

## FLM DI 16 M12

Order No.: 2736835

<http://eshop.phoenixcontact.de/phoenix/treeViewClick.do?UID=2736835>

The local bus device has digital inputs. Functions: 16 digital inputs, 3 ms filter time, 500 kbaud/2 Mbaud selection, channel-specific diagnostics, short-circuit and overload protection, 1.2 A nominal current, M12 fast connection technology.

### Commercial data

|                          |                                                                                                        |
|--------------------------|--------------------------------------------------------------------------------------------------------|
| GTIN (EAN)               | <br>4 046356 135542 |
| sales group              | L081                                                                                                   |
| Pack                     | 1 pcs.                                                                                                 |
| Customs tariff           | 85176200                                                                                               |
| Catalog page information | Page 372 (AX-2009)                                                                                     |

### Product notes

WEEE/RoHS-compliant since:  
12/08/2009



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### Technical data

#### General data

|        |        |
|--------|--------|
| Width  | 70 mm  |
| Height | 178 mm |
| Depth  | 50 mm  |

|                                          |                                                   |
|------------------------------------------|---------------------------------------------------|
| Drill hole spacing                       | 168 mm                                            |
| Weight                                   | 310 g                                             |
| Mounting type                            | Wall mounting                                     |
| Ambient temperature (operation)          | -25 °C ... 60 °C                                  |
| Ambient temperature (storage/transport)  | -25 °C ... 85 °C                                  |
| Permissible humidity (storage/transport) | 95 %                                              |
| Air pressure (operation)                 | 80 kPa ... 106 kPa (up to 2000 m above sea level) |
| Air pressure (storage/transport)         | 70 kPa ... 106 kPa (up to 3000 m above sea level) |
| Degree of protection                     | IP65/67                                           |
| Protection class                         | III, IEC 61140, EN 61140, VDE 0140-1              |
| Test section                             | To I/O 500 V AC                                   |

#### Interface

|                              |                                     |
|------------------------------|-------------------------------------|
| Name                         | Local bus                           |
| Type of connection           | M12 connector, B-coded              |
| Designation connection point | Copper cable                        |
| Transmission speed           | 500 kBaud/ 2 MBaud, can be selected |
| Number of positions          | 5                                   |

#### Power supply for module electronics

|                      |                                                    |
|----------------------|----------------------------------------------------|
| Type of connection   | M12 male connector                                 |
| Name                 | $U_L$                                              |
| Supply voltage       | 24 V DC                                            |
| Supply voltage range | 18 V DC ... 30 V DC IEC 61131-2 (including ripple) |

#### Fieldline potential routing

|                                |                                           |
|--------------------------------|-------------------------------------------|
| Voltage supply $U_L$           | 24 V DC                                   |
| Power supply at $U_L$          | max. 4 A                                  |
| Current consumption from $U_L$ | max. 50 mA (At 2 Mbaud)                   |
|                                | Typ. 40 mA (At 2 Mbaud)                   |
|                                | max. 50 mA (At 500 kBaud)                 |
|                                | Typ. 35 mA (At 500 kBaud)                 |
| Voltage supply $U_S$           | 24 V DC                                   |
| Power supply at $U_S$          | max. 4 A                                  |
| Current consumption from $U_S$ | Typ. 5 mA (plus power supply for sensors) |
|                                | max. 1.2 A                                |

#### Digital inputs

|                                    |                                      |
|------------------------------------|--------------------------------------|
| Input name                         | Digital inputs                       |
| Type of connection                 | M12 male connector                   |
| Connection method                  | 2, 3, 4-wire                         |
| Number of inputs                   | 16                                   |
| Protective circuit                 | Protection against polarity reversal |
| Filter time                        | 3 ms                                 |
| Input characteristic curve         | IEC 61131-2 type 1                   |
| Input voltage                      | 24 V DC                              |
| Input voltage range "0" signal     | -30 V DC ... 5 V DC                  |
| Input voltage range "1" signal     | 13 V DC ... 30 V DC                  |
| Delay at signal change from 0 to 1 | 3.1 ms                               |
| Delay at signal change from 1 to 0 | 4.1 ms                               |

