

IB IL AI 2-HART-PAC - Analog module



2862149

<https://www.phoenixcontact.com/us/products/2862149>

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Inline, Analog input terminal, Analog inputs: 2, 4 mA ... 20 mA, 0 mA ... 25 mA, connection technology: 2-conductor, transmission speed in the local bus: 500 kbps, HART functionality, HART protocol transmission, degree of protection: IP20, including Inline connectors and marking fields

Product description

The terminal is designed for use within an Inline station. It allows communication with smart field devices using the standardized communication protocols INTERBUS and HART. It provides both analog and digital communication. The analog signal transmits the process information. The modulated digital signal enables bidirectional communication to the sensor (with HART capabilities) at the same time.

Your advantages

- Two differential signal inputs for current sensors
- Connection of sensors in 2-conductor technology (active and passive sensors)
- Current ranges: 4 mA ... 20 mA, 0 mA ... 25 mA
- Both channels preset to the 4 mA ... 20 mA measuring range and IB IL format
- Transmission of the HART protocol with PCP
- Measured values can be represented in three different formats
- Resolution depends on the representation format and the measuring range
- Measured value acquisition with a resolution of 16 bits
- Point-to-point and multi-drop connections possible
- Connection of a hand-held operating panel possible
- A maximum of 5 HART devices can be connected per channel
- Polling and burst modes
- FDT/DTM support with AutomationXplorer+ (unavailable since 2019)

Commercial data

Item number	2862149
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	DR01
Product key	DRI141
GTIN	4017918918835
Weight per piece (including packing)	244.9 g
Weight per piece (excluding packing)	134 g
Customs tariff number	85389091
Country of origin	DE

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Technical data

Dimensions

Dimensional drawing	
Width	48.8 mm
Height	135 mm
Depth	71.5 mm

Notes

Note on application

Note on application	Only for industrial use
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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)	02
ID code (dec.)	220
Length code (dec)	02
Process data channel	32 bit
Input address area	4 Byte
Output address area	4 Byte
Parameter channel (PCP)	32 bit
Register length (bus)	64 bit

Fieldbus data telegram (PROFIBUS)

Required parameter data	9 Byte
Required configuration data	5 Byte

Input data

Analog:

Input name	Analog inputs
Description of the input	Differential inputs, current
Number of inputs	2
A/D conversion time	approx. 10 µs (bus-synchronous)
Connection method	Inline shield connector
Connection technology	2-conductor
Note regarding the connection technology	shielded
Current input signal	4 mA ... 20 mA 0 mA ... 25 mA
Input resistance current input	250 Ω
A/D converter resolution	16 bit
Data formats	IB IL, standardized representation, PIO
Limit frequency (3 dB)	25 Hz
Common mode voltage range signal - ground	40 V (Between current 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 diode

Product properties

Product type	I/O component
Product family	Inline
Type	modular
Installation location	Control cabinet
Scope of supply	including Inline connectors and marking fields
Operating mode	Process data operation with 2 words, PCP with 2 words
Special properties	HART functionality HART protocol transmission
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	2.7 W
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Potentials: Communications power (U_L)

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

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	typ. 95 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. 150 mA typ. 50 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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Inline connector

Connection method	Spring-cage connection
Conductor cross-section, rigid	0.08 mm ² ... 1.5 mm ²
Conductor cross-section, flexible	0.08 mm ² ... 1.5 mm ²
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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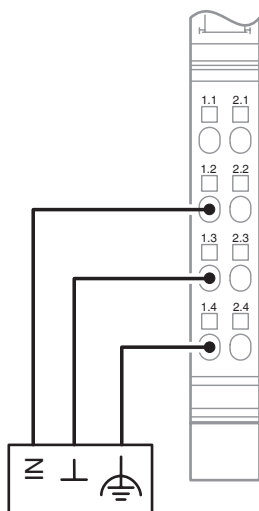
Drawings

