

I/O module - AXL F DO16 FLK 1H - 2701813

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Axioline F, Digital output module, Digital outputs: 16, 24 V DC, 500 mA, connection method: FLK connector (20-pos.), transmission speed in the local bus: 100 Mbps, degree of protection: IP20, including bus base module and Axioline F connector

Product Description

The module is designed for use within an Axioline F station.

It is used to output digital signals.

You can connect PLC relays from the INTERFACE product range quickly and conveniently using the FLK connection.

This means that you can also use this output module in applications which require relays, e.g., to switch high voltages or currents.

Your advantages

- ✓ 16 digital outputs
- ✓ 24 V DC, 500 mA
- ✓ 1 FLK connection, 20-pos.
- ✓ Minimum update time of < 100 µs
- ✓ Device rating plate stored
- ✓ Diagnostic and status indicators



Key Commercial Data

Packing unit	1 pc
GTIN	
GTIN	4046356881302
Weight per Piece (excluding packing)	200.000 g
Custom tariff number	85389091
Country of origin	Germany

Technical data

Note

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Technical data

Note

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

Width	35 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
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.
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	108 g
Note on weight specifications	with connector and bus base module
Degree of pollution	2 (IEC 60664-1, EN 60664-1)
Diagnostics messages	I/O supply failure can be parameterized via PDI object FF8F _{hex}
	Short-circuit or overload of the digital outputs Yes

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Technical data

General

Mounting position	any (no temperature derating)
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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. 120 mA
Power consumption	max. 600 mW
Designation	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 consumption	max. 8 A (provide external protection)
Power consumption	max. 240 W (of which 560 mW with 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)
Protection	max. 8 A (polarity reversal protection up to 5 A)

Digital outputs

Output name	Digital outputs
Connection method	FLK20 pin strip
Connection technology	FLK connector (20-pos.)
Number of outputs	16
Protective circuit	Short-circuit protection, overload protection of the outputs Electronic
Output voltage	24 V
Nominal output voltage	24 V DC
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)
Load min.	10 k Ω
Output voltage when switched off	max. 1 V
Output current when switched off	max. 300 μ A
Behavior with overload	Shutdown with automatic restart

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Digital outputs

Behavior with inductive overload	Output can be destroyed
Reverse voltage resistance to short pulses	limited protection up to 0.5 A for 1 s

Electrical isolation

Test section	5 V supply of the local bus (U_{Bus}) / 24 V supply (I/Os) 500 V AC 50 Hz 1 min.
	5 V supply of the local bus (U_{Bus}) / functional ground 500 V AC 50 Hz 1 min.
	24 V supply (I/O) / functional ground 500 V AC 50 Hz 1 min.

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 B, 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, Field intensity: 10 V/m
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 B, 2 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 B, DC supply lines: ± 0.5 kV/ ± 0.5 kV (symmetrical/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 30g, 11 ms period, half-sine shock pulse
	Continuous shock according to EN 60068-2-27/IEC 60068-2-27 10g
Protection class	III (IEC 61140, EN 61140, VDE 0140-1)
Overvoltage category	II (IEC 60664-1, EN 60664-1)

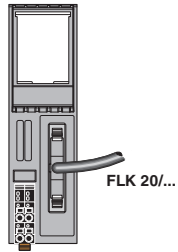
Environmental Product Compliance

REACH SVHC	Lead 7439-92-1
China RoHS	Environmentally Friendly Use Period = 50 years
	For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration"

