

AXL SE DO16/1 - Digital module



1088129

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Axioline Smart Elements, Digital output module, Digital outputs: 16, 24 V DC, 500 mA, connection technology: 1-conductor, degree of protection: IP20

Product description

You can integrate Axioline Smart Elements into systems with the Smart Element interface. This Smart Element emits digital signals.

Your advantages

- 16 digital outputs
- 24 V DC, 500 mA
- Connection of actuators in 1-conductor technology
- Substitute value behavior of the outputs can be parameterized for the Smart Element
- Device rating plate stored

Commercial data

Item number	1088129
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	DR05
Product key	DRIB32
GTIN	4055626888101
Weight per piece (including packing)	38.9 g
Weight per piece (excluding packing)	35 g
Customs tariff number	85389091
Country of origin	DE

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Technical data

Dimensions

Dimensional drawing		
Width		14.9 mm
Height		62.2 mm
Depth		62 mm

Notes

Utilization restriction

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

Smart Element interface

Number of interfaces	1
Connection method	Card edge connector
Transmission speed	See system in which you use the Smart Element.
Start time until ready to operate	< 500 ms

System properties

Module

ID code (hex)	none
Process data channel	16 bit
Input address area	0 Byte
Output address area	2 Byte
Required parameter data	9 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	16
Protective circuit	Short-circuit and overload protection; electronic

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Output voltage	24 V
Limitation of the voltage induced on circuit interruption	-32.8 V DC ... -15 V DC
Maximum output current per module	6 A (Also make sure that the maximum permissible current of 6 A is not exceeded.)
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	12 VA (1.2 H, 48 Ω , with nominal voltage)
Nominal load, lamp	12 W (at nominal voltage)
Nominal load, ohmic	12 W (48 Ω , with nominal voltage)
Switching frequency	max. 1200 per second (With resistive load, 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	min. 0.7 A
Output current with ground connection interrupt when switched off	< 1 mA

Product properties

Product type	I/O component
Product family	Axioline Smart Elements
Type	modular
Mounting position	See the system in which the Smart Element is used.

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	1.2 W
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Potentials: Communications power supply of the Smart Elements (U_{SE})

Supply voltage	using card edge connectors
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Potentials: I/O supply (U_P)

Supply voltage	24 V DC (using card edge connectors)
Supply voltage range	19.2 V DC ... 30 V DC (including all tolerances, including ripple)
Current draw	max. 6 A
Current consumption	min. 40 mA (without connected peripherals)
Power consumption	max. 180 W (of which 1.1 W internal losses)

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	min. 288 mW
Protective circuit	Surge protection; See the system in which the Smart Element is used.
	Reverse polarity protection; parallel diode

Electrical isolation/isolation of the voltage ranges

Test voltage: Communications supply / 24 V supply (I/O)	500 V AC, 50 Hz, 1 min.
Test voltage: Communications supply / 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	I/O
Note on the connection method	Please observe the information provided on conductor cross sections in the "AxioLine Smart Elements" user manual.
	With a small conductor cross section and high current, the terminal point temperature can reach up to 45 K above the ambient temperature.
	When selecting the cables, observe the permissible operating temperature in accordance with IEC or UL.

Conductor connection

Connection method	Push-in connection
Conductor cross section rigid	0.25 mm ² ... 1.5 mm ²
Conductor cross section flexible	0.25 mm ² ... 1.5 mm ²
Conductor cross section AWG	24 ... 16
Conductor cross section flexible, with ferrule without plastic sleeve	0.25 mm ² ... 1.5 mm ²
Conductor cross section, flexible, with ferrule, with plastic sleeve	0.25 mm ² ... 1.5 mm ²
Stripping length	8 mm

I/O

Connection method	Push-in connection
Note on the connection method	Please observe the information provided on conductor cross sections in the "AxioLine Smart Elements" user manual.
	With a small conductor cross section and high current, the terminal point temperature can reach up to 45 K above the ambient temperature.
	When selecting the cables, observe the permissible operating temperature in accordance with IEC or UL.
Conductor cross section, rigid	0.25 mm ² ... 1.5 mm ²
Conductor cross section, flexible	0.25 mm ² ... 1.5 mm ²
Conductor cross section AWG	24 ... 16
Conductor cross section, flexible, with ferrule, with plastic sleeve	0.25 mm ² ... 1.5 mm ²
Conductor cross section flexible, with ferrule without plastic sleeve	0.25 mm ² ... 1.5 mm ²
Stripping length	8 mm

Environmental and real-life conditions

Ambient conditions

Ambient temperature (operation)	-25 °C ... 60 °C
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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Mounting

Mounting type	Smart Element slot
Mounting position	See the system in which the Smart Element is used.

