

AXL F CNT2 INC2 XC 1F - Function module



2701239

<https://www.phoenixcontact.com/us/products/2701239>

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Axioline F, Function module, Counter inputs: 2, Incremental encoder inputs: 2, Symmetrical and asymmetrical encoders, Digital inputs: 8, 24 V DC, Digital outputs: 2, 24 V DC, Extreme conditions version, transmission speed in the local bus: 100 Mbps, degree of protection: IP20, including bus base module and Axioline F connectors

Product description

The module is designed for use within an Axioline F station. On the one hand, it is used to acquire fast pulse sequences from sensors, and on the other hand to detect positions using incremental encoders. The module combines two counter inputs for the evaluation of fast counter pulses and two incremental encoder inputs for position detection.

Your advantages

- 2 channels, selectable for each channel: counter function or position detection using incremental encoder
- Maximum input frequency: 300 kHz (one channel wired) or 100 kHz (both channels wired)
- 32-bit counter (up and down)
- Output control according to two limit values
- Counter: counting (source) is controlled via a control input (gate)
- Counter: single or periodic counting
- Incremental encoder acquisition: Acquisition of digital signals from symmetrical and asymmetrical incremental encoders
- Incremental encoder acquisition: evaluation of linear or rotary axes
- Device rating plate stored
- Can be used under extreme ambient conditions
- Extended temperature range of -40 °C ... +70 °C (see "Tested successfully: use under extreme ambient conditions" in the data sheet)
- Partially coated PCBs

Commercial data

Item number	2701239
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	DR02
Product key	DRI263
Catalog page	Page 92 (C-6-2019)
GTIN	4046356730082
Weight per piece (including packing)	264.2 g
Weight per piece (excluding packing)	233.9 g
Customs tariff number	85389091
Country of origin	DE

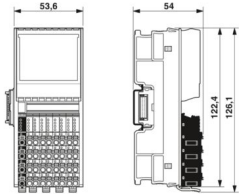
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Technical data

Dimensions

Dimensional drawing	
Width	53.6 mm
Height	126.1 mm
Depth	54 mm
Note on dimensions	The depth applies when a TH 35-7.5 DIN rail is used (in accordance with EN 60715).

Notes

Utilization restriction

EMC note	EMC: class A product, see manufacturer's declaration in the download area
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Interfaces

Axioline F local bus

Number of interfaces	2
Connection method	Bus base module
Transmission speed	100 Mbps

System properties

Module

ID code (hex)	none
Input address area	28 Byte
Output address area	28 Byte
Required parameter data	115 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	8 (CNT: G1, G2, Dir1, Dir2; INC: Ref1, Ref2, L1, L2)
Connection method	Push-in connection
Connection technology	1-conductor (optional 2, 3-conductor)

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Input voltage range "0" signal	-3 V DC ... 5 V DC
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}	2.5 mA (per channel)

Encoder

Number of inputs	2 (A1, /A1, B1, /B1, Z1, /Z1; A2, /A2, B2, /B2, Z2, /Z2)
Input name	Incremental encoder inputs
Encoder signals	Symmetrical and asymmetrical encoders
Cable length	max. 30 m

Counter

Input name	Counter inputs
Description of the input	EN 61131-2, type 3
Connection method	Push-in connection
Number of inputs	2 (S1, S2)
Input voltage	24 V DC
Input voltage range "0" signal	-3 V DC ... 5 V DC
Input voltage range "1" signal	11 V DC ... 30 V DC
Input frequency	max. 300 kHz (1 channel wired) max. 100 kHz (more than one channel wired or Z signal monitoring via the firmware)
Input current	2.5 mA (per channel)
Resolution	32 bits
Permissible cable length	max. 30 m

Output data

Digital

Output name	Digital outputs
Connection method	Push-in connection
Connection technology	1-conductor
Number of outputs	2 (Out1, Out2)
Protective circuit	Short-circuit protection Overload protection
Output voltage	24 V DC
Maximum output current per channel	500 mA
Nominal output voltage	24 V DC
Nominal load, inductive	max. 12 VA (1.2 H, 48 Ω , with nominal voltage)
Nominal load, lamp	max. 12 W (at nominal voltage)
Nominal load, ohmic	max. 12 W (48 Ω , with nominal voltage)
Output name	Digital outputs
Connection method	Push-in connection
Connection technology	1-conductor
Number of outputs	2 (Out1, Out2)
Protective circuit	Short-circuit protection

