

**Data sheet**  
**SM 331S - SPEED-Bus (331-7AF70)**
**Technical data**

|   |  |
|---|--|
| <b>Order no.</b>  | <b>331-7AF70</b>   |
| Type  | SM 331S - SPEED-Bus  |
| <b>General information</b>                              |  |
| Note  | -  |
| Features  | 8x fast AI<br>16 Bit<br>Current +/- 20 mA<br>25µs...1000µs sampling rate (parameterizable)<br>Memory: 8192 value/channel<br>Oscilloscope-/FIFO-Function<br>Alarm parameterizable |
| SPEED-Bus   | yes  |
| <b>Current consumption/power loss</b>                   |  |
| Current consumption from backplane bus                  | 530 mA   |
| Power loss  | 4 W  |
| <b>Technical data analog inputs</b>                     |  |
| 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)                   | -  |
| Input voltage ranges                                    | -  |
| Operational limit of voltage ranges                     | -  |
| Operational limit of voltage ranges with SFU            | -  |
| Basic error limit voltage ranges                        | -  |
| Basic error limit voltage ranges with SFU               | -  |
| Destruction limit voltage                               | -  |
| Current inputs  | yes  |
| Max. input resistance (current range)                   | 100 Ohm  |
| Input current ranges                                    | -20 mA ... +20 mA  |
| Operational limit of current ranges                     | +/-0.6%  |
| Operational limit of current ranges with SFU            | -  |
| Grundfehlergrenze Strombereiche                         | +/-0.4%  |
| Radical error limit current ranges with SFU             | -  |
| Destruction limit current inputs (electrical current)   | max. 40mA  |
| Destruction limit current inputs (voltage)              | max. 30V   |
| 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                     | -                        |
| 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                           | -                        |
| Temperature error internal compensation                     | -                        |
| Technical unit of temperature measurement                   | -                        |
| Resolution in bit   | 16                       |
| Measurement principle                                       | successive approximation |
| Basic conversion time                                       | 25 $\mu$ s 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  | yes              |
| Between channels of groups to                               | 1                |
| Between channels and backplane bus                          | yes              |
| Between channels and power supply                           | yes              |
| 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 50 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 |
| Net weight                   | 210 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 |
| KC certification | -   |