#### Certificates / Approvals



|                   |               |
|-------------------|---------------|
| Certification     | CUL, UL       |
| Certification Ex: | CUL-EX, UL-EX |

#### Accessories

| Item                   | Designation            | Description                                                                                                                                                  |
|------------------------|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Cable/conductor</b> |                        |                                                                                                                                                              |
| 1518368                | SAC-5P- 2,0-186/FS SCO | Sensor/Actuator cable, 5-position, PUR, Black-gray RAL 7021, Free conductor end, on Socket, straight M12-SPEEDCON, A-coded, Cable length: 2 m                |
| 1507117                | SAC-5P- 2,0-900/M12FSB | Bus system cable, INTERBUS, 5-position, PUR, halogen-free, Green RAL 6017, shielded, Free conductor end, on Socket, straight M12, B-coded, Cable length: 2 m |
| 1518371                | SAC-5P- 5,0-186/FS SCO | Sensor/Actuator cable, 5-position, PUR, Black-gray RAL 7021, Free conductor end, on Socket, straight M12-SPEEDCON, A-coded, Cable length: 5 m                |
| 1507120                | SAC-5P- 5,0-900/M12FSB | Bus system cable, INTERBUS, 5-position, PUR, halogen-free, Green RAL 6017, shielded, Free conductor end, on Socket, straight M12, B-coded, Cable length: 5 m |

|         |                                   |                                                                                                                                                                         |
|---------|-----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1518384 | SAC-5P-10,0-186/FS SCO            | Sensor/Actuator cable, 5-position, PUR, Black-gray RAL 7021, Free conductor end, on Socket, straight M12-SPEEDCON, A-coded, Cable length: 10 m                          |
| 1507133 | SAC-5P-10,0-900/M12FSB            | Bus system cable, INTERBUS, 5-position, PUR, halogen-free, Green RAL 6017, shielded, Free conductor end, on Socket, straight M12, B-coded, Cable length: 10 m           |
| 1518397 | SAC-5P-15,0-186/FS SCO            | Sensor/Actuator cable, 5-position, PUR, Black-gray RAL 7021, Free conductor end, on Socket, straight M12-SPEEDCON, A-coded, Cable length: 15 m                          |
| 1507146 | SAC-5P-15,0-900/M12FSB            | Bus system cable, INTERBUS, 5-position, PUR, halogen-free, Green RAL 6017, shielded, Free conductor end, on Socket, straight M12, B-coded, Cable length: 15 m           |
| 1507162 | SAC-5P-M12MSB/ 0,3-900/<br>M12FSB | Bus system cable, INTERBUS, 5-position, PUR, halogen-free, Green RAL 6017, shielded, Plug, straight M12, B-coded, on Socket, straight M12, B-coded, Cable length: 0.3 m |
| 1507175 | SAC-5P-M12MSB/ 0,5-900/<br>M12FSB | Bus system cable, INTERBUS, 5-position, PUR, halogen-free, Green RAL 6017, shielded, Plug, straight M12, B-coded, on Socket, straight M12, B-coded, Cable length: 0.5 m |
| 1507188 | SAC-5P-M12MSB/ 1,0-900/<br>M12FSB | Bus system cable, INTERBUS, 5-position, PUR, halogen-free, Green RAL 6017, shielded, Plug, straight M12, B-coded, on Socket, straight M12, B-coded, Cable length: 1 m   |
| 1507065 | SAC-5P-M12MSB/ 2,0-900            | Bus system cable, INTERBUS, 5-position, PUR, halogen-free, Green RAL 6017, shielded, Plug, straight M12, B-coded, on Free conductor end, Cable length: 2 m              |
| 1507191 | SAC-5P-M12MSB/ 2,0-900/<br>M12FSB | Bus system cable, INTERBUS, 5-position, PUR, halogen-free, Green RAL 6017, shielded, Plug, straight M12, B-coded, on Socket, straight M12, B-coded, Cable length: 2 m   |
| 1507078 | SAC-5P-M12MSB/ 5,0-900            | Bus system cable, INTERBUS, 5-position, PUR, halogen-free, Green RAL 6017, shielded, Plug, straight M12, B-coded, on Free conductor end, Cable length: 5 m              |
| 1507201 | SAC-5P-M12MSB/ 5,0-900/<br>M12FSB | Bus system cable, INTERBUS, 5-position, PUR, halogen-free, Green RAL 6017, shielded, Plug, straight M12, B-coded, on Socket, straight M12, B-coded, Cable length: 5 m   |
| 1507081 | SAC-5P-M12MSB/10,0-900            | Bus system cable, INTERBUS, 5-position, PUR, halogen-free, Green RAL 6017, shielded, Plug, straight M12, B-coded, on Free conductor end, Cable length: 10 m             |
| 1507214 | SAC-5P-M12MSB/10,0-900/<br>M12FSB | Bus system cable, INTERBUS, 5-position, PUR, halogen-free, Green RAL 6017, shielded, Plug, straight M12, B-coded, on Socket, straight M12, B-coded, Cable length: 10 m  |
| 1507094 | SAC-5P-M12MSB/15,0-900            | Bus system cable, INTERBUS, 5-position, PUR, halogen-free, Green RAL 6017, shielded, Plug, straight M12, B-coded, on Free conductor end, Cable length: 15 m             |
| 1507227 | SAC-5P-M12MSB/15,0-900/<br>M12FSB | Bus system cable, INTERBUS, 5-position, PUR, halogen-free, Green RAL 6017, shielded, Plug, straight M12, B-coded, on Socket, straight M12, B-coded, Cable length: 15 m  |
| 1518407 | SAC-5P-MS/ 0,3-186/FS SCO         | Sensor/Actuator cable, 5-position, PUR, Black-gray RAL 7021, Plug, straight M12-SPEEDCON, A-coded, on Socket, straight M12-SPEEDCON, A-coded, Cable length: 0.3 m       |

