

SIMATIC S7-1200, ANALOG I/O SM 1234,  
4 AI / 2 AO, +/-10V, 14 BIT RESOLUTION,  
OR 0-20 MA, 13 BIT RESOLUTION

Supply voltage	
24 V DC	Yes
Input current	
Current consumption, typ.	60 mA
from backplane bus 5 V DC, typ.	80 mA
Power losses	
Power loss, typ.	2 W
Analog inputs	
Number of analog inputs	4 ; Current or voltage differential inputs
permissible input frequency for current input (destruction limit), max.	± 35 V
permissible input voltage for voltage input (destruction limit), max.	35 V
permissible input current for voltage input (destruction limit), max.	40 mA
permissible input current for current input (destruction limit), max.	40 mA
Cycle time (all channels) max.	625 µs
Input ranges	
Voltage	Yes ; ±10 V, ±5 V, ±2.5 V
Current	Yes ; 4 to 20 mA, 0 to 20 mA
Input ranges (rated values), voltages	
-10 V to +10 V	Yes
Input resistance (-10 V to +10 V)	≥9 MOhm
-2.5 V to +2.5 V	Yes
Input resistance (-2.5 V to +2.5 V)	≥9 MOhm
-5 V to +5 V	Yes
Input resistance (-5 V to +5 V)	≥9 MOhm
Input ranges (rated values), currents	
0 to 20 mA	Yes
Input resistance (0 to 20 mA)	280 Ω
4 to 20 mA	Yes
Analog outputs	
Number of analog outputs	2 ; Current or voltage

<b>Output ranges, voltage</b>	
-10 to +10 V	Yes
<b>Output ranges, current</b>	
0 to 20 mA	Yes
4 to 20 mA	Yes
<b>Load impedance (in rated range of output)</b>	
with voltage outputs, min.	1000 Ω
with current outputs, max.	600 Ω
<b>Analog value creation</b>	
Measurement principle	Differential
<b>Integrations and conversion time/ resolution per channel</b>	
Resolution (incl. overrange)	Voltage: 14 bits; Current : 13 bits
Integration time, parameterizable	Yes
Interference voltage suppression for interference frequency f1 in Hz	40 dB, DC to 60 V for interference frequency 50 / 60 Hz
<b>Smoothing of measured values</b>	
Parameterizable	Yes
Step: None	Yes
Step: low	Yes
Step: Medium	Yes
Step: High	Yes
<b>Errors/accuracies</b>	
Temperature error (relative to input area)	25 °C ±0.1 % to 55 °C ±0.2 % total measurement range
Temperature error (relative to output area)	25 °C ±0.3% to 55 °C ±0.6% total measurement range
<b>Basic error limit (operational limit at 25 °C)</b>	
Voltage, relative to input area	+/- 0,1 %
Current, relative to input area	+/- 0,1 %
Voltage, relative to output area	+/- 0,3 %
Current, relative to output area	+/- 0,3 %
<b>Interference voltage suppression for <math>f = n \times (f1 \pm 1\%)</math>, f1 = interference frequency</b>	
common mode voltage, max.	12 V
<b>Interrupts/diagnostics/status information</b>	
<b>Alarms</b>	
Alarms	Yes
Diagnostic alarm	Yes
<b>Diagnostic messages</b>	
Diagnostic functions	Yes
Monitoring the supply voltage	Yes

Wire break	Yes
Short circuit	Yes
<b>Diagnostics indication LED</b>	
for status of the inputs	Yes
For status of the outputs	Yes
for maintenance	Yes
<b>Galvanic isolation</b>	
<b>Galvanic isolation analog outputs</b>	
between the channels and the power supply of the electronics	No
<b>Degree and class of protection</b>	
IP20	Yes
<b>Standards, approvals, certificates</b>	
CE mark	Yes
CSA approval	Yes
C-TICK	Yes
FM approval	Yes
Marine approval	Yes
<b>Climatic and mechanical conditions for storage and transport</b>	
<b>Climatic conditions for storage and transport</b>	
<b>Free fall</b>	
Drop height, max. (in packaging)	0.3 m ; five times, in dispatch package
<b>Temperature</b>	
Permissible temperature range	-40 °C to +70 °C
<b>Air pressure acc. to IEC 60068-2-13</b>	
Permissible air pressure	1080 to 660 hPa
<b>Mechanical and climatic conditions during operation</b>	
<b>Climatic conditions in operation</b>	
<b>Temperature</b>	
Permissible temperature range	-20 °C to +60 °C horizontal mounting -20 °C to 50 °C vertical mounting 95% humidity, non-condensing
<b>Air pressure acc. to IEC 60068-2-13</b>	
Permissible air pressure	1080 to 795 hPa
<b>Pollutant concentrations</b>	
SO2 at RH < 60% without condensation	SO2: < 0.5 ppm; H2S: < 0.1 ppm; RH < 60% condensation-free
<b>Connection method</b>	
required front connector	Yes
<b>Mechanics/material</b>	
Type of housing (front)	

<b>Plastic</b>	Yes
<b>Dimensions</b>	
<b>Width</b>	45 mm
<b>Height</b>	100 mm
<b>Depth</b>	75 mm
<b>Weight</b>	
<b>Weight, approx.</b>	220 g
Status	Jun 15, 2013