

I/O module - AXL SE INC1 SYM - 1088130

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Axioline Smart Elements, Position detection module, Incremental encoder input: 1, symmetrical encoders, in accordance with EIA-422, Digital inputs: 2, 24 V DC, degree of protection: IP20

Product Description


You can integrate Axioline Smart Elements into systems with the Smart Element interface. This Smart Element detects the positions of incremental encoders.

Your advantages

- Acquisition of digital signals from symmetrical incremental encoders (A, /A, B, /B, Z, /Z)
- Measuring pulses of up to 1 MHz
- Evaluating linear or rotary axes
- Power supply for 5 V or 24 V encoder
- 1 input can be used for referencing
- Latch function for quick buffering of positions
- 32-bit register to output the measured increments
- Device rating plate stored



Key Commercial Data

Packing unit	1 pc
GTIN	 4 055626 886183
GTIN	4055626886183
Weight per Piece (excluding packing)	40.000 g
Custom tariff number	85389091
Country of origin	Germany

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Technical data

Note

Utilization restriction	EMC: class A product, see manufacturer's declaration in the download area
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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 ²
Conductor cross section solid max.	1.5 mm ²
Conductor cross section flexible min.	0.25 mm ²
Conductor cross section flexible max.	1.5 mm ²
Conductor cross section AWG min.	24
Conductor cross section AWG max.	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
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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Interfaces

Designation	Smart Element interface
Number	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

Axioline potentials

Designation	Communications power supply of the Smart Elements (U_{SE})
Additional text	using card edge connectors
Current consumption	max. 40 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. 11 mA (without connected peripherals)
	typ. 512 mA
	max. 700 mA
Power consumption	min. 264 mW
	max. 21 W (of which 1.55 W internal losses)
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.

Encoder inputs

Input name	Incremental encoder input
Number of inputs	1 (A, /A, B, /B, Z, /Z)
Connection method	Push-in connection
Encoder signals	symmetrical encoders, in accordance with EIA-422
Cable length	< 30 m (Shielded cable)

Encoder data

Number of 5 V encoder supplies	1 (+5 V)
Nominal output voltage	5 V DC
Voltage range	5 V DC ... 5.5 V DC
Current carrying capacity	max. 250 mA
Type of protection	Short-circuit protection
	Overload protection
	Transient protection
Number of 24 V encoder supplies	1 (+24 V)
Nominal output voltage	24 V DC

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Encoder data

Voltage range	19.2 V DC ... 30 V DC
Current carrying capacity	max. 500 mA
Type of protection	Short-circuit protection
	Overload protection
	Transient protection
Designation	Symmetrical incremental encoders
Encoder types that can be connected	1 (A, /A, B, /B, Z, /Z)
Signal voltage level	Differential signal (signal – inverted signal), in accordance with EIA-422
Common mode voltage range signal - ground	-20 V DC ... 20 V DC
Input frequency	max. 1 MHz

Digital inputs

Input name	Digital inputs
Description of the input	EN 61131-2, type 3
Connection method	Push-in connection
Connection technology	1-conductor
Number of inputs	2 (DI Ref, DI L)
Protective circuit	Transient protection Suppressor diode
Nominal input voltage U_{IN}	24 V DC
Nominal input current at U_{IN}	3 mA
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	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, shielded 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

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Standards and Regulations

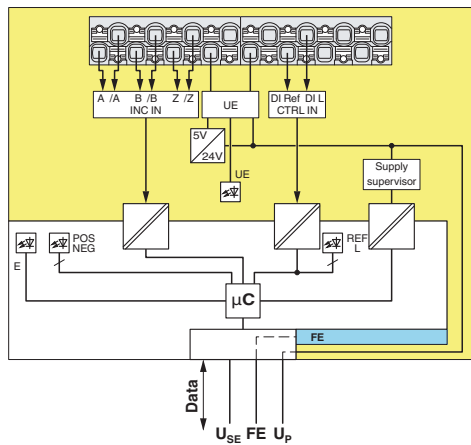
Interference emission	Noise emission test as per EN 61000-6-4 Class A
Mechanical tests	Vibration resistance in acc. with EN 60068-2-6/IEC 60068-2-6 5g
	Shock in acc. with EN 60068-2-27/IEC 60068-2-27 30g
	Continuous shock according to EN 60068-2-27/IEC 60068-2-27 10g
Protection class	III (IEC 61140, EN 61140, VDE 0140-1)
Overvoltage category	II (IEC 60664-1)

