

# SIEMENS

## Product data sheet

**6ES7134-4NB51-0AB0**


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)

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|--|--------------------------|
| <b>Supply voltage</b>  |                          |
| Load voltage L+  |                          |
| Rated value (DC)   | 24 V ; From power module |
| Reverse polarity protection  | Yes                      |
| <b>Input current</b>   |                          |
| from load voltage L+ (without load), max.                                | 30 mA                    |
| from backplane bus 3.3 V DC, max.  | 10 mA                    |
| <b>Power losses</b>  |                          |
| Power loss, typ.   | 0.6 W                    |
| <b>Address area</b>  |                          |
| Address space per module   |                          |
| Address space per module, max.   | 4 byte                   |
| <b>Analog inputs</b>   |                          |
| Number of analog inputs  | 2                        |
| permissible input voltage for voltage input<br>(destruction limit), max. | 9 V                      |

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| 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  | Yes  |
| Current  | No   |
| Thermocouple   | Yes  |
| Resistance thermometer   | Yes  |
| Resistance   | Yes  |
| <b>Input ranges (rated values), resistance thermometers</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>                      |  |

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| 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>Resistance thermometer (RTD)</b>                                  |  |
| <b>Characteristic linearization</b>                                  |  |
| for resistance thermometer   | Ptxxx, Nixxx   |
| <b>Characteristic linearization</b>                                  |  |
| Parameterizable  | Yes ; for Ptxxx, Nixxx   |
| <b>Cable length</b>  |  |
| Cable length, shielded, max.   | 200 m  |
| <b>Analog value creation</b>   |  |
| Measurement principle  | integrating (Sigma-Delta)  |
| <b>Integrations 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 | 60 / 50 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   |

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| 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 2-conductor connection   | Yes  |
| for resistance measurement with 3-conductor connection   | Yes ; internal compensation of the line resistances  |
| for resistance measurement with 4-conductor connection   | Yes  |
| <b>Errors/accuracies</b>   |  |
| Linearity error (relative to input area)   | +/- 0,01 %   |
| Temperature error (relative to input area)   | +/- 0,0009 %/K   |
| Crosstalk between the inputs, min.   | -50 dB   |
| Repeat accuracy in settled status at 25 °C (relative to input area)  | +/- 0,05 %   |
| <b>Operational limit in overall temperature range</b>  |  |
| Resistance-type thermometer, relative to input area  | 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>  |  |
| Resistance-type thermometer, relative to input area  | 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_l \pm 1\%)</math>, <math>f_l</math> = interference frequency</b> |  |
| 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  |
| <b>Isochronous mode</b>  |  |
| Isochronous operation (application synchronized up to terminal)  | No   |
| <b>Interrupts/diagnostics/status information</b>   |  |
| <b>Diagnostic messages</b>   |  |
| Wire break   | Yes  |

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| Group error                                  | Yes  |
| Overflow/underflow                           | Yes  |
| <b>Diagnostics indication LED</b>            |  |
| Group error SF (red)                         | Yes  |
| <b>Parameter</b>                             |  |
| Diagnosis: 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>Galvanic isolation</b>                    |  |
| <b>Galvanic isolation analog inputs</b>      |  |
| between the channels                         | No   |
| between the channels and the backplane bus   | Yes  |
| between the channels and the load voltage L+ | Yes  |
| <b>Permissible potential difference</b>      |  |
| between MANA and M internally (UISO)         | 75 VDC / 60 VAC  |
| <b>Isolation</b>                             |  |
| Isolation checked with                       | 500 V DC   |
| <b>Dimensions</b>                            |  |
| Width  | 15 mm  |
| Height                                       | 81 mm  |
| Depth  | 52 mm  |
| <b>Weight</b>                                |  |
| Weight, approx.                              | 40 g   |
| Status                                       | Jul 17, 2012   |