AXL SE DI16/1 NPN - Digital module

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; 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

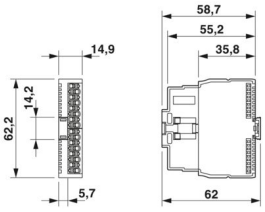
Commercial data

Item number	1105559
Packing unit	1 pc

Minimum order quantity	1 pc
Sales key	DRIB31
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

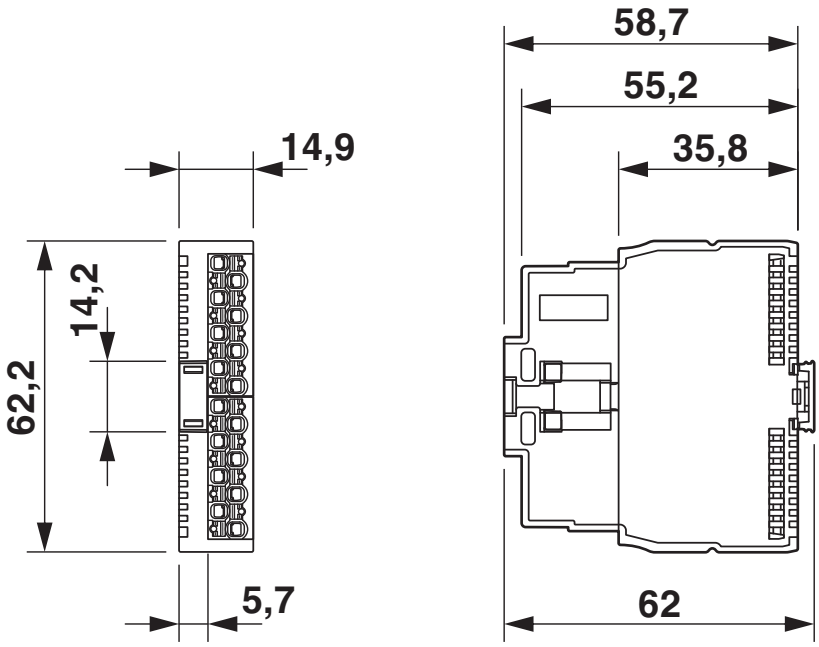
Vibration resistance in accordance with EN 60068-2-6/IEC 60068-2-6	5g
Shock in accordance with EN 60068-2-27/IEC 60068-2-27	30g
Continuous shock in accordance with EN 60068-2-27/IEC 60068-2-27	10g

