



SIMATIC S7-300, ANALOG INPUT SM 331,
OPTICALLY ISOLATED, 8AI,
RESOLUTION 9/12/14 BITS,
U/I/THERMOCOUPLE/RESISTANCE INTERRUPT,
DIAGNOSTICS;
1X20PIN REMOVE/INSERT W. BACKPLANE BUS

Supply voltage	
Load voltage L+	
Rated value (DC)	24 V
Reverse polarity protection	Ja
Input current	
from load voltage L+ (without load), max.	200 mA
from backplane bus 5 V DC, max.	50 mA
Power loss	
Werkelijk vermogensverlies / typisch	1 W
Analog inputs	
Aantal analoge ingangen	8
Number of analog inputs for resistance measurement	4
permissible input voltage for voltage input (destruction limit), max.	20 V
permissible input current for current input (destruction limit), max.	40 mA
Input ranges	
Ingangsgrootte / aan de analoge ingang / spanningssignaal	Ja
Ingangsgrootte / aan de analoge ingang / stroomsignaal	Ja
Uitvoering van de sensor / aan de analoge ingang / wordt ondersteund / thermisch element	Ja

Uitvoering van de sensor / aan de analoge ingang / wordt ondersteund / sensor voor weerstandstemperatuur	Ja
Ingangsgrootte / aan de analoge ingang / signaal met veranderlijke weerstand	Ja
Input ranges (rated values), voltages	
Bereikingangsspanning / aan de analoge ingang / 0 V ... 10 V	Nee
1 to 5 V	Ja
Input resistance (1 to 5 V)	100 k Ω
1 to 10 V	Nee
-1 V to +1 V	Ja
Input resistance (-1 V to +1 V)	10 M Ω
Bereikingangsspanning / aan de analoge ingang / -10 V ... 10 V	Ja
Input resistance (-10 V to +10 V)	100 k Ω
-2.5 V to +2.5 V	Ja
Input resistance (-2.5 V to +2.5 V)	100 k Ω
-250 mV to +250 mV	Ja
Input resistance (-250 mV to +250 mV)	10 M Ω
-5 V to +5 V	Ja
Input resistance (-5 V to +5 V)	100 k Ω
-50 mV to +50 mV	Nee
-500 mV to +500 mV	Ja
Input resistance (-500 mV to +500 mV)	10 M Ω
-80 mV to +80 mV	Ja
Input resistance (-80 mV to +80 mV)	10 M Ω
Input ranges (rated values), currents	
Bereikingangsstroom / aan de analoge ingang / 0 mA ... 20 mA	Ja
Input resistance (0 to 20 mA)	25 Ω
-10 to +10 mA	Ja
Input resistance (-10 to +10 mA)	25 Ω
-20 to +20 mA	Ja
Input resistance (-20 to +20 mA)	25 Ω
-3.2 to +3.2 mA	Ja
Input resistance (-3.2 to +3.2 mA)	25 Ω
Bereikingangsstroom / aan de analoge ingang / 4 mA ... 20 mA	Ja
Input resistance (4 to 20 mA)	25 Ω
Input ranges (rated values), thermocouples	
Type B	Nee
Type E	Ja

Input resistance (Type E)	10 MΩ
Type J	Ja
Input resistance (type J)	10 MΩ
Type K	Ja
Input resistance (Type K)	10 MΩ
Type L	Ja
Input resistance (Type L)	10 MΩ
Type N	Ja
Input resistance (Type N)	10 MΩ
Type R	Nee
Type S	Nee
Type T	Nee
Type U	Nee
Type TXK/TXK(L) acc. GOST	Nee
Input ranges (rated values), resistance thermometers	
Cu 10	Nee
Ni 100	Ja
Input resistance (Ni 100)	10 MΩ
Ni 1000	Nee
LG-Ni 1000	Nee
Ni 120	Nee
Ni 200	Nee
Ni 500	Nee
Pt 100	Ja
Input resistance (Pt 100)	10 MΩ
Pt 1000	Nee
Pt 200	Nee
Pt 500	Nee
Input ranges (rated values), resistors	
0 to 150 Ohm	Ja
Input resistance (0 to 150 Ohm)	10 MΩ
0 to 300 Ohm	Ja
Input resistance (0 to 300 Ohm)	10 MΩ
0 to 600 Ohm	Ja
Input resistance (0 to 600 Ohm)	10 MΩ
0 to 6000 Ohm	Nee
Thermocouple (TC)	
Temperature compensation	
parameterizable	Ja

internal temperature compensation	Ja
external temperature compensation with compensations socket	Ja
Characteristic linearization	
parameterizable	Ja
Cable length	
Cable length, shielded, max.	200 m
Analog value generation	
Integration and conversion time/resolution per channel	
Resolution with overrange (bit including sign), max.	15 bit
Integration time, parameterizable	Ja
Encoder	
Connection of signal encoders	
for current measurement as 2-wire transducer	Ja
for current measurement as 4-wire transducer	Ja
for resistance measurement with two-wire connection	Ja
for resistance measurement with three-wire connection	Ja
for resistance measurement with four-wire connection	Ja
Errors/accuracies	
Operational error limit in overall temperature range	
Voltage, relative to input area, (+/-)	1 %
Current, relative to input area, (+/-)	0,7 %
Resistance, relative to input area, (+/-)	0,7 %
Resistance thermometer, relative to input area, (+/-)	0,7 %
Basic error limit (operational limit at 25 °C)	
Voltage, relative to input area, (+/-)	0,6 %
Current, relative to input area, (+/-)	0,5 %
Resistance, relative to input area, (+/-)	0,5 %
Resistance thermometer, relative to input area, (+/-)	0,6 %
Isochronous mode	
Isochronous mode (application synchronized up to terminal)	Nee
Interrupts/diagnostics/status information	
Alarms	
Diagnostic alarm	Ja
Limit value alarm	Ja
Diagnostic messages	
Productfunctie / diagnosefunctie	Ja
Diagnostic information readable	Ja

Diagnostics	Ja
Diagnostics indication LED	
Group error SF (red)	Ja
Galvanic isolation	
Galvanic isolation analog inputs	
between the channels	Nee
between the channels and the backplane bus	Ja
Dimensions	
Breedte	40 mm
Hoogte	125 mm
Diepte	120 mm
Weights	
Weight, approx.	250 g
Status	14-jul-2014