

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



2702017

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

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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 according to 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	DNI233
Product Key	DRI233
Catalog Page	Page 80 (C-6-2019)
GTIN	4046356901246
Weight per Piece (including packing)	194.61 g
Weight per Piece (excluding packing)	132.88 g
Country of origin	DE

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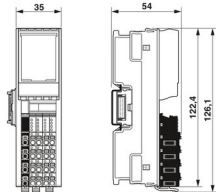


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Technical Data

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
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Material specifications

Color	traffic grey A RAL 7042
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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	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

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Connection technology	1-conductor
Input voltage range "0" signal	-3 V DC ... 5 V DC
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
Maximum output current per channel	500 mA
Maximum output current per module	4 A (provide external protection)
Nominal output voltage	24 V DC
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

Product properties

Type	block modular
Product type	I/O component
Mounting position	any (no temperature derating)
Scope of delivery	including bus base module and Axioline F connectors

Insulation characteristics

Overvoltage category	II (IEC 60664-1, EN 60664-1)
Pollution degree	2 (IEC 60664-1, EN 60664-1)

Electrical properties

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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)

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 solid	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.
Conductor cross section, rigid	0.2 mm ² ... 1.5 mm ²
Stripping length	8 mm

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)

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Permissible humidity (storage/transport)	5 % ... 95 % (non-condensing)
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Standards and regulations

Protection class	III (IEC 61140, EN 61140, VDE 0140-1)
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Approval data

ATEX

Identification	<input type="checkbox"/> II 3 G Ex ec IIC T4 Gc
Certificate	UL 20 ATEX 2241X

IECEX

Identification	Ex ec IIC T4 Gc
Certificate	IECEX ULD 20.0026X

UL, USA / Canada

Identification	cULus
Certificate	E238705

UL Ex, USA / Canada

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

Mounting

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

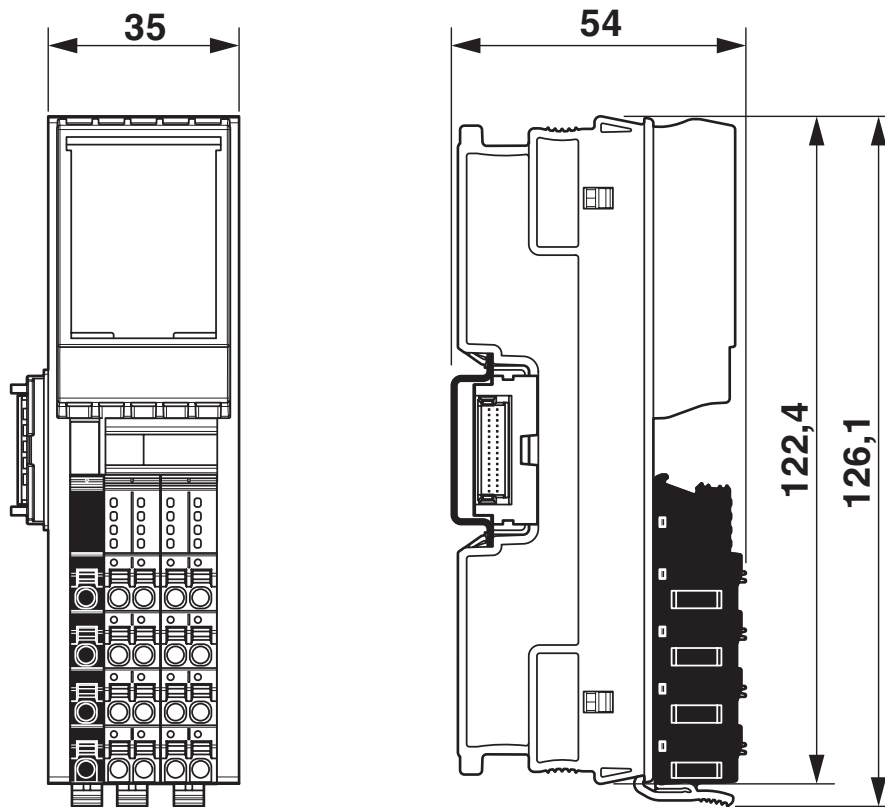
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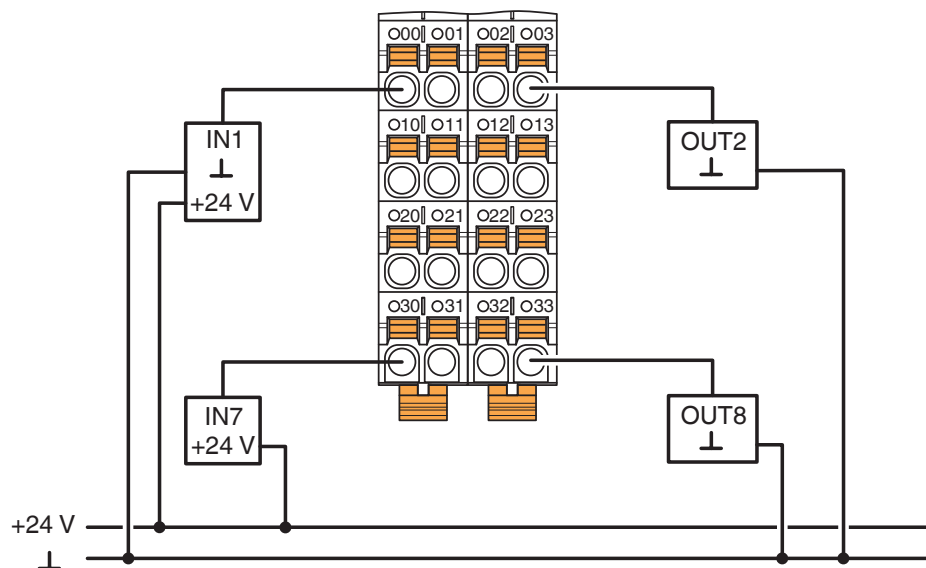
<https://www.phoenixcontact.com/nz/products/2702017>

