

IB ST 24 AI 4/EF - I/O module

2700838

<https://www.phoenixcontact.com/us/products/2700838>



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INTERBUS-ST analog input module, 4 inputs, 0 - 10 V, ± 10 V, 0 - 20 mA, 4 - 20 mA, IP20 protection, consisting of: terminal part with screw connection and module electronics

Product description

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

Your advantages

- 4 analog, differential input channels for the connection of either voltage or current signals
- Connection of sensors in 2-, 3-, and 4-conductor technology
- Sensor supply +15 V DC

Commercial data

| | |
|--------------------------------------|---------------|
| Item number | 2700838 |
| Packing unit | 1 pc |
| Sales key | DR03 |
| Product key | DRI341 |
| GTIN | 4046356660648 |
| Weight per piece (including packing) | 585.1 g |
| Weight per piece (excluding packing) | 585.1 g |
| Customs tariff number | 85389091 |
| Country of origin | DE |

Technical data

Dimensions

| | |
|--------|--------|
| Width | 118 mm |
| Height | 116 mm |
| Depth | 117 mm |

Interfaces

ST local bus

| | |
|----------------------|------------------------|
| No. of channels | 2 |
| Connection method | ST local bus connector |
| Transmission speed | 500 kbps |
| Transmission physics | Copper |

System properties

Module

| | |
|---------------------|--------|
| ID code (dec.) | 126 |
| ID code (hex) | 7E |
| Length code (hex) | 4 |
| Length code (dec) | 4 |
| Input address area | 8 Byte |
| Output address area | 0 Byte |
| Register length | 8 Byte |

Input data

Analog: General

| | |
|-------------------------------|--|
| Input name | Analog inputs |
| Number of inputs | max. 4 (differential inputs, voltage or current) |
| A/D conversion time | max. 10 μ s (per channel) |
| Connection technology | 2-, 3-, 4-conductor (shielded) |
| Measuring principle | Successive approximation |
| Measured value representation | 16 bit two's complement |

Analog: Voltage inputs

| | |
|---|---|
| Number of inputs | 4 (differential inputs, voltage) |
| Voltage input signal | 0 V ... 10 V (SF and SF4 mode) -10 V ... 10 V (Mode BP) |
| Input resistance of voltage input | 200 k Ω |
| A/D converter resolution | 12 bit (4096 steps; 4.88 mV/quantization step (BP mode); 2.44 mV/quantization step (SF and SF4 mode)) |
| Common mode voltage range signal - ground | -35 V DC ... 35 V DC |

Analog: Current inputs

| | |
|--------------------------------|---|
| Number of inputs | 4 (Differential inputs, current) |
| A/D conversion time | max. 10 μ s |
| Current input signal | 0 mA ... 20 mA (SF mode) |
| | 4 mA ... 20 mA (BP and SF4 mode) |
| Input resistance current input | 50 Ω |
| A/D converter resolution | 12 bit (4096 steps; 4.88 μ A/quantization step (SF mode); 3.91 μ A (SF4 mode); 7.8 μ A (BP mode)) |

Product properties

| | |
|----------------------|--|
| Product type | I/O component |
| Type | modular |
| | INTERBUS Smart Terminal |
| Operating mode | Process data mode with 4 words |
| Diagnostics messages | Failure of the internal I/O supply I/O error message sent to the bus coupler |
| | F1 fuse failure I/O error message sent to the bus coupler |
| | I/O supply failure I/O error message sent to the bus coupler |

Electrical properties

Supply: Module electronics

| | |
|---------------------|--------------------------------|
| Connection method | ST local bus connector |
| Designation | Communications power |
| Supply voltage | 9 V DC (from the ST local bus) |
| Current consumption | typ. 54 mA |
| | max. 80 mA |
| Power consumption | typ. 0.5 W |

Supply: Periphery supply voltage

| | |
|----------------------|---|
| Designation | U_S |
| Supply voltage | 24 V DC |
| Supply voltage range | 19.5 V DC ... 30.2 V DC (including all tolerances, including ripple) |
| Current consumption | typ. 45 mA ($I_b = 0$ mA ($I_b =$ total current for supplying passive sensors for all channels)) |
| | typ. 120 mA ($I_b = 100$ mA ($I_b =$ total current for supplying passive sensors for all channels)) |

Supply: Passive sensor supply

| | |
|---------------------|--------------------------------------|
| Designation | U_B (generated internally) |
| Supply voltage | 15 V \pm 6 % |
| Current consumption | max. 100 mA (Total for all channels) |

Electrical isolation/isolation of the voltage ranges

| | |
|---|------------------------|
| Test voltage: Bus/Inputs | 500 V AC, 50 Hz, 1 min |
| Test voltage: Supply voltage/inputs | 500 V AC, 50 Hz, 1 min |
| Test voltage: Supply voltage/Ground conductor | 500 V AC, 50 Hz, 1 min |
| Test voltage: I/O voltage/Ground conductor | 500 V AC, 50 Hz, 1 min |

Connection data

Connection technology

| | |
|-----------------|----------------|
| Connection name | Terminal block |
|-----------------|----------------|

Terminal block

| | |
|-----------------------------------|---|
| Connection method | Screw connection |
| Conductor cross-section, rigid | 0.2 mm ² ... 2.5 mm ² |
| Conductor cross-section, flexible | 0.2 mm ² ... 2.5 mm ² |
| Conductor cross-section AWG | 24 ... 12 |
| 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) | 80 kPa ... 106 kPa (up to 2000 m above sea level) |
| Air pressure (storage/transport) | 80 kPa ... 106 kPa (up to 2000 m above sea level) |
| Ambient temperature (storage/transport) | -25 °C ... 70 °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) |
|------------------|---------------------------------------|

Mounting

| | |
|---------------|-------------------|
| Mounting type | DIN rail mounting |
|---------------|-------------------|

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Classifications

ECLASS

| | |
|-------------|----------|
| ECLASS-13.0 | 27242601 |
| ECLASS-15.0 | 27242601 |

UNSPSC

| | |
|-------------|----------|
| UNSPSC 21.0 | 32151600 |
|-------------|----------|

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Environmental product compliance

EU RoHS

| | |
|---|----------------------------------|
| Fulfills EU RoHS substance requirements | Yes |
| Exemption | 6(a), 6(a)-I, 6(c), 7(a), 7(c)-I |

China RoHS

| | |
|--|--|
| Environment friendly use period (EFUP) | EFUP-E |
| | No hazardous substances above the limits |

EU REACH SVHC

| | |
|-------------------------------------|----------------------|
| REACH candidate substance (CAS No.) | Lead(CAS: 7439-92-1) |
|-------------------------------------|----------------------|

EF3.1 Climate Change

| | |
|---------|---------------|
| CO2e kg | 11.88 kg CO2e |
|---------|---------------|

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