

AXL E PN DIO16 M12 6P

**Axioline E PROFINET device, plastic housing,
16 freely configurable inputs or outputs,
24 V DC, M12 fast connection technology**



Data sheet
8448_en_04

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1 Description

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

It is used to acquire and output digital signals.

PROFINET features

- Connection to PROFINET network using M12 connectors (D-coded)
 - 2 Ethernet ports (with integrated switch)
 - Transmission speed 100 Mbps
- PROFINET RT (RTC 1) supported with minimum cycle time of 1 ms
- Supported protocols: SNMP, LLDP, MRP, DCP
- PROFINET features:
FSU, shared device, MRP client, I&M functions 0 - 4
- Specification:
 - Mapping in accordance with PROFINET specification v2.2
 - Mapping as PROFINET IO device (conformance class B)

- Device description using GSDML file
- Firmware can be updated
- Integrated web server for web-based management

Axioline E features

- Connection of digital sensors to M12 connectors (A-coded)
- Diagnostic and status indicators
- Short-circuit and overload protection of the sensor supply
- IP65/67 degree of protection



This data sheet is only valid in association with the associated user manual.

Make sure you always use the latest documentation.

It can be downloaded from the product at phoenixcontact.net/products.



Abbreviations used:

- FSU: Fast startup
- MRP: Media Redundancy Protocol
- I&M: Identification and maintenance

| | | |
|----------|--|----|
| 2 | Table of contents | |
| 1 | Description | 1 |
| 2 | Table of contents | 2 |
| 3 | Ordering data | 3 |
| 4 | Technical data | 4 |
| 5 | Internal circuit diagram | 7 |
| 6 | Pin assignment | 8 |
| 6.1 | PROFINET and power supply connection | 8 |
| 6.2 | PROFINET pin assignment | 8 |
| 6.3 | Pin assignment of the power supply U_S/U_A | 8 |
| 6.4 | Connecting inputs and outputs | 9 |
| 6.5 | Pin assignment of the inputs and outputs | 9 |
| 7 | Connection example..... | 10 |
| 8 | Connection notes | 10 |
| 9 | Local status and diagnostic indicators | 11 |
| 9.1 | Indicators for Ethernet ports and power supply | 11 |
| 9.2 | Input and output indicators | 12 |
| 10 | PROFINET IO Device | 13 |
| 10.1 | Status module..... | 13 |
| 10.10 | Device replacement | 16 |
| 10.11 | I&M functions..... | 17 |
| 10.2 | IO module..... | 13 |
| 10.3 | Substitute value behavior..... | 15 |
| 10.4 | Swap byte order. | 15 |
| 10.5 | Diagnostic messages | 16 |
| 10.6 | LLDP - Link Layer Discovery Protocol | 16 |
| 10.7 | MRP - Media Redundancy Protocol..... | 16 |
| 10.8 | FSU - Fast Startup | 16 |
| 10.9 | Shared device..... | 16 |
| 11 | Startup..... | 18 |
| 11.1 | Delivery state/default settings | 18 |
| 11.2 | Starting the firmware | 18 |
| 11.3 | Firmware update | 18 |
| 11.4 | Restoring the default settings..... | 18 |
| 12 | WBM - Web-based management | 19 |
| 13 | SNMP - Simple Network Management Protocol | 19 |
| 14 | Device description file (GSDML) | 19 |

3 Ordering data

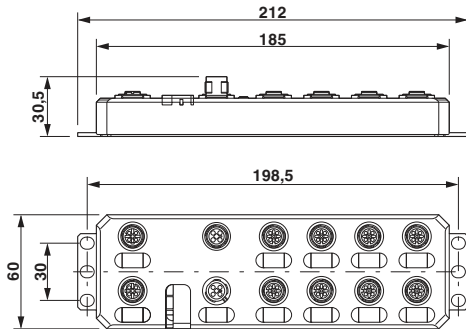
| Description | Type | Order No. | Pcs./Pkt. |
|--|-------------------------|-----------|-----------|
| Axioline E PROFINET device in a plastic housing with 16 configurable inputs or outputs, 24 V DC, M12 fast connection technology | AXL E PN DIO16 M12 6P | 2701511 | 1 |
| Accessories | Type | Order No. | Pcs./Pkt. |
| An M12 screw plug for the unoccupied M12 sockets of the sensor/actuator cable, boxes and flush-type connectors (Protection and sealing elements) | PROT-M12 | 1680539 | 5 |
| Snap-in markers, Sheet, white, unlabeled, can be labeled with: THERMOMARK CARD, BLUEMARK CLED, BLUEMARK LED, TOPMARK LASER, Mounting type: snapped into marker carrier, Lettering field: 7 x 10 mm (Marking) | UCT-EM (7X10) | 0830765 | 10 |
| Documentation | Type | Order No. | Pcs./Pkt. |
| User manual, English, Axioline E: system and installation | UM EN AXL E SYS INST | - | - |
| Application note, English, Starting up Axioline E PROFINET devices using PC Worx | AH EN AXL E PN PCWORX | - | - |
| Application note, English, Startup of Axioline E PROFINET devices on a SIMATIC® S7 controller (for experienced S7 users) | AH EN S7 - AXL E PN PRO | - | - |

