

# AXL F EX IS DI16 NAM XC 1F - Digital module



1052423

<https://www.phoenixcontact.com/us/products/1052423>

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Axioline F, Digital input module, Digital inputs: 16 (NAMUR), 8 V DC, connection technology: 2-conductor, Extreme conditions version, intrinsically safe, 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 an Axioline F I/O module for use in the Axioline F modular I/O system. The module is a modular I/O device that can be affixed to the Axioline F local bus, to communicate I/O data up to the Axioline F controller or bus coupler, which forms the head of the station. As an intrinsic safety I/O module, this device allows direct connection from intrinsically safe field I/Os to the terminals of the module. The digital input module with NAMUR capabilities collects digital input signals and supports NAMUR proximity and close contact switches and makes this information available to the controller / bus coupler through the Axioline F local bus. The I/O module will set a digital input logic "low" for non-conducting sensors and a digital input logic "high" for conducting sensors.

## Your advantages

- 16 NAMUR digital input signals for NAMUR proximity sensors according to EN 60947-5-6
- Open circuit contacts
- Switch contacts with resistance circuit in accordance with IEC/EN 60947-5-6
- Connection of sensors in 2-conductor technology
- Intrinsically safe digital inputs with connection to Zone 1, Zone 0 or Division 1
- 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)

## Commercial data

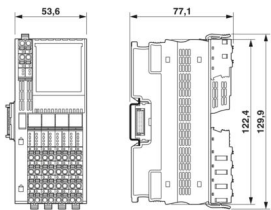
Item number	1052423
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	DR02
Product key	DRI2E4
GTIN	4055626674940
Weight per piece (including packing)	420 g
Weight per piece (excluding packing)	292.5 g
Customs tariff number	85389099
Country of origin	US

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## Technical data

### Dimensions

Dimensional drawing	
Width	53.6 mm
Height	129.9 mm
Depth	77.1 mm
Note on dimensions	The depth applies when a TH 35-7.5 DIN rail is used (in accordance with EN 60715).

### Notes

Note on application	
Note on application	Only for industrial use
Utilization restriction	
EMC note	EMC: class A product, see manufacturer's declaration in the download area
Utilization restriction	
CCCex note	Use in potentially explosive areas is not permitted in China.

### Interfaces

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

### System properties

Module	
Input address area	2 Byte (Firmware 1.00) 4 Byte (Firmware 1.04 or later)
Output address area	0 Byte
Required parameter data	6 Byte
Required configuration data	6 Byte

### Input data

Digital:	
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Input name	Digital inputs
Description of the input	NAMUR enabled digital input signals
Number of inputs	16 (NAMUR)
Connection method	Push-in connection
Connection technology	2-conductor
Nominal input voltage $U_{IN}$	8.2 V DC

## Product properties

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

## 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	2.8 W
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### Potentials: Axioline F local bus supply ( $U_{BUS}$ )

Supply voltage	5 V DC (via bus base module)
Current draw	max. 60 mA typ. 40 mA

### Potentials: Supply for digital input modules ( $U_I$ )

Supply voltage	24 V DC
Supply voltage range	19.2 V DC ... 30 V DC (including all tolerances, including ripple)
Current draw	max. 130 mA
Protective circuit	Surge protection; electronic (35 V, 0.5 s) Reverse polarity protection; Polarity protection diode Transient protection; Suppressor diode

## 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, 60 Hz, 1 min
Test voltage: 5 V supply of the local bus ( $U_{BUS}$ ) / functional ground	500 V AC, 60 Hz, 1 min
Test voltage: 5 V supply of the local bus ( $U_{BUS}$ ) / digital inputs	1500 V AC, 60 Hz, 1 min
Test voltage: 24 V supply (I/O) / functional ground	500 V AC, 60 Hz, 1 min
Test voltage: 24 V supply (I/O) / digital inputs	1500 V AC, 60 Hz, 1 min
Test voltage: Digital inputs / functional ground	500 V AC, 60 Hz, 1 min

## Connection data

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## 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.

