

## Bus coupler - AXL F BK S3 - 2701686

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Axioline F, Bus coupler, Sercos, RJ45 jack, transmission speed in the local bus: 100 Mbps, degree of protection: IP20, including bus base module and Axioline F connector

### Product Description

The bus coupler is intended for use within a third-generation Sercos® network. It is the link to the Axioline F I/O system.

Up to 63 Axioline F devices can be connected to the bus coupler.

A corresponding SDDML file is available for integrating the Axioline F station into the programming system.

It can be downloaded at: [phoenixcontact.net/product/2701686](http://phoenixcontact.net/product/2701686)

### Your advantages

- 2 RJ45 connections
- Rotary encoding switch
- Supports Sercos V1.3
- FSP-IO (Function Specific Profile-IO) for modular I/O devices
- 8 connections
- Firmware can be updated
- Typical cycle time of the Axioline F local bus is around 10 µs



### Key Commercial Data

|                                      |                                                                                                         |
|--------------------------------------|---------------------------------------------------------------------------------------------------------|
| Packing unit                         | 1 pc                                                                                                    |
| GTIN                                 | <br>4 046356 790109 |
| GTIN                                 | 4046356790109                                                                                           |
| Weight per Piece (excluding packing) | 220.000 g                                                                                               |
| Custom tariff number                 | 85389091                                                                                                |
| Country of origin                    | Germany                                                                                                 |

# Bus coupler - AXL F BK S3 - 2701686

## Technical data

### Dimensions

|                    |                                                                               |
|--------------------|-------------------------------------------------------------------------------|
| Width              | 45 mm                                                                         |
| Height             | 126.1 mm                                                                      |
| Depth              | 74 mm                                                                         |
| Note on dimensions | The depth is valid when a TH 35-7,5 DIN rail is used (according to EN 60715). |

### Ambient conditions

|                                          |                                                                            |
|------------------------------------------|----------------------------------------------------------------------------|
| Ambient temperature (operation)          | -25 °C ... 60 °C (Mounting position: wall mounting on horizontal DIN rail) |
|                                          | -25 °C ... 55 °C (Mounting position: any)                                  |
| Ambient temperature (storage/transport)  | -40 °C ... 85 °C                                                           |
| Permissible humidity (operation)         | 5 % ... 95 % (non-condensing)                                              |
| Permissible humidity (storage/transport) | 5 % ... 95 % (non-condensing)                                              |
| 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                     | IP20                                                                       |

### Connection data

|                                       |                                                                                                                               |
|---------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|
| Designation                           | Axioline F connector                                                                                                          |
| Connection method                     | Push-in connection                                                                                                            |
| Note on the connection method         | Please observe the information provided on conductor cross sections in the "Axioline F: system and installation" user manual. |
| Conductor cross section solid min.    | 0.2 mm <sup>2</sup>                                                                                                           |
| Conductor cross section solid max.    | 1.5 mm <sup>2</sup>                                                                                                           |
| Conductor cross section flexible min. | 0.2 mm <sup>2</sup>                                                                                                           |
| Conductor cross section flexible max. | 1.5 mm <sup>2</sup>                                                                                                           |
| Conductor cross section AWG min.      | 24                                                                                                                            |
| Conductor cross section AWG max.      | 16                                                                                                                            |
| Stripping length                      | 8 mm                                                                                                                          |

### General

|                               |                                    |
|-------------------------------|------------------------------------|
| Mounting type                 | DIN rail                           |
| Color                         | traffic grey A RAL 7042            |
| Net weight                    | 177 g                              |
| Note on weight specifications | with connector and bus base module |
| Mounting position             | any (observe temperature derating) |

### Interfaces

|                 |        |
|-----------------|--------|
| Designation     | Sercos |
| No. of channels | 2      |

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## Technical data

### Interfaces

|                               |                                   |
|-------------------------------|-----------------------------------|
| Connection method             | RJ45 jack                         |
| Note on the connection method | Auto negotiation and autocrossing |
| Transmission speed            | 100 Mbps (full duplex)            |
| Transmission physics          | Ethernet in RJ45 twisted pair     |
| Designation                   | Axioline F local bus              |
| Connection method             | Bus base module                   |
| Transmission speed            | 100 Mbps                          |
| Designation                   | Service                           |
| Connection method             | Micro USB type B                  |

