

# I/O module - AXL SE DI16/1 - 1088127

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Axioline Smart Elements, Digital input module, Digital inputs: 16, 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 according to EN 61131-2 type 1 and type 3
- ✓ 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



## Key Commercial Data

Packing unit	1 pc
GTIN	
GTIN	4055626886374
Weight per Piece (excluding packing)	35.000 g
Weight per piece (including packing)	37.100 g
Custom tariff number	85389091
Country of origin	Germany
Sales Key	O1 - Automation Systems
Note	Made to Order (non-returnable)

## Technical data

### Note

Utilization restriction	EMC: class A product, see manufacturer's declaration in the download area
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## Technical data

### Dimensions

Caption	Dimensions
Width	14.9 mm
Height	62.2 mm
Depth	62 mm

### Ambient conditions

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

### Connection data

Designation	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 solid min.	0.25 mm <sup>2</sup>
Conductor cross section solid max.	1.5 mm <sup>2</sup>
Conductor cross section flexible min.	0.25 mm <sup>2</sup>
Conductor cross section flexible max.	1.5 mm <sup>2</sup>
Conductor cross section AWG min.	24
Conductor cross section AWG max.	16
Conductor cross section, flexible, with ferrule, with plastic sleeve	0.25 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>
Conductor cross section flexible, with ferrule without plastic sleeve	0.25 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>
Stripping length	8 mm

### General

Mounting type	Smart Element slot
Color	traffic grey A RAL 7042
Net weight	35 g
Degree of pollution	2 (IEC 60664-1, EN 60664-1)
Mounting position	See the system in which the Smart Element is used.

### Axioline potentials

Designation	Communications power supply of the Smart Elements (U <sub>SE</sub> )
Additional text	using card edge connectors
Current consumption	max. 15 mA
Designation	I/O supply (U <sub>P</sub> )
Supply voltage	24 V DC (using card edge connectors)
Supply voltage range	19.2 V DC ... 30 V DC (including all tolerances, including ripple)

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## Technical data

### Axioline potentials

Current consumption	min. 14 mA (without connected peripherals)
	max. 17 mA
Power consumption	min. 340 mW
	max. 1.64 W
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.

### Digital inputs

Input name	Digital inputs
Description of the input	EN 61131-2 types 1 and 3
Connection method	Push-in connection
Connection technology	1-conductor
Number of inputs	16
Protective circuit	Polarity reversal protection of the inputs Diode
Nominal input voltage $U_{IN}$	24 V DC
Nominal input current at $U_{IN}$	2.4 mA
Input filter time	< 1 ms
Input voltage range "0" signal	-3 V DC ... 5 V DC
Input voltage range "1" signal	11 V DC ... 30 V DC

### Electrical isolation

Test section	Communications supply / 24 V supply (I/O) 500 V AC 50 Hz 1 min.
	Communications supply / functional ground 500 V AC 50 Hz 1 min.
	24 V supply (I/O) / functional ground 500 V AC 50 Hz 1 min.

### Standards and Regulations

Immunity to ESD	Immunity test in accordance with EN 61000-6-2/IEC 61000-6-2 Electrostatic discharge (ESD) EN 61000-4-2/IEC 61000-4-2 Criterion B, 6 kV contact discharge, 8 kV air discharge
Immunity to EF	Immunity test in accordance with EN 61000-6-2/IEC 61000-6-2 Electromagnetic fields EN 61000-4-3/IEC 61000-4-3 Criterion A, Field intensity: 10 V/m
Immunity to burst	Immunity test in accordance with EN 61000-6-2/IEC 61000-6-2 Fast transients (burst) EN 61000-4-4/IEC 61000-4-4 Criterion B, 2 kV
Immunity to surge	Immunity test in accordance with EN 61000-6-2/IEC 61000-6-2 Transient overvoltage (surge) EN 61000-4-5/IEC 61000-4-5 Criterion B, I/O cables: $\pm 1$ kV asymmetrical
Immunity to conducted interference	Immunity test in accordance with EN 61000-6-2/IEC 61000-6-2 Conducted interference EN 61000-4-6/IEC 61000-4-6 Criterion A, Test voltage 10 V
Interference emission	Noise emission test in accordance with EN 61000-6-4/IEC 61000-6-4 Class A
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
	Continuous shock according to EN 60068-2-27/IEC 60068-2-27 10g