Dimensional drawing

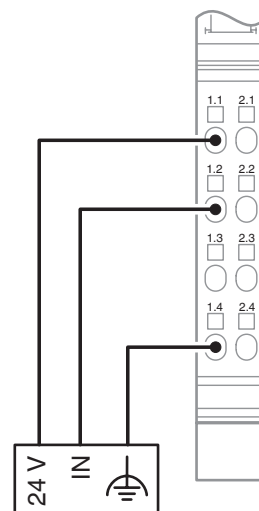


Connection diagram

Active sensors

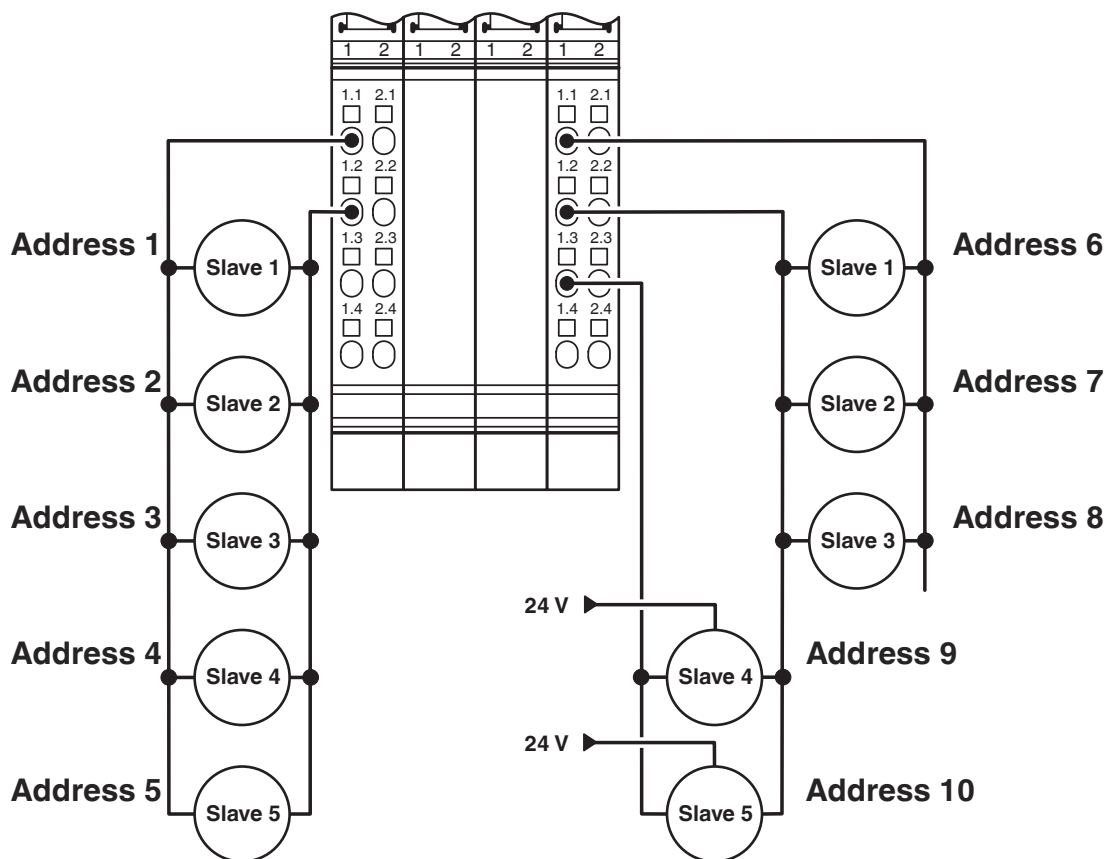


Passive sensors



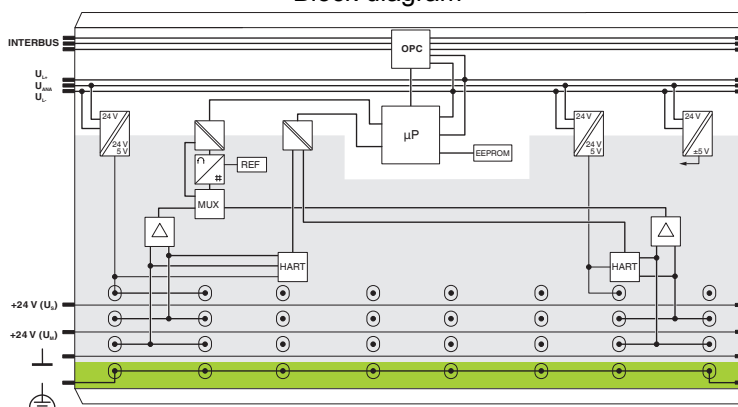
Connection of active and passive sensors (field devices) in 2-conductor technology with shield connection

Connection diagram



Connection of sensors (field devices) in a multidrop network

Block diagram



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Approvals

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cULus Recognized
Approval ID: E140324



cUL Listed
Approval ID: E256199



UL Listed
Approval ID: E256199



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	58927e8a-e56f-428b-a190-65470c1de2c0

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