



SIMATIC DP, ELECTRONIC MODULE FOR ET 200S, 2/4 AI RTD STANDARD, 15 MM WIDE, 15BIT + SIGN PT100 STD; PT100 KL; NI100 STD; NI100 KL; 150 OHM; 300 OHM; 600 OHM, CYCLE TIME 110 MS/CHANNEL 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 |

### Output voltage

#### Power supply to the transmitters

- |                       |     |
|-----------------------|-----|
| • present             | Yes |
| • short-circuit proof | Yes |

### Power losses

- |                  |       |
|------------------|-------|
| Power loss, typ. | 0.6 W |
|------------------|-------|

### Address area

#### Address space per module

- |                                  |        |
|----------------------------------|--------|
| • Address space per module, max. | 8 byte |
|----------------------------------|--------|

### Analog inputs

- |   |  |
|---|--|
| 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</b>	
• Voltage	No
• Current	No
• Thermocouple	No
• Resistance thermometer	Yes
• Resistance	Yes
<b>Input ranges (rated values), resistance thermometer</b>	
• Ni 100	Yes; Standard/climate
• Input resistance (Ni 100)	2 000 k $\Omega$
• Pt 100	Yes; Standard/climate
• Input resistance (Pt 100)	2 000 k $\Omega$
<b>Input ranges (rated values), resistors</b>	
• 0 to 150 ohms	Yes
• Input resistance (0 to 150 ohms)	2 000 k $\Omega$
• 0 to 300 ohms	Yes
• Input resistance (0 to 300 ohms)	2 000 k $\Omega$
• 0 to 600 ohms	Yes
• Input resistance (0 to 600 ohms)	2 000 k $\Omega$
<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 creation</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 bits; 300, 600 ohms: 15 bits, Pt100, Ni100: 16 bits
• Integration time, parameterizable	Yes
• Integration time (ms)	16,7 / 20 ms
• 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; 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>	

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 area), (+/-)	0.05 %
Operational limit in overall temperature range	
• Resistance thermometer, relative to input area, (+/-)	0.6 %
Basic error limit (operational limit at 25 °C)	
• Resistance thermometer, relative to input area, (+/-)	0.4 %
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 voltage (USS < 2.5 V) , min.	90 dB

Isochronous mode	
Isochronous operation (application synchronized up to terminal)	No
Diagnostic messages	
• Diagnostic functions	Yes; Can be read out
• Wire break	Yes
• Group error	Yes
• Overflow/underflow	Yes
Diagnostics indication LED	
• Group error SF (red)	Yes

Parameter	
Diagnosis: 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

Galvanic isolation	
Galvanic isolation analog inputs	
• between the channels	No

- between the channels and the backplane bus
- between the channels and the load voltage L+

Yes  
Yes

#### Permissible potential difference

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

#### Isolation

Isolation checked with 500 V DC

#### Dimensions

Width 15 mm  
Height 81 mm  
Depth 52 mm

#### Weights

Weight, approx. 40 g

**last modified:** 12.03.2015