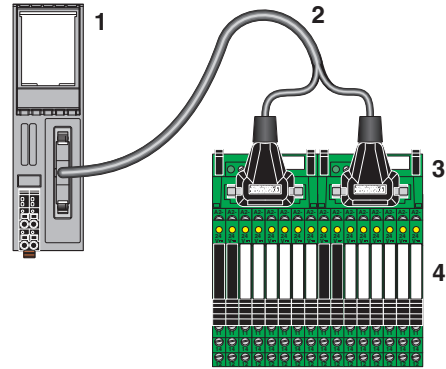
Drawings

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Connection diagram

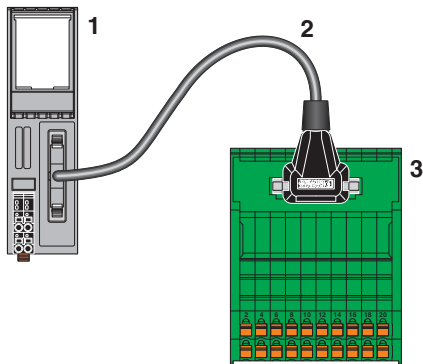


Connection diagram

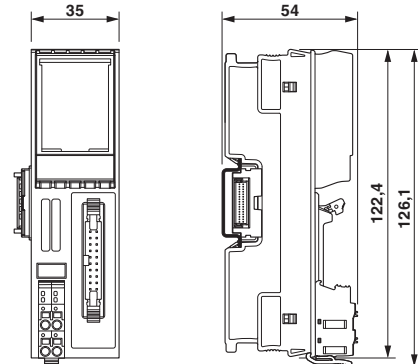


Connection of relay modules

Connection diagram



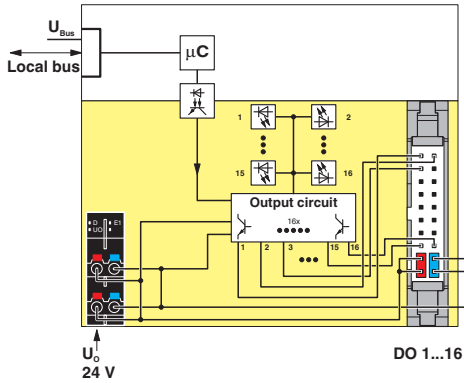
Dimensional drawing



Connection of an interface module

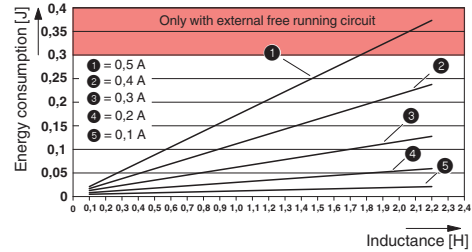
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Block diagram



Internal wiring of the terminal points

Diagram



Maximum energy consumption of the outputs when switching off inductive loads
 The diagram shows the maximum amount of energy that may be fed back into the corresponding output groups (outputs 1 to 4, 5 to 8, 9 to 12, 13 to 16) for each switch off procedure when switching off an inductive load without external freewheeling circuit.
 The current data refers to the ohmic DC voltage component of the inductive load.
 Note: Restrict freewheeling voltage to a maximum of -15 V when using an external freewheeling circuit. The external freewheeling circuit has no function in the event of a higher negative voltage.

Classifications

eCl@ss

eCl@ss 10.0.1	27242604
eCl@ss 11.0	27242604
eCl@ss 4.0	27240400
eCl@ss 4.1	27240400
eCl@ss 5.0	27242200
eCl@ss 5.1	27242600
eCl@ss 6.0	27242600
eCl@ss 7.0	27242604
eCl@ss 9.0	27242604

ETIM

ETIM 4.0	EC001599
ETIM 6.0	EC001599
ETIM 7.0	EC001599

UNSPSC

UNSPSC 6.01	43172015
UNSPSC 7.0901	43201404
UNSPSC 11	39121311
UNSPSC 12.01	39121311

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Classifications

UNSPSC

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

Approvals

Approvals

Approvals

KR / NK / ABS / BSH / RINA / LR / PRS / BV / DNV GL / UL Listed / cUL Listed / cULus Listed

Ex Approvals


Approval details

KR		http://www.krs.co.kr/eng/main/main.aspx	HMB17372-AC002
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NK		http://www.classnk.or.jp/hp/en/	14A006
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ABS		http://www.eagle.org/eagleExternalPortalWEB/	18-HG1767360-PDA
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BSH			840
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RINA		http://www.rina.org/en	ELE030120XG
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LR		http://www.lr.org/en	LR2001902TA
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Approvals

