

SIMATIC DP, ELECTRONIC MODULE ET 200S: 2AI RTD HIGH FEATURE, 15 MM WIDTH, 15BIT + SIGN ACCURACY +/- 0.1%, FOR 2-/3-/4- WIRE SENSORS, WITH INTERNAL COMPENSATION OF THE WIRE RESISTOR, WITH LED SF (GROUP FAULT)



Supply voltage	
Load voltage L+	
• Rated value (DC)	24 V; From power module
• Reverse polarity protection	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	
• 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
<b>Input ranges</b>	
• Voltage	No
• Current	No
• Thermocouple	No
• Resistance thermometer	Yes
• Resistance	Yes
<b>Input ranges (rated values), resistance thermometer</b>	
• Cu 10	Yes
• Input resistance (Cu 10)	10 MΩ
• Ni 100	Yes
• Input resistance (Ni 100)	10 MΩ
• Ni 1000	Yes
• Input resistance (Ni 1000)	10 MΩ
• Ni 120	Yes
• Input resistance (Ni 120)	10 MΩ
• Ni 200	Yes
• Input resistance (Ni 200)	10 MΩ
• Ni 500	Yes
• Input resistance (Ni 500)	10 MΩ
• Pt 100	Yes
• Input resistance (Pt 100)	10 MΩ
• Pt 1000	Yes
• Input resistance (Pt 1000)	10 MΩ
• Pt 200	Yes
• Input resistance (Pt 200)	10 MΩ
• Pt 500	Yes
• Input resistance (Pt 500)	10 MΩ
<b>Input ranges (rated values), resistors</b>	
• 0 to 150 ohms	Yes
• Input resistance (0 to 150 ohms)	10 MΩ
• 0 to 300 ohms	Yes
• Input resistance (0 to 300 ohms)	10 MΩ
• 0 to 600 ohms	Yes
• Input resistance (0 to 600 ohms)	10 MΩ
• 0 to 3000 ohms	Yes
• Input resistance (0 to 3000 ohms)	10 MΩ
<b>Thermocouple (TC)</b>	

<b>Temperature compensation</b>	
— internal temperature compensation	Yes
<b>Characteristic linearization</b>	
• parameterizable	Yes; for Ptxxx, Nixxx
— for resistance thermometer	Ptxxx, Nixxx
<b>Cable length</b>	
• shielded, max.	200 m
<b>Analog value generation for the inputs</b>	
Measurement principle	integrating (Sigma-Delta)
<b>Integration and conversion time/resolution per channel</b>	
• Resolution with overrange (bit including sign), max.	16 bit; for Pt100, Ni100, Ni120, Pt200, Ni200, Pt 500, Ni 500, Pt1000, Ni1000, Cu10: 15 bits + sign; for 150, 300, 600, 3000 ohms: 15 bits; for PTC: 1 bits
• Integration time (ms)	16,7 / 20 ms
• Interference voltage suppression for interference frequency f1 in Hz	50 / 60 Hz
• Conversion time (per channel)	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
<b>Smoothing of measured values</b>	
• Parameterizable	Yes; In four stages by means of digital filtering
• Step: None	Yes; 1 x cycle time
• Step: low	Yes; 4 x cycle time
• Step: Medium	Yes; 32 x cycle time
• Step: High	Yes; 64 x cycle time
<b>Encoder</b>	
<b>Connection of signal encoders</b>	
• for resistance measurement with two-wire connection	Yes
• for resistance measurement with three-wire connection	Yes; internal compensation of the line resistances
• for resistance measurement with four-wire connection	Yes
<b>Errors/accuracies</b>	
Linearity error (relative to input range), (+/-)	0.01 %
Temperature error (relative to input range), (+/-)	0.0009 %/K
Crosstalk between the inputs, min.	-50 dB
Repeat accuracy in steady state at 25 °C (relative to input area), (+/-)	0.05 %
Operational error limit in overall temperature range	

<ul style="list-style-type: none"> <li>Resistance thermometer, relative to input area, (+/-)</li> </ul>	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
<b>Basic error limit (operational limit at 25 °C)</b>	
<ul style="list-style-type: none"> <li>Resistance thermometer, relative to input area, (+/-)</li> </ul>	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
<b>Interference voltage suppression for <math>f = n \times (f_1 \pm 1 \%)</math>, <math>f_1</math> = interference frequency</b>	
<ul style="list-style-type: none"> <li>Series mode interference (peak value of interference &lt; rated value of input range), min.</li> </ul>	70 dB
<ul style="list-style-type: none"> <li>Common mode interference (USS &lt; 2.5 V), min.</li> </ul>	90 dB
<b>Isochronous mode</b>	
Isochronous operation (application synchronized up to terminal)	No
<b>Diagnostic messages</b>	
<ul style="list-style-type: none"> <li>Wire-break</li> </ul>	Yes
<ul style="list-style-type: none"> <li>Group error</li> </ul>	Yes
<ul style="list-style-type: none"> <li>Overflow/underflow</li> </ul>	Yes
<b>Diagnostics indication LED</b>	
<ul style="list-style-type: none"> <li>Group error SF (red)</li> </ul>	Yes
<b>Parameter</b>	
Remark	7 byte
Diagnostics wire break	Disable / enable
Measurement type/range	Deactivated/ 150 Ohm / 300 Ohm / 600 Ohm /Pt100/Pt200/Pt500/Pt1000 each standard or climate range / Ni100/Ni120/Ni200/Ni500/Ni1000 each standard or climate range / Cu10 each standard or climate range / PTC
Group diagnostics	Disable / enable
Overflow/underflow	Disable / enable
<b>Potential separation</b>	
<b>Potential separation analog inputs</b>	
<ul style="list-style-type: none"> <li>between the channels</li> </ul>	No
<ul style="list-style-type: none"> <li>between the channels and the backplane bus</li> </ul>	Yes
<ul style="list-style-type: none"> <li>between the channels and the load voltage L+</li> </ul>	Yes
<b>Permissible potential difference</b>	
between MANA and M internally (UISO)	75V DC/60V AC
<b>Isolation</b>	
Isolation tested with	500 V DC
<b>Dimensions</b>	

Width	15 mm
Height	81 mm
Depth	52 mm
<b>Weights</b>	
Weight, approx.	40 g
<b>last modified:</b>	20.07.2015