

AXL SE DI16/1 NPN - Digital module



1105559

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

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Axioline Smart Elements, Digital input module, Digital inputs: 16 (NPN), 24 V DC, connection technology: 1-conductor, degree of protection: IP20

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

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 |

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1105559

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Technical data

Dimensions

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

Notes

Note on application

| | |
|---------------------|-------------------------|
| Note on application | Only for industrial use |
|---------------------|-------------------------|

Material specifications

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

Interfaces

Smart Element interface

| | |
|-----------------------------------|--|
| Number of interfaces | 1 |
| Connection method | Card edge connector |
| Transmission speed | See system in which you use the Smart Element. |
| Start time until ready to operate | < 500 ms |

System properties

Programming data (LocalbusSlave)

| | |
|----------------------|--------|
| 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 |

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1105559

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| | |
|-----------------------------------|---|
| 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 μ s |
| 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. |

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 | |
|-----------------------|--|

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1105559

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| | |
|-------------------------------|---|
| 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 mm ² ... 1.5 mm ² |
| Conductor cross-section, flexible | 0.25 mm ² ... 1.5 mm ² |
| Conductor cross-section AWG | 24 ... 16 |
| Conductor cross-section, flexible, with ferrule, with plastic sleeve | 0.25 mm ² ... 1.5 mm ² |
| Conductor cross-section, flexible, with ferrule, without plastic sleeve | 0.25 mm ² ... 1.5 mm ² 0.25 mm ² ... 1.5 mm ² |
| Conductor cross-section, flexible, with ferrule, with plastic sleeve | 0.25 mm ² ... 1.5 mm ² |
| 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) |
|------------------|---------------------------------------|

Mounting

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

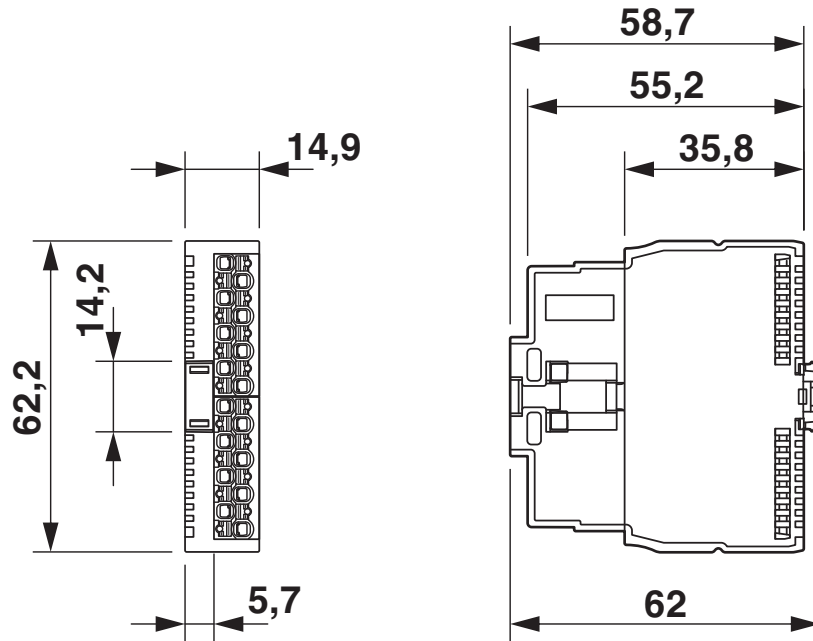
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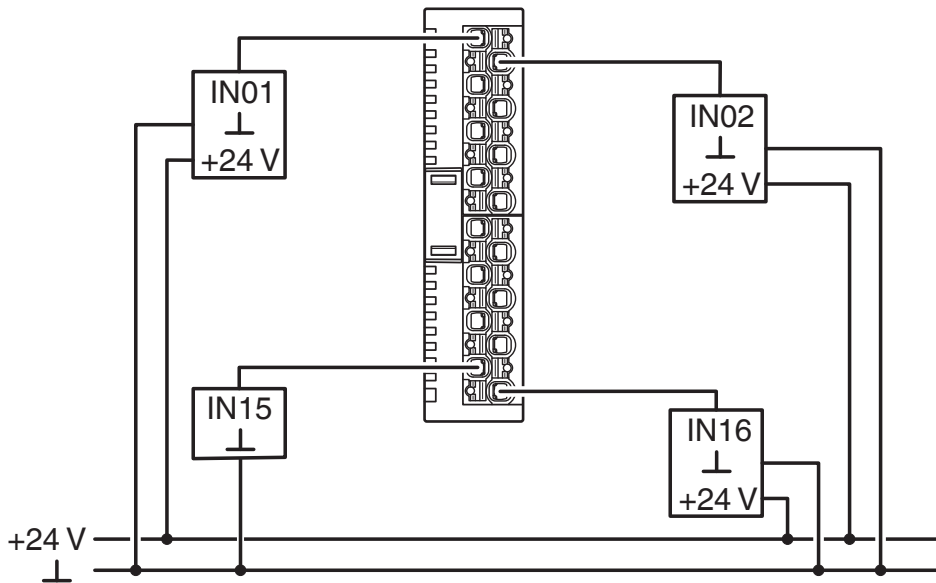
Drawings

