

SIMATIC S7-1200, ANALOG INPUT, SM 1231 RTD, 4 X AI RTD MODULE



Supply voltage	
Rated value (DC)	
<ul style="list-style-type: none"> <li>24 V DC</li> </ul>	Yes
Input current	
Current consumption, typ.	40 mA
from backplane bus 5 V DC, typ.	80 mA
Power losses	
Power loss, typ.	1.5 W
Analog inputs	
Number of analog inputs	4; Resistance thermometer
permissible input frequency 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"> <li>Thermocouple</li> </ul>	No
<ul style="list-style-type: none"> <li>Resistance thermometer</li> </ul>	Yes; Resistance-type transmitter: Pt10, Pt50, Pt100, Pt200, Pt500, Pt1000, Ni100, Ni120, Ni200, Ni500, Ni1000, Cu10, Cu50, Cu100, LG-Ni1000
<ul style="list-style-type: none"> <li>Resistance</li> </ul>	Yes; 150 Ω, 300 Ω, 600 Ω
Input ranges (rated values), resistance thermometer	
<ul style="list-style-type: none"> <li>Cu 10</li> </ul>	Yes
<ul style="list-style-type: none"> <li>Input resistance (Cu 10)</li> </ul>	10 Ω
<ul style="list-style-type: none"> <li>Ni 100</li> </ul>	Yes

• Input resistance (Ni 100)	100 Ω
• Ni 1000	Yes
• Input resistance (Ni 1000)	1 000 Ω
• LG-Ni 1000	Yes
• Input resistance (LG-Ni 1000)	1 000 Ω
• Ni 120	Yes
• Input resistance (Ni 120)	120 Ω
• Ni 200	Yes
• Input resistance (Ni 200)	200 Ω
• Ni 500	Yes
• Input resistance (Ni 500)	500 Ω
• 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>	
<b>Temperature compensation</b>	
— Parameterizable	No
<b>Analog outputs</b>	
Number of analog outputs	0
<b>Analog value creation</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 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 area), (+/-)	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

- Alarms Yes
- Diagnostic alarm Yes

### Diagnostic messages

- Diagnostic functions Yes; Can be read out
- Monitoring the supply voltage Yes
- Wire break Yes

### Diagnostics indication LED

- for status of the inputs Yes
- for maintenance Yes

## Degree and class of protection

### Degree of protection to EN 60529

- IP20 Yes

## Standards, approvals, certificates

CE mark Yes

CSA approval Yes

FM approval Yes

RCM (formerly C-TICK) Yes

### Highest safety class achievable in safety mode

- SIL acc. to IEC 61508 none

## Ambient conditions

### Free fall

- Drop height, max. (in packaging) 0.3 m; five times, in dispatch package

### Ambient temperature in operation

- Permissible temperature range -20 °C to +60 °C horizontal mounting, -20 °C to 50 °C vertical mounting, 95% humidity, non-condensing
- Min. -20 °C
- max. 60 °C

### Ambient temperature during storage/transportation

- Min. -40 °C
- max. 70 °C

### Air pressure acc. to IEC 60068-2-13

- Operation, min. 795 hPa
- Operation, max. 1 080 hPa
- Storage/transport, min. 660 hPa
- Storage/transport, max. 1 080 hPa

### Relative humidity

- Permissible range (without condensation) at 25 °C 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
<b>Mechanics/material</b>	
Type of housing (front)	Yes
• plastic	
<b>Dimensions</b>	
Width	45 mm
Height	100 mm
Depth	75 mm
<b>Weights</b>	
Weight, approx.	220 g
<b>last modified:</b>	20.04.2015