

SIMATIC S7, ANALOG INPUT SM336 6 AI; 15 BIT; FAILSAFE  
ANALOG INPUTS FOR SIMATIC SAFETY, WITH HART  
SUPPORT, UP TO CATEGORY 4 (EN954-1)/ SIL3 (IEC61508)/PLE  
(ISO13849), 1 X 20 PIN,



| Supply voltage                                                        |                                    |
|-----------------------------------------------------------------------|------------------------------------|
| Rated value (DC)                                                      | 24 V                               |
| Reverse polarity protection                                           | Yes                                |
| Input current                                                         |                                    |
| From power supply L+, typ.                                            | 150 mA                             |
| from backplane bus 5 V DC, max.                                       | 90 mA                              |
| Power loss                                                            |                                    |
| Power loss, typ.                                                      | 4.5 W                              |
| Analog inputs                                                         |                                    |
| Number of analog inputs                                               | 6                                  |
| permissible input current for current input (destruction limit), max. | 40 mA                              |
| Input ranges                                                          |                                    |
| • Voltage                                                             | No                                 |
| • Current                                                             | Yes                                |
| Input ranges (rated values), currents                                 |                                    |
| • 0 to 20 mA                                                          | Yes                                |
| • Input resistance (0 to 20 mA)                                       | 150 Ω; typ. 150 ohms max. 175 ohms |

|                                                                                                                                                                                                                           |                                                                                      |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• 4 mA to 20 mA</li> <li>• Input resistance (4 mA to 20 mA)</li> </ul>                                                                                                             | Yes<br>150 Ω; typ. 150 ohms max. 175 ohms                                            |
| Cable length                                                                                                                                                                                                              |                                                                                      |
| <ul style="list-style-type: none"> <li>• shielded, max.</li> </ul>                                                                                                                                                        | 1 000 m                                                                              |
| Analog value generation for the inputs                                                                                                                                                                                    |                                                                                      |
| Integration and conversion time/resolution per channel                                                                                                                                                                    |                                                                                      |
| <ul style="list-style-type: none"> <li>• Resolution with overrange (bit including sign), max.</li> <li>• Integration time (ms)</li> <li>• Interference voltage suppression for interference frequency f1 in Hz</li> </ul> | 16 bit; 15 bit + sign<br>20 ms @ 50 Hz, 16.7 ms @ 60 Hz<br>$f=n \times (f1\pm0.5\%)$ |
| Encoder                                                                                                                                                                                                                   |                                                                                      |
| Connection of signal encoders                                                                                                                                                                                             |                                                                                      |
| <ul style="list-style-type: none"> <li>• for current measurement as 2-wire transducer</li> <li>• for current measurement as 4-wire transducer</li> </ul>                                                                  | Yes<br>Yes                                                                           |
| Errors/accuracies                                                                                                                                                                                                         |                                                                                      |
| Operational error limit in overall temperature range                                                                                                                                                                      |                                                                                      |
| <ul style="list-style-type: none"> <li>• Current, relative to input range, (+/-)</li> </ul>                                                                                                                               | 0.2 %; 40 µA                                                                         |
| Basic error limit (operational limit at 25 °C)                                                                                                                                                                            |                                                                                      |
| <ul style="list-style-type: none"> <li>• Current, relative to input range, (+/-)</li> </ul>                                                                                                                               | 0.1 %                                                                                |
| Interrupts/diagnostics/status information                                                                                                                                                                                 |                                                                                      |
| Diagnostic functions                                                                                                                                                                                                      | Yes                                                                                  |
| Alarms                                                                                                                                                                                                                    |                                                                                      |
| <ul style="list-style-type: none"> <li>• Diagnostic alarm</li> </ul>                                                                                                                                                      | Yes                                                                                  |
| Diagnostic messages                                                                                                                                                                                                       |                                                                                      |
| <ul style="list-style-type: none"> <li>• Diagnostic information readable</li> </ul>                                                                                                                                       | Yes                                                                                  |
| Diagnostics indication LED                                                                                                                                                                                                |                                                                                      |
| <ul style="list-style-type: none"> <li>• Fail-safe operation</li> <li>• Group error SF (red)</li> <li>• Encoder supply Vs (green)</li> </ul>                                                                              | Yes<br>Yes<br>No                                                                     |
| Potential separation                                                                                                                                                                                                      |                                                                                      |
| Potential separation analog inputs                                                                                                                                                                                        |                                                                                      |
| <ul style="list-style-type: none"> <li>• between the channels</li> <li>• between the channels and backplane bus</li> <li>• between the channels and the power supply of the electronics</li> </ul>                        | Yes<br>Yes<br>Yes                                                                    |
| Isolation                                                                                                                                                                                                                 |                                                                                      |
| Isolation tested with                                                                                                                                                                                                     | 370V for 1 min                                                                       |
| Standards, approvals, certificates                                                                                                                                                                                        |                                                                                      |
| Highest safety class achievable in safety mode                                                                                                                                                                            |                                                                                      |

- acc. to EN 954
- SIL acc. to IEC 61508

4  
SIL 3

#### Connection method

required front connector 20-pin

#### Dimensions

|        |        |
|--------|--------|
| Width  | 40 mm  |
| Height | 125 mm |
| Depth  | 120 mm |

#### Weights

Weight, approx. 350 g

**last modified:** 10/28/2016