YASKAWA

Data sheet
SM 031 - Analog input (031-1BD80)

Technical data

Order no.	031-1BD80
Type	SM 031 - Analog input
Module ID	0406 1544
General information	
Note	-
Features	4x AI 16 Bit Resistance 0…3000 Ohm Resistance measurement with 2-, 3- and 4-wires Resistance temperature transmitter Pt100, Pt1000, NI100 und NI1000
Current consumption/power loss	
Current consumption from backplane bus	85 mA
Power loss	1 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)	30 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	-
Max. input resistance (current range)	-
Input current ranges	-
Operational limit of current ranges	-
Operational limit of current ranges with SFU	-
Basic error limit current ranges	-
Radical error limit current ranges with SFU	-
Destruction limit current inputs (voltage)	-
Destruction limit current inputs (electrical current)	-
Resistance inputs	yes
Resistance ranges	0 ... 60 Ohm 0 ... 600 Ohm 0 ... 3000 Ohm
Operational limit of resistor ranges	+/- 0.4 %
Operational limit of resistor ranges with SFU	+/- 0.2 %
Basic error limit	+/- 0.2 %
Basic error limit with SFU	+/- 0.1 %
Destruction limit resistance inputs	max. 24V
Resistance thermometer inputs	yes

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Resistance thermometer ranges	Pt100 Pt1000 Ni100 Ni120 Ni1000
Operational limit of resistance thermometer ranges	+/- 0.4 %
Operational limit of resistance thermometer ranges with SFU	+/- 0.2 %
Basic error limit thermoresistor ranges	+/- 0.2 %
Basic error limit thermoresistor ranges with SFU	+/- 0.1 %
Destruction limit resistance thermometer inputs	max. 24V
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	°C, °F, K
Resolution in bit	16
Measurement principle	Sigma-Delta
Basic conversion time	4.2...324.1 ms (50 Hz) 3.8...270.5 ms (60 Hz) per channel
Noise suppression for frequency	>80dB at 50Hz (UCM<6V)
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	-
Between channels of groups to	-
Between channels and backplane bus	yes
Between channels and power supply	-
Max. potential difference between circuits	-
Max. potential difference between inputs (Ucm)	DC 6 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 50 V
Max. potential difference between Mintern and outputs	-
Insulation tested with	DC 500 V
Technical data encoder supply	
Number of outputs	-

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Output voltage (typ)	-
Output current (rated value)	-
Short-circuit protection	-
Binding of potential	-
Datasizes	
Input bytes	8
Output bytes	0
Parameter bytes	34
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	61 g
Weight including accessories	61 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

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