

SIMATIC S7-1200, Analog input, SB 1231RTD, 1 AI RTD, Pt100 and Pt1000



## General information

Product type designation SB 1231, AI 1x16 bit RTD

## Supply voltage

Rated value (DC) 24 V

## Input current

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

## Power loss

Power loss, typ. 0.5 W

## Analog inputs

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

## Input ranges

- Voltage Yes
- Current No

• Thermocouple	No
• Resistance thermometer	Yes; Platinum (Pt)
• Resistance	Yes; 150 Ω, 300 Ω, 600 Ω
<b>Input ranges (rated values), voltages</b>	
• Input resistance (-80 mV to +80 mV)	>= 10 MOhm
<b>Input ranges (rated values), resistance thermometer</b>	
• Pt 100	Yes
• Input resistance (Pt 100)	100 Ω
• Pt 1000	Yes
• Input resistance (Pt 1000)	1 000 Ω
• Pt 200	Yes
• Input resistance (Pt 200)	200 Ω
• Pt 500	Yes
• Input resistance (Pt 500)	500 Ω
<b>Input ranges (rated values), resistors</b>	
• 0 to 150 ohms	Yes
• 0 to 300 ohms	Yes
• 0 to 600 ohms	Yes
<b>Thermocouple (TC)</b>	
Temperature compensation	
— parameterizable	No
<b>Analog outputs</b>	
Number of analog outputs	0
<b>Cable length</b>	
• shielded, max.	100 m; shielded, twisted pair
<b>Analog value generation for the inputs</b>	
Measurement principle	integrating
<b>Integration and conversion time/resolution per channel</b>	
• 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
<b>Errors/accuracies</b>	
Temperature error (relative to input range), (+/-)	25 °C ±0.1%, to 55 °C ±0.2% total measurement range
Repeat accuracy in steady state at 25 °C (relative to output range), (+/-)	0.05 %
Interference voltage suppression for $f = n \times (f_1 \pm 1 \%)$ , $f_1$ = interference frequency	
• Common mode interference, min.	120 dB
<b>Interrupts/diagnostics/status information</b>	
Alarms	Yes

Diagnostics function	Yes; Can be read out
<b>Alarms</b>	
• Diagnostic alarm	Yes
<b>Diagnostic messages</b>	
• Wire-break	Yes
<b>Diagnostics indication LED</b>	
• for status of the inputs	Yes
• for maintenance	Yes
<b>Standards, approvals, certificates</b>	
CE mark	Yes
CSA approval	Yes
UL approval	Yes
cULus	Yes
FM approval	Yes
RCM (formerly C-TICK)	Yes
KC approval	Yes
Marine approval	Yes
<b>Ambient conditions</b>	
<b>Free fall</b>	
• Fall height, max.	0.3 m; five times, in product package
<b>Ambient temperature during operation</b>	
• min.	-20 °C
• max.	60 °C
• horizontal installation, min.	-20 °C
• horizontal installation, max.	60 °C
• vertical installation, min.	-20 °C
• vertical installation, max.	50 °C
<b>Ambient temperature during storage/transportation</b>	
• min.	-40 °C
• max.	70 °C
<b>Air pressure acc. to IEC 60068-2-13</b>	
• Operation, min.	795 hPa
• Operation, max.	1 080 hPa
• Storage/transport, min.	660 hPa
• Storage/transport, max.	1 080 hPa
<b>Relative humidity</b>	
• Operation at 25 °C without condensation, max.	95 %
<b>Pollutant concentrations</b>	
• SO2 at RH < 60% without condensation	SO2: < 0.5 ppm; H2S: < 0.1 ppm; RH < 60% condensation-free
<b>Connection method</b>	
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:**

08/23/2019