROFINET cabling to robots, including mounting foot, for cable diameter :
1 Gbps
10 Gbps
Multi-port power connection : push-pull power, for passive PROFINET cabling to robots, including mounting foot

Ordering data		
Type	Order No.	Pcs./Pkt.
VS-MP-PPC/PPC-PO/1G	1406395	1
VS-MP-PPC/CG-PO/10G	1403682	1
VS-MP-PPC/CG-PO	1403681	1

Protective cover for data port
Stripping tool , for multiple-stage repositioning of shielded conductors

Accessories		
VS-PPC-C1-PC-ROBK-L	1405293	1
VS-CABLE-STRIP-VARIO	1657407	1

Technical data		
VS-MP-PPC/CG-10G		
CAT6 _A		
Aluminum press-drawn section / die-cast zinc		
IDC		
-		
5 mm ... 8 mm (Data cable gland)		
> 1000 (Data)		
-40°C ... 70°C		

Ordering data		
Type	Order No.	Pcs./Pkt.
VS-MP-PPC/CG-10G	1403678	1

Accessories		
VS-PPC-C1-PC-ROBK-L	1405293	1
VS-CABLE-STRIP-VARIO	1657407	1

Power and data field couplings,
IP65/67

- Fixed mounting is also an option
- Robust design
- Including covers to protect against environmental influences



RJ45 and power field coupling

ERC

		Technical data		
Electrical data		VS-MP-PPC/PPC-1G		
Rated voltage		72 V (DC)		
Rated current		-		
Transmission characteristics (category)		CAT5		
Material data				
Housing material		Aluminum press-drawn section / die-cast zinc		
Contact material		Phosphor bronze		
Flammability rating in accordance with UL 94		V0		
Mechanical data				
Number of positions		8		
Degree of protection		IP65		
Temperature data				
Ambient temperature (operation)		-40°C ... 70°C		
		Ordering data		
Description		Type	Order No.	Pcs./Pkt.
Multi-port data coupling: for passive PROFINET cabling to robots, including mounting foot				
Metal housing				
Multi-port power coupling: for passive PROFINET cabling to robots, including mounting foot		VS-MP-PPC/PPC-1G	1403685	1
		VS-MP-PPC/PPC-PO	1403684	1

Terminal outlets, IP65/67

- Easy installation, thanks to captive cover screws
- Robust design
- Including covers to protect against environmental influences
- Integrated cable management system



**Terminal outlet
with 2 x RJ45 slots**



**Terminal outlet
with RJ45 and power slots**

ERC

Technical data

Electrical data	
Rated voltage	72 V (DC)
Rated current	-
Transmission characteristics (category)	CAT6
Material data	
Housing material	Aluminum cast alloy, powder-coated

Mechanical data

Color	black
Degree of protection	IP65/IP67

Ordering data

Description	Type	Order No.	Pcs./Pkt.
Terminal outlet, IP65/IP67, 2 slots, Version 14, with protective plugs, 2 cable entries			
Push-pull with 2 x RJ45	VS-TO-RO-MCBK-F1411/1411	1404281	1
Terminal outlet, IP65/IP67, 2 slots, Version 14, with protective plugs, 2 cable entries			
Push-pull with 1 x Power and 1 x RJ45			

ERC

Technical data

Electrical data	
Rated voltage	72 V (DC)
Rated current	-
Transmission characteristics (category)	CAT6
Material data	
Housing material	Aluminum cast alloy, powder-coated

Mechanical data

Color	black
Degree of protection	IP65/IP67

Ordering data

Description	Type	Order No.	Pcs./Pkt.
Terminal outlet, IP65/IP67, 2 slots, Version 14, with protective plugs, 2 cable entries			
Push-pull with 2 x RJ45			
Terminal outlet, IP65/IP67, 2 slots, Version 14, with protective plugs, 2 cable entries			
Push-pull with 1 x Power and 1 x RJ45	VS-TO-RO-MCBK-F1411/1413	1404333	1

Push-pull power connectors, IP65/IP67

- Fixed coding for PROFINET
- Flexible coding
- Various solder versions
- Spring connection



Push-pull connector



Push-pull panel mounting side

	Technical data			Technical data		
	CUC-PPC-C2ZNI-S.../24FKP5			VS-MSTBA...-BK-A VS-PPC-F2-MSTB-MNNA...		
Electrical data	16 A (at 20°C)			16 A -		
Rated current	16 A			16 A -		
Material data	Zinc die-cast			Zinc die-cast		
Housing material	V0			V0		
Flammability rating in accordance with UL 94	0.75 mm ² ... 2.5 mm ²			-		
Conductor cross section	18 ... 13			-		
Connection cross section AWG	≥ 100			≥ 100		
Insertion/withdrawal cycles	-40°C ... 85°C			-40°C ... 70°C		
Temperature data	-40°C ... 85°C			-40°C ... 80°C		
Ambient temperature (operation)						
	Ordering data			Ordering data		
	Type	Order No.	Pcs./Pkt.	Type	Order No.	Pcs./Pkt.
Description						
MSTB connector, IP67 , with push-pull interlocking, 5-pos., with spring connection, metal housing, 24 V, molded coding						
for cable diameter of 6.5 mm ... 9 mm	CUC-PPC-C2ZNI-SX/24FKP5	1421783	1			
for cable diameter of 9 mm ... 13 mm	CUC-PPC-C2ZNI-SS/24FKP5	1421785	1			
MSTB connector, IP67, without logo , with push-pull locking, 5-pos., with spring connection, metal housing, 24 V, molded coding						
for cable diameter of 9 mm ... 13 mm	CUC-PPC-C2ZNI-SX/24FKP5:WO	1032276	1			
MSTB connector, IP67 , with push-pull interlocking, 5-pos., with spring connection, metal housing, 24 V, variable coding						
for cable diameter of 6.5 mm ... 9 mm	CUC-PPC-C2ZNI-SS/24FKP5:FC	1425515	1			
for cable diameter of 9 mm ... 13 mm	CUC-PPC-C2ZNI-SX/24FKP5:FC	1425514	1			
MSTB connector, IP67, without logo , with push-pull locking, 5-pos., with spring connection, metal housing, 24 V, variable coding						
for cable diameter of 9 mm ... 13 mm	CUC-PPC-C2ZNI-SX/24FKP5:FCWO	1032275	1			
Blind plug , for MSTB connectors	CUC-PPC-C2ZNI-DC	1001432	1			
MSTB contact insert , for PCB mounting, 24 V, 5-pos., RAL 9005 (black), for panel mounting frame VS-PPC-F2-MSTB-...-1R-P				VS-MSTBAH 2,5/ 5-GB-5,08-BK-A	1657915	50
Angled solder pins				VS-MSTBVA 2,5/ 5-GB-5,08-BK-A	1609565	50
Straight solder pins						
MSTB panel mounting frame, IP67 , for Push-Pull locking, for PCB connection, for rectangular assembly opening, with gasket, without mounting screws				VS-PPC-F2-MSTB-MNNA-1R-P	1608087	1
Metal housing						
MSTB panel mounting frame, IP67 , for push-pull interlocking, with integrated contact insert for conductor connection, spring connection, for rectangular mounting cutout, with seal, without mounting screws				VS-PPC-F2-MSTB-MNNA-1R-SPSA5	1608249	1
24 V, metal						
MSTB panel mounting frame, IP67 , for push-pull interlocking, metal, with integrated contact insert for conductor connection, spring connection, for round mounting cutout, with seal, without mounting screws						
24 V				VS-PPC-F2-MSTB-MNNA-1C-SPSA5	1405248	1
Protective cover , for MSTB panel mounting frame				CUC-PPC-A2RBK-PC	1424989	1
Protective cap , IP65, with push-pull locking for covering the contact insert in the push-pull connector for Power, plastic				VS-PPC-F2-PC-POBK	1405329	1

Push-pull power distributors, IP65/IP67



Push-pull Y-distributor



Push-pull H-distributor

EAC

Technical data		
Electrical data	VS-PPC-J-1220-1227-1020-0,2	
Rated voltage	24 V	
Rated current	16 A	
Material data	Aluminum die-cast	
Housing material	Aluminum die-cast	
Mechanical data	5	
Number of positions	IP65/IP67	
Degree of protection	IP65/IP67	
Temperature data	-40°C ... 70°C (cable, fixed installation)	
Ambient temperature (operation)	-40°C ... 70°C (cable, fixed installation)	

Ordering data		
Type	Order No.	Pcs./Pkt.
VS-PPC-J-1220-1227-1020-0,2	1404799	1
VS-PPC-J-1220-1227-1020-...	1405484	1

Accessories		
VS-PPC-J-M	1405390	1

EAC

Technical data		
Electrical data	VS-PPC-J-4X-1227	
Rated voltage	24 V	
Rated current	16 A (at 20°C)	
Material data	Zinc die-cast	
Housing material	Zinc die-cast	
Mechanical data	5	
Number of positions	IP65/IP67	
Degree of protection	IP65/IP67	
Temperature data	-40°C ... 85°C	
Ambient temperature (operation)	-40°C ... 85°C	

Ordering data		
Type	Order No.	Pcs./Pkt.
VS-PPC-J-4X-1227	1405387	1

Accessories		
VS-PPC-J-M	1405390	1

Electrical data	VS-PPC-J-1220-1227-1020-0,2
Rated voltage	24 V
Rated current	16 A
Material data	Aluminum die-cast
Housing material	Aluminum die-cast
Mechanical data	5
Number of positions	IP65/IP67
Degree of protection	IP65/IP67
Temperature data	-40°C ... 70°C (cable, fixed installation)
Ambient temperature (operation)	-40°C ... 70°C (cable, fixed installation)

Description	PROFINET Y-distributor with assembled power cable, 5-pos., IP65/IP67, MSTB connector with metal housing to 2 x socket in the metal housing, cable length:
0.2 m	
Variable	
Power H distributor, 4 x MSTB contact inserts, metal housing, without mounting screws	

Mounting foot for power distributors, plastic	VS-PPC-J-M	1405390	1
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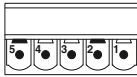
Ordering example for products with variable cable length:

For a distributor with a cable length of 34.5 m,
the ordering data is as follows:

Order No.	Length [m]
1405484	34.5
	Increment: 0.5 m
	Maximum length: 50 m

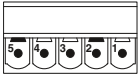
Assembled power cables
2.5 mm²

Power, metal, 24 V
2.5 mm²



Ordering data

Power, metal, 24 V, 2.5 mm²



Order No.

1609170

1609183

1609196

Variable

1609206

Ordering example for cables with
variable cable length:

Assembled PROFINET power cable for 24 V, with two metal
push-pull connectors and a cable length of 34.5 m.

Order No.	Length [m] Max. 100 m
1609206	34.5
Increments: 1.0 m ... 3.0 m = 0.1 m > 3.0 m = 0.5 m	

Technical data		Technical data
		Power, metal, 24 V 1.5 mm²
Housing material		Zinc die-cast
Outer sheath, material		PVC
Conductor cross section	[mm²]	2.5
External cable diameter	[mm]	11.8
Degree of protection		IP65
Ambient temperature		
Fixed installation	[°C]	-40 ... 70
Flexible installation	[°C]	-5 ... 70
Male connector/female connector	[°C]	-40 ... 70

Push-Pull ADVANCE connectors, IP65/IP67

- Easy handling, thanks to one-piece design
- Locking system to prevent unintentional removal



SC-RJ connector, cable outlet straight,
for polymer fibers 980 / 1000 μm



SC-RJ connector, cable outlet at the top,
for polymer fibers 980 / 1000 μm



Technical data

Degree of protection	IP65/IP67
Housing material	Zinc die-cast
External cable diameter	5.5 mm ... 10 mm
Insertion/withdrawal cycles	≥ 100
Temperature data	
Ambient temperature (operation)	-25°C ... 70°C

Ordering data

Description	Type	Order No.	Pcs./Pkt.
Push-pull ADVANCE , SC-RJ connector			
Single pack	FOC-V14-C1ZNI-S/SJFP	1407896	1

Accessories

Tool set for POF assembly , for field installation of SC connectors.	TF-SCRJ-POF KONF SET	1405246	1
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Technical data

Degree of protection	IP65/IP67
Housing material	Zinc die-cast
External cable diameter	5.5 mm ... 10 mm
Insertion/withdrawal cycles	≥ 100
Temperature data	
Ambient temperature (operation)	-25°C ... 70°C

Ordering data

Description	Type	Order No.	Pcs./Pkt.
Push-pull ADVANCE , SC-RJ connector			
Single pack	FOC-V14-C1ZNI-T/SJFP	1408028	1

Accessories

Tool set for POF assembly , for field installation of SC connectors.	TF-SCRJ-POF KONF SET	1405246	1
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Push-Pull ADVANCE connectors,
IP65/IP67



SC-RJ connector, cable outlet at the bottom,
for polymer fibers 980 / 1000 µm



Technical data		
Degree of protection	IP65/IP67	
Housing material	Zinc die-cast	
External cable diameter	5,5 mm ... 10 mm	
Insertion/withdrawal cycles	≥ 100	
Temperature data		
Ambient temperature (operation)	-25°C ... 70°C	
Ordering data		
Description	Type	Order No. Pcs./Pkt.
Push-pull ADVANCE, SC-RJ connector Single pack	FOC-V14-C1ZNI-B/SJFP	14079021
Accessories		
Tool set for POF assembly, for field installation of SC connectors.	TF-SCRJ-POF KONF SET	14052461

FO connectors, panel mounting frames, and couplings



SC-RJ panel mounting side



Technical data

Housing material	Zinc die-cast
Flammability rating in accordance with UL 94	V0
Degree of protection	IP65/IP67
Insertion/withdrawal cycles	≥ 50
Temperature data	
Ambient temperature (operation)	-40°C ... 70°C

Ordering data

Description	Type	Order No.	Pcs./Pkt.
SC-RJ panel mounting frame, IP67 , for push-pull interlocking, for rectangular mounting cutout, for AVAGO transceiver (type: AFBR5978BZ) on PCB, with seal and mounting screws			
Zinc die-cast housing	FOC-V14-F1ZNI-EM/SJO	1413981	1
SC-RJ panel mounting frame, IP67, incl. SC-RJ coupling , for push-pull interlocking, for rectangular mounting cutout, with seal and mounting screws			
Zinc die-cast housing	FOC-V14-F1ZNI-EM/SJB	1413964	1
SC-RJ panel mounting frame, IP67, incl. SC-RJ coupling , for push-pull interlocking, for round mounting cutout, with seal			
Adapter , zinc die-cast	VS-PPC-F1-SCRJ-MNNA-1C-F	1405235	1
45°	CUC-V14-A1ZNI-R45	1413988	1
180°	CUC-V14-A1ZNI-S180	1413989	1

Accessories

Protective cover , for data port	VS-PPC-C1-PC-ROBK-L	1405293	1
Adapter , with filler plug and marking element	CUC-V14-A1RBK-PC	1413985	1
Marking element , without filler plug	CUC-V14-A1PBK-BA:50	1413979	50
Protective cover , with spring lid	CUC-V14-A1PBK-PC	1413970	1
Screw set , M3x20 V2A, including plastic washers, toothed lock washers, and nuts	CUC-V14-A-SCREW-M3:20	1413987	20

Power and data field couplings, IP65/67



SC-RJ and power field coupling
with cable connection



SC-RJ field coupling
with cable connection

ERC

Technical data

VS-MP-PPC/CG-PO/FO	VS-MP-PPC/CG-PO
Aluminum press-drawn section / die-cast zinc	Aluminum press-drawn section / die-cast zinc
Data/power: SCRJ/5-pos. ≥ 500 (Data)	Power: 5-pos. ≤ 100 (Power)
-40°C ... 70°C	-40°C ... 70°C

Ordering data

Type	Order No.	Pcs./Pkt.
VS-MP-PPC/CG-PO/FO	1404321	1
VS-MP-PPC/CG-PO	1403681	1
VS-MP-PPC/PPC-PO	1403684	1

Accessories

VS-PPC-C1-PC-ROBK-L	1405293	1
VS-CABLE-STRIP-VARIO	1657407	1

ERC

Technical data

VS-MP-PPC/CG-FO
Aluminum press-drawn section / die-cast zinc
Data: SCRJ ≥ 500 (Data)
-40°C ... 70°C

Ordering data

Type	Order No.	Pcs./Pkt.
VS-MP-PPC/CG-FO	1404319	1

Accessories

VS-CABLE-STRIP-VARIO	1657407	1
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Material data
Housing material
Connection data
Connection profile
Insertion/withdrawal cycles
Temperature data
Ambient temperature (operation)

Description
Multi-port connection , for passive PROFINET cabling to robots, including mounting foot
Multi-port power connection , push-pull power, for passive PROFINET cabling to robots, including mounting foot
Multi-port power coupling , for passive PROFINET cabling to robots, including mounting foot

Protective cover for data port
Stripping tool , for multiple-stage repositioning of shielded conductors

Terminal outlets and couplings, IP65/67

- Easy installation, thanks to captive cover screws
- Robust design
- Including covers to protect against environmental influences
- Integrated cable management system



Terminal outlet
with SC-RJ and power slots



SC-RJ field coupling

EAC

Technical data		
Aluminum cast alloy, powder-coated		
-		
-		
-40°C ... 70°C		
Ordering data		
Type	Order No.	Pcs./Pkt.
VS-TO-RO-MCBK-F1417/1413	1404346	1
VS-TO-RO-MCBK-F1417/1417	1404320	1

EAC

Technical data		
Zinc die-cast		
-		
>= 500		
-40°C ... 70°C		
Ordering data		
Type	Order No.	Pcs./Pkt.
VS-PPC-J-1-SCRJ-MNBK	1405206	1

Material data	
Housing material	
Connection data	
Connection profile	
Insertion/withdrawal cycles	
Temperature data	
Ambient temperature (operation)	
Description	
Terminal outlet SC-RJ/Power IP65/67 Push-Pull, 2 slots version 14, with protective plugs, 2 cable entries	
Terminal outlet SC-RJ IP65/67 Push-Pull, 2 slots version 14, with protective plugs, 2 cable entries	
SC-RJ push/pull coupling, IP67, metal, with protective cover, color: nickel-plated	

RJ45 connectors, IP20



RJ45 crimp connectors



RJ45 field connection connectors

ERC

ERC

	Technical data	
Electrical data	VS-08-RJ45-10G/C	VS-08-ST-H21P-RJ45
Transmission characteristics (category)	CAT6 _A	-
Overvoltage category	I	I
Material data		
Housing material	-	-
Contact material	Phosphor bronze	Copper alloy
Flammability rating in accordance with UL 94	V2	V2
Degree of pollution	-	2
External cable diameter	-	-
Insertion/withdrawal cycles	≥ 750	≥ 750
Temperature data		
Ambient temperature (operation)	-25°C ... 60°C	-25°C ... 60°C

	Ordering data		
Description	Type	Order No.	Pcs./Pkt.
RJ45 connector , IP20, CAT5, 8-pos., with QUICKON fast connection technology, for 1-wire and 7-wire 26 to 23 AWG conductors, color:			
gray			
black			
RJ45 connector , IP20, CAT6 _A , 8-pos., with QUICKON fast connection technology, for 26 ... 24 AWG 1-wire and 7-wire conductors, color:			
black			
RJ45 connector , 4-pos., with QUICKON fast connection technology, for 22 AWG, color:			
gray			
RJ45 connector , IP20, CAT6, 8-pos., with crimp connection, for 27 ... 24 AWG, color:			
gray			
green			
RJ45 connector , IP20, CAT6 _A , 8-pos., with crimp connection, for 27 ... 24 AWG, color:			
gray			
green			
RJ45 male insert , CAT6 _A , 10 Gbps	CUC-STD-C1PGY-S/R4E8:1 CUC-STD-C1PGN-S/R4E8:1	1414382 1414400	1 1
	CUC-STD-C1PGY-S/R4EA:1 CUC-STD-C1PGN-S/R4EA:1	1414395 1414402	1 1
RJ45 male insert , 8-pos., shielded, IDC connection technology, for 27 ... 26 AWG litz wires, with strain relief	VS-08-RJ45-10G/C	1418853	5
CAT5	VS-08-ST-H11-RJ45	1652716	5
RJ45 bend protection sleeve , for VS-08-ST-H11-RJ45 and VS-08-RJ45-10G/C male inserts, for cable diameter up to 7 mm, color:			
gray	VS-08-KS-H/GY	1654743	5
green	VS-08-KS-H/GN	1654756	5

Accessories			
Crimp tool , pliers with die, for VS-08-ST-H...-RJ45	VS-CT-RJ45-H	1653265	1
Stripping tool , for multiple-stage repositioning of shielded conductors	VS-CABLE-STRIP-VARIO	1657407	1
Shielding foil set , 25 pcs., replacement for VS-PN-RJ45-5-Q/IP20			

	Technical data	
VS-08-RJ45-5-Q/IP20...	CUC-STD-C1P...	
CAT5 (IEC 11801:2002)	CAT6	
I	-	
Material data		
PA	PA	
Cu/Sn	Phosphor bronze	
V0	V2	
1	2	
4.5 mm ... 8 mm	7 mm	
≥ 1000	≥ 750	
Temperature data		
-20°C ... 70°C	-25°C ... 60°C	

	Ordering data		
Description	Type	Order No.	Pcs./Pkt.
VS-08-RJ45-5-Q/IP20		1656725	1
VS-08-RJ45-5-Q/IP20 BK		1658008	1
VS-08-RJ45-10G/Q		1419001	1
VS-PN-RJ45-5-Q/IP20		1658435	1

Accessories			
VS-CABLE-STRIP-VARIO		1657407	1
VS-08-RJ45-FOLIEN-SET		1417184	1

RJ45 industrial connectors, IP20

- Optimized for industrial use with a high degree of resistance to vibration
- High resistance to ESD and EMI for reliable transmission
- Easy handling, thanks to one-piece design
- Metal locking mechanism



RJ45 industrial, straight cable outlet



RJ45 industrial, cable outlet at the bottom and top



Technical data

Degree of protection
Connection cross section AWG
Connection cross section AWG
Transmission speed
Housing material
External cable diameter
Insertion/withdrawal cycles
Temperature data
Ambient temperature (operation)

Ethernet	PROFINET
IP20	IP20
26 ... 24 (rigid)	23 ... 22 (rigid)
26 ... 24 (flexible)	23 ... 22 (flexible)
1 Gbps	1 Gbps
Zinc die-cast	Zinc die-cast
5 mm ... 9 mm	5 mm ... 9 mm
≥ 750	≥ 750

-40°C ... 70°C

-40°C ... 70°C

Ordering data

Description

RJ45 industrial connector, 8-pos.

RJ45 industrial connector, 8-pos., cable outlet at the bottom

RJ45 industrial connector, 8-pos., cable outlet at the top

Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
Ethernet		PROFINET	
1421607	1	1421126	1



Technical data

Ethernet	PROFINET
IP20	IP20
26 ... 24 (rigid)	23 ... 22 (rigid)
26 ... 24 (flexible)	23 ... 22 (flexible)
1 Gbps	1 Gbps
Zinc die-cast	Zinc die-cast
5 mm ... 9 mm	5 mm ... 9 mm
≥ 750	≥ 750

-40°C ... 70°C

-40°C ... 70°C

Ordering data

Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
Ethernet		PROFINET	
1421877	1	1421128	1

1421876

1

1421127

1

Accessories

Stripping tool, for multiple-stage repositioning of shielded conductors

Electronic diagonal cutter, tapered head, without chamfer, with opening spring, non-reflective phosphate-treated surface, punched version

Markers for terminal blocks, roll, unmarked, can be marked with: THERMOMARK ROLL, THERMOMARK X, THERMOMARK S1.1

white

Marker for terminal blocks, sheet, white, unmarked, can be marked with: BLUEMARK CLED, BLUEMARK LED, plotter

VS-CABLE-STRIP-VARIO	1657407	1
MICROFOX-SP-1	1212487	1
TMT 5 R	0816430	1
UC-TMF 5	0818153	10

Accessories

VS-CABLE-STRIP-VARIO	1657407	1
MICROFOX-SP-1	1212487	1
TMT 5 R	0816430	1
UC-TMF 5	0818153	10

RJ45 panel mounting frames and inserts, IP20



Keystone panel mounting frame and keystones

ERC

Technical data

VS-08-BU-RJ45-6/KA/LSA

Electrical data

Rated current

2 A

Transmission characteristics (category)

CAT6

Material data

Housing material

PC+ABS

Contact material

Phosphor bronze

Flammability rating in accordance with UL 94

V0

Mechanical data

Number of positions

8

Connection method

LSA

Conductor cross section

0.13 mm² ... 0.25 mm² (rigid)

Connection cross section AWG

26 ... 23 (rigid)

Temperature data

Ambient temperature (operation)

-20°C ... 70°C

Ordering data

Description

RJ45 socket insert, 8-pos., shielded, female to female

CAT5

RJ45 socket insert, 8-pos., shielded, female to female

CAT6

RJ45 socket insert, 8-pos., shielded, with cable connection

CAT6_A

RJ45 panel mounting frame, single, for modular female inserts (Keystone), without mounting screws

Type

VS-08-BU-RJ45/BU

Order No.

1689064

Pcs./Pkt.

