M8/M12 Connector

PCA/EX9/EX500 *Series*

- **Communication Cable/Connector**

  EtherNet/IP™ PROFINET® EtherCAT™ ETHERNET POWERLINK

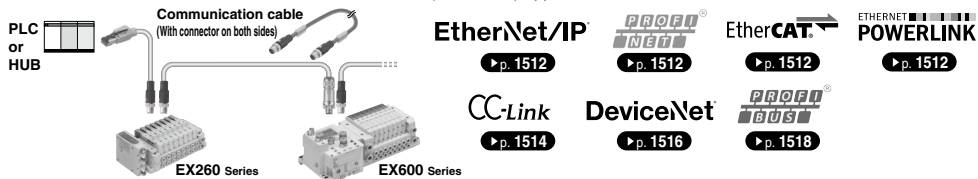 CC-Link DeviceNet™ PROFIBUS®

- **Power Supply Cable/Connector**

- **Accessory Between the Sensor/Switch and the Input Device**

- **Other Accessories**

- **Made to Order**

- **Specific Product Precautions**

Communication Cable/Connector ▶p. 1512 to 1523

● **A lineup featuring products applicable to all communication standards**

The SMC Fieldbus (SI) Unit can be connected to the PLC (controller) and communication units from other manufacturers with cables with connectors and field-wireable connectors (with shield) applicable to each of the standards.
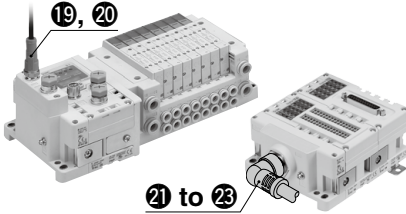
PLC or HUB

Communication cable (With connector on both sides)

EtherNet/IP ▶p. 1512 **PROFINET** ▶p. 1512 **EtherCAT** ▶p. 1512 **ETHERNET POWERLINK** ▶p. 1512

CC-Link ▶p. 1514 **DeviceNet** ▶p. 1516 **PROFIBUS** ▶p. 1518

EX260 Series **EX600 Series**

Communication cable

SPEEDCON

Socket (Female)
❹ For CC-Link
❽ For DeviceNet®
⓮ For PROFIBUS DP

SPEEDCON

Plug (Male)
❺ For CC-Link
❾ For DeviceNet®
⓯ For PROFIBUS DP
❷ For EtherNet/IP™, PROFINET, EtherCAT, Ethernet POWERLINK
 ＊ ❷ and ❸ are used in combination with each other.

Plug (Male)
❶ For EtherNet/IP™, PROFINET, EtherCAT, Ethernet POWERLINK

RJ45

Field-wireable communication connector

SPEEDCON ＊ Excluding ❸

Plug (Male)
❻ For CC-Link   ⓫ For DeviceNet®
⓰ For PROFIBUS DP
❸ For EtherNet/IP™, PROFINET, EtherCAT, Ethernet POWERLINK
 ＊ ❷ and ❸ are used in combination with each other.

SPEEDCON

Socket (Female)
❼ For CC-Link
⓬ For DeviceNet®
⓱ For PROFIBUS DP

Communication cable (With connector on both sides)

● For EtherNet/IP™, PROFINET, EtherCAT, Ethernet POWERLINK
● For CC-Link
● For DeviceNet®

SPEEDCON

Terminating resistor

Connects to the communication port of the communication unit connected at the end

⓭ ⓲

For DeviceNet® (Plug) **For PROFIBUS DP** (Plug/B-coded)

● Product Table

| Description	Application	No.	SMC part no.	Name
Communication cable (With connector on one side)	For Fieldbus communication	❶	EX9-AC□EN-PSRJ	Communication cable for EtherNet/IP™, PROFINET, EtherCAT, Ethernet POWERLINK (Plug/D-coded/RJ45)
		❷	PCA-1446566	Communication cable for EtherNet/IP™, PROFINET, EtherCAT, Ethernet POWERLINK (Plug/D-coded)
		❹	PCA-1567720	Communication cable for CC-Link (Socket)
		❺	PCA-1567717	Communication cable for CC-Link (Plug)
		❽	PCA-1557633	Communication cable for DeviceNet® (Socket)
		❾	PCA-1557646	Communication cable for DeviceNet® (Plug)
		⓮	PCA-1557688	Communication cable for PROFIBUS DP (Socket/B-coded)
		⓯	PCA-1557691	Communication cable for PROFIBUS DP (Plug/B-coded)
Communication cable (With connector on both sides)			EX9-AC□EN-PSPS EX9-AC□EN-PAPA EX9-AC□MJ-SSPS EX9-AC□MJ-SAPA EX9-AC□DN-SSPS EX9-AC□DN-SAPA	Communication cable for EtherNet/IP™, PROFINET, EtherCAT, Ethernet POWERLINK (Straight) Communication cable for EtherNet/IP™, PROFINET, EtherCAT, Ethernet POWERLINK (Angle) Communication cable for CC-Link (Straight) Communication cable for CC-Link (Angle) Communication cable for DeviceNet® (Straight) Communication cable for DeviceNet® (Angle)
Field-wireable communication connector	For Fieldbus communication	❸	PCA-1446553	Field-wireable connector for EtherNet/IP™, PROFINET, EtherCAT, Ethernet POWERLINK (Plug/D-coded/Fast connection technology)
		❻	PCA-1075526	Field-wireable connector for CC-Link (Plug/Push-in type)
		❼	PCA-1075527	Field-wireable connector for CC-Link (Socket/Push-in type)
		⓫	PCA-1075528	Field-wireable connector for DeviceNet® (Plug/Push-in type)
		⓬	PCA-1075529	Field-wireable connector for DeviceNet® (Socket/Push-in type)
		⓰	PCA-1075530	Field-wireable connector for PROFIBUS DP (Plug/B-coded/Push-in type)
		⓱	PCA-1075531	Field-wireable connector for PROFIBUS DP (Socket/B-coded/Push-in type)
Terminating resistor	For Fieldbus communication	⓭	PCA-1557675	Terminating resistor for DeviceNet® (M12)
		⓲	PCA-1557727	Terminating resistor for PROFIBUS DP (M12/B-coded)

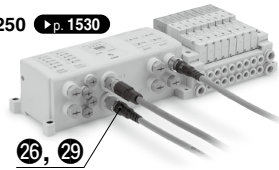# Power Supply Cable/Connector ▶p. 1524 to 1531

EX600 ▶p. 1524

❶❾, ❷⓿

❷❶ to ❷❸

EX500 ▶p. 1526

❷❶, ❷❷, ❷❹, ❷❺

❷❻, ❷❼

EX260 ▶p. 1528

❷❻ to ❸⓿

EX250 ▶p. 1530

❷❻, ❷❾
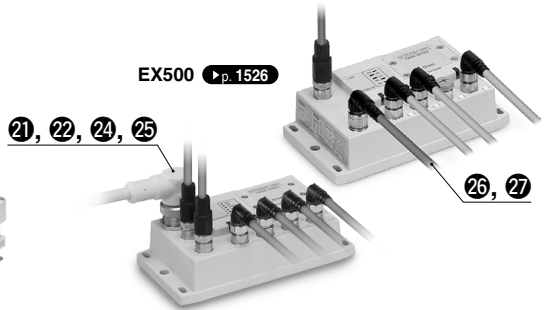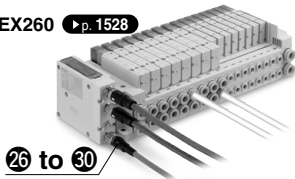
● Product Table

Series	Protocols		No.	Part no.	Connector type	Cable length
EX600	EtherNet/IP™	End plate EX600-ED2□	❶❾	**PCA-15649**□	M12, 5 pins, B-coded, Socket, Straight, SPEEDCON	2 m, 6 m
	PROFINET		❷⓿	**PCA-15649**□	M12, 5 pins, B-coded, Socket, Angle, SPEEDCON	
	EtherCAT	End plate EX600-ED3□	❷❶	**PCA-15588**□	7/8 inch, 5 pins, Socket, Straight	2 m, 6 m
	PROFIBUS DP		❷❷	**PCA-15588**□	7/8 inch, 5 pins, Socket, Angle	
	DeviceNet®		❷❸	PCA-1578081	Field-wireable connector, 7/8 inch, 5 pins, Socket, Straight	—
	CC-Link					
EX500	EtherNet/IP™		❷❹	**PCA-141**□	7/8 inch, 4 pins, Socket, Straight	2 m, 6 m
			❷❺	**PCA-141**□	7/8 inch, 4 pins, Socket, Angle	
	PROFINET		❷❶	**PCA-15588**□	7/8 inch, 5 pins, Socket, Straight	2 m, 6 m
			❷❷	**PCA-15588**□	7/8 inch, 5 pins, Socket, Angle	
	PROFIBUS DP		❷❻	**EX500-AP**□**-S**	M12, 5 pins, A-coded, Socket, Straight	1 m, 5 m
			❷❼	**EX500-AP**□**-A**	M12, 5 pins, A-coded, Socket, Angle	
EX260	EtherNet/IP™		❷❻	**EX500-AP**□**-S**	M12, 5 pins, A-coded, Socket, Straight	1 m, 5 m
	PROFINET		❷❼	**EX500-AP**□**-A**	M12, 5 pins, A-coded, Socket, Angle	
	EtherCAT		❷❽	**PCA-140180**□	M12, 5 pins, A-coded, Socket, Straight, SPEEDCON	1.5 m, 3 m, 5 m
	DeviceNet®					
	PROFIBUS DP					
	CC-Link		❷❾	**EX9-AC**□**-1**	M12, 5 pins, B-coded, Socket, Straight	1 m, 3 m, 5 m
			❸⓿	**PCA-140180**□	M12, 5 pins, B-coded, Socket, Straight, SPEEDCON	1.5 m, 3 m, 5 m
EX250	DeviceNet®		❷❾	**EX9-AC**□**-1**	M12, 5 pins, B-coded, Socket, Straight	1 m, 3 m, 5 m
	CC-Link					
	EtherNet/IP™		❷❻	**EX500-AP**□**-S**	M12, 5 pins, A-coded, Socket, Straight	1 m, 5 m

Accessory Between the Sensor/Switch and the Input Device ▶ p. 1532 to 1534

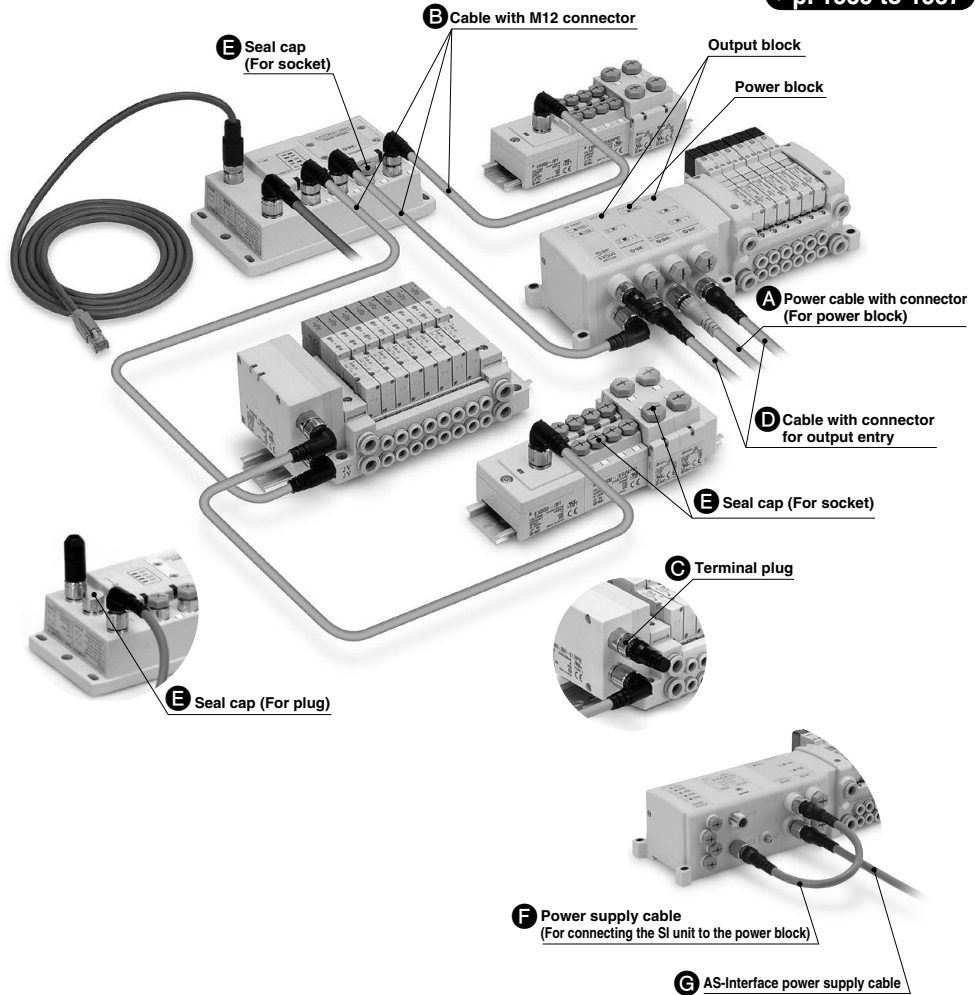## ● Connection between connectors and products

Pressure switch

Field-wireable connector ▶ p. 1532

A lineup featuring Field-wireable connectors that do not require any special tools
The lead wires can easily be made into an M8/M12 connector by changing the wire length.

M8 *Piercecon* Piercecon® connection

㉛

M12 SPEEDCON

㉜

"QUICKON-ONE" connection

Auto switch

㉝

Cable with connector ▶ p. 1533

The wiring can be changed accordingly.

M8 ㉟

M12 SPEEDCON �34

�34

Y connector ▶ p. 1534

The input block reads 2 sensor signals with one port.
Wiring can be decreased for auto switches and 1-output type pressure switches by unifying the signal wires using a Y connector.

M12 SPEEDCON x 2 → **M12** SPEEDCON ㊱

M8/M12 connector
(Field-wireable/Pre-wired)

M8 x 2 → **M12** SPEEDCON ㊲

Auto switch

Pre-wired type

M12 SPEEDCON �34

�34

M12 SPEEDCON �34

�34

* Only the M12 type connector is available for the 2-input type input block.