### System limits of the bus coupler

|                                                   |                           |
|---------------------------------------------------|---------------------------|
| Number of supported devices                       | max. 63 (per station)     |
| Number of local bus devices that can be connected | max. 63                   |
| Designation                                       | Sercos                    |
| Equipment type                                    | Sercos slave              |
| Device profile                                    | FSP_IO                    |
| System-specific protocols                         | Sercos protocols Sercos   |
| Specification                                     | Sercos specification 1.31 |

### Axioline potentials

|                      |                                                                                                                |
|----------------------|----------------------------------------------------------------------------------------------------------------|
| Designation          | Communications power $U_L$ feed-in (the supply of the Axioline F local bus $U_{Bus}$ is generated from $U_L$ ) |
| Supply voltage       | 24 V DC                                                                                                        |
| Supply voltage range | 19.2 V DC ... 30 V DC (including all tolerances, including ripple)                                             |
| Current consumption  | max. 570 mA (with 2 A at $U_{Bus}$ for the I/Os and $U_L = 24$ V)                                              |
| Power consumption    | max. 13.7 W (with 2 A load at $U_{Bus}$ for the I/Os)                                                          |
| Designation          | Axioline F local bus supply ( $U_{Bus}$ )                                                                      |
| Supply voltage       | 5 V DC (via bus base module)                                                                                   |
| Power supply unit    | 2 A                                                                                                            |
| Protective circuit   | Surge protection of the supply voltage Electronic                                                              |
|                      | Polarity reversal protection of the supply voltage Electronic                                                  |

### 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             |
|                  | 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

|            |                |
|------------|----------------|
| REACH SVHC | Lead 7439-92-1 |
|------------|----------------|

