SIEMENS

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

Supply voltage	
24 V DC	Yes

Input current	
Current consumption, typ.	40 mA
from backplane bus 5 V DC, typ.	80 mA

Power loss	
Power loss, typ.	1.5 W

Analog inputs	
Number of analog inputs	4; 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	
• 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
Input ranges (rated values), resistance thermometers	
• Cu 10	Yes
• Input resistance (Cu 10)	10 Ω
• Ni 100	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
Input ranges (rated values), resistors	
• 0 to 150 Ohm	Yes
• 0 to 300 Ohm	Yes
• 0 to 600 Ohm	Yes
Thermocouple (TC)	
Temperature compensation	
— parameterizable	No
Analog outputs	
Number of analog outputs	0
Analog value generation	

08.08.2014

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 50 / 60 / 400 Hz

Errors/accuracies	
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 x (f1 +/- 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	
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
Air pressure acc. to IEC 60068-2-13	
— permissible air pressure	1080 to 795 hPa
Pollutant concentrations	
— SO2 at RH < 60% without condensation	S02: < 0.5 ppm; H2S: < 0.1 ppm; RH < 60% condensation-free

Connection method	
required front connector	Yes

Mechanics/material	
Type of housing (front)	
• Plastic	Yes

Dimensions	
Width	45 mm
Height	100 mm
Depth	75 mm

Weights	
Weight, approx.	220 g
last modified:	31.07.2014