



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 / header	
supply voltage of the transmitters / header	
• 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	
• 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	
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		
• Uo (no-load voltage), max.	25.2 V	
• Io (short-circuit current), max.	68.5 mA	
• Po (power output), max.	431 mW	
• Co (permissible external capacity), max.	90 nF	
• Lo (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		
required front connector	20-pin	
Dimensions		
Width	40 mm	
Height	125 mm	
Depth	120 mm	
Weights		
Weight, approx.	290 g	
Classifications		
	<b>Version</b>	<b>Classification</b>
eClass	14	27-24-22-01
eClass	12	27-24-22-01
eClass	9.1	27-24-22-01
eClass	9	27-24-22-01
eClass	8	27-24-22-01
eClass	7.1	27-24-22-01
eClass	6	27-24-22-01
ETIM	9	EC001420
ETIM	8	EC001420
ETIM	7	EC001420
IDEA	4	3562
UNSPSC	15	32-15-17-05

Approvals / Certificates

General Product Approval

[Manufacturer Declaration](#)



[Miscellaneous](#)



[Metrological Approval](#)

General Product Approval

For use in hazardous locations



[FM](#)



For use in hazardous locations

Marine / Shipping



[NK / Nippon Kaiji Kyokai](#)



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