# AXL SE DI16/1 NPN - Digital module

1105559

https://www.phoenixcontact.com/us/products/1105559

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CRA-READY



Axioline Smart Elements, Digital input module, Digital inputs: 16 (NPN), 24 V DC, connection technology: 1-conductor, degree of protection: IP20; The product is being prepared for compliance with the Cyber Resilience Act (CRA).

## Product description

You can integrate Axioline Smart Elements into systems with the Smart Element interface. This Smart Element detects digital signals.

## Your advantages

- 16 digital inputs, NPN-wired
- Nominal voltage: 24 V DC
- Nominal current: 2.4 mA
- Connection of sensors in 1-conductor technology
- Filter time of < 1 ms
- Device rating plate stored

ELEKTROGERÄTE RÜCKNAHME

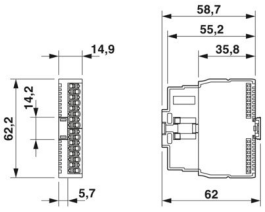
## Commercial data

| | |
|---|---|
| Item number | 1105559 |
| Packing unit | 1 pc |

| | |
|---|---|
| Minimum order quantity | 1 pc |
| Sales key | DR05 |
| Product key | DRIB31 |
| GTIN | 4055626989006 |
| Weight per piece (including packing) | 36.6 g |
| Weight per piece (excluding packing) | 35 g |
| Customs tariff number | 85389091 |
| Country of origin | DE |

## Technical data

### Dimensions

| | |
|---|---|
| Dimensional drawing |  |
| Width | 14.9 mm |
| Height | 62.2 mm |
| Depth | 62 mm |

### Notes

| | |
|---|---|
| Note on application | Only for industrial use |
| Note on application | As things stand now, we are preparing the product so that, as of December 11, 2027, it will comply with the requirements of the EU Cyber Resilience Act (CRA) based on the information currently available regarding the CRA. |

### Mounting

| | |
|---|---|
| Mounting type | Plug-in mounting (Smart Element slot) |
| Mounting position | See the system in which the Smart Element is used. |

### Material specifications

| | |
|---|---|
| Color (Housing) | gray (RAL 7042) |

### Interfaces

Smart Element interface

| | |
|---|---|
| Number of interfaces | 1 |
| Connection method | Card edge connector |
| Start time until ready to operate | < 500 ms |

### System properties

Programming data

| | |
|---|---|
| Process data channel | 16 bit |
| Input address area | 2 Byte |
| Output address area | 0 Byte |

Fieldbus data telegram (PROFIBUS)

| | |
|---|---|
| Required parameter data | 1 Byte |
| Required configuration data | 6 Byte |

### Input data

Digital:

| | |
|---|---|
| Input name | Digital inputs |
| Description of the input | Based on EN 61131-2 type 3 for PNP inputs |
| Number of inputs | 16 (NPN) |
| Connection method | Push-in connection |
| Connection technology | 1-conductor |
| Input voltage range "0" signal | 19 V DC ... 30 V DC (At $U_P$ = 24 V DC) |
| Input voltage range "1" signal | 0 V DC ... 13 V DC (At $U_P$ = 24 V DC) |
| Nominal input voltage $U_{IN}$ | 24 V DC |
| Nominal input current at $U_{IN}$ | 2.4 mA |
| Current flow | linear until nominal current is reached, then constantly approx. 2. 4 mA |
| Input filter time | < 1 ms |
| Process data update | typ. 330 µs |
| Protective circuit | Polarity reversal protection of the inputs; Diode |

## Product properties

| | |
|---|---|
| Product type | I/O component |
| Product family | Axioline Smart Elements |
| Type | modular |
| Mounting position | See the system in which the Smart Element is used. |
| Special properties | The product is being prepared for compliance with the Cyber Resilience Act (CRA) |

Insulation characteristics

| | |
|---|---|
| Overvoltage category | II (IEC 60664-1, EN 60664-1) |
| Pollution degree | 2 (IEC 60664-1, EN 60664-1) |

## Electrical properties

| | |
|---|---|
| Maximum power dissipation for nominal condition | 1.3 W |

Potentials: Communications power supply of the Smart Elements ($U_{SE}$)

| | |
|---|---|
| Supply voltage | using card edge connectors |

Potentials: I/O supply ($U_P$)

| | |
|---|---|
| Supply voltage | 24 V DC (using card edge connectors) |
| Supply voltage range | 19.2 V DC ... 30 V DC (including all tolerances, including ripple) |
| Current draw | max. 40 mA |
| Current consumption | min. 15 mA (without connected peripherals) |
| Protective circuit | Surge protection; See the system in which the Smart Element is used. |
| | Reverse polarity protection; Polarity protection diode |
| Protection | See the system in which the Smart Element is used. |

