

Data sheet

SM 031 - Analog input (031-1BB10)

Technical data

Order no.	031-1BB10
Type	SM 031 - Analog input
Module ID	0411 1543
General information	
Note	-
Features	2x AI 12 Bit Current 0(4)...20 mA 2 wire Potential separated per channel
Current consumption/power loss	
Current consumption from backplane bus	50 mA
Power loss	0.7 W
Technical data analog inputs	
Number of inputs	2
Cable length, shielded	200 m
Rated load voltage	DC 24 V
Current consumption from load voltage L+ (without load)	20 mA
Voltage inputs	-
Min. input resistance (voltage range)	-
Input voltage ranges	-
Operational limit of voltage ranges	-
Operational limit of voltage ranges with SFU	-
Basic error limit voltage ranges	-
Basic error limit voltage ranges with SFU	-
Destruction limit voltage	-
Current inputs	yes
Max. input resistance (current range)	60 Ohm
Input current ranges	+4 mA ... +20 mA 0 mA ... +20 mA
Operational limit of current ranges	+/-0.5%
Operational limit of current ranges with SFU	-
Basic error limit current ranges	+/-0.3%
Radical error limit current ranges with SFU	-
Destruction limit current inputs (voltage)	max. 24V
Destruction limit current inputs (electrical current)	max. 40mA
Resistance inputs	-
Resistance ranges	-
Operational limit of resistor ranges	-
Operational limit of resistor ranges with SFU	-
Basic error limit	-
Basic error limit with SFU	-
Destruction limit resistance inputs	-
Resistance thermometer inputs	-
Resistance thermometer ranges	-

Operational limit of resistance thermometer ranges	-
Operational limit of resistance thermometer ranges with SFU	-
Basic error limit thermoresistor ranges	-
Basic error limit thermoresistor ranges with SFU	-
Destruction limit resistance thermometer inputs	-
Thermocouple inputs	-
Thermocouple ranges	-
Operational limit of thermocouple ranges	-
Operational limit of thermocouple ranges with SFU	-
Basic error limit thermocouple ranges	-
Basic error limit thermocouple ranges with SFU	-
Destruction limit thermocouple inputs	-
Programmable temperature compensation	-
External temperature compensation	-
Internal temperature compensation	-
Temperature error internal compensation	-
Technical unit of temperature measurement	-
Resolution in bit	12
Measurement principle	successive approximation
Basic conversion time	1.15 ms all channels
Noise suppression for frequency	>80dB (UCM<20V)

Status information, alarms, diagnostics

Status display	yes
Interrupts	yes, parameterizable
Process alarm	yes, parameterizable
Diagnostic interrupt	yes, parameterizable
Diagnostic functions	yes
Diagnostics information read-out	possible
Module state	green LED
Module error display	red LED
Channel error display	red LED per channel

Isolation

Between channels	yes
Between channels of groups to	1
Between channels and backplane bus	yes
Between channels and power supply	yes
Max. potential difference between circuits	DC 75 V/ AC 50 V
Max. potential difference between inputs (Ucm)	DC 75 V/ AC 50 V
Max. potential difference between Mana and Mintern (Uiso)	-
Max. potential difference between inputs and Mana (Ucm)	DC 75 V/ AC 50 V
Max. potential difference between inputs and Mintern (Uiso)	DC 75 V/ AC 50 V
Max. potential difference between Mintern and outputs	-
Insulation tested with	DC 500 V

Technical data encoder supply

Number of outputs	2
Output voltage (typ)	+24 V (-1.5 V)
Output voltage (rated value)	35 mA
Short-circuit protection	yes, electronic

Binding of potential corresponding analog input

Datasizes

Input bytes	4
Output bytes	0
Parameter bytes	20
Diagnostic bytes	20

Housing

Material	PPE / PPE GF10
Mounting	Profile rail 35 mm

Mechanical data

Dimensions (WxHxD)	12.9 mm x 109 mm x 76.5 mm
Net weight	65 g
Weight including accessories	65 g
Gross weight	79 g

Environmental conditions

Operating temperature	0 °C to 60 °C
Storage temperature	-25 °C to 70 °C

Certifications

UL certification	yes
KC certification	yes