

## Inline terminal - IB IL AI 4/EF-PAC - 2878447

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Inline analog input terminal with differential input channels, complete with accessories (connector plug and labeling field), 4 inputs, 0 - 20 mA, 4 - 20 mA,  $\pm 20$  mA, 0 - 10 V,  $\pm 10$  V, 0 - 5 V,  $\pm 5$  V, 2-, 3- or 4-wire connection technology

### Why buy this product

- Short update time of 1 ms, maximum for all channels
- Sensor supply with channel-specific integrated short-circuit and overload protection
- Bus-synchronous provision of input values with very low jitter ( $< 10 \mu\text{s}$ )
- Measured value acquisition with 16-bit resolution
- 4 differential signal inputs
- Connection of sensors in 2, 3, and 4-wire technology
- Current ranges: 0 mA ... 20 mA, 4 mA ... 20 mA,  $\pm 20$  mA
- Voltage ranges: 0 V ... 10 V,  $\pm 10$  V, 0 V ... 5 V,  $\pm 5$  V
- Short-circuit
- Diagnostic and status indicators

### Key Commercial Data

|              |                                                                                                         |
|--------------|---------------------------------------------------------------------------------------------------------|
| Packing unit | 1 STK                                                                                                   |
| GTIN         | <br>4 017918 996376 |

### Technical data

#### Note

|                         |                                                                           |
|-------------------------|---------------------------------------------------------------------------|
| Utilization restriction | EMC: class A product, see manufacturer's declaration in the download area |
|-------------------------|---------------------------------------------------------------------------|

#### Dimensions

|        |         |
|--------|---------|
| Width  | 48.8 mm |
| Height | 135 mm  |
| Depth  | 71.5 mm |

#### Ambient conditions

|                                         |                                             |
|-----------------------------------------|---------------------------------------------|
| Ambient temperature (operation)         | -25 °C ... 55 °C                            |
| Ambient temperature (storage/transport) | -25 °C ... 85 °C                            |
| Permissible humidity (operation)        | 10 % ... 95 % (according to DIN EN 61131-2) |

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## Technical data

### Ambient conditions

|                                          |                                                   |
|------------------------------------------|---------------------------------------------------|
| Permissible humidity (storage/transport) | 10 % ... 95 % (according to DIN EN 61131-2)       |
| 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) |
| Degree of protection                     | IP20                                              |

### General

|                               |                                           |
|-------------------------------|-------------------------------------------|
| Net weight                    | 210 g                                     |
| Note on weight specifications | with connectors                           |
| Mounting type                 | DIN rail                                  |
| Operating mode                | Process data mode with 5 words/1 word PCP |

### Interfaces

|                      |                    |
|----------------------|--------------------|
| Fieldbus system      | Lokalbus           |
| Designation          | Inline local bus   |
| Connection method    | Inline data jumper |
| Transmission speed   | 500 kBit/s         |
| Transmission physics | Copper             |

### Inline potentials

|                                    |                               |
|------------------------------------|-------------------------------|
| Communications power $U_L$         | 7.5 V DC (via voltage jumper) |
| Current consumption from $U_L$     | max. 100 mA                   |
|                                    | typ. 85 mA                    |
| Main circuit supply $U_M$          | 24 V DC                       |
| Current consumption from $U_M$     | max. 200 mA                   |
| I/O supply voltage $U_{ANA}$       | 24 V DC                       |
| Current consumption from $U_{ANA}$ | max. 20 mA                    |
|                                    | typ. 13 mA                    |

### Analog inputs

|                              |                                                                      |
|------------------------------|----------------------------------------------------------------------|
| Description of the input     | Differential input, including sensor supply (24 V DC)                |
| Input name                   | Analog inputs                                                        |
| Number of inputs             | 4 (Differential inputs, voltage or current can be chosen separately) |
| Connection method            | Inline shield connector                                              |
|                              | 2, 3, 4-wire (shielded)                                              |
| A/D conversion time          | max. 10 $\mu$ s                                                      |
| Resolution A/D               | 16 bit                                                               |
| Limit frequency (3 dB)       | 500 Hz                                                               |
| Type of protection           | Transient protection                                                 |
| Protective circuit/component | Yes, via arresters                                                   |
| Data formats                 | IB IL, IB ST, standardized representation, S7 compatible             |
| Measured value resolution    | 16 bits (15 bits + sign bit)                                         |
| Current input signal         | 0 mA ... 20 mA                                                       |
|                              | 4 mA ... 20 mA                                                       |