PRS		http://www.prs.pl/	TE/1117/880590/20
BV		http://www.veristar.com/portal/veristarinfo/generalinfo/approved/approvedProducts/equipmentAndMaterials	36433/B2 BV
DNV GL		https://approvalfinder.dnvgl.com/	TAA00000DF
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

Controller board

System connection - PLC-V8/FLK14/OUT - 2295554



V8 adapter for 8 x PLC-INTERFACE (6.2 mm), controller: PLC system cabling of output cards, connection 1: Screw connection 1x, connection 2: IDC/FLK pin strip 1x 14-position, connection 3: Plug connection (Can be snapped onto 8x PLC-INTERFACE terminals), number of channels: 8, control logic: plusschaltend

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Accessories

System connection - PLC-V8L/FLK14/OUT - 2299660



V8 adapter for 8 x PLC-INTERFACE (14 mm), controller: PLC system cabling of output cards, connection 1: Screw connection 1x, connection 2: IDC/FLK pin strip 1x 14-position, connection 3: Plug connection (Can be snapped onto 8x PLC-INTERFACE terminals), number of channels: 8, control logic: plusschaltend

Passive module - FLKM-2FLK20/32M/OUT/LA/DV - 2304733



Interface modules, for 40-pos. "Mass Termination Blocks" for: -32-channel output with LED per signal, module width: 169 mm

Device marking

Insert label - EMT (35X28)R - 0801602



Insert label, 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 28 mm, Number of individual labels: 500

DIN rail connector

Bus connector - AXL F BS H - 2700992



Axiline F bus base module for housing type H

Interface module

I/O module - AXL F DO16 FLK 1H - 2701813

Accessories

Interface module - VIP-2/SC/FLK20 - 2315049



VARIOFACE module, with screw connection and flat-ribbon cable connector, for mounting on NS 35 rails, with pin strip and short and long locking latches for socket strips, 20-pos.

Interface module - VIP-2/PT/FLK20 - 2903790



VARIOFACE module, with push-in connections and flat-ribbon cable connector, for mounting on NS 35 rails, with pin strip and short and long locking latches for socket strips, 20-pos.

Interface module - UM 45-FLK20 - 2962573



VARIOFACE module, with screw connection and flat-ribbon cable connector, for assembly on NS 35/7.5, 20 positions

Interface module - UM 45-FLK20/ZFKDS - 2293543



VARIOFACE module, with spring-cage connection and flat-ribbon cable connector, for mounting on NS 35/7.5, 20-pos.

Interface module - UM 25-FLK20/FRONT/Q - 2959515



VARIOFACE SLIM LINE, with screw connection and flat-ribbon cable connector, for assembly at a right angle on NS 35/7.5, 20 positions

Relay socket

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Accessories

Relay base - PLC-BSC- 24DC/21 - 2966016



6.2 mm PLC basic terminal block with screw connection, without relay or solid-state relay, for mounting on DIN rail NS 35/7,5, 1 changeover contact, input voltage 24 V DC

System cable

Cable - FLK 20/EZ-DR/ 50KONFEK - 2296391



Round cable set; connection 1: IDC/FLK socket strip (1x 20-position); connection 2: IDC/FLK socket strip (1x 20-position); cable length: 0.5 m

Cable - FLK 20/EZ-DR/ 100KONFEK - 2296401



Round cable set; connection 1: IDC/FLK socket strip (1x 20-position); connection 2: IDC/FLK socket strip (1x 20-position); cable length: 1 m

Cable - FLK 20/EZ-DR/ 150KONFEK - 2296472



Round cable set; connection 1: IDC/FLK socket strip (1x 20-position); connection 2: IDC/FLK socket strip (1x 20-position); cable length: 1.5 m

