



Figure similar

SIMATIC DP, electronic module for ET200iSP, 4 AI, RTD, for connection of resistance thermometers PT100/Ni100, Ex ib (ia Ga) IIC T4 Gb, Ex ib [ia IIIC Da] IIC T4 Gb, Ex ib [ia] I Mb

General information	
Product type designation	4AI RTD
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	
<ul style="list-style-type: none"> Ni 100 <ul style="list-style-type: none"> — Input resistance (Ni 100) Pt 100 <ul style="list-style-type: none"> — Input resistance (Pt 100) 	Yes 2 000 kΩ Yes 2 000 kΩ
Input ranges (rated values), resistors	
<ul style="list-style-type: none"> 0 to 600 ohms <ul style="list-style-type: none"> — Input resistance (0 to 600 ohms) 	Yes; also 1 000 ohms 1 000 kΩ
Characteristic linearization	
<ul style="list-style-type: none"> parameterizable <ul style="list-style-type: none"> — for resistance thermometer 	Yes Yes
Cable length	
<ul style="list-style-type: none"> shielded, max. 	500 m
Analog value generation for the inputs	
Measurement principle	integrating (Sigma-Delta)
Integration and conversion time/resolution per channel	
<ul style="list-style-type: none"> Resolution with overrange (bit including sign), max. Integration time, parameterizable Basic conversion time, including integration time (ms) <ul style="list-style-type: none"> — additional conversion time for wire-break monitoring Interference voltage suppression for interference frequency f1 in Hz 	16 bit Yes 80 ms at 50 Hz; 66 ms at 60 Hz 5 ms 50 / 60 Hz
Smoothing of measured values	
<ul style="list-style-type: none"> parameterizable Step: None Step: low Step: Medium 	Yes; in 4 stages Yes; 1x cycle time Yes; 4x cycle time 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	
• 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)	
• 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	
• Series mode interference (peak value of interference < rated value of input range), min.	70 dB
• Common mode interference, min.	90 dB
Interrupts/diagnostics/status information	
Alarms	
• Diagnostic alarm	Yes
• Limit value alarm	Yes
Diagnoses	
• Diagnostic information readable	Yes
• Wire-break	Yes
• Short-circuit	Yes
• Group error	Yes
Diagnostics indication LED	
• Group error SF (red)	Yes
Potential separation	
Potential separation analog inputs	
• between the channels	No
• between the channels and backplane bus	Yes
• 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	
• Performance level according to ISO 13849-1	none
• SIL acc. to IEC 61508	No
Dimensions	
Width	30 mm
Height	129 mm
Depth	136.5 mm
Weights	
Weight, approx.	230 g
last modified:	1/19/2021 