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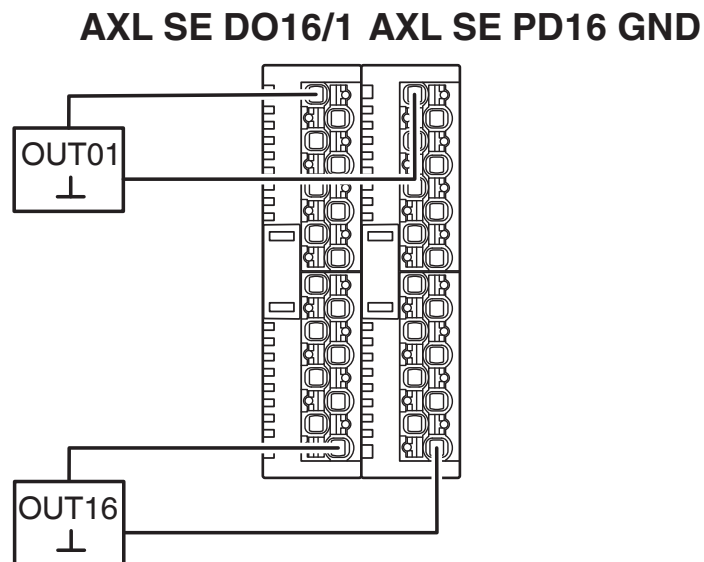
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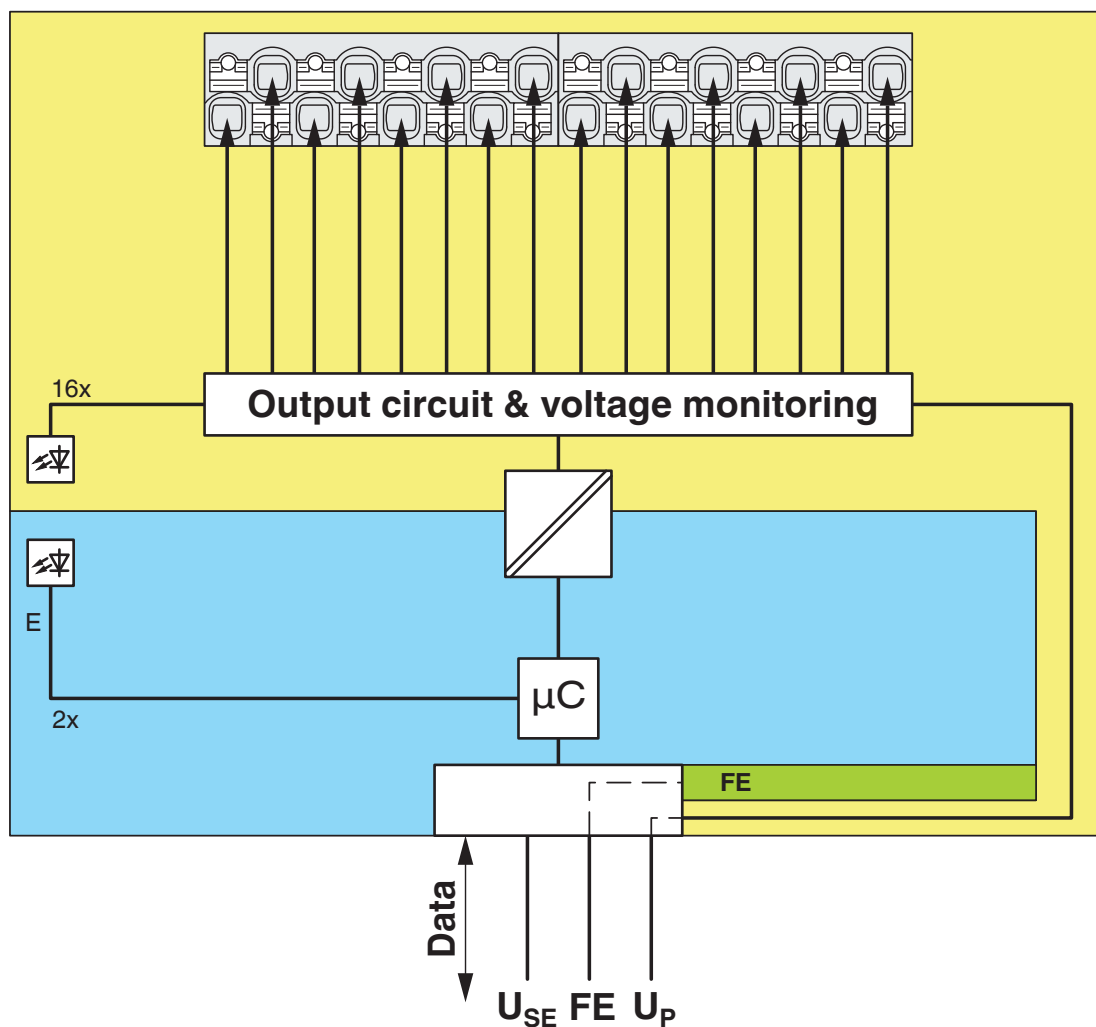
Drawings

