


Data sheet

SM 031 (031-1BD40)

Technical data

Order no.	031-1BD40
Type	SM 031
Module ID	0405 15C4
General information	
Note	-
Features	4 inputs 12Bit Current 0(4)...20 mA
Current consumption/power loss	
Current consumption from backplane bus	70 mA
Power loss	0.7 W
Technical data analog inputs	
Number of inputs	4
Cable length, shielded	200 m
Rated load voltage	DC 24 V
Current consumption from load voltage L+ (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 current	-
Current inputs	
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)	-
Destruction limit current inputs (electrical current)	-
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	-
Operational limit of resistance thermometer 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 thermoelement ranges	-
Basic error limit thermoelement ranges with SFU	-
Destruction limit thermocouple inputs	-
Programmable temperature compensation	-
External temperature compensation	-
Internal temperature compensation	-
Internal temperature 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	✓
Between channels and power supply	✓
Max. potential difference between circuits	-
Max. potential difference between inputs (Ucm)	DC 2 V
Max. potential difference between Mana and Mintern (Uiso)	-
Max. potential difference between inputs and Mana (Ucm)	-
Max. potential difference between inputs and Mintern (Uiso)	DC 75 V/ AC 60 V
Max. potential difference between Mintern and outputs	-
Insulation tested with	DC 500 V

Datasizes

Input bytes	8
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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
Weight	60 g

Environmental conditions

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

Certifications

UL508 certification	yes
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