




## Data sheet

### SM 331 (331-1KF01)

#### Technical data

<b>Order no.</b>	<b>331-1KF01</b>
Type	SM 331
<b>General information</b>	
Note	-
Features	8 inputs 13 bit Voltage, current Resistance Resistance thermometer
SPEED-Bus	-
<b>Current consumption/power loss</b>	
Current consumption from backplane bus	255 mA
Power loss	1.3 W
<b>Technical data analog inputs</b>	
Number of inputs	8
Cable length, shielded	50 m
Rated load voltage	-
Current consumption from load voltage L+ (without load)	-
Voltage inputs	
Min. input resistance (voltage range)	100 kOhm
Input voltage ranges	-50 mV ... +50 mV -500 mV ... +500 mV -1 V ... +1 V -5 V ... +5 V 0 V ... +10 V -10 V ... +10 V +1 V ... +5 V
Operational limit of voltage ranges	+/-0.5% ... +/-0.6%
Operational limit of voltage ranges with SFU	-
Basic error limit voltage ranges	+/-0.3% ... +/-0.4%
Basic error limit voltage ranges with SFU	-
Destruction limit current	-
Current inputs	
Max. input resistance (current range)	100 Ohm
Input current ranges	-20 mA ... +20 mA 0 mA ... +20 mA +4 mA ... +20 mA
Operational limit of current ranges	+/-0.5%
Operational limit of current ranges with SFU	-
Radical error limit current ranges with SFU	+/-0.3%
Radical error limit current ranges with SFU	-
Destruction limit current inputs (electrical current)	-
Destruction limit current inputs (voltage)	-
Resistance inputs	
Resistance ranges	0 ... 600 Ohm 0 ... 6000 Ohm

Operational limit of resistor ranges	+/-0.5%
Operational limit of resistor ranges with SFU	-
Basic error limit	+/-0.3%
Basic error limit with SFU	-
Destruction limit resistance inputs	-
Resistance thermometer inputs	✓
Resistance thermometer ranges	Pt100 Ni100 Ni1000
Operational limit of resistance thermometer ranges	+/-1K ... +/-1.2K
Operational limit of resistance thermometer ranges with SFU	-
Basic error limit thermoresistor ranges	+/-0.8K
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	-
Internal temperature compensation	-
Technical unit of temperature measurement	-
Resolution in bit	13
Measurement principle	Sigma-Delta
Basic conversion time	61 ms/51 ms / channel
Noise suppression for frequency	50 Hz/60 Hz
Initial data size	16 Byte

### Status information, alarms, diagnostics

Status display	none
Interrupts	no
Process alarm	no
Diagnostic interrupt	no
Diagnostic functions	no
Diagnostics information read-out	none
Supply voltage display	none
Group error display	none
Channel error display	none

### Isolation

Between channels	-
Between channels of groups to	-
Between channels and backplane bus	✓
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 60 V
Max. potential difference between Mintern and outputs	-
Insulation tested with	DC 500 V

### Datasizes

Input bytes	16
Output bytes	0
Parameter bytes	21
Diagnostic bytes	0

### Housing

Material	PPE
Mounting	Rail System 300

### Mechanical data

Dimensions (WxHxD)	40 mm x 125 mm x 120 mm
Weight	260 g

### Environmental conditions

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

### Certifications

UL508 certification	yes
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