Connection diagram



Connection in 2-conductor technology when using AXL SE PD ... (see data sheet)

Block diagram



Internal wiring of the terminal points

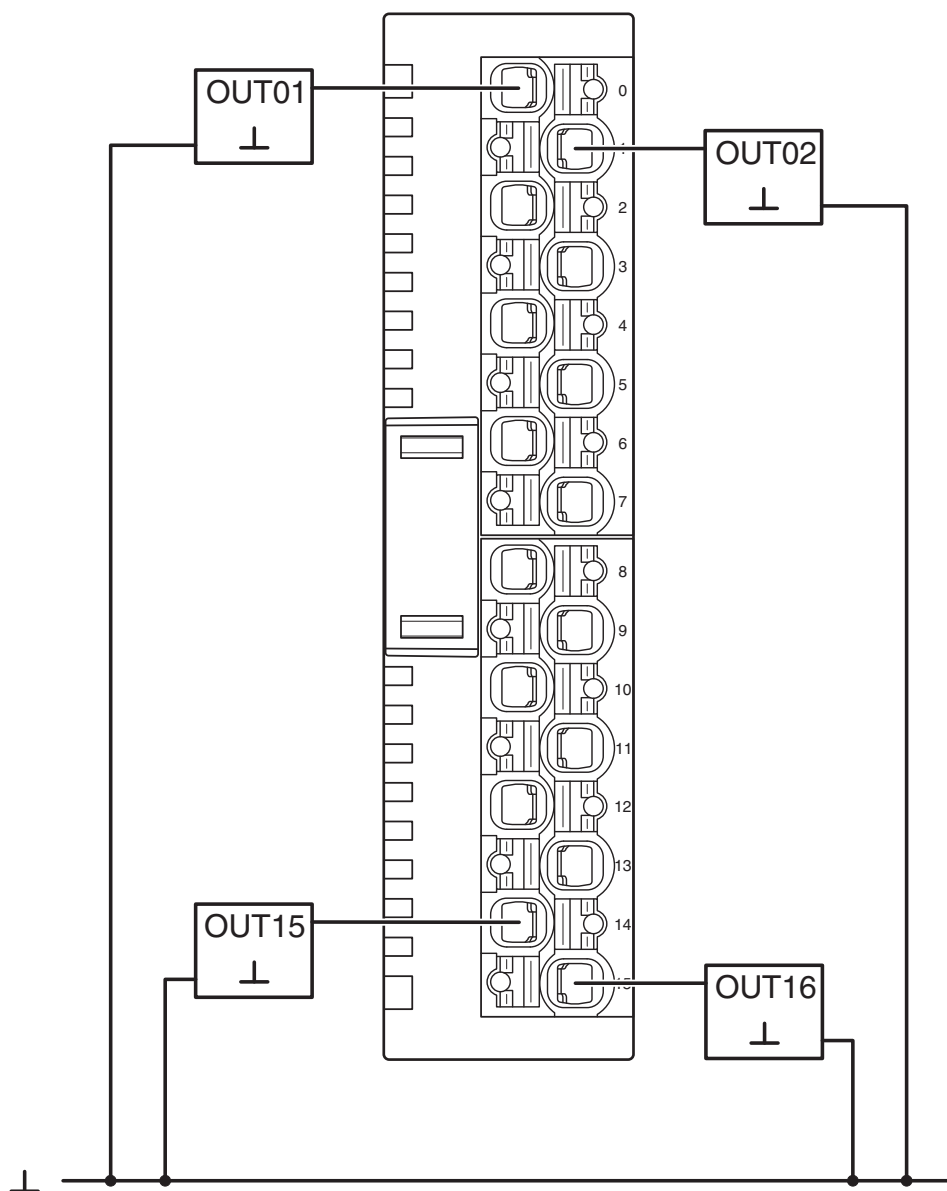
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Connection diagram



