



SIMATIC DP, Electronics module ET 200S: 2AI RTD High Feature, 15 mm width, 15 bit+sign accuracy +/-0.1%, for 2-/3-/4-wire sensors, with internal compensation of the line resistance, with SF LED (group fault)

General information	
Product function	
<ul style="list-style-type: none"> • Isochronous mode 	No
Supply voltage	
Load voltage L+	
<ul style="list-style-type: none"> • Rated value (DC) • Reverse polarity protection 	24 V; From power module Yes
Input current	
from load voltage L+ (without load), max.	30 mA
from backplane bus 3.3 V DC, max.	10 mA
Power loss	
Power loss, typ.	0.6 W
Address area	
Address space per module	
<ul style="list-style-type: none"> • Address space per module, max. 	4 byte
Analog inputs	
Number of analog inputs	2
permissible input voltage for voltage input (destruction limit), max.	9 V
Constant measurement current for resistance-type transmitter, typ.	1.25 mA
Cycle time (all channels) max.	Number of active channels per module x basic conversion time
Technical unit for temperature measurement adjustable	Yes
Input ranges (rated values), resistance thermometer	
<ul style="list-style-type: none"> • Cu 10 <ul style="list-style-type: none"> — Input resistance (Cu 10) • Ni 100 <ul style="list-style-type: none"> — Input resistance (Ni 100) • Ni 1000 <ul style="list-style-type: none"> — Input resistance (Ni 1000) • Ni 120 <ul style="list-style-type: none"> — Input resistance (Ni 120) • Ni 200 <ul style="list-style-type: none"> — Input resistance (Ni 200) • Ni 500 <ul style="list-style-type: none"> — Input resistance (Ni 500) • Pt 100 <ul style="list-style-type: none"> — Input resistance (Pt 100) 	Yes 10 MΩ Yes 10 MΩ Yes 10 MΩ Yes 10 MΩ Yes 10 MΩ Yes 10 MΩ Yes 10 MΩ

<ul style="list-style-type: none"> ● Pt 1000 <ul style="list-style-type: none"> — Input resistance (Pt 1000) ● Pt 200 <ul style="list-style-type: none"> — Input resistance (Pt 200) ● Pt 500 <ul style="list-style-type: none"> — Input resistance (Pt 500) 	<p>Yes</p> <p>10 MΩ</p> <p>Yes</p> <p>10 MΩ</p> <p>Yes</p> <p>10 MΩ</p>
Input ranges (rated values), resistors	
<ul style="list-style-type: none"> ● 0 to 150 ohms <ul style="list-style-type: none"> — Input resistance (0 to 150 ohms) ● 0 to 300 ohms <ul style="list-style-type: none"> — Input resistance (0 to 300 ohms) ● 0 to 600 ohms <ul style="list-style-type: none"> — Input resistance (0 to 600 ohms) ● 0 to 3000 ohms <ul style="list-style-type: none"> — Input resistance (0 to 3000 ohms) 	<p>Yes</p> <p>10 MΩ</p> <p>Yes</p> <p>10 MΩ</p> <p>Yes</p> <p>10 MΩ</p> <p>Yes</p> <p>10 MΩ</p>
Thermocouple (TC)	
Temperature compensation	
<ul style="list-style-type: none"> — internal temperature compensation 	Yes
Characteristic linearization	
<ul style="list-style-type: none"> ● parameterizable <ul style="list-style-type: none"> — for resistance thermometer 	<p>Yes; for Ptxxx, Nixxx</p> <p>Ptxxx, Nixxx</p>
Cable length	
<ul style="list-style-type: none"> ● shielded, max. 	200 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 (ms) ● Interference voltage suppression for interference frequency f1 in Hz ● Conversion time (per channel) 	<p>16 bit; for Pt100, Ni100, Ni120, Pt200, Ni200, Pt500, Ni500, Pt1000, Ni1000, Cu10: 15 bit + sign; for 150, 300, 600, 3 000 ohms: 15 bit; for PTC: 1 bit</p> <p>16,7 / 20 ms</p> <p>50 / 60 Hz</p> <p>Basic conversion time incl. integration time: 50 / 60 ms; additional conversion time for diagnostics of wire break test: 5 / 5 ms; additional conversion time for line compensation with 3-wire connection: 50 / 60 ms</p>
Smoothing of measured values	
<ul style="list-style-type: none"> ● parameterizable ● Step: None ● Step: low ● Step: Medium ● Step: High 	<p>Yes; In four stages by means of digital filtering</p> <p>Yes; 1x cycle time</p> <p>Yes; 4x cycle time</p> <p>Yes; 32x cycle time</p> <p>Yes; 64x cycle time</p>
Encoder	
Connection of signal encoders	
<ul style="list-style-type: none"> ● for resistance measurement with two-wire connection ● for resistance measurement with three-wire connection ● for resistance measurement with four-wire connection 	<p>Yes</p> <p>Yes; internal compensation of the line resistances</p> <p>Yes</p>
Errors/accuracies	
Operational error limit in overall temperature range	
<ul style="list-style-type: none"> ● Resistance thermometer, relative to input range, (+/-) 	Resistance-type transmitter: ±0.1 %; Pt100, Pt200, Pt500, Pt1000 standard: ±1.0 K; Pt100, Pt200, Pt500, Pt1000 climate: ±0.25 K; Ni100, Ni120, Ni200, Ni500, Ni1000 standard and climate: ±0.4 K; Cu10 ±1.5 K
Basic error limit (operational limit at 25 °C)	
<ul style="list-style-type: none"> ● Resistance thermometer, relative to input range, (+/-) 	Resistance-type transmitter: ±0.05 %; Pt100, Pt200, Pt500, Pt1000 standard: ±0.6 K; Pt100, Pt200, Pt500, Pt1000 climate: ±0.13 K; Ni100, Ni120, Ni200, Ni500, Ni1000 standard and climate: ±0.2 K; Cu10 ±1 K
Interrupts/diagnostics/status information	
Diagnoses	

• Wire-break	Yes
• Group error	Yes
• Overflow/underflow	Yes
Diagnostics indication LED	
• Group error SF (red)	Yes
Parameter	
Remark	7 byte
Diagnostics wire break	Disable / enable
Group diagnostics	Disable / enable
Overflow/underflow	Disable / enable
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
Isolation	
Isolation tested with	500 V DC
Dimensions	
Width	15 mm
Height	81 mm
Depth	52 mm
Weights	
Weight, approx.	40 g
last modified:	1/16/2021 