

SIMATIC S7-1200, ANALOG OUTPUT, SM 1232, 2 AO, +/-10V, 14 BIT RESOLUTION, OR 0 - 20 mA/4 - 20 mA, 13 BIT RESOLUTION



### Supply voltage

Rated value (DC)

- 24 V DC

Yes

### Input current

Current consumption, typ.

45 mA

from backplane bus 5 V DC, typ.

80 mA

### Power loss

Power loss, typ.

1.5 W

### Analog outputs

Number of analog outputs

2; Current or voltage

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.
- with current outputs, max.

1 000  $\Omega$

600  $\Omega$

## Analog value generation

Measurement principle	Differential
Integration and conversion time/resolution per channel	
<ul style="list-style-type: none"><li>Resolution (incl. overrange)</li><li>Integration time, parameterizable</li><li>Interference voltage suppression for interference frequency <math>f_1</math> in Hz</li></ul>	Voltage: 14 bits; Current : 13 bits Yes 40 dB, DC to 60 V for interference frequency 50 / 60 Hz

## Errors/accuracies

Temperature error (relative to output range), (+/-)	25 °C $\pm 0.3\%$ , to 55 °C $\pm 0.6\%$ total measurement range
Basic error limit (operational limit at 25 °C)	
<ul style="list-style-type: none"><li>Voltage, relative to output area, (+/-)</li><li>Current, relative to output area, (+/-)</li></ul>	0.3 % 0.3 %
Interference voltage suppression for $f = n \times (f_1 \pm 1 \%)$ , $f_1 =$ interference frequency	
<ul style="list-style-type: none"><li>Common mode voltage, max.</li></ul>	12 V

## Interrupts/diagnostics/status information

Alarms	
<ul style="list-style-type: none"><li>Alarms</li><li>Diagnostic alarm</li></ul>	Yes Yes
Diagnostic messages	
<ul style="list-style-type: none"><li>Diagnostic functions</li><li>Monitoring the supply voltage</li><li>Wire-break</li><li>Short-circuit</li></ul>	Yes Yes Yes Yes
Diagnostics indication LED	
<ul style="list-style-type: none"><li>for status of the outputs</li><li>for maintenance</li></ul>	Yes Yes

## Degree and class of protection

Degree of protection acc. to EN 60529	
<ul style="list-style-type: none"><li>IP20</li></ul>	Yes

## Standards, approvals, certificates

CE mark	Yes
CSA approval	Yes
FM approval	Yes
RCM (formerly C-TICK)	Yes
Highest safety class achievable in safety mode	
<ul style="list-style-type: none"><li>SIL acc. to IEC 61508</li></ul>	none

## Ambient conditions

Free fall	
<ul style="list-style-type: none"><li>Fall height, max.</li></ul>	0.3 m; five times, in dispatch package
Ambient temperature during operation	

<ul style="list-style-type: none"> <li>• permissible temperature range</li> </ul>	-20 °C to +60 °C horizontal mounting, -20 °C to 50 °C vertical mounting, 95% humidity, non-condensing
<ul style="list-style-type: none"> <li>• min.</li> </ul>	-20 °C
<ul style="list-style-type: none"> <li>• max.</li> </ul>	60 °C
<b>Ambient temperature during storage/transportation</b>	
<ul style="list-style-type: none"> <li>• min.</li> </ul>	-40 °C
<ul style="list-style-type: none"> <li>• max.</li> </ul>	70 °C
<b>Air pressure acc. to IEC 60068-2-13</b>	
<ul style="list-style-type: none"> <li>• Operation, min.</li> </ul>	795 hPa
<ul style="list-style-type: none"> <li>• Operation, max.</li> </ul>	1 080 hPa
<ul style="list-style-type: none"> <li>• Storage/transport, min.</li> </ul>	660 hPa
<ul style="list-style-type: none"> <li>• Storage/transport, max.</li> </ul>	1 080 hPa
<b>Relative humidity</b>	
<ul style="list-style-type: none"> <li>• permissible range (without condensation) at 25 °C</li> </ul>	95 %
<b>Extended ambient conditions</b>	
<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>	
<b>Material des Gehäuses (frontseitig)</b>	
<ul style="list-style-type: none"> <li>• Plastic</li> </ul>	Yes
<b>Dimensions</b>	
Width	45 mm
Height	100 mm
Depth	75 mm
<b>Weights</b>	
Weight, approx.	180 g
<b>last modified:</b>	13.08.2015