## Data sheet
### SM 031 (031-1CD30)

### Technical data

| Order no. | 031-1CD30 |
|---|---|
| Type | SM 031 |
| Module ID | 040D 1544 |

### General information

| | |
|---|---|
| Note | - |
| Features | 4 inputs 16Bit<br>Voltage 0...10 V |

### Current consumption/power loss

| | |
|---|---|
| Current consumption from backplane bus | 60 mA |
| Power loss | 0.9 W |

### Technical data analog inputs

| | |
|---|---|
| Number of inputs | 4 |
| Cable length, shielded | 200 m |
| Rated load voltage | DC 24 V |
| Current consumption from load voltage L+ (without load) | 25 mA |
| Voltage inputs | yes |
| Min. input resistance (voltage range) | 200 kOhm |
| Input voltage ranges | 0 V ... +10 V |
| Operational limit of voltage ranges | +/-0.2% |
| 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. 30V |
| Current inputs | - |
| Max. input resistance (current range) | - |
| Input current ranges | - |
| Operational limit of current ranges | - |
| Operational limit of current ranges with SFU | - |
| Basic error limit current ranges | - |
| Radical error limit current ranges with SFU | - |
| Destruction limit current inputs (voltage) | - |
| Destruction limit current inputs (electrical current) | - |
| 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 | - |
| Resistance thermometer ranges | - |

| | |
|---|---|
| Operational limit of resistance thermometer ranges | - |
| Operational limit of resistance thermometer ranges with SFU | - |
| Basic error limit thermoresistor ranges | - |
| Grundfehlergrenze Widerstandsthermometerbereiche mit 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 | 480 µs all channels |
| Noise suppression for frequency | >80dB at 50Hz (UCM<9V) |

## Status information, alarms, diagnostics

| | |
|---|---|
| Status display | yes |
| Interrupts | yes, parameterizable |
| Process alarm | yes, parameterizable |
| Diagnostic interrupt | yes, parameterizable |
| Diagnostic functions | yes |
| Diagnostics information read-out | possible |
| Module state | green LED |
| Module error display | red 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 | yes |
| Max. potential difference between circuits | - |
| Max. potential difference between inputs (Ucm) | DC 9 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 50 V |
| Max. potential difference between Mintern and outputs | - |
| Insulation tested with | DC 500 V |

## Datasizes

| | |
|---|---|
| Input bytes | 8 |
| Output bytes | 0 |
| Parameter bytes | 32 |

| Diagnostic bytes | 20 |
| --- | --- |

## Housing

| Material | PPE / PPE GF10 |
| --- | --- |
| Mounting | Profile rail 35 mm |

## Mechanical data

| Dimensions (WxHxD) | 12.9 mm x 109 mm x 76.5 mm |
| --- | --- |
| Weight | 60 g |

## Environmental conditions

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

## Certifications

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