

## I/O module - AXL SE DO16/1 - 1088129

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Axioline Smart Elements, Digital output module, Digital outputs: 16, 24 V DC, connection method: 1-conductor, degree of protection: IP20

### Product Description


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

### Your advantages

- 16 digital outputs
- 24 V DC, 500 mA
- Connection of actuators in 1-conductor technology
- Substitute value behavior of the outputs can be parameterized for the Smart Element
- Device rating plate stored



### Key Commercial Data

Packing unit	1 pc
GTIN	 4 055626 888101
GTIN	4055626888101
Weight per Piece (excluding packing)	40.000 g
Custom tariff number	85389091
Country of origin	Germany

### 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.
	With a small conductor cross section and high current, the terminal point temperature can reach up to 31 K above the ambient temperature.
	When selecting the cables, observe the permissible operating temperature in accordance with IEC or UL.
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 (EN 60664-1)
Mounting position	See the system in which the Smart Element is used.

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### Technical data

#### Axioline potentials

Designation	Communications power supply of the Smart Elements ( $U_{SE}$ )
Additional text	using card edge connectors
Current consumption	max. 20 mA
Designation	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 consumption	min. 12 mA (without connected peripherals)
	max. 6 A
Power consumption	min. 288 mW
	max. 180 W (of which 1.1 W internal losses)
Protective circuit	Surge protection electronic (35 V, 0.5 s)
	Reverse polarity protection parallel diode
Protection	See the system in which the Smart Element is used.

#### Digital outputs

Output name	Digital outputs
Number of outputs	16
Connection method	Push-in connection
Connection technology	1-conductor
Protective circuit	Short-circuit and overload protection electronic
Output voltage	24 V
Nominal output voltage	24 V DC
	6 A (Also make sure that the maximum permissible current of 6 A is not exceeded.)
Nominal load, inductive	12 VA (1.2 H, 48 $\Omega$ , with nominal voltage)
Nominal load, lamp	12 W (at nominal voltage)
Nominal load, ohmic	12 W (48 $\Omega$ , with nominal voltage)
Switching frequency	max. 1200 per second (With resistive load, at least 50 mA load current)
Load min.	10 k $\Omega$
Output voltage when switched off	max. 1 V
Output current when switched off	max. 300 $\mu$ A
Behavior with overload	Shutdown with automatic restart
Behavior with inductive overload	Output can be destroyed
Reverse voltage resistance to short pulses	limited protection up to 0.5 A for 1 s

#### 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.

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## Technical data

### Electrical isolation

	24 V supply (I/O) / functional ground 500 V AC 50 Hz 1 min.
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### Standards and Regulations

Immunity to ESD	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
Immunity to EF	Noise immunity test in accordance with EN 61000-6-2 Electromagnetic fields EN 61000-4-3/IEC 61000-4-3 Criterion A, Field intensity: 10 V/m
Immunity to burst	Noise immunity test in accordance with EN 61000-6-2 Fast transients (burst) EN 61000-4-4/IEC 61000-4-4 Criterion B, 2 kV
Immunity to surge	Noise immunity test in accordance with EN 61000-6-2 Transient overvoltage (surge) EN 61000-4-5/IEC 61000-4-5 Criterion B, I/O cables: ±1 kV asymmetrical
Immunity to conducted interference	Noise immunity test in accordance with EN 61000-6-2 Conducted interference EN 61000-4-6/IEC 61000-4-6 Criterion A, Test voltage 10 V
Interference emission	Noise emission test as per EN 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
Protection class	III (IEC 61140, EN 61140, VDE 0140-1)
Overvoltage category	II (IEC 60664-1)

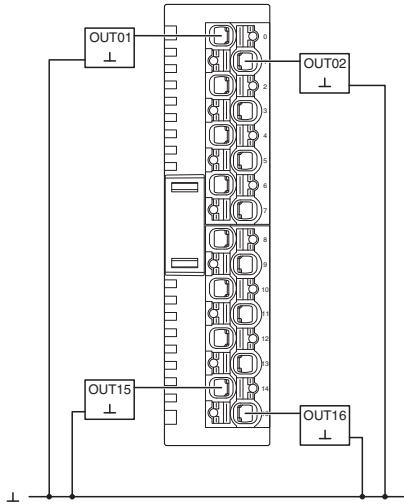
### Environmental Product Compliance

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"

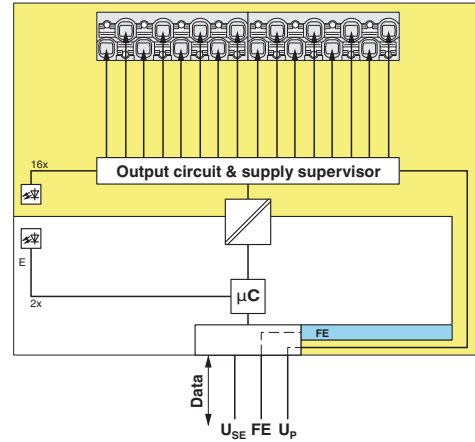
## Drawings

# I/O module - AXL SE DO16/1 - 1088129

Connection diagram



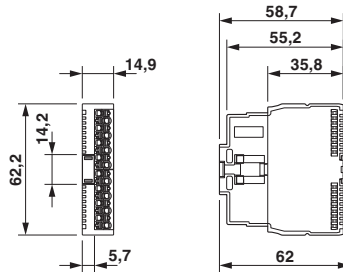
Block diagram



Internal wiring of the terminal points

Connection example

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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## Approvals

### Approvals

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#### Approvals

UL Listed / cUL Listed / cULus Listed

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#### Ex Approvals

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### 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

## I/O module - AXL SE DO16/1 - 1088129

### Accessories

#### 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

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#### 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

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### 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

## I/O module - AXL SE DO16/1 - 1088129

### Accessories

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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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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

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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

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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

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### Accessories

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

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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

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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 4.2 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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### Accessories

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

Markers for marking terminal blocks from ABB/Entrelec, 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 into tall marker groove, for terminal block width: 5.2 mm, lettering field size: 4.17 x 11.3 mm