Additional ordering data

For additional accessories, visit phoenixcontact.net/products.

4 Technical data

Dimensions (nominal sizes in mm)



| | |
|--------------------|--|
| Width | 60 mm |
| Height | 185 mm |
| Depth | 30.5 mm |
| Note on dimensions | The height is 212 mm including fixing clips. |

General data

| | |
|---------------------------------|------------------|
| Housing material | Pocan® |
| Color | anthracite |
| Weight | 480 g |
| Ambient temperature (operation) | -25 °C ... 60 °C |



CAUTION: Risk of burns

If the device is used at an ambient temperature above 50°C, the contact temperature of metal surfaces may exceed 70°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 |
| Protection class | III, IEC 61140, EN 61140, VDE 0140-1 |

Connection data

| | |
|-------------------|---------------|
| Connection method | M12 connector |
|-------------------|---------------|

Interface PROFINET

| | |
|------------------------------|------------------------------------|
| Number | 2 |
| Connection method | M12 connectors, D-coded |
| Designation connection point | Copper cable |
| Number of positions | 4 |
| Transmission speed | 100 MBit/s (with auto negotiation) |

PROFINET

| | |
|--|--------------------------------|
| Equipment type | PROFINET Device |
| Conformance class | B |
| Update rate | 1 ms |
| Number of supported application relationships (AR) | 2 |
| PROFINET protocols | LLDP, MRP client, DCP, DCE-RPC |
| Additional protocols | SNMP v1, HTTP, TFTP, FTP |

Supply: Module electronics, sensors and actuators (U_S)

| | |
|------------------------------|--|
| 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) |
| Typical current consumption | 190 mA ±15 % (at 24 V DC) |
| Current consumption | max. 12 A |

Supply: Actuators (U_A) for additional devices

| | |
|------------------------------|--|
| 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) |
| Typical current consumption | 3 mA ±15 % (at 24 V DC) |
| Current consumption | max. 12 A |

Digital inputs

| | |
|--|-------------------------------------|
| Number of inputs | 16 (EN 61131-2 types 1 and 3) |
| Connection method | M12 connector, double occupancy |
| Connection method | 2, 3, 4-wire |
| Nominal input voltage | 24 V DC |
| Nominal input current | typ. 3 mA |
| Sensor current per channel | typ. 0.75 mA (from U _S) |
| Total sensor current | max. 1.2 A (per device) |
| Input voltage range "0" signal | -30 V DC ... 5 V DC |
| Input voltage range "1" signal | 11 V DC ... 30 V DC |
| Input filter time | < 1000 µs |
| Permissible conductor length to the sensor | 30 m |
| Overload protection, short-circuit protection of sensor supply | Yes |

Digital outputs

| | |
|------------------------------------|---|
| Number of outputs | 16 |
| Connection method | M12 connector, double occupancy |
| Connection method | 2, 3-wire |
| Nominal output voltage | 24 V DC (from voltage U _S) |
| Output voltage range | 18 V DC ... 31.2 V DC |
| Maximum output current per channel | 0.5 A |
| Nominal load, ohmic | 12 W (48 Ω; with nominal voltage) |
| Nominal load, inductive | 12 VA (1.2 H; 48 Ω; with nominal voltage) |
| Signal delay | max. 150 µs (when switched on) max. 200 µs (when switched off) |

Digital outputs

| | |
|---|---|
| Switching frequency | max. 5500 per second (with at least 50 mA load current) |
| Switching frequency | max. 1 per second (with inductive load) |
| Limitation of the voltage induced on circuit interruption | -28 V ... -17 V |
| Output voltage when switched off | max. 1 V |
| Output current when switched off | max. 20 µA |
| Behavior with overload | Auto restart |
| Reverse voltage resistance to short pulses | Reverse voltage proof |
| Overcurrent shut-down | min. 0.7 A |
| Overload protection, short-circuit protection of outputs | Electronic |

