



Figure similar

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

Supply voltage	
Load voltage L+	
<ul style="list-style-type: none"> Rated value (DC) 	24 V
<ul style="list-style-type: none"> 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 / header	
supply voltage of the transmitters / header	
<ul style="list-style-type: none"> 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
Input ranges	
<ul style="list-style-type: none"> Voltage 	No
<ul style="list-style-type: none"> Current 	Yes
<ul style="list-style-type: none"> Thermocouple 	No
<ul style="list-style-type: none"> Resistance thermometer 	No
<ul style="list-style-type: none"> Resistance 	No
Input ranges (rated values), currents	
<ul style="list-style-type: none"> 0 to 20 mA — Input resistance (0 to 20 mA) 	Yes 50 Ω
<ul style="list-style-type: none"> 4 mA to 20 mA — Input resistance (4 mA to 20 mA) 	Yes 50 Ω
Cable length	
<ul style="list-style-type: none"> shielded, max. 	200 m
Analog value generation for the inputs	
Integration and conversion time/resolution per channel	
<ul style="list-style-type: none"> Resolution with overrange (bit including sign), max. 	16 bit; 10 bit to 15 bit + sign
<ul style="list-style-type: none"> Integration time, parameterizable 	Yes; 2.5 to 100 ms
<ul style="list-style-type: none"> Interference voltage suppression for interference frequency f1 in Hz 	10 to 400 Hz
Encoder	
Connection of signal encoders	
<ul style="list-style-type: none"> 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
Diagnoses	
• 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	
Module for Ex(i) protection	Yes
maximum values for connecting terminals for gas group IIC	
• U _o (no-load voltage), max.	25.2 V
• I _o (short-circuit current), max.	68.5 mA
• P _o (power output), max.	431 mW
• C _o (permissible external capacity), max.	90 nF
• L _o (permissible external inductivity), max.	7.5 mH
Potential separation	
Potential separation analog inputs	
• between the channels	Yes
• between the channels and backplane bus	Yes
Standards, approvals, certificates	
Use in hazardous areas	
• ATEX marking	ATEX II 3 G (2) GD Ex nA [ib Gb] [ib IIIC Db] IIC T4 Gc
• FM marking	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 / header	
required front connector	20-pin
Dimensions	
Width	40 mm
Height	125 mm
Depth	120 mm
Weights	
Weight, approx.	290 g
last modified:	5/31/2021 