

# IB IL AI 4/EF-2MBD - Inline terminal



2878544

<https://www.phoenixcontact.com/us/products/2878544>

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The figure shows the PAC version of the product

Inline analog input terminal with differential input channels, transmission speed 2 Mbaud, 4 inputs, 0-20 mA, 4-20 mA,  $\pm 20$  mA, 0-10 V,  $\pm 10$  V, 0-5 V,  $\pm 5$  V, 2, 3 or 4-conductor connection method

## Product description

The terminal is designed for use within an Inline station. It is used to acquire analog voltage and current signals.

## Your advantages

- 4 differential signal inputs
- Connection of sensors in 2-, 3-, and 4-conductor technology
- Current ranges: 0 mA ... 20 mA, 4 mA ... 20 mA,  $\pm 20$  mA
- Voltage ranges: 0 V ... 10 V,  $\pm 10$  V, 0 V ... 5 V,  $\pm 5$  V
- Short-circuit
- Diagnostic and status indicators
- Bus-synchronous provision of input values with very low jitter ( $< 10 \mu\text{s}$ )
- Measured value acquisition with 16-bit resolution

## Commercial data

Item number	2878544
Packing unit	1 pc
Note	Made to order (non-returnable)
Sales key	NULL
Product key	DRI141
GTIN	4017918996390
Weight per piece (including packing)	159.9 g
Weight per piece (excluding packing)	132.91 g
Customs tariff number	85389091
Country of origin	DE

## Technical data

### Product properties

Type	modular
	Inline

### System properties

#### Module

ID code (dec.)	223
ID code (hex)	DF
Length code (hex)	05
Length code (dec)	05
Input address area	10 Byte
Output address area	10 Byte
Register length	96 bit
Required parameter data	28 Byte
Required configuration data	4 Byte

### Electrical properties

#### Potentials: Communications power ( $U_L$ )

Supply voltage	7.5 V DC (via voltage jumper)
Current draw	max. 110 mA
	typ. 110 mA

#### Potentials: Supply of analog modules ( $U_{ANA}$ )

Supply voltage	24 V DC
Supply voltage range	19.2 V DC ... 30 V DC (including all tolerances, including ripple)
Current draw	max. 20 mA
	typ. 13 mA

#### Potentials: Main circuit supply ( $U_M$ )

Supply voltage	24 V DC (via voltage jumper)
Supply voltage range	19.2 V DC ... 30 V DC (including all tolerances, including ripple)
Current draw	max. 200 mA

#### Electrical isolation/isolation of the voltage ranges

Test voltage: 5 V supply, incoming remote bus/7.5 V supply (bus logics)	500 V AC, 50 Hz, 1 min
Test voltage: 5 V supply, outgoing remote bus/7.5 V supply (bus logics)	500 V AC, 50 Hz, 1 min
Test voltage: 7.5 V supply (bus logic), 24 V supply $U_{ANA}$ / I/O	500 V AC, 50 Hz, 1 min
Test voltage: 7.5 V supply (bus logic), 24 V supply $U_{ANA}$ / functional ground	500 V AC, 50 Hz, 1 min
Test voltage: I/O/functional ground	500 V AC, 50 Hz, 1 min

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## Input data

### Analog: General

Input name	Analog inputs
Description of the input	Differential input, including sensor supply (24 V DC)
Number of inputs	max. 4
A/D conversion time	max. 10 µs
Connection method	Inline shield connector
Connection technology	2-, 3-, 4-conductor (shielded)
Current input signal	0 mA ... 20 mA 4 mA ... 20 mA -20 mA ... 20 mA
Voltage input signal	0 V ... 5 V -5 V ... 5 V 0 V ... 10 V -10 V ... 10 V
Data formats	IB IL, IB ST, standardized representation, S7 compatible
Limit frequency (3 dB)	500 Hz
Measured value resolution	16 bits (15 bits + sign bit)
Protective circuit	Transient protection; Yes, via arresters

### Analog: Voltage inputs

Number of inputs	4 (differential inputs, voltage)
Voltage input signal	0 V ... 5 V -5 V ... 5 V 0 V ... 10 V -10 V ... 10 V
Input resistance of voltage input	300 kΩ
A/D converter resolution	15 bit
Measured value resolution	16 bits (15 bits + sign bit)

### Analog: Current inputs

Number of inputs	4 (Differential inputs, current)
Current input signal	0 mA ... 20 mA 4 mA ... 20 mA -20 mA ... 20 mA
Input resistance current input	approx. 110 Ω
Protective circuit	Overload protection

## Connection data

### Inline connector

Connection method	Spring-cage connection
Conductor cross-section, rigid	0.08 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>
Conductor cross-section, flexible	0.08 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>

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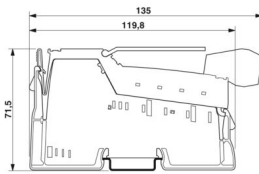
Conductor cross-section AWG	28 ... 16
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## Interfaces

### Inline local bus

Connection method	Inline data jumper
Transmission speed	2 Mbps
Transmission physics	Copper

## Dimensions

Dimensional drawing	
Width	48.8 mm
Height	119.8 mm
Depth	71.5 mm

## Material specifications

Color	green
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## Environmental and real-life conditions

