

Data sheet

SM 031 - Analog input (031-1BD40)

Technical data

Order no.	031-1BD40
Туре	SM 031 - Analog input
Module ID	0405 15C4
General information	
Note	
Features	4x AI 12 Bit Current 0(4)20 mA
Current consumption/power loss	
Current consumption from backplane bus	75 mA
Power loss	0.7 W
Technical data analog inputs	
Number of inputs	4
Cable length, shielded	200 m
Rated voltage power section supply	DC 24 V
Current consumption from power section supply (without load)	15 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)	110 Ohm
Input current ranges	0 mA +20 mA +4 mA +20 mA
Operational limit of current ranges	+/-0.3% +/-0.5%
Operational limit of current ranges with SFU	-
Basic error limit current ranges	+/-0.2% +/-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 treiminesistor ranges with 370	-
	-
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	4 ms all channels
Noise suppression for frequency	>50dB at 50Hz (UCM<2V)
Status information, alarms, diagnostics	
Status display	yes
Interrupts	no
Process alarm	no
Diagnostic interrupt	no
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	
Between channels of groups to	
	-
Between channels and backplane bus	- Ves
Between channels and backplane bus Between channels and power supply	yes ves
Between channels and power supply	yes yes
Between channels and power supply Max. potential difference between circuits	yes
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Datasizes	
Input bytes	8
Output bytes	0
Parameter bytes	8
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	60 g
Weight including accessories	60 g
Gross weight	75 g
Environmental conditions	
Operating temperature	0 °C to 60 °C
Storage temperature	-25 °C to 70 °C
Certifications	
UL certification	yes
KC certification	yes
UKCA certification	yes
ChinaRoHS certification	yes