SIEMENS

Data sheet 6ES7231-5PF32-0XB0

SIMATIC S7-1200, ANALOG INPUT, SM 1231RTD, 8 X AI RTD MODULE,



Supply voltage	
Rated value (DC)	
• 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	8; 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	
• Voltage	No
• Current	No
• Thermocouple	No

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• 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 thermometer	
• 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 ohms	Yes
• 0 to 300 ohms	Yes
• 0 to 600 ohms	Yes
Thermocouple (TC)	
Temperature compensation	
— parameterizable	No

Analog value generation	
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

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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	
Degree of protection acc. 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	
• Fall height, max.	0.3 m; five times, in dispatch package
Ambient temperature during 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

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• Storage/transport, min.	660 hPa
• Storage/transport, max.	1 080 hPa
Relative humidity	
• permissible range (without condensation) at 25 °C	95 %
Extended ambient conditions	
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	
Enclosure material (front)	
• Plastic	Yes
Dimensions	
Width	70 mm
Height	100 mm
Depth	75 mm
Weights	
Weight, approx.	220 g

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