

# SIMATIC S7-1200

## Analog modules

### SB 1232 analog output module

#### Overview



- Analog output for the SIMATIC S7-1200
- Can be plugged direct into the CPU

#### Technical specifications

<b>6ES7 232-4HA30-0XB0</b>	
<b>Product type designation</b>	SB 1232 1x AO
<b>Supply voltages</b> Power supply to the transmitters	
• Supply current, max.	25 mA
<b>Current consumption</b> from backplane bus 5 V DC, typ.	15 mA
<b>Power losses</b> Power loss, typ.	1.5 W
<b>Analog outputs</b> Number of analog outputs	1
Cycle time (all channels) max.	Voltage: 300 $\mu$ S (R), 750 $\mu$ S (1 $\mu$ F) Current: 600 ms (1 mH); 2 ms (10 mH)
Output ranges, voltage	
• -10 to +10 V	Yes
Output ranges, current	
• 0 to 20 mA	Yes
Load impedance (in rated range of output)	
• with voltage outputs, min.	1 000 $\Omega$
• with current outputs, max.	600 $\Omega$
Cable length	
• Cable length, shielded, max.	Shielded, twisted wire pair
<b>Analog value creation</b> Measurement principle	Differential
Integrations and conversion time/ resolution per channel	
• Resolution (incl. overrange)	U / 12 bit, I / 11 bit
Smoothing of measured values	
• parameterizable	Yes
<b>Errors/accuracies</b> Temperature error (relative to output area)	25°C $\pm$ 0.5% bis 55°C $\pm$ 1%
<b>Alarms/diagnostics/status information</b> Alarms	
• Alarms	Yes
Diagnostics	
• Diagnostic functions	Yes
Diagnostic indication LED	
• For status of the outputs	Yes
<b>Climatic and mechanical conditions for storage and transport</b> Climatic conditions for storage and transport	
• Free fall	
- Drop height, max. (in packaging)	0.3 m; five times, in dispatch package
• Temperature	
- Permissible temperature range	-40 °C to +70 °C
• Air pressure acc. to IEC 60068-2-13	
- Permissible air pressure	1080 to 660 hPa
• Relative humidity	
- Permissible range (without condensation) at 25 °C	95%

Technical specifications (continued)		Ordering data	Order No.
<b>6ES7 232-4HA30-0XB0</b>		<b>SB 1232 analog output signal board</b>	
<b>Mechanical and climatic conditions during operation</b> Climatic conditions in operation		1 analog output, ±10 V with 12 bit or 0 ... 20 mA with 11 bit	I <b>6ES7 232-4HA30-0XB0</b>
• Pollutant concentrations - SO <sub>2</sub> at RH < 60% without condensation	SO <sub>2</sub> : < 0.5 ppm; H <sub>2</sub> S: < 0.1 ppm; RH < 60% condensation-free	<b>Terminal block (spare part)</b> for signal board with 6 screws, gold-plated; 4 units	I <b>6ES7 292-1BF30-0XA0</b>
<b>Degree of protection</b> IP20	Yes	<b>S7-1200 automation system, system manual</b> For SIMATIC S7-1200 and STEP 7 Basic	
<b>Standards, approvals, certificates</b> CE mark	Yes	German	K <b>6ES7 298-8FA30-8AH0</b>
C-TICK	Yes	English	K <b>6ES7 298-8FA30-8BH0</b>
FM approval	Yes	French	K <b>6ES7 298-8FA30-8CH0</b>
<b>Mechanics/material</b> Type of housing (front)		Spanish	K <b>6ES7 298-8FA30-8DH0</b>
• Plastic	Yes	Italian	K <b>6ES7 298-8FA30-8EH0</b>
<b>Dimensions and weight</b> Dimensions		Chinese	K <b>6ES7 298-8FA30-8KH0</b>
• Width	38 mm	<b>S7-1200 automation system, Easy Book</b> Brief instructions	
• Height	62 mm	German	K <b>6ES7 298-8FA30-8AQ0</b>
• Depth	21 mm	English	K <b>6ES7 298-8FA30-8BQ0</b>
Weight		French	K <b>6ES7 298-8FA30-8CQ0</b>
• Weight, approx.	40 g	Spanish	K <b>6ES7 298-8FA30-8DQ0</b>
		Italian	K <b>6ES7 298-8FA30-8EQ0</b>
		Chinese	K <b>6ES7 298-8FA30-8KQ0</b>
		<b>STEP 7 Basic V11 engineering software</b> Target system: SIMATIC S7-1200 controllers and the associated I/O. Requirements: Windows XP Home SP3, Windows XP Professional SP3 (32 bit), Windows 7 Home Premium, Windows 7 Professional (32 bit), Windows 7 Enterprise (32 bit), Windows 7 Ultimate (32 bit), Microsoft Server 2003 R2 Std. SP2 (32 bit), Microsoft Server 2008 Std. SP2 (32 bit) Type of delivery: German, English, Chinese, Italian, French, Spanish	
		Single license	<b>6ES7 822-0AA01-0YA0</b>
		Upgrade STEP 7 Basic V10.5 to STEP 7 Basic V11, single license	<b>6ES7 822-0AA01-0YE0</b>
		Powerpack STEP 7 Basic V11 to STEP 7 Prof. V11, floating license	<b>6ES7 822-1AA01-0YC5</b>
		STEP 7 Basic V11, trial license	<b>6ES7 822-0AA01-0YA7</b>
		STEP 7 Basic Software Update Service, 1 year	D <b>6ES7 822-0AA00-0YL0</b>

D: Subject to export regulations AL: N and ECCN: 5D992

I: Subject to export regulations AL: N and ECCN: EAR99H

K: Subject to export regulations AL: N and ECCN: EAR99T