

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



2861302

<https://www.phoenixcontact.com/gb/products/2861302>

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Inline, Analog input terminal, Analog inputs: 2, 0 V ... 10 V, -10 V ... 10 V, 0 mA ... 20 mA, 4 mA ... 20 mA, -20 mA ... 20 mA, connection technology: 2-conductor, transmission speed in the local bus: 500 kbps, degree of protection: IP20, including Inline connector and labeling field

## Product description

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

## Your advantages

- 2 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
- Voltage ranges: 0 V ... 10 V,  $\pm 10$  V
- The channels are parameterized independently of one another via the bus system
- Measured values can be represented in four different formats
- Resolution depends on the representation format and the measuring range
- Process data update of both channels within a max. of 1.5 ms

## Commercial data

Item number	2861302
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	DRI141
Product key	DRI141
Catalog page	Page 134 (C-6-2019)
GTIN	4017918894245
Weight per piece (including packing)	95.8 g
Weight per piece (excluding packing)	95.8 g
Customs tariff number	85389099
Country of origin	DE

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## Technical data

### Dimensions

Dimensional drawing	
Width	12.2 mm
Height	136.8 mm
Depth	71.5 mm
Note on dimensions	Housing dimensions

### Notes

#### Utilization restriction

CCcex note	Use in potentially explosive areas is not permitted in China.
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### Interfaces

#### Inline local bus

Number of interfaces	2
Connection method	Inline data jumper
Transmission speed	500 kbps

### System properties

#### Module

ID code (dec.)	127
ID code (hex)	7F
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	4 Byte

### Input data

#### Analog: General

Input name	Analog inputs
Description of the input	Single-ended inputs, voltage or current

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Number of inputs	2
A/D conversion time	typ. 120 $\mu$ s (per channel)
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
Input resistance current input	50 $\Omega$ (Shunt)
Voltage input signal	0 V ... 10 V -10 V ... 10 V
Input resistance of voltage input	> 220 k $\Omega$
Data formats	IB IL, IB ST, IB RT, standardized representation
Limit frequency (3 dB)	40 Hz
Common mode voltage range signal - ground	40 V (Between current input and functional ground) 40 V (between voltage input and functional ground)
Measuring principle	Successive approximation
Measured value resolution	16 bits (15 bits + sign bit)
Measured value representation	16 bit two's complement
Protective circuit	Surge protection; Suppressor diodes in the analog inputs

## Product properties

Product type	I/O component
Product family	Inline
Type	modular
Scope of delivery	including Inline connector and labeling field
Operating mode	Process data operation with 2 words
Diagnostics messages	Failure of the internal I/O supply yes I/O error Error message in the process data User error Error message in the process data

## Insulation characteristics

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

## Electrical properties

Maximum power dissipation for nominal condition	1.87 W
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## Potentials

Power consumption	typ. 662 mW max. 882 mW
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## Potentials: Communications power ( $U_L$ )

Supply voltage	7.5 V DC (via voltage jumper)
Current draw	max. 60 mA

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	typ. 45 mA
Potentials: Supply of analog modules ( $U_{ANA}$ )	
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. 18 mA typ. 13 mA
Electrical isolation/isolation of the voltage ranges	
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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### Conductor connection

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

### 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

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Mounting type	DIN rail mounting
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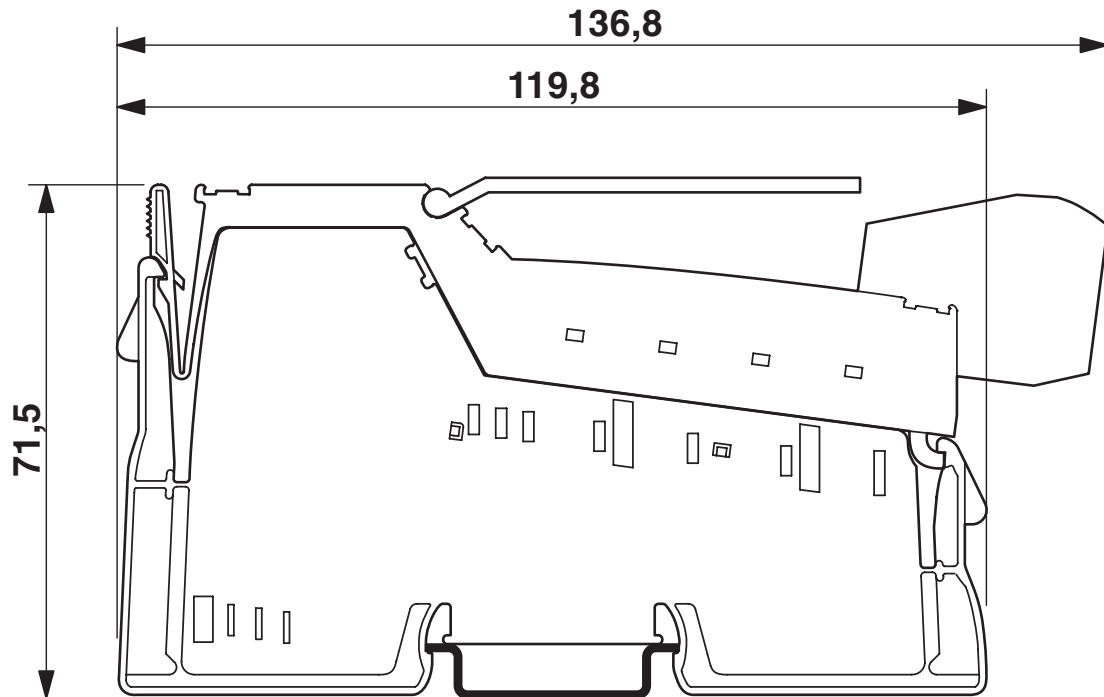
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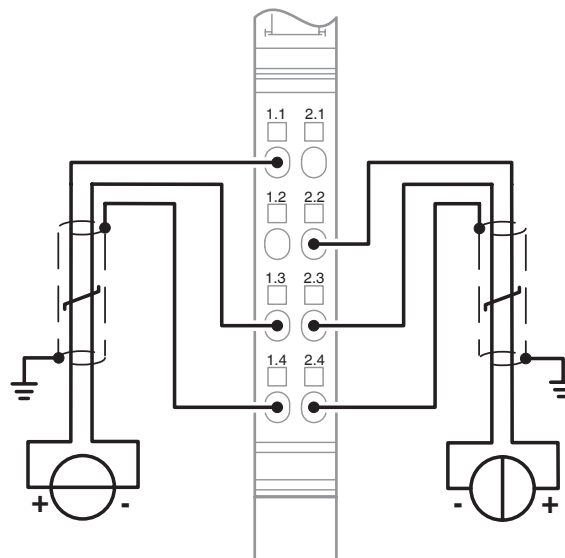
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## Drawings