Electrical isolation/isolation of the voltage ranges

| | |
|---|---|
| Test voltage: Communications supply / 24 V supply (I/O) | 500 V AC, 50 Hz, 1 min |

| | |
|---|---|
| Test voltage: Communications supply / functional ground | 500 V AC, 50 Hz, 1 min |
| Test voltage: 24 V supply (I/O) / functional ground | 500 V AC, 50 Hz, 1 min |

## Connection data

### Connection technology

| | |
|---|---|
| Connection name | I/O |
| Note on the connection method | Please observe the information provided on conductor cross-sections in the “Axioline Smart Elements” user manual. |

### I/O

| | |
|---|---|
| Connection method | Push-in connection |
| Note on the connection method | Please observe the information provided on conductor cross-sections in the “Axioline Smart Elements” user manual. |
| Conductor cross-section, rigid | 0.25 mm² ... 1.5 mm² |
| Conductor cross-section, flexible | 0.25 mm² ... 1.5 mm² |
| Conductor cross-section AWG | 24 ... 16 |
| Conductor cross-section, flexible, with ferrule, with plastic sleeve | 0.25 mm² ... 1.5 mm² |
| Conductor cross-section, flexible, with ferrule, without plastic sleeve | 0.25 mm² ... 1.5 mm² |
| | 0.25 mm² ... 1.5 mm² |
| Conductor cross-section, flexible, with ferrule, with plastic sleeve | 0.25 mm² ... 1.5 mm² |
| Stripping length | 8 mm |

## Environmental and real-life conditions

### Ambient conditions

| | |
|---|---|
| Ambient temperature (operation) | -25 °C ... 60 °C |
| Degree of protection | IP20 |
| 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) |
| Ambient temperature (storage/transport) | -40 °C ... 85 °C |
| Permissible humidity (operation) | 5 % ... 95 % (non-condensing) |
| Permissible humidity (storage/transport) | 5 % ... 95 % (non-condensing) |

### Mechanical test

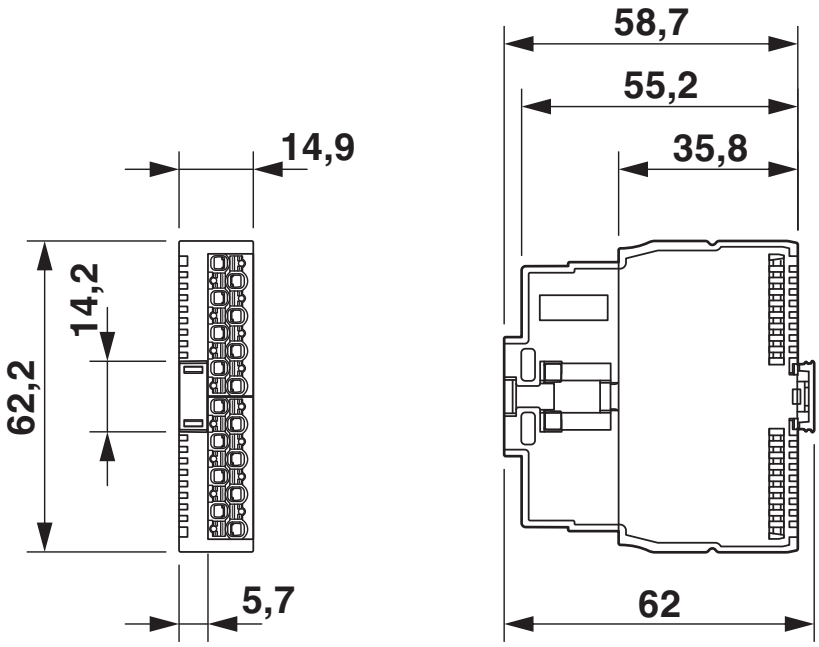
| | |
|---|---|
| Vibration resistance in accordance with EN 60068-2-6/IEC 60068-2-6 | 5g |
| Shock in accordance with EN 60068-2-27/IEC 60068-2-27 | 30g |
| Continuous shock in accordance with EN 60068-2-27/IEC 60068-2-27 | 10g |