Drawings

Dimensional drawing

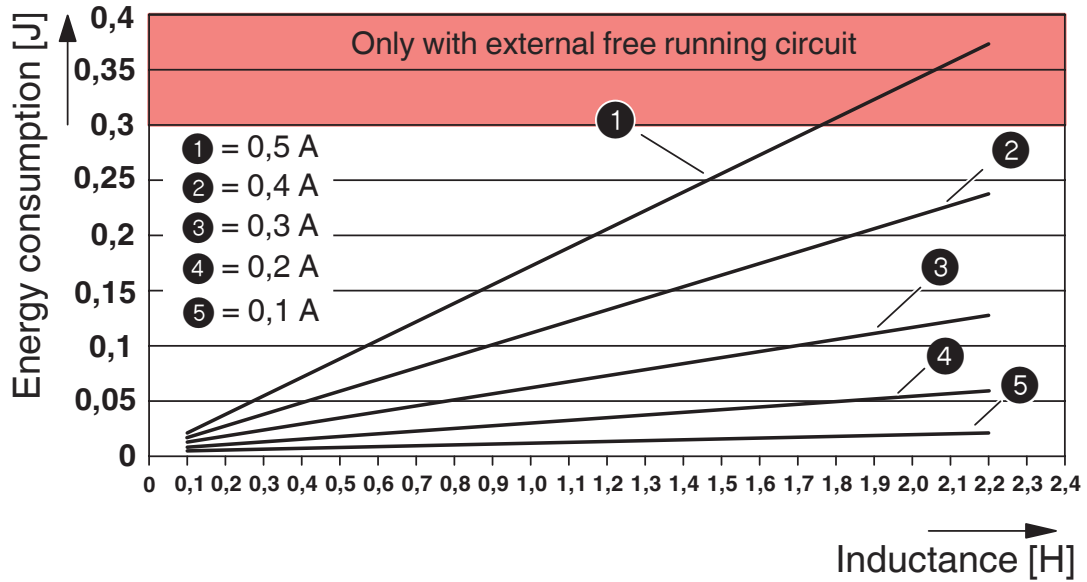


Connection diagram



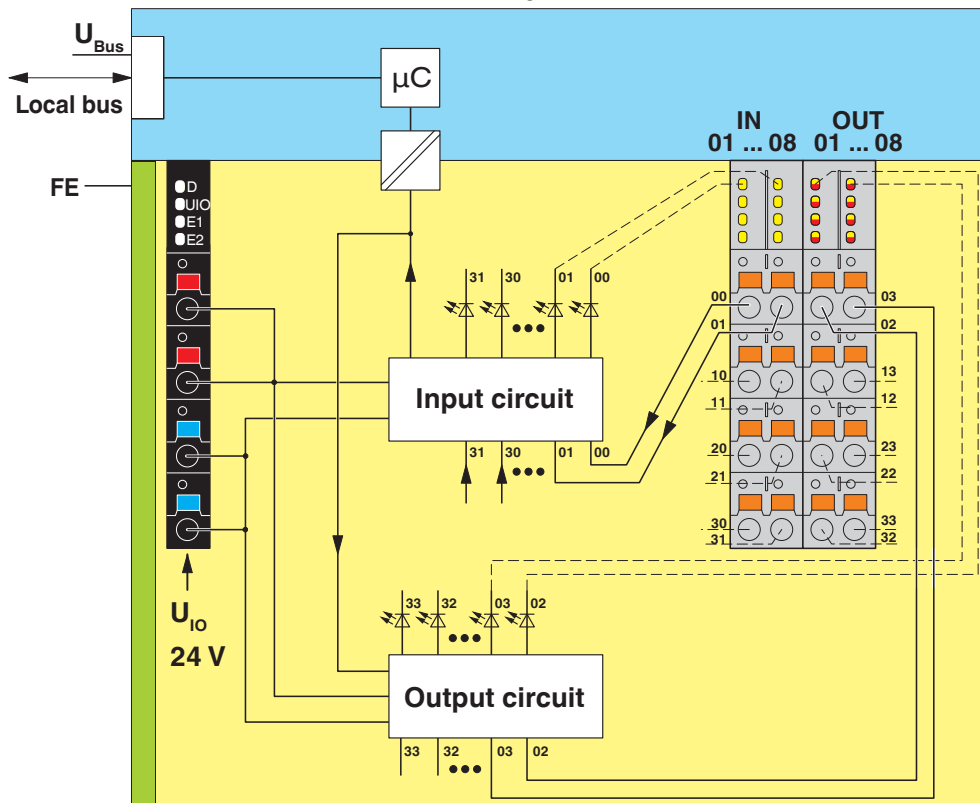
Connection in 1-conductor technology

Diagram



Maximum outputs power consumption when inductive loads are switched off

Block diagram



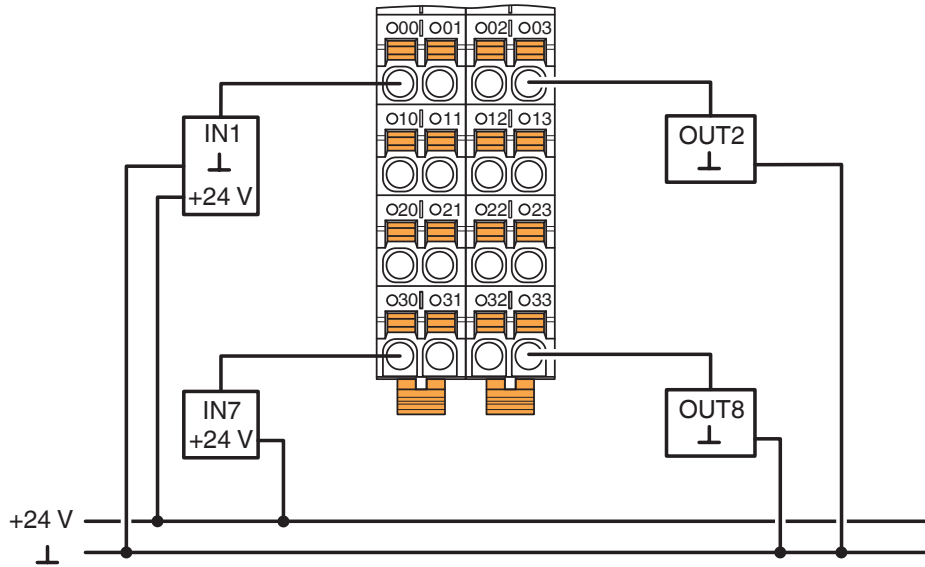
Internal wiring of the terminal points

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Connection diagram



Typical connection of sensors and actuators when using external busbars

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Approvals



DNV GL

Approval ID: TAA00000DF



LR

Approval ID: LR2001902TA



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: FILE E 238705



IECEX

Approval ID: IECEX ULD 20.0026X



ATEX

Approval ID: UL 20 ATEX 2441X



cULus Listed

Approval ID: FILE E 366272

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Classifications

ECLASS

ECLASS-9.0	27242604
ECLASS-10.0.1	27242604
ECLASS-11.0	27242604

ETIM

ETIM 8.0	EC001599
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UNSPSC

UNSPSC 21.0	32151600
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Environmental Product Compliance

REACH SVHC	Lead 7439-92-1
China RoHS	Environmentally Friendly Use Period = 50 years
	For information on hazardous substances, refer to the manufacturer's declaration available under "Downloads"

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Accessories

Bus connector

Bus connector - AXL F BS H - 2700992

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

Axioline F bus base module for housing type H



Zack marker strip

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

<https://www.phoenixcontact.com/nz/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

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Zack Marker strip, flat