Input unit

Input unit manifold
● EX500 series
Select the input block of the EX500 series according to the sensor output specification.

M12
• EX500-DXPB
• EX500-IE3, 4
M8
• EX500-DXPA
• EX500-IE1, 2
• EX500-IE5, 6

Manifold solenoid valve with input/output unit
● EX600 series

M12
• EX600-DX□B, DX□D
M8
• EX600-DX□C, DX□C1

● Product Table

Description	Application		No.	SMC part no.	Name
Cable with connector	For sensor		�34	PCA-1557769	Cable with M12 connector (4 pins/3 m)
			㉟	PCA-1557772	Cable with M8 connector (3 pins/3 m)
Field-wireable connector	For sensor		㉛	PCA-1557730	Field-wireable connector (M8/3 pins/Plug/Piercecon® connection)
			㉜	PCA-1557743	Field-wireable connector (M12/4 pins/Plug/QUICKON-ONE connection/SPEEDCON)
			㉝	PCA-1557756	
Y connector	For sensor		㊱	PCA-1557785	Y connector (2 x M12 (5 pins)-M12 (5 pins)/SPEEDCON)
			㊲	PCA-1557798	Y connector (2 x M8 (3 pins)-M12 (4 pins)/SPEEDCON)

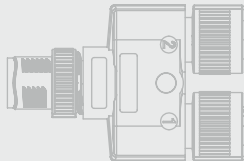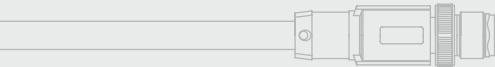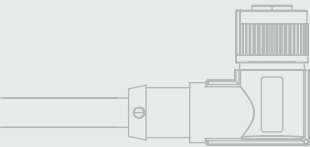# Other Accessories (EX500/EX9)

Ⓔ Seal cap (For socket)

Ⓑ Cable with M12 connector

Output block

Power block

Ⓐ Power cable with connector (For power block)

Ⓓ Cable with connector for output entry

Ⓔ Seal cap (For socket)

Ⓒ Terminal plug

Ⓔ Seal cap (For plug)

Ⓕ Power supply cable (For connecting the SI unit to the power block)

Ⓖ AS-Interface power supply cable

Description	Application	No.	SMC part no.	Name
Cable with connector	For power block	Ⓐ	EX9-AC□□□-1	Power cable with connector (Socket/B-coded)
	For EX500	Ⓑ	EX500-AC□□□-SSPS	Cable with M12 connector (8 pins/Both straight)
			EX500-AC□□□-SAPA	Cable with M12 connector (8 pins/Both angle)
	For output entry	Ⓓ	EX9-AC□□□-7	Cable with M12 connector (Plug/A-coded)
Terminal plug	For EX500	Ⓒ	EX500-AC000-S	Terminal plug (M12/8 pins)
Seal cap	For plug	Ⓔ	EX500-AWTP	Seal cap (M12/For plug)
			EX9-AWES	Seal cap (M8/For socket)
			EX9-AWTS	Seal cap (M12/For socket)
Power supply cable	For connecting the SI unit to the power block	Ⓕ	EX9-AC002-□	Power supply cable (For connecting the SI unit to the power block)
	For the AS-Interface power supply	Ⓖ	EX9-AC□□□-5	AS-Interface power supply cable (5 pins/Both straight)

CONTENTS

Fieldbus Related Accessories

M8/M12 Connector
PCA/EX9/EX500 Series
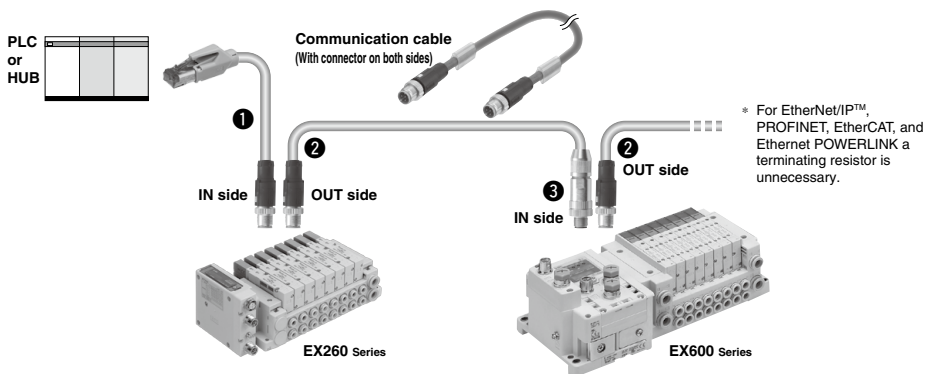
Communication Cable/Connector

M12

EtherNet/IP® PROFI NET® EtherCAT® ETHERNET POWERLINK

Example of Connection

PLC or HUB

**Communication cable**
(With connector on both sides)

❶ **IN side** ❷ **OUT side** ❸ **IN side** ❷ **OUT side**

EX260 Series

EX600 Series

∗ For EtherNet/IP™, PROFINET, EtherCAT, and Ethernet POWERLINK a terminating resistor is unnecessary.

Specifications

	Description	Communication cable (With connector on one side)		Field-wireable connector
	Part no. (Cable length)	EX9–AC010EN–PSRJ (1 m) EX9–AC020EN–PSRJ (2 m) EX9–AC030EN–PSRJ (3 m) EX9–AC050EN–PSRJ (5 m) EX9–AC100EN–PSRJ (10 m)	PCA–1446566	PCA–1446553
	Product image	❶ Plug-RJ45	❷ SPEEDCON Plug	❸ Plug
	Number of functional poles	M12: 4 pins, RJ45: 8 pins	M12: 4 pins	M12: 4 pins
	Key type	M12: D coded		
	Pin assignment	Plug, D-coded (Viewed from the plug side)	1 (Yellow): TD+ 2 (White): RD+ 3 (Orange): TD− 4 (Blue): RD− (PCA-1446566)	1 (Orange/White): TD+ 2 (Green/White): RD+ 3 (Orange): TD− 4 (Green): RD− (EX9-AC☐EN-PSRJ.PCA-1446553)
Wiring	**Fixed cable length**	1 m, 2 m, 3 m, 5 m, 10 m	5 m	—
	Cable O.D.	6.4 mm	6.5 mm	Applicable cable∗1: 4.0 to 8.0 mm
	Conductor nominal cross section	0.14 mm²/AWG26	0.34 mm²/AWG22	0.14 to 0.34 mm²/AWG26 to 22
	Wire O.D.	0.5 mm	1.55 mm	
	Connection type	—		QUICKON connection
Rating/Performance	**Rated current**	1 A	4 A	1.75 A
	Rated voltage	100 V	48 VAC/60 VDC	60 V
	Contact resistance	10 mΩ or less		
	Insulation resistance	100 MΩ or more		
	Withstand voltage	0.7 kV	1.4 kV	0.8 kV
	Ambient temperature **Connector**	−25 to +60°C	−40 to +70°C	−40 to +85°C
	Cable	−40 to +80°C		—
	Min. bending radius (Fixed)	26 mm	19.5 mm	—
	Protection class	M12: IP67 (Only with screw tightened), RJ45: IP20	M12: IP67 (Only with screw tightened)	
	Allowable repeated insertion/withdrawal	100		
Material	**Material of knurl**	Zinc die-cast (Nickel alloy)	Zinc die-cast (Nickel plating)	Brass (Nickel plating)
	Contact (Surface treatment)	M12: CuZn (Au plating (Ni underplating)) RJ45: CuSn (Au plating (Ni underplating))	CuZn (Au plating (Ni underplating))	CuSn (Au plating (Ni underplating))
	Connector material	TPU (UL94 HB)		PA66 (UL94 V0)
	Material of sheath (Sheath color)	PUR (Blue (RAL 5021 equivalent))	PVC (Green (RAL 6018 equivalent))	—
	Weight	1 m: Approx. 70 g 5 m: Approx. 252 g 2 m: Approx. 116 g 10 m: Approx. 479 g 3 m: Approx. 161 g	Approx. 350 g	Approx. 45.6 g

∗1 The shaded sections show the specifications for the applicable cable. Adaptation for the connector may vary on account of the conductor construction of the electric wire.

SMC

Specifications

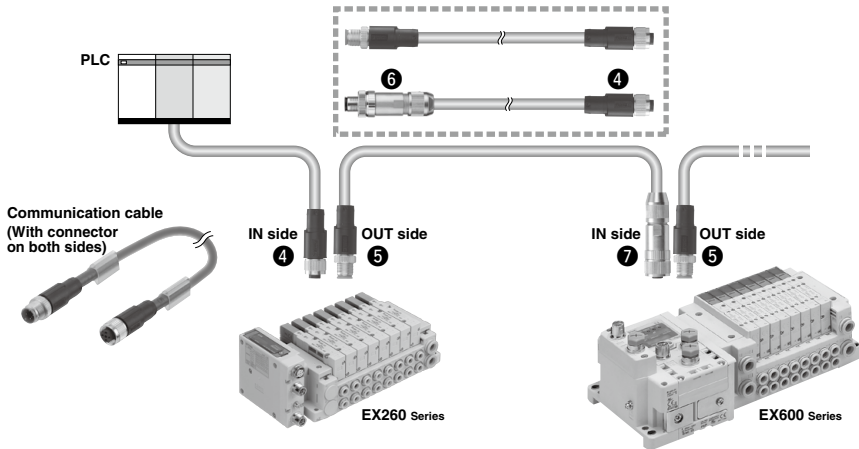| Description	Communication cable (With straight connector on both sides)	Communication cable (With angle connector on both sides)
Part no. (Cable length)	EX9-AC005EN-PSPS (0.5 m) EX9-AC010EN-PSPS (1 m) EX9-AC020EN-PSPS (2 m) EX9-AC030EN-PSPS (3 m) EX9-AC050EN-PSPS (5 m) EX9-AC100EN-PSPS (10 m)	EX9-AC005EN-PAPA (0.5 m) EX9-AC010EN-PAPA (1 m) EX9-AC020EN-PAPA (2 m) EX9-AC030EN-PAPA (3 m) EX9-AC050EN-PAPA (5 m) EX9-AC100EN-PAPA (10 m)
Product image	SPEEDCON **Both straight**	SPEEDCON **Both angle**
Number of functional poles	M12: 4 pins	
Key type	M12: D-coded	
Pin assignment	Plug, D-coded (Viewed from the plug) 1 (Yellow) : TD+ 2 (White) : RD+ 3 (Orange): TD– 4 (Blue) : RD–	
Wiring — Fixed cable length	0.5 m, 1 m, 2 m, 3 m, 5 m, 10 m	
Cable O.D.	6.5 mm	
Conductor nominal cross section	0.34 mm²/AWG22	
Wire O.D. (Including insulating material)	1.55 mm	
Rating/Performance — Rated current	4 A	
Rated voltage	48 VAC/60 VDC	
Contact resistance	10 mΩ or less	
Insulation resistance	100 MΩ or more	
Withstand voltage	1.4 kV	
Ambient temperature	−40 to 70°C	
Min. bending radius (Fixed)	19.5 mm	
Protection class	M12: IP67 (Only with screw tightened)	
Allowable repeated insertion/withdrawal	100	
Material — Material of knurl	Zinc die-cast (Nickel plating)	
Contact (Surface treatment)	CuSn (Au plating (Ni underplating))	
Connector material	TPU (UL94 HB)	
Material of sheath (Sheath color)	PVC (Green (RAL 6018 equivalent))	
Weight	0.5 m: Approx. 85g 1 m: Approx. 135g 2 m: Approx. 215g 3 m: Approx. 305g 5 m: Approx. 480g 10 m: Approx. 905g	0.5 m: Approx. 85g 1 m: Approx. 135g 2 m: Approx. 215g 3 m: Approx. 305g 5 m: Approx. 480g 10 m: Approx. 905g

Communication Cable/Connector
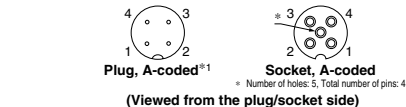
CC-Link

Example of Connection

PLC

❻ ❹

Communication cable
(With connector
on both sides)

IN side ❹   OUT side ❺

IN side ❼   OUT side ❺

EX260 Series

EX600 Series

Specifications

Description	Communication cable (With connector on one side)		Field-wireable connector	
Part no.	PCA-1567720	PCA-1567717	PCA-1075526	PCA-1075527
Product image	❹ SPEEDCON Socket	❺ SPEEDCON Plug	❻ SPEEDCON Plug	❼ SPEEDCON Socket
Number of functional poles	M12: 4 pins			
Key type	A-coded (Normal key)			
Pin assignment	Plug, A-coded*1 Socket, A-coded * Number of holes: 5, Total number of pins: 4 (Viewed from the plug/socket side)		1: SLD (Shield wire) 2: DB (White) 3: DG (Yellow) 4: DA (Blue)	

			Communication cable		Field-wireable connector	
Wiring	Fixed cable length		5 m		—	
	Cable O.D.		7.7 mm		4.0 to 8.0 mm	
	Conductor nominal cross section	Data pair	0.5 mm²/AWG20		Applicable cable*2	0.14 to 0.75 mm²/AWG26 to 18 (Solid cable/Flexible cable)
		Drain	0.34 mm²/AWG22			0.08 to 0.5 mm²/AWG28 to 20 (With ferrule)
	Wire O.D. (Including insulating material)		2.55 mm			
	Connection type		—		Push-in type	
Rating/Performance	Rated current		4 A			
	Rated voltage		48 VAC/60 VDC			
	Contact resistance		10 mΩ or less		10 mΩ or less	
	Insulation resistance		100 MΩ or more			
	Withstand voltage		1.4 kV			
	Ambient temperature	Connector	−20 to +60°C		−40 to +85°C	
		Cable			—	
	Min. bending radius (Fixed)		77 mm		—	
	Protection class		IP67 (Only with screw tightened)			
	Allowable repeated insertion/withdrawal		100			
Material	Material of knurl		Zinc die-cast (Nickel plating)			
	Contact (Surface treatment)		CuSn (Au plating (Ni underplating))			
	Connector material		TPU (UL94 HB)		PA66 (UL94 V0)	
	Material of sheath (Sheath color)		PVC (Red)		—	
Weight			Approx. 306 g	Approx. 308 g	Approx. 37 g	Approx. 42 g

*1 Can also be connected to an M12 5-pin socket A-coded connector
*2 The shaded sections show the specifications for the applicable cable. Adaptation for the connector may vary on account of the conductor construction of the electric wire.

