

Data sheet SM 031 - Analog input (031-1BB10)

Technical data

Order no.	031-1BB10
Туре	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 Basic error limit thermocouple ranges with SFU	
Destruction limit thermocouple inputs	
Programmable temperature compensation	
External temperature compensation	-
Internal temperature compensation	
Temperature error internal compensation	-
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Technical unit of temperature measurement	12
Resolution in bit	
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