

# ILB IB AI4 AO2 - I/O module



2878777

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Inline Block IO analog input/output module, INTERBUS, inputs: 0 - 20 mA, 4 - 20 mA,  $\pm 20$  mA, 0 - 5 V,  $\pm 5$  V, 0 - 10 V,  $\pm 10$  V, Pt 100, Pt 1000, Ni 1000..., outputs: 0 - 5 V,  $\pm 5$  V, 0 - 10 V,  $\pm 10$  V, 0 - 20 mA,  $\pm 20$  mA, 4 - 20 mA, 2-, 3-, 4-conductor connection

## Product description

The multifunctional, analog Inline Block IO modules can be used universally. The four inputs either offer the difference measured between analog current / voltage signals or the option of connecting resistance thermometers (RTDs). Furthermore, the current or voltage actuators can be connected at the two outputs. In addition, all channels are equipped with shield connections as a standard and are provided with the 2, 3 or 4-conductor system. The analog signals are made available with a resolution of 16 bits.

The plugs can be labeled using hinged labeling fields. The fields have insert cards that can be labeled individually to suit the application. Additionally, there is the proven ZBFM-6... Zack marker strip for labeling the terminal points.

## Your advantages

- 4 analog inputs (shielded)
- 2 analog outputs (shielded)
- Difference measurement or resistance thermometer (RTD)

## Commercial data

Item number	2878777
Packing unit	1 pc
Note	Made to order (non-returnable)
Sales key	DR01
Product key	DRI1A1
GTIN	4046356075121
Weight per piece (including packing)	560.4 g
Weight per piece (excluding packing)	465 g
Customs tariff number	85389091
Country of origin	DE

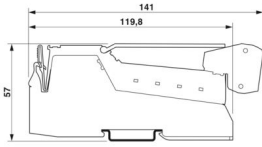
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## Technical data

### Dimensions

Dimensional drawing	
Width	156 mm
Height	141 mm
Depth	57 mm

### Notes

#### Utilization restriction

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

Color	green
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### Interfaces

#### Inline local bus

Connection method	Inline connector
Transmission speed	500 kbps
Transmission physics	Copper

### System properties

#### Module

ID code (dec.)	243
ID code (hex)	F3
Length code (hex)	05
Process data channel	80 bit
Input address area	10 Byte
Output address area	10 Byte
Register length	12 Byte

### Input data

#### Analog: General

Input name	Analog inputs
Description of the input	Differential input, incl. sensor supply (24 V DC)

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Number of inputs	max. 4 (Differential inputs, voltage or current can be chosen separately)
A/D conversion time	typ. 180 µs
Connection method	Spring-cage connection
Connection technology	2-, 3-, 4-conductor (shielded)
Current input signal	0 mA ... 20 mA 4 mA ... 20 mA -20 mA ... 20 mA
Input resistance current input	typ. 107 Ω
Voltage input signal	0 V ... 5 V -5 V ... 5 V 0 V ... 10 V -10 V ... 10 V
Input resistance of voltage input	typ. 276 kΩ
A/D converter resolution	16 bit
Limit frequency (3 dB)	120 Hz (default for 4.5 ms filter) 450 Hz (for 1.1 ms filter)
Measured value resolution	16 bits (15 bits + sign bit)

## 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	typ. 276 kΩ
Protective circuit	Electronic short-circuit protection

## 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	typ. 107 Ω
Protective circuit	Electronic short-circuit protection

## Analog:

Input name	Analog RTD inputs
Number of inputs	4
Sensor types (RTD) that can be used	Pt 100, Pt 500, Pt 1000, Ni 100, Ni 1000, Ni 1000 L&G
Linear resistance measuring range	0 Ω ... 3200 Ω 0 Ω ... 9500 Ω
Protective circuit	Overload protection, short-circuit protection of sensor supply

## Output data

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## Analog:

