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Data sheet 6ES7331-7RD00-0AB0

SIMATIC S7, analog input SM 331, isolated, 4 AE; 0/4 to 20 mA, 1 x 20-pole, for signals from the hazardous area, diagnostics-capable, PTB tested



Figure similar

Supply voltage	
Load voltage L+	
• Rated value (DC)	24 V
• Reverse polarity protection	Yes
Input current	
from load voltage L+ (without load), max.	250 mA
from backplane bus 5 V DC, max.	60 mA
Output voltage	
Power supply to the transmitters	
• Rated value (DC)	13 V; at 22 mA
Power loss	
Power loss, typ.	3 W
Analog inputs	
Number of analog inputs	4
permissible input current for current input (destruction limit), max.	40 mA

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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)	50 Ω
• 4 mA to 20 mA	Yes
— Input resistance (4 mA to 20 mA)	50 Ω
Cable length	
• shielded, max.	200 m
Analog value generation for the inputs	
Integration and conversion time/resolution per channel	
• Resolution with overrange (bit including sign), max.	16 bit; 10 bit to 15 bit + sign
• Integration time, parameterizable	Yes; 2.5 to 100 ms
• Interference voltage suppression for interference frequency f1 in Hz	10 to 400 Hz
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, (+/-)	0.45 %
Basic error limit (operational limit at 25 °C)	
• Current, relative to input range, (+/-)	0.1 %
Interrupts/diagnostics/status information	
Diagnostics function	Yes
Diagnostic messages	
• Diagnostic information readable	Yes
• Overrange	Yes
• Wire-break in signal transmitter cable	Yes
• Short-circuit of the signal encoder cable	Yes
Diagnostics indication LED	
• Group error SF (red)	Yes
• Channel fault indicator F (red)	Yes
Ex(i) characteristics	

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Module for Ex(i) protection	Yes
Maximum values of input circuits (per channel)	
• Co (permissible external capacity), max.	90 nF
• Io (short-circuit current), max.	68.5 mA
• Lo (permissible external inductivity), max.	7.5 mH
• Po (power of load), max.	431 mW
• Ri, max.	50 Ω
• Uo (output no-load voltage), max.	25.2 V

Potential separation

Potential separation analog inputs	
• between the channels	Yes
• between the channels and backplane bus	Yes

Standards, approvals, certificates

Use in hazardous areas	
• Type of protection acc. to EN 50020 (CENELEC)	[EEx ib] IIC
• Type of protection acc. to FM	Class I, Division 2, Group A, B, C, D T4
• Test number PTB	Ex-96.D.2092X

Ambient conditions

Ambient temperature during operation	
• max.	60 °C

Connection method

required front connector	20-pin

Dimensions

Width	40 mm
Height	125 mm
Depth	120 mm

Weights

Weight, approx.	290 g

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