

SIMATIC S7-200, ANALOG I/O EM 235, FOR S7-22X CPU ONLY, 4 AI, DC +/-10V; 1AQ, DC +/-10V 12 BIT CONVERTER



Input current	
from backplane bus 5 V DC, max.	30 mA
from sensor current supply or external current supply (24 V DC), max.	60 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
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
<b>Input ranges (rated values), currents</b>	
• 0 to 20 mA	Yes
<b>Thermocouple (TC)</b>	
Temperature compensation	
— parameterizable	No
<b>Analog outputs</b>	
Number of analog outputs	1
<b>Output ranges, voltage</b>	
• -10 V to +10 V	Yes
<b>Output ranges, current</b>	
• 0 to 20 mA	Yes
<b>Load impedance (in rated range of output)</b>	
• with voltage outputs, min.	5 k $\Omega$
• with current outputs, max.	0.5 k $\Omega$
<b>Analog value generation for the inputs</b>	
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
<b>Analog value generation for the outputs</b>	
Integration and conversion time/resolution per channel	
• Resolution with overrange (bit including sign), max.	11 bit
<b>Settling time</b>	
• for voltage output	100 $\mu$ s
• 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 $f = n \times (f_1 \pm 1 \%)$ , $f_1 =$ 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
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### Dimensions

Width	71.2 mm
Height	80 mm
Depth	62 mm

### Weights

Weight, approx.	186 g
<b>last modified:</b>	03/16/2017