Cable - FLK 20/EZ-DR/ 200KONFEK - 2296485



Round cable set; connection 1: IDC/FLK socket strip (1x 20-position); connection 2: IDC/FLK socket strip (1x 20-position); cable length: 2 m

I/O module - AXL F DO16 FLK 1H - 2701813

Accessories

Cable - FLK 20/EZ-DR/ 300KONFEK - 2296498



Round cable set; connection 1: IDC/FLK socket strip (1x 20-position); connection 2: IDC/FLK socket strip (1x 20-position); cable length: 3 m

Cable - FLK 20/EZ-DR/ 400KONFEK - 2296508



Round cable set; connection 1: IDC/FLK socket strip (1x 20-position); connection 2: IDC/FLK socket strip (1x 20-position); cable length: 4 m

Cable - FLK 20/EZ-DR/ 800KONFEK - 2296524



Round cable set; connection 1: IDC/FLK socket strip (1x 20-position); connection 2: IDC/FLK socket strip (1x 20-position); cable length: 8 m

Cable - FLK 20/EZ-DR/1000KONFEK - 2296537



Round cable set; connection 1: IDC/FLK socket strip (1x 20-position); connection 2: IDC/FLK socket strip (1x 20-position); cable length: 10 m

Cable - FLK 20/2FLK14/EZ-DR/ 50/KONFEK - 2305059



Round cable set; connection 1: IDC/FLK socket strip (1x 20-position); connection 2: IDC/FLK socket strip (2x 14-position); cable length: 0.5 m

I/O module - AXL F DO16 FLK 1H - 2701813

Accessories

Cable - FLK 20/2FLK14/EZ-DR/100/KONFEK - 2298470



Round cable set; connection 1: IDC/FLK socket strip (1x 20-position); connection 2: IDC/FLK socket strip (2x 14-position); cable length: 1 m

Cable - FLK 20/2FLK14/EZ-DR/10M/KONFEK - 2902708



Round cable set; connection 1: IDC/FLK socket strip (1x 20-position); connection 2: IDC/FLK socket strip (2x 14-position); cable length: 10 m

Cable - FLK 20/2FLK14/EZ-DR/200/KONFEK - 2298438



Round cable set; connection 1: IDC/FLK socket strip (1x 20-position); connection 2: IDC/FLK socket strip (2x 14-position); cable length: 2 m

Cable - FLK 20/2FLK14/EZ-DR/300/KONFEK - 2300818



Round cable set; connection 1: IDC/FLK socket strip (1x 20-position); connection 2: IDC/FLK socket strip (2x 14-position); cable length: 3 m

Cable - FLK 20/2FLK14/EZ-DR/400/KONFEK - 2305237



Round cable set; connection 1: IDC/FLK socket strip (1x 20-position); connection 2: IDC/FLK socket strip (2x 14-position); cable length: 4 m

I/O module - AXL F DO16 FLK 1H - 2701813

Accessories

Cable - FLK 20/2FLK14/EZ-DR/500/KONFEK - 2902707



Round cable set; connection 1: IDC/FLK socket strip (1x 20-position); connection 2: IDC/FLK socket strip (2x 14-position); cable length: 5 m

Cable - FLK 20/2FLK14/EZ-DR/... - 2304487



Round cable set; connection 1: IDC/FLK socket strip (1x 20-position); connection 2: IDC/FLK socket strip (2x 14-position); cable length: variable

Cable - VIP-CAB-FLK20/0,14/0,5M - 2318541



Round cable set; connection 1: IDC/FLK socket strip (1x 20-position, 180 °-out put); connection 2: IDC/FLK socket strip (1x 20-position, 90 °-out put); cable length: 0.5 m

Cable - VIP-CAB-FLK20/0,14/1,0M - 2318554



Round cable set; connection 1: IDC/FLK socket strip (1x 20-position, 180 °-out put); connection 2: IDC/FLK socket strip (1x 20-position, 90 °-out put); cable length: 1 m