SMC

Specifications

Description	Communication cable (With straight connector on both sides)	Communication cable (With angle connector on both sides)
Part no. (Cable length)	EX9-AC005MJ-SSPS (0.5 m) EX9-AC010MJ-SSPS (1 m) EX9-AC020MJ-SSPS (2 m) EX9-AC030MJ-SSPS (3 m) EX9-AC050MJ-SSPS (5 m) EX9-AC100MJ-SSPS (10 m)	EX9-AC005MJ-SAPA (0.5 m) EX9-AC010MJ-SAPA (1 m) EX9-AC020MJ-SAPA (2 m) EX9-AC030MJ-SAPA (3 m) EX9-AC050MJ-SAPA (5 m) EX9-AC100MJ-SAPA (10 m)
Product image	SPEEDCON	SPEEDCON
Number of functional poles	M12: 5 pins	
Key type	A-coded (Normal key)	
Pin assignment	Plug, A-coded[*1] Socket, A-coded * Number of holes: 5, Total number of pins: 4 (Viewed from the plug/socket side) **1: SLD (Shield wire)** **2: DB (White)** **3: DG (Yellow)** **4: DA (Blue)**	

Wiring	**Fixed cable length**	0.5 m, 1 m, 2 m, 3 m, 5 m, 10 m	
	Cable O.D.	7.7 mm	
	Conductor nominal cross section	0.5 mm²/AWG20	
	Wire O.D. (Including insulating material)	1.4 mm	
Rating/Performance	**Rated current**	4 A	
	Rated voltage	48 VAC/60 VDC	
	Contact resistance	10 mΩ or less	
	Insulation resistance	100 MΩ or more	
	Withstand voltage	1.4 kV	
	Ambient temperature	−20 to +60°C	
	Min. bending radius (Fixed)	77 mm	
	Protection class	IP67 (Only with screw tightened)	
	Allowable repeated insertion/withdrawal	100	
Material	**Material of knurl**	Zinc die-cast (Nickel plating)	
	Contact (Surface treatment)	CuSn (Au plating (Ni underplating))	
	Connector material	TPU (UL94 HB)	
	Material of sheath (Sheath color)	PVC (Red)	
Weight		0.5 m: Approx. 80 g 1 m: Approx. 120 g 2 m: Approx. 200 g 3 m: Approx. 280 g 5 m: Approx. 440 g 10 m: Approx. 840 g	0.5 m: Approx. 80 g 1 m: Approx. 120 g 2 m: Approx. 205 g 3 m: Approx. 285 g 5 m: Approx. 450 g 10 m: Approx. 865 g

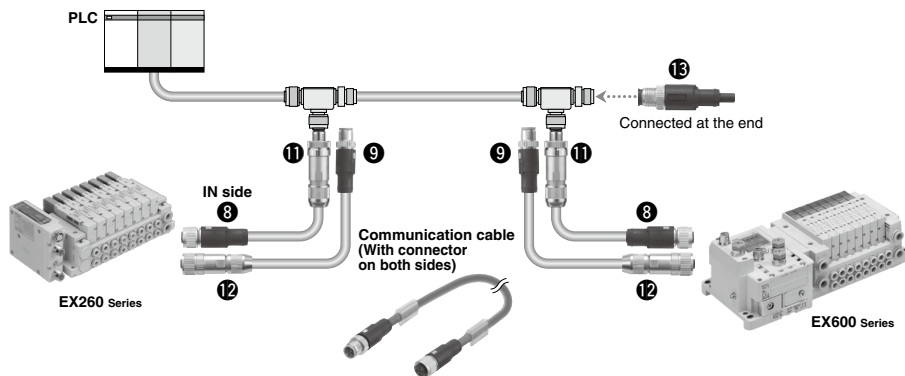*1 Can also be connected to an M12 5-pin socket A-coded connector

Communication Cable/Connector

DeviceNet®

Example of Connection

PLC

Connected at the end

IN side

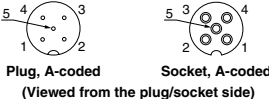**Communication cable (With connector on both sides)**

EX260 Series

EX600 Series

Specifications

Description	Communication cable (With connector on one side)		Field-wireable connector		Terminating resistor
Part no. (Cable length)	PCA-1557633	PCA-1557646	PCA-1075528	PCA-1075529	PCA-1557675
Product image	❽ SPEEDCON Socket	❾ SPEEDCON Plug	⓫ SPEEDCON Plug	⓬ SPEEDCON Socket	For DeviceNet® (Plug, A-coded)
Number of functional poles	M12: 5 pins				
Key type	A-coded (Normal key)				
Pin assignment	Plug, A-coded (Viewed from the plug/socket side)	Socket, A-coded	DeviceNet® / CANopen*2 1: DRAIN 1: — 2: V+ (Red) 2: — 3: V− (Black) 3: CAN GND 4: CAN H (White) 4: CAN H 5: CAN L (Blue) 5: CAN L		1: DRAIN: NC 2: V+: NC 3: V−: NC 4: CAN H 5: CAN L 121 Ω

			Communication cable (With connector on one side)		Field-wireable connector		Terminating resistor
Wiring	Fixed cable length		5 m				—
	Cable O.D.		6.7 mm		4.0 to 8.0 mm		—
	Conductor nominal cross section	Power pair	0.34 mm²/AWG22		Applicable cable*1	0.14 to 0.75 mm²/AWG26 to 18 (Solid cable/Flexible cable)	—
		Data pair	0.25 mm²/AWG24			0.08 to 0.5 mm²/AWG28 to 20 (With ferrule)	
	Wire O.D. (Including insulating material)	Power pair	1.4 mm				
		Data pair	1.95 mm				
	Connection type		—		Push-in type		—
Rating/Performance	Rated current		4 A		4 A		—
	Rated voltage		48 VAC/60 VDC		48 VAC/60 VDC		—
	Contact resistance		10 mΩ or less		10 mΩ or less		5 mΩ or less
	Insulation resistance		100 MΩ or more		100 MΩ or more		—
	Withstand voltage		1.0 kV		1.0 kV		—
	Ambient temperature	Connector	−20 to +80°C		−40 to +85°C		−25 to +90°C
		Cable			—		—
	Min. bending radius (Fixed)		67 mm		—		—
	Protection class		IP67 (Only with screw tightened)				
	Allowable repeated insertion/withdrawal		100		100		200
Material	Material of knurl		Zinc die-cast (Nickel plating)				
	Contact (Surface treatment)		CuSn (Au plating (Ni underplating))		CuSn (Au plating (Ni underplating))		
	Connector material		TPU (UL94 HB)		PA66 (UL94 V0)		TPU (UL94 HB)
	Material of sheath (Sheath color)		PUR (Purple (RAL 4001 equivalent))				
Weight			Approx. 308 g	Approx. 306 g	Approx. 37 g	Approx. 42 g	Approx. 12 g

*1 The shaded sections show the specifications for the applicable cable. Adaptation for the connector may vary on account of the conductor construction of the electric wire.
*2 Can also be used for CANopen communication

SMC

Specifications

Description	Communication cable (With straight connector on both sides)	Communication cable (With angle connector on both sides)
Part no. (Cable length)	**EX9-AC005DN-SSPS** (0.5 m) **EX9-AC010DN-SSPS** (1 m) **EX9-AC020DN-SSPS** (2 m) **EX9-AC030DN-SSPS** (3 m) **EX9-AC050DN-SSPS** (5 m) **EX9-AC100DN-SSPS** (10 m)	**EX9-AC005DN-SAPA** (0.5 m) **EX9-AC010DN-SAPA** (1 m) **EX9-AC020DN-SAPA** (2 m) **EX9-AC030DN-SAPA** (3 m) **EX9-AC050DN-SAPA** (5 m) **EX9-AC100DN-SAPA** (10 m)
Product image	SPEEDCON	SPEEDCON
Number of functional poles	M12: 5 pins	
Key type	A-coded (Normal key)	
Pin assignment	Plug, A-coded Socket, A-coded (Viewed from the plug/socket side)	**DeviceNet® / CANopen** 1: DRAIN 1: — 2: V+ (Red) 2: — 3: V– (Black) 3: CAN GND 4: CAN H (White) 4: CAN H 5: CAN L (Blue) 5: CAN L

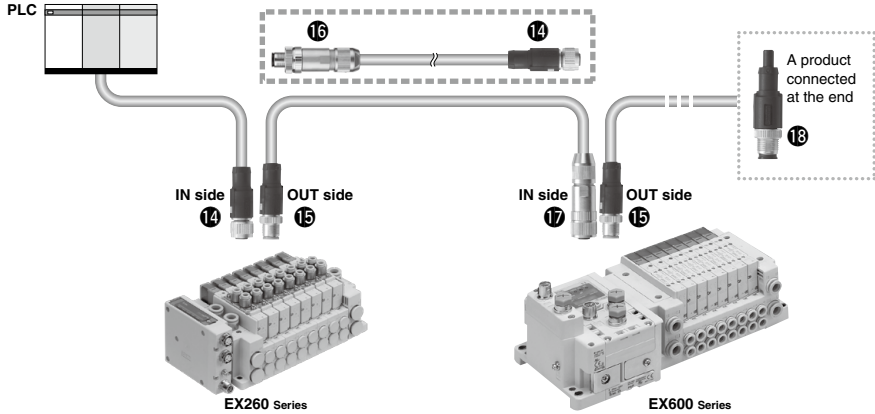|				
Wiring	Fixed cable length		0.5 m, 1 m, 2 m, 3 m, 5 m, 10 m	
	Cable O.D.		6.7 mm	
	Conductor nominal cross section	Power pair	0.34 mm²/AWG22	
		Data pair	0.25 mm²/AWG24	
	Wire O.D. (Including insulating material)	Power pair	1.4 mm	
		Data pair	1.95 mm	
Rating/Performance	Rated current		4 A	
	Rated voltage		48 VAC/60 VDC	
	Contact resistance		10 mΩ or less	
	Insulation resistance		100 MΩ or more	
	Withstand voltage		1.0 kV	
	Ambient temperature		−20 to +80°C	
	Min. bending radius (Fixed)		67 mm	
	Protection class		IP67 (Only with screw tightened)	
	Allowable repeated insertion/withdrawal		100	
Material	Material of knurl		Zinc die-cast (Nickel plating)	
	Contact (Surface treatment)		CuSn (Au plating (Ni underplating))	
	Connector material		TPU (UL94 HB)	
	Material of sheath (Sheath color)		PUR (Purple (RAL 4001 equivalent))	
Weight			0.5 m: Approx. 75 g 1 m: Approx. 105 g 2 m: Approx. 165 g 3 m: Approx. 225 g 5 m: Approx. 345 g 10 m: Approx. 645 g	0.5 m: Approx. 75 g 1 m: Approx. 105 g 2 m: Approx. 165 g 3 m: Approx. 225 g 5 m: Approx. 345 g 10 m: Approx. 645 g

Communication Cable/Connector

PROFI BUS®

Example of Connection

PLC

16 **14**

A product connected at the end **18**

14 IN side **15** OUT side

17 IN side **15** OUT side

EX260 Series

EX600 Series

Specifications

Description	Communication cable (With connector on one side)		Field-wireable connector		Terminal resistor
Part no.	PCA-1557688	PCA-1557691	PCA-1075530	PCA-1075531	PCA-1557727
Product image	**14** SPEEDCON Socket	**15** SPEEDCON Plug	**16** SPEEDCON Plug	**17** SPEEDCON Socket	**18** For PROFIBUS DP (Plug, B-coded)
Number of functional poles	M12: 2 pins		M12: 3 pins		M12: 4 pins
Key type	B-coded (Reverse key)				
Pin assignment	Plug, B-coded	Plug, B-coded (Viewed from the plug/socket side)	1: — 2: A Line (Green) 3: — 4: B Line (Red) 5: —		1: VP 4: B Line 2: A Line 3: DGND

		Communication cable (With connector on one side)		Field-wireable connector		Terminal resistor
Wiring	Fixed cable length	5 m		—		
	Cable O.D.	7.8 mm		Applicable cable*1	4.0 to 8.0 mm	—
	Conductor nominal cross section	0.34 mm²/AWG22			0.14 to 0.75 mm²/AWG26 to 18 (Solid cable/Flexible cable) 0.08 to 0.5 mm²/AWG28 to 20 (With ferrule)	—
	Wire O.D. (Including insulating material)	2.55 mm				—
	Connection type	—		Push-in type		—
Rating/Performance	Rated current	4 A				—
	Rated voltage	60 V		48 VAC/60 VAC		60 V
	Contact resistance	5 mΩ or less		10 mΩ or less		5 mΩ or less
	Insulation resistance	100 MΩ or more				—
	Withstand voltage	1.4 kV				—
	Ambient temperature Connector	−25 to +90°C		−40 to +85°C		−25 to +90°C
	Ambient temperature Cable	−40 to +85°C		—		
	Min. bending radius (Fixed)	78 mm		—		
	Protection class	IP67 (Only with screw tightened)				
	Allowable repeated insertion/withdrawal	200				
Material	Material of knurl	Zinc die-cast (Nickel plating)				
	Contact (Surface treatment)	CuSn (Au plating (Ni underplating))				
	Connector material	TPU/PA66 (UL94 HB)		PA66 (UL94 V0)		TPU/PA66 (UL94 HB)
	Material of sheath (Sheath color)	PUR (Purple (RAL 4001 equivalent))		—		
Weight		Approx. 343 g	Approx. 356 g	Approx. 37 g	Approx. 42 g	Approx. 12 g

∗1 The shaded sections show the specifications for the applicable cable. Adaptation for the connector may vary on account of the conductor construction of the electric wire.
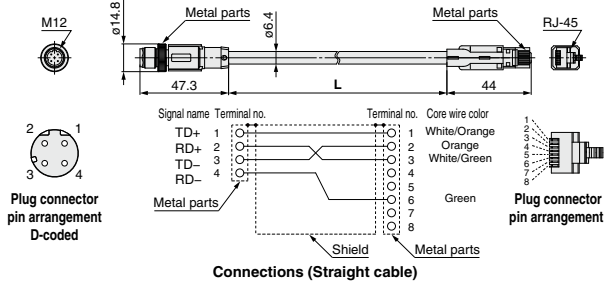
SMC

Communication Cable
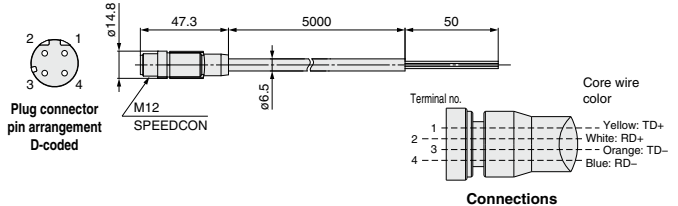
For EtherNet/IP™ | **For PROFINET** | **For EtherCAT** | **For Ethernet POWERLINK**

❶ EX9-AC [020] EN-PSRJ (Plug/RJ-45 connector)

Cable length (L)

010	1000 mm
020	2000 mm
030	3000 mm
050	5000 mm
100	10000 mm

ø14.8 M12 ø6.4 Metal parts Metal parts RJ-45

47.3 L 44

Plug connector pin arrangement D-coded

Signal name	Terminal no.		Terminal no.	Core wire color
TD+	1		1	White/Orange
RD+	2		2	Orange
TD–	3		3	White/Green
RD–	4		4	
			5	
Metal parts			6	Green
			7	
			8	

Shield Metal parts

Plug connector pin arrangement

Connections (Straight cable)

❷ PCA-1446566 (Plug)

Plug connector pin arrangement D-coded

ø14.8 47.3 5000 50

M12 SPEEDCON ø6.5

Terminal no.