### Ambient conditions

Ambient temperature (operation)	-25 °C ... 55 °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)	-25 °C ... 85 °C
Permissible humidity (operation)	10 % ... 95 % (according to DIN EN 61131-2)
Permissible humidity (storage/transport)	10 % ... 95 % (according to DIN EN 61131-2)

## Standards and regulations

Protection class	III (IEC 61140, EN 61140, VDE 0140-1)
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## Mounting

Mounting type	DIN rail mounting
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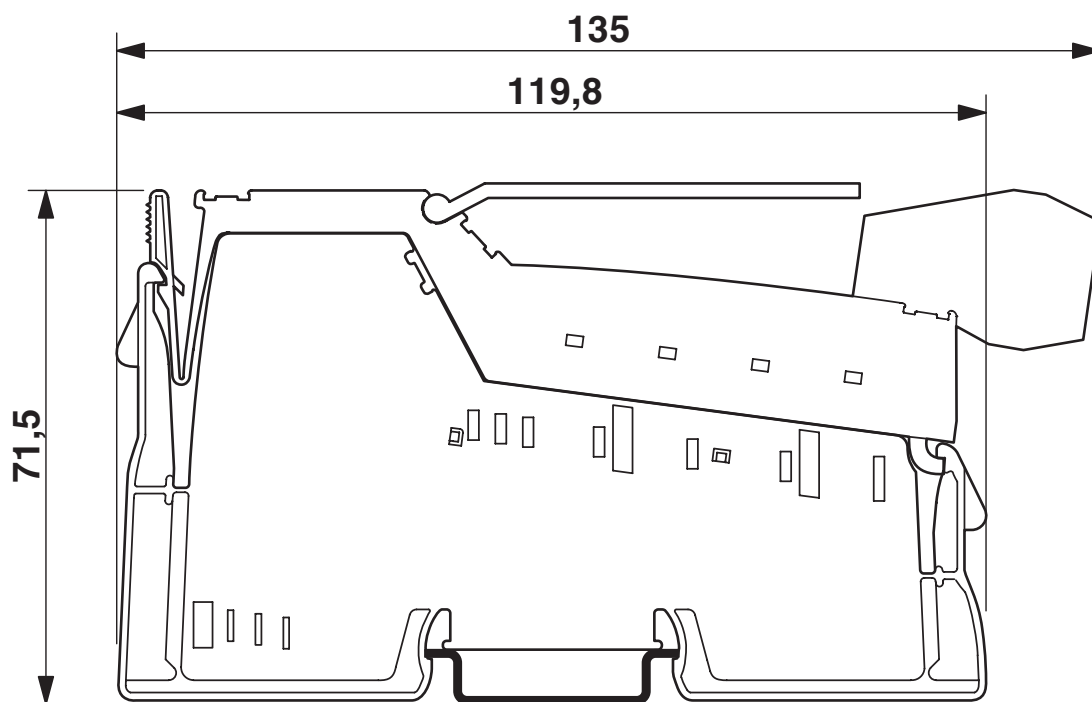


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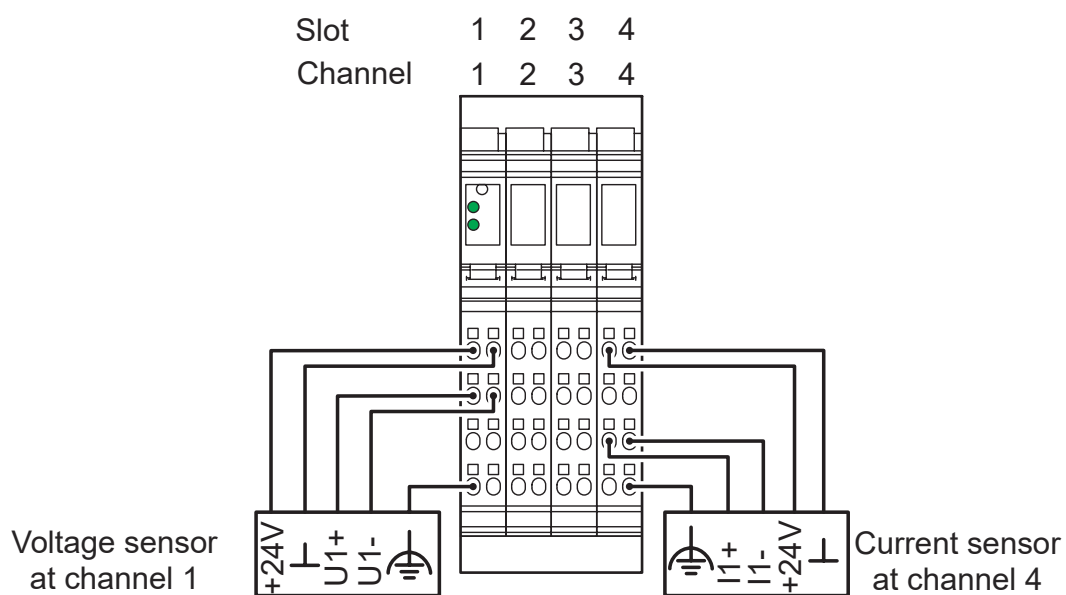
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## Drawings

Dimensional drawing



Connection diagram



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## Environmental product compliance

EU REACH SVHC

REACH candidate substance (CAS No.)	No substance above 0.1 wt%
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