Electrical isolation/isolation of the voltage areas

| Test section | Test voltage |
|--|------------------------|
| 24 V supply (communications power/sensor supply, digital inputs/outputs)/ bus connection (Ethernet 1) | 500 V AC, 50 Hz, 1 min |
| 24 V supply (communications power/sensor supply, digital inputs/outputs)/ bus connection (Ethernet 2) | 500 V AC, 50 Hz, 1 min |
| 24 V supply (communications power/sensor supply, digital inputs/outputs)/ 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, digital inputs/outputs) | 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 |

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 |

Conformance with EMC Directive 2004/108/EC

Noise immunity test in accordance with EN 61000-6-2

| | |
|--|--|
| Electrostatic discharge (ESD) EN 61000-4-2/IEC 61000-4-2 | Criterion B; 6 kV contact discharge, 8 kV air discharge |
| Electromagnetic fields EN 61000-4-3/IEC 61000-4-3 | Criterion A; Field intensity: 10 V/m |
| Fast transients (burst) EN 61000-4-4/IEC 61000-4-4 | Criterion B, 2 kV |
| Transient surge voltage (surge) EN 61000-4-5/IEC 61000-4-5 | Criterion B; DC supply lines: ±0.5 kV/±0.5 kV (symmetrical/asymmetrical) |
| Conducted interference EN 61000-4-6/IEC 61000-4-6 | Criterion A; Test voltage 10 V |

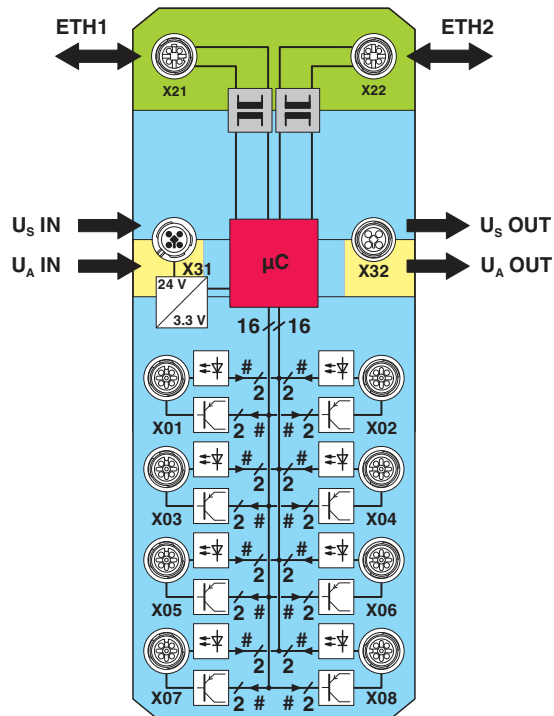
Noise emission test as per EN 61000-6-4

| | |
|--|---------|
| Radio interference properties EN 55022 | Class A |
|--|---------|

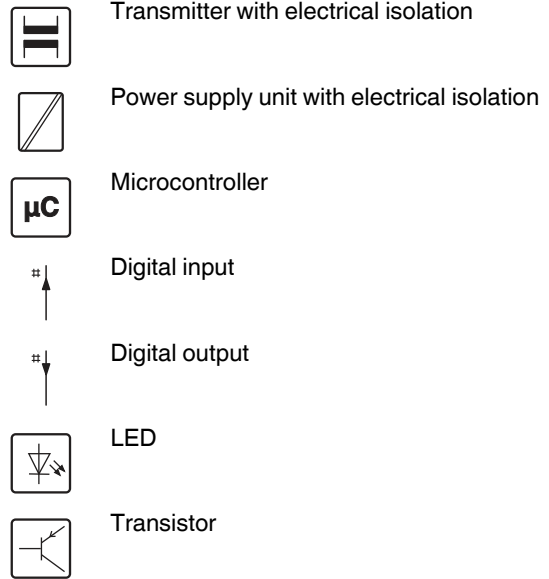
Approvals

For the latest approvals, please visit phoenixcontact.net/products.

5 Internal circuit diagram



Key:




 The U_S voltage supplies the freely configurable inputs and outputs.