Cable - VIP-CAB-FLK20/0,14/2,0M - 2318570



Round cable set; connection 1: IDC/FLK socket strip (1x 20-position, 180 °-out put); connection 2: IDC/FLK socket strip (1x 20-position, 90 °-out put); cable length: 2 m

I/O module - AXL F DO16 FLK 1H - 2701813

Accessories

Cable - VIP-CAB-FLK20/0,14/3,0M - 2318583



Round cable set; connection 1: IDC/FLK socket strip (1x 20-position, 180 °-out put); connection 2: IDC/FLK socket strip (1x 20-position, 90 °-out put); cable length: 3 m

Cable - VIP-CAB-FLK20-0,14/... - 2318619



Round cable set; connection 1: IDC/FLK socket strip (1x 20-position, 180 °-out put); connection 2: IDC/FLK socket strip (1x 20-position, 90 °-out put); cable length: variable

Cable - CABLE-FLK20/OE/0,14/ 50 - 2305826



Round cable set; connection 1: Single wires (20-position) (The wires are marked and fitted with ferrules); connection 2: IDC/FLK socket strip (1x 20-position); cable length: 0.5 m

Cable - CABLE-FLK20/OE/0,14/ 100 - 2305305



Round cable set; connection 1: Single wires (20-position) (The wires are marked and fitted with ferrules); connection 2: IDC/FLK socket strip (1x 20-position); cable length: 1 m

Cable - CABLE-FLK20/OE/0,14/ 150 - 2305318



Round cable set; connection 1: Single wires (20-position) (The wires are marked and fitted with ferrules); connection 2: IDC/FLK socket strip (1x 20-position); cable length: 1.5 m

I/O module - AXL F DO16 FLK 1H - 2701813

Accessories

Cable - CABLE-FLK20/OE/0,14/ 200 - 2305321



Round cable set; connection 1: Single wires (20-position) (The wires are marked and fitted with ferrules); connection 2: IDC/FLK socket strip (1x 20-position); cable length: 2 m

Cable - CABLE-FLK20/OE/0,14/ 250 - 2305334



Round cable set; connection 1: Single wires (20-position) (The wires are marked and fitted with ferrules); connection 2: IDC/FLK socket strip (1x 20-position); cable length: 2.5 m

Cable - CABLE-FLK20/OE/0,14/ 300 - 2305347



Round cable set; connection 1: Single wires (20-position) (The wires are marked and fitted with ferrules); connection 2: IDC/FLK socket strip (1x 20-position); cable length: 3 m

Cable - CABLE-FLK20/OE/0,14/ 400 - 2305839



Round cable set; connection 1: Single wires (20-position) (The wires are marked and fitted with ferrules); connection 2: IDC/FLK socket strip (1x 20-position); cable length: 4 m

Cable - CABLE-FLK20/OE/0,14/ 600 - 2305842



Round cable set; connection 1: Single wires (20-position) (The wires are marked and fitted with ferrules); connection 2: IDC/FLK socket strip (1x 20-position); cable length: 6 m

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Accessories

Cable - CABLE-FLK20/OE/0,14/ 800 - 2305855



Round cable set; connection 1: Single wires (20-position) (The wires are marked and fitted with ferrules); connection 2: IDC/FLK socket strip (1x 20-position); cable length: 8 m

Cable - CABLE-FLK20/OE/0,14/1000 - 2305868



Round cable set; connection 1: Single wires (20-position) (The wires are marked and fitted with ferrules); connection 2: IDC/FLK socket strip (1x 20-position); cable length: 10 m

Cable - CABLE-FLK20/OE/0,14/... - 2305745



Round cable set; connection 1: Single wires (20-position) (The wires are marked and fitted with ferrules); connection 2: IDC/FLK socket strip (1x 20-position); cable length: variable

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 10/5,8 AXL UNPRINTED - 0829580



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: 10.15 mm, lettering field size: 4 of 10.15 x 5 mm and 1 of 5.8 x 5 mm, Number of individual labels: 50
