Data sheet
SM 331S - SPEED-Bus (331-7BF70)

Technical data

Order no.	331-7BF70
Type	SM 331S - SPEED-Bus
General information	
Note	-
Features	8 inputs Voltage ±10 V Oscilloscope-/FIFO-Function Interrupt parameterizable
SPEED-Bus	✔
Current consumption/power loss	
Current consumption from backplane bus	530 mA
Power loss	4 W
Technical data analog inputs	
Number of inputs	8
Cable length, shielded	50 m
Rated load voltage	DC 24 V
Current consumption from load voltage L+ (without load)	62 mA
Voltage inputs	✔
Min. input resistance (voltage range)	120 kOhm
Input voltage ranges	-10 V ... +10 V
Operational limit of voltage ranges	+/-0.6%
Operational limit of voltage ranges with SFU	-
Basic error limit voltage ranges	+/-0.4%
Basic error limit voltage ranges with SFU	-
Destruction limit current	-
Current inputs	-
Max. input resistance (current range)	-
Input current ranges	-
Operational limit of current ranges	-
Operational limit of current ranges with SFU	-
Radical error limit current ranges with SFU	-
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	-

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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	-
Internal temperature compensation	-
Technical unit of temperature measurement	-
Resolution in bit	16
Measurement principle	successive approximation
Basic conversion time	25 µs all channels
Noise suppression for frequency	-
Initial data size	16 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	none

Isolation

Between channels	✔
Between channels of groups to	1
Between channels and backplane bus	✔
Between channels and power supply	✔
Max. potential difference between circuits	-
Max. potential difference between inputs (Ucm)	DC 30 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	41
Diagnostic bytes	16

Housing

Material	PPE
Mounting	DIN rail SPEED-Bus

Mechanical data

Dimensions (WxHxD)	40 mm x 125 mm x 120 mm
Weight	235 g

Environmental conditions

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

Certifications

UL508 certification	yes