## 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 <sup>2</sup> ... 1.5 mm <sup>2</sup>
Conductor cross-section, flexible	0.2 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>
Conductor cross-section AWG	24 ... 16
Stripping length	8 mm

## Environmental and real-life conditions

### Ambient conditions

Ambient temperature (operation)	-25 °C ... 60 °C (Standard) -40 °C ... 70 °C (Extended, see section "Tested successfully: use under extreme ambient conditions" in the data sheet.)
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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## Approvals

### ATEX

Identification	II 3(1) G Ex ec [ia Ga] IIC T4 Gc II (1) D [Ex ia Da] IIIC
Certificate	DEMKO 20 ATEX 2370X

### IECEX

Identification	Ex ec [ia Ga] IIC T4 Gc [Ex ia Da] IIIC
Certificate	IECEX UL 20.0044X

### UKCA Ex (UKEX)

Identification	II 3(1) G Ex ec [ia Ga] IIC T4 Gc II (1) D [Ex ia Da] IIIC
Certificate	UL22UKEX2508X

### UL, USA/Canada

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Identification	cULus
Certificate	E238705

## UL Ex, USA / Canada

Identification	Class I, Division 2, Groups A, B, C, D, T4
	Intrinsically safe connections to: Class I, Groups A, B, C, D; Class II, Groups E, F, G; Class III; [Ex ia] Haz loc
	Class I, Zone 2, AEx ec [ia Ga] IIC T4 Gc
	[AEx ia Da] IIIC
	Ex ec [ia Ga] IIC T4 Gc
Certificate	E196811

## CCC / China-Ex

Identification	Ex ec [ia Ga] IIC T4 Gc
	[Ex ia Da] IIIC

## Ex data

UL, USA / Canada	<p>Ind. Cont. Eq. (E238705) also Listed                      Ind. Cont. Eq. for haz. loc. E196811                      Install in: Class I, Div. 2, Groups A, B, C, D T4                      Intrinsically safe outputs for: Class I, Groups A, B, C, D; Class II, Groups E, F, G; Class III; [Ex ia] Haz loc                      Class I, Zone 2, AEx ec [ia Ga] IIC T4 Gc                      [AEx ia Da] IIIC                      Ex ec [ia Ga] IIC T4 Gc                      [Ex ia Da] IIIC</p>
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## Mounting

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

## Ex data

### Safety data

Max. output voltage $U_o$	10.6 V
Max. output current $I_o$	11 mA
Max. output power $P_o$	30 mW
Safety-related maximum voltage $U_m$	250 V
A, B / IIC: Max. external inductivity $L_o$ / Max. external capacitance $C_o$	100 mH / 2.3 $\mu$ F
C/IIB, IIIC: Max. external inductivity $L_o$ / Max. external capacitance $C_o$	100 mH / 16 $\mu$ F
D/IIA, E, F, G, Class III: Max. external inductivity $L_o$ / Max. external capacitance $C_o$	100 mH / 71.8 $\mu$ F

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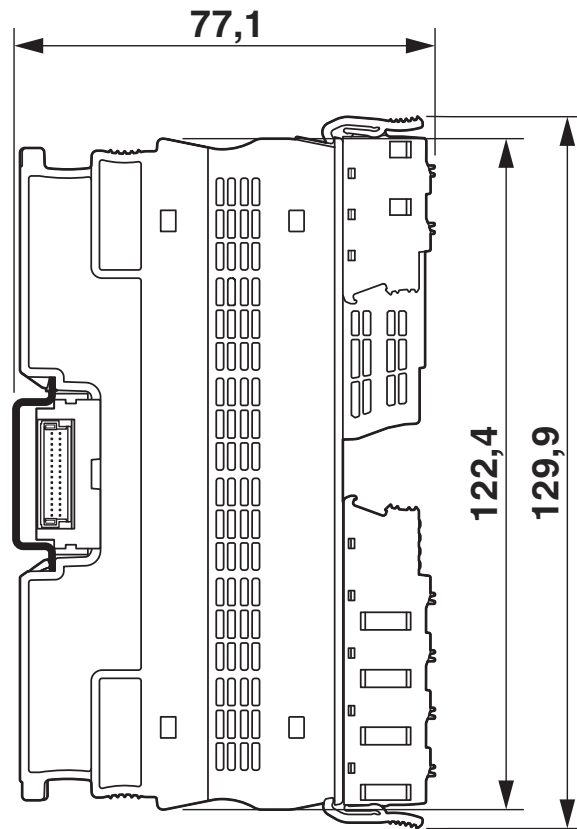
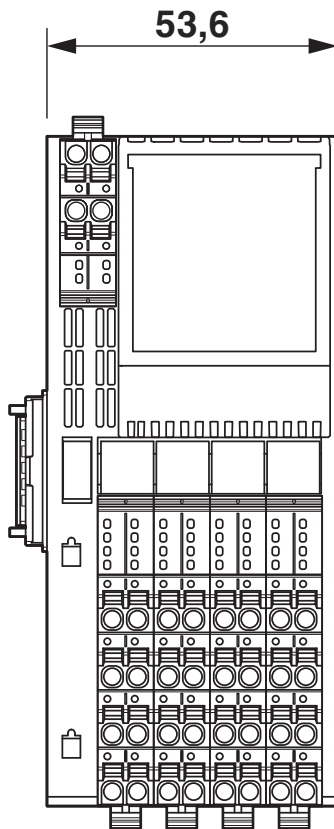


