



SIMATIC S7-300, ANALOG INPUT SM 331, OPTICALLY ISOLATED, 8 AE; +/-5/10V, 1-5 V, +/-20MA, 0/4 TO 20MA, 16 BIT (55 MS), 1 COMMON POINT(50 V COM.), 1 X 40 PIN

Input current	
from backplane bus 5 V DC, max.	130 mA
Power loss	
Power loss, typ.	0.6 W
Analog inputs	
Number of analog inputs	8
permissible input voltage for voltage input (destruction limit), max.	50 V; Permanent
permissible input current for current input (destruction limit), max.	32 mA
Input ranges	
• Voltage	Yes
• Current	Yes
• Thermocouple	No
• Resistance thermometer	No
• Resistance	No

Input ranges (rated values), voltages	
• 0 to +10 V	No
• 1 to 5 V	Yes
• Input resistance (1 to 5 V)	2 M Ω
• 1 to 10 V	No
• -1 V to +1 V	No
• -10 V to +10 V	Yes
• Input resistance (-10 V to +10 V)	2 M Ω
• -2.5 V to +2.5 V	No
• -250 mV to +250 mV	No
• -5 V to +5 V	Yes
• Input resistance (-5 V to +5 V)	2 M Ω
• -50 mV to +50 mV	No
• -500 mV to +500 mV	No
• -80 mV to +80 mV	No
Input ranges (rated values), currents	
• 0 to 20 mA	Yes
• Input resistance (0 to 20 mA)	250 Ω
• -10 to +10 mA	No
• -20 to +20 mA	Yes
• Input resistance (-20 to +20 mA)	250 Ω
• -3.2 to +3.2 mA	No
• 4 to 20 mA	Yes
• Input resistance (4 to 20 mA)	250 Ω
Input ranges (rated values), thermocouples	
• Type B	No
• Type E	No
• Type J	No
• Type K	No
• Type L	No
• Type N	No
• Type R	No
• Type S	No
• Type T	No
• Type U	No
• Type TXK/TXK(L) acc. GOST	No
Input ranges (rated values), resistance thermometers	

• Cu 10	No
• Ni 100	No
• Ni 1000	No
• LG-Ni 1000	No
• Ni 120	No
• Ni 200	No
• Ni 500	No
• Pt 100	No
• Pt 1000	No
• Pt 200	No
• Pt 500	No
Input ranges (rated values), resistors	
• 0 to 150 Ohm	No
• 0 to 300 Ohm	No
• 0 to 600 Ohm	No
• 0 to 6000 Ohm	No
Cable length	
• Cable length, shielded, max.	200 m
Analog value generation	
Measurement principle	integrating
Integration and conversion time/resolution per channel	
• Resolution with overrange (bit including sign), max.	16 bit; Unipolar: 15/15/15/15 bits; bipolar: 15 bits + sign/15 bits + sign/15 bits + sign/15 bits + sign
• Integration time, parameterizable	Yes; 10/ 16.67/ 20/ 100 ms
• Interference voltage suppression for interference frequency f1 in Hz	400 / 60 / 50 / 10 Hz
Encoder	
Connection of signal encoders	
• for current measurement as 2-wire transducer	Yes; with external transmitter; possible with separate supply for transmitter
• for current measurement as 4-wire transducer	Yes
Errors/accuracies	
Operational error limit in overall temperature range	
• Voltage, relative to input area, (+/-)	0.1 %
• Current, relative to input area, (+/-)	0.3 %
Basic error limit (operational limit at 25 °C)	
• Voltage, relative to input area, (+/-)	0.05 %

• Current, relative to input area, (+/-)	0.05 %
Isochronous mode	
Isochronous mode (application synchronized up to terminal)	No
Interrupts/diagnostics/status information	
Alarms	
• Diagnostic alarm	Yes; Parameterizable
• Limit value alarm	Yes; Parameterizable, channels 0 and 2
Diagnostic messages	
• Diagnostic functions	Yes; Parameterizable
• Diagnostic information readable	Yes
• Diagnostics	Yes
Diagnostics indication LED	
• Group error SF (red)	Yes
Galvanic isolation	
Galvanic isolation analog inputs	
• between the channels	No
• between the channels, in groups of	2
• between the channels and the backplane bus	Yes
Isolation	
Isolation tested with	500 V DC
Connection method	
required front connector	40-pin
Dimensions	
Width	40 mm
Height	125 mm
Depth	120 mm
Weights	
Weight, approx.	272 g
last modified:	31.07.2014