

Data sheet

SM 331 (331-7KB01)

Technical data

Order no.	331-7KB01
Туре	SM 331
General information	
Note	
Features	2x AI, in 1 group 12 Bit Voltage +/- 10 V, 15 V, 010 V Current +/- 20 mA, 0/420 mA Resistance thermometer, thermocouple For 20 pole front connectors
SPEED-Bus	-
Comment and a second for the asset land	
Current consumption/power loss	
Current consumption from backplane bus	95 mA
Power loss	3 W
Technical data analog inputs	
Number of inputs	2
Cable length, shielded	50 m
Rated load voltage	DC 24 V
Current consumption from load voltage L+ (without load)	100 mA
Voltage inputs	yes
Min. input resistance (voltage range)	100 kOhm
Input voltage ranges	-80 mV +80 mV -250 mV +250 mV -500 mV +500 mV -1 V +1 V -2.5 V +2.5 V -5 V +5 V +1 V +5 V -10 V +10 V
Operational limit of voltage ranges	+/-0.6% +/-1.0%
Operational limit of voltage ranges with SFU	-
Basic error limit voltage ranges	+/-0.4% +/-0.7%
Basic error limit voltage ranges with SFU	-
Destruction limit voltage	max. 15V
Current inputs	yes
Max. input resistance (current range)	85 Ohm
Input current ranges	-3.2 mA +3.2 mA -10 mA +10 mA -20 mA +20 mA 0 mA +20 mA +4 mA +20 mA
Operational limit of current ranges	+/-0.7%
Operational limit of current ranges with SFU	-
Grundfehlergrenze Strombereiche	+/-0.5%
Radical error limit current ranges with SFU	-
Destruction limit current inputs (electrical current)	max. 40mA
Destruction limit current inputs (voltage)	max. 15V
Resistance inputs	yes

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Resistance ranges	0 150 Ohm 0 300 Ohm 0 600 Ohm
Operational limit of resistor ranges	+/-0.7%
Operational limit of resistor ranges with SFU	-
Basic error limit	+/-0.5%
Basic error limit with SFU	-
Destruction limit resistance inputs	max. 15V
Resistance thermometer inputs	yes
Resistance thermometer ranges	Pt100 Ni100
Operational limit of resistance thermometer ranges	+/-0.7% +/-0.8%
Operational limit of resistance thermometer ranges with SFU	-
Basic error limit thermoresistor ranges	+/-0.5% +/-0.6%
Basic error limit thermoresistor ranges with SFU	-
Destruction limit resistance thermometer inputs	max. 15V
Thermocouple inputs	yes
Thermocouple ranges	type J type R type K type N type L type E type T type S type B type C
Operational limit of thermocouple ranges	+/-1.3% +/-2.0%
Operational limit of thermocouple ranges with SFU	-
Basic error limit thermoelement ranges	+/-0.7% +/-1.0%
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
Temperature error internal compensation	3 K
Technical unit of temperature measurement	°C
Resolution in bit	14
Measurement principle	Sigma-Delta
Basic conversion time	4 ms/18 ms/22 ms/68 ms / channel
Noise suppression for frequency	1300 Hz/190 Hz/150 Hz/50 Hz + 60 Hz
Initial data size	4 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	red SF LED
Channel error display	red LED per channel
Isolation	