|         |                           |                                                                                                                                                                   |
|---------|---------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1518410 | SAC-5P-MS/ 0,5-186/FS SCO | Sensor/Actuator cable, 5-position, PUR, Black-gray RAL 7021, Plug, straight M12-SPEEDCON, A-coded, on Socket, straight M12-SPEEDCON, A-coded, Cable length: 0.5 m |
| 1518423 | SAC-5P-MS/ 1,0-186/FS SCO | Sensor/Actuator cable, 5-position, PUR, Black-gray RAL 7021, Plug, straight M12-SPEEDCON, A-coded, on Socket, straight M12-SPEEDCON, A-coded, Cable length: 1 m   |
| 1518326 | SAC-5P-MS/ 2,0-186 SCO    | Sensor/Actuator cable, 5-position, PUR, Black-gray RAL 7021, Plug, straight M12-SPEEDCON, A-coded, on Free conductor end, Cable length: 2 m                       |
| 1518436 | SAC-5P-MS/ 2,0-186/FS SCO | Sensor/Actuator cable, 5-position, PUR, Black-gray RAL 7021, Plug, straight M12-SPEEDCON, A-coded, on Socket, straight M12-SPEEDCON, A-coded, Cable length: 2 m   |
| 1518339 | SAC-5P-MS/ 5,0-186 SCO    | Sensor/Actuator cable, 5-position, PUR, Black-gray RAL 7021, Plug, straight M12-SPEEDCON, A-coded, on Free conductor end, Cable length: 5 m                       |
| 1518449 | SAC-5P-MS/ 5,0-186/FS SCO | Sensor/Actuator cable, 5-position, PUR, Black-gray RAL 7021, Plug, straight M12-SPEEDCON, A-coded, on Socket, straight M12-SPEEDCON, A-coded, Cable length: 5 m   |
| 1518342 | SAC-5P-MS/10,0-186 SCO    | Sensor/Actuator cable, 5-position, PUR, Black-gray RAL 7021, Plug, straight M12-SPEEDCON, A-coded, on Free conductor end, Cable length: 10 m                      |
| 1518452 | SAC-5P-MS/10,0-186/FS SCO | Sensor/Actuator cable, 5-position, PUR, Black-gray RAL 7021, Plug, straight M12-SPEEDCON, A-coded, on Socket, straight M12-SPEEDCON, A-coded, Cable length: 10 m  |
| 1518355 | SAC-5P-MS/15,0-186 SCO    | Sensor/Actuator cable, 5-position, PUR, Black-gray RAL 7021, Plug, straight M12-SPEEDCON, A-coded, on Free conductor end, Cable length: 15 m                      |
| 1518465 | SAC-5P-MS/15,0-186/FS SCO | Sensor/Actuator cable, 5-position, PUR, Black-gray RAL 7021, Plug, straight M12-SPEEDCON, A-coded, on Socket, straight M12-SPEEDCON, A-coded, Cable length: 15 m  |

