



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,

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 to +20 mA)	240 Ω
Input resistance (4 to 20 mA)	240 Ω
Cable length	
Cable length, shielded, max.	800 m
Analog value creation	
Measurement principle	Sigma Delta
Integrations 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
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 area)	+/- 0.01 %
Temperature error (relative to input area)	+/- 0.001 %/K
Crosstalk between the inputs, min.	70 dB
Repeat accuracy in settled status 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 $f = n \times (f_1 \pm 1 \%)$, $f_1 =$ 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	
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

Status

Sep 2, 2013