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 (um) DC 3 V Max. potential difference between inputs and Mana (Ucm) DC 3 V Max. potential difference between inputs and Mana (Ucm) DC 3 V Max. potential difference between inputs and Mana (Ucm) DC 3 V Max. potential difference between inputs and Mana (Ucm) DC 3 V Max. potential difference between inputs and Mintern (Uiso)	Between channels	-
Between channels and power supply Max. potential difference between circuits	Between channels of groups to	-
Max. potential difference between circuits	Between channels and backplane bus	yes
Max. potential difference between inputs (Ucm) Max. potential difference between Mana and Mintern (Uiso) Max. potential difference between inputs and Mana (Ucm) 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 0 Parameter bytes 21 Diagnostic bytes 16 Housing Material PPE Mounting Rail System 300 Mechanical data Dimensions (WxHxD) At mrm x 125 mm x 120 mm Net weight including accessories Gross weight Environmental conditions Operating temperature 0 °C to 60 °C Storage temperature -25 °C to 70 °C Certifications UL certification VS AMAX. DC SOV	Between channels and power supply	yes
Max. potential difference between Mana and Mintern (Uiso) Max. potential difference between inputs and Mana (Uom) Max. potential difference between inputs and Mintern (Uiso) 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 0 Parameter bytes 21 Diagnostic bytes 16 Housing Material PPE Mounting Rail System 300 Mechanical data Dimensions (WxHxD) A mm x 125 mm x 120 mm Net weight 220 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	Max. potential difference between circuits	-
Max. potential difference between inputs and Mana (Ucm) Max. potential difference between Mintern and outputs Insulation tested with DC 500 V Datasizes Input bytes Output bytes Output bytes Output bytes 16 Housing Material PPE Mounting Material PPE Mounting Mechanical data Dimensions (WxHxD) Net weight Dimensions (WxHxD) Net weight Cross weight - Environmental conditions Operating temperature O °C to 60 °C Storage temperature Certifications UL certification Mintern (Uiso) - OC 3 V DC 3 V - OC 3 V - OC 500 V - OC 500 V A Median Substituting Additional Substit	Max. potential difference between inputs (Ucm)	DC 3 V
Max. potential difference between inputs and Mintern (Uiso)	Max. potential difference between Mana 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 Input bytes Quiput bytes Qui	Max. potential difference between inputs and Mana (Ucm)	DC 3 V
Insulation tested with DC 500 V Datasizes Input bytes	Max. potential difference between inputs and Mintern (Uiso)	-
Input bytes 4 Output bytes 0 Parameter bytes 21 Diagnostic bytes 16 Housing Material PPE Mounting Rail System 300 Mechanical data Dimensions (WxHxD) 40 mm x 125 mm x 120 mm Net weight 220 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	Max. potential difference between Mintern and outputs	-
Input bytes 4 Output bytes 0 Parameter bytes 21 Diagnostic bytes 16 Housing Material PPE Mounting Rail System 300 Mechanical data Dimensions (WxHxD) 40 mm x 125 mm x 120 mm Net weight 220 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	Insulation tested with	DC 500 V
Output bytes 0 Parameter bytes 21 Diagnostic bytes 16 Housing Material PPE Mounting Rail System 300 Mechanical data Dimensions (WxHxD) 40 mm x 125 mm x 120 mm Net weight 220 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	Datasizes	
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Diagnostic bytes 16 Housing Material PPE Mounting Rail System 300 Mechanical data Dimensions (WxHxD) 40 mm x 125 mm x 120 mm Net weight 220 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	Output bytes	0
Material PPE Mounting Rail System 300 Mechanical data Dimensions (WxHxD) 40 mm x 125 mm x 120 mm Net weight 220 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	Parameter bytes	21
Material PPE Mounting Rail System 300 Mechanical data Dimensions (WxHxD) 40 mm x 125 mm x 120 mm Net weight 220 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	Diagnostic bytes	16
Mechanical data Dimensions (WxHxD) 40 mm x 125 mm x 120 mm Net weight 220 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	Housing	
Mechanical data Dimensions (WxHxD) 40 mm x 125 mm x 120 mm Net weight 220 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	Material	PPE
Dimensions (WxHxD) 40 mm x 125 mm x 120 mm 220 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	Mounting	Rail System 300
Net weight Weight including accessories Gross weight Environmental conditions Operating temperature O °C to 60 °C Storage temperature -25 °C to 70 °C Certifications UL certification yes	Mechanical data	
Weight including accessories Gross weight Environmental conditions Operating temperature O °C to 60 °C Storage temperature -25 °C to 70 °C Certifications UL certification yes	Dimensions (WxHxD)	40 mm x 125 mm x 120 mm
Gross weight - Environmental conditions Operating temperature 0 °C to 60 °C Storage temperature -25 °C to 70 °C Certifications UL certification yes	Net weight	220 g
Environmental conditions Operating temperature 0 °C to 60 °C Storage temperature -25 °C to 70 °C Certifications UL certification yes	Weight including accessories	-
Operating temperature 0 °C to 60 °C Storage temperature -25 °C to 70 °C Certifications UL certification yes	Gross weight	-
Storage temperature -25 °C to 70 °C Certifications UL certification yes	Environmental conditions	
Certifications UL certification yes	Operating temperature	0 °C to 60 °C
UL certification yes	Storage temperature	-25 °C to 70 °C
7**	Certifications	
KC certification yes	UL certification	yes
	KC certification	yes