

AXL F DI8/1 DO8/1 XC 1H - Digital module



2702017

<https://www.phoenixcontact.com/us/products/2702017>

Please be informed that the data shown in this PDF document is generated from our online catalog. Please find the complete data in the user documentation. Our general terms of use for downloads are valid.



Axioline F, Digital I/O module, Digital inputs: 8, 24 V DC, connection technology: 1-conductor, Digital outputs: 8, 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 acquire and output digital signals. The filter times of the inputs can be adjusted to increase noise immunity. Filter times of 100 μ s enable the user to implement a counting function with a maximum input frequency of 5 kHz in the application. The outputs are protected against short circuit and overload.

Your advantages

- 8 digital inputs in accordance with EN 61131-2 type 1 and type 3
- 24 V DC, 2.4 mA
- Connection of sensors in 1-conductor technology
- Filter times can be adjusted in three increments: < 100 μ s, 1000 μ s or 3000 μ s
- Maximum input frequency: 5 kHz
- 8 digital outputs
- 24 V DC, 500 mA
- Connection of actuators in 1-conductor technology
- Minimum update time of < 100 μ 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	2702017
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	DR02
Product key	DRI233
Catalog page	Page 80 (C-6-2019)
GTIN	4046356901246
Weight per piece (including packing)	203.5 g
Weight per piece (excluding packing)	132.88 g
Customs tariff number	85389091

AXL F DI8/1 DO8/1 XC 1H - Digital module



2702017

<https://www.phoenixcontact.com/us/products/2702017>

Country of origin	DE
-------------------	----

AXL F DI8/1 DO8/1 XC 1H - Digital module

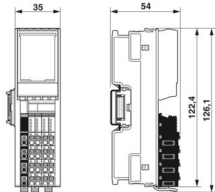


2702017

<https://www.phoenixcontact.com/us/products/2702017>

Technical data

Dimensions

Dimensional drawing	
Width	35 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

Utilization restriction	
EMC note	EMC: class A product, see manufacturer's declaration in the download area

Interfaces

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

System properties

Module	
Input address area	1 Byte
Output address area	1 Byte
Required parameter data	3 Byte
Required configuration data	7 Byte

Input data

Digital:	
Input name	Digital inputs
Description of the input	EN 61131-2 types 1 and 3
Number of inputs	8
Connection method	Push-in connection
Connection technology	1-conductor
Input voltage range "0" signal	-3 V DC ... 5 V DC

AXL F DI8/1 DO8/1 XC 1H - Digital module



2702017

<https://www.phoenixcontact.com/us/products/2702017>

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}	2.4 mA
Input filter time	3000 μ s (Default)
	1000 μ s
	< 100 μ s
Protective circuit	Polarity reversal protection of the inputs; parallel diode (30 V, 5 s)

Output data

Digital:

Output name	Digital outputs
Connection method	Push-in connection
Connection technology	1-conductor
Number of outputs	8
Protective circuit	Short-circuit protection, overload protection of the outputs; electronic
Output voltage	24 V DC
Limitation of the voltage induced on circuit interruption	-25.8 V ... -15 V
Maximum output current per module	max. 4 A (provide external protection)
Nominal output voltage	24 V DC
Load min.	10 k Ω
Output voltage when switched off	max. 1 V
Output current when switched off	max. 300 μ A
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. 10000 per second (with at least 50 mA load current)
	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. 100 μ s (when switched on)
	max. 100 μ s (when switched off, with at least 50 mA load current)
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 delivery	including bus base module and Axioline F connectors

AXL F DI8/1 DO8/1 XC 1H - Digital module



2702017

<https://www.phoenixcontact.com/us/products/2702017>

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

Potentials: Axioline F local bus supply (U_{BUS})

Supply voltage	5 V DC (via bus base module)
Current draw	max. 120 mA (up to HW 02)
	max. 60 mA (from HW 03)
Power consumption	max. 600 mW (up to HW 02)
	max. 300 mW (from HW 03)

Potentials: Supply for digital input and output modules (U_{IO})

Supply voltage	24 V DC
Supply voltage range	19.2 V DC ... 30 V DC (including all tolerances, including ripple)
Current draw	max. 4 A (provide external protection)
Power consumption	max. 96 W (of which 1.35 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.

