

*** 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

• 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 $f = n \times (f1 \pm 1 \%)$, 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



[Miscellaneous](#)



[China RoHS](#)



[EM](#)

Maritime application



Maritime application

[CCS \(China Classification Society\)](#)

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