



SIMATIC S7, Analog input SM 336, 6 AI; 15 bit; fail-safe analog inputs for SIMATIC Safety, with HART support, up to Category 4 (EN 954-1)/ SIL3 (IEC61508)/PLE (ISO13849), 1x 20-pole

Supply voltage	
Rated value (DC)	24 V
Reverse polarity protection	Yes
Load voltage L+	
• 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
• Thermocouple	No
• Resistance thermometer	No
• Resistance	No
Input ranges (rated values), currents	
• 0 to 20 mA	Yes
— Input resistance (0 to 20 mA)	150 Ω; typ. 150 ohms max. 175 ohms
• 4 mA to 20 mA	Yes
— Input resistance (4 mA to 20 mA)	150 Ω; typ. 150 ohms max. 175 ohms
Cable length	
• shielded, max.	1 000 m
Analog value generation for the inputs	
Integration and conversion time/resolution per channel	
• Resolution with overrange (bit including sign), max.	16 bit; 15 bit + sign
• Integration time (ms)	20 ms @ 50 Hz, 16.7 ms @ 60 Hz
• Interference voltage suppression for interference frequency $f_1$ in Hz	$f = n \times (f_1 \pm 0.5 \%)$
Encoder	
Connection of signal encoders	
• for current measurement as 2-wire transducer	Yes
• for current measurement as 4-wire transducer	Yes
Errors/accuracies	
Operational error limit in overall temperature range	

• Current, relative to input range, (+/-)	0.2 %; 40 µA
<b>Basic error limit (operational limit at 25 °C)</b>	
• Current, relative to input range, (+/-)	0.1 %
<b>Interrupts/diagnostics/status information</b>	
Diagnostics function	Yes
<b>Alarms</b>	
• Diagnostic alarm	Yes
<b>Diagnoses</b>	
• Diagnostic information readable	Yes
<b>Diagnostics indication LED</b>	
• Fail-safe operation	Yes
• Group error SF (red)	Yes
• Encoder supply Vs (green)	No
<b>Potential separation</b>	
<b>Potential separation analog inputs</b>	
• between the channels	Yes
• between the channels and backplane bus	Yes
• between the channels and the power supply of the electronics	Yes
<b>Isolation</b>	
Isolation tested with	370V for 1 min
<b>Standards, approvals, certificates</b>	
<b>Highest safety class achievable in safety mode</b>	
• acc. to EN 954	4
• Performance level according to ISO 13849-1	e
• SIL acc. to IEC 61508	SIL 3
<b>connection method</b>	
required front connector	20-pin
<b>Dimensions</b>	
Width	40 mm
Height	125 mm
Depth	120 mm
<b>Weights</b>	
Weight, approx.	350 g

**last modified:** 3/12/2024 