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Axioline E PROFINET device in a metal housing with 8 IO-Link ports and 4 digital inputs, 24 V DC, M12 fast connection technology

#### **Product Description**

The Axioline E device is designed for use within a PROFINET network.

It enables the operation of up to eight IO-Link sensors/actuators and is also used to acquire digital signals.

The device is designed for use in systems manufacturing.

It is suitable for use without a control cabinet under harsh industrial conditions.

The Axioline E device can be used on tool platforms, directly on welding robots or in conveying technology, for example.

#### Why buy this product

- ☑ Connection of four IO-Link devices with additional digital input
- ☑ Connection of four IO-Link actuators with additional power supply
- Connection of IO-Link ports using M12connectors (A-coded, 5-pos.)
- ☑ Diagnostic and status indicators
- Short-circuit and overload protection of the sensor supply
- ☑ IP65/IP67 degree of protection



## **Key Commercial Data**

Packing unit	1 STK
GTIN	4 046356 763691
GTIN	4046356763691
Weight per Piece (excluding packing)	700.000 g
Custom tariff number	85176200
Country of origin	Germany



## Technical data

## Note

Utilization restriction	EMC: class A product, see manufacturer's declaration in the download area
	4.04

## **Dimensions**

Width	60 mm	
Height	185 mm	
Depth	38 mm	
Note on dimensions	The height is 194.5 mm including the mounting plate. With fixing clips pulled out, the height is 212 mm. The depth is 38 mm including the mounting plate (30.5 mm without the mounting plate).	
Drill hole spacing	198.5 mm	

## Ambient conditions

Ambient temperature (operation)	-25 °C 60 °C	
Ambient temperature (storage/transport)	-25 °C 85 °C	
Permissible humidity (operation)	5 % 95 %	
Permissible humidity (storage/transport)	5 % 95 %	
Air pressure (operation)	70 kPa 106 kPa (up to 3000 m above sea level)	
Air pressure (storage/transport)	70 kPa 106 kPa (up to 3000 m above sea level)	
Degree of protection	IP65/IP67	

## General

Housing material	Zinc die-cast	
Mounting type	Wall mounting or DIN rail mounting; both with mounting plate.	
Net weight	708.7 g	

#### Interfaces

Fieldbus system	PROFINET
Designation	PROFINET
Connection method	M12 fast connection technology
Note on connection method	D-coded
Designation connection point	Copper cable
Transmission speed	100 Mbps (with auto negotiation)
Number of positions	4

## System limits of the bus coupler

Designation	PROFINET
Equipment type	PROFINET Device
Conformance class	В
Number of supported application relationships (AR)	2



# Technical data

# System limits of the bus coupler

System-specific protocols	PROFINET protocols LLDP
	PROFINET protocols MRP client
	PROFINET protocols DCP
	PROFINET protocols DCE-RPC
Protocols supported	SNMP v1
	НТТР
	TFTP
	FTP

## Power supply for module electronics

Connection method	M12 connector
Designation	Module electronics and sensors (U <sub>S</sub> )
Connection method	M12 connector (T-coded)
Number of positions	4
Supply voltage	24 V DC
Nominal supply voltage range	18 V DC 31.2 V DC (including all tolerances, including ripple)
Current consumption	max. 12 A
Typical current consumption	180 mA ±15 % (at 24 V DC)
Designation	Actuators (U <sub>A</sub> )
Connection method	M12 connector (T-coded)
Number of positions	4
Supply voltage	24 V DC
Nominal supply voltage range	18 V DC 31.2 V DC (including all tolerances, including ripple)
Current consumption	max. 12 A
Typical current consumption	28 mA ±15 % (at 24 V DC)

# Digital inputs

Description of the input	IO-Link ports in digital input (DI) mode	
Connection method	M12 connector, X01 X04 have double occupancy	
Connection technology	3-conductor	
Nominal input voltage U <sub>IN</sub>	24 V DC	
Input voltage range "0" signal	-0.3 V DC 5 V DC	
Input voltage range "1" signal	15 V DC 30 V DC	
Nominal input current	typ. 3 mA	
Sensor current per channel	max. 200 mA (from L+/L-)	
Total sensor current	max. 1.6 A (from L+/L-)	
Input filter time	< 1000 μs	
Input frequency	0.5 kHz	