Figure 1 Internal wiring of connections

Key:

| | |
|--------------|---------|
| Green area: | Network |
| Blue area: | U_S |
| Yellow area: | U_A |

6 Pin assignment

6.1 PROFINET and power supply connection

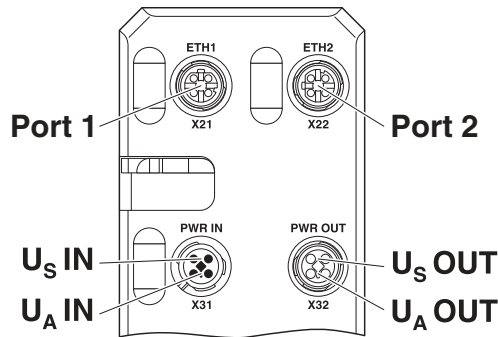


Figure 2 Connections for PROFINET and power supply

| Designation | Meaning |
|--------------------------|--|
| Port 1 (X21) | Ethernet port 1 |
| Port 2 (X22) | Ethernet port 2 |
| U _S IN (X31) | Power supply IN (logic, sensors and actuators) |
| U _A IN (X31) | Power Supply IN (actuators) for additional devices |
| U _S OUT (X32) | Power supply OUT for additional devices |
| U _A OUT (X32) | Power supply OUT for additional devices |



Ground the device by means of the mounting screws.

6.2 PROFINET pin assignment

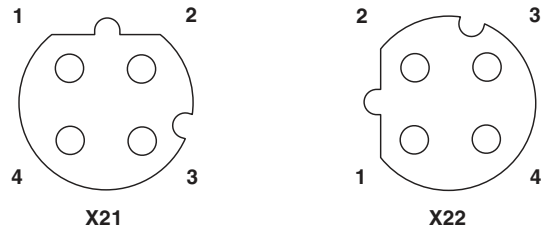


Figure 3 Pin assignment, D-coded

| Pin | Ethernet port 1 (X21) | Ethernet port 2 (X22) |
|-----|-----------------------|-----------------------|
| 1 | TX+ | TX+ |
| 2 | RX+ | RX+ |
| 3 | TX- | TX- |
| 4 | RX- | RX- |



The shield is connected to FE in the device.



The thread is used for additional shielding.

6.3 Pin assignment of the power supply U_S/U_A

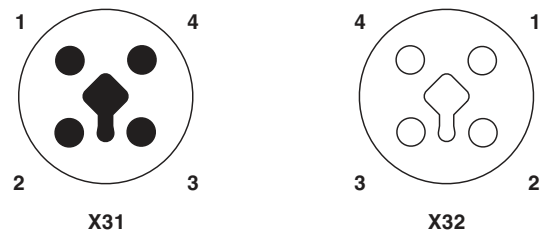


Figure 4 Pin assignment of the power supply, T-coded

| Pin | IN | OUT | Conductor colors |
|-----|----------------------------|----------------------------|------------------|
| 1 | +24 V DC (U _S) | +24 V DC (U _S) | Brown |
| 2 | GND (U _A) | GND (U _A) | White |
| 3 | GND (U _S) | GND (U _S) | Blue |
| 4 | +24 V DC (U _A) | +24 V DC (U _A) | Black |

6.4 Connecting inputs and outputs

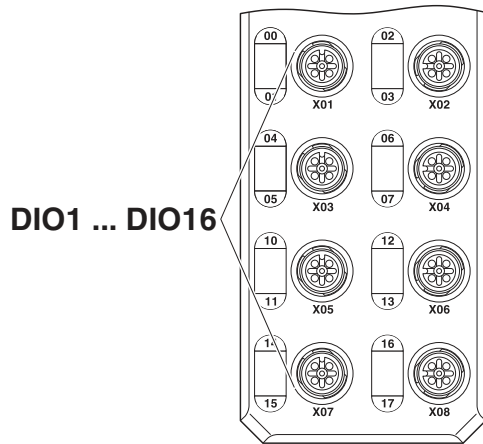


Figure 5 Input and output connections

| Designation | Meaning |
|------------------------------|-------------------------|
| DIO1 ... DIO16 (X01 ... X08) | Inputs/outputs 1 ... 16 |

6.5 Pin assignment of the inputs and outputs

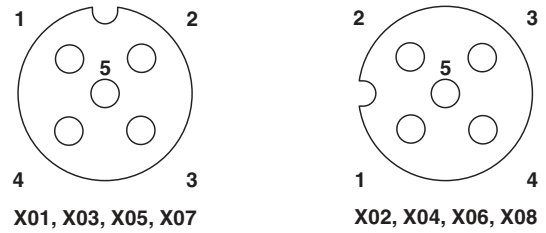


Figure 6 Pin assignment of the inputs and outputs, A-coded

| Pin | Input/output socket |
|-----|------------------------------|
| 1 | +24 V DC (U_S) |
| 2 | Input/output 2, 4, 6, ... 16 |
| 3 | GND |
| 4 | Input/output 1, 3, 5, ... 15 |
| 5 | FE |

