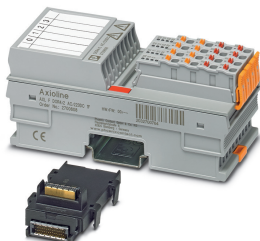


I/O module - AXL F DOR4/2 AC/220DC 1F - 2700608

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Axioline F, Relay module, Relay outputs: 4 (floating), N/O contact, 220 V DC, 230 V AC, 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 has four floating relay N/O contacts which are independent of one another.
Low-voltage and extra-low-voltage modules can be used side by side within an Axioline F station.

Your advantages

- ✓ Meets the requirements of IEC 61850-3 and IEEE 1613
- ✓ 4 monostable relays
- ✓ Floating connections for 4 actuators
- ✓ Nominal current of each output: 8 A
- ✓ Total current of the module: 32 A (4 x 8 A)
- ✓ Device rating plate stored



Key Commercial Data

Packing unit	1 pc
GTIN	 4 046356 916486
GTIN	4046356916486
Weight per Piece (excluding packing)	260.000 g
Custom tariff number	85389091
Country of origin	Germany

Technical data

Dimensions

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Technical data

Dimensions

Caption	Dimensions
Width	53.6 mm
Height	126.1 mm
Depth	54 mm
Note on dimensions	The depth is valid when a TH 35-7,5 DIN rail is used (according to EN 60715).

Ambient conditions

Ambient temperature (operation)	-25 °C ... 60 °C (max. 6 A/channel for wall mounting on horizontal DIN rail; max. 4 A/channel for any mounting position)
	-25 °C ... 50 °C (max. 8 A/channel for wall mounting on horizontal DIN rail; max. 6 A/channel for any mounting position)
	-25 °C ... 40 °C (max. 8 A/channel for any mounting position)
Ambient temperature (storage/transport)	-40 °C ... 85 °C
Permissible humidity (operation)	5 % ... 95 % (non-condensing)
Permissible humidity (storage/transport)	5 % ... 95 % (non-condensing)
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)
Degree of protection	IP20

Connection data

Designation	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. When selecting the cables, please note that in the case of a small conductor cross section and high current, the terminal point temperature may be up to 30 K above the ambient temperature.
Conductor cross section solid min.	0.2 mm ²
Conductor cross section solid max.	1.5 mm ²
Conductor cross section flexible min.	0.2 mm ²
Conductor cross section flexible max.	1.5 mm ²
Conductor cross section AWG min.	24
Conductor cross section AWG max.	16
Stripping length	8 mm

General

Mounting type	DIN rail
Color	traffic grey A RAL 7042
Net weight	222 g
Note on weight specifications	with connectors and bus base module

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Technical data

General

Degree of pollution	2
Mounting position	any (observe temperature and current derating)

Interfaces

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

Axioline potentials

Designation	Axioline F local bus supply (U_{Bus})
Supply voltage	5 V DC (via bus base module)
Current consumption	max. 280 mA (all relays pick up)
Power consumption	max. 1.4 W (all relays pick up)

Relay outputs

Output name	Relay outputs
Number of outputs	4 (floating)
Connection method	Push-in connection
Connection technology	2-conductor
Switching current	max. 8 A AC ($\cos \phi = 1$)
	For DC see load limit curve, e.g., the following values:
	max. 8 A DC (≤ 30 V, ohmic load)
	max. 500 mA DC (110 V, ohmic load)
	max. 250 mA DC (220 V DC, ohmic load)
	max. 220 mA DC (125 V DC, $L/R \leq 50$ ms, applications with UL approval)
	max. 110 mA DC (250 V DC, $L/R \leq 50$ ms, applications with UL approval)
Switching capacity	max. 2000 VA
	For DC see load limit curve, e.g., the following values:
	max. 240 W (30 V DC)
	max. 55 W (≥ 60 V DC)
	max. 25 W (125 V DC, 250 V DC, applications with UL approval)
Contact type	N/O contact
Output current	max. 8 A (per channel, provide an external fuse)
	max. 32 A (per module)
Nominal output voltage	220 V DC
	230 V AC
Output voltage range	24 V DC ... 220 V DC -20 % / +15 %
	24 V AC ... 230 V AC -20 % / +15 % (50/60 Hz)