5

VS-08-BU-RJ45-6-MOD/BU

1653155

5

CUC-K-J1ZNI-S/R4IDC8

1419021

1

VS-08-A-RJ45/MOD-1-IP20

1689433

5

Accessories

Stripping tool, for multiple-stage repositioning of shielded conductors

VS-CABLE-STRIP-VARIO

1657407

1

DIN rail adapters

new



DIN rail adapter

DIN rail adapter housing,
inserts

EAC

Technical data				Technical data			
FL-PP-RJ45-...				FOC-I-D1PGN-S/... CUC-I-...1ZNI-S/R4...			
CAT6				-			
PC-GF				PBT			
CuSn				-			
V0				V0			
8				-			
gray				-			
IP20				IP20			
Coupling				Coupling			
-				-			
-10°C ... 60°C				-10°C ... 70°C			
Ordering data				Ordering data			
Description				Description			
DIN rail adapter , IP20, coupler module				DIN rail adapter , IP20, CAT6 _A , connection cross section: 26 ... 22 AWG			
CAT6 for 1 Gbps				CAT6 _A for 10 Gbps			
DIN rail adapter , patch panel, SC-RJ, IP20, female/female, can be used with glass, multimode, HCS, and polymer fibers				DIN rail adapter housing			
Insert , for DIN rail adapter housings				LC duplex coupling			
SC simplex coupling				MTP coupling, type A			
MTP coupling, type B				RJ45 female insert, CAT6 _A			
RJ45 coupling, CAT6 _A				Plug Guard Security frame , white, for DIN rail adapters, for securing the RJ45 interface against unauthorized disconnection, with key element			
Dust protection flap , gray, for DIN rail adapters				Port Guard Security element , red, for securing the RJ45 interface against unauthorized access, with key element			
Accessories				Accessories			
NBC-PP-G1PGY				NBC-PP-F1PWH:10			
FOC-I-D1PGN-S/LCGCSM				NBC-PP-P1PGY:10			
FOC-I-D1PGR-S/SCGCSM				NBC-PP-A1PRD:10			
FOC-I-D1PGY-S/MPAGC							
FOC-I-D1PGY-S/MPBGC							
CUC-I-J1ZNI-S/R4IDC8							
CUC-I-D1ZNI-S/R4GC8							

FO connectors, IP20



POF, 980/1000 μm



PCF, 200/230 μm, 2.9 mm

ERC

Technical data

Material data
Housing material
Ferrule material
Flammability rating in accordance with UL 94
Color
Degree of protection
Insertion/withdrawal cycles
Temperature data
Ambient temperature (operation)

PBT
Copper alloy
V0
black
IP20
≥ 500

-25°C ... 70°C

Ordering data

Description
FO connector SC-RJ , duplex, with fast connection
IP20 IP20, for single wire diameter: 2.9 mm FO connector for 200/230 μm PCF fibers , crimp connection
- SC-RJ - SC duplex Connector set for polymer fibers (diameter of the individual elements: 2.2 mm), for self-assembly, with bend protection
- F-SMA set, 4 connectors Connector set for PCF fibers (diameter of the individual elements: 2.9 mm), for self-assembly, with bend protection
- F-SMA set, 4 connectors - B-FOC (ST®) set, 4 connectors Connector set for PROFINET PCF fibers (diameter of the individual elements: 2.2 mm), for self-assembly, with bend protection
- SC duplex set, 2 duplex connectors - B-FOC (ST®) set, 4 connectors

Type	Order No.	Pcs./Pkt.
VS-SCRJ-POF-FA-IP20	1654879	1
PSM-SET-FSMA/4-KT	2799720	1

ERC

Technical data

PBT
Copper alloy
V0
black
IP20
≥ 1000

-20°C ... 70°C

Ordering data

Type	Order No.	Pcs./Pkt.
VS-SCRJ-HCS-FA-IP20	1654866	1
PSM-SET-FSMA/4-HCS PSM-SET-B-FOC/4-HCS	2799487 2708481	1 1

Accessories

Tool set for POF assembly , for field installation of SC connectors.
Tool set for PCF assembly , for field installation of SC connectors
PCF (GI) DIY case for SC-RJ and SC duplex quick mounting connectors, stripping blade, stripping pliers, aramid yarn scissors, fiber stripper, fiber cleaving tool, and microscope

TF-SCRJ-POF KONF SET	1405246	1
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Accessories

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PCF, 200/230 μm

EAC

Technical data
PBT
Zirconia ceramics
V0
beige
IP20
≥ 500
-40°C ... 70°C

Ordering data		
Type	Order No.	Pcs./Pkt
FOC-C-SCRJ-PCF	1411304	1
FOC-C-SCDU-PCF	1411305	1

Accessories		
FOC-TOOL-PCF KONF SET	1411051	1
PSM-HCS-KONFTOOL/SC-RJ	2708876	1

Data connectors and cables

Network components – IP20 connectors

FO connectors, IP20, field connection

- Cleave technology
- Reusable connectors
- Optimum attenuation values with easy assembly
- No bonding or polishing



LC duplex connector,
1.25 mm - ferrules



LC simplex connector for pigtails,
1.25 mm - ferrules

Material data
Housing material
Ferrule material
Flammability rating in accordance with UL 94
Color
Degree of protection
Insertion/withdrawal cycles
Temperature data
Ambient temperature (operation)

Technical data
PBT
Zirconia ceramics
V0
beige
IP20
≥ 500 (in accordance with IEC 61300-2-2)
-10°C ... 60°C (IEC 61300-2)

Description
FO connector , fast connection, reusable
GOF, 50/125 µm, multimode
GOF, 9/125 µm, single mode (APC)
GOF, 9/125 µm, single mode (PC)
FO connector , fast connection, reusable, value pack
GOF, 50/125 µm, multimode
GOF, 9/125 µm, single mode (APC)
GOF, 9/125 µm, single mode (PC)

Ordering data		
Type	Order No.	Pcs./Pkt.
FOC-C-LCDU-GOF-MM	1411052	1
FOC-C-LCDU-GOF-SM-APC	1412472	1
FOC-C-LCDU-GOF-SM-PC	1411053	1
FOC-C-LCDU-GOF-MM/10	1411298	1
FOC-C-LCDU-GOF-SM-APC/10	1412479	1
FOC-C-LCDU-GOF-SM-PC/10	1411299	1

Accessories
Tool set for GOF assembly , for field installation of LC and SC connectors

Accessories		
FOC-TOOL-GOF KONF SET	1411049	1

Technical data
-
Zirconia ceramics
V0
beige
IP20
≥ 500 (in accordance with IEC 61300-2-2)
-10°C ... 60°C (IEC 61300-2)

Ordering data		
Type	Order No.	Pcs./Pkt
FOC-C-LC:P-GOF-MM	1411294	1
FOC-C-LC:P-GOF-SM-APC	1412476	1
FOC-C-LC:P-GOF-SM-PC	1411295	1

Accessories		
FOC-TOOL-GOF KONF SET	1411049	1



SC duplex connector,
2.5 mm - ferrules



SC simplex connector for pigtails,
2.5 mm - ferrules



SC-RJ connector,
2.5 mm - ferrules

ERC

Technical data		
-		
Zirconia ceramics		
V0		
green		
IP20		
≥ 500 (in accordance with IEC 61300-2-2)		
-10°C ... 60°C (IEC 61300-2)		
Ordering data		
Type	Order No.	Pcs./Pkt.
FOC-C-SCDU-GOF-MM	1411292	1
FOC-C-SCDU-GOF-SM-APC	1412474	1
FOC-C-SCDU-GOF-SM-PC	1411293	1
FOC-C-SCDU-GOF-MM/10	1411302	1
FOC-C-SCDU-GOF-SM-APC/10	1412481	1
FOC-C-SCDU-GOF-SM-PC/10	1411303	1
Accessories		
FOC-TOOL-GOF KONF SET	1411049	1

ERC

Technical data		
-		
Zirconia ceramics		
V0		
blue		
IP20		
≥ 500 (in accordance with IEC 61300-2-2)		
-10°C ... 60°C (IEC 61300-2)		
Ordering data		
Type	Order No.	Pcs./Pkt.
FOC-C-SC:P-GOF-MM	1411296	1
FOC-C-SC:P-GOF-SM-APC	1412478	1
FOC-C-SC:P-GOF-SM-PC	1411297	1
FOC-C-SC:P-GOF-MM/10	1411300	1
FOC-C-SC:P-GOF-SM-APC/10	1412480	1
FOC-C-SC:P-GOF-SM-PC/10	1411301	1
Accessories		
FOC-TOOL-GOF KONF SET	1411049	1

ERC

Technical data		
-		
Zirconia ceramics		
V0		
beige		
IP20		
≥ 500 (in accordance with IEC 61300-2-2)		
-10°C ... 60°C (IEC 61300-2)		
Ordering data		
Type	Order No.	Pcs./Pkt.
FOC-C-SCRJ-GOF-MM	1411290	1
FOC-C-SCRJ-GOF-SM-APC	1412473	1
FOC-C-SCRJ-GOF-SM-PC	1411291	1
FOC-C-SCRJ-GOF-MM/10	1411300	1
FOC-C-SCRJ-GOF-SM-APC/10	1412480	1
FOC-C-SCRJ-GOF-SM-PC/10	1411301	1
Accessories		
FOC-TOOL-GOF KONF SET	1411049	1

Fiber optic couplings

Suitable for fiber types:

- POF (980/1000 µm), PCF (200/230 µm), GOF MM (50/125 µm), GOF SM (9/125 µm)



SC-RJ coupling



Couplings for connecting FO cables

ERC

Technical data

Material data	
Housing material	PBT
Ferrule material	Zirconia ceramics
Flammability rating in accordance with UL 94	V0
Color	black
Degree of protection	IP20
Insertion/withdrawal cycles	≥ 500
Temperature data	
Ambient temperature (operation)	-25°C ... 70°C

Ordering data

Description	
SC-RJ coupling , for terminal outlets VS-TO-... and 19" patch panels VS-PP-19-1HE-16-F and front plate VS-SI-FP-2F	
1x SC-RJ (duplex)	
Coupling ; set, consisting of:	
2 x F-SMA/F-SMA	
2 x B-FOC (ST®)/B-FOC (ST®)	
1x SC-RJ/SC-RJ (duplex)	
1 x LC/LC (duplex, multimode fiber)	
1x LC/LC (duplex, single-mode fiber (PC))	
1x SC duplex/SC duplex	

Type	Order No.	Pcs./Pkt.
VS-SCRJ-GOF-KU	1654358	1

ERC

Technical data

-	
-	
V0	
bare metallic	
IP20	
-	
-25°C ... 85°C	

Ordering data

Type	Order No.	Pcs./Pkt.
PSM-SET-FSMA-LINK/2	2799416	1
PSM-SET-BFOC-LINK/2	2799429	1
VS-SCRJ-GOF-BU/BU	1652978	1
FL MM PATCH COUPLER LC-LC	2700312	1
FL SM PATCH COUPLER LC-LC	2700313	1
FL COUPLER SC-DUPLEX	2901788	1

FO splice boxes, FDX 20 series, IP20

- Compact dimensions despite large splice comb
- Snap-in adapter for easy DIN rail mounting
- Ready for equipotential bonding
- Suitable for industrial applications
- Up to twelve duplex front connections
- Preassembly ready for splicing
- Intuitive front operation



new

**FDX 20 splice box,
DIN rail mounting**

Technical data				
Material data				
Housing material	Sheet steel			
Ferrule material	Zirconia ceramics			
Flammability rating in accordance with UL 94	V0			
Color	traffic gray A RAL 7042			
Degree of protection	IP20			
Insertion/withdrawal cycles	≥ 500			
Temperature data				
Ambient temperature (operation)	-40°C ... 85°C			
Ordering data				
Type	Order No.	Pcs./Pkt.		
DIN rail splice box , for 6 x LC duplex				
	Without pigtails			
	OM2 (G50 / 125 µm)	FOC-FDX20-PP-LCD6-MM	1019710	1
	OM4 (G50 / 125 µm)	FOC-FDX20-PP-LCD6-OM2-PT9	1019713	1
	OS2 (PC) (E9 / 125 µm)	FOC-FDX20-PP-LCD6-OM4-PT9	1019712	1
OS2 (APC) (E9 / 125 µm)	FOC-FDX20-PP-LCD6-OSP-PT9	1019711	1	
DIN rail splice box , for 12 x LC duplex	FOC-FDX20-PP-LCD6-OSA-PT9	1083665	1	
	Without pigtails			
	OM2 (G50 / 125 µm)	FOC-FDX20-PP-LCQ6-MM	1019705	1
	OM4 (G50 / 125 µm)	FOC-FDX20-PP-LCQ6-OM2-PT9	1019709	1
	OS2 (PC) (E9 / 125 µm)	FOC-FDX20-PP-LCQ6-OM4-PT9	1019708	1
DIN rail splice box , for 6 x SC duplex	FOC-FDX20-PP-LCQ6-OSP-PT9	1019707	1	
	Without pigtails			
	OM2 (G50 / 125 µm)	FOC-FDX20-PP-SCD6-MM	1019686	1
	OM4 (G50 / 125 µm)	FOC-FDX20-PP-SCD6-OM2-PT9	1019700	1
	OS2 (PC) (E9 / 125 µm)	FOC-FDX20-PP-SCD6-OM4-PT9	1019698	1
DIN rail splice box , for 6 x ST duplex	FOC-FDX20-PP-SCD6-OSP-PT9	1019692	1	
	Without pigtails			
	OM1 (G62,5 / 125 µm)	FOC-FDX20-PP-STD6-MM	1019681	1
	OM2 (G50 / 125 µm)	FOC-FDX20-PP-STD6-OM1-PT9	1019684	1
	OS2 (PC) (E9 / 125 µm)	FOC-FDX20-PP-STD6-OM2-PT9	1019683	1
DIN rail splice box , for 6 x LSH duplex	FOC-FDX20-PP-STD6-OSP-PT9	1019682	1	
OS2 (APC) (E9 / 125 µm)	FOC-FDX20-PP-E2D6-OSA-PT9	1019680	1	
Accessories				
Shrink splice protection , for FDX 20 splice boxes	FOC-SHRINKSPLICE-PROTECT	1019676	12	
Crimp splice protection , for FDX 20 splice boxes	FOC-CRIMPSPLICE-PROTECT	1019678	12	

FO 19" splice boxes



19" splice box

Material data

Housing material
Flammability rating in accordance with UL 94
Color
Degree of protection
Insertion/withdrawal cycles
Temperature data
Ambient temperature (operation)

Technical data

Sheet steel
V0
light gray RAL 7035
IP20
min. 1000

-10°C ... 60°C

Ordering data

Description

19" splice box, 1 RU, fully pre-assembled ready to splice, for 12x LC duplex

gray, OM2
black, OM4

19" splice box, 1 RU, fully pre-assembled ready to splice, for 24x LC duplex

gray, OM2
black, OM4

Type	Order No.	Pcs./Pkt.
FOC-SB-FR19:1U-LCD12-OM2 GY	1418815	1
FOC-SB-FR19:1U-LCD12-OM4 BK	1418817	1
FOC-SB-FR19:1U-LCD24-OM2 GY	1418816	1
FOC-SB-FR19:1U-LCD24-OM4 BK	1418818	1

Accessories for fiber optic assembly



Ferrule cleaner



Fiber stripper

Ordering data

Description

Ferrule cleaner, approx. 500 cleaning cycles

1.25 mm, for LC
2.50 mm, for ST, SC, FC

Stick cleaner for couplings and plug end faces

1.25 mm, for LC
2.50 mm, for ST, SC, FC

Type	Order No.	Pcs./Pkt.
FOC-TOOL-FERRULECLEANER-1.25	1407032	1
FOC-TOOL-FERRULECLEANER-2.50	1407029	1

Ordering data

Type	Order No.	Pcs./Pkt.
FOC-TOOL-STICKCLEANER-1.25	1407000	1
FOC-TOOL-STICKCLEANER-2.50	1407002	1

Tools for processing fiber optics



Fiber and T-stripper



Solvent dispenser and ceramic blade

Ordering data				Ordering data		
Description	Type	Order No.	Pcs./Pkt.	Type	Order No.	Pcs./Pkt.
Fiber stripper , for stripping the coating from 250 µm to 125 µm						
For 1 fiber	FOC-TOOL-STRIPPING-1HOLE-250	1407004	1			
For 2 fibers	FOC-TOOL-STRIPPING-2HOLE-250	1407008	1			
T-stripper						
AWG 18 ... 10/1.0 mm ... 2.6 mm	FOC-TOOL-STRIPPING-T-1	1407016	1			
AWG 30 ... 22 / 0.25 mm ... 0.64 mm	FOC-TOOL-STRIPPING-T-2	1407014	1			
Solvent dispenser , 100 ml, lockable pump dispenser						
				FOC-TOOL-DISPENSER	1406995	1
Ceramic blade				FOC-TOOL-CERAMIC-BLADE	1407019	1

Polishing accessories fiber optic connectors



Polishing film



Polishing disc

Ordering data				Ordering data		
Description	Type	Order No.	Pcs./Pkt.	Type	Order No.	Pcs./Pkt.
Polishing film , silicon carbide						
15 µm	FOC-POLISHINGFILM-SK-15.0	1407034	25			
Polishing film , AL ₂ O ₃						
1 µm	FOC-POLISHINGFILM-AO-01.0	1407037	25			
3 µm	FOC-POLISHINGFILM-AO-03.0	1407039	25			
Polishing film , diamond						
0.1 µm	FOC-POLISHINGFILM-D-00.1	1407046	10			
1 µm	FOC-POLISHINGFILM-D-01.0	1407042	10			
9 µm	FOC-POLISHINGFILM-D-09.0	1407044	10			
Polishing disc						
1.25 mm, for LC				FOC-POLISHINGDISC-1.25	1407024	1
2.50 mm, for ST, SC, FC				FOC-POLISHINGDISC-2.50	1407021	1

Data connectors and cables

Network components – Accessories

Tools for FO cabling, POF

- For quick and easy field assembly
- No bonding or polishing
- Blade can be replaced easily on site
- Optimum attenuation values with easy assembly
- Reusable connectors



ERC

Description	Ordering data			Ordering data		
	Type	Order No.	Pcs./Pkt.	Type	Order No.	Pcs./Pkt.
Polymer fiber DIY Case , consisting of: Stripping knife, stripping pliers, polishing wheel for F-SMA and SC-RJ quick mounting connectors, polishing pad and emery paper						
Power meter measuring case , comprising an optical power meter, F-SMA and B-FOC (ST®) coupling, reference fibers, and operating instructions	PSM-POF-KONFTOOL	2744131	1			
Powermeter supplementary set for devices with SC-RJ interface, comprising one-meter polymer reference fiber (SC Simplex connector to F-SMA connector), one-meter PCF GI reference fiber (SC Simplex connector to B-FOC (ST®) connector), and SC-RJ coupling				PSM-FO-POWERMETER	2799539	1
Tool set for POF assembly , for field installation of SC connectors.				PSM-FO-POWERMETER SCRJ-SET	2901560	1
Cutting tool , SC-RJ, for polymer fiber				TF-SCRJ-POF KONF SET	1405246	1
Sheath stripping tool , for polymer fiber				CUTFOX-SCRJ-POF	1405247	1
Electrician's scissors , high cutting performance, thanks to micro-serrated cutting area, suitable for copper, aluminum (flexible), Kevlar® fibers, and plastic, two-component non-slip soft-grip handles, ergonomic design, adjustable screw joint				WIREFOX-PN POF	1405249	1
				CUTFOX-ES	1212621	1

Tools for FO cabling, PCF

- Cleave technology
- For quick and easy field assembly
- No bonding or polishing
- A real alternative to splicing
- Optimum attenuation values with easy assembly



Description
Tool set for PCF assembly , for field installation of SC connectors
PCF assembly case , stripping knife, stripping pliers, Aramid yarn scissors, fiber stripper, fiber cleaving tool and microscope
- For SCRJ/SC duplex connectors
- For B-FOC (ST®) connectors
- For F-SMA connectors
Fiber cleaving tool for PCF fiber
- For SCRJ/SC duplex connectors
- For B-FOC (ST®) connectors
- For F-SMA connectors

Ordering data		
Type	Order No.	Pcs./Pkt.
FOC-TOOL-PCF KONF SET	1411051	1
PSM-HCS-KONFTOOL/SC-RJ	2708876	1
PSM-HCS-KONFTOOL/B-FOC	2708465	1
PSM-HCS-KONFTOOL	2799526	1
PSM-HCS-CLEAVETOOL/SCRJ	2313122	1
PSM-HCS-CLEAVETOOL/B-FOC	2708478	1
PSM-HCS-CLEAVETOOL	2744995	1

Tools for FO cabling, GOF

- Cleave technology
- For quick and easy field assembly
- No bonding or polishing
- A real alternative to splicing
- Optimum attenuation values with easy assembly
- Reusable connectors



Description
Tool set for GOF assembly , for field installation of LC and SC connectors

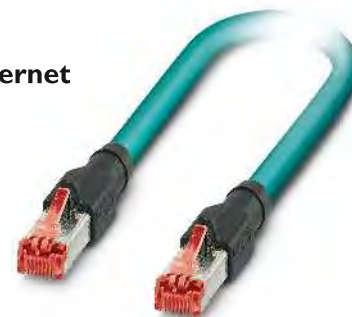
Ordering data		
Type	Order No.	Pcs./Pkt.
FOC-TOOL-GOF KONF SET	1411049	1

RJ45 Ethernet cables

Notes:

For accessories, see page: 388

Ethernet



**RJ45 Ethernet cable
for IP20 applications**

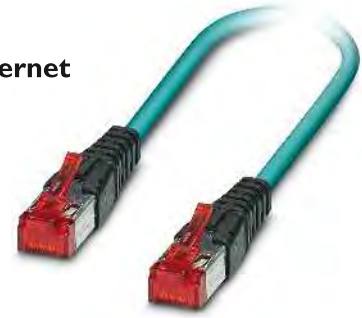
		Technical data		
Cable, properties				
Transmission characteristics (category)		CAT5		
Conductor structure		7x 0.16 mm		
Conductor cross section		4x 2x 0.14 mm ²		
Conductor structure for signal		7x 0.16 mm		
AWG signal line		26		
Cable diameter		6.2 mm		
Conductor resistance		≤ 290 Ω/km (at 20°C)		
Type of shield		Tinned copper braided shield		
Conductor material		Bare Cu litz wires		
Outer sheath material		PUR		
Color of outer sheath		water blue RAL 5021		
Color, single wire		white/blue-blue, white/orange-orange, white/green-green, white/brown-brown		
General data				
Ambient temperature (operation)		-20°C ... 70°C (RJ45 connector)		
		Ordering data		
Description	Length of cable	Type	Order No.	Pcs./Pkt.
Ethernet cable, CAT5, pre-assembled				
	0.3 m	NBC-R4AC/0,3-94Z/R4AC	1423032	1
	0.5 m	NBC-R4AC/0,5-94Z/R4AC	1403926	1
	1 m	NBC-R4AC/1,0-94Z/R4AC	1403927	1
	1.75 m	NBC-R4AC/1,75-94Z/R4AC	1423433	1
	2 m	NBC-R4AC/2,0-94Z/R4AC	1403929	1
	3 m	NBC-R4AC/3,0-94Z/R4AC	1403930	1
	5 m	NBC-R4AC/5,0-94Z/R4AC	1403933	1
	10 m	NBC-R4AC/10,0-94Z/R4AC	1403934	1
	15 m	NBC-R4AC/15,0-94Z/R4AC	1410797	1
	20 m	NBC-R4AC/20,0-94Z/R4AC	1423033	1

RJ45 patch cables

Notes:

For accessories, see page: 388

Ethernet

RJ45 patch cable
for IP20 applications

ERC

		Technical data		
Cable, properties		CAT6 _A		
Transmission characteristics (category)		6.00 mm +0.2 mm -0.1 mm		
Conductor structure		6.00 mm +0.2 mm -0.1 mm		
Conductor structure for signal		26		
AWG signal line		S/FTP		
Type of shield		PUR		
Outer sheath material				
General data				
Ambient temperature (operation)		-25°C ... 70°C (RJ45 connector)		
		Ordering data		
Description	Length of cable	Type	Order No.	Pcs./Pkt.
Patch cable, CAT6_A, pre-assembled, outer sheath color: water blue	0.3 m	NBC-R4AC1/0,3-94G/R4AC1-BU	1413158	1
	0.5 m	NBC-R4AC1/0,5-94G/R4AC1-BU	1413159	1
	1 m	NBC-R4AC1/1,0-94G/R4AC1-BU	1413160	1
	2 m	NBC-R4AC1/2,0-94G/R4AC1-BU	1413161	1
	3 m	NBC-R4AC1/3,0-94G/R4AC1-BU	1413162	1
	5 m	NBC-R4AC1/5,0-94G/R4AC1-BU	1413163	1
	10 m	NBC-R4AC1/10,0-94G/R4AC1-BU	1413164	1
	15 m	NBC-R4AC1/15,0-94G/R4AC1-BU	1413165	1
	20 m	NBC-R4AC1/20,0-94G/R4AC1-BU	1413166	1
Patch cable, CAT6_A, pre-assembled, outer sheath color: yellow	0.3 m	NBC-R4AC1/0,3-94G/R4AC1-YE	1421168	1
	0.5 m	NBC-R4AC1/0,5-94G/R4AC1-YE	1421169	1
	1 m	NBC-R4AC1/1,0-94G/R4AC1-YE	1421170	1
	2 m	NBC-R4AC1/2,0-94G/R4AC1-YE	1421171	1
	3 m	NBC-R4AC1/3,0-94G/R4AC1-YE	1421172	1
	5 m	NBC-R4AC1/5,0-94G/R4AC1-YE	1421173	1
	10 m	NBC-R4AC1/10,0-94G/R4AC1-YE	1421174	1
	15 m	NBC-R4AC1/15,0-94G/R4AC1-YE	1421175	1
	20 m	NBC-R4AC1/20,0-94G/R4AC1-YE	1421176	1
Patch cable, CAT6_A, pre-assembled, outer sheath color: red	0.3 m	NBC-R4AC1/0,3-94G/R4AC1-RD	1421138	1
	0.5 m	NBC-R4AC1/0,5-94G/R4AC1-RD	1421139	1
	1 m	NBC-R4AC1/1,0-94G/R4AC1-RD	1421140	1
	2 m	NBC-R4AC1/2,0-94G/R4AC1-RD	1421141	1
	3 m	NBC-R4AC1/3,0-94G/R4AC1-RD	1421143	1
	5 m	NBC-R4AC1/5,0-94G/R4AC1-RD	1421144	1
	10 m	NBC-R4AC1/10,0-94G/R4AC1-RD	1421145	1
	15 m	NBC-R4AC1/15,0-94G/R4AC1-RD	1421146	1
	20 m	NBC-R4AC1/20,0-94G/R4AC1-RD	1421147	1

Data connectors and cables

Network components – patch cables

Accessories

The reliability of networks is becoming more and more important and is a decisive factor for the future of entire companies. Independent studies show that more than 70% of network errors and crashes are due to faulty cabling infrastructure and manipulation of the connecting cables.

With the new accessories for Factoryline patch cables, the various safety requirements for automation are comprehensively met.