Dimensional drawing



Connection diagram



Connection example

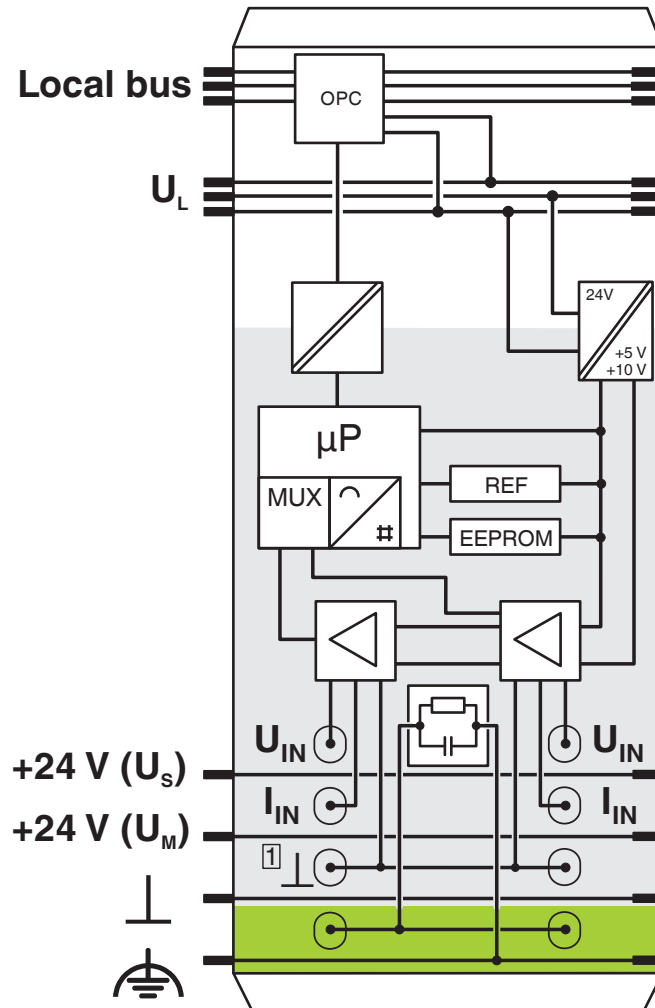
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Block diagram



Internal wiring of the terminal points

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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/gb/products/2861302>



**UL Recognized**

Approval ID: FILE E 140324



**EAC**

Approval ID: TR TS\_D\_01921-19



**DNV GL**

Approval ID: TAA00000BN



**LR**

Approval ID: LR23398855TA

**BSH**

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**RINA**

Approval ID: ELE121121XG

**ABS**

Approval ID: 22-2226444-PDA



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



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## Classifications

### ECLASS

ECLASS-11.0	27242601
ECLASS-12.0	27242601
ECLASS-13.0	27242601

### ETIM

ETIM 9.0	EC001596
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### UNSPSC

UNSPSC 21.0	32151600
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## Environmental product compliance

### EU RoHS

Fulfills EU RoHS substance requirements	Yes
Exemption	7(a), 7(c)-I, 7(c)-II

### China RoHS

Environment friendly use period (EFUP)	EFUP-50
	An article-related China RoHS declaration table can be found in the download area for the respective article under "Manufacturer declaration". For all articles with EFUP-E, no China RoHS declaration table issued and required.

### EU REACH SVHC

REACH candidate substance (CAS No.)	Lead(CAS: 7439-92-1)
SCIP	39c15a57-71c5-4b71-a3ef-cf37c4c19e4c

### EF3.0 Climate Change

CO2e kg	4.19 kg CO2e
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## Accessories

### IB IL SCN 6-SHIELD-TWIN - Inline shield connector

2740245

<https://www.phoenixcontact.com/gb/products/2740245>



Inline shield connector

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### IB IL FIELD 2 - Marking field

2727501

<https://www.phoenixcontact.com/gb/products/2727501>



Marking field, width: 12.2 mm

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## ESL 62X10 - Insert strip

0809492

<https://www.phoenixcontact.com/gb/products/0809492>

Insert strip, Sheet, white, unlabeled, can be labeled with: Office printing systems, CMS-P1-PLOTTER, mounting type: insert, lettering field size: 62 x 10 mm, Number of individual labels: 72



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## IB IL SCN-6 SHIELD - Inline shield connector

2726353

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Inline shield connector



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