Connection in 1-conductor technology

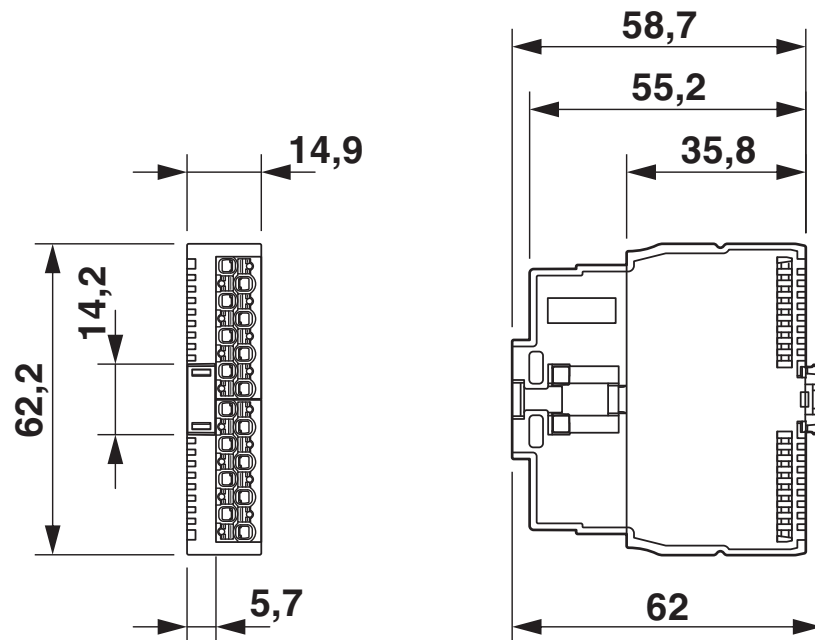
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Dimensional drawing



Dimensions

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Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/1088129>

	UL Listed Approval ID: E238705
	cUL Listed Approval ID: E238705
	cUL Listed Approval ID: E238705
	UL Listed Approval ID: E238705
	DNV Approval ID: TAA00003B0
	DNV Approval ID: TAA00003B0
	LR Approval ID: LR23402057TA
	LR Approval ID: LR23402057TA
	RINA Approval ID: ELE263623XG
	ABS Approval ID: 24-2510075-PDA
	ABS Approval ID: 24-2510075-PDA

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RINA

Approval ID: ELE263623XG

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Classifications

ECLASS

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

ETIM

ETIM 9.0	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	1566ffa1-dd75-48e7-af6c-20ee81deec9e
EF3.0 Climate Change	
CO2e kg	1.73 kg CO2e

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Mandatory accessories

AXL F BP SE4 - Module carrier

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Axioline F, Backplane, 4 slots for Axioline Smart Elements, transmission speed in the local bus: 100 Mbps, degree of protection: IP20