Dust protection for SFN switches and FL MC 1000 and 2000 media converters



Security lock for SFN switches and FL MC 1000 and 2000 media converters

	Ordering data			Ordering data		
Description	Type	Order No.	Pcs./Pkt.	Type	Order No.	Pcs./Pkt.
Dust protection with color marking , for SFN switch and angled patch connector						
- Black	FL DUST CVR BK	2891107	10			
- Blue	FL DUST CVR BU	2891204	10			
- Brown	FL DUST CVR BN	2891301	10			
- Yellow	FL DUST CVR YE	2891408	10			
- Gray	FL DUST CVR GY	2891505	10			
- Green	FL DUST CVR GN	2891602	10			
- Red	FL DUST CVR RD	2891709	10			
- Violet	FL DUST CVR VT	2891806	10			
- White	FL DUST CVR WH	2891903	10			
Security frame for SFN switch and patch fields						
- Green				FL PLUG GUARD GN	2891615	20
- Red				FL PLUG GUARD RD	2891712	20
- White				FL PLUG GUARD WH	2891819	20
Locking element for security frame FL PLUG GUARD...						
- Locking element				FL PORT GUARD	2891220	20
- Key				FL PLUG GUARD KEY	2891327	1
Color marking for FL CAT... Patch...						
- Black						
- Blue						
- Brown						
- Yellow						
- Gray						
- Green						
- Red						
- Violet						
Security element for FL CAT ...patch...						
- Security element						
- Security element, lockable						
- Key						
Dust protection cap for RJ45 socket						
- Black						
- Gray						





**Color coding
for RJ45 FL patch cables**



**Security element
for RJ45 FL patch cables**



**Dust protection
for RJ45 sockets**

Ordering data		
Type	Order No.	Pcs./Pkt.
FL PATCH CCODE BK	2891194	20
FL PATCH CCODE BU	2891291	20
FL PATCH CCODE BN	2891495	20
FL PATCH CCODE YE	2891592	20
FL PATCH CCODE GY	2891699	20
FL PATCH CCODE GN	2891796	20
FL PATCH CCODE RD	2891893	20
FL PATCH CCODE VT	2891990	20

Ordering data		
Type	Order No.	Pcs./Pkt.
FL PATCH SAFE CLIP	2891246	20
FL PATCH GUARD	2891424	20
FL PATCH GUARD KEY	2891521	1

Ordering data		
Type	Order No.	Pcs./Pkt.
FL RJ45 PROTECT CAP	2832991	10
FL RJ45 PROTECT CAP GY	1065531	100



19" patch bays

new

new



19" patch bay



19" mounting frame

Material data
Housing material
Flammability rating in accordance with UL 94
Temperature data
Ambient temperature (operation)

Technical data		
FOC-FR19:1U-2OS12-LCD12-OM1		
Aluminum alloy		
V0		
-10°C ... 60°C (IEC 61300-2-22)		

Description
19" patch bay, 1 RU, 2 x Q-ODC-12 female to 12 x LC duplex coupling
19" mounting frame, 3 RU, modular, unassembled
Module insert, marshalling panel, for 19" mounting frame, 3 RU, 1 x Q-ODC-12 female to 6 x LC duplex coupling

Ordering data		
Type	Order No.	Pcs./Pkt.
FOC-FR19:1U-2OS12-LCD12-OM1	1419973	1

Patch cable, IP68, 10 meters, Q-ODC-12 male to Q-ODC-12 male
--

Accessories		
FOC-OP12-OP12-GL02/10	1415353	1

Technical data		
FOC-FR19:3U		
Aluminum alloy		
V0		
-20°C ... 60°C (IEC 61300-2-22)		

Ordering data		
Type	Order No.	Pcs./Pkt.
FOC-FR19:3U	1419976	1
FOC-MODUL:3U-OS12-LCD6-OM1	1419978	1

Accessories		
FOC-OP12-OP12-GL02/10	1415353	1

19" patch bays



Ethernet

Patch bay for 19" rack
and matching female inserts

Ethernet

Patch bay for 19" rack
and matching female inserts

Material data
Housing material
Flammability rating in accordance with UL 94
Temperature data
Ambient temperature (operation)

Technical data		
VS-PP-19-1HE-16-F		
PC-GF		
V0		
5°C ... 55°C		

Description
Patch panel , 19" mounting, IP20, with 16 installation slots for contact inserts with Freenet system
Patch bay , 19" mounting, IP20, with 24 installation slots for RJ45 cable connection module, adapter-free
gray
black

Ordering data		
Type	Order No.	Pcs./Pkt.
VS-PP-19-1HE-16-F	1652994	1

RJ45 Freenet socket insert , 8-pos., shielded, with cable connection
1 Gbps, CAT5
SC-RJ coupling , for terminal outlets VS-TO-... and 19" patch panels VS-PP-19-1HE-16-F and front plate VS-SI-FP-2F
1x SC-RJ (duplex)
LC/LC coupling for mounting in angled patch connectors and patch panels with Freenet slots
1 x LC/LC (duplex, multimode fiber)
1x LC/LC (duplex, single-mode fiber (PC))

Accessories		
VS-08-BU-RJ45-5-F/PK	1652936	1
VS-SCRJ-GOF-KU	1654358	1
FL MM PATCH COUPLER LC-LC	2700312	1
FL SM PATCH COUPLER LC-LC	2700313	1

Insert , for patch bay
MTP coupling, type A
MTP coupling, type B
LC duplex coupling
SC simplex coupling
RJ45 female insert, CAT6 _A
USB socket insert , 4-pos., female USB to flat-ribbon cable terminal strip, 2.54 pitch, socket, type A
USB socket insert , 4-pos., female USB to flat-ribbon cable terminal strip, 2.54 pitch, socket, type B

VS-04-BUA-FK-F/IP67	1653854	1
VS-04-BUB-FK-F/IP67	1653867	1

Technical data		
CUC-PP-FR19:1U-I-EMPTY:24		
PC-GF		
V0		
5°C ... 55°C		

Ordering data		
Type	Order No.	Pcs./Pkt.
CUC-PP-FR19:1U-I-EMPTY:24	1422978	1
CUC-PP-FR19:1U-I-EMPTY:24 BK	1422979	1

Accessories		
FOC-I-D1PGY-S/MPAGC	1041820	1
FOC-I-D1PGY-S/MPBGC	1041840	1
FOC-I-D1PGN-S/LCGCSM	1041780	1
FOC-I-D1PGR-S/SCGCSM	1041800	1
CUC-I-J1ZNI-S/R4IDC8	1417274	1

Data connectors and cables

Network components – Assembled cables

Network cables, sold by the meter,
PROFINET, EtherCAT®, shielded

Notes:
For information about the cable qualities, see page 454



4-wire, star quad,
cable coil



4-wire, star quad,
cable drum

ERC

Description	Ordering data			Ordering data		
	Type	Order No.	Pcs./Pkt.	Type	Order No.	Pcs./Pkt.
PVC rigid - green , 1 x 4 x 22 AWG, CAT5, SF/TQ, type A						
Cable coil: 100 m	VS-OE-OE-93A-100,0	1416392	1			
Cable coil: 1 m ... 100 m	VS-93A/...	1416486	1			
PVC flexible - green , 1 x 4 x 22 AWG, CAT5, SF/TQ, type B						
Cable coil: 100 m	VS-OE-OE-93B-100,0	1416389	1			
Cable coil: 1 m ... 100 m	VS-OE-OE-93B/...	1417362	1	NBC-93B/...	1408537	1
Cable drum: 110 m ... 500 m						
PUR suitable for use with drag chain - green, 1 x 4 x 22 AWG, CAT5, SF/TQ, type C						
Cable coil: 100 m	VS-OE-OE-93C-100,0	1416376	1			
Cable coil: 1 m ... 100 m	VS-OE-OE-93C/...	1417491	1	NBC-93C/...	1408538	1
Cable drum: 110 m ... 500 m						
PUR suitable for use with robots - green, 1 x 4 x 22 AWG, CAT5, S/TQ						
Cable coil: 100 m	VS-OE-OE-93R-100,0	1416363	1			
Cable coil: 1 m ... 100 m	VS-OE-OE-93R/...	1417388	1	NBC-93R/...	1408539	1
Cable drum: 110 m ... 500 m						
RADOX® for railway applications - black, 1 x 4 x 22 AWG, CAT5, SF/TQ						
Cable coil: 1 m ... 100 m	VS-OE-OE-937/...	1402687	1	NBC-937/...	1408540	1
Cable drum: 110 m ... 500 m						

Ordering example for cables with
variable cable length:

For a 34.0 m long **type 93A** network cable,
the ordering data is as follows:

Order No.	Length [m]
1416486	100 m, maximum
	34.0
	Increment:
	1.0 m ... 100 m = 1.0 m
	110 m ... 500 m = 10 m

Network cables, sold by the meter, Ethernet, shielded

Notes:

For information about the cable qualities, see page 454

Ethernet



2-pair,
twisted pair

ERC

Ordering data		
Type	Order No.	Pcs./Pkt.
PUR flexible - blue, 2 x 2 x 26 AWG, CAT5, SF/UTP		
Cable coil: 100 m	VS-OE-OE-93E-100,0	1416295
Cable coil: 1 m ... 100 m	VS-OE-OE-93E/...	1417320
Cable drum: 110 m ... 500 m	NBC-93E/...	1408534
PUR rigid - blue, 4 x 2 x 24 AWG, CAT5, SF/UTP		
Cable coil: 100 m		
Cable coil: 1 m ... 100 m		
PUR flexible - blue, 4 x 2 x 26 AWG, CAT5, SF/UTP		
Cable coil: 100 m		
Cable coil: 1 m ... 100 m		
Cable drum: 110 m ... 500 m		
PUR suitable for use with drag chain - blue, 4 x 2 x 26 AWG, CAT5, S/UTP		
Cable coil: 100 m		
Cable coil: 1 m ... 100 m		
Cable drum: 110 m ... 500 m		
PVC flexible, outdoor - black, 4 x 2 x 26 AWG, CAT5, SF/UTP		
Cable coil: 100 m		
Cable coil: 1 m ... 100 m		
FRNC rigid - blue, 4 x 2 x 23 AWG, CAT7, S/FTP		
Cable coil: 100 m		
Cable coil: 1 m ... 100 m		
PUR flexible - blue, 4 x 2 x 26 AWG, CAT6 _A , S/FTP		
Cable coil: 100 m		
Cable coil: 1 m ... 100 m		

Ethernet



4-pair,
twisted pair

ERC

Ordering data		
Type	Order No.	Pcs./Pkt.
VS-OE-OE-94A-100,0	1416305	1
VS-94A/...	1416415	1
VS-OE-OE-94B-100,0	1416567	1
VS-OE-OE-94B/...	1417333	1
NBC-94B/...	1408535	1
VS-OE-OE-94C-100,0	1416318	1
VS-OE-OE-94C/...	1417346	1
NBC-94C/...	1408536	1
VS-OE-OE-94D-100,0	1416334	1
VS-94D/...	1416444	1
VS-OE-OE-94E-100,0	1416350	1
VS-94E/...	1416460	1
VS-OE-OE-94F-100,0	1416347	1
VS-OE-OE-94F/...	1417359	1

Ordering example for cables with variable cable length:

For a 34.0 m long **type 94A** network cable,
the ordering data is as follows:

Order No.	Length [m]
1416415	100 m, maximum
	34.0
	Increment:
	1.0 m ... 100 m = 1.0 m
	110 m ... 500 m = 10 m

Data connectors and cables

Network components – Assembled cables

Assembled cables,
PROFINET, EtherCAT®, Ethernet,
4-pos., shielded, A-coded

PROFINET Ethernet

EtherCAT

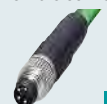


Open cable end



OE

M8 male connector



M8MS

RJ45 connector, IP20



R4AC

M8 male connector



M8 female connector



M8MS

M8FS

Ordering data

Ordering data

Order No.

Order No.

1 m 1407344
2 m 1407345
5 m 1407346
10 m 1407347

Variable 1408719

Variable 1408716

1 m 1407348
2 m 1407349
5 m 1407350
10 m 1407351

Variable 1408718

Variable 1408715

1 m 1407352
2 m 1407353
5 m 1407354
10 m 1407355

Variable 1408717

Variable 1408714

Information for products with fixed cable length:

Products with fixed cable length are produced with the 93B cable type and are available from stock.

Ordering data for cables with variable cable length:

For a 4.5 m long type 93B network cable with M8 male connector, straight and RJ45 connector, IP20, the ordering data is as follows:

Order No.	Cable type	Length [m] Max. 40 m
1408717	93B	4.5
Minimum order qty: 25 pcs.		Increments: 0.2 ... 3 m = 0.1 m > 3 m = 0.5 m
Pin	Wire color	Signal
M8	RJ45	
2	1	YE
3	2	OG
1	3	WH
4	6	BU

Technical data

PROFINET PVC flexible
CAT5 [93B]

CAT5

1x4xAWG22/7; SF/TQ

4x 0.34 mm²

7x 0.25 mm

22

6.5 mm

-

Aluminum-coated foil, tinned
copper braided shield

Tin-plated Cu litz wires

PVC

green RAL 6018

White, yellow, blue, orange

Transmission characteristics (category)

Cable structure

Conductor cross section

Conductor structure for signal

AWG signal line

Cable diameter

Conductor resistance

Type of shield

Conductor material

Outer sheath material

Color of outer sheath

Color, single wire

Ambient temperature

Fixed installation

[°C]

Flexible installation

[°C]

-40 ... 70

-40 ... 70

Assembled cables,
PROFINET, EtherCAT®, Ethernet,
4-pos., shielded, D-coded

PROFI
NET

EtherCAT®



Open cable end



OE

M8 male connector



M8MSD

M8 male connector



M8MRD

RJ45 connector, IP20



R4AC

M8 male connector



M8MSD

Ordering data

Order No.

1 m	1423703
2 m	1423704
5 m	1423705
10 m	1423706

M8 male connector



M8MRD

Ordering data

Order No.

1 m	1080526
2 m	1080528
5 m	1080530
10 m	1080531

1 m	1423707
2 m	1423708
5 m	1423709
10 m	1423710

1 m	1080538
2 m	1080539
5 m	1080540
10 m	1080542

1 m	1080532
2 m	1080535
5 m	1080536
10 m	1080537

1 m	1423711
2 m	1423712
5 m	1423713
10 m	1423714

1 m	1080543
2 m	1080544
5 m	1080545
10 m	1080546

Information for products with fixed cable length:

Products with fixed cable length are produced with the 93C cable type and are available from stock.

Pin		Wire color		Signal
M8	RJ45			
1	1	YE		TD+
3	2	OG		TD-
2	3	WH		RD+
4	6	BU		RD-

Technical data

PROFINET drag chain CAT5 [93C]

CAT5
1x4xAWG22/7; SF/TQ
4x 0.34 mm²
7x 0.25 mm
22
6.5 mm

Aluminum-coated foil, tinned
copper braided shield

Tin-plated Cu litz wires
PUR
green RAL 6018
White, yellow, blue, orange

Transmission characteristics (category)

Cable structure
Conductor cross section
Conductor structure for signal
AWG signal line
Cable diameter
Conductor resistance
Type of shield

Conductor material
Outer sheath material
Color of outer sheath
Color, single wire

Ambient temperature

Fixed installation	[°C]
Flexible installation	[°C]

-40 ... 70
-40 ... 70

Data connectors and cables

Network components – Assembled cables

**Assembled cables,
PROFINET, EtherCAT®,
4-pos., shielded, CAT5**



Open cable end



OE

RJ45 connector, IP20



R4AC

RJ45 connector, IP20



R4ACR

RJ45 connector, Version 14, metal



R4RC

RJ45 connector, Version 14, plastic



R4QC

M12 male connector



MSD SCO

M12 male connector



MRD SCO

RJ45 connector,
IP20



R4AC

Ordering data

Order No.

RJ45 connector,
IP20



R4ACR

Ordering data

Order No.

RJ45 connector,
Version 14,
metal



R4RC

Ordering data

Order No.

5.00 m 1416162

Variable 1411857
1.00 m 1408968
2.00 m 1408969
5.00 m 1408970
10.00 m 1408971
Variable 1411861

Variable 1411858
1.00 m 1418248
2.00 m 1418277
Variable 1411862

Variable 1411859
5.00 m 1416138
Variable 1411863

1.00 m 1409002
2.00 m 1409003
5.00 m 1409004
10.00 m 1409005
Variable 1411865

1.00 m 1408974
2.00 m 1408975
5.00 m 1408972
10.00 m 1408976
Variable 1411866

Information for products with fixed cable length:

Products with fixed cable length are produced with the **93B** cable type and are available from stock.

Ordering data for cables with variable cable length:

For a **4.5 m** long type **93C** network cable with **M12 male connector, straight** and **RJ45 connector, IP20**, the ordering data is as follows:

Order No.	Cable type	Length [m] Max. 40 m
1408639	93C	4.5
Minimum order qty: 25 pcs.		Increments: 0.2 ... 3 m = 0.1 m > 3 m = 0.5 m

Note:
The maximum length is 100 m for 2 x RJ45 connectors and 1 x RJ45 connector with open cable end.

Cable description		Cable type		Pin		Wire color		Signal
M12	RJ45							
1	1	PVC flexible – green, 1 x 4, CAT5	93B	1	1	YE		TD+
3	2	PUR suitable for drag chain applications – green, 1 x 4, CAT5	93C	2	2	OG		TD–
2	3	PUR for robot applications – green, 1 x 4, CAT5	93R	3	3	WH		RD+
4	6	RADOX® for railway applications – black, 1 x 4, CAT5	937	4	6	BU		RD–
		PUR flexible – green, 1 x 4, CAT5	93M					

Network components – Assembled cables

RJ45 connector, Version 14, plastic	M12 male connector	M12 male connector	M12 female connector	M12 female connector	M12 flush-type female connector, rear mounting
					
R4QC	MSD SCO	MRD SCO	FSD SCO	FRD SCO	FSDBP
Ordering data	Ordering data	Ordering data	Ordering data	Ordering data	Ordering data
Order No.	Order No.	Order No.	Order No.	Order No.	Order No.
5.00 m 1416168	1 m 1407495 2 m 1407496 5 m 1407497 10 m 1407498	Variable 1408633	1 m 1407528 2 m 1407529 5 m 1407530 10 m 1407531	Variable 1408615	1 m 1437779 2 m 1437782 5 m 1437795
Variable 1411860	Variable 1408640		Variable 1408623		
5.00 m 1416141	1 m 1407499 2 m 1407500 5 m 1407501 10 m 1407502	Variable 1408632	1 m 1407532 2 m 1407533 5 m 1407534 10 m 1407535	Variable 1408613	
Variable 1411864	Variable 1408639		Variable 1408622		
	1 m 1407508 2 m 1407509 5 m 1407510 10 m 1407511	Variable 1408631	1 m 1407536 2 m 1407537 5 m 1407538 10 m 1407539	Variable 1408612	
	Variable 1408638		Variable 1408621		
	1 m 1407516 2 m 1407517 5 m 1407518 10 m 1407519	Variable 1408628	1 m 1407544 2 m 1407545 5 m 1407546 10 m 1407547	Variable 1408610	
	Variable 1408636		Variable 1408619		
1.00 m 1408978 2.00 m 1408979 5.00 m 1408977 10.00 m 1408980	1 m 1407520 2 m 1407521 5 m 1407522 10 m 1407523	Variable 1408626	1 m 1407548 2 m 1407549 5 m 1407551 10 m 1407552	Variable 1408609	
Variable 1411867	Variable 1408635		Variable 1408618		
	1 m 1407524 2 m 1407525 5 m 1407526 10 m 1407527	Variable 1408625	1 m 1407553 2 m 1407554 5 m 1407555 10 m 1407556	Variable 1408608	
	Variable 1408634		Variable 1408617		
		Variable 1408624	Variable 1408616	Variable 1408607	

	Technical data	Technical data	Technical data	Technical data
	PROFINET PVC flexible CAT5 [93B]	PROFINET drag chain CAT5 [93C]	PROFINET robot CAT5 [93R]	PROFINET railway applications [937]
Transmission characteristics (category)	CAT5	CAT5	CAT5	CAT5
Cable structure	1x4xAWG22/7; SF/TQ	1x4xAWG22/7; SF/TQ	1x4xAWG22/19; S/TQ	1x4xAWG22/7; SF/TQ
Conductor cross section	4x 0.34 mm ²	4x 0.34 mm ²	4x 0.34 mm ²	4x 0.34 mm ²
Conductor structure for signal	7x 0.25 mm	7x 0.25 mm	19x 0.15 mm	7x 0.25 mm
AWG signal line	22	22	22	22
Cable diameter	6.5 mm	6.5 mm	6.5 mm	6.6 mm
Conductor resistance	-	-	-	≤ 54.4 Ω/km
Type of shield	Aluminum-coated foil, tinned copper braided shield	Aluminum-coated foil, tinned copper braided shield	Tinned copper braided shield	Plastic-coated aluminum foil, tinned copper braided shield
Conductor material	Tin-plated Cu litz wires	Tin-plated Cu litz wires	Tin-plated Cu litz wires	silver-plated Cu litz wires
Outer sheath material	PVC	PUR	PUR	PE-X
Color of outer sheath	green RAL 6018	green RAL 6018	green RAL 6018	black RAL 9005
Color, single wire	White, yellow, blue, orange	White, yellow, blue, orange	White, yellow, blue, orange	white-blue, orange-yellow
Ambient temperature				
Fixed installation	[°C] -40 ... 70	-40 ... 70	-40 ... 80	-50 ... 90
Flexible installation	[°C] -40 ... 70	-40 ... 70	-40 ... 80	-40 ... 90

Data connectors and cables

Network components – Assembled cables

**Assembled cables,
Ethernet, 4-pos.,
shielded, CAT5**



Ethernet

Open cable end



OE

RJ45 connector, IP20



R4AC

RJ45 connector, Version 6



R4MC

RJ45 connector, Version 14, metal



R4RC

RJ45 connector, Version 14, plastic



R4QC

M12 male connector



MSD SCO

M12 male connector



MRD SCO

RJ45 connector,
IP20



R4AC

Ordering data

Order No.

1.00 m 1405633

Variable 1411827

1.00 m 1408933

2.00 m 1408934

5.00 m 1408935

10.00 m 1408936

Variable 1411831

RJ45 connector,
Version 6



R4MC

Ordering data

Order No.

2.00 m 1405675

Variable 1411828

2.00 m 1405921

Variable 1411832

1.00 m 1408937

2.00 m 1408938

5.00 m 1408939

10.00 m 1408940

Variable 1411835

RJ45 connector,
Version 14,
metal



R4RC

Ordering data

Order No.

5.00 m 1405743

Variable 1411829

5.00 m 1405992

Variable 1411833

1.00 m 1408941

2.00 m 1408942

5.00 m 1408943

10.00 m 1408945

Variable 1411836

Information for products with fixed cable length:

Products with fixed cable length are produced with the 93E cable type and are available from stock.

Ordering data for cables with variable cable length:

For a 4.5 m long type 93E network cable with M12 male connector, straight and RJ45 connector, IP20, the ordering data is as follows:

Order No.	Cable type	Length [m] Max. 40 m
1408712	93E	4.5
Minimum order qty: 25 pcs.		Increments: 0.2 ... 3 m = 0.1 m > 3 m = 0.5 m

Note:

The maximum length is 100 m for 2 x RJ45 connectors and 1 x RJ45 connector with open cable end.

Cable description

PUR flexible – blue, 2 x 2, CAT5

Cable type

93E

Pin	Wire color		Signal
	M12	RJ45	
1	1	WHOG	TD+
3	2	OG	TD-
2	3	WHGN	RD+
4	6	GN	RD-

Network components – Assembled cables

RJ45 connector, Version 14, plastic	M12 male connector	M12 male connector	M12 female connector	M12 female connector	M12 flush-type female connector, rear mounting
					
R4QC	MSD SCO	MRD SCO	FSD SCO	FRD SCO	FSDBP
Ordering data	Ordering data	Ordering data	Ordering data	Ordering data	Ordering data
Order No.	Order No.	Order No.	Order No.	Order No.	Order No.
5.00 m 1405772	1 m 1407356 2 m 1407357 5 m 1407358 10 m 1407359 Variable 1408713	Variable 1408705	1 m 1407380 2 m 1407381 5 m 1407382 10 m 1407383 Variable 1408697	Variable 1408690	2 m 1405866
5.00 m 1406030	1 m 1407360 2 m 1407361 5 m 1407362 10 m 1407363 Variable 1408712	Variable 1408704	1 m 1407384 2 m 1407385 5 m 1407386 10 m 1407387 Variable 1408696	Variable 1408689	2.00 m 1406085
	1 m 1407364 2 m 1407365 5 m 1407366 10 m 1407367 Variable 1408710	Variable 1408703	1 m 1407388 2 m 1407389 5 m 1407390 10 m 1407391 Variable 1408695	Variable 1408688	2.00 m 1406247
	1 m 1407368 2 m 1407369 5 m 1407370 10 m 1407371 Variable 1408709	Variable 1408702	1 m 1407392 2 m 1407393 5 m 1407394 10 m 1407395 Variable 1408694	Variable 1408687	2.00 m 1406519
1.00 m 1408947 2.00 m 1408948 5.00 m 1408946 10.00 m 1408949 Variable 1411837	1 m 1407372 2 m 1407373 5 m 1407374 10 m 1407375 Variable 1408707	Variable 1408701	1 m 1407396 2 m 1407397 5 m 1407398 10 m 1407399 Variable 1408693	Variable 1408686	2.00 m 1406603
	1 m 1407376 2 m 1407377 5 m 1407378 10 m 1407379 Variable 1408706	Variable 1408700	1 m 1407400 2 m 1407401 5 m 1407402 10 m 1407403 Variable 1408692	Variable 1408684	
		Variable 1408699	Variable 1408691	Variable 1408683	

Technical data

PUR ETHERNET 2x2
FLEX [93E]

CAT5

2x2xAWG26/7; SF/UTP

2x 2x 0.14 mm²

7x 0.16 mm

26

6.4 mm

-

Aluminum-coated foil,
tinned copper braided shield

Bare Cu litz wires

PUR

water blue RAL 5021

white/orange-orange,

white/green-green

Transmission characteristics (category)

Cable structure

Conductor cross section

Conductor structure for signal

AWG signal line

Cable diameter

Conductor resistance

Type of shield

Conductor material

Outer sheath material

Color of outer sheath

Color, single wire

Ambient temperature

Fixed installation

Flexible installation

[°C]

[°C]

-40 ... 80

-20 ... 80

Data connectors and cables

Network components – Assembled cables

**Assembled cables,
Ethernet, 8-pos.,
shielded, CAT5**



Ethernet

Open cable end



OE

RJ45 connector, IP20



R4AC

RJ45 connector, Version 6



R4MC

RJ45 connector, Version 14, metal



R4RC

RJ45 connector, Version 14, plastic



R4QC

M12 male connector



MS SCO

M12 male connector



MR SCO

RJ45 connector,
IP20



R4AC

Ordering data

Order No.

5.00 m 1407699

Variable 1411838

1.00 m 1408950

2.00 m 1408951

5.00 m 1408952

10.00 m 1408953

Variable 1411842

RJ45 connector,
Version 6



R4MC

Ordering data

Order No.

5.00 m 1407725

Variable 1411839

5.00 m 1407932

Variable 1411843

1.00 m 1408955

2.00 m 1408956

5.00 m 1408954

10.00 m 1408958

Variable 1411846

RJ45 connector,
Version 14,
metal



R4RC

Ordering data

Order No.

5.00 m 1407783

Variable 1411840

5.00 m 1407990

Variable 1411844

1.00 m 1408961

2.00 m 1408962

5.00 m 1408959

10.00 m 1408963

Variable 1411847

Information for products with fixed cable length:

Products with fixed cable length are produced with the **94B** cable type and are available from stock.