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## Technical data

### Standards and Regulations

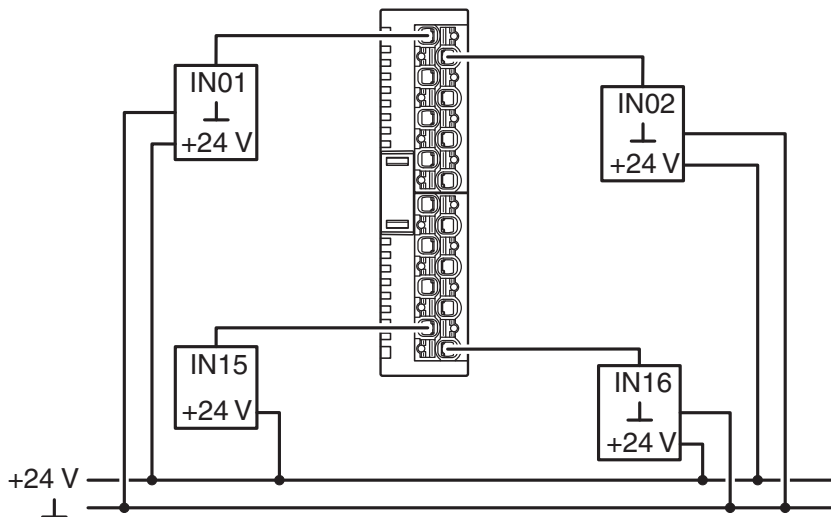
Protection class	III (IEC 61140, EN 61140, VDE 0140-1)
Overvoltage category	II (IEC 60664-1, EN 60664-1)

### Environmental Product Compliance

REACH SVHC	Lead 7439-92-1
China RoHS	Environmentally Friendly Use Period = 50 years
	For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration"