## Bus coupler - AXL F BK S3 - 2701686

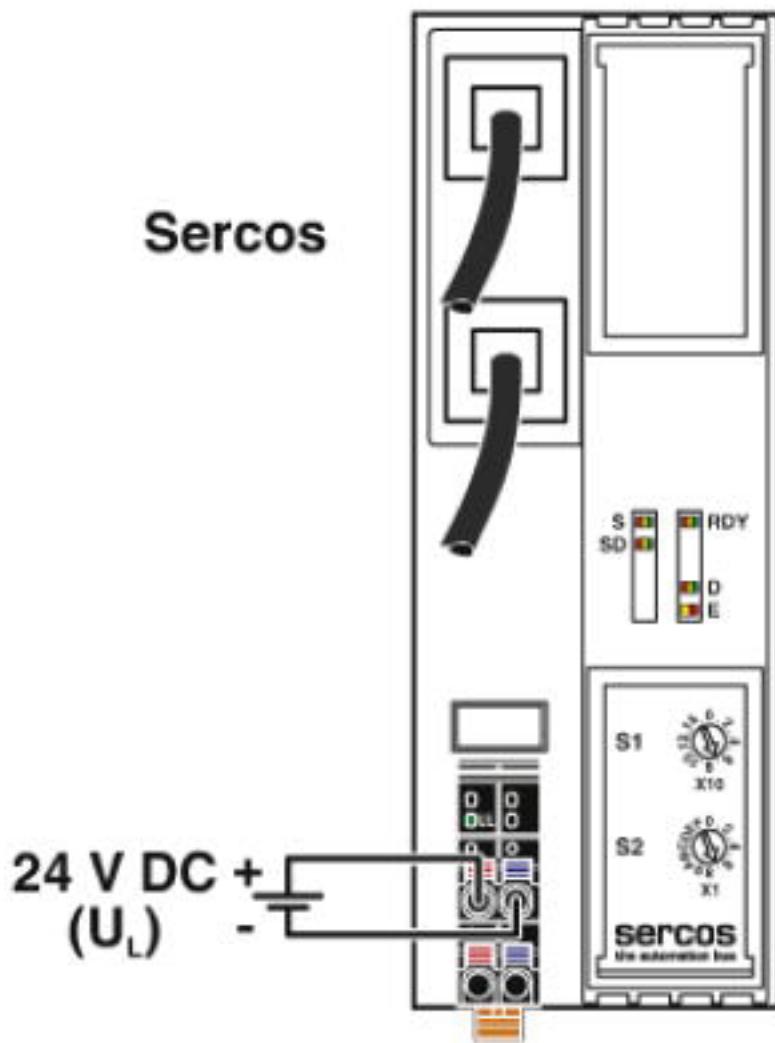
### Technical data

#### Environmental Product Compliance

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

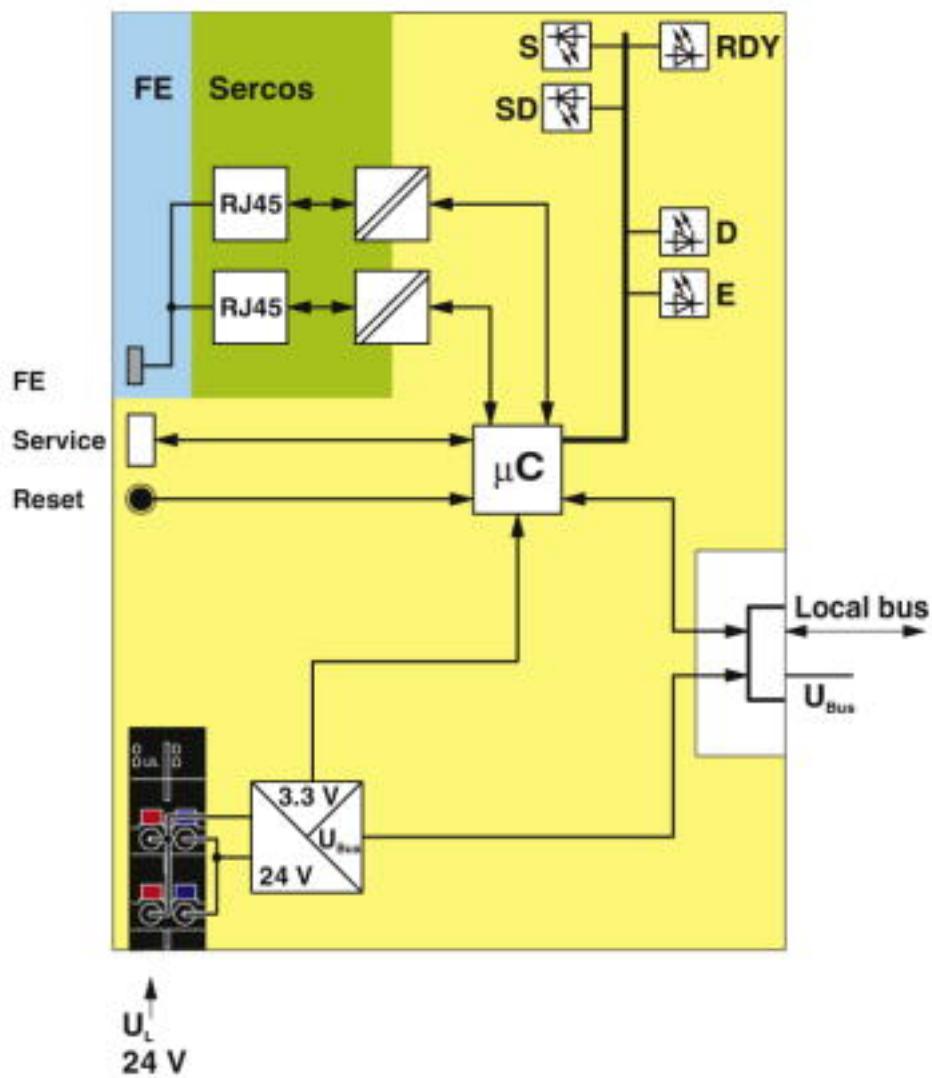
### Drawings

Connection diagram



## Bus coupler - AXL F BK S3 - 2701686

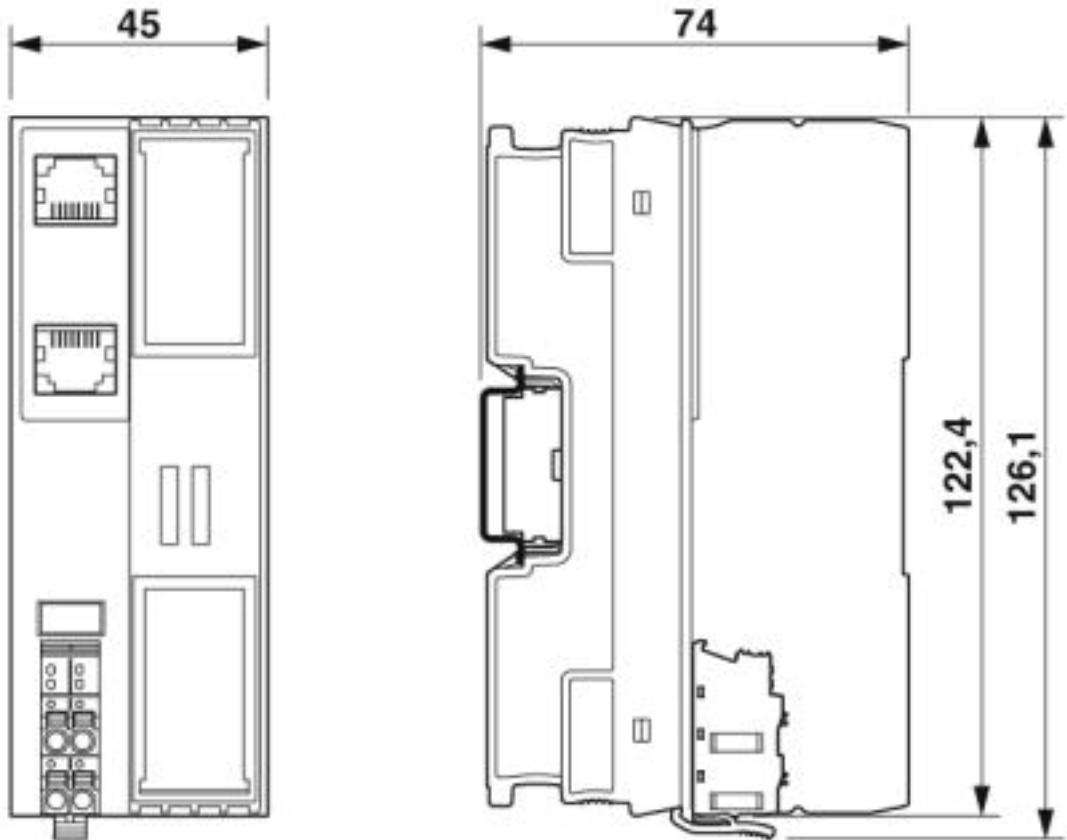
Block diagram



Internal wiring of the terminal points

## Bus coupler - AXL F BK S3 - 2701686

Dimensional drawing



### Classifications

#### eCl@ss

|               |          |
|---------------|----------|
| eCl@ss 10.0.1 | 27242608 |
| eCl@ss 4.0    | 27240400 |
| eCl@ss 4.1    | 27240400 |
| eCl@ss 5.0    | 27242200 |
| eCl@ss 5.1    | 27242600 |
| eCl@ss 6.0    | 27242600 |
| eCl@ss 7.0    | 27242608 |
| eCl@ss 8.0    | 27242608 |
| eCl@ss 9.0    | 27242608 |

#### ETIM

|          |          |
|----------|----------|
| ETIM 3.0 | EC001604 |
| ETIM 4.0 | EC001604 |

## Bus coupler - AXL F BK S3 - 2701686

### Classifications

#### ETIM

|          |          |
|----------|----------|
| ETIM 5.0 | EC001604 |
| ETIM 6.0 | EC001604 |
| ETIM 7.0 | EC001604 |

#### UNSPSC

|               |          |
|---------------|----------|
| UNSPSC 6.01   | 43172015 |
| UNSPSC 7.0901 | 43201404 |
| UNSPSC 11     | 39121311 |
| UNSPSC 12.01  | 39121311 |
| UNSPSC 13.2   | 32151602 |
| UNSPSC 18.0   | 32151602 |
| UNSPSC 19.0   | 32151602 |
| UNSPSC 20.0   | 32151602 |
| UNSPSC 21.0   | 32151602 |

### Approvals

#### Approvals

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#### Approvals

LR / KR / NK / ABS / BSH / RINA / PRS / BV / DNV GL / UL Listed / cUL Listed / cULus Listed

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#### Ex Approvals

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#### Approval details

|    |                                                                                     |                                                         |          |
|----|-------------------------------------------------------------------------------------|---------------------------------------------------------|----------|
| LR |  | <a href="http://www.lr.org/en">http://www.lr.org/en</a> | 14-20019 |
|----|-------------------------------------------------------------------------------------|---------------------------------------------------------|----------|

|    |                                                                                     |                                                                                               |                |
|----|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|----------------|
| KR |  | <a href="http://www.krs.co.kr/eng/main/main.aspx">http://www.krs.co.kr/eng/main/main.aspx</a> | HMB17372-AC002 |
|----|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|----------------|

|    |                                                                                     |                                                                               |        |
|----|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|--------|
| NK |  | <a href="http://www.classnk.or.jp/hp/en/">http://www.classnk.or.jp/hp/en/</a> | 14A006 |
|----|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|--------|