Ordering data for cables with variable cable length:

For a **4.5 m** long type **94C** network cable with **M12 male connector, straight** and **RJ45 connector, IP20**, the ordering data is as follows:

Order No.	Cable type	Length [m] Max. 40 m
1408681	94C	4.5
Minimum order qty: 25 pcs.		Increments: 0.2 ... 3 m = 0.1 m > 3 m = 0.5 m

Note:

The maximum length is 100 m for 2 x RJ45 connectors and 1 x RJ45 connector with open cable end.

Cable description

Cable type

PUR flexible – blue, 4 x 2, CAT5

94B

PUR suitable for drag chain applications – blue, 4 x 2, CAT5

94C

Pin	Wire color		Signal
	M12	RJ45	
6	1	WHOG	D1+
4	2	OG	D1–
1	5	WHBU	D3–
7	4	BU	D3+
5	3	WHGN	D2+
8	6	GN	D2–
2	7	WHBN	D4+
3	8	BN	D4–

Network components – Assembled cables

RJ45 connector, Version 14, plastic	M12 male connector	M12 male connector	M12 female connector	M12 female connector	M12 flush-type female connector, rear mounting
					
R4QC	MS SCO	MR SCO	FS SCO	FR SCO	FSBP
Ordering data	Ordering data	Ordering data	Ordering data	Ordering data	Ordering data
Order No.	Order No.	Order No.	Order No.	Order No.	Order No.
5.00 m 1407819	1 m 1407404 2 m 1407405 5 m 1407406 10 m 1407407	Variable 1408675	1 m 1407439 2 m 1407440 5 m 1407441 10 m 1407442	Variable 1408657	5 m 1407877
Variable 1411841	Variable 1408682		Variable 1408665		
5.00 m 1412024	1 m 1407414 2 m 1407415 5 m 1407416 10 m 1407417	Variable 1408674	1 m 1407443 2 m 1407444 5 m 1407445 10 m 1407446	Variable 1408655	5.00 m 1412082
Variable 1411845	Variable 1408681		Variable 1408664		
	2 m 1407423 5 m 1407424 10 m 1407425	Variable 1408671	1 m 1407451 2 m 1407452 5 m 1407453 10 m 1407454	Variable 1408653	
	Variable 1408679		Variable 1408662		
	1 m 1407426 2 m 1407427 5 m 1407428 10 m 1407429	Variable 1408670	1 m 1407455 2 m 1407456 5 m 1407457 10 m 1407458	Variable 1408652	5.00 m 1412503
	Variable 1408678		Variable 1408661		
1.00 m 1408965 2.00 m 1408966 5.00 m 1408964 10.00 m 1408967	1 m 1407430 2 m 1407431 5 m 1407432 10 m 1407433	Variable 1408668	1 m 1407459 2 m 1407460 5 m 1407461 10 m 1407462	Variable 1408651	5.00 m 1412590
Variable 1411848	Variable 1408677		Variable 1408660		
	1 m 1407434 2 m 1407435 5 m 1407436 10 m 1407438	Variable 1408667	1 m 1407463 2 m 1407464 5 m 1407465 10 m 1407466	Variable 1408650	
	Variable 1408676		Variable 1408659		
		Variable 1408666	Variable 1408658	Variable 1408649	

	Technical data	Technical data
	Ethernet, flexible, CAT5 [94B]	Ethernet drag chain CAT5 [94C]
Transmission characteristics (category)	CAT5	CAT5
Cable structure	4x2xAWG26/7; SF/UTP	4x2xAWG26/19; S/UTP
Conductor cross section	4x 2x 0.14 mm ²	4x 2x 0.14 mm ²
Conductor structure for signal	7x 0.16 mm	19x 0.10 mm
AWG signal line	26	26
Cable diameter	6.4 mm	6.9 mm
Conductor resistance	≤ 290 Ω/km	-
Type of shield	Aluminum-coated foil, tinned copper braided shield	Tinned copper braided shield
Conductor material	Bare Cu litz wires	Bare Cu litz wires
Outer sheath material	PUR	PUR
Color of outer sheath	water blue RAL 5021	water blue RAL 5021
Color, single wire	white/blue-blue, white/orange-orange, white/green-green, white/brown-brown	white/blue-blue, white/orange-orange, white/green-green, white/brown-brown
Ambient temperature		
Fixed installation	[-40 ... 80 °C]	[-40 ... 80 °C]
Flexible installation	[-20 ... 80 °C]	[-20 ... 80 °C]

Data connectors and cables

Network components – Assembled cables

**Assembled cables,
Ethernet, CC-Link IE, 8-pos.,
shielded, CAT6_A**



Ethernet



CC-Link IE

Open cable end



OE

RJ45 connector, IP20



R4AC

RJ45 connector, Version 6



R4MC

RJ45 connector, Version 14, metal



R4RC

RJ45 connector, Version 14, plastic



R4QC

M12 male connector



MSX SCO

M12 male connector



M12MRX

**RJ45 connector,
IP20**



R4AC

Ordering data

Order No.

**RJ45 connector,
Version 6**



R4MC

Ordering data

Order No.

**RJ45 connector,
Version 14,
metal**



R4RC

Ordering data

Order No.

Variable **1411853**

1.00 m **1418866**

2.00 m **1408360**

5.00 m **1418879**

10.00 m **1408367**

Variable **1411854**

Variable **1415639**

Variable **1414321**

Variable **1414322**

Variable **1415637**

Variable **1411855**

Variable **1414323**

Information for products with fixed cable length:

Products with fixed cable length are produced with the **94F** cable type and are available from stock.

Ordering data for cables with variable cable length:

For a **4.5 m long type 94F** network cable with **M12 male connector, straight** and **RJ45 connector, IP20**, the ordering data is as follows:

Order No.	Cable type	Length [m] Max. 40 m
1408647	94F	4.5
Minimum order qty: 25 pcs.		Increments: 0.2 ... 3 m = 0.1 m > 3 m = 0.5 m

Note:
The maximum length is 100 m for 2 x RJ45 connectors and 1 x RJ45 connector with open cable end.

Cable description

PUR flexible – blue, 4 x 2, CAT6_A

Cable type

94F

Pin	Wire color		Signal
	M12	RJ45	
1	1	WHOG	D1+
2	2	OG	D1–
7	5	WHBU	D3–
8	4	BU	D3+
3	3	WHGN	D2+
4	6	GN	D2–
5	7	WHBN	D4+
6	8	BN	D4–

Network components – Assembled cables

RJ45 connector, Version 14, plastic	M12 male connector	M12 male connector	M12 female connector	M12 female connector	M12 flush-type female connector, rear mounting
					
R4QC	MSX SCO	M12MRX	M12FSX	M12FRX	FSBPX
Ordering data	Ordering data	Ordering data	Ordering data	Ordering data	Ordering data
Order No.	Order No.	Order No.	Order No.	Order No.	Order No.
	1 m 2 m 5 m 10 m Variable 1415638	1 m 2 m 5 m 10 m	1 m 2 m 5 m 10 m	1 m 2 m 5 m 10 m	0.5 m 1 m 2 m 5 m
	1407467 1407468 1407469 1407470 1408648	1080716 1080717 1080718 1080719	1080728 1080729 1080731 1080732	1080746 1080747 1080748 1080750	1424135 1424148 1424151 1424164
	1 m 2 m 5 m 10 m Variable 1411856		1 m 2 m 5 m 10 m		
	1407471 1407472 1407473 1407474 1408647		1080733 1080734 1080736 1080737		
	1 m 2 m 5 m 10 m Variable 1408646		1 m 2 m 5 m 10 m		
	1407475 1407476 1407477 1407478 1408646		1080738 1080739 1080740 1080741		
	1 m 2 m 5 m 10 m Variable 1414324				
	1407479 1407480 1407481 1407482 1408645				
	1 m 2 m 5 m 10 m Variable 1408644	1 m 2 m 5 m 10 m	1 m 2 m 5 m 10 m	1 m 2 m 5 m 10 m	
	1407483 1407484 1407485 1407486 1408644	1080724 1080725 1080726 1080727	1080742 1080743 1080744 1080745	1080751 1080752 1080753 1080754	
		1 m 2 m 5 m 10 m			
		1080720 1080721 1080722 1080723			

Technical data	
Ethernet 10 Gbit [94F]	
Transmission characteristics (category)	CAT6 _A
Cable structure	4x2xAWG26/7; S/FTP
Conductor cross section	4x 2x 0.14 mm ²
Conductor structure for signal	7x 0.16 mm
AWG signal line	26
Cable diameter	6.4 mm
Conductor resistance	-
Type of shield	Tinned copper braided shield
Type of pair shielding	Aluminum-lined foil
Conductor material	Bare Cu litz wires
Outer sheath material	PUR
Color of outer sheath	water blue RAL 5021
Color, single wire	white/blue-blue, white/orange-orange, white/green-green, white/brown-brown
Ambient temperature	
Fixed installation	[°C] -40 ... 80
Flexible installation	[°C] -20 ... 80

Assembled cables for railway applications, Ethernet, shielded, CAT6_A



Ethernet



Open cable end



OE

M12 male connector, straight



MSX SCO

M12 male connector



MSX SCO

Ordering data

Order No.

2 m	1415599
5 m	1415600
10 m	1415601

2 m	1415595
5 m	1415598

Pin	Wire color	Signal
M12		
1	WHOG	D1+
2	OG	D1–
7	WHBU	D3–
8	BU	D3+
3	WHGN	D2+
4	GN	D2–
5	WHBN	D4+
6	BN	D4–

Transmission characteristics (category)
Cable structure
Conductor cross section
Conductor structure for signal
AWG signal line
Cable diameter
Conductor resistance
Type of shield

Type of pair shielding

Conductor material
Outer sheath material
Color of outer sheath
Color, single wire

Ambient temperature
Fixed installation

Technical data
Ethernet for rail applications [94S]
CAT7
4x2xAWG26/7; S/FTP
4x 2x 0.14 mm ²
7x 0.16 mm
26
6.6 mm
≤ 145 Ω/km
Tinned copper braided shield
Aluminum-lined polyester foil
Tin-plated Cu litz wires
PE-X
black
White-blue, white-orange, white-green, white-brown
–40 ... 80

Assembled cables, Ethernet hybrid, 4+4-pos., shielded, CAT5



Ethernet

Open cable end



OE

M12 male connector



MSY SCO

M12 male connector



MSY SCO

Ordering data

Order No.

1 m	1407487
2 m	1407488
5 m	1407489
10 m	1407490
Variable	1408642

M12 flush-type female connector, rear mounting



FSBPY

Ordering data

Order No.

0.5 m	1407504
1 m	1407505
2 m	1407506
5 m	1407507

Notes:

For H, Y, and T distributors, see page 436

Information for products with fixed cable length:

Products with fixed cable length are produced with the **94H** cable type and are available from stock.

Ordering data for cables with variable cable length:

For a 4.5 m long type 94H network cable with **M12 male connector, straight** and **RJ45 connector, IP20**, the ordering data is as follows:

Order No.	Cable type	Length [m] Max. 40 m
1408717	94H	4.5

Minimum order qty:
25 pcs.

Increments:
0.2 ... 3 m = 0.1 m
> 3 m = 0.5 m

Pin M12	Wire color	Signal
1	WHOG	TD+
2	OG	TD-
3	WHGN	RD+
4	GN	RD-
5	BU	
6	WH	
7	BN	
8	BK	

Transmission characteristics (category)
Cable structure
Conductor cross section for signal
Conductor structure for signal
AWG signal line
Conductor cross section for power
Conductor structure for power
AWG power supply
Cable diameter
Type of shield

Conductor material
Outer sheath material
Color of outer sheath
Color, single wire

Ambient temperature

Fixed installation
Flexible installation

Technical data

Ethernet hybrid [94H]

CAT5
1x4xAWG26+1x4xAWG20
0.15
19x 0.10 mm
26
0.6
19x 0.20 mm
20
7.6 mm
Tinned copper braided shield

Bare Cu litz wires
PUR
black RAL 9005
White/orange, orange,
white/green, green, white, blue,
brown, black

[-40 ... 90
-30 ... 70

Fiber optics patch cables

Connectors:

- LC
- SC duplex
- B-FOC (ST®)

Fixed lengths:

- 1 m
- 2 m
- 5 m

Fiber types:

- Single-mode fiberglass (SM)

Sheath colors:

- Single-mode: yellow

Technical Data:

- Halogen-free
- Flame-retardant
- No corrosive or toxic fumes
- External dimensions: 2.8 mm x 5.7 mm



LC connector

ERC

Technical data	
Cable, properties	
Individual wire diameter	900 µm
Outer sheath, material	FRNC
External sheath, strain relief elements	Non-metallic, aramide fiber
Lateral pressure, long-term	60.00 N/cm
Tensile strength short-term/long-term	600 N
Halogen-free	In accordance with IEC 60754-2
General data	
Ambient temperature (storage/transport)	-25°C ... 70°C
Ambient temperature (installation)	-5°C ... 50°C
Ambient temperature (operation)	-5°C ... 70°C

		Ordering data		
Description	Length of cable	Type	Order No.	Pcs./Pkt.
FO patch cable with single mode fiberglass (OS1) - LC plug to LC, SC duplex or B-FOC plug				
	1 m	FL SM PATCH 1,0 LC-LC	2989187	1
	2 m	FL SM PATCH 2,0 LC-LC	2989284	1
	5 m	FL SM PATCH 5,0 LC-LC	2901826	1
FO patch cable with single mode fiberglass (OS1) - SC duplex plug to SC duplex or B-FOC plug				
	1 m			
	2 m			
	5 m			
FO patch cable with single mode fiberglass (OS1) - B-FOC plug to B-FOC plug				
	1 m			
	2 m			
	5 m			



SC duplex connector



B-FOC connector

ERC

Technical data			Technical data		
900 µm			900 µm		
FRNC			FRNC		
Non-metallic, aramide fiber			Non-metallic, aramide fiber		
60.00 N/cm			60.00 N/cm		
600 N			600 N		
In accordance with IEC 60754-2			In accordance with IEC 60754-2		
-25°C ... 70°C			-25°C ... 70°C		
-5°C ... 50°C			-5°C ... 50°C		
-5°C ... 70°C			-5°C ... 70°C		
Ordering data			Ordering data		
Type	Order No.	Pcs./Pkt.	Type	Order No.	Pcs./Pkt.
FL SM PATCH 1,0 LC-SC	2989190	1	FL SM PATCH 1,0 LC-ST	2989242	1
FL SM PATCH 2,0 LC-SC	2989297	1	FL SM PATCH 2,0 LC-ST	2989349	1
FL SM PATCH 5,0 LC-SC	2901827	1	FL SM PATCH 5,0 LC-ST	2901828	1
FL SM PATCH 1,0 SC-SC	2901829	1	FL SM PATCH 1,0 SC-ST	2901832	1
FL SM PATCH 2,0 SC-SC	2901830	1	FL SM PATCH 2,0 SC-ST	2901833	1
FL SM PATCH 5,0 SC-SC	2901831	1	FL SM PATCH 5,0 SC-ST	2901834	1
			FL SM PATCH 1,0 ST-ST	2901836	1
			FL SM PATCH 2,0 ST-ST	2901837	1
			FL SM PATCH 5,0 ST-ST	2901838	1

Data connectors and cables

Network components – Assembled fiber optic cables

Fiber optic outdoor cables, sold by the meter

- Robust round cables for outdoor installation
- Ozone and UV resistant
- Watertight lengthwise
- Integrated vapor barrier and rodent-proof scrim



GOF fiber type



PCF fiber type

	Technical data		Technical data			
	FOC-OE-OE-GB01/...	FOC-OE-OE-GB02/...	FOC-OE-OE-GB03/...	FOC-OE-OE-HB01/...		
Cable data						
Cable abbreviation in accordance with IEC 61977:2010	02-G50/FJ(ZNG)H-...22	02-G50/FJ(ZN)Z-...22	04-G50/FJ(ZNG)H-...22	02-H200/VJ(ZNG)H-...22		
Fibers	50/125 µm OM2	50/125 µm OM2	50/125 µm OM2	200/230 µm		
Attenuation, typical	2.7 dB/km (at 850 nm); 0.8 dB/km (at 1300 nm)	2.7 dB/km (at 850 nm); 0.8 dB/km (at 1300 nm)	2.7 dB/km (at 850 nm); 0.8 dB/km (at 1300 nm)	10 dB/km (at 660 nm), 8 dB/km (at 850 nm)		
Outer sheath						
Material	PE	PUR	PE	PE		
Color	black	black	black	black		
Strain relief elements	Aramide/glass fibers	Non-metallic, aramide fiber	Aramide/glass fibers	Aramide/glass fibers		
Diameter	7.5 mm	7.5 - 8 mm	9 mm	7.5 mm		
Individual wire						
Color	Black/orange	Black/orange	Black/orange	Black/orange		
Diameter	2.2 mm	2.2 mm	2.15 mm	2.2 mm		
Strain relief elements	Non-metallic, aramide fibers	Non-metallic, aramide fibers	Non-metallic, aramide fibers	Non-metallic, aramide fibers		
General data						
Weight	59.00 kg/km	46.00 kg/km	90.00 kg/km	67.00 kg/km		
Ambient temperature (operation)	-40°C ... 70°C	-40°C ... 85°C	-40°C ... 70°C	-20°C ... 70°C		
Ambient temperature (storage/transport)	-45°C ... 70°C	-45°C ... 85°C	-40°C ... 70°C	-25°C ... 70°C		
Ambient temperature (installation)	-20°C ... 60°C	-20°C ... 60°C	-20°C ... 60°C	-10°C ... 60°C		
Halogen-free:	In acc. with IEC 60754-1/2	In acc. with IEC 60754-1/2	In acc. with IEC 60754-1/2	In acc. with IEC 60754-1/2		
	Ordering data			Ordering data		
Description	Type	Order No.	Pcs./Pkt.	Type	Order No.	Pcs./Pkt.
GOF outdoor cable, 2-wire, full breakout cable for fixed installation	FOC-OE-OE-GB01/...	1406429	1			
GOF outdoor cable, 2-wire, full breakout cable for flexible installation	FOC-OE-OE-GB02/...	1406430	1			
GOF outdoor cable, 4-wire, full breakout cable for fixed installation	FOC-OE-OE-GB03/...	1406431	1			
PCF outdoor cable, 2-wire, full breakout cable for fixed installation				FOC-OE-OE-HB01/...	1406432	1

Ordering example for cables by the meter:

For a 34.0 m long FO outdoor type GB02 cable, the ordering data is as follows:

Order No.	Length [m] Max. 1000 m
1406430	34
	Increment: 1 m ... 1000 m = 1 m

Assembled FO cables

- Universal installation cables for fixed installation indoors
- 2.2 mm individual wires made from extremely hard-wearing polyvinyl chloride (PVC)
- Ozone and UV resistant
- PVC outer cable sheath
- PROFINET type B

Ethernet



Assembled FO cable,
SC-RJ to BFOC (ST®)

Technical data

FOC-SJ:14-ST/.../.../...

Cable data

Cable abbreviation in accordance with IEC 61977:2010

Fibers

Attenuation, typical

Outer sheath

Material

Color

Strain relief elements

Diameter

Individual wire

Color

Diameter

Strain relief elements

General data

Weight

Ambient temperature (operation)

Ambient temperature (storage/transport)

Ambient temperature (installation)

Halogen-free:

AT-V(ZN)YY 2K200/230 HCS

200/230 µm

10 dB/km (at 660 nm), 8 dB/km (at 850 nm)

PVC

green

Non-metallic, aramide fiber

6.7 - 7.7 mm

Black and orange with arrow labeling

2.2 mm ±0.1 mm

Non-metallic, aramide fibers

45.00 kg/km

-30°C ... 70°C

-40°C ... 70°C

-5°C ... 50°C

yes

Ordering data

Description

Assembled FO cable, PROFINET cable type B with
SC-RJ Push-Pull metal housing to BFOC (ST®) male connector

Type

Order No.

Pcs./Pkt.

FOC-SJ:14-ST/.../.../...

1417723

1

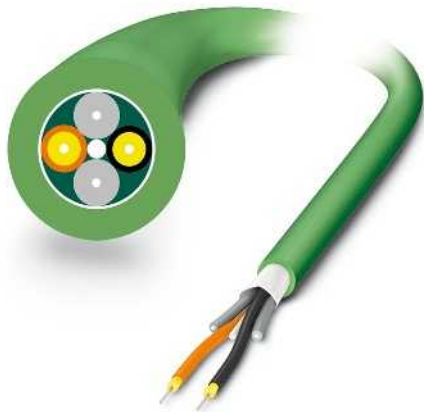
Ordering example for a configured cable:

For an **HCS cable**, fitted with an **SC-RJ push-pull male connector** on one end and a **B-FOC(ST®) male connector, IP20** on the other end, and a **length of 15 m**, the ordering data is as follows:

Order No.	Length [m] Max. 2000 m
1417723	15
Increment:	
1 m ... 5 m = 0.25 m	
5 m ... 1000 m = 1 m	

Network components – Assembled fiber optic cables

Universal PROFINET B PCF cables for free assembly, type PN-B-PCF-1018



- Universal installation cables for fixed installation indoors
- 2.2 mm individual wires made from extremely hard-wearing polyvinyl chloride (PVC)
- Ozone and UV resistant
- PVC outer cable sheath
- PROFINET type B

Ethernet



Free end



OE
FSMA connector, IP20
FSMA
SC-RJ connectors, IP20



SCRJ
SC duplex connector, IP20
SCDUP
B-FOC (ST®) connector, IP20



BFOC
LC male connector
LC
Push/pull SC-RJ, plastic



PPCPL
Push/pull SC-RJ, metal
PPCME



Free end	FSMA connector, IP20	SC-RJ connector, IP20
OE	FSMA	SCRJ
Ordering data	Ordering data	Ordering data
Order No.	Order No.	Order No.
By the meter 2313766	Variable 2901556	Variable 2901556
Variable 2901556	Variable 2901556	Variable 2901556
Variable 2901556	Variable 2901556	Variable 2901556
Variable 2901556	Variable 2901556	Variable 2901556
Variable 2901556	Variable 2901556	Variable 2901556
Variable 2901556	Variable 2901556	Variable 2901556
Variable 2901556	Variable 2901556	Variable 2901556
Variable 1402190	Variable 1402190	Variable 1402190
Variable 1402190	Variable 1402190	Variable 1402190
Variable 1402190	Variable 1402190	Variable 1402190

Ordering example for configured cable:

For an HCS cable, fitted at one end with an SC-RJ connector and a B-FOC(ST®) connector, IP20 at the other end, and a length of 15 m, the ordering data as follows:

Order No.	Connector 1	Connector 2	Length [m]
2901556	SCRJ	BFOC	15
Length: Min. 1 m Max. 2000 m			
Increment: 0.25 m 1 m 1 m ... 5 m 5 m ... 2000 m			

Ordering example for cable sold by the meter:

For an HCS cable with a length of 70 m, the ordering data is as follows:

Order No.	Length [m]
2313766	70
Length: Min. 1 m Max. 2000 m/cable drum	
Increment: 0.25 m 1 m 1 m ... 5 m 5 m ... 2000 m	

Network components – Assembled fiber optic cables

SC duplex connector, IP20	B-FOC (ST®) connector, IP20	LC connector	Push/pull SC-RJ, plastic	Push/pull SC-RJ, metal
				
SCDUP	BFOC	LC	PPCPL	PPCME
Ordering data	Ordering data	Ordering data	Ordering data	Ordering data
Order No.	Order No.	Order No.	Order No.	Order No.