## Drawings

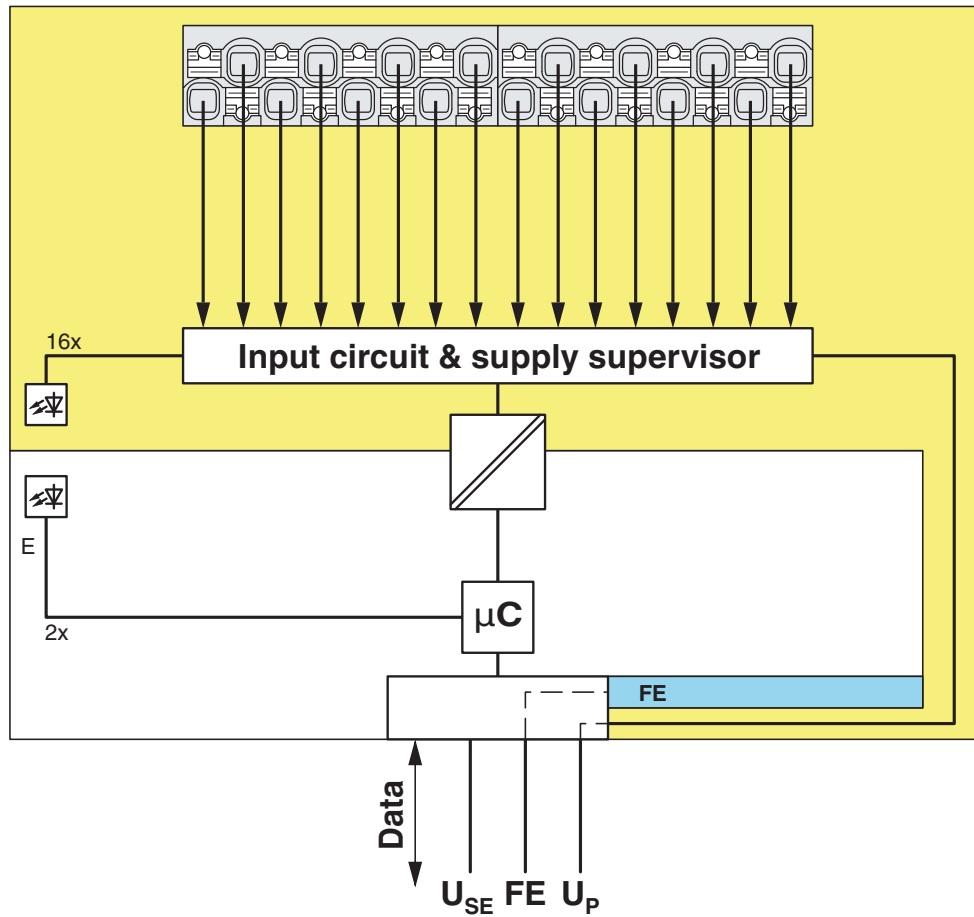
Connection diagram



Connection example

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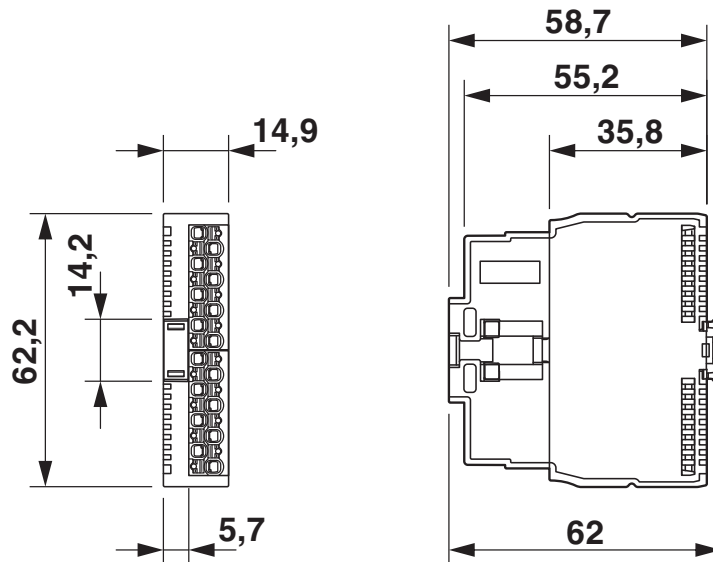
Block diagram



Internal wiring of the terminal points

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Dimensional drawing



Dimensions

## Classifications

### eCl@ss

eCl@ss 10.0.1	27242604
eCl@ss 11.0	27242604
eCl@ss 9.0	27242604

### ETIM

ETIM 7.0	EC001599
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### UNSPSC

UNSPSC 18.0	32151602
UNSPSC 19.0	32151602
UNSPSC 20.0	32151602
UNSPSC 21.0	32151602

## Approvals

### Approvals

Approvals

UL Listed / cUL Listed / cULus Listed

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## Approvals

Ex Approvals

### Approval details

UL Listed		<a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a>	FILE E 238705
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cUL Listed		<a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a>	FILE E 238705
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cULus Listed			
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## Accessories

### Accessories

#### Crimping tool

Crimping pliers - CRIMPFOX 6 - 1212034



Crimping pliers, for ferrules without insulating collar according to DIN 46228 Part 1 and ferrules with insulating collar according to DIN 46228 Part 4, 0.25 mm<sup>2</sup> ... 6.0 mm<sup>2</sup>, lateral entry, trapezoidal crimp

Crimping pliers - CRIMPFOX DUO 10 - 1031721



Crimping pliers, type of contact: Insulated and uninsulated ferrules, min. cross section: 0.14 mm<sup>2</sup>, max. cross section: 10 mm<sup>2</sup>, for TWIN ferrules up to 2 x 4 mm<sup>2</sup>, automatic cross section adjustment, rotating die, lateral and frontal insertion, compression: Trapezoidal crimp, black/green

Crimping pliers - CRIMPFOX 10T-F - 1134913



Crimping pliers, type of contact: Insulated and uninsulated ferrules, standards/specifications: DIN 46228-1, DIN 46228-4, min. cross section: 0.14 mm<sup>2</sup>, max. cross section: 10 mm<sup>2</sup>, For TWIN ferrules up to 2 x 4 mm<sup>2</sup>, automatic cross section adjustment, frontal insertion, compression: Trapezoidal crimp, black

## I/O module - AXL SE DI16/1 - 1088127

### Accessories

#### I/O component

Module carrier - AXL F BP SE4 - 1088135



AxioLine F, Backplane, 4 slots for AxioLine Smart Elements, transmission speed in the local bus: 100 Mbps, degree of protection: IP20

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Module carrier - AXL F BP SE6 - 1088136



AxioLine F, Backplane, 6 slots for AxioLine Smart Elements, transmission speed in the local bus: 100 Mbps, degree of protection: IP20

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#### Screwdriver tools

Screwdriver - SZS 0,4X2,5 VDE - 1205037



Screwdriver, slot-headed, VDE insulated, size: 0.4 x 2.5 x 80 mm, 2-component grip, with non-slip grip