	Core wire color
1	Yellow: TD+
2	White: RD+
3	Orange: TD–
4	Blue: RD–

Connections

EX9-AC [005] EN-PSPS (With connector on both sides (Plug/Plug))

Cable length (L)

005	500 mm
010	1000 mm
020	2000 mm
030	3000 mm
050	5000 mm
100	10000 mm

ø14.8 47.3 L 47.3 ø14.8

Metal parts Metal parts M12 SPEEDCON ø6.5 M12 SPEEDCON

Plug connector pin arrangement D-coded

Terminal no.		Terminal no.	Core wire color	Signal name
1		1	Yellow	TD+
2		2	White	RD+
3		3	Orange	TD–
4		4	Blue	RD–

Metal parts Shield Metal parts

Plug connector pin arrangement D-coded

Connections (Straight cable)
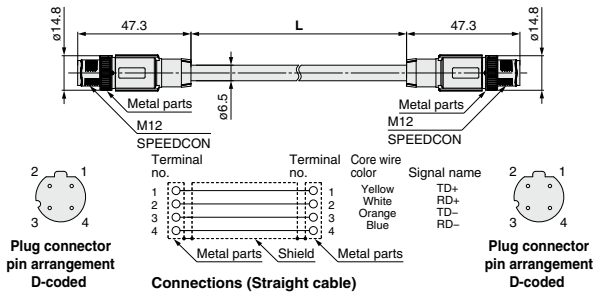
EX9-AC [005] EN-PAPA (With angle connector on both sides (Plug/Plug))

Cable length (L)

005	500 mm
010	1000 mm
020	2000 mm
030	3000 mm
050	5000 mm
100	10000 mm

36.3 L 30.8 ø6.5

Metal parts Metal parts M12 SPEEDCON M12 SPEEDCON ø15

Plug connector pin arrangement D-coded

Terminal no.		Terminal no.	Core wire color	Signal name
1		1	Yellow	TD+
2		2	White	RD+
3		3	Orange	TD–
4		4	Blue	RD–

Metal parts Shield Metal parts

Plug connector pin arrangement D-coded

Connections (Straight cable)

SMC

1519
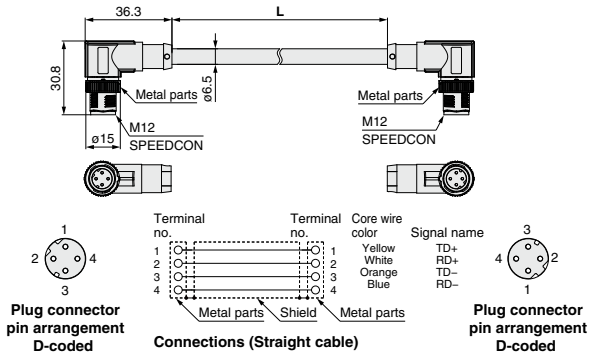
Communication Cable/Connector

Communication Cable

For CC-Link

❹ PCA-1567720
(Socket)

Socket connector
pin arrangement
A-coded (Normal key)
∗ Number of holes: 5,
Total number of pins: 4

Made to Order

| Change in the cable length	p. 1538

ø14.8 / 44.5 / 5000 / 50 / 22.5

M12
SPEEDCON
Marker tag / ø7.7 / Marker tag / Shield
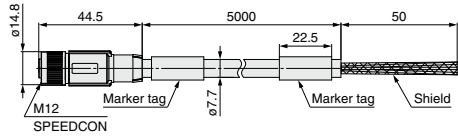
❺ PCA-1567717
(Plug)

Plug connector
pin arrangement
A-coded (Normal key)

ø14.8 / 47.3 / 5000 / 50 / 22.5

M12
SPEEDCON
Marker tag / ø7.7 / Marker tag / Shield

Terminal no. / Core wire color

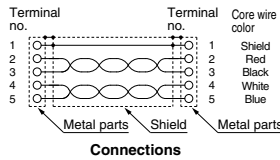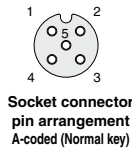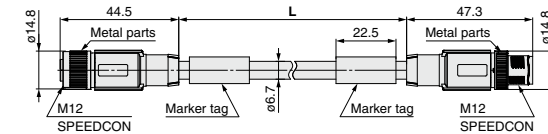2 1
4 3
White: DB
Blue: DA
: SLD
Yellow: DG
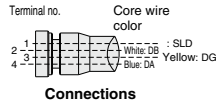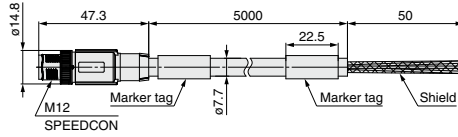
Connections

EX9-AC 005 MJ-SSPS (With connector on both sides (Socket/Plug))

● Cable length (L)

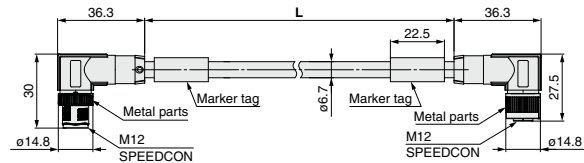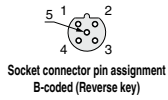| 005	500 mm
010	1000 mm
020	2000 mm
030	3000 mm
050	5000 mm
100	10000 mm

ø14.8 / 44.5 / L / 47.3 / ø14.8
Metal parts / 22.5 / Metal parts

M12
SPEEDCON
Marker tag / ø7.7 / Marker tag / M12 SPEEDCON

Terminal no.		Terminal no.	Core wire color	Signal name CC-Link
4		4	Blue	DA
2		2	White	DB
3		3	Yellow	DG
1		1	Shield	SLD

Metal parts / Shield / Metal parts
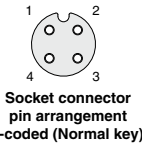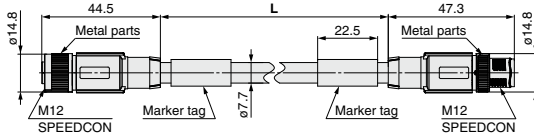
Socket connector
pin arrangement
A-coded (Normal key)
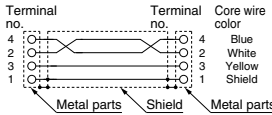
Connections
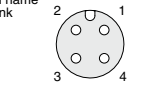
Plug connector
pin arrangement
A-coded (Normal key)

EX9-AC 005 MJ-SAPA (With angle connector on both sides (Socket/Plug))

● Cable length (L)

005	500 mm
010	1000 mm
020	2000 mm
030	3000 mm
050	5000 mm
100	10000 mm

35 / 33.1 / L / 22.5 / 35 / 33.1
32.5 / ø7.7 / 29.6
Marker tag / Marker tag
Metal parts / Metal parts
ø14.8 / ø14.4
M12 SPEEDCON / M12 SPEEDCON

Terminal no.		Terminal no.	Core wire color	Signal name CC-Link
4		4	Blue	DA
2		2	White	DB
3		3	Yellow	DG
1		1	Shield	SLD

Metal parts / Shield / Metal parts
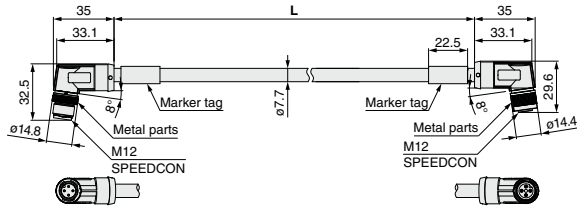
Plug connector
pin arrangement
A-coded (Normal key)
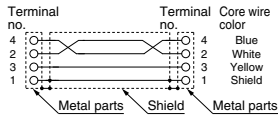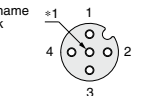
Connections

Socket connector pin arrangement
A-coded (Normal key)
∗1 Number of holes: 5, Total number of pins: 4

SMC

Communication Cable

For DeviceNet®

❽ **PCA-1557633**
(Socket)

Socket connector pin assignment
A-coded (Normal key)

| Made to Order |
| Change in the cable length | p. 1538 |

Made to Order
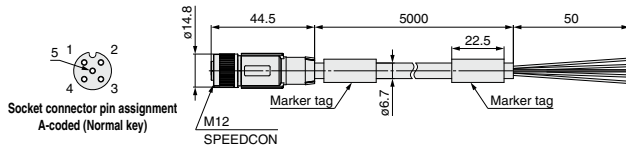
❾ **PCA-1557646**
(Plug)

Plug connector pin assignment
A-coded (Normal key)

Terminal no. / Core wire color

1 Red: V+ / : DRAIN
3 White: CAN H / Black: V−
5 Blue: CAN L
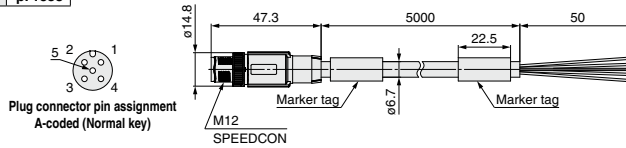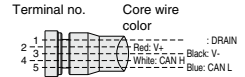
Connections

EX9-AC `005` DN-SSPS (With connector on both sides (Socket/Plug))

Cable length (L)

005	500 mm
010	1000 mm
020	2000 mm
030	3000 mm
050	5000 mm
100	10000 mm

Terminal no.	Core wire color	Signal name DeviceNet®	CANopen
1	Shield	DRAIN	−(CAN SHLD)
2	Red	V+	−(CAN V+)
3	Black	V−	CAN GND
4	White	CAN H	CAN H
5	Blue	CAN L	CAN L

Socket connector pin arrangement A-coded (Normal key)
Connections
Plug connector pin arrangement A-coded (Normal key)
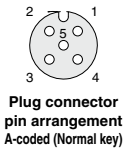
EX9-AC `005` DN-SAPA (With angle connector on both sides (Socket/Plug))

Cable length (L)

005	500 mm
010	1000 mm
020	2000 mm
030	3000 mm
050	5000 mm
100	10000 mm

Terminal no.	Core wire color	Signal name DeviceNet®
1	Shield	DRAIN
2	Red	V+
3	Black	V−
4	White	CAN H
5	Blue	CAN L

Plug connector pin arrangement A-coded (Normal key)
Connections
Socket connector pin arrangement A-coded (Normal key)

Communication Cable/Connector

Communication Cable

For PROFIBUS DP

⓮ **PCA-1557688**
(Socket)

Socket connector pin assignment
B-coded (Reverse key)

44.5   5000   50

22.5

ø14.8

ø7.8

M12
SPEEDCON

Marker tag   Marker tag

⓯ **PCA-1557691**
(Plug)

Plug connector pin assignment
B-coded (Reverse key)

47.3   5000   50

22.5

ø14.8

ø7.8

M12
SPEEDCON

Marker tag   Marker tag

Terminal no.   Core wire color

2
1
3
4
5

Green: A Line
Red: B Line

Shield line is connected to the knurl.
Connections

SMC
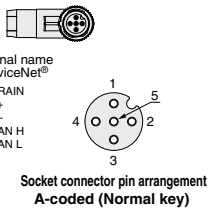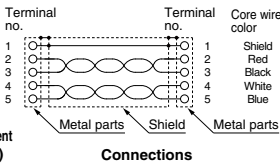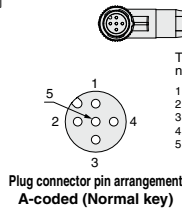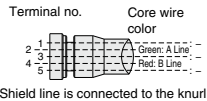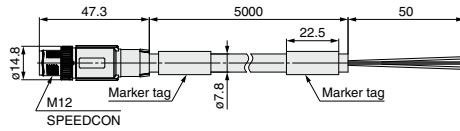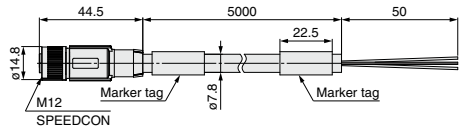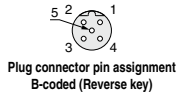
Field-wireable Communication Connector

Plug

| For EtherNet/IP™ | For PROFINET | For EtherCAT |

❸ PCA-1446553

D-coded
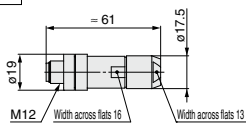
= 61

ø17.5

ø19

M12 Width across flats 16   Width across flats 13

Applicable Cable

Item	Specifications
Cable O.D.	4.0 to 8.0 mm
Wire gauge (Stranded wire cross section)	0.14 to 0.34 mm^2/AWG26 to 22