Variable 2901556	Variable 2901556	Variable 2901556	Variable 1402190	Variable 1402190
Variable 2901556	Variable 2901556	Variable 2901556	Variable 1402190	Variable 1402190

Variable 2901556	Variable 2901556	Variable 2901556	Variable 1402190	Variable 1402190
Variable 2901556	Variable 2901556	Variable 2901556	Variable 1402190	Variable 1402190

Variable 2901556	Variable 2901556	Variable 2901556	Variable 1402190	Variable 1402190
Variable 2901556	Variable 2901556	Variable 2901556	Variable 1402190	Variable 1402190

Variable 1402190	Variable 1402190	Variable 1402190	Variable 1402190	Variable 1402190
Variable 1402190	Variable 1402190	Variable 1402190	Variable 1402190	Variable 1402190

Technical data	
Cable data	
Cable abbreviation in accordance with IEC 61977:2010	AT-V(ZN)YY 2K200/230 HCS
Fibers	HCS, 200/230 µm
Attenuation, typical	10 dB/km
Outer sheath	
Material	PVC
Color	green
Diameter	6.7 - 7.7 mm
Strain relief elements	Non-metallic, aramide fiber
Individual wire	
Structure	PVC
Color	Black and orange with arrow labeling
Diameter	2.2 mm ±0.1 mm
Strain relief elements	Non-metallic, aramide fibers
General data	
Weight	45 kg/km
Ambient temperature (operation)	-40°C ... 90°C
Ambient temperature (storage/transport)	-40°C ... 90°C
Ambient temperature (installation)	-5°C ... 50°C
Halogen-free:	-

- Robust installation cables for indoor use
- Highly tear-resistant aramid strain relief elements
- 2.9 mm individual wires made from highly flexible FRNC material
- Halogen-free, ozone and UV resistant
- Robust polyurethane (PUR) outer cable sheath

	Free end	FSMA connector, IP20	SC-RJ connector, IP20
	OE	FSMA	SCRJ
	Ordering data	Ordering data	Ordering data
	Order No.	Order No.	Order No.
Free end			
	OE		
FSMA connector, IP20			
	FSMA		
SC-RJ connectors, IP20			
	SCRJ		
SC duplex connector, IP20			
	SCDUP		
B-FOC (ST®) connector, IP20			
	BFOC		
LC connector			
	LC		
Push/pull SC-RJ, plastic			
	PPCPL		
Push/pull SC-RJ, metal			
	PPCME		
SC-RJ male connector, IP67			
	IP67		

For an **HCS cable**, fitted at one end with an **SC-RJ connector** and a **B-FOC(ST®) connector**, **IP20** at the other end, and a **length of 15 m**, the ordering data is as follows:

Length:	Min. 1 m Max. 2000 m
Increment:	0.25 m 1 m ... 5 m 1 m 5 m ... 2000 m

For an **HCS cable** with a **length of 70 m**, the ordering data is as follows:

Length:	Min. 1 m Max. 2000 m/cable drum	
Increment:	0.25 m 1 m	1 m ... 5 m 5 m ... 2000 m

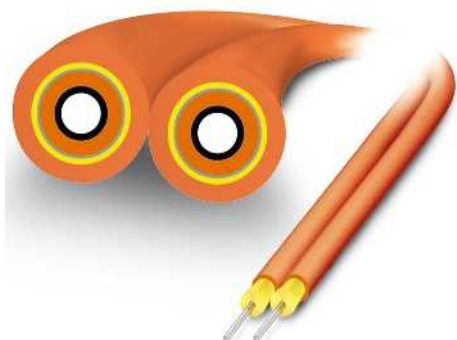
Variable 1402191 Variable 1402191 Variable 1402191 Variable 1402191

Courtesy of Steven Engineering, Inc - (800) 258-9200 - sales@steveneng.com - www.stevenengineering.com

Data connectors and cables

Network components – Assembled fiber optic cables

Zip cord fiberglass cables for assembly, OM1



- Multimode patch cables for indoor installation
- Ideal for use in distributor systems and for connecting termination devices
- 2.8 mm single elements made from halogen-free and flame-retardant material
- UL approval type OFNR (riser) for USA and Canada

Free end	FSMA connector, IP20	SC duplex connector, IP20
OE	FSMA	SCDUP
Ordering data	Ordering data	Ordering data
Order No.	Order No.	Order No.
Variable 1411566	1.00 m 1409855	1.00 m 1409857
FSMA connector, IP20	Variable 1406532	Variable 1406536
SC duplex connector, IP20	1.00 m 1409857	1.00 m 1413828
SCDUP	Variable 1406536	Variable 1413790
B-FOC (ST®) connector, IP20	1.00 m 1409856	1.00 m 1413830
BFOC	Variable 1406535	Variable 1413791
LC duplex connector, IP20	1.00 m 1413825	1.00 m 1413827
LC	Variable 1413787	Variable 1413789

Ordering example for a configured cable:

For a 15 m long zip cord fiberglass cable, fitted with an FSMA male connector, IP20, at one end and an SC Duplex connector, IP20, at the other end, the ordering data is as follows:

Order No.	Length [m]
1406536	15

Length:	Min. 1 m Max. 1000 m
Increment:	1 m 1 m ... 1000 m

**B-FOC (ST®) connector,
IP20****BFOC****Ordering data****Order No.****LC duplex connector,
IP20****LC****Ordering data****Order No.**1.00 m **1409856**Variable **1406535**1.00 m **1413830**Variable **1413791**1.00 m **1413832**Variable **1413821**1.00 m **1413831**Variable **1413792**1.00 m **1413825**Variable **1413787**1.00 m **1413827**Variable **1413789**1.00 m **1413831**Variable **1413792**1.00 m **1413826**Variable **1413788****Technical data****Cable data**

Cable abbreviation in accordance with IEC 61977:2010

Fibers

Attenuation, typical

I-V(ZN)H

-

3.2 dB/km (at 850 nm);
0.9 dB/km (at 1300 nm)**Outer sheath**

Material

-

Color

orange

Diameter

2.8 - 5.7 mm

Strain relief elements

-

Individual wire

Structure

-

Color

-

Diameter

-

General data

Weight

15.80 kg/km

Ambient temperature (operation)

-10°C ... 60°C

Ambient temperature (storage/transport)

-10°C ... 60°C

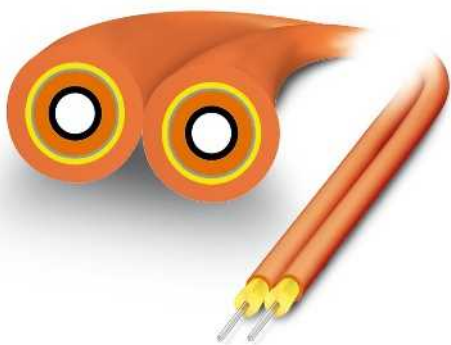
Ambient temperature (installation)

-5°C ... 50°C

Halogen-free:

In accordance with IEC 60754-2

Zip cord fiberglass cables
for assembly, OM2



- Multimode patch cables for indoor installation
- Ideal for use in distributor systems and for connecting termination devices
- 2.8 mm single elements made from halogen-free and flame-retardant material
- UL approval type OFNR (riser) for USA and Canada

	Free end	SC-RJ connector, IP20	SC duplex connector, IP20
	OE	SCRJ	SCDUP
Ordering data	Ordering data	Ordering data	Ordering data
Order No.	Order No.	Order No.	Order No.
	Variable1411561	1.00 m1409813 2.00 m1400697 Variable1405703	1.00 m1409810 2.00 m1400690 Variable1405700
			1.00 m1409798 2.00 m1400685 Variable1405697
			1.00 m1409790 2.00 m1400639 Variable1405691

Ordering example for a configured cable:

For a 15 m long zip cord fiberglass cable, fitted with an SC duplex connector, IP20, at one end and an SC-RJ connector, IP20, at the other end, the ordering data is as follows:

Order No.	Length [m]
1405700	15

Length:	1 m, minimum 1000 m, maximum
Increment:	1 m 1 m ... 1000 m

**B-FOC (ST®) connector,
IP20****BFOC****Ordering data****Order No.****LC duplex connector,
IP20****LC****Ordering data****Order No.**

1.00 m **1409822**
2.00 m **1400706**

Variable **1405710**

1409819
1400703

Variable **1405708**

1.00 m **1409824**
2.00 m **1404768**

Variable **1405712**

1.00 m **1409816**
2.00 m **1400701**

Variable **1405706**

1.00 m **1409793**
2.00 m **1400682**

Variable **1405694**

1.00 m **1409787**
2.00 m **1400604**

Variable **1405688**

Technical data**Cable data**

Cable abbreviation in accordance with IEC 61977:2010

Fibers

Attenuation, typical

I-V(ZN)H

-

2.7 dB/km (at 850 nm);
0.8 dB/km (at 1300 nm)

Outer sheath

Material

Color

Diameter

Strain relief elements

Individual wire

Structure

Color

Diameter

General data

Weight

Ambient temperature (operation)

Ambient temperature (storage/transport)

Ambient temperature (installation)

Halogen-free:

-

orange

2.8 - 5.7 mm

-

-

-

900 µm

15.80 kg/km

-10°C ... 60°C

-10°C ... 60°C

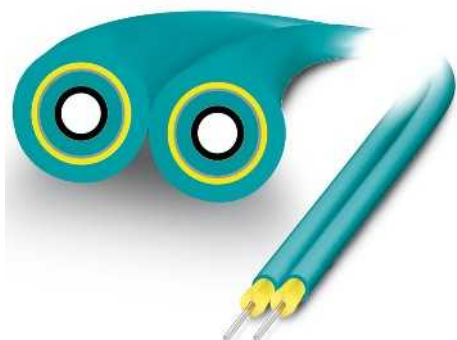
-5°C ... 50°C

In acc. with IEC 60754-1/2

Data connectors and cables

Network components – Assembled fiber optic cables

Zip cord fiberglass cables for assembly, OM3



- Multimode patch cables for indoor installation
- Ideal for use in distributor systems and for connecting termination devices
- 2.8 mm single elements made from halogen-free and flame-retardant material
- UL approval type OFNR (riser) for USA and Canada
- Low-bend fiber
- Data rate: up to 10 Gbps up to 300 m

Free end	SC-RJ male connector, IP20	SC duplex connector, IP20
		
OE	SCRJ	SCDUP
Ordering data	Ordering data	Ordering data
Order No.	Order No.	Order No.
Free end		
		
OE		
SC-RJ connector, IP20		
		
SCRJ		
SC duplex connector, IP20		
		
SCDUP		
LC duplex connector, IP20		
		
LC		

Variable	1411563		
		1.00 m 1409814	1.00 m 1409811
		2.00 m 1400699	2.00 m 1400691
		Variable 1405704	Variable 1405701
			1.00 m 1409799
			2.00 m 1400688
			Variable 1405698
			1.00 m 1409791
			2.00 m 1400673
			Variable 1405692

Ordering example for a configured cable:

For a 15 m long zip cord fiberglass cable, fitted with an SC duplex connector, IP20, at one end and an SC-RJ connector, IP20, at the other end, the ordering data is as follows:

Order No.	Length [m]
1405701	15

Length:	1 m, minimum 1000 m, maximum
Increment:	1 m 1 m ... 1000 m

**B-FOC (ST®) connector,
IP20****BFOC****Ordering data****Order No.****LC duplex connector,
IP20****LC****Ordering data****Order No.**

1.00 m **1409823**
2.00 m **1400711**

Variable **1405711**

1.00 m **1409821**
2.00 m **1400705**

Variable **1405709**

1.00 m **1409818**
2.00 m **1400702**

Variable **1405707**

1.00 m **1409796**
2.00 m **1400683**

Variable **1405695**

1.00 m **1409788**
2.00 m **1400621**

Variable **1405695**

Technical data**Cable data**

Cable abbreviation in accordance with IEC 61977:2010

Fibers

Attenuation, typical

Smallest bending radius, fixed installation

Smallest bending radius, movable installation

Outer sheath

Material

Color

Diameter

Strain relief elements

Individual wire

Structure

Color

Diameter

General data

Weight

Ambient temperature (operation)

Ambient temperature (storage/transport)

Ambient temperature (installation)

Halogen-free:

I-V(ZN)H

-

2.5 dB/km (at 850 nm),
0.7 dB/km (at 1300 nm)

15 mm

30 mm

-

aqua

2.8 - 5.7 mm

-

-

-

-

15.80 kg/km

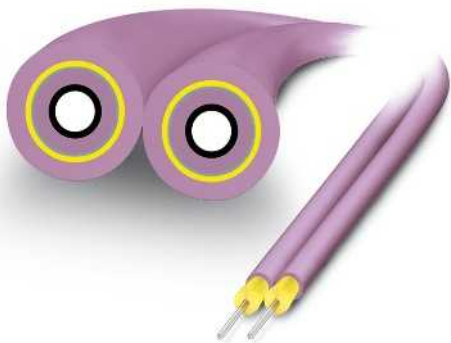
-10°C ... 60°C

-10°C ... 60°C

-5°C ... 50°C

In acc. with IEC 60754-1/2

Zip cord fiberglass cables
for assembly, OM4



- Multimode patch cables for indoor installation
- Ideal for use in distributor systems and for connecting termination devices
- 2.8 mm single elements made from halogen-free and flame-retardant material
- UL approval type OFNR (riser) for USA and Canada
- Low-bend fiber
- Data rate: up to 10 Gbps up to 550 m

Free end	SC-RJ connector, IP20	SC duplex connector, IP20
OE	SCRJ	SCDUP
Ordering data	Ordering data	Ordering data
Order No.	Order No.	Order No.
Free end		
OE		
SC-RJ connector, IP20		
SCRJ		
SC duplex connector, IP20		
SCDUP		
LC duplex connector, IP20		
LC		

Variable	1411564		
		1.00 m 1409815	1.00 m 1409812
		2.00 m 1400700	2.00 m 1400695
		Variable 1405705	Variable 1405702
			1.00 m 1409801
			2.00 m 1400689
			Variable 1405699
			1.00 m 1409792
			2.00 m 1400681
			Variable 1405693

Ordering example for a configured cable:

For a 15 m long zip cord fiberglass cable, fitted with an SC duplex connector, IP20, at one end and an SC-RJ connector, IP20, at the other end, the ordering data is as follows:

Order No.	Length [m]
1405702	15

Length:	1 m, minimum	1000 m, maximum
Increment:	1 m	1 m ... 1000 m

LC duplex connector,
IP20

LC

Ordering data

Order No.

1.00 m	1409797
2.00 m	1400684

Variable	1405696
----------	---------

1.00 m	1409789
2.00 m	1400622

Variable	1405690
----------	---------

Technical data

Cable data

Cable abbreviation in accordance with IEC 61977:2010

Fibers

Attenuation, typical

I-V(ZN)H

-

2.5 dB/km (at 850 nm),
0.7 dB/km (at 1300 nm)

Smallest bending radius, fixed installation

15 mm

Smallest bending radius, movable installation

30 mm

Outer sheath

Material

-

Color

Violet

Diameter

2.8 - 5.7 mm

Strain relief elements

-

Individual wire

Structure

-

Color

-

Diameter

-

General data

Weight

15.80 kg/km

Ambient temperature (operation)

-10°C ... 60°C

Ambient temperature (storage/transport)

-10°C ... 60°C

Ambient temperature (installation)

-5°C ... 50°C

Halogen-free:

In acc. with IEC 60754-1/2

Connectors, for assembly



INTERBUS



PROFIBUS DP



Technical data	
Push-in connection	Screw connection
IEC 61076-2-101	IEC 61076-2-101
3	3
IP65 / IP67	IP67
Push-in connection	Screw connection
0.14 mm² ... 0.75 mm²	0.25 mm² ... 0.75 mm²
4 mm ... 8 mm	6.5 mm ... 8.5 mm
48 V AC / 60 V DC	48 V AC / 60 V DC
4 A	4 A
≥ 100 MΩ	≥ 100 MΩ
CuSn	CuZn
Ni/Au	Au
PA 6.6	PA 6.6
V0	HB
B - inverse	B - inverse
5	5
-40 ... 85	-40 ... 85

Ordering data			
Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
Push-in connection		Screw connection	

M12 circular connector in accordance with:

Degree of pollution	3
Degree of protection	IP65 / IP67
Connection method	Push-in connection
Connection cross section	0.14 mm ² ... 0.75 mm ²
External cable diameter	4 mm ... 8 mm
Electrical data	
Rated voltage	48 V AC / 60 V DC
Rated current	4 A
Insulation resistance	≥ 100 MΩ
Material data	
Contact material	CuSn
Contact surface material	Ni/Au
Contact carrier material	PA 6.6
Flammability rating in accordance with UL 94	V0
Coding	B - inverse
Number of positions	5
Temperature data	
Male connector/female connector	-40 ... 85



Technical data	
Push-in connection	Screw connection
IEC 61076-2-101	IEC 61076-2-101
3	3
IP65 / IP67	IP67
Push-in connection	Screw connection
0.14 mm² ... 0.75 mm²	0.25 mm² ... 0.75 mm²
4 mm ... 8 mm	6.5 mm ... 8.5 mm
48 V AC / 60 V DC	48 V AC / 60 V DC
4 A	4 A
≥ 100 MΩ	≥ 100 MΩ
CuSn	CuZn
Ni/Au	Au
PA 6.6	PA 6.6
V0	HB
B - inverse	B - inverse
2	5
-40 ... 85	-40 ... 85

Ordering data			
Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
Push-in connection		Screw connection	

Connectors

Female, straight	1424676	1
Male, straight	1424674	1
Female, angled	1424677	1
Male, angled	1424675	1
Cable connector, shielded, color-coded and numbered connection area		

Accessories		
Type	Order No.	Pcs./Pkt.
VS-CABLE-STRIP-VARIO	1657407	1

Description	
Stripping tool, for multiple-stage repositioning of shielded conductors	

Accessories		
Type	Order No.	Pcs./Pkt.
VS-CABLE-STRIP-VARIO	1657407	1



PROFIBUS DP, PROFIBUS PA



CANopen®, DeviceNet™



CC-Link

ERC

ERC

ERC

Technical data

PROFIBUS DP	PROFIBUS PA
in accordance with IEC 61076-2-101	in accordance with IEC 61076-2-101
3	3
IP65 / IP67	IP65 / IP67
Insulation displacement connection	Insulation displacement connection
0.25 mm² ... 0.75 mm²	0.25 mm² ... 0.75 mm²
5 mm ... 9.7 mm	5 mm ... 9.7 mm
48 V AC / 60 V DC	30 V DC
4 A	4 A
≥ 100 MΩ	≥ 100 MΩ
CuSn	CuSn
Ni/Au	Ni/Au
PA 6.6	PA 6.6
V0	V0
B - inverse	A - standard
2	2
-40 ... 85	-40 ... 85

Technical data

Push-in connection	Insulation displacement connection
IEC 61076-2-101	in accordance with IEC 61076-2-101
3	3
IP65 / IP67	IP65 / IP67
Push-in connection	Insulation displacement connection
0.14 mm² ... 0.75 mm²	0.14 mm² ... 0.75 mm²
4 mm ... 8 mm	5 mm ... 9.7 mm
48 V AC / 60 V DC	48 V AC / 60 V DC
4 A	4 A
≥ 100 MΩ	≥ 100 MΩ
CuSn	CuSn
Ni/Au	Ni/Au
PA 6.6	PA 6.6
V0	V0
A - standard	A - standard
5	5
-40 ... 85	-40 ... 85

Technical data

Push-in connection
IEC 61076-2-101
3
IP65 / IP67
Push-in connection
0.14 mm² ... 0.75 mm²
4 mm ... 8 mm
48 V AC / 60 V DC
4 A
≥ 100 MΩ
CuSn
Ni/Au
PA 6.6
V0
A - standard
4
-40 ... 85

Ordering data

Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
PROFIBUS DP		PROFIBUS PA	
1413932	1	1413934	1
1413931	1	1413933	1
1420426	1		

Ordering data

Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
Push-in connection		Insulation displacement connection	
1424672	1	1422760	1
1424670	1	1422759	1
1424673	1		
1424671	1		

Ordering data

Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
Push-in connection			
1424700	1		
1424699	1		

Accessories

Type	Order No.	Pcs./Pkt.
VS-CABLE-STRIP-VARIO	1657407	1

Accessories

Type	Order No.	Pcs./Pkt.
VS-CABLE-STRIP-VARIO	1657407	1

Accessories

Type	Order No.	Pcs./Pkt.
VS-CABLE-STRIP-VARIO	1657407	1

Device connectors, shielded



With 0.5 m long litz wires,
front mounting



M12 circular connector in accordance with:

Degree of pollution
Degree of protection
Connection method

Electrical data

Rated voltage
Rated current
Contact resistance
Insulation resistance

Material data

Material contact/contact surface
Contact carrier material
Flammability rating in accordance with UL 94
Temperature data

Male connector/female connector [°C]

IEC 61076-2-101
3
IP67
Individual wires

250 V
4 A
≤ 3 mΩ
≥ 100 MΩ

CuZn / Ni/Au
PA66 GF
V0

-25 ... 85

Technical data

Ordering data

Description	Coding
Device connectors	
Female	A - standard
Male	A - standard

Type	Order No.	Pcs./Pkt.
SACC-E-M12FS-4CON-PG9/0,5 FFVA	1431429	1
SACC-E-M12MS-4CON-PG9/0,5 FFVA	1431432	1

**Device connectors,
with assembled cable,
type 900**



Rear mounting

Front mounting,
can be positioned

EAC

Technical data

M16 fastening thread

IEC 61076-2-101

3

IP67

60 V

4 A

 $\leq 3 \text{ m}\Omega$ $\geq 100 \text{ M}\Omega$

M12 circular connector in accordance with:

Degree of pollution

Degree of protection

Electrical data

Rated voltage

Rated current

Contact resistance

Insulation resistance

Material data

Material contact/contact surface

Contact carrier material

Flammability rating in accordance with UL 94

Temperature data

Male connector/female connector

[°C]

-25 ... 85

Pg9 fastening thread

IEC 61076-2-101

3

IP67

60 V

4 A

 $\leq 3 \text{ m}\Omega$ $\geq 100 \text{ M}\Omega$

CuZn / Ni/Au

PA 6.6

V0

-25 ... 85

EAC

Technical data

M16 fastening thread

IEC 61076-2-101

3

IP67

60 V

4 A

 $\leq 3 \text{ m}\Omega$ $\geq 100 \text{ M}\Omega$

CuZn / Ni/Au

PA 6.6

V0

-25 ... 85

Ordering data

Order No.

Pcs./Pkt.

Order No.

Pcs./Pkt.

M16 fastening thread

Pg9 fastening thread

Ordering data

Order No.

Pcs./Pkt.

Order No.

Pcs./Pkt.

M16 fastening thread

Description

Cable length

Device connector, B-coded, with bus system cable, 6-wire,
shielded, PUR, halogen-free, green outer sheath, 3 x 2 x 0.25 mm²

Female	0.5 m
Male	0.5 m
Female	1 m
Male	1 m
Female	2 m
Male	2 m
Female	5 m
Male	5 m

EMC hexagonal nut with fine toothing,
for all device connectors with:

M16 fastening thread

Pg9 fastening thread

1440164

10

1440177

10

1529742	1
1529629	1
1529755	1
1530223	1
1529768	1
1529726	1
1529771	1
1529739	1

Device connectors, with assembled cable, type 910

PROFI[®]
BUS



Rear mounting

PROFI[®]
BUS



Front mounting,
can be positioned

ERC

Technical data

M12 circular connector in accordance with:

Degree of pollution	3
Degree of protection	IP67
Electrical data	
Rated voltage	60 V
Rated current	4 A
Contact resistance	≤ 3 mΩ
Insulation resistance	≥ 100 MΩ
Material data	
Material contact/contact surface	CuZn / Ni/Au
Contact carrier material	PA 6.6
Flammability rating in accordance with UL 94	V0
Temperature data	
Male connector/female connector	[-25 ... 85 °C]

M16 fastening thread
IEC 61076-2-101

Pg9 fastening thread
IEC 61076-2-101

3
IP67

3
IP67

60 V

60 V

4 A

4 A

≤ 3 mΩ

≤ 3 mΩ

≥ 100 MΩ

≥ 100 MΩ

CuZn / Ni/Au

CuZn / Ni/Au

PA 6.6

PA 6.6

V0

V0

-25 ... 85

-25 ... 85

Ordering data

Description Cable length

Device connector, B-coded, with bus system cable, 2-wire,
shielded, PUR, halogen-free, violet outer sheath, 1 x 2 x 0.25 mm²

Female	0.5 m
Male	0.5 m
Female	1 m
Male	1 m
Female	2 m
Male	2 m
Female	5 m
Male	5 m

EMC hexagonal nut with fine toothing,
for all device connectors with:

M16 fastening thread
Pg9 fastening thread

Order No. Pcs./Pkt.

M16 fastening thread

Order No. Pcs./Pkt.

Pg9 fastening thread

1534384	1
1534342	1
1534397	1
1534355	1
1534407	1
1534368	1
1534410	1
1534371	1

1437449	1
1437481	1
1437452	1
1437494	1
1437465	1
1437504	1
1437478	1
1437517	1

1440164 10

1440177 10

ERC

Technical data

M16 fastening thread
IEC 61076-2-101

3
IP67

60 V

4 A

≤ 3 mΩ

≥ 100 MΩ

CuZn / Ni/Au

PA 6.6

V0

-25 ... 85

Ordering data

Order No. Pcs./Pkt.

M16 fastening thread

Order No. Pcs./Pkt.

1525597	1
1525555	1
1525607	1
1525568	1
1519574	1
1519561	1
1525610	1
1525571	1

Device connectors, with assembled cable, type 920

CANopen

DeviceNet



Rear mounting

CANopen

DeviceNet

Front mounting,
can be positioned

EAC

Technical data

M16 fastening thread

IEC 61076-2-101

3

IP67

60 V

4 A

 $\leq 3 \text{ m}\Omega$ $\geq 100 \text{ M}\Omega$

M12 circular connector in accordance with:

Degree of pollution

Degree of protection

Electrical data

Rated voltage

Rated current

Contact resistance

Insulation resistance

Material data

Material contact/contact surface

Contact carrier material

Flammability rating in accordance with UL 94

Temperature data

Male connector/female connector

[°C]

-25 ... 85

Pg9 fastening thread

IEC 61076-2-101

3

IP67

60 V

2 A

 $\leq 3 \text{ m}\Omega$ $\geq 100 \text{ M}\Omega$

CuZn / Ni/Au

PA 6.6

V0

-25 ... 85

EAC

Technical data

M16 fastening thread

IEC 61076-2-101

3

IP67

60 V

4 A

 $\leq 3 \text{ m}\Omega$ $\geq 100 \text{ M}\Omega$

CuZn / Ni/Au

PA 6.6

V0

-25 ... 85

Ordering data

Order No.

Pcs./Pkt.

Order No.

Pcs./Pkt.

M16 fastening thread

Pg9 fastening thread

Ordering data

Order No.

Pcs./Pkt.

Order No.

Pcs./Pkt.