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Technical data

Relay outputs

Switching current	max. 8 A AC (cos phi = 1)
	For DC see load limit curve, e.g., the following values:
	max. 8 A DC (≤ 30 V, ohmic load)
	max. 500 mA DC (110 V, ohmic load)
	max. 250 mA DC (220 V DC, ohmic load)
	max. 220 mA DC (125 V DC, L/R ≤ 50 ms, applications with UL approval)
	max. 110 mA DC (250 V DC, L/R ≤ 50 ms, applications with UL approval)
Switching capacity	max. 2000 VA
Switching frequency	max. 6 (per minute)
Mechanical service life	10x 10 ⁶ cycles

Electrical isolation

Test section	Relay contact / logic 4 kV Rated surge voltage (safe isolation according to EN 61010-2-201/IEC 61010-2-201)
	Relay contact / logic 5 kV Pulse test voltage according to EN 61850/IEC 61850
	Contact/functional ground 4 kV Rated surge voltage (safe isolation according to EN 61010-2-201/IEC 61010-2-201)
	Contact/functional ground 5 kV Pulse test voltage according to EN 61850/IEC 61850
	Contact / contact (open contact) 1 kV 50 Hz 1 min.
	Contact / contact (adjacent connectors 2.5 kV Pulse test voltage according to EN 61850/IEC 61850

Standards and Regulations

Immunity to ESD	Noise immunity test in accordance with EN 61000-6-2 Electrostatic discharge (ESD) EN 61000-4-2/IEC 61000-4-2 Criterion A, 6 kV contact discharge, 8 kV air discharge
Immunity to EF	Noise immunity test in accordance with EN 61000-6-2 Electromagnetic fields EN 61000-4-3/IEC 61000-4-3 Criterion A, 20 V/m up to 1 GHz, 10 V/m up to 3 GHz
Immunity to burst	Noise immunity test in accordance with EN 61000-6-2 Fast transients (burst) EN 61000-4-4/IEC 61000-4-4 Criterion A, 4 kV
Immunity to surge	Noise immunity test in accordance with EN 61000-6-2 Transient overvoltage (surge) EN 61000-4-5/IEC 61000-4-5 Criterion A, ± 4 kV (asymmetrical)
Immunity to conducted interference	Noise immunity test in accordance with EN 61000-6-2 Conducted interference EN 61000-4-6/IEC 61000-4-6 Criterion A, Test voltage 10 V
Interference emission	Noise emission test according to EN 61000-6-3 Class B
Mechanical tests	Vibration resistance in acc. with EN 60068-2-6/IEC 60068-2-6 5g
	Shock in acc. with EN 60068-2-27/IEC 60068-2-27 20g (contact interruption) / 5g (contact closure)
	Continuous shock according to EN 60068-2-27/IEC 60068-2-27 10g

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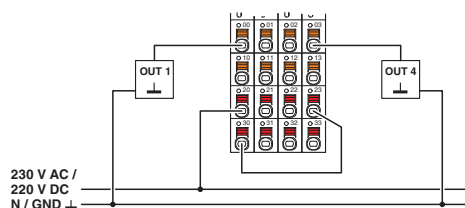
Technical data

Standards and Regulations

Developed according to standard	IEC 61850-3 Electrostatic discharge (ESD) EN 61000-4-2/IEC 61000-4-2 Criterion A, 6 kV contact discharge, 8 kV air discharge
	IEC 61850-3 Electromagnetic fields EN 61000-4-3/IEC 61000-4-3 Criterion A, 20 V/m up to 1 GHz, 10 V/m up to 3 GHz
	IEC 61850-3 Fast transients (burst) EN 61000-4-4/IEC 61000-4-4 Criterion A, 4 kV
	IEC 61850-3 Transient overvoltage (surge) EN 61000-4-5/IEC 61000-4-5 Criterion A, ± 4 kV (asymmetrical)
	IEC 61850-3 Conducted interference EN 61000-4-6/IEC 61000-4-6 Criterion A, Test voltage 10 V
	IEC 61850-3 Immunity to magnetic fields, EN 61000-4-8/IEC 61000-4-8 300 A/m continuous, 1000 A/m for 1 s
	IEC 61850-3 Immunity to attenuated oscillating magnetic fields, EN 61000-4-10/IEC 61000-4-10 100 A/m
	IEC 61850-3 Immunity to conducted common-mode interference, EN 61000-4-16/IEC 61000-4-16 30 V continuous, 300 V for 1 s
	IEC 61850-3 Attenuated oscillating waves, EN 61000-4-18/IEC 61000-4-18 2.5 kV asymmetrical
	IEC 61850-3 Radio interference properties EN 55022 Class B
Overvoltage category	III (EN 61010-2-201/UL 61010-2-201), up to 2000 m above sea level II (EN 61010-2-201/UL 61010-2-201), up to 3000 m above sea level