7 Connection example

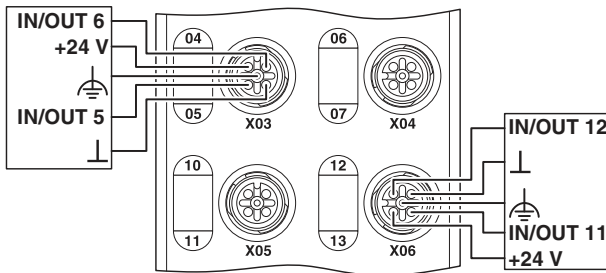


Figure 7 Example of connection of sensors and actuators

8 Connection notes



Note: data corruption or loss

Implement the FE connection using mounting screws, in order to ensure immunity to interference.



NOTE: device damage

To ensure IP65/IP67 protection, cover unused sockets with protective caps.



NOTE: Damage to the electronics

Only supply the sensors with the voltage U_S provided at the terminal points.



NOTE: Damage to the electronics

Observe the correct polarity of the supply voltages U_S and U_A in order to prevent damage to the device.



NOTE: Malfunction

When connecting the sensors and actuators, observe the assignment of the connections to the PROFINET input and output data.



Secure the device to a level surface or to a profile. Do not use this device to bridge gaps, in order to prevent forces being transmitted via the device.



Use standard M5 screws with toothed lock washer and self-locking nuts. Observe the maximum torque of the screws.

9 Local status and diagnostic indicators

9.1 Indicators for Ethernet ports and power supply

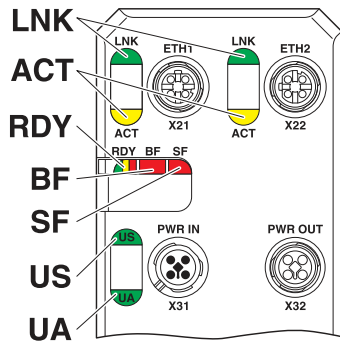


Figure 8 Indicators for Ethernet ports and power supply

| Designation | Color | Meaning | State | Description |
|-------------|--------------------------|-----------------------|---------------------------|--|
| LNK 1/2 | Green | Link | Green ON | Connection present at port 1/2. |
| | | | OFF | Connection not present at port 1/2. |
| ACT 1/2 | Yellow | Activity | Yellow flashing | Data transmission present at port 1/2. |
| | | | OFF | Data transmission not present at port 1/2. |
| RDY | Green/ yellow/ red | Ready | Green ON | Device ready to operate |
| | | | Yellow flashing | Firmware update is being performed. |
| | | | Flashing green/ yellow | Over- or undervoltage at U_S Temperature of the device is in the critical area. And red US LED: sensor supply overload |
| | | | OFF | Device is not ready for operation. |
| BF | Red | Bus Fault | Red ON | No link status available on any port |
| | | | Flashing | SF LED not flashing: Link status available, no communication connection to the PROFINET controller |
| | | | Flashing | SF LED flashing: hardware watchdog has been triggered. |
| | | | OFF | A PROFINET controller has established an active communication connection to the PROFINET device. |
| SF | Red | Station Fail | ON | PROFINET diagnostics available |
| | | | Flashing | Flashes only together with the BF LED; watchdog triggered |
| | | | OFF | PROFINET diagnostics not available |
| US | Green/ red | U_{Sensorik} | Green ON | Communications power/sensor voltage present |
| | | | OFF | Communications power/sensor voltage not present or too low. |
| | | | Red ON | Sensor voltage overload |
| UA | Green | U_{Aktorik} | ON | Actuator voltage present. |
| | | | OFF | Actuator voltage not present. |