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#### System cable

Round cable - VIP-CAB-FLK14/AXIO/0,14/0,5M - 2901604



Round cable set; controller: AxioLine Realtime I/O; connection 1: Single wires (8-position) (The wires are marked and fitted with ferrules); connection 2: IDC/FLK socket strip (1x 14-position, 90 °-out put); cable length: 0.5 m

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Round cable - VIP-CAB-FLK14/AXIO/0,14/1,0M - 2901605



Round cable set; controller: AxioLine Realtime I/O; connection 1: Single wires (8-position) (The wires are marked and fitted with ferrules); connection 2: IDC/FLK socket strip (1x 14-position, 90 °-out put); cable length: 1 m



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### Accessories

Round cable - VIP-CAB-FLK14/AXIO/0,14/1,5M - 2901606



Round cable set; controller: Axioline Realtime I/O; connection 1: Single wires (8-position) (The wires are marked and fitted with ferrules); connection 2: IDC/FLK socket strip (1x 14-position, 90 °-out put); cable length: 1.5 m

Round cable - VIP-CAB-FLK14/AXIO/0,14/2,0M - 2901607



Round cable set; controller: Axioline Realtime I/O; connection 1: Single wires (8-position) (The wires are marked and fitted with ferrules); connection 2: IDC/FLK socket strip (1x 14-position, 90 °-out put); cable length: 2 m

Round cable - VIP-CAB-FLK14/AXIO/0,14/2,5M - 2901608



Round cable set; controller: Axioline Realtime I/O; connection 1: Single wires (8-position) (The wires are marked and fitted with ferrules); connection 2: IDC/FLK socket strip (1x 14-position, 90 °-out put); cable length: 2.5 m

Round cable - VIP-CAB-FLK14/AXIO/0,14/3,0M - 2901609



Round cable set; controller: Axioline Realtime I/O; connection 1: Single wires (8-position) (The wires are marked and fitted with ferrules); connection 2: IDC/FLK socket strip (1x 14-position, 90 °-out put); cable length: 3 m

Round cable - VIP-CAB-FLK14/AXIO/0,14/4,0M - 2901610



Round cable set; controller: Axioline Realtime I/O; connection 1: Single wires (8-position) (The wires are marked and fitted with ferrules); connection 2: IDC/FLK socket strip (1x 14-position, 90 °-out put); cable length: 4 m

## I/O module - AXL SE DI16/1 - 1088127

### Accessories

Round cable - VIP-CAB-FLK14/AXIO/0,14/6,0M - 2901611



Round cable set; controller: Axioline Realtime I/O; connection 1: Single wires (8-position) (The wires are marked and fitted with ferrules); connection 2: IDC/FLK socket strip (1x 14-position, 90 °-out put); cable length: 6 m

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### Terminal marking

Label - MM-TML (EX4,2)R C1 TR/BK - 0803979



Label, Roll, transparent, unlabeled, can be labeled with: THERMOFOX, THERMOMARK GO, THERMOMARK GO.K, mounting type: adhesive, for terminal block width: 8000 mm, lettering field size: continuous x 3.2 mm

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Marker strip - SK 5,0 WH:REEL - 0805221



Marker strip, Roll, white, unlabeled, can be labeled with: THERMOMARK ROLL 2.0, THERMOMARK ROLL, THERMOMARK ROLL X1, THERMOMARK ROLLMASTER 300/600, THERMOMARK X1.2, mounting type: adhesive, for terminal block width: 5 mm, lettering field size: continuous x 5 mm, Number of individual labels: 90000

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Marker for terminal blocks - UM6M-TM (5X12) - 0830928



Markers for marking terminal blocks from ABB/Entelec, 24-section, unmarked, can be marked with THERMOMARK CARD and BLUEMARK, color: white

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Marker for terminal blocks from the SNK series from ABB - UCT6M-TM 5 - 0830756



Marker for terminal blocks from the SNK series from ABB, Sheet, white, unlabeled, can be labeled with: THERMOMARK CARD, THERMOMARK CARD 2.0, THERMOMARK PRIME, BLUEMARK ID, BLUEMARK ID COLOR, TOPMARK LASER, TOPMARK NEO, mounting type: snap in, for terminal block width: 5.2 mm, lettering field size: 4.17 x 11.3 mm