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### Technical data

#### Analog inputs

|                                   |                      |
|-----------------------------------|----------------------|
|                                   | -20 mA ... 20 mA     |
| Input resistance current input    | approx. 110 $\Omega$ |
| Voltage input signal              | 0 V ... 5 V          |
|                                   | -5 V ... 5 V         |
|                                   | 0 V ... 10 V         |
|                                   | -10 V ... 10 V       |
| Input resistance of voltage input | 300 k $\Omega$       |

#### Standards and Regulations

|                                  |                                                                                                |
|----------------------------------|------------------------------------------------------------------------------------------------|
| Test section                     | 5 V supply, incoming remote bus/7.5 V supply (bus logics) 500 V AC 50 Hz 1 min.                |
|                                  | 5 V supply, outgoing remote bus/7.5 V supply (bus logics) 500 V AC 50 Hz 1 min.                |
|                                  | 7.5 V supply (bus logic), 24 V supply $U_{ANA}$ / I/O 500 V AC 50 Hz 1 min.                    |
|                                  | 7.5 V supply (bus logic), 24 V supply $U_{ANA}$ /functional earth ground 500 V AC 50 Hz 1 min. |
|                                  | I/O / functional earth ground 500 V AC 50 Hz 1 min.                                            |
| Connection in acc. with standard | CUL                                                                                            |
| Protection class                 | III, IEC 61140, EN 61140, VDE 0140-1                                                           |

### Classifications

#### eCl@ss

|            |          |
|------------|----------|
| eCl@ss 4.0 | 27250303 |
| eCl@ss 4.1 | 27250303 |
| eCl@ss 5.0 | 27250303 |
| eCl@ss 5.1 | 27242601 |
| eCl@ss 6.0 | 27242601 |
| eCl@ss 7.0 | 27242601 |
| eCl@ss 8.0 | 27242601 |

#### ETIM

|          |          |
|----------|----------|
| ETIM 2.0 | EC001431 |
| ETIM 3.0 | EC001596 |
| ETIM 4.0 | EC001596 |
| ETIM 5.0 | EC001596 |

#### UNSPSC

|               |          |
|---------------|----------|
| UNSPSC 6.01   | 43172015 |
| UNSPSC 7.0901 | 43201404 |
| UNSPSC 11     | 43172015 |
| UNSPSC 12.01  | 43201404 |
| UNSPSC 13.2   | 43201404 |

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### Approvals

#### Approvals

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##### Approvals

UL Recognized / cUL Recognized / LR / BV / ABS / BSH / RINA / EAC / BSH / cULus Recognized

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##### Ex Approvals

UL Listed / cUL Listed / cULus Listed

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##### Approvals submitted

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### Approval details

UL Recognized 

cUL Recognized 

LR

BV

ABS

BSH

RINA

EAC

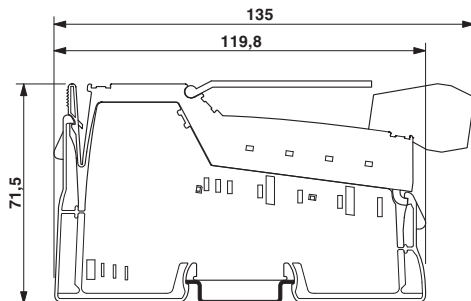
BSH

cULus Recognized 

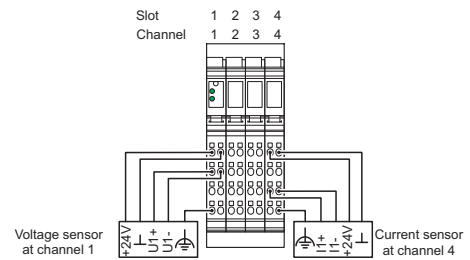
### Drawings

## Inline terminal - IB IL AI 4/EF-PAC - 2878447

Dimensional drawing



Connection diagram



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PHOENIX CONTACT GmbH & Co. KG  
Flachsmarktstr. 8  
32825 Blomberg  
Germany  
Tel. +49 5235 300  
Fax +49 5235 3 41200  
<http://www.phoenixcontact.com>