

## Inline terminal - IB IL AI 4/U-PAC - 2700459

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Inline analog input terminal, complete with accessories (connector and labeling field), inputs: 0-10 V,  $\pm 10$  V, 2-wire connection method

The figure shows version: IB IL AI 4/I-PAC

### Product Features

- 4 analog, bipolar input channels for the connection of voltage signals
- Connection of sensors in 2-wire technology
- Voltage ranges: 0 V ... 10 V,  $\pm 10$  V
- Mean-value generation of the inputs
- Process data update of all channels in 250  $\mu$ s
- Diagnostic and status indicators



### Key Commercial Data

|                                      |          |
|--------------------------------------|----------|
| Packing unit                         | 1 pc     |
| Weight per Piece (excluding packing) | 80.0 g   |
| Custom tariff number                 | 85389091 |
| Country of origin                    | Germany  |

### Technical data

#### Note

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

#### Dimensions

|                    |                    |
|--------------------|--------------------|
| Width              | 12.2 mm            |
| Height             | 119.8 mm           |
| Depth              | 71.5 mm            |
| Note on dimensions | Housing dimensions |

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## Technical data

### 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)       |
| 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

|                               |                                                                              |
|-------------------------------|------------------------------------------------------------------------------|
| Mounting type                 | DIN rail                                                                     |
| Net weight                    | 88 g                                                                         |
| Note on weight specifications | with connector                                                               |
| Diagnostics messages          | Failure of the internal I/O supply I/O error message sent to the bus coupler |
|                               | I/O supply failure Message in the diagnostic code (in the IB IL format)      |
|                               | Overrange or underrange Message in the diagnostic code (in the IB IL format) |
|                               | Configuration invalid Message in the diagnostic code (in the IB IL format)   |

### Interfaces

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

### Power supply for module electronics

|                            |                            |
|----------------------------|----------------------------|
| Communications power $U_L$ | 7.5 V (via voltage jumper) |
|----------------------------|----------------------------|

### Inline potentials

|                                    |                               |
|------------------------------------|-------------------------------|
| Communications power $U_L$         | 7.5 V DC (via voltage jumper) |
|                                    | typ. 55 mA                    |
| I/O supply voltage $U_{ANA}$       | 24 V DC                       |
| Current consumption from $U_{ANA}$ | typ. 30 mA                    |
| Power consumption                  | typ. 0.94 W (total)           |

### Analog inputs

|                   |                                  |
|-------------------|----------------------------------|
| Input name        | Analog inputs                    |
| Number of inputs  | 4 (differential inputs, voltage) |
| Connection method | Inline connector                 |
|                   | 2-wire                           |

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### Technical data

#### Analog inputs

|                                           |                                                                 |
|-------------------------------------------|-----------------------------------------------------------------|
| A/D conversion time                       | max. 6.5 µs                                                     |
| Resolution A/D                            | 12 bit                                                          |
| Limit frequency (3 dB)                    | 300 Hz                                                          |
| Type of protection                        | Overload protection                                             |
| Protective circuit/component              | ±30 V DC, maximum                                               |
| Data formats                              | IB IL, S7-compatible                                            |
| Measured value resolution                 | 12 bits (11 bits + sign bit)                                    |
| Measured value representation             | 12 bits (11 bits + sign bit)                                    |
| Voltage input signal                      | 0 V ... 10 V                                                    |
|                                           | -10 V ... 10 V                                                  |
| Input resistance of voltage input         | typ. 324 kΩ                                                     |
| Common mode voltage range signal - ground | max. 50 V                                                       |
| Filtering                                 | None or mean-value generation over 4, 16, or 32 measured values |