AXL F DI8/1 DO8/1 XC 1H - Digital module



2702017

<https://www.phoenixcontact.com/us/products/2702017>

Conductor cross section, rigid	0.2 mm² ... 1.5 mm²
Conductor cross section, flexible	0.2 mm² ... 1.5 mm²
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 with UL approval, use in zone 2 potentially explosive area) -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)
------------------	---------------------------------------

Approvals

ATEX

Identification	Ⓔ II 3 G Ex ec IIC T4 Gc
Certificate	UL 20 ATEX 2441X
References to standards	EN IEC 60079-0, EN IEC 60079-7

UKEX

Identification	Ⓔ II 3 G Ex ec IIC T4 Gc
Certificate	PxCIMA22UKEX2701949X
References to standards	EN IEC 60079-0, EN IEC 60079-7

IECEx

Identification	Ex ec IIC T4 Gc
Certificate	IECEx ULD 20.0026X
References to standards	IEC 60079-0 Ed. 7, IEC 60079-7 Ed. 5.1

UL, USA/Canada

Identification	cULus
Certificate	E238705

UL Ex, USA / Canada

Identification	Class I, Zone 2, AEx ec IIC T4 Class I, Division 2, Groups A, B, C, D, T4 Ex ec IIC T4 Gc X
Certificate	E366272

AXL F DI8/1 DO8/1 XC 1H - Digital module



2702017

<https://www.phoenixcontact.com/us/products/2702017>

References to standards	UL 60079-0 Ed. 7 / CSA C22.2 NO. 60079-0 Ed. 4
	UL 60079-7 Ed. 5 / CSA C22.2 NO. 60079-7 Ed. 2

CCC / China-Ex

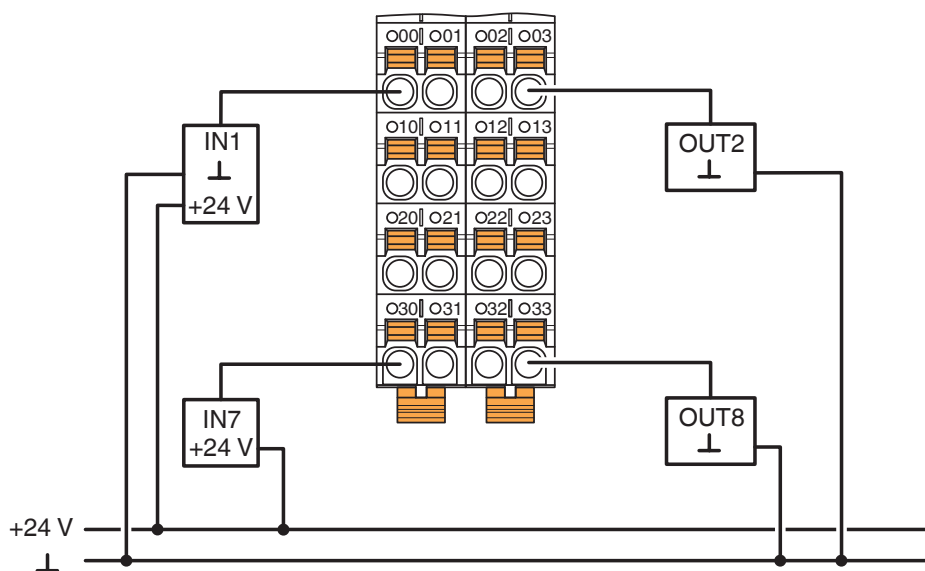
Identification	Ex ec IIC T4 Gc
Certificate	
References to standards	GB/T 3836.1-2021, GB/T 3836.3-2021

