

SIMATIC DP, electronics module for ET200iSP, 4 AI, RTD, for connection of resistance thermometers Pt100/Ni100



Figure similar

Input current	
Current consumption, typ.	19 mA
from supply voltage L+, max.	22 mA
Power loss	
Power loss, typ.	0.4 W
Analog inputs	
Number of analog inputs	4
Cycle time (all channels) max.	320 ms; 66 ms basic conversion time x 4 channels with interference frequency suppression 60 Hz, 80 ms basic conversion time x 4 channels with interference frequency suppression 50 Hz
Technical unit for temperature measurement adjustable	Yes
Input ranges (rated values), resistance thermometer	
• Ni 100	Yes
• Input resistance (Ni 100)	2 000 kΩ
• Pt 100	Yes

• Input resistance (Pt 100)	2 000 kΩ
Input ranges (rated values), resistors	
• 0 to 600 ohms	Yes; Also 1 000 ohms
• Input resistance (0 to 600 ohms)	1 000 kΩ
Characteristic linearization	
• parameterizable	Yes
— for resistance thermometer	Yes
Cable length	
• shielded, max.	500 m

Analog value generation for the inputs

Measurement principle	integrating (Sigma-Delta)
Integration and conversion time/resolution per channel	
• Resolution with overrange (bit including sign), max.	16 bit
• Integration time, parameterizable	Yes
• Basic conversion time, including integration time (ms)	80 ms at 50 Hz; 66 ms at 60 Hz
— additional conversion time for wire-break monitoring	5 ms
• Interference voltage suppression for interference frequency f1 in Hz	50 / 60 Hz
Smoothing of measured values	
• parameterizable	Yes; in 4 stages
• Step: None	Yes; 1x cycle time
• Step: low	Yes; 4x cycle time
• Step: Medium	Yes; 32x cycle time
• Step: High	Yes; 64x cycle time

Encoder

Connection of signal encoders	
• for resistance measurement with two-wire connection	Yes
• for resistance measurement with three-wire connection	Yes
• for resistance measurement with four-wire connection	Yes

Errors/accuracies

Linearity error (relative to input range), (+/-)	0.015 %
Temperature error (relative to input range), (+/-)	0.02 %/K
Crosstalk between the inputs, min.	-50 dB
Repeat accuracy in steady state at 25 °C (relative to input range), (+/-)	0.01 %
Operational error limit in overall temperature range	

<ul style="list-style-type: none"> Resistance thermometer, relative to input range, (+/-) 	0.15 %; Applies to resistances standard ± 0.8 K, climatic ± 0.3 K
Basic error limit (operational limit at 25 °C)	
<ul style="list-style-type: none"> Resistance thermometer, relative to input range, (+/-) 	0.1 %; Applies to resistances standard ± 0.5 K, climatic ± 0.2 K
Interference voltage suppression for $f = n \times (f_1 \pm 1 \%)$, f_1 = interference frequency	
<ul style="list-style-type: none"> Series mode interference (peak value of interference < rated value of input range), min. 	70 dB
<ul style="list-style-type: none"> Common mode interference, min. 	90 dB
Interrupts/diagnostics/status information	
Alarms	
<ul style="list-style-type: none"> Diagnostic alarm 	Yes
<ul style="list-style-type: none"> Limit value alarm 	Yes
Diagnostic messages	
<ul style="list-style-type: none"> Diagnostic information readable 	Yes
<ul style="list-style-type: none"> Wire-break 	Yes
<ul style="list-style-type: none"> Short-circuit 	Yes
<ul style="list-style-type: none"> Group error 	Yes
Diagnostics indication LED	
<ul style="list-style-type: none"> Group error SF (red) 	Yes
Potential separation	
Potential separation analog inputs	
<ul style="list-style-type: none"> between the channels 	No
<ul style="list-style-type: none"> between the channels and backplane bus 	Yes
<ul style="list-style-type: none"> Between the channels and load voltage L+ 	Yes; Channels and power bus
Standards, approvals, certificates	
CE mark	Yes
Highest safety class achievable in safety mode	
<ul style="list-style-type: none"> Performance level according to ISO 13849-1 	none
<ul style="list-style-type: none"> SIL acc. to IEC 61508 	No
Use in hazardous areas	
<ul style="list-style-type: none"> Type of protection acc. to EN 50020 (CENELEC) 	II2 G (1) GD Ex ib[ia] IIC T4 and I M2 Ex ib[ia] I
<ul style="list-style-type: none"> Type of protection acc. to KEMA 	04 ATEX 1247
Dimensions	
Width	30 mm
Height	129 mm
Depth	136.5 mm
Weights	
Weight, approx.	230 g

last modified:

08/15/2019