#### Standards and Regulations

|                                |                                                                                                                                                                                                               |
|--------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Conformity with EMC directives | Noise immunity test in accordance with EN 61000-6-2 Electrostatic discharge (ESD) EN 61000-4-2/IEC 61000-4-2 Criterion B, 6 kV contact discharge, 8 kV air discharge                                          |
|                                | Noise immunity test in accordance with EN 61000-6-2 Electromagnetic fields EN 61000-4-3/IEC 61000-4-3 Criterion A, Field intensity: 10 V/m                                                                    |
|                                | Noise immunity test in accordance with EN 61000-6-2 Fast transients (burst) EN 61000-4-4/IEC 61000-4-4 Criterion B, 2 kV                                                                                      |
|                                | Noise immunity test in accordance with EN 61000-6-2 Transient overvoltage (surge) EN 61000-4-5/IEC 61000-4-5 Criterion B, supply lines DC: ±1 kV/±1 kV (symmetrical/asymmetrical), shielded I/O cables: ±1 kV |
|                                | Noise immunity test in accordance with EN 61000-6-2 Conducted interference EN 61000-4-6/IEC 61000-4-6 Criterion A; Test voltage 10 V                                                                          |
|                                | Noise emission test according to EN 61000-6-3 Radio interference properties EN 55022 Class A                                                                                                                  |
| 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 <sub>ANA</sub> / I/O 500 V AC 50 Hz 1 min.                                                                                                                            |
|                                | 7.5 V supply (bus logic), 24 V supply U <sub>ANA</sub> /functional earth ground 500 V AC 50 Hz 1 min.                                                                                                         |
|                                | I/O / functional earth ground 500 V AC 50 Hz 1 min.                                                                                                                                                           |
| Protection class               | III, IEC 61140, EN 61140, VDE 0140-1                                                                                                                                                                          |

## Inline terminal - IB IL AI 4/U-PAC - 2700459

### 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 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 |

### Approvals

#### Approvals

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##### Approvals

UL Listed / cUL Listed / EAC / cULus Listed

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##### Ex Approvals

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##### Approvals submitted

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#### Approval details

|                                                                                               |
|-----------------------------------------------------------------------------------------------|
| UL Listed  |
|-----------------------------------------------------------------------------------------------|

## Inline terminal - IB IL AI 4/U-PAC - 2700459

### Approvals

cUL Listed 

EAC

cULus Listed 

### Accessories

#### Accessories

##### Installation terminal block

Connection terminal block - AKG 4 GNYE - 0421029



Connection terminal block, Connection method Screw connection, Cross section: 0.5 mm<sup>2</sup> - 6 mm<sup>2</sup>, Width: 7 mm, Color: green-yellow

Connection terminal block - AKG 4 BK - 0421032



Connection terminal block, Connection method Screw connection, Cross section: 0.5 mm<sup>2</sup> - 6 mm<sup>2</sup>, Width: 7 mm, Color: black

##### Neutral conductor rail

Neutral busbar - NLS-CU 3/10 SN 1000MM - 0402174



PEN conductor busbar, 3mm x 10 mm, length: 1000 mm

##### Pick-off terminal block

## Inline terminal - IB IL AI 4/U-PAC - 2700459

### Accessories

Connection terminal block - AK 4 - 0404017



Connection terminal block, Connection method Screw connection, Cross section: 0.5 mm<sup>2</sup> - 6 mm<sup>2</sup>, Width: 7 mm, Color: silver

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### Shield connection clamp

Shield connection terminal block - SK 8 - 3025163



Shield connection clamp, for shield on busbars, contact resistance < 1 mΩ

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Shield connection terminal block - SK 14 - 3025176



Shield connection clamp, for shield on busbars, contact resistance < 1 mΩ

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Shield connection terminal block - SK 20 - 3025189



Shield connection clamp, for shield on busbars, contact resistance < 1 mΩ

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Shield connection terminal block - SK 35 - 3026463



Shield connection clamp, for shield on busbars, contact resistance < 1 mΩ

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### Accessories

#### Support

Support bracket - AB-SK - 3025341

Support bracket for busbars



Support bracket - AB-SK 65 - 3026489

Support bracket, Bracket for busbars, set every 20 cm, Length: 95.5 mm, Width: 6.2 mm, Color: gray



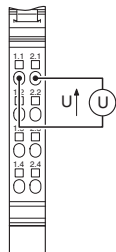
Support bracket - AB-SK/E - 3026476

Support bracket, Bracket for busbars, set every 20 cm, Length: 10 mm, Width: 56 mm, Height: 20 mm, Color: silver



### Drawings

Connection diagram



Dimensional drawing

