

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

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

Programming data

Length code (hex)	4
ID code (dec.)	126
Length code (dec)	4
Input address area	8 Byte
Output address area	0 Byte
Parameter channel (PCP)	0 Byte
Register length (bus)	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
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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)
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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)
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EF3.1 Climate Change

CO2e kg	11.88 kg CO2e
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