AXL F BP SE6 - Module carrier

1088136

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Axioline F, Backplane, 6 slots for Axioline Smart Elements, transmission speed in the local bus: 100 Mbps, degree of protection: IP20



Accessories

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AXL SE PD16 24V - Potential distributors

1337223

<https://www.phoenixcontact.com/us/products/1337223>



Axioline Smart Elements, Potential distribution module, 24 V DC, degree of protection: IP20

AXL SE PD16 GND - Potential distributors

1337224

<https://www.phoenixcontact.com/us/products/1337224>



Axioline Smart Elements, Potential distribution module, GND, degree of protection: IP20

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AXL SE PD8/8 24V/GND - Potential distributors

1337225

<https://www.phoenixcontact.com/us/products/1337225>



Axioline Smart Elements, Potential distribution module, 24 V DC, GND, degree of protection: IP20

SZS 0,4X2,5 VDE - Screwdriver

1205037

<https://www.phoenixcontact.com/us/products/1205037>



Screwdriver, slot-headed, VDE insulated, size: 0.4 x 2.5 x 80 mm, 2-component grip, with non-slip grip

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CRIMPFOX 6 - Crimping pliers

1212034

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Crimping pliers, for ferrules without insulating collar according to DIN 46228 Part 1 and ferrules with insulating collar according to DIN 46228 Part 4, 0.25 mm² ... 6.0 mm², lateral entry, trapezoidal crimp

CRIMPFOX DUO 10 - Crimping pliers

1031721

<https://www.phoenixcontact.com/us/products/1031721>



Crimping pliers, contact connection type: Insulated and uninsulated ferrules, standards/specifications: DIN 46228-1, DIN 46228-4, UL 486F, form A, E, F, min. cross section: 0.14 mm², max. cross section: 10 mm², for TWIN ferrules up to 2 x 4 mm², automatic cross section adjustment, rotating die, lateral and frontal insertion, compression: Trapezoidal crimp, black/green

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CRIMPFOX 10T-F - Crimping pliers

1134913

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Crimping pliers, contact connection type: Insulated and uninsulated ferrules, standards/specifications: DIN 46228-1, DIN 46228-4, min. cross section: 0.14 mm², max. cross section: 10 mm², For TWIN ferrules up to 2 x 4 mm², automatic cross section adjustment, frontal insertion, compression: Trapezoidal crimp, black

MM-TML (EX4,2)R C1 TR/BK - Label

0803979

<https://www.phoenixcontact.com/us/products/0803979>



Label, Roll, transparent/black, unlabeled, can be labeled with: THERMOFOX, THERMOMARK GO, THERMOMARK GO.K, mounting type: adhesive, lettering field size: continuous x 3.2 mm, Number of individual labels: 1

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SK 5,0 WH:REEL - Marker strip

0805221

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Marker strip, 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: adhesive, lettering field size: continuous x 5 mm, Number of individual labels: 10

UM6M-TM (5X12) - Marker for terminal blocks

0830928

<https://www.phoenixcontact.com/us/products/0830928>



Marker for terminal blocks, Strip, white, unlabeled, can be labeled with: TOPMARK NEO, TOPMARK LASER, BLUEMARK ID COLOR, BLUEMARK ID, BLUEMARK CLED, THERMOMARK PRIME, THERMOMARK CARD 2.0, THERMOMARK CARD, mounting type: snapped, for terminal block width: 5 mm, lettering field size: 5 x 12 mm, Number of individual labels: 24

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UCT6M-TM 5 - Marker for terminal blocks

0830756

<https://www.phoenixcontact.com/us/products/0830756>



Marker for terminal blocks, for marking ABB terminal blocks from the SNK series, Sheet, white, unlabeled, can be labeled with: THERMOMARK CARD, THERMOMARK CARD 2.0, THERMOMARK PRIME, BLUEMARK ID, BLUEMARK ID COLOR, TOPMARK LASER, TOPMARK NEO, mounting type: snapped, for terminal block width: 5.2 mm, lettering field size: 4.17 x 11.3 mm

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

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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

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

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

1369904

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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

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

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

1369906

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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

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

1369909

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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

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