YASKAWA

Data sheet
SM 231 (231-1BF00)

Technical data

Order no.	231-1BF00
Type	SM 231
General information	
Note	-
Features	8x AI 16 Bit (2-Leiter) 4x 16 Bit (4-Leiter) Voltage 0...60 mV Resistance thermometer, thermocouple Parameterizable
Current consumption/power loss	
Current consumption from backplane bus	280 mA
Power loss	1.4 W
Technical data analog inputs	
Number of inputs	8
Cable length, shielded	200 m
Rated load voltage	-
Current consumption from load voltage L+ (without load)	-
Voltage inputs	yes
Min. input resistance (voltage range)	2 MOhm
Input voltage ranges	0 mV ... +60 mV
Operational limit of voltage ranges	-
Operational limit of voltage ranges with SFU	-
Basic error limit voltage ranges	+/-0.1%
Basic error limit voltage ranges with SFU	-
Destruction limit voltage	max. 15V
Current inputs	-
Max. input resistance (current range)	-
Input current ranges	-
Operational limit of current ranges	-
Operational limit of current ranges with SFU	-
Grundfehlergrenze Strombereiche	-
Radical error limit current ranges with SFU	-
Destruction limit current inputs (electrical current)	-
Destruction limit current inputs (voltage)	-
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	yes
Resistance thermometer ranges	Pt100
Operational limit of resistance thermometer ranges	-

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Operational limit of resistance thermometer ranges with SFU	-
Basic error limit thermoresistor ranges	±0.15% (2-wire) ±0.15% (4-wire)
Basic error limit thermoresistor ranges with SFU	-
Destruction limit resistance thermometer inputs	max. 15V
Thermocouple inputs	yes
Thermocouple ranges	type J type K type T
Operational limit of thermocouple ranges	-
Operational limit of thermocouple ranges with SFU	-
Basic error limit thermocouple ranges	±0.1% (Compensation external) ±1.0% (internal)
Basic error limit thermocouple ranges with SFU	-
Destruction limit thermocouple inputs	max. 15V
Programmable temperature compensation	yes
External temperature compensation	yes
Internal temperature compensation	yes
Temperature error internal compensation	4 K
Technical unit of temperature measurement	°C, °F
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	16 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	none
Group error display	red SF 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 15 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 15 V
Max. potential difference between Mintern and outputs	-
Insulation tested with	DC 500 V
Datasizes	
Input bytes	16
Output bytes	0
Parameter bytes	12

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	90 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
KC certification	-