

## Data sheet

### SM 231 (231-1BF00)

#### Technical data

<b>Order no.</b>	<b>231-1BF00</b>
Type	SM 231
<b>General information</b>	
Note	-
Features	8 inputs Configurable Voltage 0..60 mV Resistance thermometer, thermocouple
<b>Current consumption/power loss</b>	
Current consumption from backplane bus	280 mA
Power loss	1.4 W
<b>Technical data analog inputs</b>	
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	-
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 thermoelement ranges	±0.1% (Compensation external) ±1.0% (internal)
Basic error limit thermoelement ranges with SFU	-
Destruction limit thermocouple inputs	max. 15V
Programmable temperature compensation	yes
External temperature compensation	yes
Internal temperature compensation	yes
Internal temperature compensation	4 K
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	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

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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
Weight	90 g

### Environmental conditions

Operating temperature	0 °C to 60 °C
Storage temperature	-25 °C to 70 °C

### Certifications

UL certification	yes
KC certification	-