



Product data sheet
6ES7231-4HD30-0XB0

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

Supply voltages

Rated value

DC 24 V	Yes
Short-circuit protection	0.0000000000000000E+00
Current consumption	
Current consumption, typ.	45 mA
from backplane bus DC 5 V, typ.	80 mA
Current consumption/power loss	
Power loss, typ.	1.5 W
Connection point	
required front connectors	Yes

Analog inputs

Number of analog inputs	4 ; Current or voltage differential inputs
Permissible input frequency for current input (destruction limit), max.	± 35 V
permissible input current for voltage input (destruction limit), max.	40 mA
Cycle time (all channels), max.	625 μ s
Voltage	Yes ; ± 10 V, ± 5 V, ± 2.5 V
Current	Yes ; 0 to 20 mA
thermocouple	No
Resistance thermometer	No
Impedance	No
Input ranges (rated values), voltages	
-10 V to +10 V	Yes
Input resistance (-10 V to +10 V)	9M ohms
-2.5 V to +2.5 V	Yes
Input resistance (-2.5 V to +2.5 V)	9M ohms
-5 V to +5 V	Yes

Input resistance (-5 V to +5 V)	9M ohms
Input ranges (rated values), currents	
0 to 20 mA	Yes
Input resistance (0 to 20 mA)	250 ohms
Voltage input	
permissible input frequency for voltage input (destruction limit), max.	35 V
Current input	
permissible input current for current input (destruction limit), max.	40 mA
Temperature compensation	
programmable	No
Analog outputs	
Number of analog outputs	0
Analog value creation	
Integration and conversion time/resolution per channel	
Resolution with overload area (bit including sign), max.	12 bit ; + sign
Integration time, parameterizable	Yes
Interference voltage suppression for interference frequency f_1 in Hz	40 dB, DC to 60 V for interference frequency 50 / 60 Hz
Smoothing of measured values	
parameterizable	Yes
Level: none	Yes
Level: weak	Yes
Level: middle	Yes
Level: strong	Yes
Errors/accuracies	
Temperature error (relative to input areas)	25°C $\pm 0.1\%$ to 55°C $\pm 0.2\%$ total measurement range
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 $f = n \times (f_1 \pm 1 \%)$, f_1 = interference frequency	
common mode voltage, max.	12 V
Interrupts/diagnostics/status information	
Alarms	

Alarms	Yes
Diagnostic alarm	Yes
Diagnoses	
Diagnostic functions	Yes
Monitoring the voltage supply to the electronics	Yes
Wire break	No
Isolation	
Isolation, analog outputs between the channels and the voltage supply to the electronics	No
Degree of protection	
IP 20	Yes
Standards, approvals, certificates	
CE symbol	Yes
C-TICK	Yes
FM approval	Yes
Mechanics	
Plastic	Yes
Dimensions and weight	
Dimensions and weight	
Width	45 mm
Height	100 mm
Depth	75 mm
Weight	
Weight, approx.	180 g
Status	Sep 28, 2009