

# IB IL AI 8/SF-2MBD-PAC - Analog module



2862042

<https://www.phoenixcontact.com/us/products/2862042>

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Inline, Analog input terminal, Analog inputs: 8, 0 V ... 5 V, -5 V ... 5 V, 0 V ... 10 V, -10 V ... 10 V, 0 V ... 25 V, -25 V ... 25 V, 0 V ... 50 V, 0 mA ... 20 mA, 4 mA ... 20 mA, -20 mA ... 20 mA, 0 mA ... 40 mA, -40 mA ... 40 mA, connection technology: 2-conductor, transmission speed in the local bus: 2 Mbps, degree of protection: IP20, including Inline connectors and marking fields

## Product description

Inline terminals with "2 MBD" added to their item designation work with a transmission speed of 2 Mbps. These terminal blocks are discontinued or no longer in the range. If you require this transmission speed, please ask your local Phoenix Contact representative. If you can work with a transmission speed of 500 kbps, select as a replacement the corresponding variant that does not have "2MBD" added to its item designation. Please note that a uniform transmission speed must always be used within one inline station. The terminal is designed for use within an Inline station. It is used to acquire analog voltage and current signals.

## Your advantages

- 8 analog single-ended signal inputs for the connection of either voltage or current signals
- Connection of sensors in 2-conductor technology
- Current ranges: 0 mA ... 20 mA, 4 mA ... 20 mA,  $\pm 20$  mA, 0 mA ... 40 mA,  $\pm 40$  mA
- Voltage ranges: 0 V ... 5 V,  $\pm 5$  V, 0 V ... 10 V,  $\pm 10$  V, 0 V ... 25 V,  $\pm 25$  V, 0 V ... 50 V
- The channels are parameterized independently of one another via the bus system
- Measured values can be represented in five different formats
- 16-bit analog-to-digital converter
- Process data multiplex mode
- High measuring accuracy

## Commercial data

Item number	2862042
Packing unit	1 pc
Note	Made to order (non-returnable)
Sales key	DR01
Product key	DRI141
GTIN	4017918974688
Weight per piece (including packing)	252.85 g
Weight per piece (excluding packing)	213 g
Customs tariff number	85389091
Country of origin	DE

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## Technical data

### Dimensions

Dimensional drawing	
Width	48.8 mm
Height	136.8 mm
Depth	71.5 mm
Note on dimensions	Housing dimensions

### Notes

#### Utilization restriction

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

#### Inline local bus

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

### System properties

#### Module

ID code (dec.)	95
ID code (hex)	5F
Length code (hex)	02
Length code (dec)	02
Process data channel	32 bit
Input address area	4 Byte
Output address area	4 Byte
Register length	32 bit
Required parameter data	6 Byte
Required configuration data	5 Byte

### Input data

#### Analog: General

Input name	Analog inputs
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Description of the input	Single-ended inputs, voltage or current
Number of inputs	8
A/D conversion time	approx. 10 $\mu$ s
Connection method	Inline shield connector
Connection technology	2-conductor
Note regarding the connection technology	shielded
Current input signal	0 mA ... 20 mA 4 mA ... 20 mA -20 mA ... 20 mA 0 mA ... 40 mA -40 mA ... 40 mA
Input resistance current input	25 $\Omega$ $\pm$ 0.01 % (Shunt)
Voltage input signal	0 V ... 5 V -5 V ... 5 V 0 V ... 10 V -10 V ... 10 V 0 V ... 25 V -25 V ... 25 V 0 V ... 50 V
Input resistance of voltage input	> 240 k $\Omega$ $\pm$ 0.01 %
A/D converter resolution	16 bit
Data formats	IB IL, IB ST, IB RT, standardized representation, PIO format
Limit frequency (3 dB)	3.5 kHz
Measuring principle	Successive approximation
Measured value resolution	16 bits (15 bits + sign bit)
Measured value representation	16 bit two's complement

## Product properties

Product type	I/O component
Product family	Inline
Type	modular
Scope of supply	including Inline connectors and marking fields

## Insulation characteristics

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

## Electrical properties

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

Supply voltage	7.5 V DC (via voltage jumper)
Current draw	max. 85 mA typ. 68 mA

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

Supply voltage	24 V DC (via voltage jumper)
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Supply voltage range	19.2 V DC ... 30 V DC (including all tolerances, including ripple)
Current draw	max. 38 mA
	typ. 24 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

## Connection data

### Connection technology

Connection name	Inline connector
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### 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>
Conductor cross-section AWG	28 ... 16
Stripping length	8 mm