Standards and regulations

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

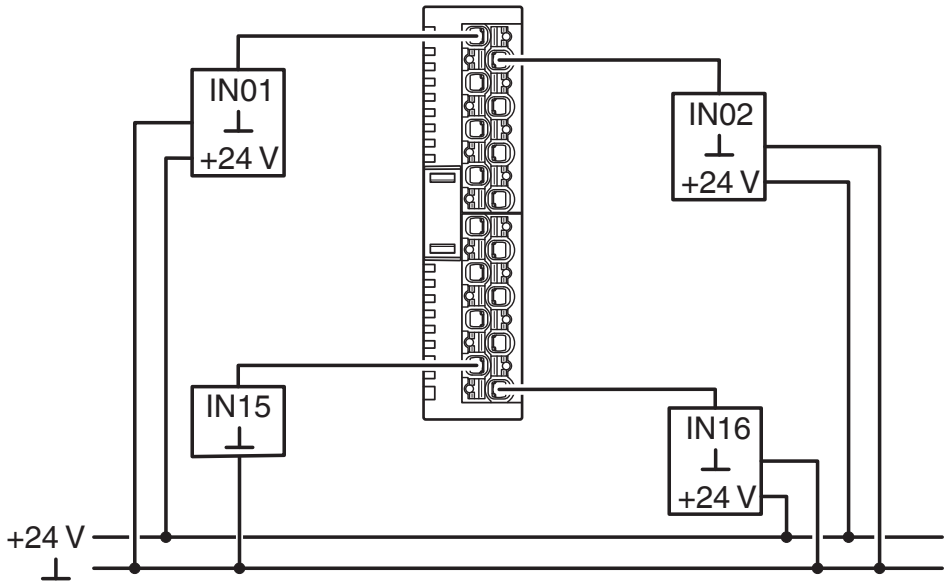
Drawings

Dimensional drawing



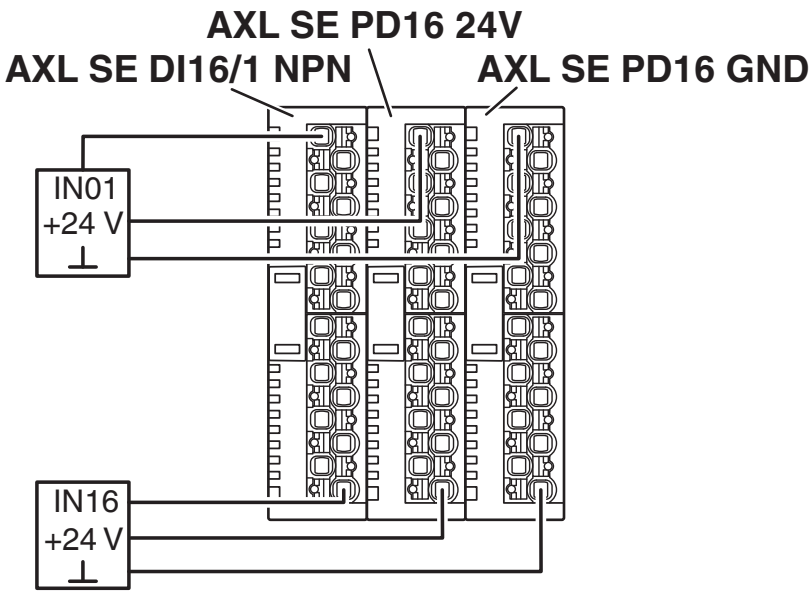
Dimensions

Connection diagram



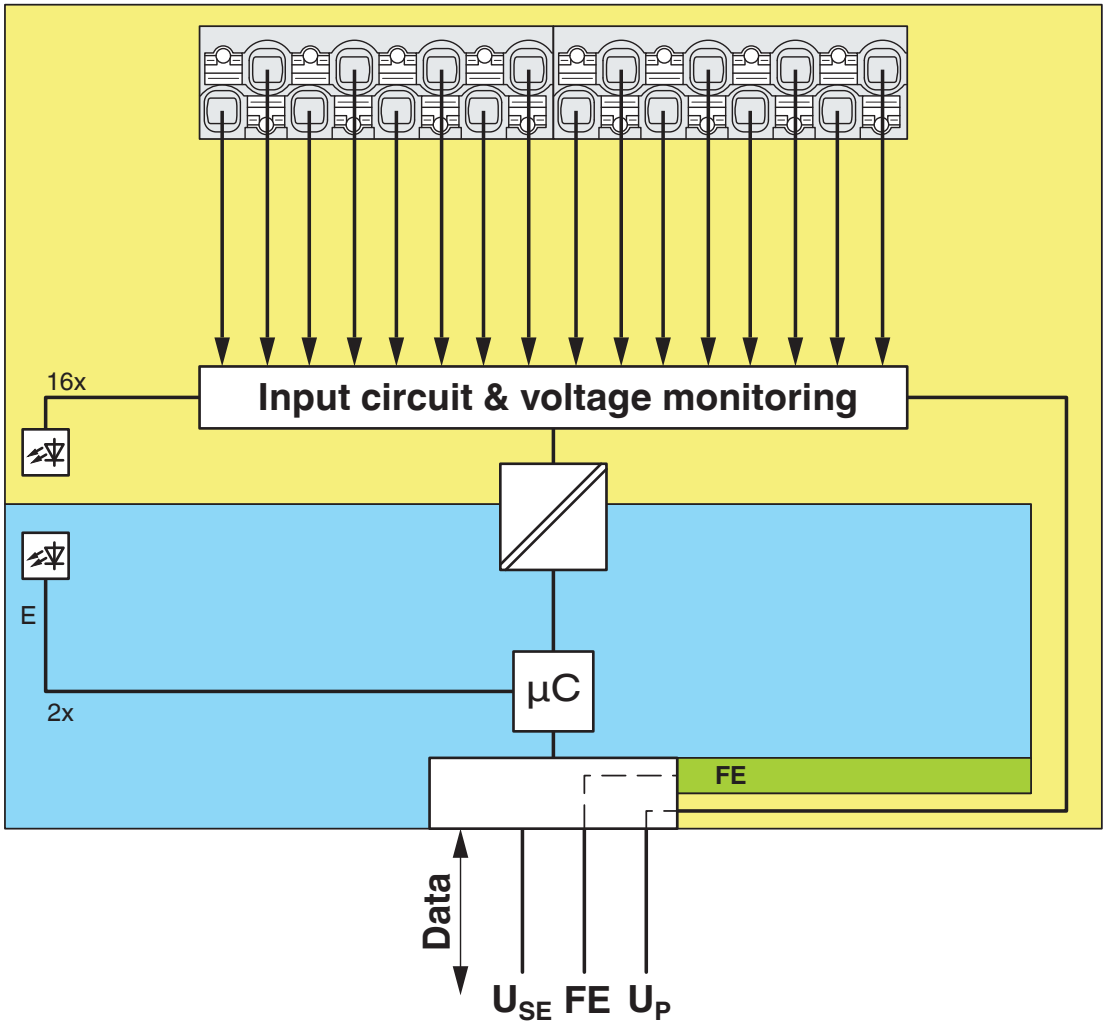
Connection in 1-conductor technology

Connection diagram



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

Block diagram



Internal wiring of the terminal points

Approvals

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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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