

AXL F CNT2 INC2 1F - Function module



2688093

<https://www.phoenixcontact.com/us/products/2688093>

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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, 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

Commercial data

Item number	2688093
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	DR02
Product key	DRI263
Catalog page	Page 92 (C-6-2019)
GTIN	4046356501439
Weight per piece (including packing)	254 g
Weight per piece (excluding packing)	225 g
Customs tariff number	85389091
Country of origin	DE

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Technical data

Dimensions

Dimensional drawing	
	53.6
	54 126.1 54
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).

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)
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

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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 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)

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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

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	0.6 W
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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
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)

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Potentials: Axiline F local bus supply (U_{Bus})

Supply voltage	5 V DC (via bus base module)
Current draw	max. 120 mA
Power consumption	typ. 100 mA 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
Conductor cross section, flexible	0.2 mm ² ... 1.5 mm ²
Conductor cross section AWG	24 ... 16
Stripping length	8 mm

Environmental and real-life conditions

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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)
Permissible humidity (storage/transport)	5 % ... 95 % (non-condensing)

Standards and regulations

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