

SIPLUS S7-1200 SB 1231 1AI RTD -40 ... +60 degree C, startup -25 degree C, with conformal coating BasedOn: 6ES7231-5PA30-0XB0 .
SIPLUS S7-1200, analog input, SB 1231RTD, 1 AI RTD, PT 100 and PT1000

General information

Product type designation	SB 1231, AI 1x16 bit RTD
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Supply voltage

Rated value (DC)	Yes
<ul style="list-style-type: none"> • 24 V DC 	

Input current

Current consumption, typ.	5 mA
from backplane bus 5 V DC, typ.	20 mA

Power loss

Power loss, typ.	0.5 W
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Analog inputs

Number of analog inputs	1; Resistance thermometer
permissible input voltage for current input (destruction limit), max.	± 35 V
Technical unit for temperature measurement adjustable	Degrees Celsius/degrees Fahrenheit

Input ranges

<ul style="list-style-type: none"> • Voltage 	Yes
<ul style="list-style-type: none"> • Current 	No
<ul style="list-style-type: none"> • Thermocouple 	No
<ul style="list-style-type: none"> • Resistance thermometer 	Yes; Platinum (Pt)
<ul style="list-style-type: none"> • Resistance 	Yes; 150 Ω, 300 Ω, 600 Ω

Input ranges (rated values), voltages

<ul style="list-style-type: none"> • Input resistance (-80 mV to +80 mV) 	>= 10 MOhm
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Input ranges (rated values), resistance thermometer

<ul style="list-style-type: none"> • Pt 100 	Yes
<ul style="list-style-type: none"> • Input resistance (Pt 100) 	100 Ω
<ul style="list-style-type: none"> • Pt 1000 	Yes
<ul style="list-style-type: none"> • Input resistance (Pt 1000) 	1 000 Ω
<ul style="list-style-type: none"> • Pt 200 	Yes
<ul style="list-style-type: none"> • Input resistance (Pt 200) 	200 Ω
<ul style="list-style-type: none"> • Pt 500 	Yes

• Input resistance (Pt 500)	500 Ω
Input ranges (rated values), resistors	
• 0 to 150 ohms	Yes
• 0 to 300 ohms	Yes
• 0 to 600 ohms	Yes
Thermocouple (TC)	
Temperature compensation	
— parameterizable	No
Analog outputs	
Number of analog outputs	0
Analog value generation for the inputs	
Measurement principle	integrating
Integration and conversion time/resolution per channel	
• Resolution with overrange (bit including sign), max.	15 bit; + sign
• Integration time, parameterizable	No
• Interference voltage suppression for interference frequency f1 in Hz	85 dB at 10 / 50 / 60 / 400 Hz
Errors/accuracies	
Temperature error (relative to input range), (+/-)	25 °C \pm 0.1%, up to 55 °C \pm 0.25% total measurement range
Repeat accuracy in steady state at 25 °C (relative to output range), (+/-)	0.05 %
Interference voltage suppression for $f = n \times (f1 \pm 1 \%)$, f1 = interference frequency	
• Common mode interference, min.	120 dB
Interrupts/diagnostics/status information	
Alarms	Yes
Diagnostic functions	Yes; Can be read out
Alarms	
• Diagnostic alarm	Yes
Diagnostic messages	
• Wire-break	Yes
Diagnostics indication LED	
• for status of the inputs	Yes
• for maintenance	Yes
Degree and class of protection	
Degree of protection acc. to EN 60529	
• IP20	Yes
Standards, approvals, certificates	
CE mark	Yes
Ambient conditions	

Free fall	
• Fall height, max.	0.3 m; five times, in product package
Ambient temperature during operation	
• min.	-40 °C; = Tmin; Startup @ -25 °C
• max.	60 °C; = Tmax
• vertical installation, min.	-40 °C; = Tmin; Startup @ -25 °C
• vertical installation, max.	50 °C; = Tmax
Ambient temperature during storage/transportation	
• min.	-40 °C
• max.	70 °C
Altitude during operation relating to sea level	
• Installation altitude above sea level, max.	5 000 m
• 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	
• With condensation, tested in accordance with IEC 60068-2-38, max.	100 %; RH incl. condensation / frost (no commissioning in bedewed state), horizontal installation
Resistance	
Coolants and lubricants	
— Resistant to commercially available coolants and lubricants	Yes
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; *
from supply voltage 1L+	
— Note regarding classification of environmental conditions acc. to EN 60721	* The supplied plug covers must remain in place over the unused interfaces during operation!
Connection method	
required front connector	Yes
Mechanics/material	

Enclosure material (front)	
• Plastic	Yes
Dimensions	
Width	38 mm
Height	62 mm
Depth	21 mm
Weights	
Weight, approx.	35 g
last modified:	05/16/2018