

# AXL F DO32/1 XC 1F - Digital module



2701230

<https://www.phoenixcontact.com/us/products/2701230>

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The figure shows the standard item

Axioline F, Digital output module, Digital outputs: 32, 24 V DC, 500 mA, connection technology: 1-conductor, 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. It is used to output digital signals. The outputs are protected against short circuit and overload.

## Your advantages

- 32 digital outputs
- 24 V DC, 500 mA
- Connection of actuators in 1-conductor technology
- Minimum update time of < 100  $\mu$ s
- 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	2701230
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	DR02
Product key	DRI232
GTIN	4046356730518
Weight per piece (including packing)	234.6 g
Weight per piece (excluding packing)	234.6 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

#### Note on application

Note on application	Only for industrial use
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#### 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

Input address area	0 Byte
Output address area	4 Byte
Required parameter data	1 Byte
Required configuration data	6 Byte

### Output data

#### Digital:

Output name	Digital outputs
Connection method	Push-in connection
Connection technology	1-conductor
Number of outputs	32

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Protective circuit	Short-circuit protection, overload protection of the outputs; electronic
Output voltage	24 V
Limitation of the voltage induced on circuit interruption	-32.8 V ... -15 V
Maximum output current per module	8 A (up to HW 01, fuse externally) 16 A (from HW 02, provide external protection; if the total current of 8 A is exceeded, connect the supply at the power connector parallel via both terminal points.)
Nominal output voltage	24 V DC
Load min.	10 kΩ
Output voltage when switched off	max. 1 V
Output current when switched off	max. 300 μA
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)
Switching frequency	max. 5500 per second (with ohmic load) max. 1 per second (with inductive load) max. 16 per second (with nominal lamp load)
Reverse voltage resistance to short pulses	limited protection up to 0.5 A for 1 s
Behavior with overload	Shutdown with automatic restart
Behavior with inductive overload	Output can be destroyed
Signal delay	max. 150 μs (when switched on) max. 200 μs (during switching off with ohmic nominal load)
Overcurrent shut-down	as of 0.7 A
Output current with ground connection interrupt when switched off	< 1 mA

## 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

## 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	3 W
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## Potentials: Axioline F local bus supply (U<sub>Bus</sub>)

Supply voltage	5 V DC (via bus base module)
Current draw	max. 120 mA (up to HW 01) max. 60 mA (from HW 02)

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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. 8 A (up to HW 01, fuse externally) max. 16 A (from HW 02, provide external protection; if the total current of 8 A is exceeded, connect the supply at the power connector parallel via both terminal points.)
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.

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 applications and applications with UL approval) -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)

Test (noxious gas)

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Test standard	ISA-71.04-2013 G3 Harsh Group A
	IEC 60068-2-60:2015 Method 4
Temperature	25 °C ±1 K
Humidity (relative)	75 % ±3 %
Test duration	21 Days
Volume concentration H <sub>2</sub> S (Hydrogen sulfide)	50 ppb
Volume concentration NO <sub>2</sub> (Nitrogen dioxide)	1250 ppb
Volume concentration Cl <sub>2</sub> (Chlorine)	10 ppb
Volume concentration SO <sub>2</sub> (Sulfur dioxide)	300 ppb