Mounting

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

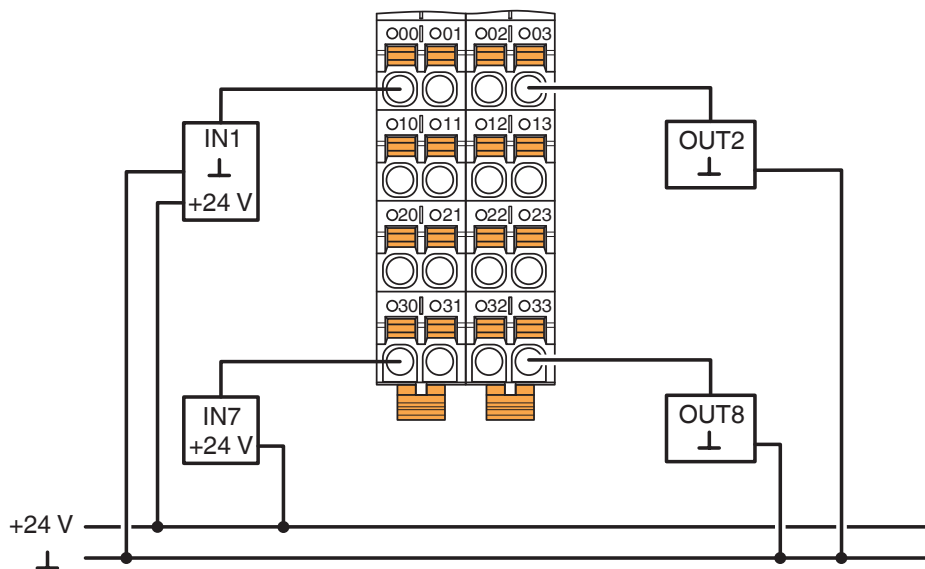
Drawings

Connection diagram



Connection in 1-conductor technology

Connection diagram



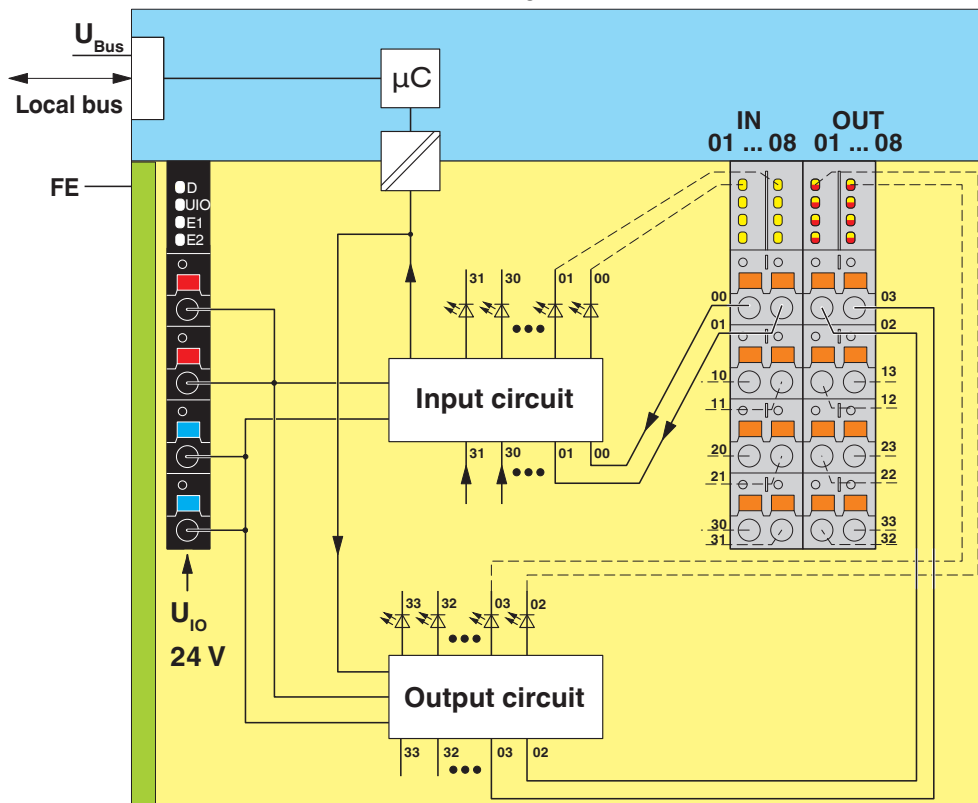
Typical connection of sensors and actuators when using external busbars