9.2 Input and output indicators

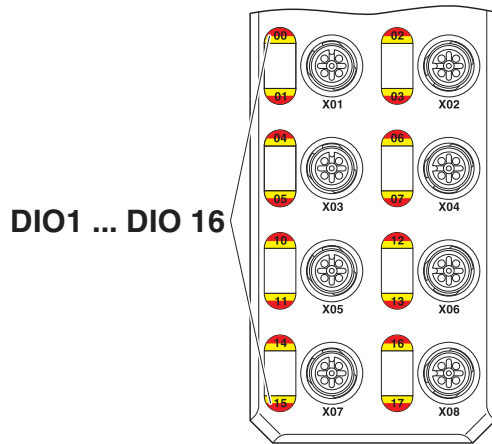


Figure 9 Input and output indicators

| Designation | Color | Meaning | State | Description |
|-------------------------|------------|---|-----------|--|
| 00 ... 07, 10 ... 17 | Yellow | Status of the inputs and outputs when used as an input | ON | Input is set. |
| | | | OFF | Input is not set. |
| 00 ... 07, 10 ... 17 | Yellow/red | Status of the inputs and outputs when used as an output | Yellow ON | Output is set. |
| | | | Red ON | Output is short circuited or overloaded. |
| | | | OFF | Output is not set. |



The numbering of the LEDs is as follows: the first number specifies the byte, the second number specifies the bit.

10 PROFINET IO Device

The Axioline E PROFINET device operates as a PROFINET IO device based on PROFINET specification v2.2.

Slot 1 always contains the “Status module” with 4 bytes of IN process data . Slot 2 contains the IO module, which contains the process data and startup parameters.

10.1 Status module

The status module cyclically provides the following diagnostics options via process data:

| Bit 31 ... bit 6 | Bit 5 | Bit 4 | Bit 3 | Bit 2 | Bit 1 | Bit 0 |
|------------------|--|----------|----------|----------|----------|---------------|
| Reserved | Supply of the module electronics, sensors, and actuators (U _S) | | | Reserved | | Outputs |
| Reserved | Undervoltage | Overload | Reserved | | Overload | Short-circuit |

10.2 IO module

Configuration of digital inputs and outputs

A channel, whether an input or an output, is configured by using the IN or OUT process data according to the channel function.

Parameterization is not necessary.



If the channel is used as an output, the status of the channel is also mapped to the IN process data. This can be useful, e.g., for diagnostic purposes. If the channel is used as an input, the channel cannot simultaneously be used as an output.



Depending on the configuration, process data bytes 0 and 1 can be swapped.

Assignment of the terminal points to the IN process data

When the byte order is not reversed, the process data looks like this:

| Input process data | | | | | | | | | | | | | | | | |
|--------------------|--------|----|-----|----|-----|----|-----|----|--------|----|-----|----|-----|----|-----|----|
| Byte | Byte 0 | | | | | | | | Byte 1 | | | | | | | |
| Bit | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
| IN | 07 | 06 | 05 | 04 | 03 | 02 | 01 | 00 | 17 | 16 | 15 | 14 | 13 | 12 | 11 | 10 |
| Connection | X04 | | X03 | | X02 | | X01 | | X08 | | X07 | | X06 | | X05 | |
| Pin | 2 | 4 | 2 | 4 | 2 | 4 | 2 | 4 | 2 | 4 | 2 | 4 | 2 | 4 | 2 | 4 |
| DI | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 |

Key:

- Bit: Process data assignment
- IN: LED marking
- DI: Device input

Assignment of the terminal points to the OUT process data

When the byte order is not reversed, the process data looks like this:

| Output process data | | | | | | | | | | | | | | | | |
|---------------------|--------|----|-----|----|-----|----|-----|----|--------|----|-----|----|-----|----|-----|----|
| Byte | Byte 0 | | | | | | | | Byte 1 | | | | | | | |
| Bit | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
| OUT | 07 | 06 | 05 | 04 | 03 | 02 | 01 | 00 | 17 | 16 | 15 | 14 | 13 | 12 | 11 | 10 |
| Connection | X04 | | X03 | | X02 | | X01 | | X08 | | X07 | | X06 | | X05 | |
| Pin | 2 | 4 | 2 | 4 | 2 | 4 | 2 | 4 | 2 | 4 | 2 | 4 | 2 | 4 | 2 | 4 |
| DO | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 |

Key:

- Bit: Process data assignment
- OUT: LED marking
- DO: Device output

10.3 Substitute value behavior

The substitute value behavior is set via the IO module in slot 2. The following parameters are available:

| Parameter | Possible values (bold = default) | Description |
|------------------------------------|--|--|
| Failsafe substitute value behavior | 0 = all outputs reset (default) | Substitute value behavior for all outputs |
| | 1 = all outputs set | |
| | 2 = hold last value | |
| | 3 = substitute values | |
| Failsafe substitute values | 0 = zero (default) | Specification of a substitute value pattern for all outputs. In order to use this parameter, you must first set the "Substitute values" in the "Failsafe substitute value behavior" parameter. |

Byte order: Substitute value pattern



The parameter "Failsafe substitute value" controls regardless of the setting "byte ordering exchange" always the same outputs. Take this into account when calculating the substitute value.

