



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

<b>Supply voltage</b>	
24 V DC	Yes
<b>Input current</b>	
Current consumption, typ.	40 mA
from backplane bus 5 V DC, typ.	80 mA
<b>Power losses</b>	
Power loss, typ.	1.5 W
<b>Analog inputs</b>	
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
<b>Input ranges</b>	
Thermocouple	No
Resistance thermometer	Yes ; Resistance-type transmitter: Pt10, Pt50, Pt100, Pt200, Pt500, Pt1000, Ni100, Ni120, Ni200, Ni500, Ni1000, Cu10, Cu50, Cu100, LG-Ni1000
Resistance	Yes ; 150 Ω, 300 Ω, 600 Ω
<b>Input ranges (rated values), resistance thermometers</b>	
Cu 10	Yes

Input resistance (Cu 10)	10 $\Omega$
Ni 100	Yes
Input resistance (Ni 100)	100 $\Omega$
Ni 1000	Yes
Input resistance (Ni 1000)	1000 $\Omega$
LG-Ni 1000	Yes
Input resistance (LG-Ni 1000)	1000 $\Omega$
Ni 120	Yes
Input resistance (Ni 120)	120 $\Omega$
Ni 200	Yes
Input resistance (Ni 200)	200 $\Omega$
Ni 500	Yes
Input resistance (Ni 500)	500 $\Omega$
Pt 100	Yes
Input resistance (Pt 100)	100 $\Omega$
Pt 1000	Yes
Input resistance (Pt 1000)	1000 $\Omega$
Pt 200	Yes
Input resistance (Pt 200)	200 $\Omega$
Pt 500	Yes
Input resistance (Pt 500)	500 $\Omega$
<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>Integrations 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 $\pm$ 0.1 % to 55 °C $\pm$ 0.2 % total measurement range

Repeat accuracy in steady state at 25 °C (relative to output area), (+/-)	0.05 %
Interference voltage suppression for $f = n \times (f_1 \pm 1 \%)$ , $f_1$ = 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	
IP20	Yes
Standards, approvals, certificates	
CE mark	Yes
RCM (former C-TICK)	Yes
FM approval	Yes
Highest safety class achievable in safety mode	
acc. to IEC 61508	none
Climatic and mechanical conditions for storage and transport	
Climatic conditions for storage and transport	
Free fall	
Drop height, max. (in packaging)	0.3 m ; five times, in dispatch package
Temperature	
Permissible temperature range	-40 °C to +70 °C
Air pressure acc. to IEC 60068-2-13	
Permissible air pressure	1080 to 660 hPa
Relative humidity	
Permissible range (without condensation) at 25 °C	95 %
Mechanical and climatic conditions during operation	
Climatic conditions in operation	
Temperature	
Permissible temperature range	-20 °C to +60 °C horizontal mounting, -20 °C to 50 °C vertical mounting, 95% humidity, non-condensing

<b>Air pressure acc. to IEC 60068-2-13</b>	
<b>Permissible air pressure</b>	1080 to 795 hPa
<b>Pollutant concentrations</b>	
<b>SO2 at RH &lt; 60% without condensation</b>	SO2: < 0.5 ppm; H2S: < 0.1 ppm; RH < 60% condensation-free
<b>Connection method</b>	
<b>required front connector</b>	Yes
<b>Mechanics/material</b>	
<b>Type of housing (front)</b>	
<b>Plastic</b>	Yes
<b>Dimensions</b>	
<b>Width</b>	45 mm
<b>Height</b>	100 mm
<b>Depth</b>	75 mm
<b>Weights</b>	
<b>Weight, approx.</b>	220 g
Status	Jun 19, 2014