Zack Marker strip, flat - ZBF 10/5,8 AXL UNPRINTED - 0829580

<https://www.phoenixcontact.com/nz/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 of 10.15 x 5 mm and 1 of 5.8 x 5 mm, Number of individual labels: 50

Insert label

Insert label - EMT (35X28)R - 0801602

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



Insert label, for marking 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: insert, lettering field size: 35 x 28 mm, Number of individual labels: 500

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Round cable

Round cable - CABLE-FLK14/AXIO/OE/0,14/0,5M - 1369888

<https://www.phoenixcontact.com/nz/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

Round cable

Round cable - CABLE-FLK14/AXIO/OE/0,14/1,0M - 1369897

<https://www.phoenixcontact.com/nz/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

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Round cable

Round cable - CABLE-FLK14/AXIO/OE/0,14/1,5M - 1369902

<https://www.phoenixcontact.com/nz/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

Round cable

Round cable - CABLE-FLK14/AXIO/OE/0,14/2,0M - 1369904

<https://www.phoenixcontact.com/nz/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

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Round cable

Round cable - CABLE-FLK14/AXIO/OE/0,14/3,0M - 1369905

<https://www.phoenixcontact.com/nz/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

Round cable

Round cable - CABLE-FLK14/AXIO/OE/0,14/4,0M - 1369906

<https://www.phoenixcontact.com/nz/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

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Round cable

Round cable - CABLE-FLK14/AXIO/OE/0,14/6,0M - 1369909

<https://www.phoenixcontact.com/nz/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

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