## 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 % (non-condensing)
Permissible humidity (storage/transport)	10 % ... 95 % (non-condensing)

## Standards and regulations

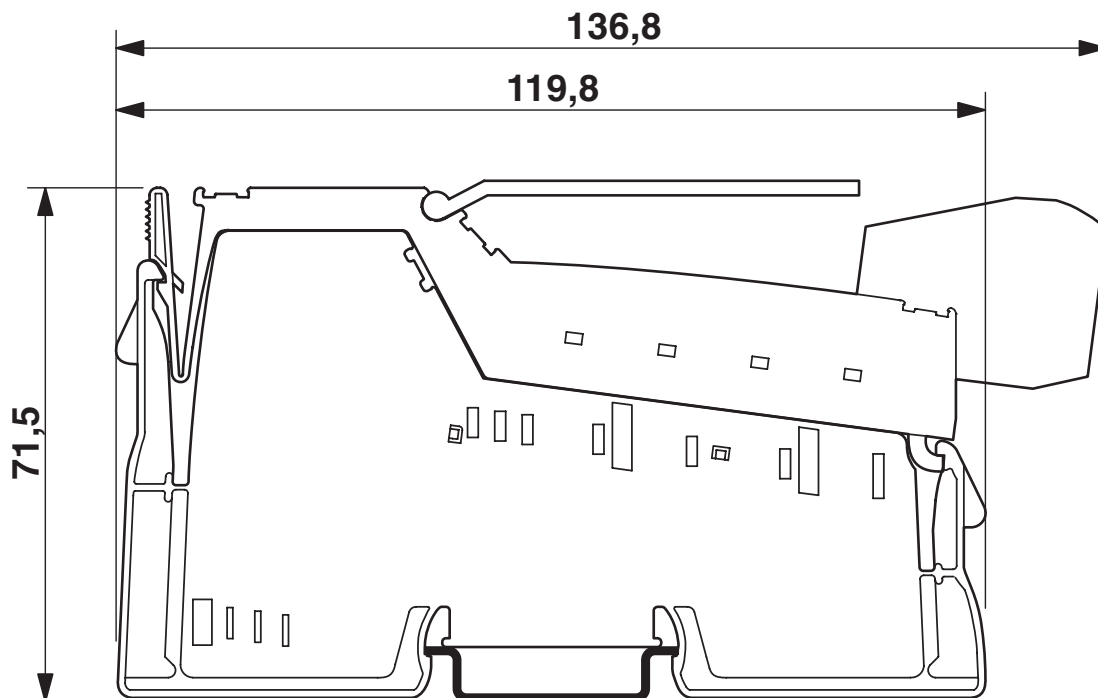
Protection class	III (IEC 61140, EN 61140, VDE 0140-1)
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## Mounting

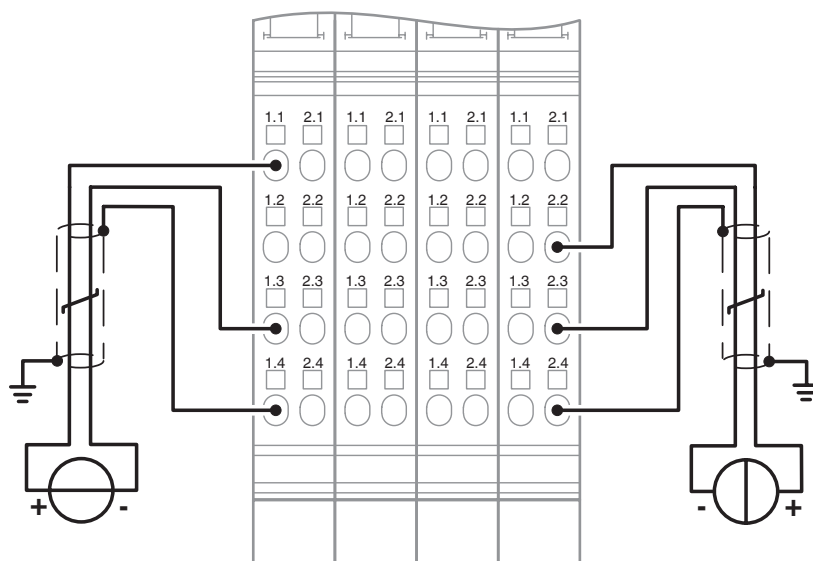
Mounting type	DIN rail mounting
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## Drawings

Dimensional drawing



Connection diagram



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## Environmental product compliance

### China RoHS

Environment friendly use period (EFUP)	EFUP-E
	No hazardous substances above the limits

### EU REACH SVHC

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