Dimensional drawing



Dimensions

Connection diagram



Connection in 1-conductor technology

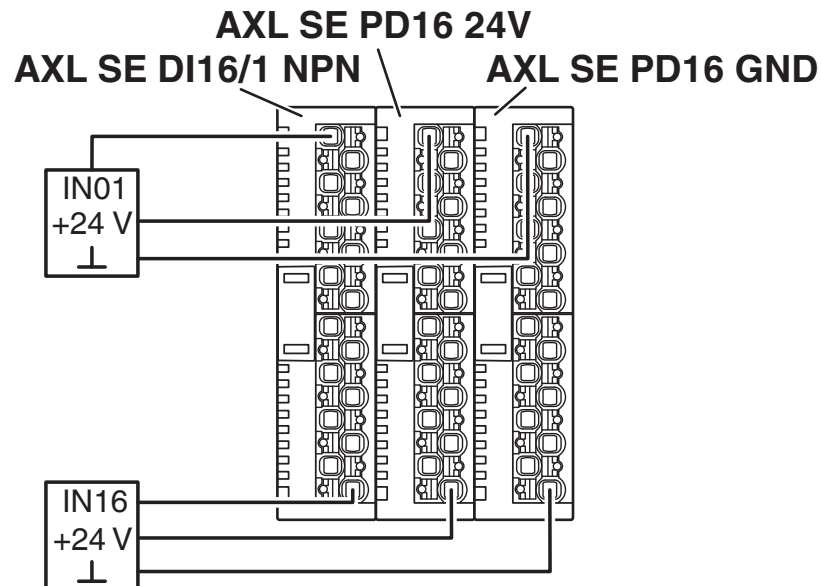
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Connection diagram

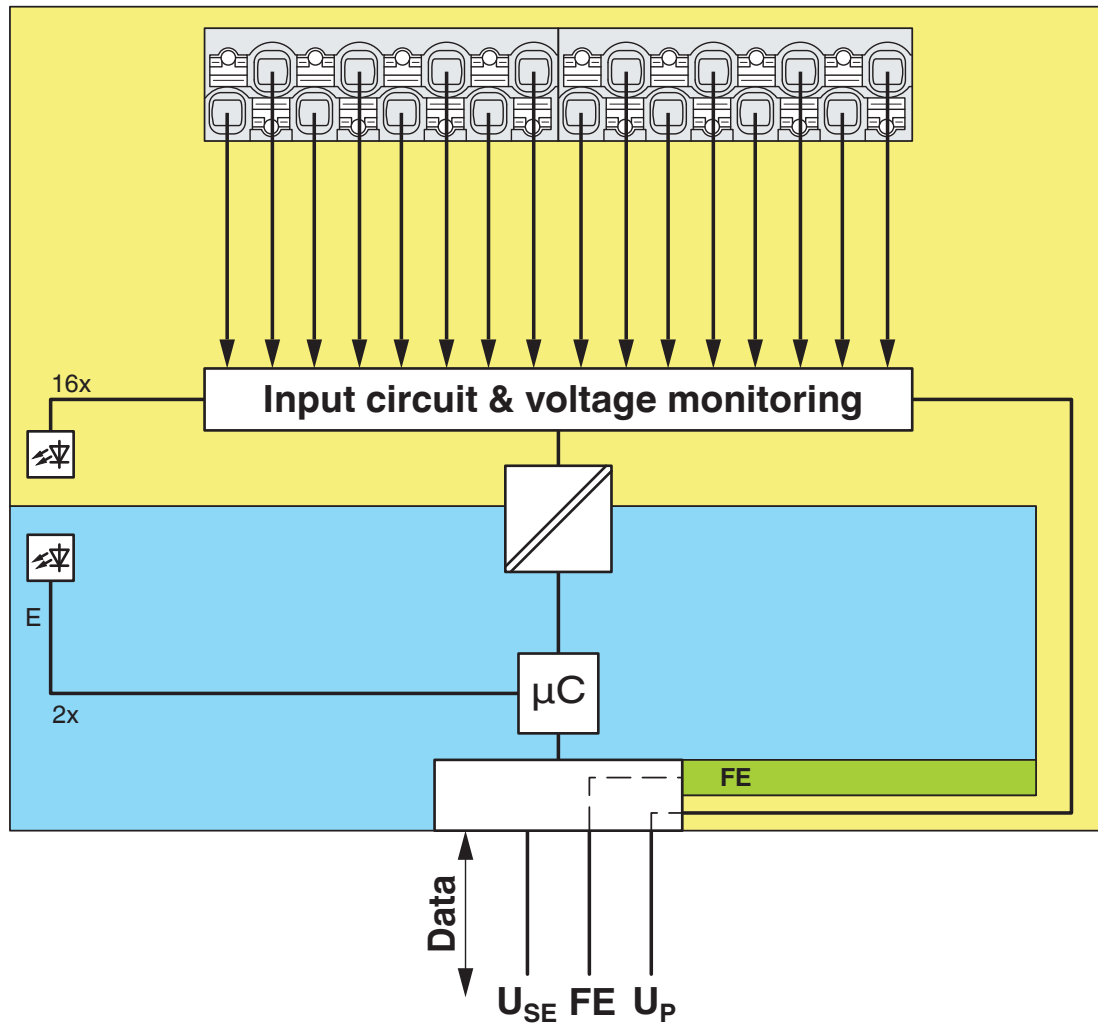


Connection in 3-conductor technology when using AXL SE PD ... (see data sheet)

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Block diagram



Internal wiring of the terminal points

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Approvals

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cULus Listed

Approval ID: E238705

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Classifications

ECLASS

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

ETIM

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

UNSPSC

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

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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) |
|-------------------------------------|----------------------|

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