#### Marking

|         |                   |                                                                                 |
|---------|-------------------|---------------------------------------------------------------------------------|
| 0809735 | ZBF 12:UNBEDRUCKT | Zack strip, flat, unprinted, 5-section, divisible, for labeling by the customer |
|---------|-------------------|---------------------------------------------------------------------------------|

#### Plug/Adapter

|         |                                |                                                                                                                                                                                            |
|---------|--------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1683455 | SAC-3P-M12Y/2XM12FS PE         | Y-distributor, 3-pos. +PE, straight connector M12 on 2 x straight socket M12                                                                                                               |
| 1518481 | SAC-5P-MS/ 0,13-186/FS SCO     | Sensor/Actuator cable, 5-position, PUR, Black-gray RAL 7021, Plug, straight M12-SPEEDCON, A-coded, on Socket, straight M12-SPEEDCON, A-coded, Cable length: 0.13 m                         |
| 1518478 | SAC-5P-MSB/0,13-PUR/FSB SCO SH | Sensor/Actuator cable, 5-position, PUR, halogen-free, Black-gray RAL 7021, shielded, Plug, straight M12-SPEEDCON, B-coded, on Socket, straight M12-SPEEDCON, B-coded, Cable length: 0.13 m |

|         |                            |                                                                                                                                                              |
|---------|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1513606 | SACC-M12FRB-5SC SH         | Sensor/actuator connector, female, angled, 5-pos., M12, shielded, B-coded, spring-cage connection, metal knurl, cable cross section max. 8 mm                |
| 1508200 | SACC-M12FS-5SC M           | Sensor/actuator connector, female, straight, 5-pos., M12, A-coded, spring-cage connection, metal knurl, cable cross section max. 8 mm                        |
| 1507777 | SACC-M12FSB-5CON-PG9 SH AU | Bus system plug connector, female, straight, 5-pos., M12, shielded, gold-plated contacts, B-coded, screw connection, metal knurl, cable screw connection Pg9 |
| 1513596 | SACC-M12FSB-5SC SH         | Sensor/actuator connector, female, straight, 5-pos., M12, shielded, B-coded, spring-cage connection, metal knurl, cable cross section max. 8 mm              |
| 1513583 | SACC-M12MRB-5SC SH         | Sensor/actuator connector, male, angled, 5-pos., M12, shielded, B-coded, spring-cage connection, metal knurl, cable cross section max. 8 mm                  |
| 1508187 | SACC-M12MS-5SC M           | Sensor/actuator connector, male, straight, 5-pos., M12, A-coded, spring-cage connection, metal knurl, cable cross section max. 8 mm                          |
| 1507764 | SACC-M12MSB-5CON-PG9 SH AU | Bus system plug connector, male straight, 5-pos., M12, shielded, gold-plated contacts, B-coded, screw connection, metal knurl, cable screw connection Pg9    |
| 1513570 | SACC-M12MSB-5SC SH         | Sensor/actuator connector, male, straight, 5-pos., M12, shielded, B-coded, spring-cage connection, metal knurl, cable cross section max. 8 mm                |

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