M16 fastening thread

Description

Cable length

Device connector, A-coded, with bus system cable, 4-wire, shielded, PUR, halogen-free, violet outer sheath, 2 x 0.34 mm²; 2 x 0.25 mm²

Female

0.5 m

1534465

1

1437520

1

1525678

1

Male

0.5 m

1534423

1

1437562

1

1525623

1

Female

1 m

1534478

1

1437533

1

1525681

1

Male

1 m

1534436

1

1437575

1

1525636

1

Female

2 m

1534481

1

1437546

1

1525694

1

Male

2 m

1534449

1

1437588

1

1525649

1

Female

5 m

1534494

1

1437559

1

1525704

1

Male

5 m

1534452

1

1437591

1

1525652

1

EMC hexagonal nut with fine toothing, for all device connectors with:

M16 fastening thread

1440164

10

Pg9 fastening thread

1440177

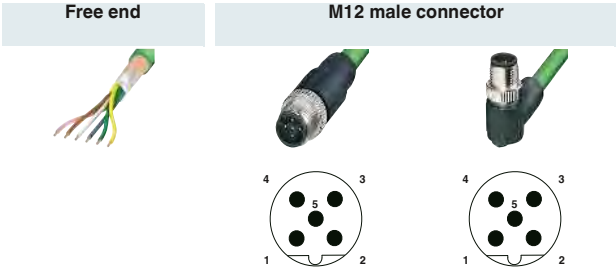
10

Data connectors and cables

Fieldbus components – Assembled cables

Assembled cables,
INTERBUS, M12

Notes:
For information about the cable qualities, see page 454



Free end		M12 female connector, straight		M12 female connector, angled	
Order No.		Order No.		Order No.	
	2 m	Variable	2723123		2 m
	5 m		1507117		5 m
	10 m		1507120		10 m
	15 m		1507133		15 m
	Variable		1538005		Variable
	0.3 m	Variable	1537983		0.3 m
	0.5 m		1507162		0.5 m
	1 m		1507175		1 m
	2 m		1507188		2 m
	5 m		1507191		5 m
	10 m	Variable	1507201		10 m
	15 m		1507214		15 m
	Variable		1507227		Variable
	Variable		1538021		Variable
	Variable		1430970		Variable
	0.3 m	Variable	1430983		0.3 m
	0.5 m		1430996		0.5 m
	1 m		1431005		1 m
	2 m		1431018		2 m
	5 m		1431018		5 m

Ordering example for cable with
connector assembly:

For an INTERBUS bus cable, straight M12 socket to straight M12 pin and 34.5 m cable length, the ordering data is as follows:

Order No.	Length [m]
1538021	34.5
Increments: 0.2 ... 3.0 m = 0.1 m > 3.0 m = 0.5 m	

Ordering example for cable without
connector assembly:

For an INTERBUS bus cable with 34.5 m cable length, the ordering data is as follows:

Order No.	Length [m]
2723123	34.5
Increments: 0.5 ... 400.0 m = 0.5 m	

Technical data	
M12	
Rated voltage	48 V AC / 60 V DC
Rated current	4
Contact resistance	≤ 5 mΩ
Contact material	CuSn
Contact surface material	Ni/Au
Material of grip body	TPU, hardly inflammable, self-extinguishing
Degree of protection	IP65 / IP67
Temperature data	-25 ... 90
Male connector/female connector	

Assembled cables, PROFIBUS DP, M12

Notes:

For information about the cable qualities, see page 454

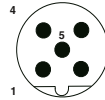
For H, Y, and T distributors, see page 436

For termination resistors, see page 437

Free end



M12 male connector



Ordering data

Ordering data

Ordering data

Free end	Order No.	Order No.	Order No.
		2 m	1507243
		5 m	1507256
		10 m	1507269
		15 m	1507272
	Variable	Variable	1538047
M12 female connector, straight			
		0.3 m	1507340
		0.5 m	1507353
		1 m	1507366
		2 m	1507379
		5 m	1507382
	2 m	10 m	1507395
	5 m	15 m	1507405
	10 m	Variable	1538089
	15 m		
	Variable		

Ordering example for cable with connector assembly:

For a PROFIBUS bus cable, straight M12 socket to straight M12 pin and 34.5 m cable length, the ordering data is as follows:

Order No.	Length [m]
1538089	40 m, maximum
	Increments: 0.2 ... 3.0 m = 0.1 m > 3.0 m = 0.5 m

Ordering example for cable without connector assembly:

For a PROFIBUS bus cable with 34.5 m cable length, the ordering data is as follows:

Order No.	Length [m]
1511491	400 m, maximum
	Increments: 0.5 ... 400.0 m = 0.5 m

Technical data

M12

Rated voltage	48 V AC / 60 V DC
Rated current	4 [A]
Contact resistance	≤ 5 mΩ
Contact material	CuSn
Contact surface material	Ni/Au
Material of grip body	TPU, hardly inflammable, self-extinguishing
Degree of protection	IP65 / IP67
Temperature data	
Male connector/female connector	-25 ... 90 [°C]

Data connectors and cables

Fieldbus components – Assembled cables

Assembled cables, PROFIBUS PA, M12 stainless steel

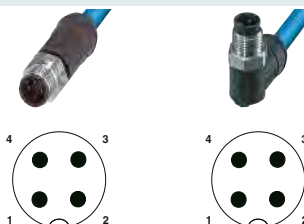
Notes:
For information about the cable qualities, see page 456
For H, Y, and T distributors, see page 436



Free end



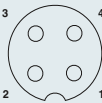
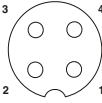
M12 male connector



Ordering data

Ordering data

Ordering data

Free end	Order No.		Order No.		Order No.	
	2 m	1419092	2 m	1419097		
	5 m	1419093	5 m	1419098		
	10 m	1419094	10 m	1419099		
	15 m	1419095	15 m	1419100		
	20 m	1419096	20 m	1419101		
M12 female connector, straight						
		0.3 m	1419102	0.3 m	1419110	
		0.5 m	1419103	0.5 m	1419111	
		1 m	1419104	1 m	1419112	
		2 m	1419105	2 m	1419113	
		5 m	1419106	5 m	1419114	
		10 m	1419107	10 m	1419115	
		15 m	1419108	15 m	1419116	
		20 m	1419109	20 m	1419117	
M12 female connector, angled						
		0.3 m	1419118	0.3 m	1419126	
		0.5 m	1419119	0.5 m	1419127	
		1 m	1419120	1 m	1419128	
		2 m	1419121	2 m	1419129	
		5 m	1419122	5 m	1419130	
		10 m	1419123	10 m	1419131	
		15 m	1419124	15 m	1419132	
		20 m	1419125	20 m	1419133	

Color coding	Pin assignment M12
OG	1
n.c.	2
BU	3
Shield	4

Technical data

M12

Rated voltage	48 V AC / 60 V DC
Rated current	4
Contact resistance	≤ 5 mΩ
Contact material	CuSn
Contact surface material	Ni/Au
Material of grip body	TPU, hardly inflammable, self-extinguishing
Degree of protection	IP65 / IP67 / IP68 / IP69K
Temperature data	
Male connector/female connector	-25 ... 90

Assembled cables, DeviceNet™/CANopen®, M12, unshielded

Notes:

For information about the cable qualities, see page 455

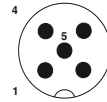
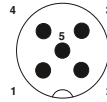
For H, Y, and T distributors, see page 436

For termination resistors, see page 437

Free end



M12 male connector



DeviceNet™ CANopen

Ordering data

Ordering data

Ordering data

Free end



Order No.

Order No.

Order No.

2 m

1419039

2 m

1419044

5 m

1419040

5 m

1419045

10 m

1419041

10 m

1419046

15 m

1419042

15 m

1419047

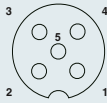
20 m

1419043

20 m

1419048

M12 female connector, straight



2 m

1419081

0.3 m

1419049

0.3 m

1419057

5 m

1419030

0.5 m

1419050

0.5 m

1419058

10 m

1419031

1 m

1419051

1 m

1419059

15 m

1419032

2 m

1419052

2 m

1419060

20 m

1419033

5 m

1419053

5 m

1419061

10 m

1419054

10 m

1419062

15 m

1419055

15 m

1419063

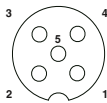
20 m

1419056

20 m

1419064

M12 female connector, angled



2 m

1419034

0.3 m

1419065

0.3 m

1419073

5 m

1419035

0.5 m

1419066

0.5 m

1419074

10 m

1419036

1 m

1419067

1 m

1419075

15 m

1419037

2 m

1419068

2 m

1419076

20 m

1419038

5 m

1419069

5 m

1419077

10 m

1419070

10 m

1419078

15 m

1419071

15 m

1419079

20 m

1419072

20 m

1419080

Color coding

Pin assignment

M12

Shield

1

RD

2

BK

3

WH

4

BU

5

Technical data

M12

Rated voltage

48 V AC / 60 V DC

Rated current

[A]

4

Contact resistance

< 5 mΩ

Contact material

CuSn

Contact surface material

Ni/Au

Material of grip body

TPU

Degree of protection

IP65 / IP67

Temperature data

Male connector/female connector

[°C]

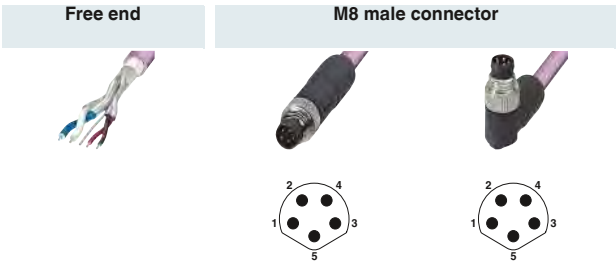
-25 ... 90

Data connectors and cables

Fieldbus components – Assembled cables

Assembled cables,
DeviceNet™/CANopen®, M8

Notes:
For information about the cable qualities, see page 455
For termination resistors, see page 437



	Ordering data		Ordering data		Ordering data	
Free end	Order No.		Order No.		Order No.	
			2 m	1575712		
			5 m	1575725		
			10 m	1575738		
			15 m	1575754		
			Variable	1575767	Variable	1575903
M8 female connector, straight 			0.3 m	1575822		
			0.5 m	1575835		
			1 m	1575848		
	2 m	1575770	2 m	1575851		
	5 m	1575783	5 m	1575864		
	10 m	1575796	10 m	1575877		
	15 m	1575806	15 m	1575880		
M8 female connector, angled 	Variable	1575819	Variable	1575893	Variable	1575932
					Variable	1575945

Ordering example for cable with
variable cable length:

For a DeviceNet™ bus cable, straight M8 female to straight
M8 male and 34.5 m cable length, the ordering data is as follows:

Order No.	Length [m] 40 m, maximum
1575893	34.5
Increments: 0.2 ... 3.0 m = 0.1 m > 3.0 m = 0.5 m	

Technical data	
M8	
Rated voltage	30 V AC / 30 V DC
Rated current	4
Contact resistance	≤ 5 mΩ
Contact material	CuSn
Contact surface material	Ni/Au
Material of grip body	TPU, hardly inflammable, self-extinguishing
Degree of protection	IP65 / IP67
Temperature data	
Male connector/female connector	-25 ... 90

Assembled cables, DeviceNet™/CANopen®, M12

Notes:

For information about the cable qualities, see page 455

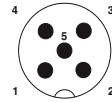
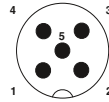
For H, Y, and T distributors, see page 436

For termination resistors, see page 437

Free end



M12 male connector



DeviceNet™ CANopen®

Ordering data

Ordering data

Ordering data

Free end	Order No.	Order No.	Order No.
		2 m	1507421
		5 m	1507434
		10 m	1507447
		15 m	1507450
	Variable 1511504	Variable 1538102	Variable 1431089
M12 female connector, straight			
		0.3 m	1507528
		0.5 m	1507531
		1 m	1507544
	2 m	2 m	1507557
	5 m	5 m	1507560
	10 m	10 m	1507573
	15 m	15 m	1507586
	Variable 1538128	Variable 1538144	Variable 1431115
M12 female connector, angled			
	Variable 1431092	Variable 1431102	Variable 1431128

Ordering example for cable with connector assembly:

For a DeviceNet™ bus cable, straight M12 socket to straight M12 pin and 34.5 m cable length, the ordering data is as follows:

Order No.	Length [m]
1538144	40 m, maximum
	34.5
	Increments:
	0.2 ... 3.0 m = 0.1 m
	> 3.0 m = 0.5 m

Ordering example for cable without connector assembly:

For a DeviceNet™ bus cable with 34.5 m cable length, the ordering data is as follows:

Order No.	Length [m]
1511504	400 m, maximum
	34.5
	Increments:
	0.5 ... 400.0 m = 0.5 m

Technical data

M12

Rated voltage	48 V AC / 60 V DC
Rated current	4
Contact resistance	≤ 5 mΩ
Contact material	CuSn
Contact surface material	Ni/Au
Material of grip body	TPU, hardly inflammable, self-extinguishing
Degree of protection	IP65 / IP67
Temperature data	
Male connector/female connector	-25 ... 90

M12 Y distributors, DeviceNet™/CANopen®, unshielded

Notes:

For information about the cable qualities, see page 455

For H, Y, and T distributors, see page 436

For termination resistors, see page 437



Bus system cable



Bus system cable

ERC

Technical data

Electrical data	
Rated voltage	48 V AC / 60 V DC
Rated current	4 A
Contact resistance	≤ 5 mΩ
Material data	
Contact material	CuSn
Contact surface material	Ni/Au
Contact carrier material	TPU GF
Flammability rating in accordance with UL 94	HB
Mechanical data	
Number of positions	5
Degree of pollution	3
Degree of protection	IP65/IP67
External cable diameter	6.70 mm
Conductor cross section for signal	0.2 mm ²
Conductor structure signal line	19x 0.12 mm
Conductor cross section for power	0.32 mm ²
Conductor structure, voltage supply	19x 0.15 mm
Temperature data	
Male connector/female connector	[-25 ... 90 °C]
Cable, fixed installation	[-40 ... 80 °C]
Cable, flexible installation	[-20 ... 80 °C]

Ordering data

Description	Type	Order No.	Pcs./Pkt.
Bus system Y-cable , 5-pos., shielded, PUR, halogen-free, violet, unshielded straight M12 Y-female to straight M12 female and straight M12 connector			
- Conductor length 0.3 m	SAC-5PY-F/2X 0,3-920-MS-FS	1436013	1
- Conductor length 0.5 m	SAC-5PY-F/2X 0,5-920-MS-FS	1436026	1
- Conductor length 1.0 m	SAC-5PY-F/2X 1,0-920-MS-FS	1436039	1
- Conductor length 2.0 m	SAC-5PY-F/2X 2,0-920-MS-FS	1436042	1
- Conductor length 5.0 m	SAC-5PY-F/2X 5,0-920-MS-FS	1436055	1
- Conductor length 10.0 m	SAC-5PY-F/2X10,0-920-MS-FS	1436068	1
- Conductor length 15.0 m	SAC-5PY-F/2X15,0-920-MS-FS	1436071	1
Bus system Y-cable , 5-pos., shielded, PUR, halogen-free, violet, unshielded straight M12 Y-connector to free cable ends			
- Conductor length 2.0 m			
- Conductor length 5.0 m			
- Conductor length 10.0 m			
- Conductor length 15.0 m			
Bus system Y-cable , 5-pos., shielded, PUR, halogen-free, violet, unshielded straight M12 Y-female to free cable ends			
- Conductor length 2.0 m			
- Conductor length 5.0 m			
- Conductor length 10.0 m			
- Conductor length 15.0 m			

ERC

Technical data

Electrical data	
Rated voltage	48 V AC / 60 V DC
Rated current	4 A
Contact resistance	≤ 5 mΩ
Material data	
Contact material	CuSn
Contact surface material	Ni/Au
Contact carrier material	TPU GF
Flammability rating in accordance with UL 94	HB
Mechanical data	
Number of positions	5
Degree of pollution	3
Degree of protection	IP65/IP67
External cable diameter	6.70 mm
Conductor cross section for signal	0.2 mm ²
Conductor structure signal line	19x 0.12 mm
Conductor cross section for power	0.32 mm ²
Conductor structure, voltage supply	19x 0.15 mm
Temperature data	
Male connector/female connector	[-25 ... 90 °C]
Cable, fixed installation	[-40 ... 80 °C]
Cable, flexible installation	[-20 ... 80 °C]

Ordering data

Type	Order No.	Pcs./Pkt.
Bus system Y-cable , 5-pos., shielded, PUR, halogen-free, violet, unshielded straight M12 Y-female to free cable ends		
SAC-5PY-M/2X 2,0-920	1436084	1
SAC-5PY-M/2X 5,0-920	1436097	1
SAC-5PY-M/2X10,0-920	1436107	1
SAC-5PY-M/2X15,0-920	1436110	1
Bus system Y-cable , 5-pos., shielded, PUR, halogen-free, violet, unshielded straight M12 Y-female to free cable ends		
SAC-5PY-F/2X 2,0-920	1436123	1
SAC-5PY-F/2X 5,0-920	1436136	1
SAC-5PY-F/2X10,0-920	1436149	1
SAC-5PY-F/2X15,0-920	1436152	1

Assembled cables, FOUNDATION Fieldbus, M12 stainless steel

Notes:

For H, Y, and T distributors, see page 436

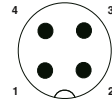
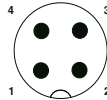
For termination resistors, see page 437



Free end



M12 male connector



Ordering data

Ordering data

Ordering data

Free end	Order No.	Order No.	Order No.
		2 m	1431173
		5 m	1431186
		10 m	1431199
		15 m	1431209
	Variable	Variable	Variable
	1432389	1431322	1431335
M12 female connector, straight			
		0.3 m	1431254
		0.5 m	1431267
		1 m	1431270
		2 m	1431283
		5 m	1431296
		10 m	1431306
		15 m	1431319
	Variable	Variable	Variable
	1431348	1431364	1431377
M12 female connector, angled			
			
	Variable	Variable	Variable
	1431351	1431380	1431393

Ordering example for products with variable cable:

For a 34.5 m long FOUNDATION Fieldbus cable, fitted with a straight M12 male at one end and an M12 female at the other end, the ordering data is as follows:

Order No.	Length [m] max. 50 m
1431364	34.5
	Increment: 0.5 m

Color coding	Pin assignment M12
BU	1
BN	2
Shield	3
n.c.	4

Technical data

Connectors

M12

Rated voltage	48 V AC / 60 V DC
Rated current	4 [A]
Contact resistance	≤ 5 mΩ
Contact material	CuSn
Contact surface material	Ni/Au
Material of grip body	TPU, hardly inflammable, self-extinguishing

Material, knurls	Stainless steel
Degree of protection	IP65 / IP67 / IP68 / IP69K

Temperature data	
Male connector/female connector	-25 ... 90 [°C]

H, Y, and T distributors



H and Y distributors



T-distributor

ERC

ERC

	Technical data		Technical data	
	H distributor, 5-pos.	Y distributor, hybrid	T distributor, 4-pos.	T distributor, 5-pos.
General data				
Degree of protection	IP65 / IP67	IP67	IP65 / IP67 / IP68	IP65 / IP67
Electrical data				
Rated voltage	48 V AC / 60 V DC	30 V AC (Power and data) / 30 V DC (Power and data)	48 V AC / 60 V DC	48 V AC / 60 V DC
Insulation resistance	≥ 100 MΩ	≥ 100 MΩ	≥ 100 MΩ	≥ 100 MΩ
Overvoltage category / Degree of pollution	II / 3	III / 3	II / 3	II / 3
Material data				
Contact material	CuZn	CuZn	CuZn	CuZn
Contact surface material	Ni/Au	Ni/Au	Ni/Au	Ni/Au
Contact carrier material	TPU GF	-	TPU GF	TPU GF
Material of grip body	TPU, hardly inflammable, self-extinguishing	TPU, hardly inflammable, self-extinguishing	TPU, hardly inflammable, self-extinguishing	TPU, hardly inflammable, self-extinguishing
Temperature data				
Male connector/female connector	°C			
	-25 ... 90	-25 ... 80	-25 ... 90	-25 ... 90
	Ordering data		Ordering data	
	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
	H distributor, 5-pos.	Y distributor, hybrid	T distributor, 4-pos.	T distributor, 5-pos.
Bus system H distributor, for DeviceNet™ with two mounting holes				
M12 male to 3x M12 female	1417414	1		
Hybrid Y distributor, 4+4-pos., for data and power				
M12 connector (Y-coded) to M12 female (D-coded) and M12 connector (A-coded)		1410630		
Bus system T distributor, for PROFIBUS, B-coded, shielded 360°				
M12 female to 2x M12 connector				1424711
M12 female to M12 male and fixed M12 male				1424713
Bus system T distributor, for CANopen® and DeviceNet™, M12 female to M12 female and M12 connector				
Green				1541186
black, with two mounting holes				1424712
Bus system T distributor, for CC-Link				
M12 female on M12 female and M12 male			1559783	5
Bus system T distributor, for FOUNDATION Fieldbus and PROFIBUS PA (M12), with stainless steel knurl				
M12 female on M12 female and M12 male			1431416	5

Termination resistors



M8 termination resistor



M12 termination resistor



Technical data		
SAC-5P-M 8MS DN TR		
30 V		
-		
II / 3		
CuSn		
Ni/Au		
TPU GF		
TPU, hardly inflammable, self-extinguishing		
IP65/IP67/IP69K		
-25 ... 90		
Ordering data		
Type	Order No.	Pcs./Pkt.
SAC-5P-M 8MS DN TR	1435988	5



Technical data		
SAC-5P-M12MS PB TR	SAC-4P-M12MS FF TR VA	
48 V AC	24 V	
≥ 100 MΩ	≥ 100 MΩ	
II / 3	II / 3	
CuSn	CuZn	
Ni/Au	Ni/Au	
TPU GF	TPU GF	
TPU, hardly inflammable, self-extinguishing	TPU, hardly inflammable, self-extinguishing	
-	IP65/IP68/IP69K	
-25 ... 90	-25 ... 90	
Ordering data		
Type	Order No.	Pcs./Pkt.
SAC-5P-M12MS PB TR	1507803	5
SAC-5P-M12MS CAN TR	1507816	5
SAC-4P-M12MS CCL TR	1558470	1
SAC-4P-M12MS FF TR VA	1431403	5

Electrical data	
Nominal voltage U_N	30 V
Insulation resistance	-
Overvoltage category / Degree of pollution	II / 3
Material data	
Contact material	CuSn
Contact surface material	Ni/Au
Contact carrier material	TPU GF
Material of grip body	TPU, hardly inflammable, self-extinguishing
Degree of protection	IP65/IP67/IP69K
Temperature data	
Male connector/female connector	-25 ... 90

Description	
Termination resistor, M8 male	
- DeviceNet™	
Termination resistor, M12 male	
- PROFIBUS	
- DeviceNet™/CANopen®	
- CC-Link	
Termination resistor, M12 male, high-grade steel knurl	
- FOUNDATION Fieldbus	



Distributors with spring connection and with round cables



**Flat-ribbon conductor distributor
and distributor with spring connection**



**Distributor with round cable
and over-molded M12 connector**

Technical data	
SAC-ASI-J-Y-B-FFKDS	SAC-ASI-J-Y-Y-N
≤ 32 V DC	≤ 32 V DC
4 A	8 A
-	-
PBT	PBT
4	4
IP20	IP65 / IP67 / IP69K
0.2 mm ² ... 1.5 mm ² (without ferrule)	-
24 ... 16 (without ferrule)	-
-	-
-	-
-	-
-25 ... 75	-25 ... 75
-	-
-	-

Ordering data		
Type	Order No.	Pcs./Pkt.
SAC-ASI-J-Y-B-FFKDS	1407579	1
SAC-ASI-J-Y-Y-N	1405622	1

Technical data	
SAC-ASI-J-Y-N...	SAC-ASI-J-Y-B...
≤ 32 V DC	≤ 32 V DC
4 A	4 A
TPU	TPU
PBT	PBT
2	4
IP65 / IP67	IP65 / IP67
-	-
-	-
PUR	PUR
4.3 mm	4.3 mm
4x 0.34 mm² (signal line)	4x 0.34 mm² (signal line)
-25 ... 75	-25 ... 75
-40 ... 80	-40 ... 80
-25 ... 80	-25 ... 80

Ordering data		
Type	Order No.	Pcs./Pkt
SAC-ASI-J-Y-N-PUR-1,0-FS SCO	1407573	1
SAC-ASI-J-Y-N-PUR-2,0-FS SCO	1407574	1
SAC-ASI-J-Y-B-PUR-1,0-FS SCO	1407575	1
SAC-ASI-J-Y-B-PUR-2,0-FS SCO	1407576	1
SAC-ASI-J-Y-B-PUR-1,0-FR SCO	1407577	1
SAC-ASI-J-Y-B-PUR-2,0-FR SCO	1407578	1
SAC-ASI-J-Y-N-PUR-2,0-OE	1407580	1
SAC-ASI-J-Y-B-PUR-2,0-OE	1407581	1



**PUR round cables
with over-molded M12 connectors**

440 | PHOENIX CONTACT Courtesy of Steven Engineering, Inc - (800) 258-9200 - sales@steveneng.com - www.stevenengineering.com

Digital I/O devices with M8 connection method

The digital I/O devices are particularly suitable for use in machines close to the process.

Features:

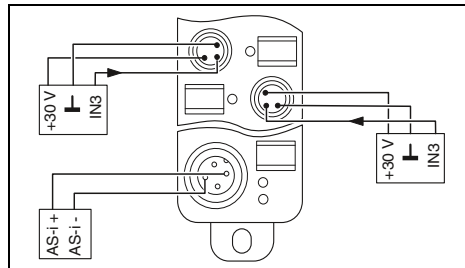
- Optimized for 30 mm mounting profile
- M12 connection technology with fast locking system for the AS-Interface connection
- M8 connection technology for inputs and outputs



4 digital inputs



4 digital inputs and 4 digital outputs



Technical data

Interface	
Fieldbus system	AS-i
Connection method	M12 connector, (A-coded)
AS-Interface	
AS-i specification	2.0
Required master specification	>= 2.0
AS-i profile	S-0.0
Digital inputs	
Connection method	M8 connector
Connection technology	2, 3-wire
Maximum number of inputs	-
Input characteristic curve	-
Digital outputs	
Connection method	-
Connection technology	-
Maximum number of outputs	-
Maximum output current per channel	-
Maximum output current per module / terminal block	-
General data	
Weight	85 g
Drill hole spacing	93 mm
Dimensions	30 mm / 26 mm / 103 mm
Degree of protection	IP65/IP67
Ambient temperature (operation)	-25°C ... 70°C
EMC note	Class A product, see page 727

W / H / D

Ordering data

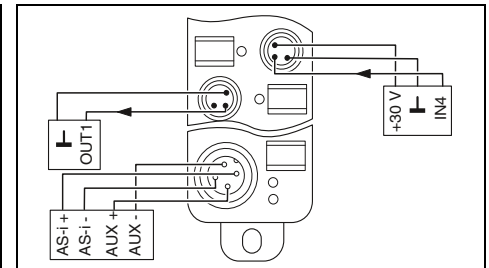
Description
Fieldline Extension AS-i digital input device
- 4 inputs
Fieldline Extension AS-i digital I/O device
- 4 inputs, 4 outputs, 1 A

Type	Order No.	Pcs./Pkt.
FLX ASI DI 4 M8	2773403	1

Accessories

M8 screw plug
Zack marker strip, flat, 10-section, without color print
Manual addressing device, for AS-Interface devices

PROT-M8	1682540	5
ZBF 8:UNBEDRUCKT	0808781	10
ASI CC ADR	2741338	1



Technical data

Interface	
Fieldbus system	AS-i
Connection method	M12 connector, (A-coded)
AS-Interface	
AS-i specification	2.0
Required master specification	>= 2.0
AS-i profile	S-7.0
Digital inputs	
Connection method	M8 connector
Connection technology	2, 3-wire
Maximum number of inputs	-
Input characteristic curve	-
Digital outputs	
Connection method	M8 connector
Connection technology	2-wire
Maximum number of outputs	-
Maximum output current per channel	1 A
Maximum output current per module / terminal block	4 A
General data	
Weight	125 g
Drill hole spacing	133 mm
Dimensions	30 mm / 26 mm / 143 mm
Degree of protection	IP65/IP67
Ambient temperature (operation)	-25°C ... 70°C
EMC note	Class A product, see page 727

Ordering data

Type	Order No.	Pcs./Pkt.
FLX ASI DIO 4/4 M8-1A	2773416	1

Accessories

PROT-M8	1682540	5
ZBF 8:UNBEDRUCKT	0808781	10
ASI CC ADR	2741338	1

Digital I/O devices with M12 connection method

The innovative locking mechanism enables quick and easy installation of the I/O devices.

