

6ES7331-7TF00-0AB0

SM331, 8AI, 0/4-20mA HART

Technical data

SIMATIC DP, HART analog input SM 331, 8 AI, 0/4 - 20 mA HART, for ET200M with interface IM 153-2, 20-pole

Supply voltage

Load voltage L+	
• Rated value (DC)	24 V
• Reverse polarity protection	Yes

Input current

from load voltage L+ (without load), max.	20 mA
from backplane bus 5 V DC, max.	120 mA

Output voltage

Power supply to the transmitters	
• Rated value (DC)	24 V

Power loss

Power loss, typ.	1.5 W
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Analog inputs

Number of analog inputs	8
• For resistance measurement	0
permissible input current for current input (destruction limit), max.	40 mA

Input ranges

• Current	Yes
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Input ranges (rated values), currents

• 0 to 20 mA	Yes
• Input resistance (0 to 20 mA)	125 Ω
• -20 mA to +20 mA	Yes
• Input resistance (-20 mA to +20 mA)	125 Ω
• 4 mA to 20 mA	Yes
• Input resistance (4 mA to 20 mA)	125 Ω

Cable length

• shielded, max.	800 m
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Analog value generation for the inputs

Measurement principle	Sigma Delta
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Integration and conversion time/resolution per channel

• Resolution with overrange (bit including sign), max.	16 bit
• Integration time, parameterizable	Yes
• Integration time (ms)	20 ms at 50 Hz; 16.6 ms at 60 Hz; 100 ms at 100 Hz
• Interference voltage suppression for interference frequency f1 in Hz	10 / 50 / 60 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, (+/-)	0.15 %

Basic error limit (operational limit at 25 °C)

• Current, relative to input range, (+/-)	0.1 %
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Interrupts/diagnostics/status information

Diagnostics function	Yes
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Alarms

• Diagnostic alarm	Yes
• Limit value alarm	Yes

Diagnostic messages

• Diagnostic information readable	Yes
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Diagnostics indication LED

• Group error SF (red)	Yes
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Potential separation

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

Isolation

Isolation tested with	500
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Connection method

required front connector	20-pin
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Dimensions

Width	40 mm
Height	125 mm
Depth	117 mm

Weights

Weight, approx.	205 g
last modified:	08/15/2019

Last changes: 08/16/2019