

SIMATIC DP, ELECT. SUBMODULE FOR ET200ISP, 4 AI, TC, FOR CONNECTION OF THERMOELEMENTS (VOLTAGE MEASUREMENT)



Figure similar

Input current	
from supply voltage L+, max.	30 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	
• Voltage	Yes
• Current	No
• Thermocouple	Yes
• Resistance thermometer	No

• Resistance	No
Input ranges (rated values), voltages	
• -80 mV to +80 mV	Yes
• Input resistance (-80 mV to +80 mV)	1 000 kΩ
Input ranges (rated values), thermocouples	
• Type B	Yes
• Input resistance (Type B)	1 000 kΩ
• Type C	Yes
• Input resistance (Type C)	1 000 kΩ
• Type E	Yes
• Input resistance (Type E)	1 000 kΩ
• Type J	Yes
• Input resistance (type J)	1 000 kΩ
• Type K	Yes
• Input resistance (Type K)	1 000 kΩ
• Type L	Yes
• Input resistance (Type L)	1 000 kΩ
• Type N	Yes
• Input resistance (Type N)	1 000 kΩ
• Type R	Yes
• Input resistance (Type R)	1 000 kΩ
• Type S	Yes
• Input resistance (Type S)	1 000 kΩ
• Type T	Yes
• Input resistance (Type T)	1 000 kΩ
• Type U	Yes
• Input resistance (Type U)	1 000 kΩ
Thermocouple (TC)	
Temperature compensation	
— internal temperature compensation	Yes; via supplied TC sensor module
— external temperature compensation with compensations socket	Yes; via temperature value, acquired by an analog module of the same ET 200iSP station
Characteristic linearization	
• parameterizable	Yes
— for thermocouples	Yes
Cable length	
• shielded, max.	50 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. 	16 bit
<ul style="list-style-type: none"> • Integration time, parameterizable 	Yes
<ul style="list-style-type: none"> • Basic conversion time, including integration time (ms) <ul style="list-style-type: none"> — additional conversion time for wire-break monitoring 	80 ms at 50 Hz; 66 ms at 60 Hz 5 ms
<ul style="list-style-type: none"> • Interference voltage suppression for interference frequency f_1 in Hz 	50 / 60 Hz
Smoothing of measured values	
<ul style="list-style-type: none"> • parameterizable 	Yes; in 4 stages
<ul style="list-style-type: none"> • Step: None 	Yes; 1 x cycle time
<ul style="list-style-type: none"> • Step: low 	Yes; 4 x cycle time
<ul style="list-style-type: none"> • Step: Medium 	Yes; 32 x cycle time
<ul style="list-style-type: none"> • Step: High 	Yes; 64 x cycle time
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"> • Voltage, relative to input range, (+/-) 	0.15 %
Basic error limit (operational limit at 25 °C)	
<ul style="list-style-type: none"> • Voltage, relative to input range, (+/-) 	0.1 %
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; Parameterizable
<ul style="list-style-type: none"> • Limit value alarm 	Yes; Parameterizable
Diagnostic messages	
<ul style="list-style-type: none"> • Diagnostic information readable 	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 	Yes
<ul style="list-style-type: none"> • between the channels and backplane bus 	Yes

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
Use in hazardous areas	
• Type of protection acc. to EN 50020 (CENELEC)	II2 G (1) GD Ex ib[ia] IIC T4 and I M2 Ex ib[ia] I
• Type of protection acc. to KEMA	04 ATEX 1246

Dimensions

Width	30 mm
Height	129 mm
Depth	136.5 mm

Weights

Weight, approx.	230 g
last modified:	03/09/2017 