AXL F DI8/1 DO8/1 XC 1H - Digital module

2702017

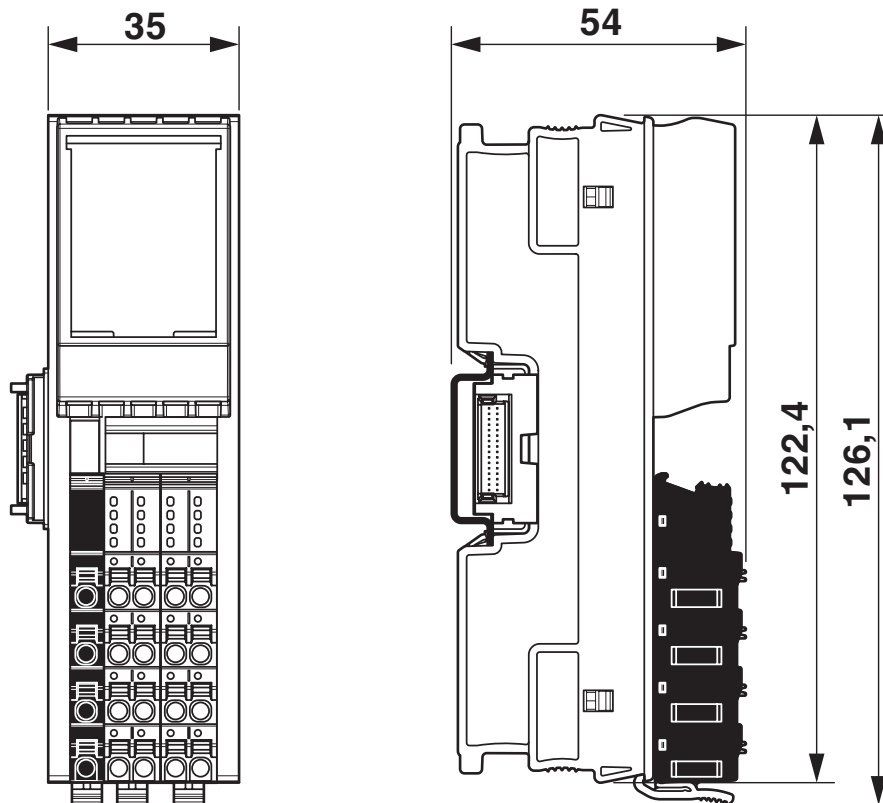
<https://www.phoenixcontact.com/us/products/2702017>