Environmental Product Compliance

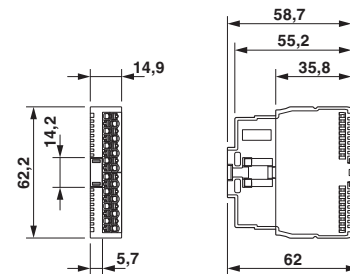
REACH SVHC	Lead 7439-92-1
China RoHS	Environmentally Friendly Use Period = 50 years
	For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration"

Drawings

Block diagram



Dimensional drawing

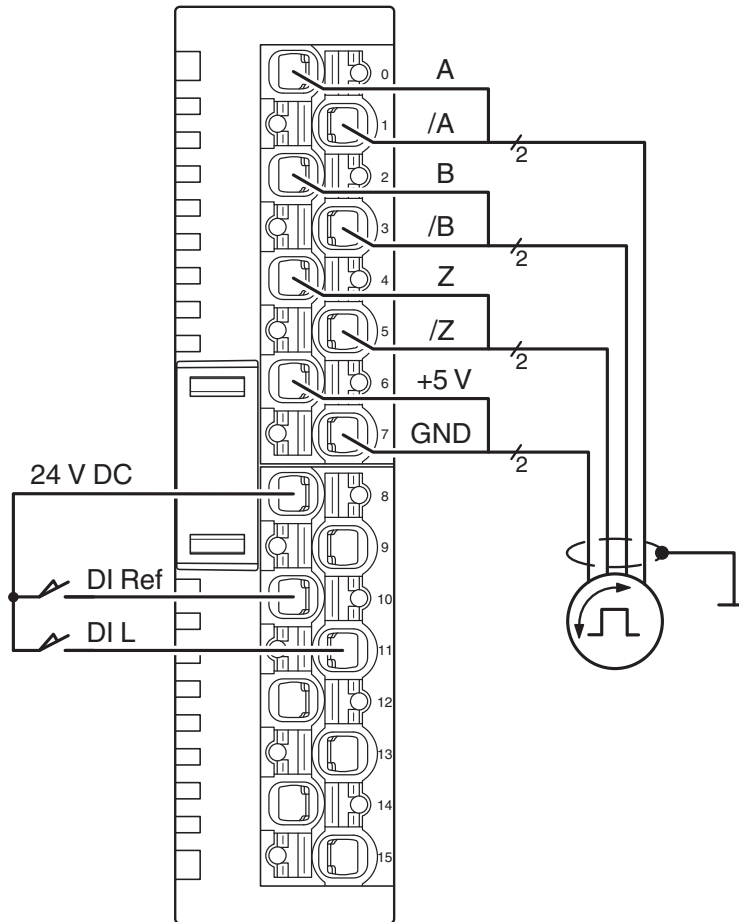


Dimensions

Internal wiring of the terminal points

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Connection diagram



Connection example

Classifications

eCl@ss

eCl@ss 10.0.1	27242605
eCl@ss 11.0	27242605
eCl@ss 9.0	27242605

ETIM

ETIM 7.0	EC001601
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Approvals

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UL Listed / cUL Listed / cULus Listed

Ex Approvals

Approval details

UL Listed		http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm	FILE E 238705
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cUL Listed		http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm	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 mm² ... 6.0 mm², lateral entry, trapezoidal crimp

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Accessories

Crimping pliers - CRIMPFOX DUO 10 - 1031721



Crimping pliers, type of contact: Insulated and uninsulated ferrules, min. cross section: 0.14 mm², max. cross section: 10 mm², for TWIN ferrules up to 2 x 4 mm², 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 mm², max. cross section: 10 mm², For TWIN ferrules up to 2 x 4 mm², automatic cross section adjustment, frontal insertion, compression: Trapezoidal crimp, black

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

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

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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Accessories

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

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

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

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
