

Data sheet

SM 031 (031-1BD40)

Technical data

Type	Order no.	031-1BD40
Seneral information Note -	Туре	SM 031
Note	Module ID	0405 15C4
Features	General information	
12 Bit Current (c4)20 mA	Note	-
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 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 with SFU - Basic error limit voltage ranges with SFU - Destruction limit soft search and 44 mA - 420 mA + 44 mA - 420 mA	Features	12 Bit
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 with SFU - Basic error limit voltage ranges with SFU - Destruction limit voltage ranges with SFU - Current inputs yes Max. input resistance (current range) 110 Ohm Input current ranges 0 0 mA +20 mA +4 mA +20	Current consumption/power loss	
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 with SFU Destruction limit voltage ranges with SFU Under the provided of the	Current consumption from backplane bus	75 mA
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	Power loss	0.7 W
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 with SFU - Basic error limit voltage ranges with SFU - Current inputs yes Max. input resistance (current range) 110 Ohm Input current ranges 0 mA +20 mA +4 mA +20 mA +4 mA +20 mA Operational limit of current ranges with SFU - Destructional limit current ranges with SFU - Basic error limit current inputs (voltage) max. 24V Destruction limit current inputs (electrical current) max. 40mA Resistance ranges - Operational limit of resistor ranges with SFU - Resistance ranges - Operational limit of resistor ranges with SFU - Basic error limit - Basic error limit with SFU - Basic error limit with SFU - Basic error limit with SFU - Basi	Technical data analog inputs	
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Operational limit of voltage ranges - Operational limit of voltage ranges with SFU - Basic error limit voltage ranges with SFU - Destruction limit voltage ranges with SFU - Destruction limit voltage ranges with SFU - Current inputs yes Max. input resistance (current range) 110 Ohm Input current ranges 0 or mA +20 mA +4 mA +20 mA 44 mA +20 mA Operational limit of current ranges +/-0.3% +/-0.5% Operational limit of current ranges with SFU - Basic error limit current ranges with SFU - Destruction limit current inputs (voltage) max. 24V Destruction limit current inputs (electrical current) max. 40mA Resistance inputs - Operational limit of resistor ranges with SFU - Destruction limit current inputs (resistor ranges - Operational limit of resistor ranges with SFU - Basic error limit of resistor ranges with SFU - Destruction limit current inputs (electrical current) max. 40mA Resistance inputs - Operational limit of resistor ranges with SFU - Basic error limit - Basic error limit with SFU - Destruction limit tresistance inputs - Destruction limit tresistance inputs - Destruction limit with SFU - Destruction limit tresistance inputs - Destruction limit resistance input	Min. input resistance (voltage range)	-
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Input current ranges 0 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 - Operational limit of resistor ranges - Operational limit of resistor ranges with SFU - Basic error limit - Basic error limit - Basic error limit with SFU - Destruction limit resistance inputs - - Operational limit of resistor ranges with SFU - Basic error limit with SFU - Destruction limit resistance inputs -	Current inputs	yes
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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 Destruction limit resistance inputs	Input current ranges	
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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 -	Basic error limit current ranges	+/-0.2% +/-0.3%
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 -	Radical error limit current ranges with SFU	-
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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 -	Destruction limit current inputs (electrical current)	max. 40mA
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 inputs	-
Operational limit of resistor ranges with SFU - Basic error limit - Basic error limit with SFU - Destruction limit resistance inputs -	Resistance ranges	-
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Basic error limit with SFU - Destruction limit resistance inputs -	Operational limit of resistor ranges with SFU	-
Destruction limit resistance inputs -	Basic error limit	
	Basic error limit with SFU	-
Resistance thermometer inputs -	Destruction limit resistance inputs	
	Resistance thermometer inputs	-
Resistance thermometer ranges -	Resistance thermometer ranges	-

YASKAWA VIPA CONTROLS

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 thermoelement ranges	-
Basic error limit thermoelement 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	yes
Between channels and power supply	yes
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 50 V
Max. potential difference between Mintern and outputs	-
Insulation tested with	DC 500 V
Technical data encoder supply	
Number of outputs	-
Output voltage (typ)	-
Output voltage (rated value)	-
Short-circuit protection	-



Binding of potential	-	
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	