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Data sheet 6ES7231-0HF22-0XA0

	*** spare part *** SIMATIC S7-200, analog input EM 231, only for S7-22X CPU, 8 AI, 0-10V DC, max 2 AI 0..20 mA 12/11-bit converter
Input current	
from load voltage L+ (without load), max.	60 mA
from backplane bus 5 V DC, max.	20 mA
Power loss	
Power loss, typ.	2 W
Analog inputs	
Number of analog inputs	8; Difference
permissible input voltage for voltage input (destruction limit), max.	30 V
permissible input current for current input (destruction limit), max.	40 mA
Input ranges	
● Voltage	Yes
● Current	Yes; for channels 6 and 7 only
● Thermocouple	No
● Resistance thermometer	No
● Resistance	No
Input ranges (rated values), voltages	
● 0 to +5 V	Yes
— Input resistance (0 to 5 V)	10 MΩ
● 0 to +10 V	Yes
— Input resistance (0 to 10 V)	10 MΩ
● -2.5 V to +2.5 V	Yes
— Input resistance (-2.5 V to +2.5 V)	10 MΩ
● -5 V to +5 V	Yes
— Input resistance (-5 V to +5 V)	10 MΩ
● -80 mV to +80 mV	No
Input ranges (rated values), currents	
● 0 to 20 mA	Yes; for channels 6 and 7 only
— Input resistance (0 to 20 mA)	10 MΩ
Input ranges (rated values), thermocouples	
● Type E	No
● Type J	No
● Type K	No
● Type N	No
● Type R	No
● Type S	No
● Type T	No
Input ranges (rated values), resistance thermometer	
● Cu 10	No
● Ni 10	No
● Ni 1000	No
● Ni 120	No
● Pt 100	No
● Pt 1000	No
● Pt 10000	No
● Pt 200	No
● Pt 500	No
Input ranges (rated values), resistors	
● 0 to 150 ohms	No

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● 0 to 300 ohms	No
● 0 to 600 ohms	No
Thermocouple (TC)	
Temperature compensation	
— Parameterizable	No
Cable length	
● shielded, max.	100 m; to the sensor
Analog value generation for the inputs	
Integration and conversion time/resolution per channel	
● Resolution with overrange (bit including sign), max.	12 bit
● Interference voltage suppression for interference frequency f1 in Hz	40 dB, DC up to 60 V for interference frequency
● Conversion time (per channel)	250 µs
Displayable conversion value range	
● bipolar signals	-32 000 to +32 000
● unipolar signals	0 to 32 000
Errors/accuracies	
Interference voltage suppression for f = n x (f1 +/- 1 %), f1 = interference frequency	
● Common mode voltage, max.	12 V
Interrupts/diagnostics/status information	
Diagnostics indication LED	
● external fault EXTF (red)	Yes
Potential separation	
Potential separation analog inputs	
● Potential separation analog inputs	No
Connection method	
Plug-in I/O terminals	No
Dimensions	
Width	71.2 mm
Height	80 mm
Depth	62 mm
Weights	
Weight, approx.	190 g

Classifications

	Version	Classification
eClass	16	27-24-22-01
eClass	14	27-24-22-01
eClass	12	27-24-22-01
eClass	9.1	27-24-22-01
eClass	9	27-24-22-01
eClass	8	27-24-22-01
eClass	7.1	27-24-22-01
eClass	6	27-24-22-01
ETIM	10	EC001420
ETIM	9	EC001420
ETIM	8	EC001420
ETIM	7	EC001420
IDEA	4	3562
UNSPSC	15	32-15-17-05

Approvals / Certificates

General Product Approval				For use in hazardous locations
CE EG-Konf.	Miscellaneous	EAC	China RoHS	Ex ATEX	FM

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Maritime application













Maritime application

CCS (China Classification Society)

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