

# IB IL SGI 2/F-PAC - Analog module



2878638

<https://www.phoenixcontact.com/us/products/2878638>

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Inline, Strain gauge measurement terminal, transmission speed in the local bus: 500 kbps, 2 fast inputs, 4-, 6-conductor connection technology, degree of protection: IP20, including Inline connectors and marking fields

## Product description

The terminal is designed for use within an Inline station. This terminal is a fast input module used to connect load cells, force transducers, mass pressure transducers, and similar devices based on strain gauges. The strain gauges can be connected using 6- or 4-conductor technology. The strain gauge output signals are measured in each bus cycle and updated in the process data (bus-synchronous process data update). The terminal is suitable for control applications with increased speed requirements. There are two options for data exchange: - via process data (both inputs in one bus cycle) - via PCP Compact (both inputs in the "Analog Values" PCP object) The measured values are represented by standardized 16-bit values.

## Your advantages

- 2 fast inputs for strain gauge
- Connection of strain gauges in 6- and 4-conductor technology
- Sensor supply voltage provided by the terminal, no external power supply required
- Communication either via process data or parameter channel (PCP Compact)
- The channels are parameterized independently of one another via the bus system
- Bus-synchronous process data update

## Commercial data

Item number	2878638
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	DR01
Product key	DRI144
GTIN	4017918996406
Weight per piece (including packing)	230 g
Weight per piece (excluding packing)	190 g
Customs tariff number	85389091
Country of origin	DE

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## Technical data

### Dimensions

Dimensional drawing	
Width	48.8 mm
Height	136 mm
Depth	71.5 mm
Note on dimensions	Housing dimensions

### Notes

#### Note on application

Note on application	Only for industrial use
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#### Utilization restriction

CCCex note	Use in potentially explosive areas is not permitted in China.
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### Material specifications

Color (Housing)	green (RAL 6021)
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### Interfaces

#### Inline local bus

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

### System properties

#### Programming data (LocalbusSlave)

Length code (hex)	03
ID code (dec.)	223
Length code (dec)	03
Process data channel	48 bit
Input address area	6 Byte
Output address area	6 Byte
Parameter channel (PCP)	2 Byte
Register length (bus)	64 bit

#### Fieldbus data telegram (PROFIBUS)

Required parameter data	15 Byte
Required configuration data	5 Byte

## Input data

### Analog

Description of the input	Input channels for strain gauge
Number of inputs	2
Connection technology	6 or 4-wire, twisted pair shielded cable
Bridge difference $U_d$	Measuring range specified by selecting the characteristic and the bridge voltage
Bridge voltage $U_0$	3.3 V
	5 V
Measured value representation	15 bit + sign bit
Characteristics	$\pm 1$ mV/V, $\pm 2$ mV/V, $\pm 3$ mV/V, $\pm 4$ mV/V
	+1 mV/V, +2 mV/V, +3 mV/V, +4 mV/V

## Output data

### Analog

Output description	Voltage output
Number of outputs	2
Impedance	> 58.3 $\Omega$ (typical; permissible total resistance of the strain gauge)
Output voltage	5 V
	3.3 V
Output current	typ. 55 mA (with $U_V = 3.3$ V)
	typ. 85 mA (with $U_V = 5$ V)

## Product properties

Product type	I/O component
Product family	Inline
Type	modular
Scope of supply	including Inline connectors and marking fields
Operating mode	Process data operation with 3 words, PCP with 1 word
Special properties	2 fast inputs
	4-, 6-conductor connection technology
Diagnostics messages	Failure of the power supply at $U_{ANA}$ Error message in the process data
	Failure of or insufficient communications power $U_L$ I/O error message sent to the bus coupler
	I/O 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

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Maximum power dissipation for nominal condition	1.05 W
Potentials: Communications power ( $U_L$ )	
Supply voltage	7.5 V DC (via voltage jumper)
Current draw	max. 85 mA
	typ. 75 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	typ. 32 mA (with maximum load of 58.3 $\Omega$ when $U_V = 5$ V)
	typ. 8 mA (without strain gauge)
Electrical isolation/isolation of the voltage ranges	
Test voltage: Logic/analog I/O (digital isolator)	500 V AC, 50 Hz, 1 min
Test voltage: Functional ground/analog I/O (isolating distance)	500 V AC, 50 Hz, 1 min
Test voltage: Logic/functional ground (isolating distance)	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)

### Mechanical test

Vibration resistance in accordance with EN 60068-2-6/IEC 60068-2-6	5g
Shock in accordance with EN 60068-2-27/IEC 60068-2-27	25g

