YASKAWA

Data sheet
SM 234 (234-1BD50)

Technical data

Order no.	234-1BD50
Type	SM 234
General information	
Note	-
Features	2x AI 2x AO 12 Bit Voltage +/- 10 V, 1…5 V, 0…10 V Current +/- 20 mA, 0/4…20 mA Parameterizable
Current consumption/power loss	
Current consumption from backplane bus	100 mA
Power loss	2.9 W
Technical data analog inputs	
Number of inputs	2
Cable length, shielded	200 m
Rated load voltage	DC 24 V
Reverse polarity protection of rated load voltage	yes
Current consumption from load voltage L+ (without load)	70 mA
Voltage inputs	yes
Min. input resistance (voltage range)	100 kOhm
Input voltage ranges	+1 V ... +5 V 0 V ... +10 V -10 V ... +10 V
Operational limit of voltage ranges	-
Operational limit of voltage ranges with SFU	-
Basic error limit voltage ranges	+/-0.2% ... +/-0.6%
Basic error limit voltage ranges with SFU	-
Destruction limit voltage	max. 15V
Current inputs	yes
Max. input resistance (current range)	50 Ohm
Input current ranges	+4 mA ... +20 mA 0 mA ... +20 mA -20 mA ... +20 mA
Operational limit of current ranges	-
Operational limit of current ranges with SFU	-
Basic error limit current ranges	+/-0.3% ... +/-0.8%
Radical error limit current ranges with SFU	-
Destruction limit current inputs (electrical current)	max. 30mA
Destruction limit current inputs (voltage)	max. 1.5V
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	-

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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 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	16
Measurement principle	Sigma-Delta
Basic conversion time	6.75 ms - 268 ms
Noise suppression for frequency	50 Hz and 60 Hz
Initial data size	4 Byte
Technical data analog outputs	
Number of outputs	2
Cable length, shielded	200 m
Rated load voltage	DC 24 V
Reverse polarity protection of rated load voltage	yes
Current consumption from load voltage L+ (without load)	70 mA
Voltage output short-circuit protection	yes
Voltage outputs	yes
Min. load resistance (voltage range)	1 kOhm
Max. capacitive load (current range)	1 µF
Max. inductive load (current range)	30 mA
Output voltage ranges	-10 V ... +10 V +1 V ... +5 V 0 V ... +10 V
Operational limit of voltage ranges	-
Basic error limit voltage ranges	+/-0.2% ... +/-0.6%
Destruction limit against external applied voltage	max. 15V
Current outputs	yes
Max. in load resistance (current range)	500 Ohm
Max. inductive load (current range)	10 mH
Typ. open circuit voltage current output	14 V
Output current ranges	-20 mA ... +20 mA +4 mA ... +20 mA 0 mA ... +20 mA
Operational limit of current ranges	-
Basic error limit current ranges	+/-0.3% ... +/-0.8%

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Destruction limit against external applied voltage	max. 15V
Settling time for ohmic load	0.05 ms
Settling time for capacitive load	0.5 ms
Settling time for inductive load	0.1 ms
Resolution in bit	12
Conversion time	2.5 ms/all channels
Substitute value can be applied	yes
Output data size	4 Byte
Status information, alarms, diagnostics	
Status display	none
Interrupts	yes
Process alarm	no
Diagnostic interrupt	yes, parameterizable
Diagnostic functions	yes
Diagnostics information read-out	possible
Supply voltage display	green LED
Group error display	red SF LED
Channel error display	none
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)	-
Max. potential difference between Mana and Mintern (Uiso)	DC 75 V/ AC 50 V
Max. potential difference between inputs and Mana (Ucm)	-
Max. potential difference between inputs and Mintern (Uiso)	-
Max. potential difference between Mintern and outputs	-
Insulation tested with	DC 500 V
Datasizes	
Input bytes	4
Output bytes	4
Parameter bytes	14
Diagnostic bytes	12
Housing	
Material	PPE / PA 6.6
Mounting	Profile rail 35 mm
Mechanical data	
Dimensions (WxHxD)	25.4 mm x 76 mm x 88 mm
Net weight	110 g
Weight including accessories	-
Gross weight	-
Environmental conditions	
Operating temperature	0 °C to 60 °C
Storage temperature	-25 °C to 70 °C
Certifications	
UL certification	yes

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