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## Drawings

Dimensional drawing

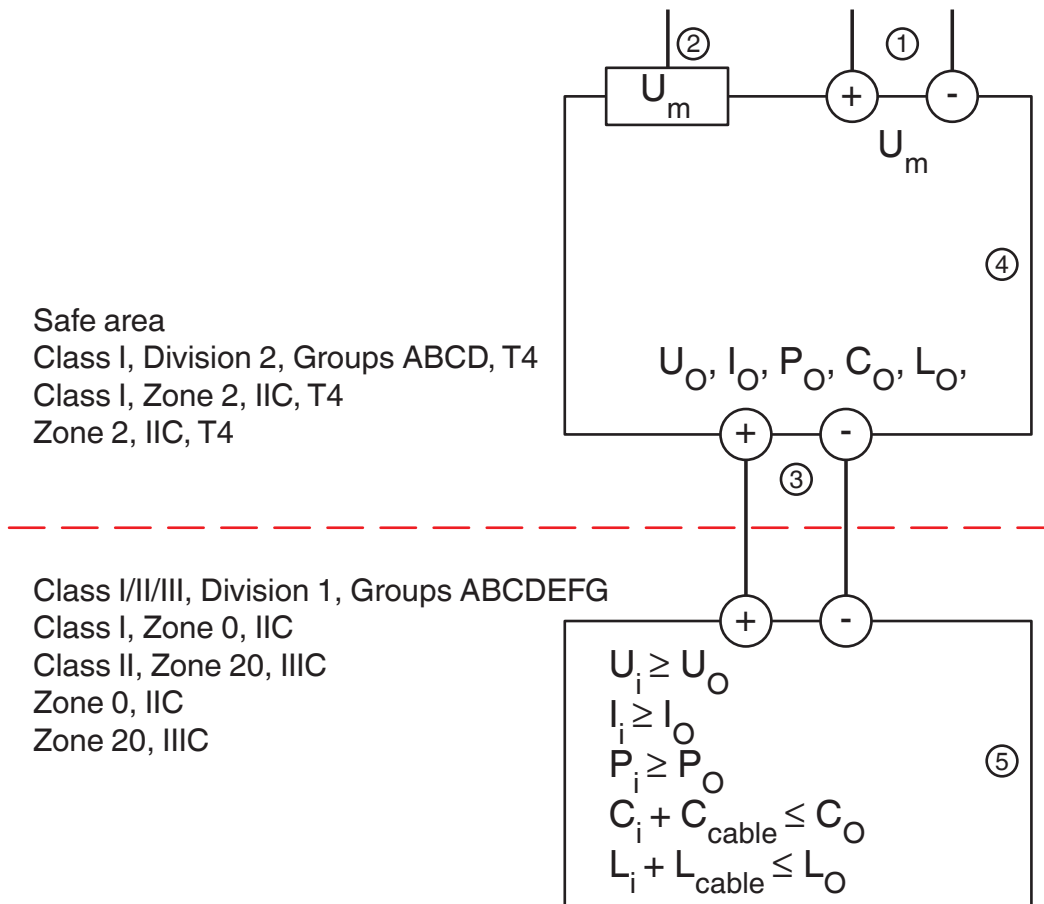


Dimensional drawing

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<https://www.phoenixcontact.com/us/products/1052423>

Schematic diagram



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<https://www.phoenixcontact.com/us/products/1052423>

## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/1052423>



**cULus Listed**

Approval ID: E238705



**IECEX**

Approval ID: IECEX UL 20.0044X



**cUL Listed**

Approval ID: FILE E196811



**UL Listed**

Approval ID: FILE E196811



**ATEX**

Approval ID: DEMKO 20 ATEX 2370X



**CCC**

Approval ID: 2025122316122298



**UKCA-EX**

Approval ID: UL22UKEX2508X

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## Classifications

### ECLASS

ECLASS-13.0	27242604
ECLASS-15.0	27242604

### ETIM

ETIM 10.0	EC001599
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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-25
	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	a18a7f42-803b-4991-a5d6-059413f35187

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