∗ The table above shows the specifications for the applicable cable. Adaptation for the connector may vary on account of the conductor construction of the electric wire.

| For CC-Link | For DeviceNet® |

❻ PCA-1075526   ⓫ PCA-1075528

For PROFIBUS DP

⓰ PCA-1075530

A-coded (Normal key)

= 60

ø17.5

ø19

M12
SPEEDCON   Width across flats 16

B-coded (Reverse key)

= 60

ø17.5

ø19

M12
SPEEDCON   Width across flats 16

Applicable Cable

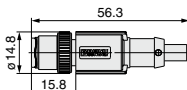| Item	Specifications
Cable O.D.	4.0 to 8.0 mm
Wire gauge (Stranded wire cross section)	0.14 to 0.75 mm^2/AWG26 to 18 (Solid cable/Flexible cable) 0.08 to 0.5 mm^2/AWG28 to 20 (With ferrule)

Socket

| For CC-Link | For DeviceNet® |

❼ PCA-1075527   ⓬ PCA-1075529

For PROFIBUS DP

⓱ PCA-1075531

A-coded (Normal key)

= 58

ø17.5

ø19

M12
SPEEDCON   Width across flats 16

B-coded (Reverse key)

= 58

ø17.5

ø19

M12
SPEEDCON   Width across flats 16

Applicable Cable

Item	Specifications
Cable O.D.	4.0 to 8.0 mm
Wire gauge (Stranded wire cross section)	0.14 to 0.75 mm^2/AWG26 to 18 (Solid cable/Flexible cable) 0.08 to 0.5 mm^2/AWG28 to 20 (With ferrule)

Terminating Resistor

For DeviceNet®

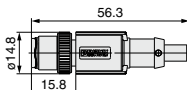⓭ PCA-1557675
Terminating resistor for DeviceNet®

M12

56.3

ø14.8

15.8

For PROFIBUS DP

⓲ PCA-1557727
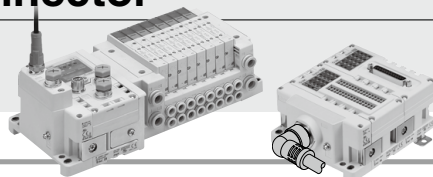Terminating resistor for PROFIBUS DP

M12

56.3

ø14.8

15.8

Power Supply Cable/Connector

EX600 Series

Specifications

Description		Power supply cable (With connector on one side)				Field-wireable connector	
Part no. (Cable length)		**⓳** **PCA-1564927 (2 m)** **PCA-1564930 (6 m)**	**⓴** **PCA-1564943 (2 m)** **PCA-1564969 (6 m)**	**㉑** **PCA-1558810 (2 m)** **PCA-1558823 (6 m)**	**㉒** **PCA-1558836 (2 m)** **PCA-1558849 (6 m)**	**㉓ PCA-1578081**	
Protocol		EtherNet/IP™, PROFINET, EtherCAT, PROFIBUS DP, DeviceNet®, CC-Link					
Number of functional poles		M12: 5 pins		7/8 inch: 5 pins			
Key type		B-coded		—			
Wiring	Cable O.D.	5.9 mm		12.58 mm		Applicable cable*1	12.0 to 14.0 mm
	Conductor nominal cross section	AWG22		AWG16			0.34 to 1.5 mm²/AWG22 to 16
	Wire O.D. (Including insulating material)	1.27 mm		2.35 mm		—	
	Connection type	—				Screw tightening	
Rating/Performance	Rated current	4 A		8 A		9 A	
	Rated voltage	60 V		600 V		250 V	
	Contact resistance	5 mΩ or less					
	Insulation resistance	100 MΩ or more					
	Withstand voltage	1.0 kV		1.4 kV		4 kV	
	Ambient temperature — Connector	−25 to +90°C		−25 to +80°C		−25 to +85°C	
	Ambient temperature — Cable	−25 to +80°C		−10 to +105°C		—	
	Min. bending radius (Fixed)	59 mm		110 mm		—	
	Protection class	IP67 (Only with screw tightened)					
	Allowable repeated insertion/withdrawal	200		100		50	
Material	Material of knurl	Zinc die-cast (Nickel plating)		Brass (Nickel plating)		Zinc die-cast (Nickel plating)	
	Contact (Surface treatment)	CuSn (Au plating (Ni underplating))				CuZn (Au plating (Ni underplating))	
	Connector material	TPU (UL94 HB)		PUR (UL94 HB)		PUR/PA66/PBT (UL94 HB)	
	Material of sheath (Sheath color)	PUR (Black–Gray (RAL 7021 equivalent))		PVC (Yellow (RAL 1021 equivalent))		—	
Weight		2 m: Approx. 113 g 6 m: Approx. 425 g	2 m: Approx. 130 g 6 m: Approx. 475 g	2 m: Approx. 446 g 6 m: Approx. 1270 g	2 m: Approx. 455 g 6 m: Approx. 1300 g	Approx. 47.6 g	

∗1 The shaded sections show the specifications for the applicable cable. Adaptation for the connector may vary on account of the conductor construction of the electric wire.
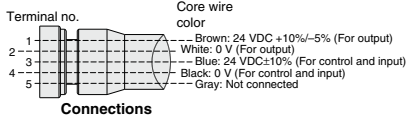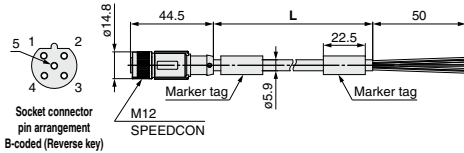
Power Supply Cable/Connector

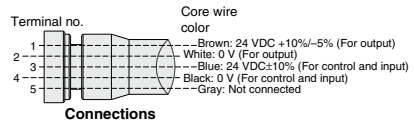### ⑲⑳ PCA- 1564927
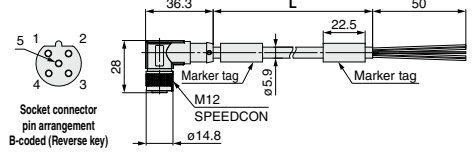
● Socket specification, Cable length (L)

1564927	Straight 2 m
1564930	Straight 6 m
1564943	Angle 2 m
1564969	Angle 6 m

Item	Specifications
Cable O.D.	ø5.9 mm
Conductor nominal cross section	0.34 mm²/AWG22
Wire O.D. (Including insulator)	1.27 mm
Min. bending radius (Fixed)	59 mm

Straight connector type

Socket connector
pin arrangement
B-coded (Reverse key)

M12
SPEEDCON

Marker tag

Terminal no.

Core wire color

1 —— Brown: 24 VDC +10%/–5% (For output)
2 —— White: 0 V (For output)
3 —— Blue: 24 VDC±10% (For control and input)
4 —— Black: 0 V (For control and input)
5 —— Gray: Not connected

Connections

Angle connector type

Socket connector
pin arrangement
B-coded (Reverse key)

M12
SPEEDCON

Marker tag

Terminal no.

Core wire color

1 —— Brown: 24 VDC +10%/–5% (For output)
2 —— White: 0 V (For output)
3 —— Blue: 24 VDC±10% (For control and input)
4 —— Black: 0 V (For control and input)
5 —— Gray: Not connected

Connections

㉑㉒ PCA- 1558810

● Socket specification, Cable length (L)

1558810	Straight 2 m
1558823	Straight 6 m
1558836	Angle 2 m
1558849	Angle 6 m

Item	Specifications
Cable O.D.	ø12.58 mm
Conductor nominal cross section	1.5 mm²/AWG16
Wire O.D. (Including insulator)	2.35 mm
Min. bending radius (Fixed)	110 mm

Straight connector type

Socket pin arrangement

Core wire color

1 —— Red/White: 0 V (For output)
2 —— Red: 0 V (For control and input)
3 —— Green: FE
4 —— Red/Orange: 24 VDC±10% (For control and input)
5 —— Red/Black: 24 VDC +10%/–5% (For output)

Connections

Angle connector type

Socket pin arrangement

Core wire color

1 —— Red/White: 0 V (For output)
2 —— Red: 0 V (For control and input)
3 —— Green: FE
4 —— Red/Orange: 24 VDC±10% (For control and input)
5 —— Red/Black: 24 VDC +10%/–5% (For output)

Connections

Socket

㉓ PCA-1578081

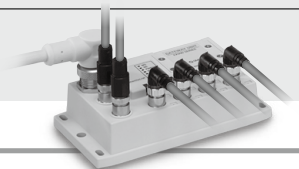Width across flats 24 **Socket connector pin assignment 7/8 inch (Mini style)**
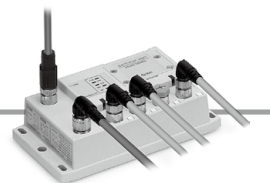
Power Supply Cable/Connector

EX500 Series

Specifications/Gateway Decentralized System 2 (128 Points)

Description		Power supply cable (With connector on one side)			
Part no. (Cable length)		㉔ PCA-1415999 (2 m) PCA-1415996 (6 m)	㉕ PCA-1416000 (2 m) PCA-1415997 (6 m)	㉑ PCA-1558810 (2 m) PCA-1558823 (6 m)	㉒ PCA-1558836 (2 m) PCA-1558849 (6 m)
Protocol		EtherNet/IP™		PROFINET	
Number of functional poles		7/8 inch: 4 pins		7/8 inch: 5 pins	
Key type		—			
Wiring	Cable O.D.	10.7 mm		12.58 mm	
	Conductor nominal cross section	1.5 mm²/AWG16		1.5 mm²/AWG16	
	Wire O.D. (Including insulating material)	2.35 mm		2.35 mm	
Rating/Performance	Rated current	10 A		8 A	
	Rated voltage	600 V		600 V	
	Contact resistance	5 mΩ or less			
	Insulation resistance	100 MΩ or more			
	Withstand voltage	1.4 kV			
	Ambient temperature — Connector	−25 to 80°C			
	Ambient temperature — Cable	−30 to +105°C		−10 to +105°C	
	Min. bending radius (Fixed)	94 mm		110 mm	
	Protection class	IP67 (Only with screw tightened)			
	Allowable repeated insertion/withdrawal	100			
Material	Material of knurl	Brass (Nickel plating)		Brass (Nickel plating)	
	Contact (Surface treatment)	CuSn (Au plating)			
	Connector material	PUR (UL94 HB)			
	Material of sheath (Sheath color)	PVC (Yellow (RAL 1021 equivalent))			
Weight		2 m: Approx. 385 g 6 m: Approx. 1065 g	2 m: Approx. 395 g 6 m: Approx. 1075 g	2 m: Approx. 446 g 6 m: Approx. 475 g	2 m: Approx. 455 g 6 m: Approx. 1300 g

Specifications/Gateway Decentralized System (64 Points)

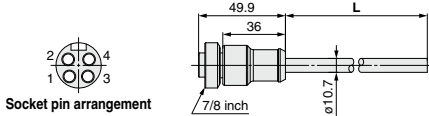| Description		Power supply cable (With connector on one side)	
Part no. (Cable length)		㉖ EX500-AP010-S (1 m) EX500-AP050-S (5 m)	㉗ EX500-AP010-A (1 m) EX500-AP050-A (5 m)
Protocol		PROFIBUS DP	
Number of functional poles		M12: 5 pins	
Key type		A-coded	
Wiring	Cable O.D.	6 mm	
	Conductor nominal cross section	0.3 mm²/AWG22	
	Wire O.D. (Including insulating material)	1.5 mm	
Rating/Performance	Rated current	3 A	
	Rated voltage	125 V	
	Contact resistance	40 mΩ or less	
	Insulation resistance	1000 MΩ or more	
	Withstand voltage	1.5 kV	
	Ambient temperature — Connector	−25 to +60°C	
	Ambient temperature — Cable	−25 to +60°C	
	Min. bending radius (Fixed)	40 mm	
	Protection class	IP67 (Only with screw tightened)	
	Allowable repeated insertion/withdrawal	200	
Material	Material of knurl	Brass (Nickel plating)	
	Contact (Surface treatment)	Phosphor bronze (Au plating)	
	Connector material	Soft PBT (UL94 V0)	
	Material of sheath (Sheath color)	PVC (Light gray)	
Weight		1 m: Approx. 80 g 5 m: Approx. 395 g	1 m: Approx. 85 g 5 m: Approx. 400 g

⊛SMC

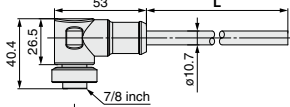## Power Supply Cable/Gateway Decentralized System 2 (128 Points)

For EtherNet/IP™
㉔㉕ PCA- 1416000

●**Connector specification, Cable length (L)**

1415999	Straight 2 m
1415996	Straight 6 m
1416000	Angle 2 m
1415997	Angle 6 m

Socket pin arrangement

Core wire color
1 --- Red: 24 VDC +10%/−5% (For valve)
2 --- Green: 24 VDC±10% (For control and input)
3 --- White: 0 V (For control and input)
4 --- Black: 0 V (For valve)

Connections

Item	Specifications
Cable O.D.	ø10.7 mm
Conductor nominal cross section	1.5 mm²/AWG16
Min. bending radius (Fixed)	94 mm

For PROFINET
㉑㉒ PCA- 1558810

●**Connector specification, Cable length (L)**

1558810	Straight 2 m
1558823	Straight 6 m
1558836	Angle 2 m
1558849	Angle 6 m

Socket pin arrangement
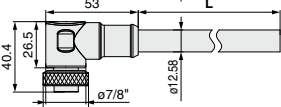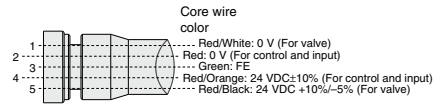
Core wire color
1 --- Red/White: 0 V (For valve)
2 --- Red: 0 V (For control and input)
3 --- Green: FE
4 --- Red/Orange: 24 VDC±10% (For control and input)
5 --- Red/Black: 24 VDC +10%/−5% (For valve)

Connections

Item	Specifications
Cable O.D.	ø12.58 mm
Conductor nominal cross section	1.5 mm²/AWG16
Wire O.D. (Including insulator)	2.35 mm
Min. bending radius (Fixed)	110 mm

