

# AXL SE INC1 SYM - Function module



1088130

<https://www.phoenixcontact.com/us/products/1088130>

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Axioline Smart Elements, Function module, Position detection, Incremental encoder; 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

## Commercial data

Item number	1088130
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	DR05
Product key	DRIB61
GTIN	4055626886183
Weight per piece (including packing)	37.7 g
Weight per piece (excluding packing)	35 g
Customs tariff number	85389091
Country of origin	DE

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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
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### 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

#### Module

ID code (hex)	none
Process data channel	80 bit
Input address area	10 Byte
Output address area	10 Byte
Required parameter data	19 Byte
Required configuration data	7 Byte

### Input data

#### Digital:

Input name	Digital inputs
Description of the input	EN 61131-2, type 3
Number of inputs	2 (DI Ref, DI L)
Connection method	Push-in connection
Connection technology	1-conductor
Input voltage range "0" signal	-3 V DC ... 5 V DC

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Input voltage range "1" signal	11 V DC ... 30 V DC
Nominal input voltage $U_{IN}$	24 V DC
Nominal input current at $U_{IN}$	3 mA
Input frequency	max. 200 Hz (at latch input DI L)
Protective circuit	Transient protection; Suppressor diode

## Encoder

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

## 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	1.8 W
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## Encoder

Number	1 (+5 V)
Nominal output voltage	5 V DC
Voltage range	5 V DC ... 5.5 V DC
Current carrying capacity	max. 250 mA
Protective circuit	Short-circuit protection; Electrical and thermal Overload protection Transient protection; Suppressor diode
Number	1 (+24 V)
Nominal output voltage	24 V DC
Voltage range	19.2 V DC ... 30 V DC
Current carrying capacity	max. 500 mA
Protective circuit	Short-circuit protection; Electrical (from approx. 600 mA) Overload protection Transient protection; Suppressor diode
Number	1 (A, /A, B, /B, Z, /Z)
Designation	Symmetrical incremental encoders
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

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## Potentials: Communications power supply of the Smart Elements ( $U_{SE}$ )

Supply voltage	using card edge connectors
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## 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. 700 mA typ. 512 mA
Current consumption	min. 11 mA (without connected peripherals)
Protective circuit	Surge protection; See the system in which the Smart Element is used. Reverse polarity protection; Polarity protection diode

## 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 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>
Conductor cross-section, flexible	0.25 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>
Conductor cross-section AWG	24 ... 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> 0.25 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>
Conductor cross-section, flexible, with ferrule, with plastic sleeve	0.25 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>
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)

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Permissible humidity (storage/transport)	5 % ... 95 % (non-condensing)
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## Standards and regulations

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

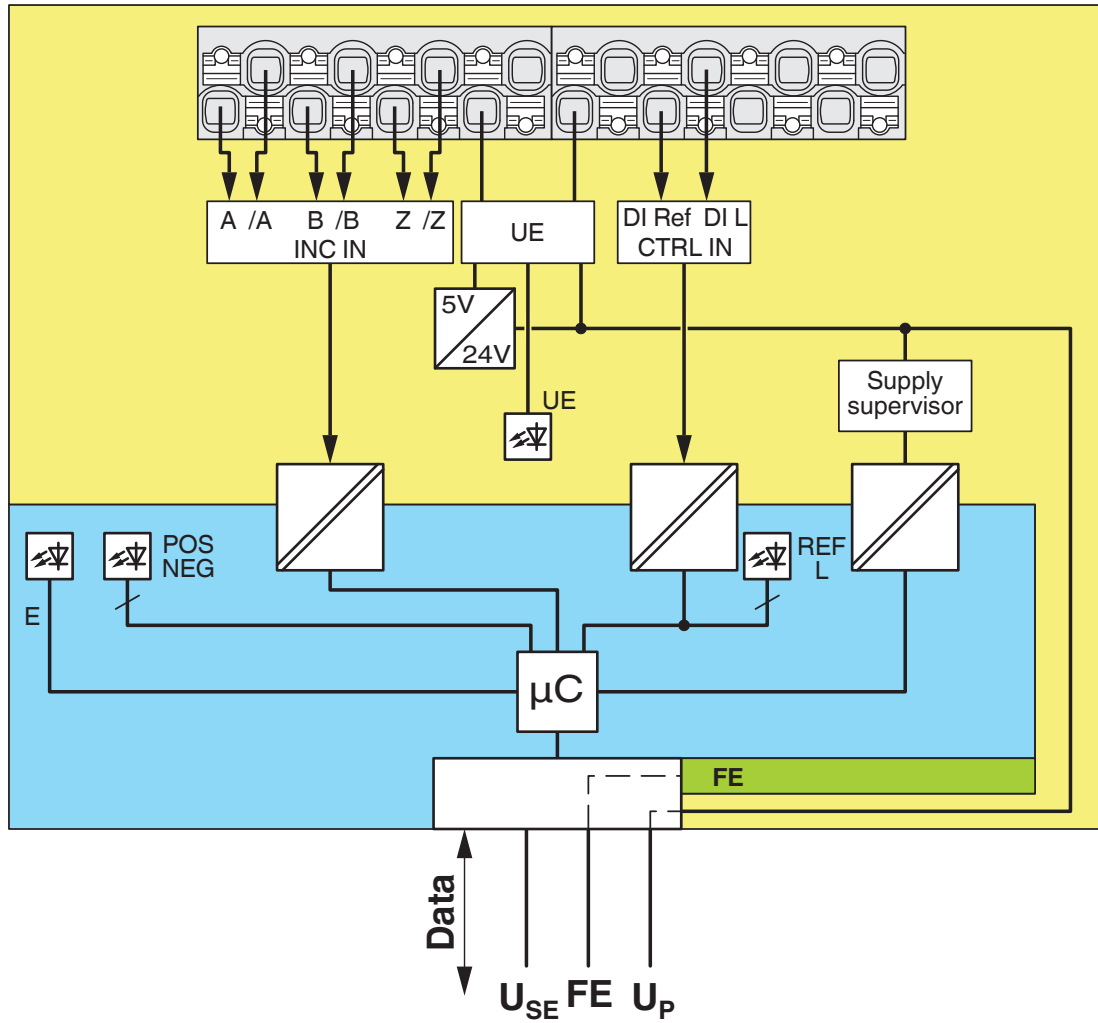


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Block diagram



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	27242605
ECLASS-15.0	27242605

### ETIM

ETIM 10.0	EC001601
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### 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)
SCIP	c1cefc67-bf3c-4ac2-91fa-26cef19be2ca

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