



SIMATIC DP, HART ANALOG INPUT SM 331, 8 AI, 0/4 - 20MA HART, FOR ET200M WITH IM153-2, 1 X 20-POLE, FEATURES: FW UPDATE, HART SECONDARY VARIABLES, REDUNDANCY, LOCAL DIAGNOSTIC BUFFER WITH TIMESTAMP,

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.	20 mA
from backplane bus 5 V DC, max.	120 mA
Output voltage	
Power supply to the transmitters	
• present	Yes
• Rated value (DC)	24 V
• short-circuit proof	Yes
Power losses	
Power loss, typ.	1.5 W
Analog inputs	
Number of analog inputs	8
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)	240 Ω
• Input resistance (-20 mA to +20 mA)	240 Ω
• Input resistance (4 mA to 20 mA)	240 Ω
Cable length	
• shielded, max.	800 m

Analog value generation for the inputs	
Measurement principle	Sigma Delta
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@50 Hz/16.6 ms@60 Hz/100 ms@100 Hz
• Basic conversion time, including integration time (ms)	65ms@50Hz / 55ms@60Hz / 305ms@100Hz
• Interference voltage suppression for interference frequency f1 in Hz	60 / 50 / 10 Hz

Encoder	
Connection of signal encoders	
• for current measurement as 2-wire transducer	Yes
• for current measurement as 4-wire transducer	Yes

Errors/accuracies	
Linearity error (relative to input range), (+/-)	0.01 %
Temperature error (relative to input range), (+/-)	0.001 %/K
Crosstalk between the inputs, min.	70 dB
Repeat accuracy in steady state at 25 °C (relative to input area), (+/-)	0.1 %
Operational limit in overall temperature range	
• Current, relative to input area, (+/-)	0.15 %
Basic error limit (operational limit at 25 °C)	
• Current, relative to input area, (+/-)	0.1 %
Interference voltage suppression for $f = n \times (f1 \pm 1 \%)$, f1 = interference frequency	
• Series mode interference (peak value of interference < rated value of input range), min.	40 dB
• Common mode interference, min.	100 dB

Isochronous mode	
Isochronous operation (application synchronized up to terminal)	No

Interrupts/diagnostics/status information

Alarms	
• Diagnostic alarm	Yes
• Limit value alarm	Yes
Diagnostic messages	
• Diagnostic functions	Yes
• Diagnostic information readable	Yes
• Diagnostics	Yes
• Group error	Yes
Diagnostics indication LED	
• Group error SF (red)	Yes
Galvanic isolation	
Galvanic isolation analog inputs	
• between the channels	No
• between the channels, in groups of	8
• between the channels and the backplane bus	Yes
Isolation	
Isolation checked with	500
Connection method	
required front connector	20-pin
Dimensions	
Width	40 mm
Height	125 mm
Depth	117 mm
Weights	
Weight, approx.	205 g
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