Power Supply Cable/Gateway Decentralized System (64 Points)
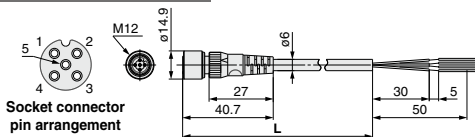
For PROFIBUS DP
㉖㉗ EX500-AP 050 - S

Cable length (L)

010	1000 mm
050	5000 mm

Connector specification

S	Straight
A	Angle

Straight connector type

Socket connector pin arrangement A-coded (Normal key)

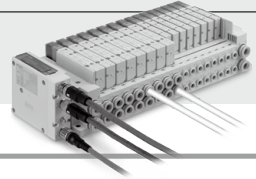| Item	Specifications
Cable O.D.	ø6 mm
Conductor nominal cross section	0.3 mm²/AWG22
Wire O.D. (Including insulator)	1.5 mm
Min. bending radius (Fixed)	40 mm

Angle connector type

Item	Specifications
Cable O.D.	ø6 mm
Conductor nominal cross section	0.3 mm²/AWG22
Wire O.D. (Including insulator)	1.5 mm
Min. bending radius (Fixed)	40 mm

Terminal no. / Core wire color
1 --- Brown: 0 V (Valve power supply)
2 --- White: 24 VDC +10%/−5% (Valve power supply)
3 --- Blue: 0 V (Power supply for control/input)
4 --- Black: 24 VDC±10% (Power supply for control/input)
5 --- Gray: FE

Connections (PROFIBUS DP)

Made to Order

Cable length	10000 mm	p. 1539

SMC

1527

Power Supply Cable/Connector

EX260 Series

Specifications

Description		Power supply cable (With connector on one side)				
Part no. (Cable length)		**㉖** EX500-AP010-S (1 m) EX500-AP050-S (5 m)	**㉗** EX500-AP010-A (1 m) EX500-AP050-A (5 m)	**㉘** PCA-1401804 (1.5 m) PCA-1401805 (3 m) PCA-1401806 (5 m)	**㉙** EX9-AC010-1 (1 m) EX9-AC030-1 (3 m) EX9-AC050-1 (5 m)	**㉚** PCA-1401807 (1.5 m) PCA-1401808 (3 m) PCA-1401809 (5 m)
Protocol		PROFIBUS DP, DeviceNet®, EtherCAT, PROFINET, EtherNet/IP™			CC-Link	
Number of functional poles		M12: 5 pins				
Key type		A-coded			B-coded	
Wiring	Cable O.D.	6 mm		5 mm	6.6 mm	5 mm
	Conductor nominal cross section	0.3 mm²/AWG22		AWG22	0.3 mm²/AWG22	AWG22
	Wire O.D. (Including insulating material)	1.5 mm		1.27 mm	1.65 mm	1.27 mm
Rating/Performance	Rated current	3 A		4 A	3.1 A	4 A
	Rated voltage	125 V		60 V	125 V	60 V
	Contact resistance	40 mΩ or less		5 mΩ or less	40 mΩ or less	5 mΩ or less
	Insulation resistance	1000 MΩ or more		100 MΩ or more	1000 MΩ or more	100 MΩ or more
	Withstand voltage	1.5 kV		1.0 kV	1.5 kV	1.0 kV
	Ambient temperature Connector	−25 to +60°C		−40 to +80°C	−25 to +60°C	−40 to +80°C
	Ambient temperature Cable	−25 to +60°C		−40 to +80°C	−25 to +60°C	−40 to +80°C
	Min. bending radius (Fixed)	40 mm		21.7 mm	40 mm	21.7 mm
	Protection class	IP67 (Only with screw tightened)				
	Allowable repeated insertion/withdrawal	200				
Material	Material of knurl	Brass (Nickel plating)		Zinc die-cast (Nickel plating)	Brass (Nickel plating)	Zinc die-cast (Nickel plating)
	Contact (Surface treatment)	Phosphor bronze (Au plating)		CuSn (Au plating)	Phosphor bronze (Au plating)	CuSn (Au plating)
	Connector material	Soft PBT (UL94 V0)		TPU (UL94 HB)	Soft PBT (UL94 V0)	TPU (UL94 HB)
	Material of sheath (Sheath color)	PVC (Light gray)		PUR (Black-Gray (RAL 7021 equiv.))	PVC (Light gray)	PUR (Black-Gray (RAL 7021 equiv.))
Weight		1 m: Approx. 80 g 5 m: Approx. 395 g	1 m: Approx. 85 g 5 m: Approx. 400 g	1.5 m: Approx. 65 g 3 m: Approx. 130 g 5 m: Approx. 195 g	1 m: Approx. 85 g 3 m: Approx. 215 g 5 m: Approx. 345 g	1.5 m: Approx. 65 g 3 m: Approx. 130 g 5 m: Approx. 195 g

Power Supply Cable
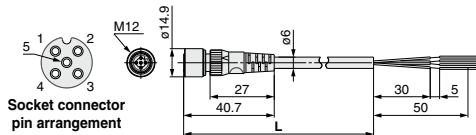
For PROFIBUS DP	For DeviceNet®	For EtherCAT	For PROFINET	For EtherNet/IP™

㉖㉗ EX500-AP [050] - [S]

Cable length (L) •
| 010 | 1000 mm |
| 050 | 5000 mm |

• Connector specification
| S | Straight |
| A | Angle |

Angle connector type

Straight connector type

Socket connector pin arrangement A-coded (Normal key)

ø14.9 M12 ø6 27 40.7 30 5 50 L

Item	Specifications
Cable O.D.	ø6 mm
Conductor nominal cross section	0.3 mm²/AWG22
Wire O.D. (Including insulator)	1.5 mm
Min. bending radius (Fixed)	40 mm

Socket connector pin arrangement A-coded (Normal key)

M12 ø14.9 28.3 ø6 25.3 30 5 50 L

Item	Specifications
Cable O.D.	ø6 mm
Conductor nominal cross section	0.3 mm²/AWG22
Wire O.D. (Including insulator)	1.5 mm
Min. bending radius (Fixed)	40 mm

Terminal no.

Core wire color
1 — Brown: 24 VDC +10%/−5% (Valve power supply)
2 — White: 0 V (Valve power supply)
3 — Blue: 24 VDC±10% (Power supply for control)
4 — Black: 0 V (Power supply for control)
5 — Gray: Not connected

Connections (PROFIBUS DP/EtherCAT/PROFINET)

Terminal no.

Core wire color
1 — Brown: Not connected*1, 24 VDC±10% (Power supply for control)*2
2 — White: 24 VDC +10%/−5% (Valve power supply)
3 — Blue: Not connected*1, 0 V (Power supply for control)*2
4 — Black: 0 V (Valve power supply)
5 — Gray: Not connected

Connections (DeviceNet®, EtherNet/IP™)

∗1 For DeviceNet®
∗2 For EtherNet/IP™

Made to Order

Made to Order

| Cable length | 10000 mm | **p. 1539** |

SMC

Power Supply Cable

| For PROFIBUS DP | For DeviceNet® | For EtherCAT | For PROFINET | For EtherNet/IP™ |

❷❽ PCA- 1401804

● **Cable length (L)**

1401804	1500 mm
1401805	3000 mm
1401806	5000 mm

Socket connector pin arrangement A-coded (Normal key)
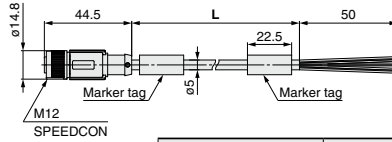
M12 SPEEDCON

Item	Specifications
Cable O.D.	ø5 mm
Conductor nominal cross section	0.34 mm²/AWG22
Wire O.D. (Including insulator)	1.27 mm
Min. bending radius (Fixed)	21.7 mm

Terminal no. — Core wire color

1 — Brown: 24 VDC +10%/−5% (Valve power supply)
2 — White: 0 V (Valve power supply)
3 — Blue: 24 VDC±10% (Power supply for control)
4 — Black: 0 V (Power supply for control)
5 — Green/Yellow: Not connected

Connections (PROFIBUS DP/EtherCAT/PROFINET)

Terminal no. — Core wire color

1 — Brown: Not connected*1, 24 VDC±10% (Power supply for control)*2
2 — White: 24 VDC +10%/−5% (Valve power supply)
3 — Blue: Not connected*1, 0 V (Power supply for control)*2
4 — Black: 0 V (Valve power supply)
5 — Green/Yellow: Not connected
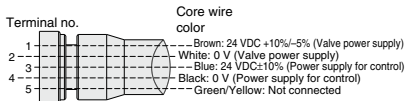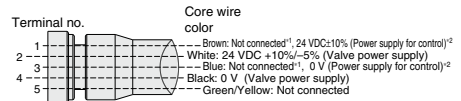
Connections (DeviceNet®, EtherNet/IP™)

∗1 For DeviceNet®
∗2 For EtherNet/IP™

For CC-Link

Straight connector type

❷❾ EX9-AC 050 -1

● **Cable length (L)**

010	1000 mm
030	3000 mm
050	5000 mm

Socket connector pin arrangement B-coded (Reverse key)

M12

Item	Specifications
Cable O.D.	ø6.6 mm
Conductor nominal cross section	0.3 mm²/AWG22
Wire O.D. (Including insulator)	1.65 mm
Min. bending radius (Fixed)	40 mm

Made to Order

| Cable length | 10000 mm | p. 1539 |

Terminal no. — Core wire color

Connections

1 — Brown: 24 VDC +10%/−5% (Valve power supply)
2 — White: 0 V (Valve power supply)
3 — Blue: 24 VDC±10% (Power supply for control)
4 — Black: 0 V (Power supply for control)
5 — Gray: Not connected
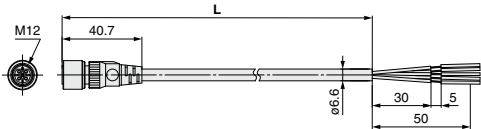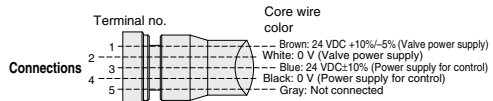
❸⓿ PCA- 1401807

● **Cable length (L)**

1401807	1500 mm
1401808	3000 mm
1401809	5000 mm

Socket connector pin arrangement B-coded (Reverse key)
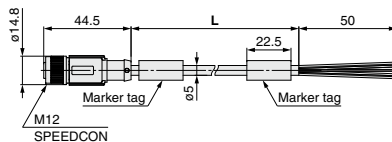
M12 SPEEDCON

Item	Specifications
Cable O.D.	ø5 mm
Conductor nominal cross section	0.34 mm²/AWG22
Wire O.D. (Including insulator)	1.27 mm
Min. bending radius (Fixed)	21.7 mm

Terminal no. — Core wire color

Connections

1 — Brown: 24 VDC +10%/−5% (Valve power supply)
2 — White: 0 V (Valve power supply)
3 — Blue: 24 VDC±10% (Power supply for control)
4 — Black: 0 V (Power supply for control)
5 — Green/Yellow: Not connected
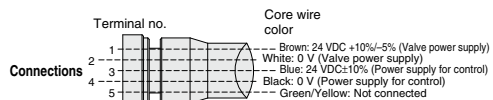
Power Supply Cable

EX250 Series
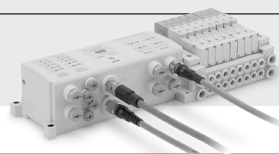
Specifications

Description		Power supply cable (With connector on one side)	
Part no. (Cable length)		**EX9-AC010-1 (1 m)** ㉙ **EX9-AC030-1 (3 m)** **EX9-AC050-1 (5 m)**	㉖ **EX500-AP010-S (1 m)** **EX500-AP050-S (5 m)**
Protocol		CC-Link, DeviceNet®	EtherNet/IP™
Number of functional poles		M12: 5 pins	M12: 5 pins
Key type		B-coded	A-coded
Wiring	**Cable O.D.**	6.6 mm	6 mm
	Conductor nominal cross section	0.3 mm²/AWG22	0.3 mm²/AWG22
	Wire O.D. (Including insulating material)	1.65 mm	1.5 mm
Rating/Performance	**Rated current**	3.1 A	3 A
	Rated voltage	125 V	
	Contact resistance	40 mΩ or less	
	Insulation resistance	1000 MΩ or more	
	Withstand voltage	1.5 kV	
	Ambient temperature — Connector	−25 to +60°C	
	Ambient temperature — Cable	−25 to +60°C	
	Min. bending radius (Fixed)	40 mm	
	Protection class	IP67 (Only with screw tightened)	
	Allowable repeated insertion/withdrawal	200	
Material	**Material of knurl**	Brass (Nickel plating)	
	Contact (Surface treatment)	Phosphor bronze (Au plating)	
	Connector material	Soft PBT (UL94 V0)	
	Material of sheath (Sheath color)	PVC (Light gray)	
Weight		1 m: Approx. 85 g 3 m: Approx. 215 g 5 m: Approx. 345 g	1 m: Approx. 80 g 5 m: Approx. 395 g

Power Supply Cable

For CC-Link | For DeviceNet®

Straight connector type

❷⑨ EX9-AC 050 -1

Cable length (L)

010	1000 mm
030	3000 mm
050	5000 mm

Socket connector
pin arrangement
B-coded
(Reverse key)

Made to Order

| Cable length | 10000 mm | p. 1539 |

Item	Specifications
Cable O.D.	ø6.6 mm
Conductor nominal cross section	0.3 mm²/AWG22
Wire O.D. (Including insulator)	1.65 mm
Min. bending radius (Fixed)	40 mm

Core wire color

Terminal no.
- 1 — Brown: 24 VDC +10%/−5% (Valve power supply)
- 2 — White: 0 V (Valve power supply)
- 3 — Blue: 24 VDC±10% (Power supply for control/input) (Power supply for input)*1
- 4 — Black: 0 V (Power supply for control/input) (Power supply for input)*1
- 5 — Gray: Ground
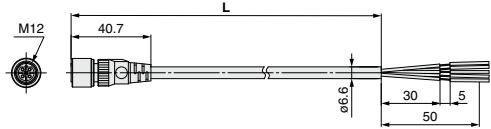
Connections