Non-turned byte order:

| Byte | Byte 0 | | | | | | | | Byte 1 | | | | | | | |
|------|--------|----|----|----|----|----|----|----|--------|----|----|----|----|----|----|----|
| Bit | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
| OUT | 07 | 06 | 05 | 04 | 03 | 02 | 01 | 00 | 17 | 16 | 15 | 14 | 13 | 12 | 11 | 10 |

Rotated byte order:

| Byte | Byte 1 | | | | | | | | Byte 0 | | | | | | | |
|------|--------|----|----|----|----|----|----|----|--------|----|----|----|----|----|----|----|
| Bit | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
| OUT | 07 | 06 | 05 | 04 | 03 | 02 | 01 | 00 | 17 | 16 | 15 | 14 | 13 | 12 | 11 | 10 |

10.4 Swap byte order

The byte order of the process data can be changed with the following parameters on the IO module in the slot 2.

| Parameter | Possible values (bold = default) | Description |
|-----------------|----------------------------------|---|
| Swap byte order | 0 = off (default) | With this parameter, the process data can be rotated, ie the byte swap. The parameter "Failsafe substitute value" remains unaffected. |
| | 1 = on | |

10.5 Diagnostic messages

PROFINET enables the PROFINET device to store diagnostic information together with the error location and error type. An incoming alarm informs the PROFINET controller that diagnostic information has been entered.

When the diagnostic information has been removed, an outgoing alarm is sent to the device.

If at least one piece of diagnostic information is stored, the SF LED is on. If no diagnostic information is present, the SF LED is off.

The following PROFINET diagnostic messages are indicated by the PROFINET device:

- Overtemperature of the device
- Surge voltage of U_S
- Overload of U_S
- Short circuit of an output
- Output overload



Channel diagnostics are always reported in groups of 4.

10.6 LLDP - Link Layer Discovery Protocol

The device supports LLDP according to IEEE 802.1AB and therefore enables topology detection of devices that also have LLDP activated.

Advantages of using LLDP:

- Improved error location detection
- Improved device replacement
- More efficient network configuration

The following information is received by or sent to neighbors, as long as LLDP is activated:

- The device sends its own management and connection information to neighboring devices.
- The device receives management and connection information from neighboring devices.

Engineering tools can be used to represent the LLDP information as a topology overview.

10.7 MRP - Media Redundancy Protocol

The device supports the role of a Media Redundancy Client (MRC) in an MRP network.



Follow the instructions in the documentation for your engineering tool and controller in order to parameterize this function.

10.8 FSU - Fast Startup

The device supports the Fast Startup function. This function enables fast startup of the PROFINET device. The device is ready to operate in < 500 ms.



Follow the instructions in the documentation for your engineering tool and controller in order to parameterize this function.

10.9 Shared device

The device supports the shared device function. This enables two controllers to simultaneously establish a cyclic connection to the device and read input data. Writing outputs can only be activated by the first controller.



Follow the instructions in the documentation for your engineering tool and controller in order to parameterize this function.

10.10 Device replacement

Devices can be replaced without having to reconfigure them within the PROFINET network.

Device replacement is only then possible if the new device is in its default state. The controller must support the device replacement function.

The device name and the device address are assigned by the controller to the newly added PROFINET device with the help of the neighborhood detection function.

10.11 I&M functions

The PROFINET device supports Identification & Maintenance functions (I&M). General Identification & Maintenance functions 0 ... 4 can be read via slot 0.

I&M 0 (slot 0)

| I&M data | Access / data type | Presets |
|-----------------------|--------------------|---|
| MANUFACTURER_ID | Read / 2 bytes | B0 _{hex} (Phoenix Contact GmbH & Co. KG) |
| ORDER_ID | Read / 20 bytes | 2701511 |
| SERIAL_Number | Read / 16 bytes | Stipulated in the product process |
| HARDWARE_Revision | Read / 2 bytes | Corresponds to the hardware version of the device |
| SOFTWARE_Revision | Read / 4 bytes | Corresponds to the firmware version of the device |
| REVISION_Counter | Read / 2 bytes | 0000 _{hex} (reserved) |
| PROFILE_ID | Read / 2 bytes | 4E00 _{hex} (generic device) |
| PROFILE_SPECIFIC_TYPE | Read / 2 bytes | 0003 _{hex} (IO module) |
| IM_VERSION | Read / 2 bytes | 0101 _{hex} (Version 1.1) |
| IM_SUPPORTED | Read / 2 bytes | 001E _{hex} (I&M 1 ... 4) |