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	Overload protection
Output voltage	24 V DC
Maximum output current per channel	500 mA
Nominal output voltage	24 V DC
Nominal load, inductive	max. 12 VA (1.2 H, 48 Ω, with nominal voltage)
Nominal load, lamp	max. 12 W (at nominal voltage)
Nominal load, ohmic	max. 12 W (48 Ω, with nominal voltage)

Product properties

Type	block modular
Product type	I/O component
Product family	Axioline F
Mounting position	any (no temperature derating)
Scope of delivery	including bus base module and Axioline F connectors
Special properties	Extreme conditions version

Insulation characteristics

Overvoltage category	II (IEC 60664-1, EN 60664-1)
Pollution degree	2 (IEC 60664-1, EN 60664-1)

Electrical properties

Encoder

Number	2 (U_{E1} , U_{E2})
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; electronic
Number	2 (U_{S1} , U_{S2})
Nominal output voltage	24 V DC
Voltage range	19.2 V DC ... 30 V DC
Current carrying capacity	typ. 500 mA
Protective circuit	Short-circuit protection; electronic
Number	max. 2 (A, /A, B, /B, (Z, /Z))
Designation	Symmetrical incremental encoders
Type of connection of signals	Push-in connection
Encoder supply voltage	5 V DC 24 V DC
Signal voltage level	Differential signal (signal – inverted signal) ± 0.5 V, minimum; ± 6 V, maximum
Common mode voltage range signal - ground	-10 V ... 13.2 V
Input frequency	max. 300 kHz (1 channel wired) max. 100 kHz (more than one channel wired or Z signal monitoring via the firmware)
Number	max. 2 (A, B, (Z))
Designation	Asymmetrical incremental encoder

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Type of connection of signals	Push-in connection
Signal voltage level	Low ≤ 2.5 V, high ≥ 3.5 V (up to 27 V, maximum)
Input frequency	max. 300 kHz (1 channel wired)
	max. 100 kHz (more than one channel wired or Z signal monitoring via the firmware)

Potentials: Axioline F local bus supply (U_{BUS})

Supply voltage	5 V DC (via bus base module)
Current draw	max. 120 mA
	typ. 100 mA
Power consumption	max. 0.6 W
	typ. 0.5 W

Potentials: 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 draw	max. 2.5 A (dependent on the encoder or sensor type used and the load on the digital output.)
Power consumption	max. 60 W (of which 1.6 W internal losses)
Protective circuit	Surge protection; electronic (35 V, 0.5 s)
	Reverse polarity protection; parallel diode; with external 5 A fuse (only for commissioning)

Electrical isolation/isolation of the voltage ranges

Test voltage: 5 V supply of the local bus (U_{BUS}) / 24 V supply (I/Os)	500 V AC, 50 Hz, 1 min.
Test voltage: 5 V supply of the local bus (U_{BUS}) / 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	Axioline F connector
Note on the connection method	Please observe the information provided on conductor cross sections in the "Axioline F: system and installation" user manual.

Conductor connection

Connection method	Push-in connection
Conductor cross section rigid	0.2 mm ² ... 1.5 mm ²
Conductor cross section flexible	0.2 mm ² ... 1.5 mm ²
Conductor cross section AWG	24 ... 16
Stripping length	8 mm

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, rigid	0.2 mm ² ... 1.5 mm ²

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Mounting

Mounting type	DIN rail mounting
Mounting position	any (no temperature derating)

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Classifications

ECLASS

ECLASS-11.0	27242605
ECLASS-12.0	27242605
ECLASS-13.0	27242605

ETIM

ETIM 9.0	EC001601
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UNSPSC

UNSPSC 21.0	32151600
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Environmental product compliance

REACH SVHC	Lead 7439-92-1
China RoHS	Environmentally Friendly Use Period = 50 years
	For information on hazardous substances, refer to the manufacturer's declaration available under "Downloads"

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