SIEMENS

Product data sheet 6ES7231-5QF30-0XB0

SIMATIC S7-1200, ANALOG INPUT,
SM 1231 TC, 8 AI THERMOCOUPLE

Supply voltage	
24 V DC	Yes
Input current	
Current consumption, typ.	80 mA
from backplane bus 5 V DC, typ.	80 mA
Power losses	
Power loss, typ.	1.5 W
Analog inputs	
Number of analog inputs	8 ; Thermocouples
permissible input frequency for current input (destruction limit), max.	± 35 V
Technical unit for temperature measurement adjustable	Degrees Celsius/degrees Fahrenheit
Input ranges	
Thermocouple	Yes ; J, K, T, E, R, S, N, C, TXK/XK(L); voltage range: +/-80 mV
Input ranges (rated values), voltages	
-80 mV to +80 mV	Yes
Input ranges (rated values), thermoelements	
Type C	Yes
Type E	Yes
Type J	Yes
Type K	Yes
Type N	Yes
Type R	Yes
Type S	Yes
Type T	Yes
Type TXK/TXK(L) to GOST	Yes
Thermocouple (TC)	
permissible input voltage for voltage input (destruction limit), max.	+-35V
Temperature compensation	
Parameterizable	No
Analog value creation	

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Measurement principle	integrating
Integrations 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
Analog value generation (in isochronous mode)	
Smoothing of measured values	
Parameterizable	Yes
Errors/accuracies	
cold connection point	+/-1.5 °C
Temperature error (relative to input area)	25 °C ±0.1 % to 55 °C ±0.2 % total measurement range
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
C-TICK	Yes
FM approval	Yes
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	

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Permissible air pressure	1080 to 660 hPa
Mechanical and climatic conditions during operation	
Climatic conditions in operation	
Temperature	
Permissible temperature range	0 °C to 55 °C horizontal installation 0 °C to 45 °C vertical installation
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
Weight	
Weight, approx.	220 g
Status	Feb 25, 2013

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