

SIMATIC DP, Electronics module for ET 200S, 2/4 AI RTD Standard, 15 mm width, 15 bit+sign Pt100 STD; Pt100 KL; NI100 STD; NI100 KL; 150 ohm; 300 ohm; 600 ohm; Cycle time 110 ms/channel with SF LED (group fault)



<b>Supply voltage</b>	
Load voltage L+	
<ul style="list-style-type: none"> <li>Rated value (DC)</li> <li>Reverse polarity protection</li> </ul>	<p>24 V; From power module</p> <p>Yes</p>
<b>Input current</b>	
from load voltage L+ (without load), max.	30 mA
from backplane bus 3.3 V DC, max.	10 mA
<b>Output voltage</b>	
Power supply to the transmitters	
<ul style="list-style-type: none"> <li>present</li> <li>short-circuit proof</li> </ul>	<p>Yes</p> <p>Yes</p>
<b>Power loss</b>	
Power loss, typ.	0.6 W
<b>Address area</b>	
Address space per module	
<ul style="list-style-type: none"> <li>Address space per module, max.</li> </ul>	8 byte
<b>Analog inputs</b>	

Number of analog inputs	4; 2 for 3 or 4-wire connection
permissible input voltage for voltage input (destruction limit), max.	9 V
Constant measurement current for resistance-type transmitter, typ.	1.67 mA
Cycle time (all channels) max.	Number of active channels per module x basic conversion time
Technical unit for temperature measurement adjustable	No
<b>Input ranges (rated values), resistance thermometer</b>	
• Ni 100	Yes; Standard/climate
• Input resistance (Ni 100)	2 000 kΩ
• Pt 100	Yes; Standard/climate
• Input resistance (Pt 100)	2 000 kΩ
<b>Input ranges (rated values), resistors</b>	
• 0 to 150 ohms	Yes
• Input resistance (0 to 150 ohms)	2 000 kΩ
• 0 to 300 ohms	Yes
• Input resistance (0 to 300 ohms)	2 000 kΩ
• 0 to 600 ohms	Yes
• Input resistance (0 to 600 ohms)	2 000 kΩ
<b>Characteristic linearization</b>	
• parameterizable — for resistance thermometer	Yes; for Pt100, Ni100 Pt100 (standard, climatic range), Ni100 (standard, climatic range)
<b>Cable length</b>	
• shielded, max.	200 m
<b>Analog value generation for the inputs</b>	
Measurement principle	integrating
<b>Integration and conversion time/resolution per channel</b>	
• Resolution with overrange (bit including sign), max.	16 bit; 150 ohms: 14 bit; 300, 600 ohms: 15 bit, Pt100, Ni100: 16 bit
• Integration time, parameterizable	Yes
• Integration time (ms)	16,7 / 20 ms
• Interference voltage suppression for interference frequency f1 in Hz	50 / 60 Hz
• Conversion time (per channel)	66 / 80 ms; additional conversion time for diagnostic wire break test
<b>Smoothing of measured values</b>	
• parameterizable	Yes; In four stages by means of digital filtering
• 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), (+/-)	0.01 %
Temperature error (relative to input range), (+/-)	0.005 %/K
Crosstalk between the inputs, min.	-50 dB
Repeat accuracy in steady state at 25 °C (relative to input range), (+/-)	0.05 %

### Operational error limit in overall temperature range

• Resistance thermometer, relative to input range, (+/-)	0.6 %
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### Basic error limit (operational limit at 25 °C)

• Resistance thermometer, relative to input range, (+/-)	0.4 %
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### 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 (USS < 2.5 V), min.	90 dB

### Isochronous mode

Isochronous operation (application synchronized up to terminal)	No
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### Interrupts/diagnostics/status information

#### Diagnostic messages

• Wire-break	Yes
• Group error	Yes
• Overflow/underflow	Yes

#### Diagnostics indication LED

• Group error SF (red)	Yes
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### Parameter

Diagnostics wire break	Disable / enable
Measurement type/range	deactivated/150 ohms/; 300 ohms/600 ohms/ Pt100 climatic/ Pt100 standard; Ni100 standard / Ni100 climatic, 2, 3 or 4-wire
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

Permissible potential difference	
between MANA and M internally (UISO)	75 V DC/60 V AC

Isolation	
Isolation tested with	500 V DC

Dimensions	
Width	15 mm
Height	81 mm
Depth	52 mm

Weights	
Weight, approx.	40 g

**last modified:** 05/09/2019