

# AXL F EX IS DO4 SD 24-48 XC 1F - Digital module



1086901

<https://www.phoenixcontact.com/us/products/1086901>

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Axioline F, Digital output module, Digital outputs: 4, 24 V, connection technology: 2-conductor, Solenoid drive, 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 module digital output characteristics of 24 V DC and 48 mA allow the connection of up to four solenoid driven, digital output signals.

## Your advantages

- Four 24 V DC - 48 mA digital output-powered control signals for solenoid drives
- Intrinsically safe digital outputs 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	1086901
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	DR02
Product key	DRI2E4
GTIN	4055626881140
Weight per piece (including packing)	399.4 g
Weight per piece (excluding packing)	248 g
Customs tariff number	85389099
Country of origin	US

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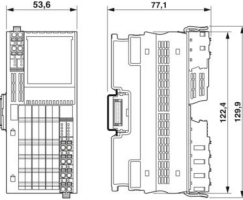


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## Technical data

### 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.

### Material specifications

Color (Housing)	gray (RAL 7042)
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### Interfaces

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

### System properties

Programming data (LocalbusSlave)	
Input address area	0 Byte
Output address area	1 Byte
Fieldbus data telegram (PROFIBUS)	
Required parameter data	5 Byte
Required configuration data	6 Byte

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## Output data

Digital:

Output name	Digital outputs
Connection method	Push-in connection
Connection technology	2-conductor
Number of outputs	4
Output voltage	24 V
Maximum output current per channel	48 mA
Nominal output voltage	24 V

## 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	Solenoid drive
	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	6.44 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 output modules ( $U_O$ )

Supply voltage	24 V DC
Supply voltage range	19.2 V DC ... 30 V DC (including all tolerances, including ripple)
Current draw	max. 420 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

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Test voltage: 5 V supply of the local bus ( $U_{Bus}$ ) / digital outputs	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 outputs	1500 V AC, 60 Hz, 1 min
Test voltage: Digital outputs / functional ground	500 V AC, 60 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.

### 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)

### Mechanical test

Vibration resistance in accordance with EN 60068-2-6/IEC 60068-2-6	5g
Shock in accordance with EN 60068-2-27/IEC 60068-2-27	30g
Continuous shock in accordance with EN 60068-2-27/IEC 60068-2-27	10g

## 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
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Certificate	DEMKO 20 ATEX 2370X
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## 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

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	[Ex ia Da] IIIC
	E196811

## CCC / China-Ex

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

## Ex data

UL, USA / Canada	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
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## Mounting

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

## Ex data

### Safety data

Max. output voltage $U_o$	27.3 V
Max. output current $I_o$	99 mA
Max. output power $P_o$	676 mW

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Safety-related maximum voltage $U_m$	250 V
A, B / IIC: Max. external inductivity $L_o$ / Max. external capacitance $C_o$	1.189 mH / 0.088 $\mu$ F
C/IIB, IIIC: Max. external inductivity $L_o$ / Max. external capacitance $C_o$	12.9 mH / 0.683 $\mu$ F
D/IIA, E, F, G, Class III: Max. external inductivity $L_o$ / Max. external capacitance $C_o$	27.41 mH / 2.28 $\mu$ F

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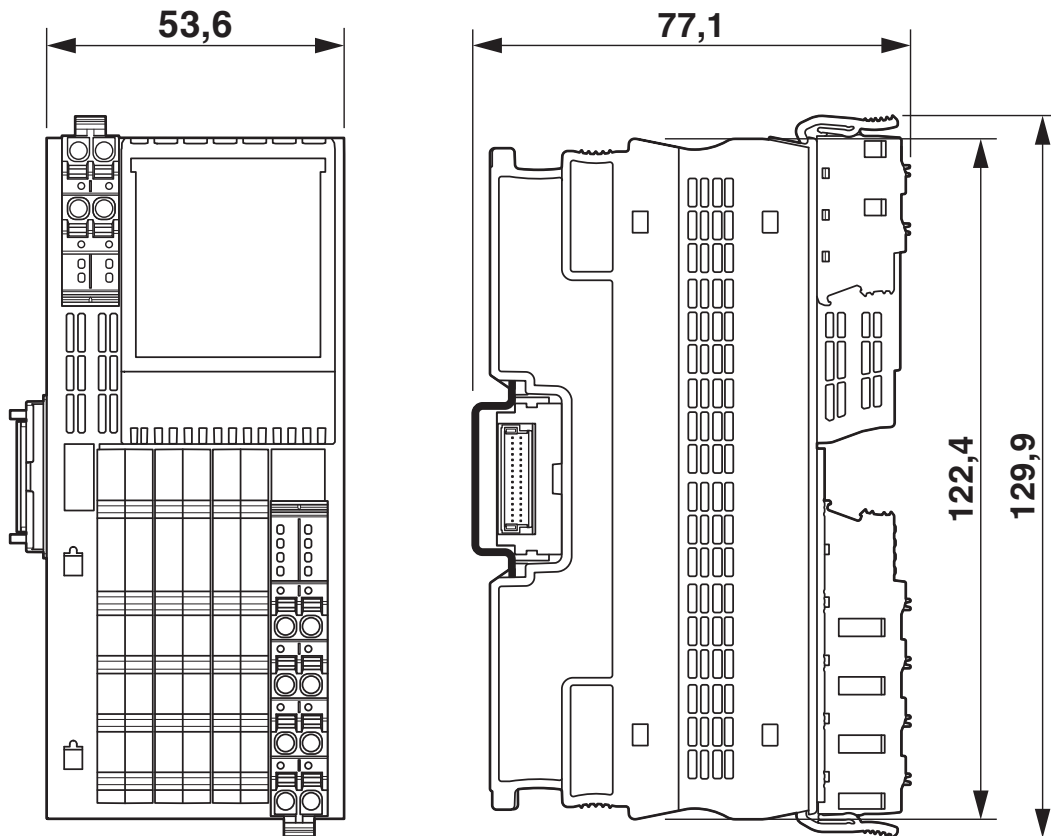


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## Drawings

Dimensional drawing



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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/1086901>



**cULus Listed**

Approval ID: E238705



**IECEX**

Approval ID: IECEX UL 20.0044X



**CCC**

Approval ID: 2025122316122298



**cUL Listed**

Approval ID: FILE E196811



**UL Listed**

Approval ID: FILE E196811



**ATEX**

Approval ID: DEMKO 20 ATEX 2370X



**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	f48ea384-bc2a-4bf7-9ce4-c2ff6baf3928

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