# Technical data

# Digital inputs

Protective circuit	Overload protection Electronic
Short-circuit protection for the sensor supply Electronic	

## Digital outputs

IO-Link ports in digital output (DO) mode		
M12 connector, X01 X04 have double oc	cupancy	
3-conductor		
max. 8		
24 V DC		
150 mA		
1.2 A		
3.6 W (160 Ω, at nominal load)		
3.6 VA (0.8 H, 160 Ω, at nominal load)		
max. 150 μs (when switched on)		
max. 200 μs (when switched off)		
1 per second, maximum (at nominal inducti	e load)	
interruption -15 V DC		
max. 1 V	max. 1 V	
max. 300 μA	max. 300 μA	
Overload protection		
Short-circuit protection Electronic		
Shutdown with automatic restart		
interruption  -15 V DC  max. 1 V  max. 300 µA  Overload protection  Short-circuit protection Electronic	e load)	

## Electrical isolation

Test section	24 V supply (communications power and sensor supply, IO-Link ports)/bus connection (Ethernet 1) 500 V AC 50 Hz 1 min.
	24 V supply (communications power and sensor supply, IO-Link ports)/bus connection (Ethernet 2) 500 V AC 50 Hz 1 min.
	24 V supply (communications power and sensor supply, IO-Link ports)/FE 500 V AC 50 Hz 1 min.
	Bus connection (Ethernet 1)/FE 500 V AC 50 Hz 1 min.
	Bus connection (Ethernet 2)/FE 500 V AC 50 Hz 1 min.
	Bus connection (Ethernet 1)/bus connection (Ethernet 2) 500 V AC 50 Hz 1 min.
	24 V supply (actuator supply)/24 V supply (communications power and sensor supply, IO-Link ports) 500 V AC 50 Hz 1 min.
	24 V supply (actuator supply)/bus connection (Ethernet 1) 500 V AC 50 Hz 1 min.
	24 V supply (actuator supply)/bus connection (Ethernet 2) 500 V AC 50 Hz 1 min.
	24 V supply (actuator supply)/FE 500 V AC 50 Hz 1 min.



## Technical data

## Standards and Regulations

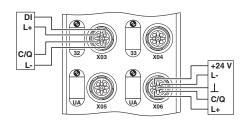
Mechanical tests	Vibration resistance in acc. with EN 60068-2-6/IEC 60068-2-6 5g
	Shock in acc. with EN 60068-2-27/IEC 60068-2-27 30g, 11 ms period, half-sine shock pulse
	Continuous shock according to EN 60068-2-27/IEC 60068-2-27 10g
Protection class	III, IEC 61140, EN 61140, VDE 0140-1

## **Environmental Product Compliance**

China RoHS	Environmentally Friendly Use Period = 50
	For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration"

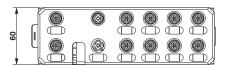
## Drawings

## Connection diagram

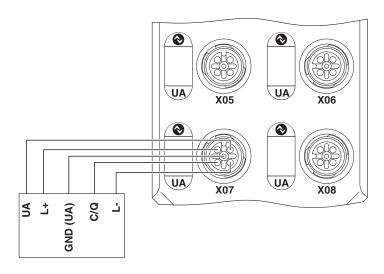


## Dimensional drawing





## Connection diagram





# Classifications

## eCl@ss

eCl@ss 4.0	27240404
eCl@ss 4.1	27240404
eCl@ss 5.0	27242204
eCl@ss 5.1	27242604
eCl@ss 6.0	27242604
eCl@ss 7.0	27242604
eCl@ss 8.0	27242604
eCl@ss 9.0	27242604

## **ETIM**

ETIM 2.0	EC001433
ETIM 3.0	EC001599
ETIM 4.0	EC001599
ETIM 5.0	EC001599
ETIM 6.0	EC001599

## UNSPSC

UNSPSC 6.01	43172015
UNSPSC 7.0901	43201404
UNSPSC 11	39121311
UNSPSC 12.01	39121311
UNSPSC 13.2	32151602

# Approvals

## Approvals

Approvals

UL Listed / cUL Listed / PROFINET / cULus Listed

Ex Approvals

UL Listed / cUL Listed / cULus Listed

## Approval details



## Approvals

UL Listed http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm FILE E 140324

cUL Listed http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm FILE E 140324

