

## Special function module - AXL F SSI1 AO1 1H - 2688433

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Axioline#F special function module, 1 SSI interface for absolute encoder, 1 analog output: 0-10 V,  $\pm 10$  V, 0-5 V,  $\pm 5$  V, 0-20 mA, 4-20 mA,  $\pm 20$  mA, 2-wire connection method (including bus base module and connectors)

### Product Description

The module is designed for use within an Axioline#F station.

It is used to acquire data from absolute encoders with SSI interface with a maximum resolution of up to 56 bits.

The module supports encoders with Gray and binary code. Transmission speeds of up to 2 MHz are supported.

In addition, the module has an analog output which can be used to specify setpoints, e.g., for electrical and hydraulic drives.

### Product Features

- Permanent surge protection against 24 V DC for all interfaces
- Permanent short-circuit protection for all interfaces
- Device rating plate stored
- Diagnostic and status indicators
- 1 SSI interface
- Monitoring of the 24 V encoder supply
- Supports transmission speeds from 62.5 kHz to 2 MHz for SSI
- 8-bit to 56-bit resolution
- Supports Gray and binary code
- 1 analog, bipolar output channel for the connection of either voltage or current signals
- Connection of actuators in 2-wire technology
- Voltage ranges: 0 V ... 10 V,  $\pm 10$  V, 0 V ... 5 V,  $\pm 5$  V
- Current ranges: 0 mA ... 20 mA, 4 mA ... 20 mA,  $\pm 20$  mA



### Key Commercial Data

Packing unit	1 pc
Weight per Piece (excluding packing)	200.0 g
Custom tariff number	85389091
Country of origin	Germany

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### Technical data

#### Dimensions

Width	35 mm
Height	126.1 mm
Depth	54 mm
Note on dimensions	The depth is valid when a TH 35-7.5 DIN rail is used (according to EN 60715).

#### 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	Axioline F connector
Connection method	Push-in connection
Note on connection method	Please observe the information provided on conductor cross sections in the "Axioline F: system and installation" user manual.
Conductor cross section solid min.	0.2 mm <sup>2</sup>
Conductor cross section solid max.	1.5 mm <sup>2</sup>
Conductor cross section flexible min.	0.2 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
Stripping length	8 mm

#### General

Mounting type	DIN rail
Net weight	135 g
Note on weight specifications	with connectors and bus base module

#### Interfaces

Designation	Axioline F local bus
Connection method	Bus base module
Transmission speed	100 MBit/s

#### Axioline potentials

Communications power $U_{Bus}$	5 V DC (via bus base module)
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### Technical data

#### Axioline potentials

Current consumption from $U_{BUS}$	max. 140 mA
Supply of digital input modules $U_I$	24 V DC
Current consumption from $U_I$	max. 60 mA (Supply of the SSI interface and the analog output (20 mA), without sensor supply)

#### Encoder inputs

Input name	SSI interface
Description of the input	RS-422 interface according to SSI specification
Number of inputs	1
Connection method	Push-in connection
Encoder signals	Single-turn and multi-turn encoder, length measuring sticks
Input frequency	to 2 MHz (Can be parameterized: 67.5 kHz, 125 kHz (default), 250 kHz, 500 kHz, 1 MHz, 2 MHz)
Parity	Even, odd or no parity
Transmission frequency	2 MHz
Adjustable resolution	8 ... 56
Encoder supply voltage	24 V DC ( $U_I - 0.5 V$ )

#### Encoder data

Nominal output voltage	24 V DC ( $U_I - 0.5 V$ )
Voltage range	19.5 V DC ... 30 V DC (including all tolerances, including ripple)
Current carrying capacity	max. 500 mA
Type of protection	Surge protection
Protective circuit/component	Electronic (35 V, 0.5 s)

#### Analog outputs

Number of outputs	1
Connection method	Push-in connection
	2-wire (shielded, twisted pair)
Output name	Analog outputs
D/A conversion time	5 $\mu$ s
D/A resolution	16 bit
Type of protection	Surge protection
	Short-circuit and overload protection
	Transient protection
Protective circuit/component	Electronic (35 V, permanent)
	Electronic
	Suppressor diode
Data formats	IB IL, S7-compatible, standardized representation

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### Technical data

#### Analog outputs

Measured value representation	16 bits
Representation of output values	16 bits (15 bits + sign)
Current output signal	0 mA ... 20 mA
	4 mA ... 20 mA
	-20 mA ... 20 mA
Load/output load current output	max. 500 Ω
Voltage output signal	0 V ... 5 V
	-5 V ... 5 V
	0 V ... 10 V
	-10 V ... 10 V
Load/output load voltage output	> 2 kΩ
Precision	typ. 0.1 % (of output range final value)
	typ. 0.1 % (of output range final value)
Permissible cable length	max. 250 m