## 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)

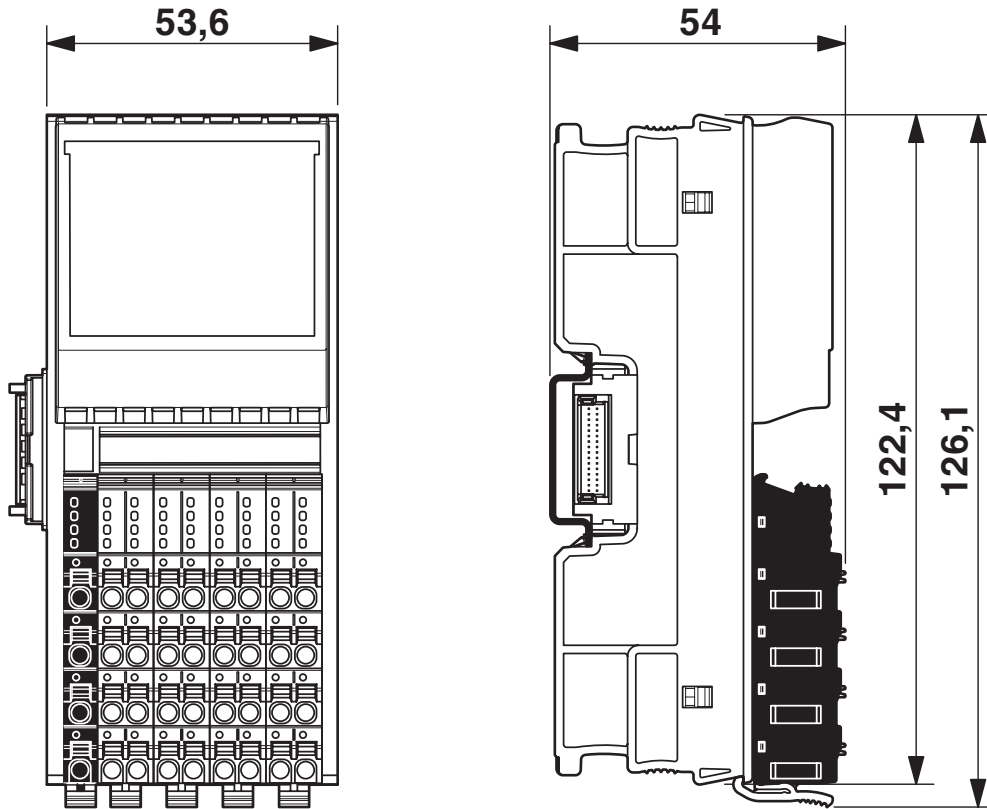
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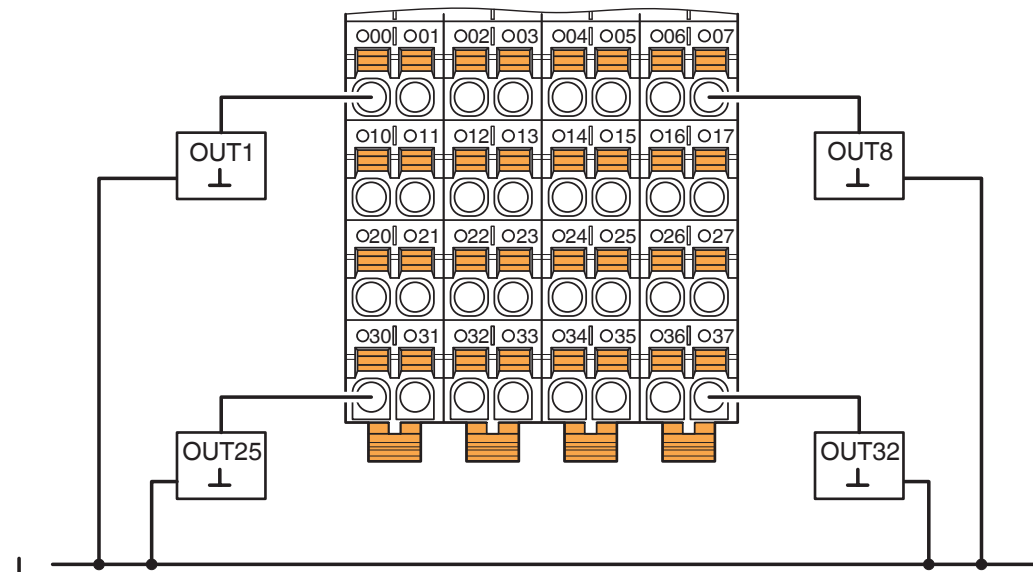
## Drawings