∗1 For DeviceNet®

For EtherNet/IP™

Straight connector type

❷⑥ EX500-AP 050 - S

Cable length (L)

010	1000 mm
050	5000 mm

Connector specification

| S | Straight |

Socket connector
pin arrangement
A-coded
(Normal key)

Made to Order

| Cable length | 10000 mm | p. 1539 |

Item	Specifications
Cable O.D.	ø6 mm
Conductor nominal cross section	0.3 mm²/AWG22
Wire O.D. (Including insulator)	1.5 mm
Min. bending radius (Fixed)	40 mm

Core wire color

Terminal no.
- 1 — Brown: 24 VDC +10%/−5% (Valve power supply)
- 2 — White: 0 V (Valve power supply)
- 3 — Blue: 24 VDC±10% (Power supply for control)
- 4 — Black: 0 V (Power supply for control)
- 5 — Gray: Not connected
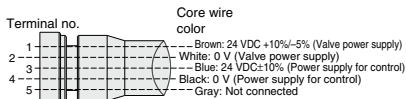
Connections

Accessory Between the Sensor/Switch and the Input Device

Field-wireable Connector

Specifications

Part no.			PCA-1557730	PCA-1557743	PCA-1557756
Product image/Pin assignment			㉛ M8 Plug	㉜ M12 SPEEDCON Plug	㉝ M12 SPEEDCON Plug
Number of functional poles			M8: 3 poles	M12: 4 poles	
Key type			—	A-coded (Normal key)	
Wiring *1	Applicable cable	Cable O.D.	3.0 to 5.0 mm	3.5 to 6.0 mm	4.0 to 8.0 mm
		Wire gauge (Stranded wire cross section)	0.14 to 0.25 mm²/AWG26 to 24 0.25 to 0.34 mm²/AWG24 to 22	0.14 to 0.34 mm²/AWG26 to 22	0.34 to 0.75 mm²/AWG22 to 18
		Core wire diameter (Including insulating material)	1.0 to 1.6 mm	0.7 to 1.3 mm	1.3 to 2.5 mm
	Connection type		Piercecon® connection	QUICKON-ONE connection	
Rating/Performance	Rated current		4 A		
	Rated voltage		60 V	250 V	
	Contact resistance		5 mΩ or less		
	Insulation resistance		100 MΩ or more		
	Withstand voltage		1.0 kV	1.4 kV	
	Ambient temperature		−40 to +85°C	−25 to +80°C	
	Protection class		IP67 (Only with screw tightened)		
	Allowable repeated insertion/withdrawal		100	200	
	Allowable number of repeated connection between conductors of the same cross section		10		
Material	Material of knurl		Brass (Nickel plating)	Zinc die-cast (Nickel plating)	
	Contact (Surface treatment)		CuZn (Au plating (Ni underplating))		
	Connector material		PA66 (UL94 V0)		
Weight			Approx. 14 g	Approx. 13 g	Approx. 15 g

*1 The shaded sections show the specifications for the applicable cable. Adaptation for the connector may vary on account of the conductor construction of the electric wire.
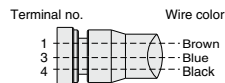
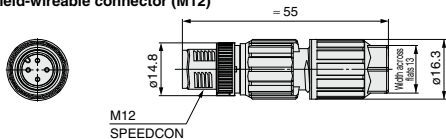## Field-wireable

㉛ PCA-1557730
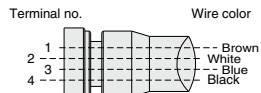**Field-wireable connector (M8)**
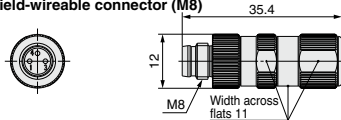
Plug connector pin assignment

Wiring

Terminal no.	Wire color
1	Brown
3	Blue
4	Black

㉜ PCA-1557743
Field-wireable connector (M12)

Plug connector pin assignment A-coded (Normal key)

Wiring

Terminal no.	Wire color
2 1	Brown White
4 3	Blue Black

㉝ PCA-1557756
Field-wireable connector (M12)
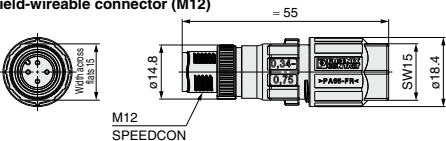
Plug connector pin assignment A-coded (Normal key)

Wiring

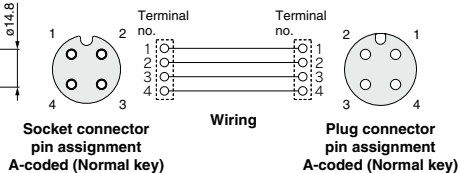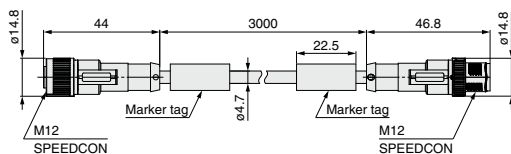| Terminal no.	Wire color
2 1	Brown White
4 3	Blue Black

SMC

Accessory Between the Sensor/Switch and the Input Device
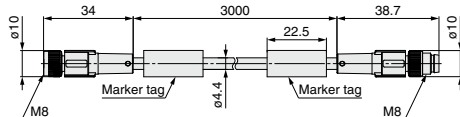
Cable with Connector

Specifications

Part no.	PCA-1557769		PCA-1557772
Product image	㉞ M12 [SPEEDCON]		㉟ M8
Number of functional poles	M12: 4 poles		M8: 3 poles
Key type	A-coded (Normal key)		—
Wiring — Fixed cable length	3 m		
Cable O.D.	4.7 mm		4.4 mm
Conductor nominal cross section	0.34 mm²/AWG22		0.25 mm²/AWG24
Min. bending radius (Fixed)	47 mm		44 mm
Rating/Performance — Rated current	4 A		
Rated voltage	250 V		60 V
Contact resistance	5 mΩ or less		
Insulation resistance	100 MΩ or more		
Withstand voltage	1.4 kV		1.0 kV
Ambient temperature — Connector	−25 to +90°C		
Ambient temperature — Cable	−40 to +80°C		
Protection class	IP67 (Only with screw tightened)		
Allowable repeated insertion/withdrawal	200		
Material — Material of knurl	Zinc die-cast (Nickel plating)		
Contact (Surface treatment)	CuSn (Au plating (Ni underplating))		
Connector material	TPU (UL94 HB)		
Material of sheath (Sheath color)	PUR (Black-Gray (RAL 7021 equivalent))		
Weight	Approx. 111 g		Approx. 80 g

Cable with Connector

㉞ PCA-1557769
Cable with M12 connector (4 poles)

Socket connector pin assignment
A-coded (Normal key)

Wiring

Plug connector pin assignment
A-coded (Normal key)

㉟ PCA-1557772
Cable with M8 connector (3 poles)

Socket connector pin assignment

Wiring

Plug connector pin assignment
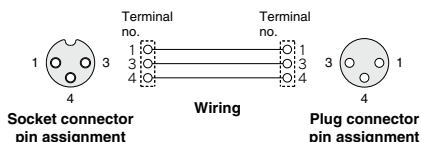
Accessory Between the Sensor/Switch and the Input Device

Y Connector

Specifications

Part no.	PCA-1557785		PCA-1557798	
Product image	❸❻ M12 → M12 [SPEEDCON] M12		❸❼ M8 → M12 [SPEEDCON] M8	
Number of functional poles	2 x M12: 5 poles – M12: 5 poles		2 x M8: 3 poles – M12: 4 poles	
Key type	A-coded (Normal key)			
Rating/Performance Rated current	4 A			
Rated voltage	60 V			
Contact resistance	5 mΩ or less			
Insulation resistance	100 MΩ or more			
Withstand voltage	1.0 kV			
Ambient temperature	–25 to +90°C			
Protection class	IP67 (Only with screw tightened)			
Allowable repeated insertion/withdrawal	200			
Material Material of knurl	Zinc die-cast (Nickel plating)			
Contact (Surface treatment)	CuZn (Au plating (Ni underplating))			
Connector material	TPU (UL94 HB)			
Weight	Approx. 29 g		Approx. 13 g	

Y Connector

❸❻ PCA-1557785
Y connector
(2 x M12-M12)
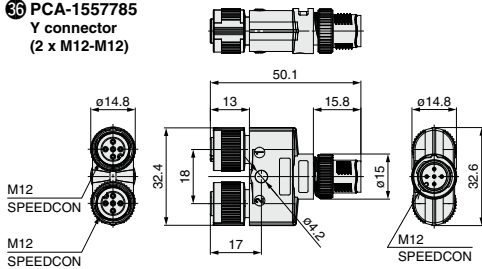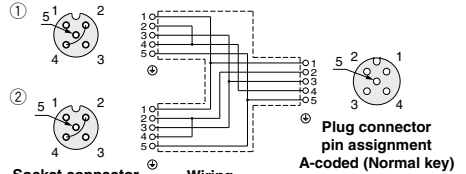
ø14.8

M12 SPEEDCON
M12 SPEEDCON

50.1
13
15.8
32.4
18
ø15
ø4.2
17
ø14.8
32.6
M12 SPEEDCON

Socket connector pin assignment A-coded (Normal key)

① 5 1 2 / 4 3
② 5 1 2 / 4 3

Socket connector pin assignment A-coded (Normal key)

Wiring

Plug connector pin assignment A-coded (Normal key)
2 1 / 3 4

❸❼ PCA-1557798
Y connector
(2 x M8-M12)

ø9.9

M8
M8

40.7
8.3
15.8
21.8
12
ø13
ø14.8
21.7
M12 SPEEDCON

Socket connector pin assignment

① 1 3 / 4
② 1 3 / 4

Socket connector pin assignment

Wiring

Plug connector pin assignment A-coded (Normal key)
2 1 / 3 4

⊘SMC
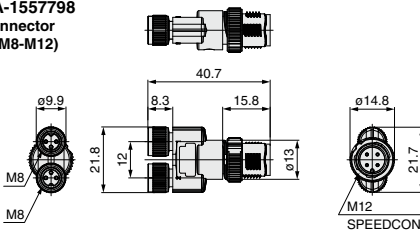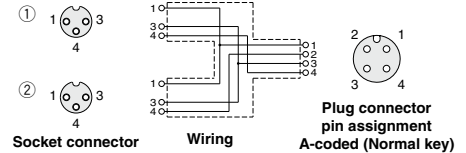
EX9/EX500 Series
Other Accessories

Ⓐ Power Cable with Connector (For power block)

Straight connector type

EX9-AC 050 -1

● Cable length (L)

010	1000 mm
030	3000 mm
050	5000 mm

Socket connector
pin arrangement
B-coded
(Reverse key)

M12   40.7   L

ø6.6   30   5   50

Item	Specifications
Cable O.D.	ø6.6 mm
Conductor nominal cross section	0.3 mm^2/AWG22
Wire O.D. (Including insulator)	1.65 mm
Min. bending radius (Fixed)	40 mm

Made to Order

Cable length	10000 mm	**p. 1539**

Terminal no.   Core wire color

- 1 — Brown: 24 VDC +10%/–5% (Valve power supply)
- 2 — White: 0 V (Valve power supply)
- 3 — Blue: (24 VDC±10% (For control))
- 4 — Black: (0 V (For control))
- 5 — Gray: Ground
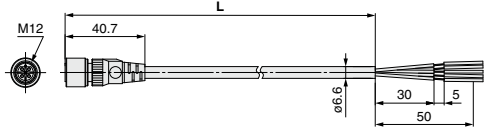
Connections

Ⓑ Cable with M12 Connector

EX500-AC 030 - SSPS

● Cable length (L)

003	300 mm
005	500 mm
010	1000 mm
030	3000 mm
050	5000 mm
100	10000 mm

● Connector specification

SSPS	Socket side: Straight, Plug side: Straight
SAPA	Socket side: Angle, Plug side: Angle

Straight connector type

ø14.9   L   ø14.9
40.7   ø6   44.7
M12   M12

A-coded

Socket pin arrangement

Terminal no.   Core wire color

1	1 White
2	2 Brown
3	3 Green
4	4 Yellow
5	5 Gray
6	6 Pink
7	7 Blue
8	8 Shield
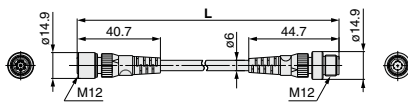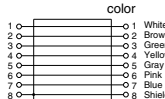
Connections

A-coded

Plug pin arrangement

Angle connector type

M12   M12
28.3   ø6   32.3
25.3   L   25.3

A-coded

Socket pin arrangement

Terminal no.   Core wire color

1	1 White
2	2 Brown
3	3 Green
4	4 Yellow
5	5 Gray
6	6 Pink
7	7 Blue
8	8 Shield
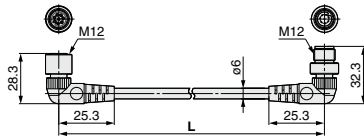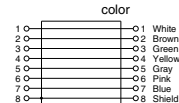
Connections

A-coded

Plug pin arrangement

Item	Specifications
Cable O.D.	ø6 mm
Conductor nominal cross section	0.25 mm^2
Wire O.D. (Including insulator)	1.27 mm
Min. bending radius (Fixed)	40 mm

Other Accessories

C Terminal Plug

This is used in place of an input unit manifold (input unit/input block).
(If a terminal plug is not used, the GW unit's COM LED will not light up.)
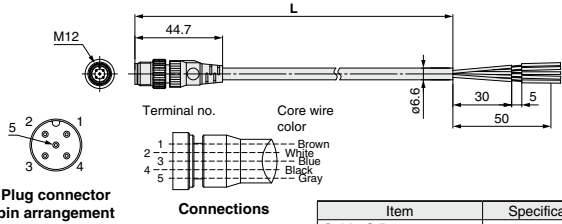
EX500-AC000-S

Plug connector pin arrangement
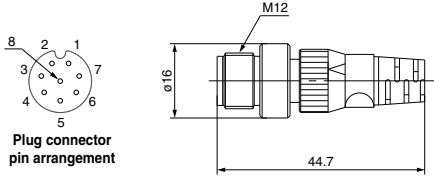
D Cable with Connector for Output Entry

Connects the output block to the output device

Straight connector type

EX9-AC 030 -7

Cable length (L)

010	1000 mm
030	3000 mm

Plug connector pin arrangement

Connections

Terminal no. — Core wire color
1 — Brown
2 — White
3 — Blue
4 — Black
5 — Gray

Item	Specifications
Cable O.D.	ø6.6 mm
Conductor nominal cross section	0.3 mm^2/AWG22
Wire O.D. (Including insulator)	1.65 mm
Min. bending radius (Fixed)	40 mm

E Seal Cap: M12 Connector (For plug)

Use this on ports that are not being used for an M12 connector (plug).
Use of this seal cap maintains the integrity of the enclosure.
∗ Tighten the seal caps with the prescribed tightening torque. (For M12: 0.1 N·m)

EX500-AWTP
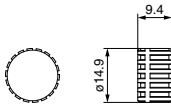
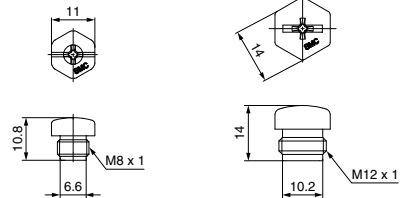## E Seal Cap: M8, M12 Connector (For socket)

Use this on ports that are not being used for an M8 or M12 connector (socket). Use of this seal cap maintains the integrity of the enclosure.
(Seal caps are packed together with each unit.)
∗ Tighten the seal caps with the prescribed tightening torque. (For M8: 0.05 N·m, For M12: 0.1 N·m)

EX9-AW ES

Connector type

ES	M8 connector (For socket), 10 pcs.
TS	M12 connector (For socket), 10 pcs.

