

Data sheet
SM 331 (331-1KF01)
Technical data

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| Order no. | 331-1KF01 |
| Type | SM 331 |
| General information | |
| Note | - |
| Features | 8x AI 13 Bit Voltage +/- 20 V, 1...5 V, 0/4...20 V Current +/- 20 mA, 0/4...20 mA Resistance thermometer, thermocouple For 40 pole front connector |
| SPEED-Bus | - |
| Current consumption/power loss | |
| Current consumption from backplane bus | 255 mA |
| Power loss | 1.3 W |
| Technical data analog inputs | |
| Number of inputs | 8 |
| Cable length, shielded | 50 m |
| Rated load voltage | - |
| Current consumption from load voltage L+ (without load) | - |
| Voltage inputs | yes |
| 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 voltage | max. 30V |
| Current inputs | yes |
| 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 | - |
| Grundfehlergrenze Strombereiche | +/-0.3% |
| 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 |
| Resistance ranges | 0 ... 600 Ohm 0 ... 6000 Ohm |
| Operational limit of resistor ranges | +/-0.5% |

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| Operational limit of resistor ranges with SFU | - |
| Basic error limit | +/-0.3% |
| Basic error limit with SFU | - |
| Destruction limit resistance inputs | max. 15V |
| Resistance thermometer inputs | yes |
| 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 | max. 15V |
| 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 | °C, °F, K |
| 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

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| 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

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| 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 Minern (Uiso) | - |

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| 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

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

Housing

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| Material | PPE |
| Mounting | Rail System 300 |

Mechanical data

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| Dimensions (WxHxD) | 40 mm x 125 mm x 120 mm |
| Net weight | 260 g |
| Weight including accessories | - |
| Gross weight | - |

Environmental conditions

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

Certifications

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| UL certification | yes |
| KC certification | yes |