SIEMENS

Product data sheet 6ES7231-4HF32-0XB0

SIMATIC S7-1200, ANALOG INPUT, SM 1231,
8 AI, +/-10V, +/-5V, +/-2.5V,
OR 0-20MA/4-20 MA,
12 BIT + SIGN OR (13 BIT ADC)

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Supply voltage	
24 V DC	Yes
Input current	
Current consumption, typ.	45 mA
from backplane bus 5 V DC, typ.	90 mA
Power losses	
Power loss, typ.	1.5 W
Analog inputs	
Number of analog inputs	8 ; Current or voltage differential inputs
permissible input frequency for current input (destruction limit), max.	± 35 V
permissible input voltage for voltage input (destruction limit), max.	35 V
permissible input current for voltage input (destruction limit), max.	40 mA
permissible input current for current input (destruction limit), max.	40 mA
Cycle time (all channels) max.	625 µs
Input ranges	
Voltage	Yes ; ±10 V, ±5 V, ±2.5 V
Current	Yes ; 4 to 20 mA, 0 to 20 mA
Thermocouple	No

Resistance thermometer	No
Resistance	Yes
Input ranges (rated values), voltages	
-10 V to +10 V	Yes
Input resistance (-10 V to +10 V)	≥9 MOhm
-2.5 V to +2.5 V	Yes
Input resistance (-2.5 V to +2.5 V)	≥9 MOhm
-5 V to +5 V	Yes
Input resistance (-5 V to +5 V)	≥9 MOhm
Input ranges (rated values), currents	
0 to 20 mA	Yes
Input resistance (0 to 20 mA)	280 Ω
Thermocouple (TC)	
Temperature compensation	
Parameterizable	No
Analog outputs	
Number of analog outputs	0
Analog value creation	
Integration and conversion time/resolution per channel	
Resolution with overrange (bit including sign), max.	12 bit ; + sign
Integration time, parameterizable	Yes
Interference voltage suppression for interference frequency f1 in Hz	40 dB, DC to 60 V for interference frequency 50 / 60 Hz
Smoothing of measured values	
Parameterizable	Yes
Step: None	Yes
Step: low	Yes
Step: Medium	Yes
Step: High	Yes
Errors/accuracies	
Basic error limit (operational limit at 25 °C)	
Voltage, relative to input area, (+/-)	0.1 %
Current, relative to input area, (+/-)	0.1 %
Interference voltage suppression for f = n x (f1 +/- 1 %), f1 = interference frequency	
common mode voltage, max.	12 V
Interrupts/diagnostics/status information	
Alarms	
Alarms	Yes

Diagnostic alarm	Yes
Diagnostic messages	
Diagnostic functions	Yes
Monitoring the supply voltage	Yes
Wire break	Yes
Diagnostics indication LED	
for status of the inputs	Yes
for maintenance	Yes
Galvanic isolation	
Galvanic isolation analog outputs	
between the channels and the power supply of the electronics	No
Degree and class of protection	
IP20	Yes
Standards, approvals, certificates	
CE mark	Yes
CSA approval	Yes
RCM (formerly C-TICK)	Yes
FM approval	Yes
Marine approval	
Marine 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
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
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.	180 g
Status	Dec 11, 2014