



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"> <li>Rated value (DC)</li> </ul>	24 V
<ul style="list-style-type: none"> <li>Reverse polarity protection</li> </ul>	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	
<ul style="list-style-type: none"> <li>Rated value (DC)</li> </ul>	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"> <li>Voltage</li> </ul>	No
<ul style="list-style-type: none"> <li>Current</li> </ul>	Yes
<ul style="list-style-type: none"> <li>Thermocouple</li> </ul>	No
<ul style="list-style-type: none"> <li>Resistance thermometer</li> </ul>	No
<ul style="list-style-type: none"> <li>Resistance</li> </ul>	No
Input ranges (rated values), currents	
<ul style="list-style-type: none"> <li>0 to 20 mA</li> </ul>	Yes
— Input resistance (0 to 20 mA)	50 Ω
<ul style="list-style-type: none"> <li>4 mA to 20 mA</li> </ul>	Yes
— Input resistance (4 mA to 20 mA)	50 Ω
Cable length	
<ul style="list-style-type: none"> <li>shielded, max.</li> </ul>	200 m
Analog value generation for the inputs	
Integration and conversion time/resolution per channel	
<ul style="list-style-type: none"> <li>Resolution with overrange (bit including sign), max.</li> </ul>	16 bit; 10 bit to 15 bit + sign
<ul style="list-style-type: none"> <li>Integration time, parameterizable</li> </ul>	Yes; 2.5 to 100 ms
<ul style="list-style-type: none"> <li>Interference voltage suppression for interference frequency f1 in Hz</li> </ul>	10 to 400 Hz
Encoder	

<b>Connection of signal encoders</b>	
• for current measurement as 2-wire transducer	Yes
• for current measurement as 4-wire transducer	Yes
<b>Errors/accuracies</b>	
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 %
<b>Interrupts/diagnostics/status information</b>	
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
<b>Ex(i) characteristics</b>	
Module for Ex(i) protection	Yes
maximum values for connecting terminals for gas group IIC	
• U <sub>o</sub> (no-load voltage), max.	25.2 V
• I <sub>o</sub> (short-circuit current), max.	68.5 mA
• P <sub>o</sub> (power output), max.	431 mW
• C <sub>o</sub> (permissible external capacity), max.	90 nF
• L <sub>o</sub> (permissible external inductivity), max.	7.5 mH
<b>Potential separation</b>	
Potential separation analog inputs	
• between the channels	Yes
• between the channels and backplane bus	Yes
<b>Standards, approvals, certificates</b>	
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
<b>Ambient conditions</b>	
Ambient temperature during operation	
• max.	60 °C
<b>Connection method</b>	
required front connector	20-pin
<b>Dimensions</b>	
Width	40 mm
Height	125 mm
Depth	120 mm
<b>Weights</b>	
Weight, approx.	290 g
<b>last modified:</b>	5/31/2021 