#### Standards and Regulations

Conformity with EMC directives	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
	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
	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
	Noise immunity test in accordance with EN 61000-6-2 Transient overvoltage (surge) EN 61000-4-5/IEC 61000-4-5 Criterion B, supply lines DC: ±0.5 kV/±0.5 kV (symmetrical/asymmetrical), ±1 kV to shielded I/O cables
	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
	Noise emission test according to EN 61000-6-3 Radio interference properties EN 55022 Class B
Test section	Logic 500 V AC 50 Hz 1 min.
	SSI I/O (24 V supply) 500 V AC 50 Hz 1 min.
	Functional earth ground 500 V AC 50 Hz 1 min.
	Analog I/O 500 V AC 50 Hz 1 min.
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

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## Classifications

### eCl@ss

eCl@ss 4.0	27240405
eCl@ss 4.1	27240405
eCl@ss 5.0	27242201
eCl@ss 5.1	27242601
eCl@ss 6.0	27242601
eCl@ss 7.0	27242601
eCl@ss 8.0	27242605

### ETIM

ETIM 3.0	EC001599
ETIM 4.0	EC001601
ETIM 5.0	EC001601

### UNSPSC

UNSPSC 6.01	43172015
UNSPSC 7.0901	43201404
UNSPSC 11	39121311
UNSPSC 12.01	39121311
UNSPSC 13.2	39121311

## Approvals

### Approvals

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Approvals

UL Listed / cUL Listed / EAC / cULus Listed

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Ex Approvals

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Approvals submitted

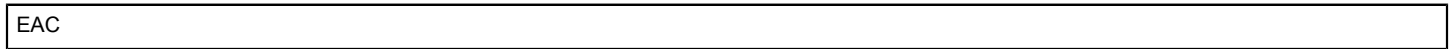
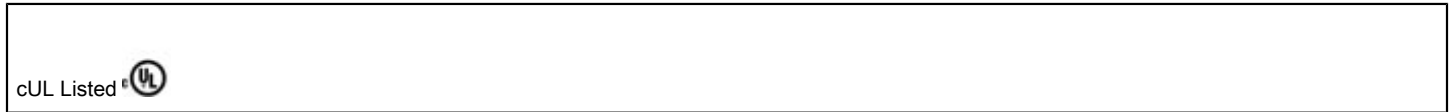
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### Approval details

UL Listed 
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## Special function module - AXL F SSI1 AO1 1H - 2688433

### Approvals



### Accessories

#### Accessories

#### Device marking

Insert label - EMT (35X28)R - 0801602



Insert label, Roll, white, unlabeled, can be labeled with: THERMOMARK ROLL, THERMOMARK ROLL X1, THERMOMARK X, THERMOMARK S1.1, Mounting type: snapped into marker carrier, Lettering field: 35 x 28 mm

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#### DIN rail connector

Bus connector - AXL F BS H - 2700992



Axiline F bus base module for housing type H

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#### Mounting material

Shield connection - AXL SHIELD SET - 2700518



Axiline shield connection set (contains 2 busbar holders and 2 SK 5 shield connection clamps)

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## Accessories

### Terminal marking

Zack marker strip - ZB 20,3 AXL UNPRINTED - 0829579



Zack marker strip for AxioLine F (device labeling), in 2 x 20.3 mm pitch, unprinted, 25-section, for individual labeling with B-STIFT 0.8, X-PEN, or CMS-P1-PLOTTER

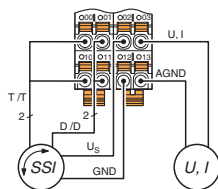
Zack Marker strip, flat - ZBF 10/5,8 AXL UNPRINTED - 0829580



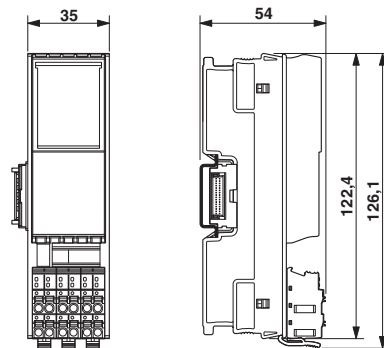
Zack marker strip, flat, in 10 mm pitch, unprinted, 10-section, for individual labeling with M-PEN 0,8, X-PEN, or CMS-P1-PLOTTER

## Drawings

Connection diagram

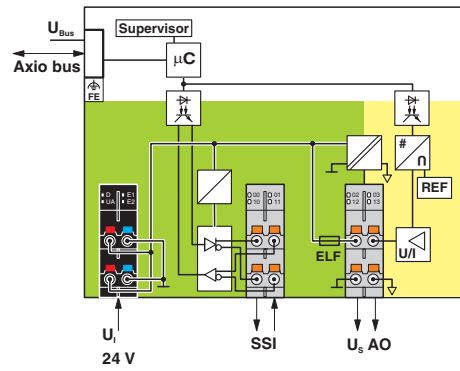


Dimensional drawing



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Block diagram



Internal wiring of the terminal points



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