For M8 connector socket   **For M12 connector socket**

SMC

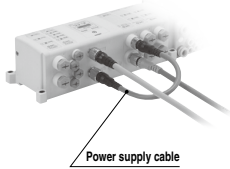## ⑤ Power Supply Cable (For connecting the SI unit to the power block)

Connects between the power supply connector for the power block and the SI unit power supply connector, bridging the external power supply, which is supplied with the power block, to the SI unit.
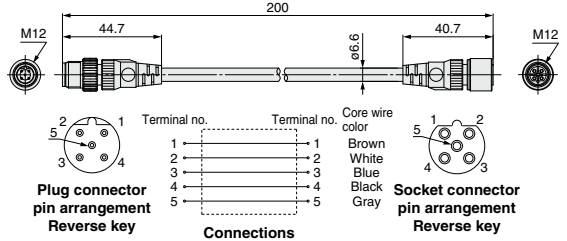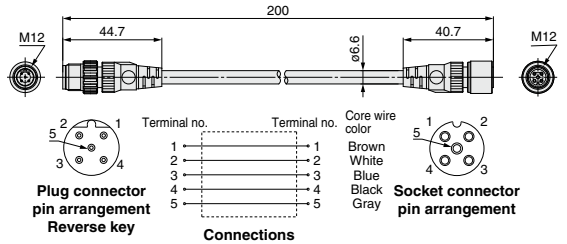
Straight connector type

EX9-AC002-[2]

SI unit type

2	EX250-SDN1 EX250-SMJ2 EX250-SCA1A	} Compliant
3	EX250-SPR1 EX250-SEN1	} Compliant
4	EX250-SAS3/5 Compliant	
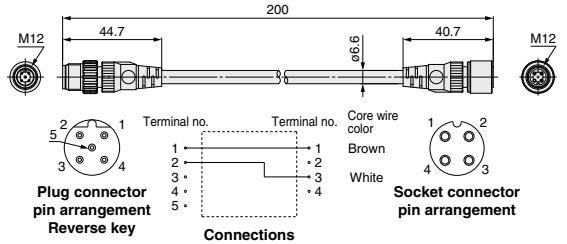
EX9-AC002-2

Plug connector pin arrangement Reverse key

Connections

Socket connector pin arrangement Reverse key

Core wire color: Brown, White, Blue, Black, Gray

EX9-AC002-3

Plug connector pin arrangement Reverse key

Connections

Socket connector pin arrangement

Core wire color: Brown, White, Blue, Black, Gray

EX9-AC002-4

Plug connector pin arrangement Reverse key

Connections

Socket connector pin arrangement

Core wire color: Brown, White

Item	Specifications
Cable O.D.	ø6.6 mm
Conductor nominal cross section	0.3 mm²/AWG22
Wire O.D. (Including insulator)	1.65 mm
Min. bending radius (Fixed)	40 mm

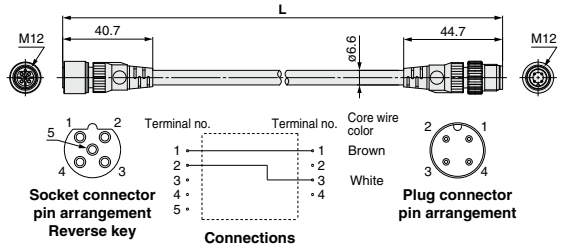## ⑥ AS-Interface Power Supply Cable

Cable connecting between AS-Interface power supply line (for external devices) branch connector (M12) and the power block's power supply input connector.

Straight connector type

EX9-AC[010]-5

Cable length (L)

010	1000 mm
030	3000 mm
050	5000 mm

Socket connector pin arrangement Reverse key

Connections

Plug connector pin arrangement

Core wire color: Brown, White

Item	Specifications
Cable O.D.	ø6.6 mm
Conductor nominal cross section	0.3 mm²/AWG22
Wire O.D. (Including insulator)	1.65 mm
Min. bending radius (Fixed)	40 mm

Made to Order

Communication Cable

With connector on one side (Socket)
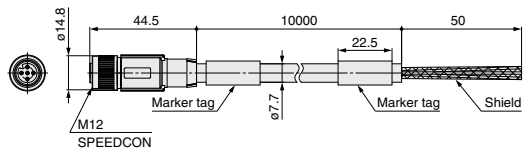**Cable length: 10000 mm**

| For CC-Link | For DeviceNet® |

EX9-AC100 MJ -X12

● **Applicable protocol**

MJ	CC-Link
DN	DeviceNet®

Dimensions

For CC-Link

ø14.8 44.5 10000 50 22.5 ø7.7

Marker tag   Marker tag   Shield

M12
SPEEDCON

2 *1
1   3
4

**Socket connector
pin arrangement
A-coded (Normal key)**

Connections

Terminal no.	Core wire color: Signal name (CC-Link)
1	Shield: SLD
2	White: DB
3	Yellow: DG
4	Blue: DA

*1 Number of holes: 5, Total number of pins: 4

Item		Specifications
Cable O.D.		ø7.7 mm
Conductor nominal cross section	Data pair	0.5 mm²/AWG20
	Drain	0.34 mm²/AWG22
Wire O.D. (Including insulator)		2.55 mm
Min. bending radius (Fixed)		77 mm

For DeviceNet®
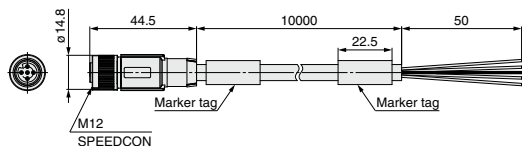
ø14.8 44.5 10000 50 22.5

Marker tag   Marker tag

M12
SPEEDCON

2
5   3
1
4

**Socket connector
pin arrangement
A-coded (Normal key)**

Connections

Terminal no.	Core wire color: Signal name (DeviceNet®)
1	Shield: DRAIN
2	Red: V+
3	Black: V−
4	White: CAN H
5	Blue: CAN L

Item		Specifications
Cable O.D.		ø6.7 mm
Conductor nominal cross section	Power pair	0.34 mm²/AWG22
	Data pair	0.25 mm²/AWG24
Wire O.D. (Including insulator)	Power pair	1.4 mm
	Data pair	2.05 mm
Min. bending radius (Fixed)		67 mm

⬡SMC

Power Supply Cable

① **With connector on one side (Socket)**
Cable length: 10000 mm

For EX250/EX260/EX500

EX500-AP100-[S]-X1

● **Connector specification**
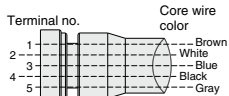
S	Straight
A	Angle

Straight connector type

Socket connector
pin arrangement
A-coded
(Normal key)

Item	Specifications
Cable O.D.	ø6 mm
Conductor nominal cross section	0.3 mm²/AWG22
Wire O.D. (Including insulator)	1.5 mm
Min. bending radius (Fixed)	40 mm

Terminal no. / Core wire color

1 — Brown
2 — White
3 — Blue
4 — Black
5 — Gray

Connections

Angle connector type

Socket connector
pin arrangement
A-coded
(Normal key)

Item	Specifications
Cable O.D.	ø6 mm
Conductor nominal cross section	0.3 mm²/AWG22
Wire O.D. (Including insulator)	1.5 mm
Min. bending radius (Fixed)	40 mm

Terminal no. / Core wire color

1 — Brown
2 — White
3 — Blue
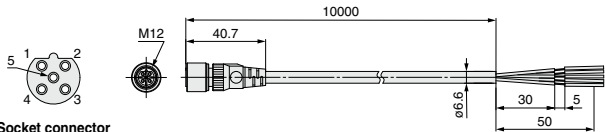4 — Black
5 — Gray
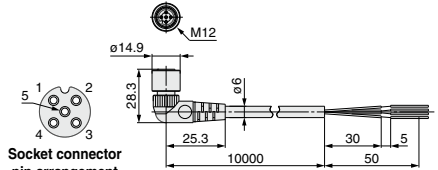
Connections

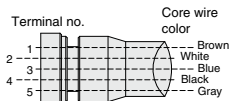### ② **With connector on one side (Socket)**
Cable length: 10000 mm

For EX250/EX260/EX9

Straight connector type

EX9-AC100-1-X16

Socket connector
pin arrangement
B-coded
(Reverse key)

Terminal no. / Core wire color

1 — Brown
2 — White
3 — Blue
4 — Black
5 — Gray

Connections

Item	Specifications
Cable O.D.	ø6.6 mm
Conductor nominal cross section	0.3 mm²/AWG22
Wire O.D. (Including insulator)	1.65 mm
Min. bending radius (Fixed)	40 mm

SMC

1539

Be sure to read this before handling the products. Refer to page 7 for safety instructions and pages 15 to 17 for fieldbus system precautions.

Explanation of Terms

SPEEDCON
There are two types of cable with M12 connector: SPEEDCON compatible and non-compatible. If both plug and socket sides have connectors for SPEEDCON, the cable can be inserted and connected by rotating it 180°, leading to a reduction in labor hours. A non-compatible connector can be connected to a compatible connector as well as an M12.

Marker tag
By inserting the marked insertion label into the tag, the cable can be identified. For details of the insertion label, please make an inquiry to PHOENIX CONTACT.

· Part no.: 1013779 (PABA WH/23)

Example of use of an insertion label

Insertion label

∗ If an insertion label is not to be used, the marker tag can be removed before use.

Wiring

⚠ Caution

1. Do not lay the wires while they are energized. Doing so may give you an electric shock.
2. It should be cabled according to the connection diagram.
3. Check if it can be connected when using a sensor or switch.
4. When the cable sheath is stripped, confirm the stripping direction.
   (For SMC switches with oblong cables)
   The insulator may be split or damaged depending on the direction.
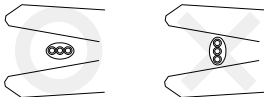
Tightening of Screw

⚠ Caution

1. The enclosure (IP65/67) cannot be maintained and the screws may become loose if they are not tightened sufficiently.
2. Check that they are tightened enough at appropriate intervals during operation.

Connection and Disconnection of Connector

⚠ Caution

1. Be sure to turn the power off when connecting and disconnecting the connectors.
2. Do not touch the engagement surface with wet hands.
3. Do not pull the cable out by holding the cable.
4. Note the key direction.
   Especially for the SPEEDCON specification, match the protrusion of the knurl (bracket) and the mark at the mold for insertion so that the SPEEDCON function can be maintained.
5. When engaging the connectors, insert the connectors until the entire engagement surface is no longer visible and tighten the screws so as not to damage the thread ridges.

Handling of Cable with Connector

⚠ Caution

1. Avoid repeatedly bending or stretching the cable and applying heavy objects or force to it.
2. Set up the cables in a place where they will not be stepped on in order to prevent them from being broken and to prevent damage to the connectors.
   Install a protective cover when deemed necessary.
3. Do not pull the connector or cable unnecessarily. It may damage the connectors or break the cables.
4. Do not bend the cable at the root of the connector when installed.

Handling of Field-wireable Connector

⚠ Caution

Common Precautions

1. Follow the "Assembly Procedure" provided by SMC. If it is not followed correctly, it may not maintain IP65/67.
2. Do not use it for any purpose other than its original purpose.
3. This connector may only be operated when under no load.
4. Working with wet hands may lead to an electric shock.
5. Never attempt to repair the product yourself.

Spring-cage Connection

1. Do not use it for any purpose other than its original purpose.
2. This connector may only be operated when under no load.
3. Working with wet hands may lead to an electric shock.
4. Never attempt to repair the product yourself.

SMC

Handling of Field-wireable Connector

⚠️Caution

QUICKON-ONE Connection

1. **Connection between cables** (with the same material and the same cross section) **is 10 times at max.**
2. **PVC or PE is suitable for sheath material, however fluoro resin is not suitable for sheath material.**
3. **Only for flexible cable, not for solid cable.**
4. **When you remove the cable, pull the cable. However, if you remove the cable gland, cable and the splice ring remain to the body.**
   When you connect the cable again, screw the splice ring approx. two turns into the cable gland before using.
5. **When you connect the cable again, cut and strip the cable.**

Piercecon® Connection

1. **Connection between cables** (with the same material and the same cross section) **is 10 times at max.**
2. **Only for flexible cable, not for solid cable.**
3. **If you connect the cable again, cut and strip the cable.**

Operating Environment

⚠️Caution

1. **Do not use in the atmosphere and environment over the rated specifications.**
2. **Do not use in the environment of corrosive gas or liquid splash.**
3. **Do not use in an environment where oil and chemicals are used.**

Maintenance

⚠️Caution

1. **Perform periodic inspection.**