

# 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
<b>Thermocouple (TC)</b>	
permissible input voltage for voltage input (destruction limit), max.	+/-35V
<b>Temperature compensation</b>	
Parameterizable	No
<b>Analog value creation</b>	
Measurement principle	integrating
<b>Integrations and conversion time/ resolution per channel</b>	
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
<b>Analog value generation (in isochronous mode)</b>	
<b>Smoothing of measured values</b>	
Parameterizable	Yes
<b>Errors/accuracies</b>	
cold connection point	+/-1.5 °C
Temperature error (relative to input area)	25 °C ±0.1 % to 55 °C ±0.2 % total measurement range
<b>Interference voltage suppression for <math>f = n \times (f1 \pm 1\%)</math>, f1 = interference frequency</b>	
Common mode interference, min.	120 dB
<b>Interrupts/diagnostics/status information</b>	
<b>Alarms</b>	
Alarms	Yes
Diagnostic alarm	Yes
<b>Diagnostic messages</b>	
Diagnostic functions	Yes ; Can be read out
Monitoring the supply voltage	Yes
Wire break	Yes
<b>Diagnostics indication LED</b>	
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	
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	
SO <sub>2</sub> at RH < 60% without condensation	SO <sub>2</sub> : < 0.5 ppm; H <sub>2</sub> S: < 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	

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Weight, approx.	220 g
Status	Jul 17, 2012