

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 loss	
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)	140 Ω
• Input resistance (-20 mA to +20 mA)	140 Ω
• Input resistance (4 mA to 20 mA)	140 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 at 50 Hz; 16.6 ms at 60 Hz; 100 ms at 100 Hz
• Basic conversion time, including integration time (ms)	55 ms @ 60 Hz, 65 ms @ 50 Hz, 305 ms @ 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	
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 range), (+/-)	0.1 %
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 %
Interference voltage suppression for $f = n \times (f_1 \pm 1 \%)$, $f_1 =$ 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

Diagnostic functions Yes

Alarms

- Diagnostic alarm Yes
- Limit value alarm Yes

Diagnostic messages

- Diagnostic information readable Yes

Diagnostics indication LED

- Group error SF (red) Yes
- Channel fault indicator F (red) Yes

Potential separation

Potential separation analog inputs

- between the channels No
- between the channels and backplane bus Yes

Isolation

Isolation tested with 500 V DC

Connection method

required front connector 20-pin

Dimensions

Width 40 mm

Height 125 mm

Depth 117 mm

Weights

Weight, approx. 205 g

last modified: 03/24/2017