

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

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Axioline F function module, 1 SSI interface for absolute encoder, 1 analog output: 0 - 10 V, ± 10 V, 0 - 5 V, ± 5 V, 0 - 20 mA, 4 - 20 mA, ± 20 mA, 2-conductor connection technology (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 allows for specifying setpoints, e.g., for electrical and hydraulic drives.

Your advantages

- ✓ 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-conductor technology
- ✓ Voltage ranges: 0 V ... 10 V, ± 10 V, 0 V ... 5 V, ± 5 V
- ✓ Current ranges: 0 mA ... 20 mA, 4 mA ... 20 mA, ± 20 mA



Key Commercial Data

Packing unit	1 pc
GTIN	 4 046356 644952

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GTIN	4046356644952
Weight per Piece (excluding packing)	200.000 g
Custom tariff number	85389091
Country of origin	Germany

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 the 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 ²
Conductor cross section solid max.	1.5 mm ²
Conductor cross section flexible min.	0.2 mm ²
Conductor cross section flexible max.	1.5 mm ²
Conductor cross section AWG min.	24
Conductor cross section AWG max.	16
Stripping length	8 mm

General

Mounting type	DIN rail
Color	traffic grey A RAL 7042
Net weight	135 g
Note on weight specifications	with connectors and bus base module
Degree of pollution	2 (IEC 60664-1, EN 60664-1)
Mounting position	any (no temperature derating)

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Technical data

Interfaces

Designation	Axioline F local bus
Number of interfaces	2
Connection method	Bus base module
Transmission speed	100 Mbps

Axioline potentials

Designation	Axioline F local bus supply (U_{Bus})
Supply voltage	5 V DC (via bus base module)
Current consumption	max. 140 mA
Power consumption	max. 0.7 W
Designation	Feed-in of supply voltage (U_i)
Supply voltage	24 V DC
Supply voltage range	19.2 V DC ... 30 V DC including all tolerances, including ripple
Current consumption	max. 60 mA (Supply of the SSI interface and the analog output (20 mA), without sensor supply)
Power consumption	max. 1.4 W (Supply of the SSI interface and the analog output (20 mA), without sensor supply)
Protective circuit	Surge protection electronic (35 V, 0.5 s)
	Reverse polarity protection Polarity protection diode
	Transient protection Suppressor diode

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: 62.5 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 bit
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
	Short-circuit/overload protection

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Technical data

Encoder data

	Transient protection
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Analog outputs

Number of outputs	1
Connection method	Push-in connection
Connection technology	2-conductor (shielded, twisted pair)
Output name	Analog outputs
D/A conversion time	5 µs
D/A converter 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
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)
Permissible cable length	max. 250 m

Electrical isolation

Test section	Logic 500 V AC 50 Hz 1 min.
	SSI I/O (24 V supply) 500 V AC 50 Hz 1 min.
	Functional ground 500 V AC 50 Hz 1 min.
	Analog I/O 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
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Technical data

Standards and Regulations

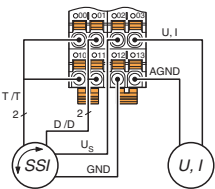
Immunity to EF	Noise immunity test in accordance with EN 61000-6-2 Electromagnetic fields EN 61000-4-3/IEC 61000-4-3 Criterion A, Field intensity: 10 V/m
Immunity to burst	Noise immunity test in accordance with EN 61000-6-2 Fast transients (burst) EN 61000-4-4/IEC 61000-4-4 Criterion B, 2 kV
Immunity 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, supply lines DC: ± 0.5 kV/ ± 0.5 kV (symmetrical/asymmetrical), ± 1 kV to shielded I/O cables
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 according to EN 61000-6-3 Class B
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, 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"

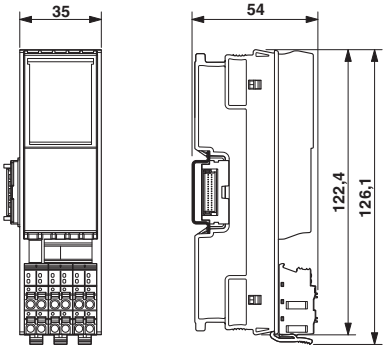
Drawings

Connection diagram



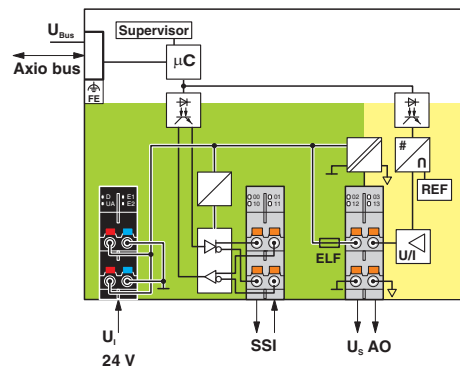
Example connection of an SSI sensor and an analog actuator for current or voltage

Dimensional drawing



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Block diagram



Internal wiring of the terminal points

Classifications

eCl@ss

eCl@ss 10.0.1	27242605
eCl@ss 11.0	27242605
eCl@ss 4.0	27240400
eCl@ss 4.1	27240400
eCl@ss 5.0	27242200
eCl@ss 5.1	27242600
eCl@ss 6.0	27242600
eCl@ss 7.0	27242605
eCl@ss 9.0	27242605

ETIM

ETIM 3.0	EC001599
ETIM 4.0	EC001601
ETIM 6.0	EC001601
ETIM 7.0	EC001601

UNSPSC

UNSPSC 6.01	43172015
UNSPSC 7.0901	43201404
UNSPSC 11	39121311
UNSPSC 12.01	39121311
UNSPSC 13.2	32151602
UNSPSC 18.0	32151602

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Classifications

UNSPSC

UNSPSC 19.0	32151602
UNSPSC 20.0	32151602
UNSPSC 21.0	32151602

Approvals

Approvals

Approvals

UL Listed / cUL Listed / EAC / 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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EAC		EAC-Zulassung
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cULus Listed	
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Accessories

Accessories

Device marking

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Accessories

Insert label - EMT (35X28)R - 0801602



Insert label, Roll, white, unlabeled, can be labeled with: THERMOMARK ROLLMASTER 300/600, THERMOMARK X1.2, THERMOMARK ROLL X1, THERMOMARK ROLL 2.0, THERMOMARK ROLL, mounting type: snapped into marker carrier, lettering field size: 35 x 28 mm, Number of individual labels: 500

DIN rail connector

Bus connector - AXL F BS H - 2700992



Axioline F bus base module for housing type H

Shield connection

Shield connection - AXL SHIELD SET - 2700518



Axioline shield connection set (contains 2 shield bus holders and 2 SK 5 shield connection clamps)

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

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Accessories

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



Zack Marker strip, flat, Strip, white, unlabeled, can be labeled with: PLOTMARK, CMS-P1-PLOTTER, mounting type: snap into flat marker groove, for terminal block width: 10.15 mm, lettering field size: 4 of 10.15 x 5 mm and 1 of 5.8 x 5 mm, Number of individual labels: 50