Features:

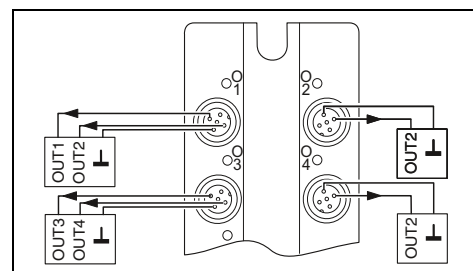
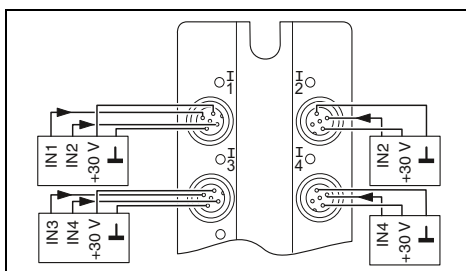
- Optimized for direct mounting and DIN rail mounting
- Tool-free connection to AS-Interface, thanks to piercing technology
- M12 connection technology with fast locking system for the inputs and outputs



4 digital inputs



4 digital outputs



Technical data

Interface	
Fieldbus system	AS-i
Connection method	Flat-ribbon cable penetration technique
AS-Interface	
AS-i specification	2.1
Required master specification	>= 2.0
AS-i profile	S-0.A.2
Digital inputs	
Connection method	M12 connector
Connection technology	2, 3-wire
Maximum number of inputs	-
Input characteristic curve	-
Digital outputs	
Connection method	-
Connection technology	-
Maximum number of outputs	-
Maximum output current per channel	-
Maximum output current per module / terminal block	-
General data	
Weight	195 g
Drill hole spacing	108 mm
Dimensions	58 mm / 118 mm / 35 mm
Degree of protection	IP65/IP67
Ambient temperature (operation)	-25°C ... 70°C
EMC note	Class A product, see page 727

Interface	
Fieldbus system	AS-i
Connection method	Flat-ribbon cable penetration technique
AS-Interface	
AS-i specification	2.0
Required master specification	>= 2.0
AS-i profile	S-8.1
Digital inputs	
Connection method	-
Connection technology	-
Maximum number of inputs	-
Input characteristic curve	-
Digital outputs	
Connection method	M12 connector
Connection technology	2-wire
Maximum number of outputs	4
Maximum output current per channel	2 A
Maximum output current per module / terminal block	4 A
General data	
Weight	195 g
Drill hole spacing	108 mm
Dimensions	58 mm / 118 mm / 35 mm
Degree of protection	IP65/IP67
Ambient temperature (operation)	-25°C ... 70°C
EMC note	Class A product, see page 727

Technical data

Interface	
Fieldbus system	AS-i
Connection method	Flat-ribbon cable penetration technique
AS-Interface	
AS-i specification	2.0
Required master specification	>= 2.0
AS-i profile	S-8.1
Digital inputs	
Connection method	-
Connection technology	-
Maximum number of inputs	-
Input characteristic curve	-
Digital outputs	
Connection method	M12 connector
Connection technology	2-wire
Maximum number of outputs	4
Maximum output current per channel	2 A
Maximum output current per module / terminal block	4 A
General data	
Weight	195 g
Drill hole spacing	108 mm
Dimensions	58 mm / 118 mm / 35 mm
Degree of protection	IP65/IP67
Ambient temperature (operation)	-25°C ... 70°C
EMC note	Class A product, see page 727

Ordering data

Description	Type	Order No.	Pcs./Pkt.
Fieldline Extension AS-i digital input device			
- 4 inputs	FLX ASI DI 4 M12	2773429	1
Fieldline Extension AS-i digital output device			
- 4 outputs, 2 A			
Fieldline Extension AS-i digital I/O device			
- 2 inputs, 2 outputs, 2 A			
- 4 inputs, 3 outputs, 2 A			
- 4 inputs, 4 outputs, 2 A			

Type	Order No.	Pcs./Pkt.
FLX ASI DI 4 M12	2773429	1

Ordering data

Type	Order No.	Pcs./Pkt.
FLX ASI DO 4 M12-2A	2773458	1

Accessories

M12 screw plug	PROT-M12	1680539	5
Label sheet for laser printers, 64 x 16 mm, color: white	BMKL 64X16 WH	0821807	2
Manual addressing device , for AS-Interface devices	ASI CC ADR	2741338	1
Programming cable , for addressing the AS-i devices	ASI CC ADR CAB CINCH	2741341	1

PROT-M12	1680539	5
BMKL 64X16 WH	0821807	2
ASI CC ADR	2741338	1
ASI CC ADR CAB CINCH	2741341	1

Accessories

PROT-M12	1680539	5
BMKL 64X16 WH	0821807	2
ASI CC ADR	2741338	1
ASI CC ADR CAB CINCH	2741341	1



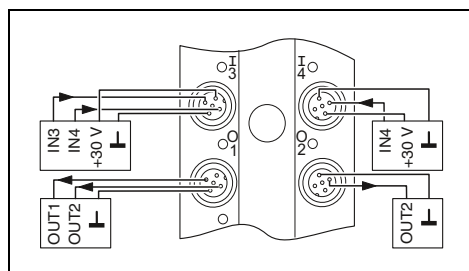
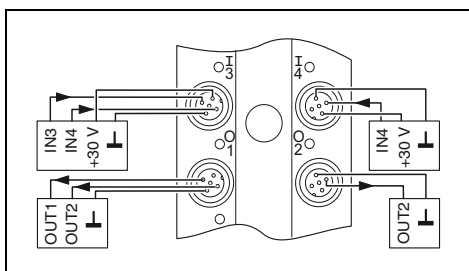
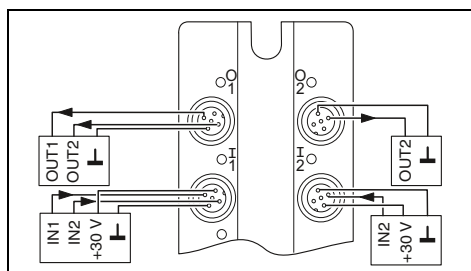
2 digital inputs
and 2 digital outputs



4 digital inputs
and 3 digital outputs



4 digital inputs
and 4 digital outputs



Technical data

AS-i
Flat-ribbon cable penetration technique

2.1
≥ 2.0
S-B.A.2

M12 connector
2, 3-wire
-

M12 connector
2-wire
-
2 A
4 A

195 g
108 mm
58 mm / 118 mm / 35 mm
IP65/IP67
-25°C ... 70°C
Class A product, see page 727

Technical data

AS-i
Flat-ribbon cable penetration technique

2.1
≥ 2.0
S-7.A.2

M12 connector
2, 3-wire
-

M12 connector
2-wire
-
2 A
4 A

245 g
108 mm
58 mm / 150 mm / 35 mm
IP65/IP67
-25°C ... 70°C
Class A product, see page 727

Technical data

AS-i
Flat-ribbon cable penetration technique

3.0
≥ 3.0
S-7.A.7

M12 connector
2, 3-wire
-

M12 connector
2-wire
-
2 A
4 A

245 g
108 mm
58 mm / 150 mm / 35 mm
IP65/IP67
-25°C ... 70°C
Class A product, see page 727

Ordering data

Type	Order No.	Pcs./Pkt.
FLX ASI DIO 2/2 M12-2A	2773432	1

Accessories

PROT-M12	1680539	5
BMKL 64X16 WH	0821807	2
ASI CC ADR	2741338	1
ASI CC ADR CAB CINCH	2741341	1

Ordering data

Type	Order No.	Pcs./Pkt.
FLX ASI DIO 4/3 M12-2A	2773445	1

Accessories

PROT-M12	1680539	5
ASI CC ADR	2741338	1
ASI CC ADR CAB CINCH	2741341	1

Ordering data

Type	Order No.	Pcs./Pkt.
FLX ASI 3.0 DIO 4/4 M12-2A	2773474	1

Accessories

PROT-M12	1680539	5
ASI CC ADR	2741338	1
ASI CC ADR CAB CINCH	2741341	1



FAR

	Technical data
Electrical data	
Rated voltage	63 V
Rated current	1 A
Overvoltage category	II
Material data	
Housing material	PA
Contact material	Copper alloy
Contact surface material	Gold over nickel
Contact carrier material	PBTP
Flammability rating in accordance with UL 94	V0
Mechanical data	
Number of positions	9
Color	gray
Degree of pollution	2
Degree of protection	IP67
Connection method	Screw connection
Conductor cross section	0.14 mm ² ... 0.5 mm ²
Connection cross section AWG	26 ... 20
Insertion/withdrawal cycles	≥ 200
Temperature data	
Ambient temperature (operation)	-20°C ... 70°C

FAR

Technical data
-
-
-
PA
-
-
-
V0
9
gray
2
IP67
-
-
-
≥ 1000
-40°C ... 80°C

Ordering data			
Description	Type	Order No.	Pcs./Pkt
D-SUB complete connector , for INTERBUS, shell size 1, screw connection, shielded			
Male	VS-09-IBS-ST	1689271	1
Female	VS-09-IBS-BU	1689284	1
D-SUB complete connector , for PROFIBUS, shell size 1, male, shielded			
Screw connection	VS-09-PROFIBUS-SC	1654549	1
Spring-cage connection	VS-09-PROFIBUS-SP	1654345	1
D-SUB complete connector , for CANopen®, shell size 1, female, screw connection, shielded			
Female	VS-09-CAN	1689307	1
D-SUB panel mounting frame , for taking up D-SUB contact inserts			
D-SUB 09			
D-SUB EMC shroud , for the IP67 panel mounting frame, for shield contacting to the housing panel			
D-SUB 09			
D-SUB connector set			
D-SUB 09			

Ordering data		
Type	Order No.	Pcs./Pkg
VS-09-A	1688366	5
VS-09-A-EMV-S	1688463	5
VS-09-SET-EMV	1689158	1

**D-SUB connectors,
IP20/IP67**

Screw connection
Fixing: 2.5 mm hole



**D-SUB panel mounting frame IP67,
with integrated gender changer**

EAC

Technical data

Electrical data	
Rated voltage	60 V
Rated current	5 A
Overvoltage category	III
Material data	
Housing material	Steel
Contact material	Cu
Contact surface material	Au/Ni
Contact carrier material	PBTP
Flammability rating in accordance with UL 94	V0
Mechanical data	
Number of positions	9
Color	-
Degree of pollution	2
Degree of protection	IP20
Connection method	Screw connection
Conductor cross section	0.14 mm ² ... 0.5 mm ²
Connection cross section AWG	26 ... 20
Insertion/withdrawal cycles	≥ 200
Temperature data	
Ambient temperature (operation)	-20°C ... 80°C

Ordering data

Description	Type	Order No.	Pcs./Pkt.
D-SUB contact insert			
Male	VS-09-ST-DSUB/10-MPT-0,5	1688379	10
Female	VS-09-BU-DSUB/9-MPT-0,5	1688395	10
D-SUB panel mounting frame, with integrated gender changer, shielded			
D-SUB 09, male/male			
D-SUB 09, female/female			
D-SUB coupling, with integrated gender changer, shielded			
D-SUB 09, male/male			
D-SUB 09, female/female			

EAC

Technical data

125 V	125 V
5 A	5 A
III	III
PA	PA
Copper alloy	Copper alloy
Hard gold-plated over nickel	Hard gold-plated over nickel
Polyester GF	Polyester GF
V0	V0
9	9
gray	gray
2	2
IP67	IP67
-	-
-	-
-	-
≥ 200	≥ 200
-40°C ... 80°C	-40°C ... 80°C

Ordering data

Type	Order No.	Pcs./Pkt.
D-SUB panel mounting frame, with integrated gender changer, shielded		
VS-09-A-GC-ST/ST	1689705	5
VS-09-A-GC-BU/BU	1689695	5
D-SUB coupling, with integrated gender changer, shielded		
VS-09-KU-ST/ST	1689640	5
VS-09-KU-BU/BU	1689637	5

Data connectors and cables

D-SUB-based connectors

Signal contacts



Contacts for standard
D-SUB contact carriers



Contacts for high density
D-SUB contact carriers

ERC

Technical data

AWG 28 ... 26	AWG 24 ... 20
-	-
5 A (at 20°C)	5 A (at 20°C)
Copper alloy	Copper alloy
0.2 µm, gold over nickel	0.2 µm, gold over nickel
Crimp connection	Crimp connection
0.08 mm ² ... 0.12 mm ²	0.2 mm ² ... 0.5 mm ²
28 ... 26	24 ... 20
≥ 200	≥ 200
-55°C ... 130°C	-55°C ... 130°C

Ordering data

Type	Order No.	Pcs./Pkt.
Turned male crimp contacts , for D-SUB contact inserts with standard contact density, gold-plated surface		
AWG 28 ... 26	CUC-DSC-C1BAU-S/DSC28	1418784 100
AWG 24 ... 20	CUC-DSC-C1BAU-S/DSC24	1418786 100
Turned female crimp contacts , for D-SUB contact inserts with standard contact density, gold-plated surface		
AWG 28 ... 26	CUC-DSC-J1BAU-S/DSC28	1418787 100
AWG 24 ... 20	CUC-DSC-J1BAU-S/DSC24	1418788 100
Turned crimp contacts , for D-SUB contact inserts with high density, gold-plated surface		
AWG 28 ... 22, male		
AWG 28 ... 22, female		

Accessories

Crimping pliers , for turned contacts, universal cross section setting, up to a maximum of 2.5 mm ² , digital display with 0.01 mm increments, unlockable pressure lock, lateral entry, including positioning tool		
for turned contacts, four-mandrel crimping	CRIMPFOX-TC MP	1212510 1
Insertion/Extraction Tool , for fitting and removing the D-SUB standard signal contacts		
Insertion/Extraction Tool , for fitting and removing the D-SUB High Density signal contacts	VS-IET-DSUB-SIGNAL-STD	1658794 1

ERC

Technical data

CUC-DSC-...BAU-S/DSC22
-
3 A
Copper alloy
0.2 µm, gold over nickel
Crimp connection
0.08 mm ² ... 0.34 mm ²
28 ... 22
≥ 200
-55°C ... 115°C

Ordering data

Type	Order No.	Pcs./Pkt.
Turned male crimp contacts , for D-SUB contact inserts with standard contact density, gold-plated surface		
AWG 28 ... 26	CUC-DSC-C1BAU-S/DSC28	1418784 100
AWG 24 ... 20	CUC-DSC-C1BAU-S/DSC24	1418786 100
Turned female crimp contacts , for D-SUB contact inserts with standard contact density, gold-plated surface		
AWG 28 ... 26	CUC-DSC-J1BAU-S/DSC28	1418787 100
AWG 24 ... 20	CUC-DSC-J1BAU-S/DSC24	1418788 100
Turned crimp contacts , for D-SUB contact inserts with high density, gold-plated surface		
AWG 28 ... 22, male	CUC-DSC-C1BAU-S/DSC22	1418789 100
AWG 28 ... 22, female	CUC-DSC-J1BAU-S/DSC22	1418790 100

Accessories

Crimping pliers , for turned contacts, universal cross section setting, up to a maximum of 2.5 mm ² , digital display with 0.01 mm increments, unlockable pressure lock, lateral entry, including positioning tool		
for turned contacts, four-mandrel crimping	CRIMPFOX RC 2,5	1205448 1
Insertion/Extraction Tool , for fitting and removing the D-SUB standard signal contacts		
Insertion/Extraction Tool , for fitting and removing the D-SUB High Density signal contacts	VS-IET-DSUB-SIGNAL-HD	1658503 1

Power contacts

With straight solder cups
or angled solder pins

With screw connection

ERC

Technical data	
VS-.../2,6	VS-.../4,6
Electrical data	
Rated voltage	-
Rated current	20 A (at 20°C) 40 A (at 20°C)
Material data	
Contact material	Copper alloy
Contact surface material	Au/Sn
Mechanical data	
Connection method	Solder cup
Conductor cross section	2 mm² ... 3.5 mm² 5 mm² ... 8.5 mm²
Connection cross section AWG	14 ... 12 10 ... 8
Insertion/withdrawal cycles	≥ 500 ≥ 500
Temperature data	
Ambient temperature (operation)	-55°C ... 130°C -55°C ... 130°C

Ordering data

Type	Order No.	Pcs./Pkt.
VS-ST-LK-3,6/22,4/2,6	1688243	100
VS-ST-LK-3,6/22,4/4,6	1688269	100
VS-BU-LK-3,6/22,8/2,6	1688256	100
VS-BU-LK-3,6/22,8/4,6	1688272	100
CUC-DSC-J1MAU-S/DSLS:100	1426074	100
CUC-DSC-C1MAU-S/DSLS:100	1426073	100
VS-ST-LH-3,6/18/3,8	1655467	100
VS-BU-LH-3,6/18/3,8	1655454	100

Accessories

HC-M4-KOAX-EWZ	1676747	1
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ERC

Technical data	
VS-...SC-2,6	
Electrical data	
Rated voltage	-
Rated current	20 A
Material data	
Contact material	Copper alloy
Contact surface material	Hard gold-plated over nickel
Mechanical data	
Connection method	Screw connection
Conductor cross section	0.75 mm² ... 2 mm²
Connection cross section AWG	18 ... 14
Insertion/withdrawal cycles	≥ 500
Temperature data	
Ambient temperature (operation)	-55°C ... 155°C

Ordering data

Type	Order No.	Pcs./Pkt.
VS-ST-SC-2,6	1655483	30
VS-BU-SC-2,6	1655470	30

Accessories

HC-M4-KOAX-EWZ	1676747	1
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Electrical data
Rated voltage
Rated current
Material data
Contact material
Contact surface material
Mechanical data
Connection method
Conductor cross section
Connection cross section AWG
Insertion/withdrawal cycles
Temperature data
Ambient temperature (operation)

Description
Power contact , for D-SUB combination inserts, with straight solder cup, gold-plated surface
Up to 20 A, male
Up to 40 A, male
Up to 20 A, female
Up to 40 A, female
Power contact , for D-SUB combination inserts, with straight solder pin, gold-plated surface
Up to 20 A, male
Up to 20 A, female
Power contact , for D-SUB combination inserts, with angled solder pins for PCB mounting, gold-plated surface
Up to 40 A, male
Up to 40 A, female
Power contact , for D-SUB combination inserts, with straight screw connection, gold-plated surface
Up to 40 A, male
Up to 40 A, female

Removal tool

Data connectors and cables

D-SUB-based connectors

Sleeve housings
and contact inserts
with IP20 degree of protection

Signal						
Solder connection						
						
Solder cups						
VS-...-ST-DSUB-EG VS-...-BU-DSUB-EG			VS-...-ST-DSUB-HD-EG VS-...-BU-DSUB-HD-EG			
D-SUB contact insert Fixing: 3 mm drill hole			D-SUB contact insert, high-position Fixing: 3 mm drill hole			
Number of positions	Male	Female	Number of positions	Male	Female	
9	1688793	1688803	15	1655111	1655108	
15	1688874	1688887	26	1655179	1655166	
25	1689899	1689909	44	1655234	1655221	
9	1688793	1688803	15	1655111	1655108	
15	1688874	1688887	26	1655179	1655166	
25	1689899	1689909	44	1655234	1655221	
9	1688793	1688803	15	1655111	1655108	
15	1688874	1688887	26	1655179	1655166	
25	1689899	1689909	44	1655234	1655221	
9	1688793	1688803	15	1655111	1655108	
15	1688874	1688887	26	1655179	1655166	
25	1689899	1689909	44	1655234	1655221	
9	1688793	1688803	15	1655111	1655108	
15	1688874	1688887	26	1655179	1655166	
25	1689899	1689909	44	1655234	1655221	
-	-	-	-	-	-	
15	1688874	1688887	26	1655179	1655166	
25	1689899	1689909	44	1655234	1655221	

Signal						Hybrid			Power					
Crimp connection						Solder connection						Screw connection		
														
Contact carriers for crimp contacts						Solder cups						AWG 28 ... 16		
VS-...-ST-DSUB-CD-... VS-...-BU-DSUB-CD-...			VS-...-ST-DSUB-HD-CD-B VS-...-BU-DSUB-HD-CD-B			VS-...-ST-DSUB-...P-...S VS-...-BU-DSUB-...P-...S			VS-...-ST-DSUB-...P VS-...-BU-DSUB-...P			PSC 1,5/...-F		
D-SUB contact carrier Fixing: 3 mm drill hole			D-SUB contact carrier, high-position Fixing: 3 mm drill hole			D-SUB contact insert Fixing: 3 mm drill hole			D-SUB contact carrier Fixing: 3 mm drill hole			D-SUB contact insert Fixing: 3 mm drill hole		
Number of positions	Male	Female	Number of positions	Male	Female	Number of positions	Male	Female	Number of positions	Male	Female	Number of positions	Female	
9	1688858	1688861	15	1655137	1655124	1PK-4S	1689006	1689019	2PK	1688418	1688421	3	1841909	
15	1688939	1688942	26	1655195	1655182	2PK-5S	1688227	1688230	3PK	1688201	1688214	5	1841912	
25	1689954	1689967	44	1655250	1655247	3PK-10S	1689996	1690008	5PK	1689970	1689983			
						4PK-5S	1655386	1655373						
						1PK-10S	1418755	1418759						
						2PK-15S	1418757	1418760						
						1PK-20S	1418758	1418761						
9	1688858	1688861	15	1655137	1655124	1PK-4S	1689006	1689019	2PK	1688418	1688421	3	1841909	
15	1688939	1688942	26	1655195	1655182	2PK-5S	1688227	1688230	3PK	1688201	1688214	5	1841912	
25	1689954	1689967	44	1655250	1655247	3PK-10S	1689996	1690008	5PK	1689970	1689983			
						4PK-5S	1655386	1655373						
						1PK-10S	1418755	1418759						
						2PK-15S	1418757	1418760						
						1PK-20S	1418758	1418761						
9	1688858	1688861	15	1655137	1655124	1PK-4S	1689006	1689019	2PK	1688418	1688421	3	1841909	
15	1688939	1688942	26	1655195	1655182	2PK-5S	1688227	1688230	3PK	1688201	1688214	5	1841912	
25	1689954	1689967	44	1655250	1655247	3PK-10S	1689996	1690008	5PK	1689970	1689983			
						4PK-5S	1655386	1655373						
						1PK-10S	1418755	1418759						
						2PK-15S	1418757	1418760						
						1PK-20S	1418758	1418761						
9	1688858	1688861	15	1655137	1655124	1PK-4S	1689006	1689019	2PK	1688418	1688421	3	1841909	
15	1688939	1688942	26	1655195	1655182	2PK-5S	1688227	1688230	3PK	1688201	1688214	5	1841912	
25	1689954	1689967	44	1655250	1655247	3PK-10S	1689996	1690008	5PK	1689970	1689983			
						4PK-5S	1655386	1655373						
						1PK-10S	1418755	1418759						
						2PK-15S	1418757	1418760						
						1PK-20S	1418758	1418761						
9	1688858	1688861	15	1655137	1655124	1PK-4S	1689006	1689019	2PK	1688418	1688421	3	1841909	
15	1688939	1688942	26	1655195	1655182	2PK-5S	1688227	1688230	3PK	1688201	1688214	5	1841912	
25	1689954	1689967	44	1655250	1655247	3PK-10S	1689996	1690008	5PK	1689970	1689983			
						4PK-5S	1655386	1655373						
						1PK-10S	1418755	1418759						
						2PK-15S	1418757	1418760						
						1PK-20S	1418758	1418761						
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	1688939	1688942	26	1655195	1655182	2PK-5S	1688227	1688230	3PK	1688201	1688214	5	1841912	
25	1689954	1689967	44	1655250	1655247	3PK-10S	1689996	1690008	5PK	1689970	1689983			
						4PK-5S	1655386	1655373						
						1PK-10S	1418755	1418759						
						2PK-15S	1418757	1418760						
						1PK-20S	1418758	1418761						

Data connectors and cables

D-SUB-based connectors

Panel mounting frames, sleeve housings, and contact inserts with IP67 degree of protection

Panel mounting frames, sleeve housings, and contact inserts with IP67 degree of protection				Signal								
				Screw connection			Solder connection					
												
				AWG 26 ... 20			Solder cups					
				VS-...-ST-DSUB/...-MPT-0,5 VS-...-BU-DSUB/...-MPT-0,5			VS-...-ST-DSUB-EG VS-...-BU-DSUB-EG			VS-...-ST-DSUB-HD-EG VS-...-BU-DSUB-HD-EG		
Housing size 1 to 3				D-SUB contact insert Fixing: 2.5 mm drill hole			D-SUB contact insert Fixing: 3 mm drill hole			D-SUB contact insert, high-position Fixing: 3 mm drill hole		
Type		Order No.		Number of positions	Male	Female	Number of positions	Male	Female	Number of positions	Male	Female
	IP67 panel mounting frame											
	VS-09-A	1688366		9	1688379	1688395	9	1688793	1688803	15	1655111	1655108
	VS-15-A	1688036		15	1688078	1688094	15	1688874	1688887	26	1655179	1655166
	VS-25-A	1689750		25	1689789	1689776	25	1689899	1689909	44	1655234	1655221
	VS-25-A	1689750										
	VS-15-A	1688036										
	VS-25-A	1689750										
	VS-25-A	1689750										
	IP67 sleeve housing											
	VS-09-T-2M16	1688353		9	1688379	1688395	9	1688793	1688803	15	1655111	1655108
	VS-15-T-2PG11	1688052		15	1688078	1688094	15	1688874	1688887	26	1655179	1655166
	VS-25-T-2M20	1689792		25	1689789	1689776	25	1689899	1689909	44	1655234	1655221
	VS-25-T-2M20	1689792										
	VS-15-T-2PG11	1688052										
	VS-25-T-2M20	1689792										
	VS-25-T-2M20	1689792										
	VS-09-SET-STD	1689145	Panel mounting frame	9	1688379	1688395	9	1688793	1688803	15	1655111	1655108
			Sleeve housing	9	1688379	1688395	9	1688793	1688803	15	1655111	1655108
	VS-15-SET-STD	1689129	Panel mounting frame	15	1688078	1688094	15	1688874	1688887	26	1655179	1655166
			Sleeve housing	15	1688078	1688094	15	1688874	1688887	26	1655179	1655166
	VS-25-SET-STD	1652198	Panel mounting frame	25	1689789	1689776	25	1689899	1689909	44	1655234	1655221
			Sleeve housing	25	1689789	1689776	25	1689899	1689909	44	1655234	1655221
	VS-25-SET-STD	1652198	Panel mounting frame									
			Sleeve housing									
	VS-15-SET-STD	1689129	Panel mounting frame									
			Sleeve housing									
	VS-25-SET-STD	1652198	Panel mounting frame									
			Sleeve housing									
	VS-25-SET-STD	1652198	Panel mounting frame									
			Sleeve housing									
	VS-09-SET-EMV	1689158	Panel mounting frame	9	1688379	1688395	9	1688793	1688803	15	1655111	1655108
			Sleeve housing	9	1688379	1688395	9	1688793	1688803	15	1655111	1655108
	VS-15-SET-EMV	1689132	Panel mounting frame	15	1688078	1688094	15	1688874	1688887	26	1655179	1655166
			Sleeve housing	15	1688078	1688094	15	1688874	1688887	26	1655179	1655166
	VS-25-SET-EMV	1652208	Panel mounting frame	25	1689789	1689776	25	1689899	1689909	44	1655234	1655221
			Sleeve housing	25	1689789	1689776	25	1689899	1689909	44	1655234	1655221
	VS-25-SET-EMV	1652208	Panel mounting frame									
			Sleeve housing									
	VS-15-SET-EMV	1689132	Panel mounting frame									
			Sleeve housing									
	VS-25-SET-EMV	1652208	Panel mounting frame									
			Sleeve housing									
	VS-25-SET-EMV	1652208	Panel mounting frame									
			Sleeve housing									

Note:
Do not use the EMC inner sleeve of the IP67 sleeve housing on the panel mounting side.