PROFINET Z10677

cULus Listed

## Accessories

Accessories

Assembly element

Mounting plate - AXL E MP 60 - 2701761



Mounting plate for Axioline E metal devices

Circular connector (cable-side)

Bus system connector - SACC-M12MSD-4CON-PG 9-SH - 1521261



Bus system connector, Ethernet/PROFINET CAT5 (100 Mbps), 4-position, shielded, Plug straight M12, D-coded, Screw connection, Knurl material: Zinc die-cast, nickel-plated, Cable gland Pg9, External cable diameter 6 mm ... 8 mm

Data cable preassembled



#### Accessories

Network cable - NBC-MSD SCO-PN/.../... - 1408640



Network cable, PROFINET CAT5 (100 Mbps), 4-position, Variable cable type, shielded, Plug straight M12 SPEEDCON / IP67, Coding: D, on free cable end, Cable length: Free input (0.2 ... 40.0 m)

Network cable - NBC-MSD-FSD SCO-PN/.../... - 1408617



Network cable, PROFINET CAT5 (100 Mbps), 4-position, Variable cable type, shielded, Plug straight M12 SPEEDCON / IP67, Coding: D, on Socket straight M12 SPEEDCON / IP67, Coding: D, Cable length: Free input (0.2 ... 40.0 m)

Network cable - NBC-MSD-MSD SCO-PN/.../... - 1408634



Network cable, PROFINET CAT5 (100 Mbps), 4-position, Variable cable type, shielded, Plug straight M12 SPEEDCON / IP67, Coding: D, on Plug straight M12 SPEEDCON / IP67, Coding: D, Cable length: Free input (0.2 ... 40.0 m)

Network cable - NBC-MSD-R4AC SCO-PN/.../... - 1408639



Network cable, PROFINET CAT5 (100 Mbps), 4-position, Variable cable type, shielded, Plug straight M12 SPEEDCON / IP67, Coding: D, on Plug straight RJ45 / IP20, Cable length: Free input (0.2 ... 40.0 m)

#### Device marking

Snap-in markers - UCT-EM (7X10) - 0830765



Snap-in markers, Sheet, white, unlabeled, can be labeled with: THERMOMARK PRIME, THERMOMARK CARD, BLUEMARK CLED, BLUEMARK LED, TOPMARK LASER, Mounting type: snapped into marker carrier, Lettering field: 7 x 10 mm



#### Accessories

Interface converter

Distributed I/O device - AXL E IOL AI1 U M12 R - 2700273



Axioline E-IO-Link/analog converter for connecting an analog sensor, 0 V ... 10 V, M12 fast connection technology, angled version

Distributed I/O device - AXL E IOL AI1 I M12 R - 2700275



Axioline E-IO-Link/analog converter for connecting an analog sensor, 4 mA ... 20 mA, M12 fast connection technology, angled version

Distributed I/O device - AXL E IOL AO1 U M12 R - 2700278



Axioline E-IO-Link/analog converter for connecting an analog actuator, 0 V ... 10 V, M12 fast connection technology, angled version

Distributed I/O device - AXL E IOL AO1 I M12 R - 2700282



Axioline E-IO-Link/analog converter for connecting an analog actuator, 4 mA ... 20 mA, M12 fast connection technology, angled version

Distributed I/O device - AXL E IOL RTD1 M12 R - 2700305



Axioline E-IO-Link/analog converter for connecting a temperature measurement resistor, M12 fast connection technology, angled version



#### Accessories

Distributed I/O device - AXL E IOL AI1 U M12 S - 2700336



Axioline E-IO-Link/analog converter for connecting an analog sensor, 0 V ... 10 V, M12 fast connection technology, straight version

Distributed I/O device - AXL E IOL AI1 I M12 S - 2700338



Axioline E-IO-Link/analog converter for connecting an analog sensor, 4 mA ... 20 mA, M12 fast connection technology, straight version

Distributed I/O device - AXL E IOL AO1 U M12 S - 2700350



Axioline E IO-Link/analog converter for connecting an analog actuator, 0 V ... 10 V, M12 fast connection technology, straight version

