

SIPLUS ET 200S EM 2AI RTD HF -25...+60°C based on 6ES7134-4NB51-0AB0



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
Input ranges (rated values), resistance thermometer	
• 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
Input ranges (rated values), resistors	
• 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
Thermocouple (TC)	
Temperature compensation	
— internal temperature compensation	Yes
Characteristic linearization	
• parameterizable	Yes; for Ptxxx, Nixxx
Cable length	
• shielded, max.	200 m
Analog value generation for the inputs	
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	
<ul style="list-style-type: none"> • between the channels 	No
<ul style="list-style-type: none"> • between the channels and backplane bus 	Yes
<ul style="list-style-type: none"> • Between the channels and load voltage L+ 	Yes
Isolation	
Isolation tested with	500 V DC
Standards, approvals, certificates	
CE mark	Yes
Ambient conditions	
Ambient temperature during operation	
<ul style="list-style-type: none"> • min. 	-25 °C; = Tmin
<ul style="list-style-type: none"> • max. 	60 °C; = Tmax
Altitude during operation relating to sea level	
<ul style="list-style-type: none"> • Installation altitude above sea level, max. 	5 000 m
<ul style="list-style-type: none"> • Ambient air temperature-barometric pressure-altitude 	Tmin ... Tmax at 1 140 hPa ... 795 hPa (-1 000 m ... +2 000 m) // Tmin ... (Tmax - 10 K) at 795 hPa ... 658 hPa (+2 000 m ... +3 500 m) // Tmin ... (Tmax -20 K) at 658 hPa ... 540 hPa (+3 500 m ... +5 000 m)
Relative humidity	
<ul style="list-style-type: none"> • With condensation, tested in accordance with IEC 60068-2-38, max. 	100 %; RH incl. condensation/frost permitted (no commissioning in bedewed state)
Resistance	
Use in stationary industrial systems	
— to biologically active substances according to EN 60721-3-3	Yes; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna); Class 3B3 on request
— to chemically active substances according to EN 60721-3-3	Yes; Class 3C4 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); *
— to mechanically active substances according to EN 60721-3-3	Yes; Class 3S4 incl. sand, dust, *
Use on ships/at sea	
— to biologically active substances according to EN 60721-3-6	Yes; Class 6B2 mold and fungal spores (excluding fauna); Class 6B3 on request
— to chemically active substances according to EN 60721-3-6	Yes; Class 6C3 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); *
— to mechanically active substances according to EN 60721-3-6	Yes; Class 6S3 incl. sand, dust; *
Usage in industrial process technology	
— Against chemically active substances acc. to EN 60654-4	Yes; Class 3 (excluding trichlorethylene)

— Environmental conditions for process, measuring and control systems acc. to ANSI/ISA-71.04

Yes; Level GX group A/B (excluding trichlorethylene; harmful gas concentrations up to the limits of EN 60721-3-3 class 3C4 permissible); level LC3 (salt spray) and level LB3 (oil)

Remark

— Note regarding classification of environmental conditions acc. to EN 60721, EN 60654-4 and ANSI/ISA-71.04

* The supplied plug covers must remain in place over the unused interfaces during operation!

Dimensions

Width	15 mm
Height	81 mm
Depth	52 mm

Weights

Weight, approx.	40 g
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last modified: 05/13/2020