## 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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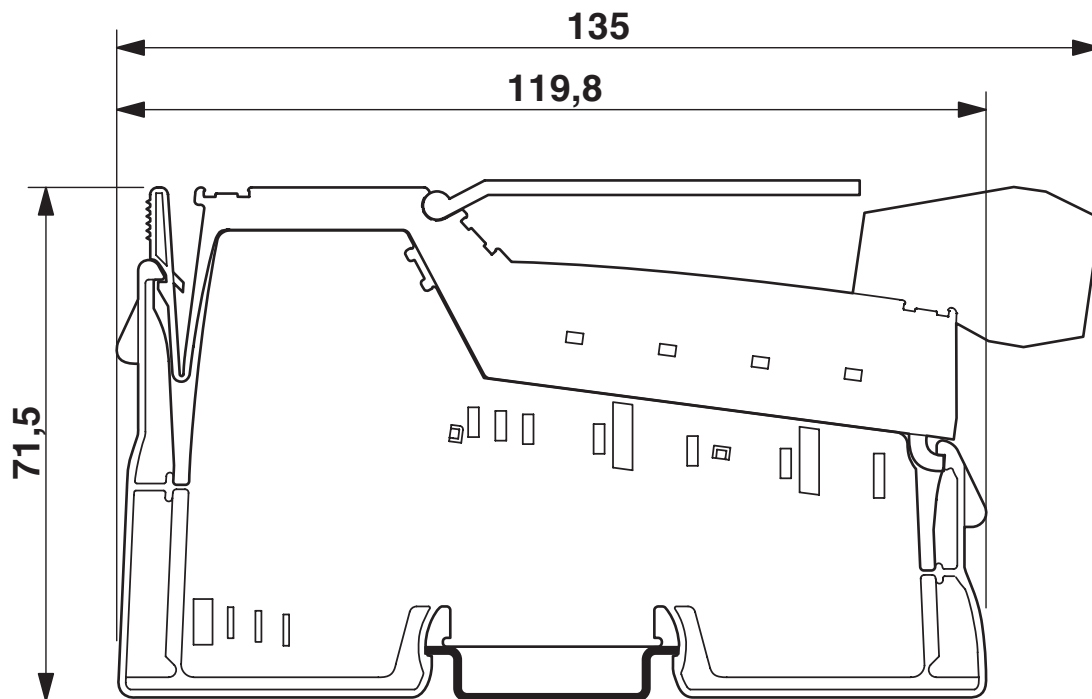


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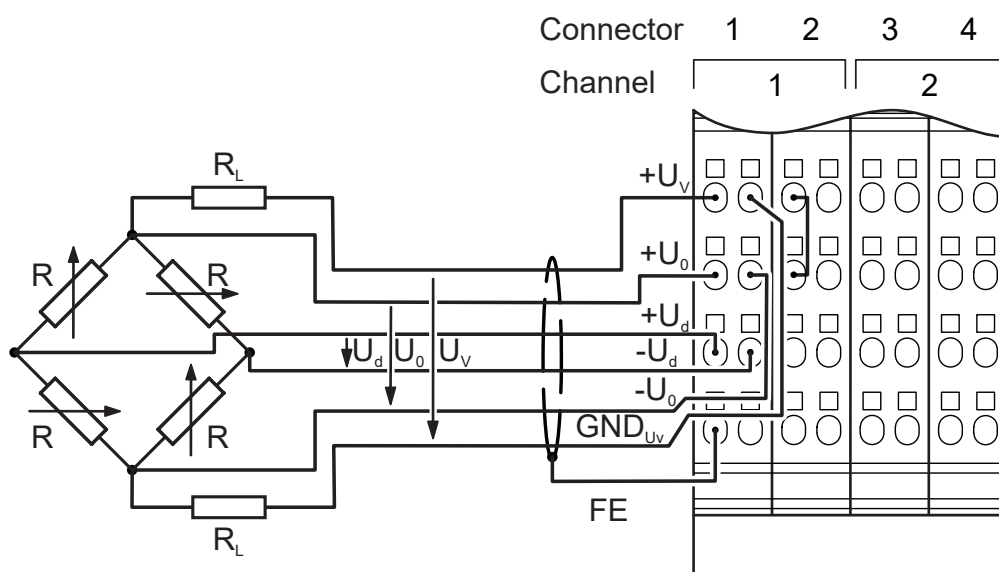
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## Drawings

Dimensional drawing



Connection diagram



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## Approvals

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**cULus Recognized**

Approval ID: E140324



**cULus Listed**

Approval ID: E199827

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## Classifications

### ECLASS

ECLASS-13.0	27242601
ECLASS-15.0	27242601

### ETIM

ETIM 10.0	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

### 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	4ae0bc01-d8c7-40f2-8b69-295c45627de4

### EF3.1 Climate Change

CO2e kg	12.14 kg CO2e
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