I&M 1 (slot 0)

| I&M data | Access / data type | Presets |
|--------------|-----------------------|------------------------------|
| TAG_FUNCTION | Read/write / 32 bytes | "20 _{hex} " (empty) |
| TAG_LOCATION | Read/write / 22 bytes | "20 _{hex} " (empty) |

I&M 2 (slot 0)

| I&M data | Access / data type | Presets |
|-------------------|-----------------------|------------------------------|
| INSTALLATION_DATE | Read/write / 16 bytes | "20 _{hex} " (empty) |
| RESERVED | Read/write / 38 bytes | 00 _{hex} |

I&M 3 (slot 0)

| I&M data | Access / data type | Presets |
|------------|-----------------------|------------------------------|
| DESCRIPTOR | Read/write / 54 bytes | "20 _{hex} " (empty) |

I&M 4 (slot 0)

| I&M data | Access / data type | Presets |
|-----------|-----------------------|------------------------------|
| SIGNATURE | Read/write / 54 bytes | "20 _{hex} " (empty) |

11 Startup

11.1 Delivery state/default settings

By default upon delivery, the following functions and features are available:

PROFINET

| | |
|---------------------|-----------------------|
| PROFINET name: | No name assigned |
| IP parameters: | 0.0.0.0 |
| Subnet mask: | 0.0.0.0 |
| Default Gateway: | 0.0.0.0 |
| Device designation: | AXL E PN DIO16 M12 6P |
| Vendor ID: | 00B0 _{hex} |
| Device ID: | 0104 _{hex} |

Firmware update

| | |
|----------------------------------|-----------------|
| Firmware update on next restart: | deactivated |
| TFTP server IP address: | 192.168.210.211 |
| Firmware file name: | FIRMWARE.NXF |

System identification

| | |
|------------------|-------------------------|
| Device name: | No name assigned |
| Description: | No description assigned |
| Device location: | No location assigned |
| Contact: | No contact assigned |

Web-based Management (WBM)

| | |
|------------|---------|
| User name: | admin |
| Password: | private |

11.2 Starting the firmware

Once you have connected the power, the firmware is started. After completion of the firmware boot process, the RDY LED lights up green. After completion of the firmware boot process, the BF LED either lights up or flashes.

11.3 Firmware update

In order to update the firmware of the device, the device must be provided with a firmware container via a TFTP server or it must be loaded onto the device via FTP. Any FTP client or TFTP server can be used for this. The update must always be initiated by the web-based management. When carrying out the firmware update, the RDY LED flashes yellow.

11.4 Restoring the default settings

The default settings can be restored via WBM.

To do this, go to:

Administration web page > default settings and follow the instructions.

12 WBM - Web-based management

The device has a web server, which generates the required pages for web-based management and, depending on the requirements of the user, sends them to a standard web browser. Web-based management can be used to access static information (e.g., technical data, MAC address) or dynamic information (e.g., IP address, status information).



You can access web-based management by entering the IP address you assigned to the device in the browser.



If you cannot access the WBM pages, check the connection settings in your browser and deactivate the proxy, if set.

13 SNMP - Simple Network Management Protocol

The device supports SNMP v1.

Management Information Base - MIB



The corresponding latest MIBs are available on the Internet at phoenixcontact.net/products.

For the object descriptions, please refer to the ASN1 descriptions for this product.

The password for read access is “public” and cannot be changed.

By default upon delivery, the password for write/read access is “private” and can be modified at any time.

By default, the password for write and read access is “private” and can be changed at any time.

14 Device description file (GSDML)

PC Worx

Parameterization of the PROFINET device in PC Worx requires at least PC Worx Version 6.30.601. This is part of the AUTOMATION Software Suite 2013, Version 1.80, Order No. 2985660.

An online data sheet of the device with important technical data and a configuration file are integrated into PC Worx. If several versions of the configuration file are available, make sure that you are working with the file version that corresponds to the firmware/hardware version used.

Other tools (STEP 7 ...)

The PROFINET device is parameterized using the configuration tool of the PROFINET controller. For parameterization, integrate the corresponding device GSDML file in the relevant software tool (STEP 7/HW Config, etc.).



For the latest device description files, visit phoenixcontact.net/products. If several versions of the device description file are available, make sure that you are working with the file version that corresponds to the firmware/hardware version used.