Distributed I/O device - AXL E IOL AO1 I M12 S - 2700351



Axioline E-IO-Link/analog converter for connecting an analog actuator, 4 mA ... 20 mA, M12 fast connection technology, straight version

Distributed I/O device - AXL E IOL RTD1 M12 S - 2700352



Axioline E-IO-Link/analog converter for connecting a temperature measurement resistor, M12 fast connection technology, straight version

Power cable



#### Accessories

Power cable - SAC-4P-FRT/ 1,5-PUR SH SCO - 1424116



Power cable, 4-position, PUR halogen-free, black RAL 9005, shielded, free cable end, on Socket angled M12 SPEEDCON, T-coded, Cable length: 1.5 m

Power cable - SAC-4P-MST/ 1,5-PUR SH SCO - 1424120



Power cable, 4-position, PUR halogen-free, black RAL 9005, shielded, Plug straight M12 SPEEDCON, T-coded, on free cable end, Cable length: 1.5 m

Power cable - SAC-4P-MST/ 1,0-PUR SCO - 1408812



Power cable, 4-position, PUR halogen-free, black-gray RAL 7021, Plug straight M12 SPEEDCON, T-coded, on free cable end, Cable length: 1 m

Power cable - SAC-4P-MST/ 2,0-PUR SCO - 1408813



Power cable, 4-position, PUR halogen-free, black-gray RAL 7021, Plug straight M12 SPEEDCON, T-coded, on free cable end, Cable length: 2 m

Power cable - SAC-4P-MST/ 5,0-PUR SCO - 1408814



Power cable, 4-position, PUR halogen-free, black-gray RAL 7021, Plug straight M12 SPEEDCON, T-coded, on free cable end, Cable length: 5 m



#### Accessories

Power cable - SAC-4P-MST/10,0-PUR SCO - 1408815



Power cable, 4-position, PUR halogen-free, black-gray RAL 7021, Plug straight M12 SPEEDCON, T-coded, on free cable end, Cable length: 10 m

Power cable - SAC-4P-MRT/ 1,0-PUR SCO - 1408816



Power cable, 4-position, PUR halogen-free, black-gray RAL 7021, Plug angled M12 SPEEDCON, T-coded, on free cable end, Cable length: 1 m

Power cable - SAC-4P-MRT/ 2,0-PUR SCO - 1408819



Power cable, 4-position, PUR halogen-free, black-gray RAL 7021, Plug angled M12 SPEEDCON, T-coded, on free cable end, Cable length: 2 m

Power cable - SAC-4P-MRT/ 5,0-PUR SCO - 1408820



Power cable, 4-position, PUR halogen-free, black-gray RAL 7021, Plug angled M12 SPEEDCON, T-coded, on free cable end, Cable length: 5 m

Power cable - SAC-4P-MRT/10,0-PUR SCO - 1408822



Power cable, 4-position, PUR halogen-free, black-gray RAL 7021, Plug angled M12 SPEEDCON, T-coded, on free cable end, Cable length: 10 m



#### Accessories

Power cable - SAC-4P- 1,0-PUR/FST SCO - 1408823



Power cable, 4-position, PUR halogen-free, black-gray RAL 7021, free cable end, on Socket straight M12 SPEEDCON, T-coded, Cable length: 1 m

Power cable - SAC-4P- 2,0-PUR/FST SCO - 1408824



Power cable, 4-position, PUR halogen-free, black-gray RAL 7021, free cable end, on Socket straight M12 SPEEDCON, T-coded, Cable length: 2 m

Power cable - SAC-4P- 5,0-PUR/FST SCO - 1408825



Power cable, 4-position, PUR halogen-free, black-gray RAL 7021, free cable end, on Socket straight M12 SPEEDCON, T-coded, Cable length: 5 m

Power cable - SAC-4P-10,0-PUR/FST SCO - 1408826



Power cable, 4-position, PUR halogen-free, black-gray RAL 7021, free cable end, on Socket straight M12 SPEEDCON, T-coded, Cable length: 10 m

Power cable - SAC-4P- 1,0-PUR/FRT SCO - 1408827



Power cable, 4-position, PUR halogen-free, black-gray RAL 7021, free cable end, on Socket angled M12 SPEEDCON, T-coded, Cable length: 1 m



