



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
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Power losses

Power loss, typ.	0.6 W
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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 MΩ
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), thermoelements	
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) to 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 ohms	No
0 to 300 ohms	No
0 to 600 ohms	No
0 to 6000 ohms	No
Cable length	
Cable length, shielded, max.	200 m
Analog value creation	
Measurement principle	integrating
Integrations 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 limit in overall temperature range	
Voltage, relative to input area	+/- 0,1 % ; +/-0.7%
Current, relative to input area	+/- 0,3 % ; +/-0.9%
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 operation (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 checked 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
Status	Jan 23, 2014