Output name	Analog outputs
Connection method	Spring-cage connection
Connection technology	2-conductor (shielded)
Number of outputs	2
D/A conversion time	typ. 70 $\mu$ s
D/A converter resolution	16 bit
Protective circuit	Short-circuit protection of outputs; Electronic
Data formats	IB IL, IB ST, IB RT, standardized representation, S7 compatible
Representation of output values	16 bits (15 bits + sign)
Process data update	17 ms
Current output signal	0 mA ... 20 mA 4 mA ... 20 mA -20 mA ... 20 mA
Load/output load current output	to 500 $\Omega$
Voltage output signal	0 V ... 5 V -5 V ... 5 V 0 V ... 10 V -10 V ... 10 V
Load/output load voltage output	> 2 k $\Omega$

## Product properties

Product type	I/O component
Product family	Inline
Type	Block design Inline

## Electrical properties

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

Supply voltage	24 V DC
Supply voltage range	19.2 V DC ... 30 V DC (including all tolerances, including ripple)
Power supply	max. 8 A
Current draw	max. 175 mA (AO-I nominal load) typ. 100 mA

### Potentials: Sensor supply ( $U_S$ )

Supply voltage	24 V DC
Supply voltage range	19.2 V DC ... 30 V DC (including all tolerances, including ripple)
Power supply	max. 8 A
Current draw	max. 220 mA (maximum full load)

### Potentials

Power supply	max. 8 A
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## Potentials

Supply voltage	24 V DC
Power supply	max. 8 A
Current draw	max. 220 mA (maximum full load)

## 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 ... 60 °C
Degree of protection	IP20
Air pressure (operation)	80 kPa ... 108 kPa (up to 2000 m above sea level)
Air pressure (storage/transport)	66 kPa ... 108 kPa (up to 3500 m above sea level)
Ambient temperature (storage/transport)	-25 °C ... 85 °C
Permissible humidity (operation)	10 % ... 85 % (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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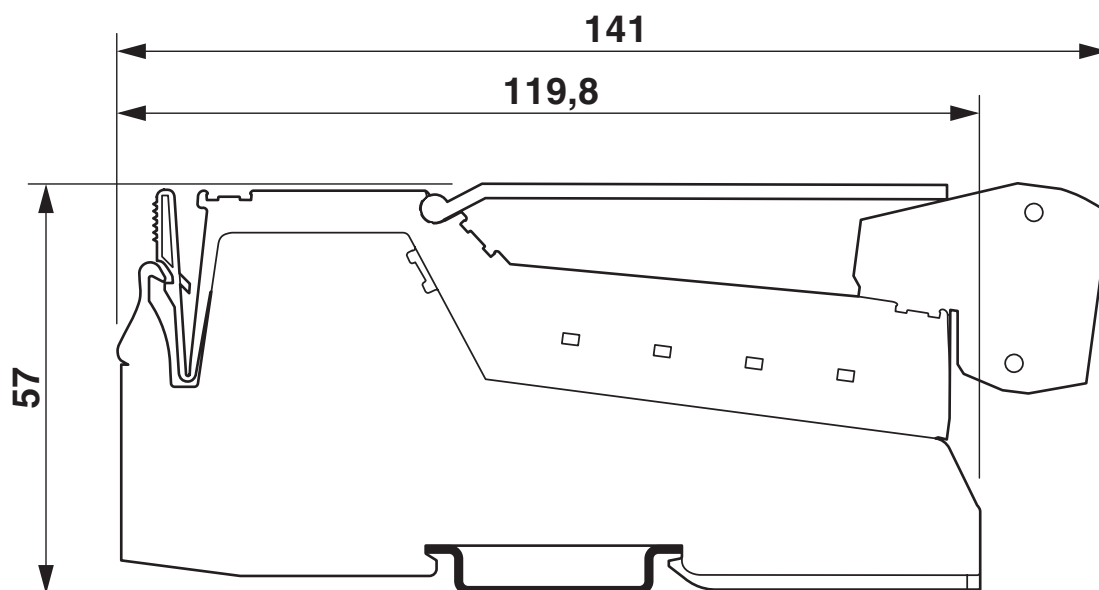
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## Drawings

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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