Block diagram

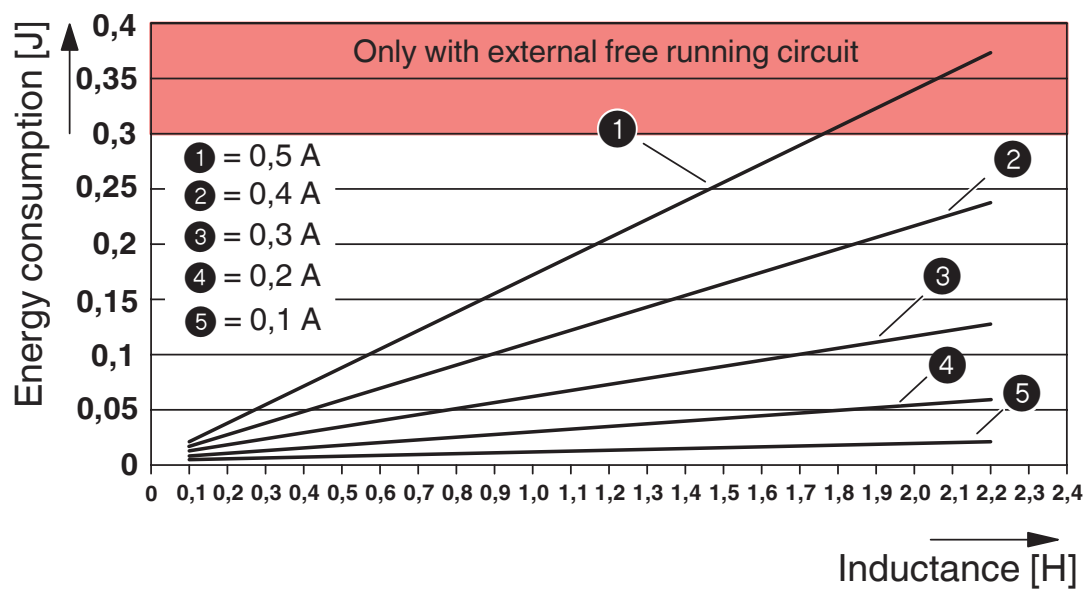


Internal wiring of the terminal points

Dimensional drawing



Diagram



Maximum outputs power consumption when inductive loads are switched off

AXL F DI8/1 DO8/1 XC 1H - Digital module



2702017

<https://www.phoenixcontact.com/us/products/2702017>

Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/2702017>



DNV GL

Approval ID: TAA00000DF



LR

Approval ID: LR2001902TA-08



NK

Approval ID: 14A006



BV

Approval ID: 36433/B4 BV



PRS

Approval ID: TE/1020/880590/21

BSH

Approval ID: 840

ABS

Approval ID: 20-2059154-PDA



cULus Listed

Approval ID: E238705

UAE-RoHS

Approval ID: 23-02-63243



RINA

Approval ID: ELE008423XG



IECEx

Approval ID: IECEx ULD 20.0026X

AXL F DI8/1 DO8/1 XC 1H - Digital module



2702017

<https://www.phoenixcontact.com/us/products/2702017>



ATEX

Approval ID: UL 20 ATEX 2441X



cULus Listed

Approval ID: E366272



CCC

Approval ID: 2021122309114456_CN

AXL F DI8/1 DO8/1 XC 1H - Digital module



2702017

<https://www.phoenixcontact.com/us/products/2702017>

Classifications

ECLASS

ECLASS-11.0	27242604
ECLASS-12.0	27242604
ECLASS-13.0	27242604

ETIM

ETIM 9.0	EC001599
----------	----------

UNSPSC

UNSPSC 21.0	32151600
-------------	----------

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	a43bae79-91a8-4a63-8888-8418d082c1b9

AXL F DI8/1 DO8/1 XC 1H - Digital module



2702017

<https://www.phoenixcontact.com/us/products/2702017>

Accessories

AXL F BS H - Bus connector

2700992

<https://www.phoenixcontact.com/us/products/2700992>

Axioline F bus base module for housing type H



ZB 20,3 AXL UNPRINTED - Zack marker strip

0829579

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

AXL F DI8/1 DO8/1 XC 1H - Digital module



2702017

<https://www.phoenixcontact.com/us/products/2702017>

ZBF 10/5,8 AXL UNPRINTED - Zack Marker strip, flat

0829580

<https://www.phoenixcontact.com/us/products/0829580>



Zack Marker strip, flat, Strip, white, unlabeled, can be labeled with: PLOTMARK, CMS-P1-PLOTTER, mounting type: snapped, for terminal block width: 10.15 mm, lettering field size: 4 x 10, 15 x 5 mm, 1 x 5.8 x 5 mm, Number of individual labels: 50

