

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)



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
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 (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
<b>Cable length</b>	
• shielded, max.	200 m
<b>Analog value generation for the inputs</b>	
Integration and conversion time/resolution per channel	

- Resolution with overrange (bit including sign), max.
- Integration time (ms)
- Interference voltage suppression for interference frequency f1 in Hz
- Conversion time (per channel)

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  
 16,7 / 20 ms  
 50 / 60 Hz

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

## Encoder

Connection of signal encoders	
• 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

## Errors/accuracies

Operational error limit in overall temperature range	
• Resistance thermometer, relative to input range, (+/-)	Resistance-type transmitter: $\pm 0.1\%$ ; Pt100, Pt200, Pt500, Pt1000 standard: $\pm 1.0\text{ K}$ ; Pt100, Pt200, Pt500, Pt1000 climate: $\pm 0.25\text{ K}$ ; Ni100, Ni120, Ni200, Ni500, Ni1000 standard and climate: $\pm 0.4\text{ K}$ ; Cu10 $\pm 1.5\text{ K}$
Basic error limit (operational limit at 25 °C)	
• Resistance thermometer, relative to input range, (+/-)	Resistance-type transmitter: $\pm 0.05\%$ ; Pt100, Pt200, Pt500, Pt1000 standard: $\pm 0.6\text{ K}$ ; Pt100, Pt200, Pt500, Pt1000 climate: $\pm 0.13\text{ K}$ ; Ni100, Ni120, Ni200, Ni500, Ni1000 standard and climate: $\pm 0.2\text{ K}$ ; Cu10 $\pm 1\text{ K}$

## Interrupts/diagnostics/status information

Diagnostic messages	
• 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
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
--------------------	------------------

### 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
-----------------	------

<b>last modified:</b>	05/13/2020
-----------------------	------------