

SIEMENS

Product data sheet

6ES7231-7PD22-0XA0



SIMATIC S7-200, T/C INPUT MOD. EM 231,
FOR S7-22X CPU ONLY, 4 AI,
+/-80 MV AND THERMOCOUPLE TYPE
J,K,S,T,R,E,N;
15BIT+VORZ.

Input current

from load voltage L+ (without load), max.	60 mA
from backplane bus 5 V DC, max.	87 mA

Power losses

Power loss, typ.	1.8 W
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Analog inputs

Number of analog inputs	4
permissible input voltage for voltage input (destruction limit), max.	30 V
Loop resistance cable	100 Ω
Updating time (all channels)	405 ms

Input ranges

Voltage	Yes
Current	No
Thermocouple	Yes
Resistance thermometer	No

Resistance	No
Input ranges (rated values), voltages	
-80 mV to +80 mV	Yes
Input resistance (-80 mV to +80 mV)	1 MΩ
Input ranges (rated values), thermoelements	
Type E	Yes
Type J	Yes
Input resistance (type J)	1 MΩ
Type K	Yes
Input resistance (Type K)	1 MΩ
Type N	Yes
Input resistance (Type N)	1 MΩ
Type R	Yes
Input resistance (Type R)	1 MΩ
Type S	Yes
Input resistance (Type S)	1 MΩ
Type T	Yes
Input resistance (Type T)	1 MΩ
Cable length	
Cable length, shielded, max.	100 m ; to the sensor
Analog value creation	
Measurement principle	Sigma Delta
Integrations and conversion time/ resolution per channel	
Resolution with overrange (bit including sign), max.	16 bit ; Temperature 0.1 °C / 0.1 °F
Interference voltage suppression for interference frequency f1 in Hz	85 dB at 50 / 60 / 400 Hz
Displayable conversion value range	
bipolar signals	-27.648 to +27.648
Errors/accuracies	
cold connection point	+/-1.5 °C
Repeat accuracy in settled status at 25 °C (relative to input area)	+/- 0,05 %
Operational limit in overall temperature range	

Voltage, relative to output area	+/- 0,1 %
Interference voltage suppression for $f = n \times (f_l \pm 1\%)$, f_l = interference frequency	
common mode voltage, max.	120 V ; AC
Common mode interference, min.	120 dB ; At 120 V DC
Interrupts/diagnostics/status information	
Diagnostics indication LED	
External fault EXTf (red)	Yes
Group error SF (red)	Yes
Galvanic isolation	
Galvanic isolation analog inputs	
Galvanic isolation analog inputs	Yes
Permissible potential difference	
between inputs and MANA (UCM)	500 V AC
between M internally and the inputs	500 V AC
Connection method	
Plug-in I/O terminals	No
Dimensions	
Width	71.2 mm
Height	80 mm
Depth	62 mm
Weight	
Weight, approx.	210 g
Status	Jul 17, 2012