EMT (35X28)R - Insert label

0801602

<https://www.phoenixcontact.com/us/products/0801602>



Insert label, for marking the Axioline F series from Phoenix Contact, Roll, white, unlabeled, can be labeled with: THERMOMARK E.300 (D)/600 (D), THERMOMARK ROLL 2.0, THERMOMARK ROLL, THERMOMARK ROLL X1, THERMOMARK ROLLMaster 300/600, THERMOMARK X1.2, mounting type: insert, lettering field size: 35 x 28 mm, Number of individual labels: 500

AXL F DI8/1 DO8/1 XC 1H - Digital module



2702017

<https://www.phoenixcontact.com/us/products/2702017>

CABLE-FLK14/AXIO/OE/0,14/0,5M - Cable

1369888

<https://www.phoenixcontact.com/us/products/1369888>



Round cable set; controller: Axioline Realtime I/O; connection 1: Single wires (8-position) (The wires are marked and fitted with ferrules); connection 2: IDC/FLK socket strip (1x 14-position); cable length: 0.5 m

CABLE-FLK14/AXIO/OE/0,14/1,0M - Cable

1369897

<https://www.phoenixcontact.com/us/products/1369897>



Round cable set; controller: Axioline Realtime I/O; connection 1: Single wires (8-position) (The wires are marked and fitted with ferrules); connection 2: IDC/FLK socket strip (1x 14-position); cable length: 1 m

AXL F DI8/1 DO8/1 XC 1H - Digital module



2702017

<https://www.phoenixcontact.com/us/products/2702017>

CABLE-FLK14/AXIO/OE/0,14/1,5M - Cable

1369902

<https://www.phoenixcontact.com/us/products/1369902>



Round cable set; controller: Axioline Realtime I/O; connection 1: Single wires (8-position) (The wires are marked and fitted with ferrules); connection 2: IDC/FLK socket strip (1x 14-position); cable length: 1.5 m

CABLE-FLK14/AXIO/OE/0,14/2,0M - Cable

1369904

<https://www.phoenixcontact.com/us/products/1369904>



Round cable set; controller: Axioline Realtime I/O; connection 1: Single wires (8-position) (The wires are marked and fitted with ferrules); connection 2: IDC/FLK socket strip (1x 14-position); cable length: 2 m

AXL F DI8/1 DO8/1 XC 1H - Digital module



2702017

<https://www.phoenixcontact.com/us/products/2702017>

CABLE-FLK14/AXIO/OE/0,14/3,0M - Cable

1369905

<https://www.phoenixcontact.com/us/products/1369905>



Round cable set; controller: Axioline Realtime I/O; connection 1: Single wires (8-position) (The wires are marked and fitted with ferrules); connection 2: IDC/FLK socket strip (1x 14-position); cable length: 3 m

CABLE-FLK14/AXIO/OE/0,14/4,0M - Cable

1369906

<https://www.phoenixcontact.com/us/products/1369906>



Round cable set; controller: Axioline Realtime I/O; connection 1: Single wires (8-position) (The wires are marked and fitted with ferrules); connection 2: IDC/FLK socket strip (1x 14-position); cable length: 4 m

AXL F DI8/1 DO8/1 XC 1H - Digital module



2702017

<https://www.phoenixcontact.com/us/products/2702017>

CABLE-FLK14/AXIO/OE/0,14/6,0M - Cable

1369909

<https://www.phoenixcontact.com/us/products/1369909>



Round cable set; controller: Axioline Realtime I/O; connection 1: Single wires (8-position) (The wires are marked and fitted with ferrules); connection 2: IDC/FLK socket strip (1x 14-position); cable length: 6 m

Phoenix Contact 2024 © - all rights reserved

<https://www.phoenixcontact.com>

Phoenix Contact USA
586 Fulling Mill Road
Middletown, PA 17057, United States
(+717) 944-1300
info@phoenixcon.com