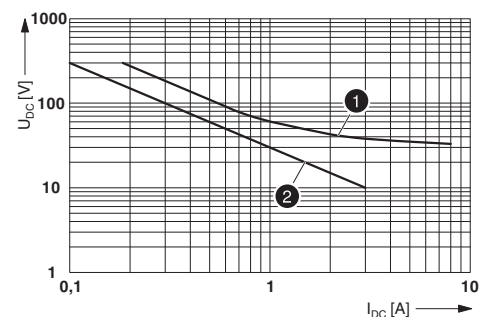
Drawings

Connection diagram



Connection of actuators

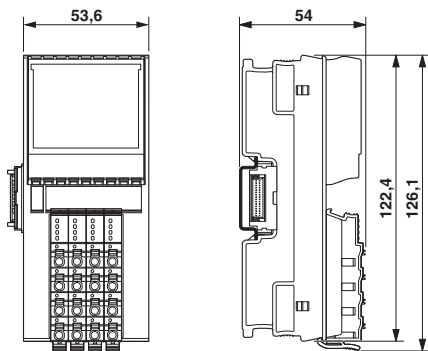
Diagram



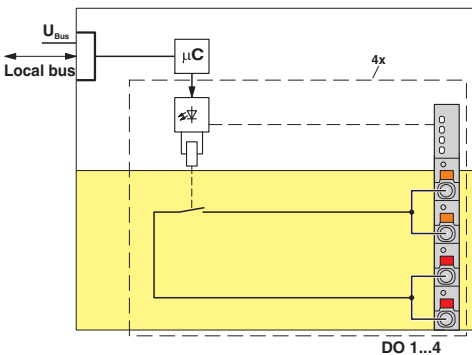
DC load limit curve for REL-MLR-1X1/G 5 (1 - ohmic load, 2 - inductive load L/R = 50 ms)

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Dimensional drawing



Block diagram



Dimensions

Internal wiring of the terminal points

Classifications

eCl@ss

eCl@ss 10.0.1	27242604
eCl@ss 11.0	27242604
eCl@ss 5.1	27242600
eCl@ss 6.0	27242600
eCl@ss 7.0	27242604
eCl@ss 9.0	27242604

ETIM

ETIM 6.0	EC001599
ETIM 7.0	EC001599

UNSPSC

UNSPSC 13.2	32151602
UNSPSC 18.0	32151602
UNSPSC 19.0	32151602
UNSPSC 20.0	32151602
UNSPSC 21.0	32151602

Approvals

Approvals

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Approvals

Approvals

UL Listed / cUL Listed / cULus Listed

Ex Approvals

Approval details

UL Listed



<http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm>

FILE E 238705

cUL Listed



<http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm>

FILE E 238705

cULus Listed



Accessories

Accessories

Device marking

Insert label - EMT (35X46)R - 0801604



Insert label, for the Axioline F series from Phoenix Contact, Roll, white, unlabeled, can be labeled with: THERMOMARK ROLLMASTER 300/600, THERMOMARK X1.2, THERMOMARK ROLL X1, THERMOMARK ROLL 2.0, THERMOMARK ROLL, mounting type: snapped into marker carrier, lettering field size: 35 x 46 mm, Number of individual labels: 500

DIN rail connector

Bus connector - AXL F BS F - 2688129



Axioline F bus base module for housing type F

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Accessories

Terminal marking

Zack marker strip - ZB 20,3 AXL UNPRINTED - 0829579



Zack marker strip for Axioline F (device labeling), in 2 x 20.3 mm pitch, unprinted, 25-section, for individual labeling with B-STIFT 0.8, X-PEN, or CMS-P1-PLOTTER

Zack Marker strip, flat - ZBF 7,5:UNBEDRUCKT - 0809942



Zack Marker strip, flat, Strip, white, unlabeled, can be labeled with: PLOTMARK, CMS-P1-PLOTTER, mounting type: snap into flat marker groove, for terminal block width: 7.5 mm, lettering field size: 5.15 x 7.4 mm, Number of individual labels: 10