Signal									Hybrid			Power				
Solder connection			Crimp connection						Solder connection						Screw connection	
																
Angled solder pins			Contact carriers for crimp contacts						Solder cups						AWG 28 ... 16	
VS-...-ST-DSUB-LH-B VS-...-BU-DSUB-LH-B			VS-...-ST-DSUB-CD-... VS-...-BU-DSUB-CD-...		VS-...-ST-DSUB-HD-CD-B VS-...-BU-DSUB-HD-CD-B				VS-...-ST-DSUB-...P-...S VS-...-BU-DSUB-...P-...S			VS-...-ST-DSUB-...P VS-...-BU-DSUB-...P			PSC 1,5/...-F	
D-SUB contact insert Fixing: 2.5 mm drill hole and solder plate			D-SUB contact carrier Fixing: 3 mm drill hole		D-SUB contact carrier, high-position Fixing: 3 mm drill hole				D-SUB contact insert Fixing: 3 mm drill hole			D-SUB contact carrier Fixing: 3 mm drill hole			D-SUB contact insert Fixing: 3 mm drill hole	
Number of positions	Male	Female	Number of positions	Male	Female	Number of positions	Male	Female	Number of positions	Male	Female	Number of positions	Male	Female	Number of positions	Female
9	1654785	1654798	9	1688858	1688861	15	1655137	1655124	1PK-4S	1689006	1689019	2PK	1688418	1688421		
15	1654808	1654811	15	1688939	1688942	26	1655195	1655182	2PK-5S	1688227	1688230	3PK	1688201	1688214		
25	1654824	1654837	25	1689954	1689967	44	1655250	1655247	3PK-10S	1689996	1690008	5PK	1689970	1689983		
									4PK-5S	1655386	1655373					
									1PK-10S	1418755	1418759					
									2PK-15S	1418757	1418760					
									1PK-20S	1418758	1418761					
9	1654785	1654798	9	1688858	1688861	15	1655137	1655124	1PK-4S	1689006	1689019	2PK	1688418	1688421	3	1841909
15	1654808	1654811	15	1688939	1688942	26	1655195	1655182	2PK-5S	1688227	1688230	3PK	1688201	1688214	5	1841912
25	1654824	1654837	25	1689954	1689967	44	1655250	1655247	3PK-10S	1689996	1690008	5PK	1689970	1689983		
									4PK-5S	1655386	1655373					
									1PK-10S	1418755	1418759					
									2PK-15S	1418757	1418760					
									1PK-20S	1418758	1418761					
9	1654785	1654798	9	1688858	1688861	15	1655137	1655124	1PK - 4S	1689006	1689019	2PK	1688418	1688421		
9	1654785	1654798	9	1688858	1688861	15	1655137	1655124	1PK - 4S	1689006	1689019	2PK	1688418	1688421	3	1841909
15	1654808	1654811	15	1688939	1688942	26	1655195	1655182	2PK - 5S	1688227	1688230	3PK	1688201	1688214	5	1841912
15	1654808	1654811	15	1688939	1688942	26	1655195	1655182	2PK - 5S	1688227	1688230	3PK	1688201	1688214		
25	1654824	1654837	25	1689954	1689967	44	1655250	1655247	3PK-10S	1689996	1690008	5PK	1689970	1689983		
25	1654824	1654837	25	1689954	1689967	44	1655250	1655247	3PK-10S	1689996	1690008	5PK	1689970	1689983		
									4PK - 5S	1655386	1655373					
									4PK - 5S	1655386	1655373					
									1PK-10S	1418755	1418759					
									1PK-10S	1418755	1418759					
									2PK-15S	1418757	1418760					
									2PK-15S	1418757	1418760					
									1PK-20S	1418758	1418761					
									1PK-20S	1418758	1418761					
9	1654785	1654798	9	1688858	1688861	15	1655137	1655124	1PK - 4S	1689006	1689019	2PK	1688418	1688421		
9	1654785	1654798	9	1688858	1688861	15	1655137	1655124							3	1841909
15	1654808	1654811	15	1688939	1688942	26	1655195	1655182	2PK - 5S	1688227	1688230	3PK	1688201	1688214	5	1841912
15	1654808	1654811	15	1688939	1688942	26	1655195	1655182								
25	1654824	1654837	25	1689954	1689967	44	1655250	1655247	3PK-10S	1689996	1690008	5PK	1689970	1689983		
25	1654824	1654837	25	1689954	1689967	44	1655250	1655247								
									4PK - 5S	1655386	1655373					
									1PK-10S	1418755	1418759					
									2PK-15S	1418757	1418760					
									1PK-20S	1418758	1418761					

Data connectors and cables

USB connectors

Assembled cables,
IP20/IP67

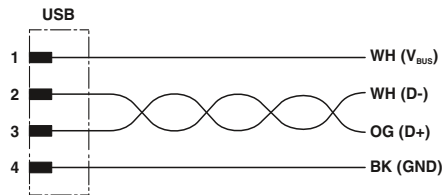
USB type A plug,
IP20



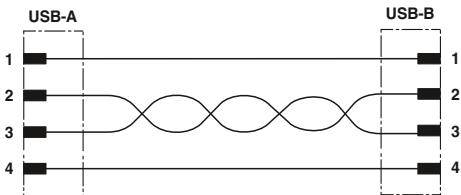
USB type A plug,
IP67



Free end	Ordering data		Ordering data		Ordering data
		Order No.		Order No.	Order No.
	1.00 m	1655771	1.00 m	1655742	
	2.00 m	1655784	2.00 m	1655755	
	5.00 m	1655797	5.00 m	1655768	
USB type B plug, IP20	1.00 m	1654853	2.00 m	1653896	
	2.00 m	1653935	5.00 m	1653906	
	5.00 m	1653948			
USB type B plug, IP67	2.00 m	1653919	2.00 m	1653870	
	5.00 m	1653922	5.00 m	1653883	
M12 Mini USB, SPEEDCON	1 m	1420168			
	2 m	1420171			
	5 m	1420184			



USB cable with free end



USB connector pin assignment

		Technical data	Technical data
		IP20	IP67
Transmission characteristics (category)		USB 2.0	USB 2.0
Cable diameter	[mm]	6.7	6.7
Housing material		PA	PA
Handle color		black	gray
Number of positions		4	4
Degree of protection		IP20	IP67
Temperature data			
Cable, fixed installation	[°C]	-20 ... 60	-20 ... 60
Cable, flexible installation	[°C]	0 ... 50	0 ... 50

Panel feed-throughs, memory sticks, protective cover

Panel feed-throughs are implemented with the IP67 panel mounting frame and USB female inserts. The USB memory sticks with IP67 protection enable wireless data transmission in harsh industrial environments.



USB panel mounting frame

ERC

Technical data

VS-04-BUA-BUB-F/IP67

Electrical data	
Rated voltage	30 V
Transmission speed	480 Mbps
Material data	
Housing material	PC
Flammability rating in accordance with UL 94	V0
Mechanical data	
Number of positions	4
Degree of protection	IP67
Insertion/withdrawal cycles	≥ 1000
Temperature data	
Ambient temperature (operation)	-15°C ... 65°C

Ordering data

Description	Type	Order No.	Pcs./Pkt.
Version 6 , panel mounting frame with USB coupling:			
Slot V6 with USB-B	CUC-V06-F1PGY-UBB/UBAB	1411905	1
Slot V6 with USB-A	CUC-V06-F1PGY-UBA/UBBB	1411904	1
USB female insert , 4-pos., female USB to flat-ribbon cable terminal strip, 2.54 pitch, female, type A			
	VS-04-BUA-FK-F/IP67	1653854	1
	VS-04-BUB-FK-F/IP67	1653867	1
USB cable , assembled on one side with USB connector			
Connector type: A, length: 0.3 m	VS-04-C-SDA/PH/0,3	1405552	1
Connector type: B, length: 0.3 m	VS-04-C-SDB/PH/0,3	1405565	1
Connector type: A on B, length: 1.8 m	VS-04-C-SDA/SDB/1,8	1405578	1
Freenet panel mounting frame , Version 6, for round mounting cutout, with seal, without mounting screws			
Military gray RAL 7042	VS-A-F-IP67	1653744	5
Protective cover for Version 6 panel mounting frame			
Military gray RAL 7042	VS-08-SD-F	1652606	5

Data connectors and cables

Cable range

Symbol key



With UL style



Suitable for drag chain applications



Resistant to welding sparks



UV-resistant



Extremely flame-retardant



High temperature resistance



Good oil resistance



Good resistance to chemicals



Suitable for torsional stress



Halogen-free



Transmission properties



Suitable for railway applications

INTERBUS cable, type 900



The INTERBUS type 900 cable is designed for highly flexible use in dry and humid rooms and in harsh industrial environments. The remote bus cable is certified in accordance with the requirements of the INTERBUS Club under No. 117.

The cable is halogen-free and flame-retardant in accordance with VDE 0482, Part 265-2-1/ IEC 332-1. The wire insulation of the inner conductor is made from polyethylene.

Outer sheath material PVC

Minimum bending radius 7.5 x D
Tested at 20°C ... 25°C

Type	Number of positions	Application	Structure	Cross section	Wire colors	Wire insulation	Temperature range	Page
900 PVC Green	6-pos.	M12	3 x 2 x 0.25 mm ² 32 x 0.1 mm		Yellow, green, white, brown, pink, gray	PE	-30°C ... 70°C	425 428

PROFIBUS cable, type 910



The PROFIBUS type 910 cable is suitable for drag chain applications and for use in harsh industrial environments, and is oil resistant.

Outer sheath material PUR

Number of bending cycles 5 million
Minimum bending radius 10 x D
Traverse path 10 m
Acceleration 7 m/s²
Speed 3 m/s
Tested at 20°C ... 25°C

Type	Number of positions	Application	Structure	Cross section	Wire colors	Wire insulation	Temperature range	Page
910 PUR Violet	2-pos.	M12	1 x 2 x AWG 24 19 x 0.15 mm		Green, red	PE	-40°C ... 80°C	426 429

DeviceNet™/CANopen® cable, type 920

The DeviceNet™/CANopen® type 920 cable is designed for flexible installation. It is suitable for drag chain applications and use in harsh industrial environments. The cable is also oil resistant.

Outer sheath material PUR
Number of bending cycles 5 million
Minimum bending radius 10 x D
Traverse path 4.5 m
Acceleration 3 m/s²
Speed 3 m/s
Tested at 20°C ... 25°C

Type	Number of positions	Application	Structure	Cross section	Wire colors	Wire insulation	Temperature range	Page
920 PUR Violet	4-pos.	M12, M8	1 x 2 x AWG 22 19 x 0.15 mm + 1 x 2 x AWG 24 19 x 0.15 mm		Red, black, blue, white	PO, PE	-40°C ... 80°C	427 432 433 434

DeviceNet™/CANopen® cable, type 923

The DeviceNet™/CANopen® type 923 cable is designed for flexible installation. It is suitable for drag chain applications and use in harsh industrial environments. The cable is also oil resistant.

Outer sheath material PUR
Number of bending cycles 5 million
Minimum bending radius 10 x D
Traverse path 4.5 m
Acceleration 3 m/s²
Speed 3 m/s
Tested at 20°C ... 25°C

Type	Number of positions	Application	Structure	Cross section	Wire colors	Wire insulation	Temperature range	Page
923 PUR Gray	4-pos.	M12, 7/8"	1 x 2 x AWG 22 19 x 0.15 mm + 1 x 2 x AWG 24 19 x 0.15 mm		Red, black, blue, white	PO, PE	-40°C ... 80°C	431

DeviceNet™ cable, type 928

The DeviceNet™/CANopen® type 928 cable is designed for fixed installation. It is suitable for use in harsh industrial environments and is oil resistant.

Outer sheath material PVC
Minimum bending radius 10 x D

Type	Number of positions	Application	Structure	Cross section	Wire colors	Wire insulation	Temperature range	Page
928 PVC Gray	4-pos.	7/8"	1 x 2 x AWG18 19 x 0.26 mm + 1 x 2 x AWG15 19 x 0.34 mm		Red, black, blue, white	PVC	Fixed: -40°C ... 80°C	See: phoenix contact.net/ products

Data connectors and cables

Cable range

FOUNDATION Fieldbus cable, type 960

FOUNDATION Fieldbus/PROFIBUS PA cable, type 961



The FOUNDATION Fieldbus type 960 cable is designed for fixed installation. It is UV-resistant and flame-retardant in accordance with UL 1685, which means that it is suitable for both indoor and outdoor use.

Cable type 961 is available in a blue version designed specifically for use in the hazardous area.

Outer sheath material PVC

Minimum bending radius 10 x D

Type	Number of positions	Use	Structure	Cross section	Wire colors	Wire insulation	Temperature range	Page
960 PVC Orange	2-pos.	7/8", M12	2 x AWG 20 7 x 0.3 mm		Blue, orange	PO	-30°C ... 105°C	See: phoenix contact.net/ products
961 PVC Blue	2-pos.	7/8", M12	2 x AWG 20 7 x 0.3 mm		Blue, orange	PO	-30°C ... 105°C	430

CC-Link cable, type 990



The CC-Link type 990 cable is designed for fixed indoor installation. The cable is flame-retardant in accordance with UL 1685.

Outer sheath material PVC

Type	Number of positions	Use	Structure	Cross section	Wire colors	Wire insulation	Temperature range	Page
990 PVC Red	3-pos.	M12	3 x AWG 22 7 x 0.28 mm		White, blue, yellow	Foam PE	-30°C ... 60°C	See: phoenix contact.net/ products

PROFINET cable, type 93A



The PROFINET type 93A cable is designed for fixed installation. It is flame-retardant and its transmission properties meet CAT5.

Outer sheath material PVC

Minimum bending radius 7.5 x D

Type	Number of positions	Use	Structure	Cross section	Wire colors	Wire insulation	Temperature range	Page
93A PVC Green	4-pos.	M12, RJ45	4 x AWG 22 single-strand		White, yellow, blue, orange	PE	-25°C ... 80°C	392

PROFINET cable, type 93B

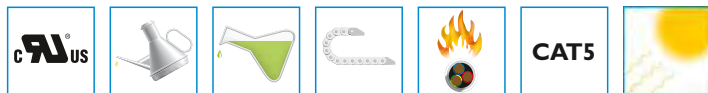
The PROFINET type 93B cable is designed for flexible installation and is oil resistant up to a degree. It is suitable for outdoor use, as it is UV-resistant for 1200 seconds in

accordance with UL 1581. Its transmission properties meet CAT5.

Outer sheath material PVC

Minimum bending radius 7 x D
Tested at 20°C ... 25°C

Type	Number of positions	Use	Structure	Cross section	Wire colors	Wire insulation	Temperature range	Page
93B PVC Green	4-pos.	M12, RJ45	4 x AWG 22 7 x 0.25 mm		White, yellow, blue, orange	PE	-40°C...70°C	394 392 396

PROFINET cable, type 93C

The PROFINET type 93C cable is designed for use in drag chains and is halogen-free and oil resistant. It is UV-resistant and therefore suitable for outdoor use. Its transmission properties meet CAT5.

Outer sheath material PUR

Number of bending cycles 3 million
Minimum bending radius 7.5 x D
Traverse path 10 m
Acceleration 4 m/s²
Speed 4 m/s
Tested at 20°C ... 25°C

Type	Number of positions	Use	Structure	Cross section	Wire colors	Wire insulation	Temperature range	Page
93C PUR Green	4-pos.	M12, RJ45	4 x AWG 22 7 x 0.25 mm		White, yellow, blue, orange	PE	-40°C ... 70°C	392 396

PROFINET cable, type 93R

The PROFINET type 93R cable is designed for robot applications. The cable is oil resistant up to a degree. It is suitable for outdoor use, as it is UV-resistant for

1200 seconds in accordance with UL 1581. Its transmission properties meet CAT5.

Outer sheath material PUR

Torsion angle ±180°
Torsion cycles 1 million

Type	Number of positions	Use	Structure	Cross section	Wire colors	Wire insulation	Temperature range	Page
93R PUR Green	4-pos.	M12, RJ45	4 x AWG 22 19 x 0.15 mm		White, yellow, blue, orange	PE	-40°C ... 80°C	392 396

Data connectors and cables

Cable range

PROFINET cable, type 937



The PROFINET type 937 cable is designed for railway applications. The cable is oil resistant. It meets the requirements of fire protection standards BS 6853, GM/RT 2130, EN 45545, DIN 5510,

NF F16-101, NFPA 130, UNI CEI 11170 and its transmission properties meet CAT5.

Outer sheath material PE-X

Minimum bending radius 6 x D

Type	Number of positions	Use	Structure	Cross section	Wire colors	Wire insulation	Temperature range	Page
937 PE-X Black	4-pos.	M12, RJ45	4 x AWG 22 7 x 0.25 mm		White, yellow, blue, orange	PE-X	-40°C ... 90°C	392 396

PROFINET cable, type 93X



This robust PROFINET cable for outdoor use has good oil and fuel resistance. The black outer sheath and the electron beam cross-linked design provide good protection against the influence of UV radiation. The cable meets the requirements of flame

resistance standard ISO 6722-1, which is referred to by the European ECE-R 118 regulation. This means that the cable can also be used in buses and trams.

Outer sheath material PE-X

Minimum bending radius 6 x D

Type	Number of positions	Use	Structure	Cross section	Wire colors	Wire insulation	Temperature range	Page
93X PE-X Black	4-pos.	M12	4 x AWG 22 7 x 0.25 mm Twisted pair		White, yellow, blue, orange	PE-X	Mobile: -40°C ... 90°C Fixed: -50°C ... 90°C	See: phoenix contact.net/ products

EtherCAT® cable, type 93G



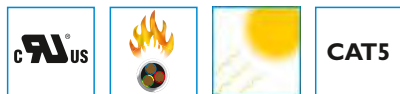
The EtherCAT® type 93G cable is designed for flexible installation. The cable is oil resistant up to a degree. It is suitable for use in harsh industrial environments, as it is UV-resistant for 1200 seconds in

accordance with UL 1581. Its transmission properties meet CAT5.

Outer sheath material PVC

Minimum bending radius 7 x D
Tested at 20°C ... 25°C

Type	Number of positions	Use	Structure	Cross section	Wire colors	Wire insulation	Temperature range	Page
93G PVC Green	4-pos.	M12, PP, RJ45	4 x AWG 22 7 x 0.25 mm		White, yellow, blue, orange	PE	-40°C ... 70°C	See: phoenix contact.net/ products

Sercos® cable, type 93K

The Sercos® cable is designed for flexible installation. The cable is oil resistant up to a degree. It is suitable for use in harsh industrial environments, as it is UV-resistant for 1200 seconds in accordance with UL 1581. Its transmission properties meet CAT5.

Outer sheath material PVC

Minimum bending radius 7 x D
Tested at 20°C ... 25°C

Type	Number of positions	Use	Structure	Cross section	Wire colors	Wire insulation	Temperature range	Page
93K PVC Red	4-pos.	M12, PP, RJ45	4 x AWG 22 7 x 0.25 mm		White, yellow, blue, orange	PE	-40°C ... 70°C	See: phoenix contact.net/ products

Ethernet cable, type 93E

The Ethernet type 93E cable is designed for flexible use. The cable is halogen-free and oil resistant. Its transmission properties meet CAT5.

Outer sheath material PUR

Minimum bending radius 5 x D

Type	Number of positions	Use	Structure	Cross section	Wire colors	Wire insulation	Temperature range	Page
93E PUR Blue	4-pos.	M12, RJ45	2 x 2 x AWG 26 7 x 0.25 mm		White/orange-orange, white/green-green	PE	-20°C ... 80°C	393 398

Ethernet cable, type 94A

The Ethernet type 94A cable is designed for fixed installation. Its transmission properties meet CAT5.

Outer sheath material PUR

Minimum bending radius 7 x D
Tested at 20°C ... 25°C

Type	Number of positions	Use	Structure	Cross section	Wire colors	Wire insulation	Temperature range	Page
94A PUR Blue	8-pos.	M12, PP, RJ45	4 x 2 x AWG 24 single-strand Twisted pair		White/blue-blue, white/orange-orange, white/green-green, white/brown-brown	PE	-20°C ... 70°C	393

Cable range

Ethernet cable, type 94B



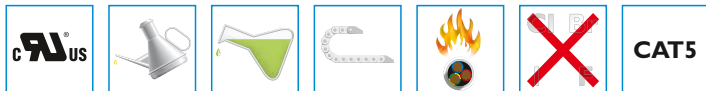
The Ethernet type 94B cable is designed for flexible installation. The cable is resistant to oil and chemicals and is flame-retardant. Its transmission properties meet CAT5.

Outer sheath material PUR

Minimum bending radius 5 x D

Type	Number of positions	Use	Structure	Cross section	Wire colors	Wire insulation	Temperature range	Page
94B PUR Blue	8-pos.	M12, RJ45	4 x 2 x AWG 26 7 x 0.25 mm		White/blue-blue, white/orange-orange, white/green-green, white/brown-brown	PE	-40°C ... 80°C	393 400

Ethernet cable, type 94C



The Ethernet cable type 94C is designed for universal use in drag chains. The cable is resistant to oil and chemicals and is flame-retardant. Its transmission properties meet CAT5.

Outer sheath material PUR

Minimum bending radius 5 x D

Type	Number of positions	Use	Structure	Cross section	Wire colors	Wire insulation	Temperature range	Page
94C PUR Blue	8-pos.	M12, RJ45	4 x 2 x AWG 26 19 x 0.10 mm		White-blue, blue, white-orange, orange, white-green, green, white-brown, brown	PP	-20°C ... 80°C	393 400

Ethernet cable, type 94D



The Ethernet cable type 94D is designed for flexible installation. The cable is oil resistant up to a degree. It is suitable for outdoor use, as it is UV-resistant for 1200 seconds in accordance with UL 1581. Its transmission properties meet CAT5.

Outer sheath material PVC

Type	Number of positions	Use	Structure	Cross section	Wire colors	Wire insulation	Temperature range	Page
94D PVC Black	8-pos.	M12, PP, RJ45	4 x 2 x AWG 26 7 x 0.16 mm Twisted pair		White-blue, blue, white-orange, orange, white-green, green, white-brown, brown	PP	-40°C ... 80°C	393

Ethernet cable, type 94E



The Ethernet cable type 94E is designed for fixed installation. The cable is resistant to oil and chemicals and is flame-retardant. It is also halogen-free and its transmission properties meet CAT7.

Outer sheath material FRNC

Type	Number of positions	Use	Structure	Cross section	Wire colors	Wire insulation	Temperature range	Page
94E FRNC Blue	8-pos.	M12, PP, RJ45	4 x 2 x AWG 23 single-strand Twisted pair		White-blue, blue, white-orange, orange, white-green, green, white-brown, brown	PE	-20°C ... 80°C	393

Ethernet cable, type 94F



The Ethernet type 94F cable is designed for flexible installation. The cable is resistant to oil and chemicals and is flame-retardant. It is also halogen-free and its transmission properties meet CAT6_A.

Outer sheath material PUR

Minimum bending radius 10 x D

Type	Number of positions	Use	Structure	Cross section	Wire colors	Wire insulation	Temperature range	Page
94F PUR Blue	8-pos.	M12, PP, RJ45	4 x 2 x AWG 26 7 x 0.16 mm Twisted pair		White-blue, blue, white-orange, orange, white-green, green, white-brown, brown	PE	-20°C ... 80°C	402

Ethernet cable, type 94S



The 94S Ethernet cable is designed for use in the railway industry. The cable is halogen-free and resistant to fuels and ozone. Thanks to its high flame resistance and low smoke density, the cable meets the requirements of the following standards for safety in rail vehicles: BS 6853, DIN 5510-2,

EN 45545-2, EN 50306-4, NF F16-101, NFPA 130, PN-K-02511, and UIC 564-2. Its transmission properties meet CAT7.

Outer sheath material PE-X

Minimum bending radius 6 x D

Type	Number of positions	Use	Structure	Cross section	Wire colors	Wire insulation	Temperature range	Page
94S PE-X Black	8-pos.	M12	4 x 2 x AWG 26 7 x 0.16 mm Twisted pair		White, blue, white, orange, white, green, white, brown	PE-X	-40°C ... 80°C	404

Data connectors and cables

Cable range

Ethernet hybrid cable, type 94H



The Ethernet type 94H hybrid cable is designed for drag chain applications. It has four wires for data transmission and four wires for power supply. The cable is oil resistant and flame-retardant.

It is also halogen-free and its transmission properties are in accordance with CAT5.

Outer sheath material PUR

Number of bending cycles 2 million
Minimum bending radius 10 x D
Traversal path 4.5 m
Acceleration 3 m/s²
Speed 3 m/s

Type	Number of positions	Application	Structure	Cross section	Wire colors	Wire insulation	Temperature range	Page
94H PUR Black	8-pos.	M12	1 x 4 x AWG 26 19 x 0.15 mm 1 x 4 x AWG 20 19 x 0.6 mm		White-orange, orange, white-green, green, white, blue, brown, black	PP	-40°C ... 90°C	405

Ethernet cable, type 94Z



The type 94Z Ethernet cable is designed for flexible installation. The cable is resistant to oil and chemicals and is flame-retardant. Its transmission properties are in accordance with CAT5.

Outer sheath material PUR

Minimum bending radius 51.2 mm

Type	Number of positions	Application	Structure	Cross section	Wire colors	Wire insulation	Temperature range	Page
94Z PUR Blue	8-pos.	RJ45	4 x 2 x AWG 26 7 x 0.16 mm		White-blue, blue, white-orange, orange, white-green, green, white-brown, brown	PE	-20°C ... 80°C	405

VARAN cable, type 970



The VARAN type 970 cable is designed for flexible installation. The cable is resistant to oil and chemicals and is flame-retardant. Its transmission properties are in accordance with CAT5.

Outer sheath material Santoprene

Minimum bending radius 7.5 x D
Tested at 20°C ... 25°C

Type	Number of positions	Application	Structure	Cross section	Wire colors	Wire insulation	Temperature range	Page
970 Santoprene Black	6-pos.	M12, PP, RJ45	1 x 2 x AWG 22 19 x 0.1 mm + 2 x 2 x AWG 26 19 x 0.1 mm		Brown, blue White-orange, orange, white-green, green	PE	-40°C ... 80°C	See: phoenix contact.net/products