YASKAWA

Data sheet
SM 231 (231-1FD00)

Technical data

Order no.	231-1FD00
Type	SM 231
General information	
Note	-
Features	4x fast AI 16 Bit Voltage +/- 10 V, +/- 4 V, +/- 400 mV Current +/- 20 mA, 4…20 mA Parameterizable 0,8 ms cycle time
Current consumption/power loss	
Current consumption from backplane bus	300 mA
Power loss	1.5 W
Technical data analog inputs	
Number of inputs	4
Cable length, shielded	200 m
Rated load voltage	-
Current consumption from load voltage L+ (without load)	-
Voltage inputs	yes
Min. input resistance (voltage range)	10 MOhm
Input voltage ranges	-400 mV ... +400 mV -4 V ... +4 V -10 V ... +10 V
Operational limit of voltage ranges	+/-0.2% ... +/-0.4%
Operational limit of voltage ranges with SFU	-
Basic error limit voltage ranges	+/-0.1% ... +/-0.3%
Basic error limit voltage ranges with SFU	-
Destruction limit voltage	max. 15V
Current inputs	yes
Max. input resistance (current range)	57 Ohm
Input current ranges	+4 mA ... +20 mA -20 mA ... +20 mA
Operational limit of current ranges	+/-0.2% ... +/-0.5%
Operational limit of current ranges with SFU	-
Grundfehlergrenze Strombereiche	+/-0.1% ... +/-0.3%
Radical error limit current ranges with SFU	-
Destruction limit current inputs (electrical current)	max. 50mA
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	-

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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 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	16
Measurement principle	successive approximation
Basic conversion time	0.2 ms/channel
Noise suppression for frequency	-
Initial data size	8 Byte
Status information, alarms, diagnostics	
Status display	none
Interrupts	yes
Process alarm	yes, parameterizable
Diagnostic interrupt	yes, parameterizable
Diagnostic functions	yes
Diagnostics information read-out	possible
Supply voltage display	none
Group error display	none
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 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
Datasizes	
Input bytes	8

Output bytes	0
Parameter bytes	34
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	-