#### Accessories

Power cable - SAC-4P- 2,0-PUR/FRT SCO - 1408828



Power cable, 4-position, PUR halogen-free, black-gray RAL 7021, free cable end, on Socket angled M12 SPEEDCON, T-coded, Cable length: 2 m

Power cable - SAC-4P- 5,0-PUR/FRT SCO - 1408829



Power cable, 4-position, PUR halogen-free, black-gray RAL 7021, free cable end, on Socket angled M12 SPEEDCON, T-coded, Cable length: 5 m

Power cable - SAC-4P-10,0-PUR/FRT SCO - 1408830



Power cable, 4-position, PUR halogen-free, black-gray RAL 7021, free cable end, on Socket angled M12 SPEEDCON, T-coded, Cable length: 10 m

Power cable - SAC-4P-MST/ 0,3-PUR/FST SCO - 1408806



Power cable, 4-position, PUR halogen-free, black-gray RAL 7021, Plug straight M12 SPEEDCON, T-coded, on Socket straight M12 SPEEDCON, T-coded, Cable length: 0.3 m, for direct current up to 12 A/60 V

Power cable - SAC-4P-MST/ 0,6-PUR/FST SCO - 1408807



Power cable, 4-position, PUR halogen-free, black-gray RAL 7021, Plug straight M12 SPEEDCON, T-coded, on Socket straight M12 SPEEDCON, T-coded, Cable length: 0.6 m, for direct current up to 12 A/60 V



#### Accessories

Power cable - SAC-4P-MST/ 1,0-PUR/FST SCO - 1408808



Power cable, 4-position, PUR halogen-free, black-gray RAL 7021, Plug straight M12 SPEEDCON, T-coded, on Socket straight M12 SPEEDCON, T-coded, Cable length: 1 m

Power cable - SAC-4P-MST/ 2,0-PUR/FST SCO - 1408809



Power cable, 4-position, PUR halogen-free, black-gray RAL 7021, Plug straight M12 SPEEDCON, T-coded, on Socket straight M12 SPEEDCON, T-coded, Cable length: 2 m

Power cable - SAC-4P-MST/ 5,0-PUR/FST SCO - 1408810



Power cable, 4-position, PUR halogen-free, black-gray RAL 7021, Plug straight M12 SPEEDCON, T-coded, on Socket straight M12 SPEEDCON, T-coded, Cable length: 5 m

Power cable - SAC-4P-MST/10,0-PUR/FST SCO - 1408811



Power cable, 4-position, PUR halogen-free, black-gray RAL 7021, Plug straight M12 SPEEDCON, T-coded, on Socket straight M12 SPEEDCON, T-coded, Cable length: 10 m

#### Protective cap

Screw plug - PROT-M12 - 1680539



An M12 screw plug for the unoccupied M12 sockets of the sensor/actuator cable, boxes and flush-type connectors



#### Accessories

Sensor/actuator cable

Sensor/Actuator cable - SAC-3P-MS SCO/.../... - 1523515



Sensor/Actuator cable, 3-position, Variable cable type, Plug straight M12 SPEEDCON, A-coded, on free cable end, Cable length: Free input (0.2 ... 40.0 m)

Sensor/Actuator cable - SAC-3P-MR SCO/.../... - 1523531



Sensor/Actuator cable, 3-position, Variable cable type, Plug angled M12 SPEEDCON, A-coded, on free cable end, Cable length: Free input (0.2 ... 40.0 m)

Sensor/Actuator cable - SAC-3P-MS-FS SCO/.../... - 1523544



Sensor/Actuator cable, 3-position, Variable cable type, Plug straight M12 SPEEDCON, A-coded, on Socket straight M12 SPEEDCON, A-coded, Cable length: Free input (0.2 ... 40.0 m)

Sensor/Actuator cable - SAC-3P-MR-FS SCO/.../... - 1523557



Sensor/Actuator cable, 3-position, Variable cable type, Plug angled M12 SPEEDCON, A-coded, on Socket straight M12 SPEEDCON, A-coded, Cable length: Free input (0.2 ... 40.0 m)

Sensor/Actuator cable - SAC-3P-MR-FR SCO/.../... - 1542020



Sensor/Actuator cable, 3-position, Variable cable type, Plug angled M12 SPEEDCON, A-coded, on Socket angled M12 SPEEDCON, A-coded, Cable length: Free input (0.2 ... 40.0 m)



