



Spare part SIMATIC S7-200, analog I/O EM 235, only for S7-22X CPU, 4 AI, +/-10 V DC; 1 AO, +/-10 V DC 12 bit converter

Input current	
from external supply (24 V DC), max.	60 mA
from backplane bus 5 V DC, max.	30 mA
Power loss	
Power loss, typ.	2 W
Analog inputs	
Number of analog inputs	4; Difference
permissible input voltage for voltage input (destruction limit), max.	30 V
permissible input current for current input (destruction limit), max.	32 mA
Input ranges	
• Voltage	Yes
• Current	Yes
• Thermocouple	No
• Resistance thermometer	No
• Resistance	No
Input ranges (rated values), voltages	
• 0 to +50 mV	Yes
• 0 to +100 mV	Yes
• 0 to +500 mV	Yes
• 0 to +1 V	Yes
• 0 to +5 V	Yes
• 0 to +10 V	Yes
• -1 V to +1 V	Yes
• -10 V to +10 V	Yes
• -100 mV to +100 mV	Yes
• -2.5 V to +2.5 V	Yes
• -25 mV to +25 mV	Yes
• -250 mV to +250 mV	Yes
• -5 V to +5 V	Yes
• -50 mV to +50 mV	Yes
• -500 mV to +500 mV	Yes
Input ranges (rated values), currents	
• 0 to 20 mA	Yes
Thermocouple (TC)	
Temperature compensation — parameterizable	No
Analog outputs	
Number of analog outputs	1
Output ranges, voltage	

• -10 V to +10 V	Yes
Output ranges, current	
• 0 to 20 mA	Yes
Load impedance (in rated range of output)	
• with voltage outputs, min.	5 kΩ
• with current outputs, max.	0.5 kΩ
Analog value generation for the inputs	
Integration and conversion time/resolution per channel	
• Resolution with overrange (bit including sign), max.	12 bit
• Basic conversion time (ms)	< 0.25 ms
• Interference voltage suppression for interference frequency f1 in Hz	40 dB, DC to 60 Hz
Displayable conversion value range	
• bipolar signals	-32 000 to +32 000
• unipolar signals	0 to 32 000
Analog value generation for the outputs	
Integration and conversion time/resolution per channel	
• Resolution with overrange (bit including sign), max.	11 bit
Settling time	
• for voltage output	100 μs
• for current output	2 ms
Displayable conversion value range	
• bipolar signals	-32 000 to +32 000
• unipolar signals	0 to 32 000
Errors/accuracies	
Operational error limit in overall temperature range	
• Voltage, relative to output range, (+/-)	2 %
• Current, relative to output range, (+/-)	2 %
Basic error limit (operational limit at 25 °C)	
• Voltage, relative to output range, (+/-)	0.5 %
• Current, relative to output range, (+/-)	0.5 %
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
Potential separation analog outputs	
• Potential separation analog outputs	No
connection method	
Plug-in I/O terminals	No
Dimensions	
Width	71.2 mm
Height	80 mm
Depth	62 mm
Weights	
Weight, approx.	186 g
Classifications	

	Version	Classification
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	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	Maritime application
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[Miscellaneous](#)



[FM](#)



Maritime application



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

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