## Standards and regulations

| | |
|---|---|
| Protection class | III (IEC 61140, EN 61140, VDE 0140-1) |

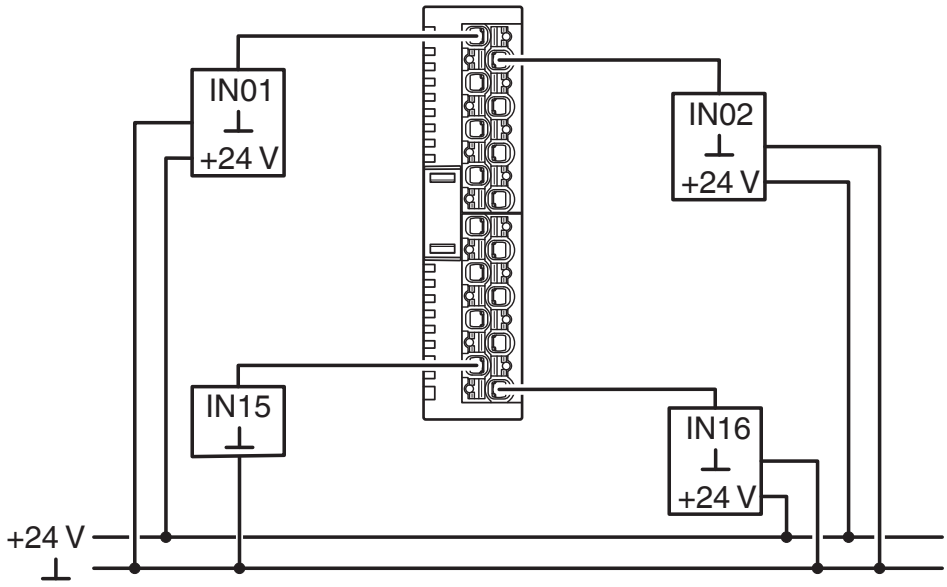
## Drawings

Dimensional drawing



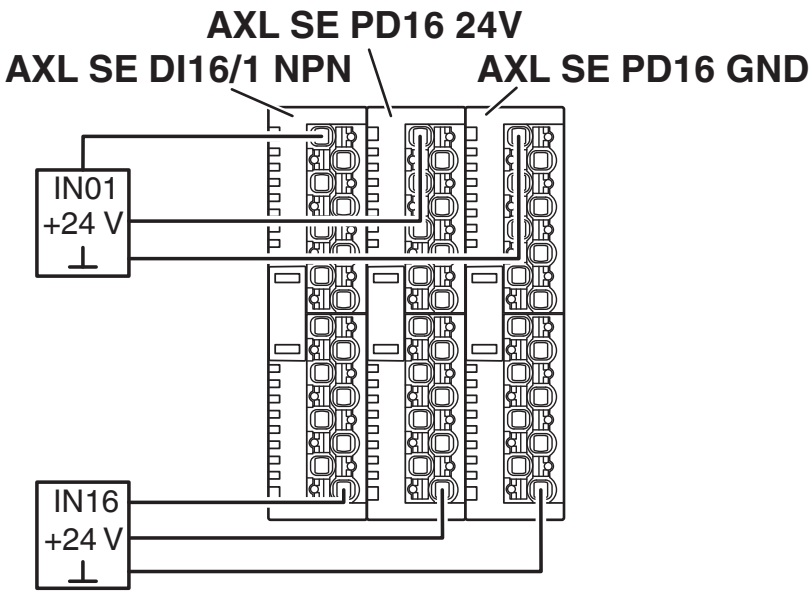

Dimensions

Connection diagram



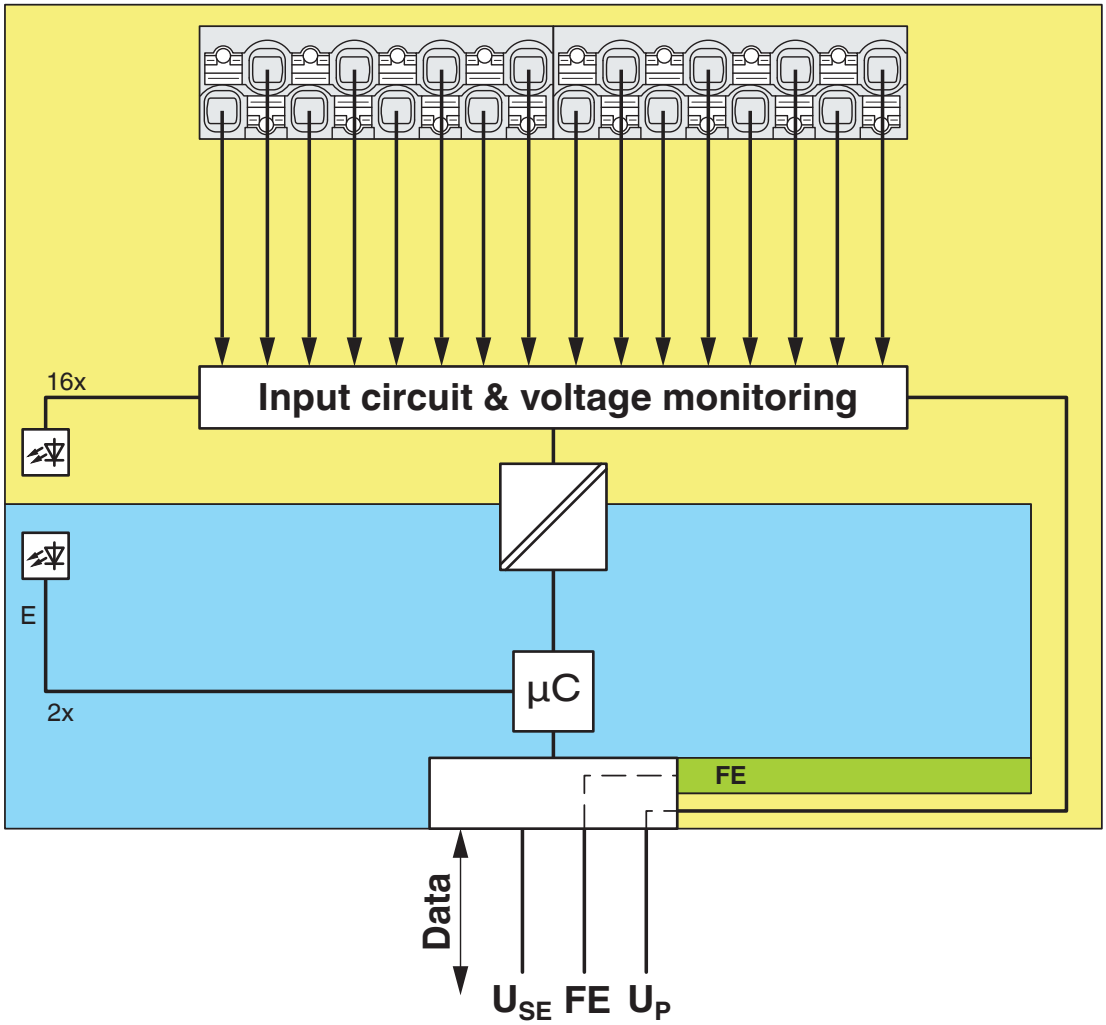

Connection in 1-conductor technology

Connection diagram




Connection in 3-conductor technology when using AXL SE PD ... (see data sheet)

Block diagram




Internal wiring of the terminal points

## Approvals

To download certificates, visit the product detail page: https://www.phoenixcontact.com/us/products/1105559

**cULus Listed**
Approval ID: E238705

## Classifications

### ECLASS

| | |
|---|---|
| ECLASS-13.0 | 27242604 |
| ECLASS-15.0 | 27242604 |

### ETIM

| | |
|---|---|
| ETIM 10.0 | EC001599 |

### UNSPSC

| | |
|---|---|
| UNSPSC 21.0 | 32151600 |

## Environmental product compliance

EU RoHS

| | |
|---|---|
| Fulfills EU RoHS substance requirements | Yes |
| Exemption | 7(a), 7(c)-I |

China RoHS

| | |
|---|---|
| Environment friendly use period (EFUP) | EFUP-50 |
| | An article-related China RoHS declaration table can be found in the download area for the respective article under "Manufacturer declaration". For all articles with EFUP-E, no China RoHS declaration table issued and required. |

EU REACH SVHC

| | |
|---|---|
| REACH candidate substance (CAS No.) | Lead(CAS: 7439-92-1) |

EF3.1 Climate Change

| | |
|---|---|
| CO2e kg | 2.866 kg CO2e |


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