#### Accessories

Sensor/Actuator cable - SAC-4P-MS SCO/.../... - 1523560



Sensor/Actuator cable, 4-position, Variable cable type, Plug straight M12 SPEEDCON, A-coded, on free cable end, Cable length: Free input (0.2 ... 40.0 m)

Sensor/Actuator cable - SAC-4P-MR SCO/.../... - 1523573



Sensor/Actuator cable, 4-position, Variable cable type, Plug angled M12 SPEEDCON, A-coded, on free cable end, Cable length: Free input (0.2 ... 40.0 m)

Sensor/Actuator cable - SAC-4P-MS-FS SCO/.../... - 1523586



Sensor/Actuator cable, 4-position, Variable cable type, Plug straight M12 SPEEDCON, A-coded, on Socket straight M12 SPEEDCON, A-coded, Cable length: Free input (0.2 ... 40.0 m)

Sensor/Actuator cable - SAC-4P-MR-FS SCO/.../... - 1523599



Sensor/Actuator cable, 4-position, Variable cable type, Plug angled M12 SPEEDCON, A-coded, on Socket straight M12 SPEEDCON, A-coded, Cable length: Free input (0.2 ... 40.0 m)

Sensor/Actuator cable - SAC-4P-MR-FR SCO/.../... - 1537828



Sensor/Actuator cable, 4-position, Variable cable type, Plug angled M12 SPEEDCON, A-coded, on Socket angled M12 SPEEDCON, A-coded, Cable length: Free input (0.2 ... 40.0 m)



#### Accessories

Sensor/Actuator cable - SAC-5P-MS SCO/.../... - 1523609



Sensor/Actuator cable, 5-position, Variable cable type, Plug straight M12 SPEEDCON, A-coded, on free cable end, Cable length: Free input (0.2 ... 40.0 m)

Sensor/Actuator cable - SAC-5P-MR SCO/.../... - 1523612



Sensor/Actuator cable, 5-position, Variable cable type, Plug angled M12 SPEEDCON, A-coded, on free cable end, Cable length: Free input (0.2 ... 40.0 m)

Sensor/Actuator cable - SAC-5P-MS-FS SCO/.../... - 1523625



Sensor/Actuator cable, 5-position, Variable cable type, Plug straight M12 SPEEDCON, A-coded, on Socket straight M12 SPEEDCON, A-coded, Cable length: Free input (0.2 ... 40.0 m)

Sensor/Actuator cable - SAC-5P-MR-FS SCO/.../... - 1523638



Sensor/Actuator cable, 5-position, Variable cable type, Plug angled M12 SPEEDCON, A-coded, on Socket straight M12 SPEEDCON, A-coded, Cable length: Free input (0.2 ... 40.0 m)

Sensor/Actuator cable - SAC-5P-MR-FR SCO/.../... - 1542389



Sensor/Actuator cable, 5-position, Variable cable type, Plug angled M12 SPEEDCON, A-coded, on Socket angled M12 SPEEDCON, A-coded, Cable length: Free input (0.2 ... 40.0 m)

Y-distributor



#### Accessories

Y distributor - SAC-3P-Y/2XM 8FS SCO - 1523984



Y distributor, 4-position, Plug straight M12 SPEEDCON, A-coded, on Socket straight M8, A-coded and Socket straight M8, A-coded

Y distributor - SAC-3P-Y/2XFS PE SCO - 1523971



Y distributor, 4-position, Plug straight M12 SPEEDCON, A-coded, on Socket straight M12 SPEEDCON, A-coded and Socket straight M12 SPEEDCON, A-coded

Y distributor - SAC-3P-Y/2XFS B PE SCO - 1523968



Y distributor, 4-position, Plug straight M12 SPEEDCON, A-coded, on Socket straight M12 SPEEDCON, A-coded, PIN 2+4 bridged and Socket straight M12 SPEEDCON, A-coded, PIN 2+4 bridged

Y distributor - SAC-5P-Y/2XFS VP SCO - 1546068



Y distributor, 5-position, Plug straight M12 SPEEDCON, A-coded, on Socket straight M12 SPEEDCON, A-coded and Socket straight M12 SPEEDCON, A-coded, Parallel distributor

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