Dimensional drawing



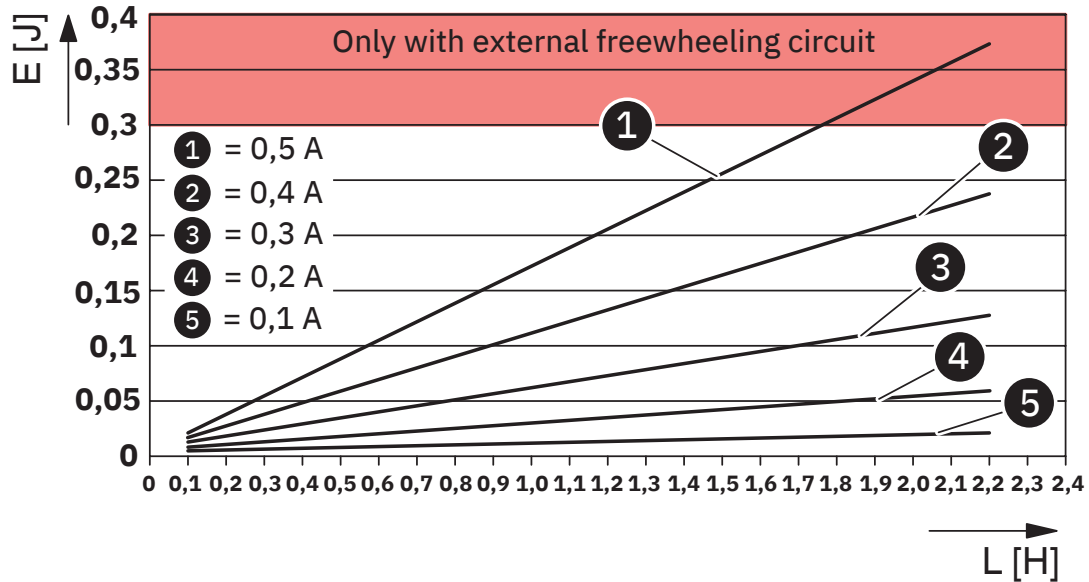
## Dimensions

Connection diagram



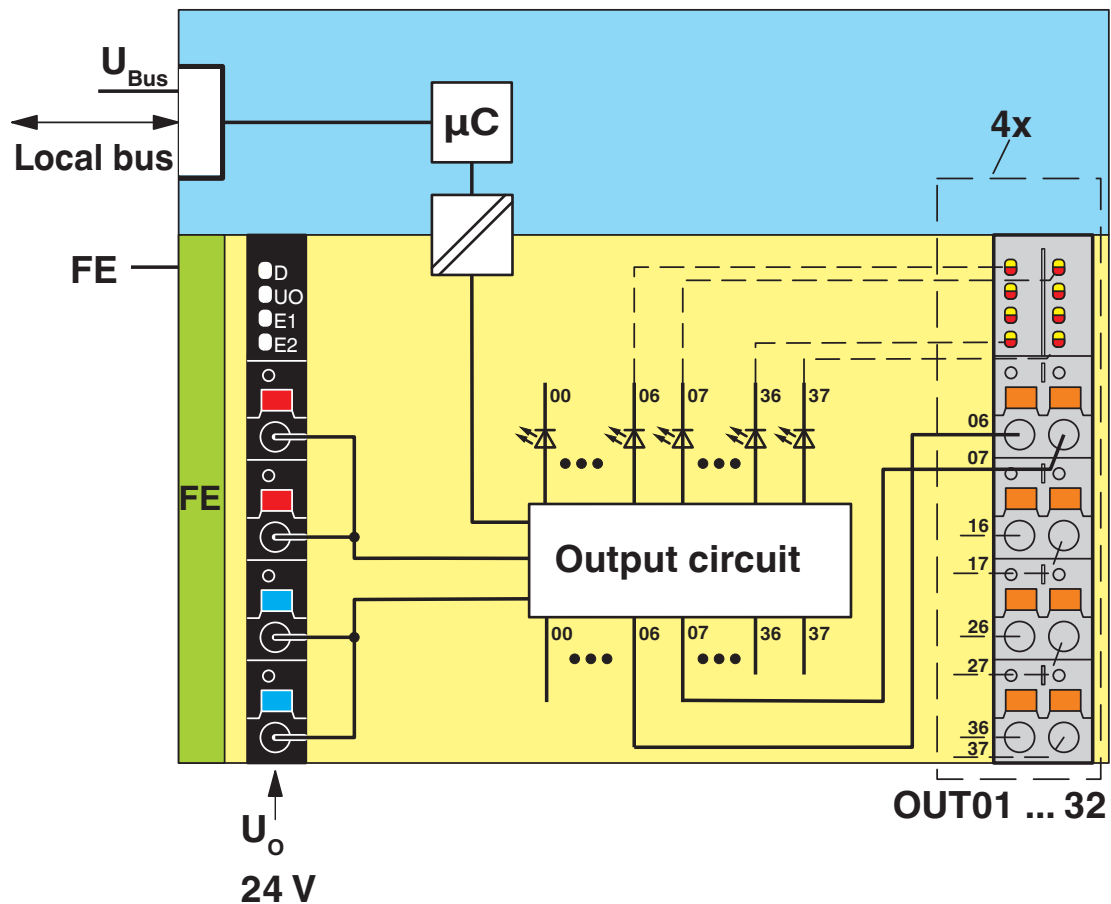
## Connection example

Diagram



Maximum outputs power consumption when inductive loads are switched off

Block diagram



Internal wiring of the terminal points

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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/2701230>



**DNV GL**

Approval ID: TAA00000DF



**LR**

Approval ID: LR2480202TA-02



**PRS**

Approval ID: TE/1020/880590/21

**BSH**

Approval ID: 840



**cULus Listed**

Approval ID: E238705

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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-50
	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	96fb0789-4c68-44f0-8c78-81c67c78674b

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