## Bus coupler - AXL F BK S3 - 2701686

### Approvals

|              |                                                                                                         |                                                                                                                                                                                                                               |
|--------------|---------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ABS          | <a href="http://www.eagle.org/eagleExternalPortalWEB/">http://www.eagle.org/eagleExternalPortalWEB/</a> | 18-HG1767360-PDA                                                                                                                                                                                                              |
| BSH          |                                                                                                         | 840                                                                                                                                                                                                                           |
| RINA         |                        | <a href="http://www.rina.org/en">http://www.rina.org/en</a>                                                                                                                                                                   |
| PRS          |                        | <a href="http://www.prs.pl/">http://www.prs.pl/</a>                                                                                                                                                                           |
| BV           |                        | <a href="http://www.veristar.com/portal/veristarinfo/generalinfo/approved/approvedProducts/equipmentAndMaterials">http://www.veristar.com/portal/veristarinfo/generalinfo/approved/approvedProducts/equipmentAndMaterials</a> |
| DNV GL       |                      | <a href="https://approvalfinder.dnvg.com/">https://approvalfinder.dnvg.com/</a>                                                                                                                                               |
| UL Listed    |                      | <a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a>                                                                         |
| cUL Listed   |                      | <a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a>                                                                         |
| cULus Listed |                      |                                                                                                                                                                                                                               |

### Accessories

#### Accessories

Data cable by the meter

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### Accessories

Network cable - FL CAT5 HEAVY - 2744814



CAT5-SF/UTP cable (J-02YS(ST)C HP 2 x 2 x 24 AWG), heavy-duty installation cable, 2 x 2 x 0.22 mm<sup>2</sup>, solid conductor, shielded, outer sheath: 7.8 mm diameter, inner sheath: 5.75 mm ± 0.15 mm diameter

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Network cable - FL CAT5 FLEX - 2744830



CAT5-SF/UTP cable (J-LI02YS(ST)C H 2 x 2 x 26 AWG), light-duty, flexible installation cable 2 x 2 x 0.14 mm<sup>2</sup>, stranded, shielded, outer sheath: 5.75 mm ± 0.15 mm diameter

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### Device marking

Insert label - EMT (35X18,7)R - 0801831



Insert label, Roll, white, unlabeled, can be labeled with: THERMOMARK ROLLMASTER 300/600, THERMOMARK X1.2, THERMOMARK ROLL X1, THERMOMARK ROLL 2.0, THERMOMARK ROLL, mounting type: snapped into marker carrier, lettering field size: 35 x 18.7 mm, Number of individual labels: 500

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### DIN rail connector

Bus connector - AXL BS BK - 2701422



Axioline F bus base module for housing type BK

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### Plug

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### Accessories

RJ45 connector - FL PLUG RJ45 GR/2 - 2744856

RJ45 connector, shielded, with bend protection sleeve, 2 pieces, gray for straight cables, for assembly on site. For connections that are not crossed, it is recommended that you use the connector set with gray bend protection sleeve.



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RJ45 connector - FL PLUG RJ45 GN/2 - 2744571

RJ45 connector, shielded, with bend protection sleeve, 2 pieces, green for crossed cables, for assembly on site. For connections that are crossed, it is recommended that the connector set with green bend protection sleeves is used.



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### Programming cable

Connecting cable - CAB-USB A/MICRO USB B/2,0M - 2701626



Connecting cable, for connecting the controller to a PC for PC Worx and LOGIC+, USB A to micro USB B, 2 m in length.

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### Terminal marking

Zack marker strip - ZB 20,3 AXL UNPRINTED - 0829579



Zack marker strip for AxioLine F (device labeling), in 2 x 20.3 mm pitch, unprinted, 25-section, for individual labeling with B-STIFT 0.8, X-PEN, or CMS-P1-PLOTTER

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Zack Marker strip, flat - ZBF 10/5,8 AXL UNPRINTED - 0829580



Zack Marker strip, flat, Strip, white, unlabeled, can be labeled with: PLOTMARK, CMS-P1-PLOTTER, mounting type: snap into flat marker groove, for terminal block width: 10.15 mm, lettering field size: 4 of 10.15 x 5 mm and 1 of 5.8 x 5 mm, Number of individual labels: 50

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### Accessories

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Assembly tool - FL CRIMPTOOL - 2744869



Crimping pliers, for assembling the RJ45 plugs FL PLUG RJ45..., for assembly on site

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