

Overview

- Analog outputs
- For the connection of analog actuators

Technical specifications

Article number	6ES7332-5HB01-0AB0 SM332, 2AA, U/I, 11/12BIT	6ES7332-5HD01-0AB0 SM332, 4AA, U/I, 11/12BIT	6ES7332-5HF00-0AB0 SM332, 8AA, U/I, 11/12BIT	6ES7332-7ND02-0AB0 SM332, 4AA, 0-10V, 0-5V, +/-10V,+/-20MA
Product type designation				
Supply voltage				
Load voltage L+				
• Rated value (DC)	24 V	24 V	24 V	24 V
Input current				
from load voltage L+ (without load), max.	135 mA	240 mA	340 mA	290 mA
from backplane bus 5 V DC, max.	60 mA	60 mA	100 mA	120 mA
Power losses				
Power loss, typ.	3 W	3 W	6 W	3 W
Analog outputs				
Number of analog outputs	2	4	8	4; Isochronous mode
Voltage output, short-circuit protection	Yes	Yes	Yes	Yes
Voltage output, short-circuit current, max.	25 mA	25 mA	25 mA	40 mA
Current output, no-load voltage, max.	18 V	18 V	18 V	18 V
Output ranges, voltage				
• 0 to 10 V	Yes	Yes	Yes	Yes
• 1 V to 5 V	Yes	Yes	Yes	Yes
• -10 V to +10 V	Yes	Yes	Yes	Yes
Output ranges, current				
• 0 to 20 mA	Yes	Yes	Yes	Yes
• -20 mA to +20 mA	Yes	Yes	Yes	Yes
• 4 mA to 20 mA	Yes	Yes	Yes	Yes
Load impedance (in rated range of output)				
• with voltage outputs, min.	1 k Ω	1 k Ω	1 k Ω	1 k Ω
• with voltage outputs, capacitive load, max.	1 μ F	1 μ F	1 μ F	1 μ F
• with current outputs, max.	500 Ω	500 Ω	500 Ω	500 Ω
• with current outputs, inductive load, max.	10 mH	10 mH	10 mH	1 mH
Cable length				
• shielded, max.	200 m	200 m	200 m	200 m

SIMATIC S7-300 advanced controller

I/O modules

Analog modules

SM 332 analog output modules**Technical specifications** (continued)

Article number	6ES7332-5HB01-0AB0 SM332, 2AA, U/I, 11/12BIT	6ES7332-5HD01-0AB0 SM332, 4AA, U/I, 11/12BIT	6ES7332-5HF00-0AB0 SM332, 8AA, U/I, 11/12BIT	6ES7332-7ND02-0AB0 SM332, 4AA, 0-10V, 0-5V, +/-10V,+/-20MA
Analog value creation				
Integration and conversion time/ resolution per channel				
• Resolution with overrange (bit including sign), max.	12 bit; +/-10 V, +/-20 mA, 4 to 20 mA, 1 to 5 V: 11 bits + sign; 0 to 10 V, 0 to 20 mA: 12 bits	12 bit; +/-10 V, +/-20 mA, 4 to 20 mA, 1 to 5 V: 11 bits + sign; 0 to 10 V, 0 to 20 mA: 12 bits	12 bit; +/-10 V, +/-20 mA, 4 to 20 mA, 1 to 5 V: 11 bits + sign; 0 to 10 V, 0 to 20 mA: 12 bits	16 bit
• Conversion time (per channel)	0.8 ms	0.8 ms	0.8 ms	200 µs; in isochronous mode 640 µs
Settling time				
• for resistive load	0.2 ms	0.2 ms	0.2 ms	0.2 ms
• for capacitive load	3.3 ms	3.3 ms	3.3 ms	3.3 ms
• for inductive load	0.5 ms; 0.5 ms (1 mH); 3.3 ms (10 mH)	0.5 ms; 0.5 ms (1 mH); 3.3 ms (10 mH)	0.5 ms; 0.5 ms (1 mH); 3.3 ms (10 mH)	0.5 ms
Errors/accuracies				
Operational limit in overall temperature range				
• Voltage, relative to output area, (+/-)	0.5 %	0.5 %	0.5 %	0.12 %
• Current, relative to output area, (+/-)	0.6 %	0.6 %	0.6 %	0.18 %
Basic error limit (operational limit at 25 °C)				
• Voltage, relative to output area, (+/-)	0.4 %	0.4 %	0.4 %	0.02 %
• Current, relative to output area, (+/-)	0.5 %	0.5 %	0.5 %	0.02 %
Interrupts/diagnostics/ status information				
Substitute values connectable	Yes; Parameterizable	Yes; Parameterizable	Yes; Parameterizable	Yes; Parameterizable
Alarms				
• Diagnostic alarm	Yes; Parameterizable	Yes; Parameterizable	Yes; Parameterizable	Yes; Parameterizable
Diagnostic messages				
• Diagnostic information readable	Yes	Yes	Yes	Yes
Galvanic isolation				
Galvanic isolation analog outputs				
• between the channels and the backplane bus	Yes	Yes	Yes	Yes
Isolation				
Isolation checked with	500 V DC	500 V DC	500 V DC	1500 V DC
Connection method				
required front connector	20-pin	20-pin	40-pin	20-pin
Dimensions				
Width	40 mm	40 mm	40 mm	40 mm
Height	125 mm	125 mm	125 mm	125 mm
Depth	120 mm	120 mm	120 mm	120 mm
Weights				
Weight, approx.	220 g	220 g	272 g	220 g

Ordering data	Article No.	Article No.
SM 332 analog output modules		
incl. labeling strips, bus connector		
4 outputs, 11/12 bit	6ES7332-5HD01-0AB0	
4 outputs, 16 bit	6ES7332-7ND02-0AB0	
2 outputs, 11/12 bit	6ES7332-5HB01-0AB0	
8 outputs, 11/12 bit	6ES7332-5HF00-0AB0	
Front connectors		
20-pin, with screw contacts		
• 1 unit	6ES7392-1AJ00-0AA0	
• 100 units	6ES7392-1AJ00-1AB0	
20-pin, with spring-loaded contacts		
• 1 unit	6ES7392-1BJ00-0AA0	
• 100 units	6ES7392-1BJ00-1AB0	
40-pin, with screw contacts		
• 1 unit	6ES7392-1AM00-0AA0	
• 100 units	6ES7392-1AM00-1AB0	
40-pin, with spring-loaded contacts		
• 1 unit	6ES7392-1BM01-0AA0	
• 100 units	6ES7392-1BM01-1AB0	
Front door, elevated design	6ES7328-0AA00-7AA0	
e.g. for 32-channel modules; for connecting 1.3 mm ² /16 AWG wires		
SIMATIC TOP connect	See page 5/247	
Bus connectors		
1 unit (spare part)	6ES7390-0AA00-0AA0	
Shield connecting element	6ES7390-5AA00-0AA0	
80 mm wide, with 2 rows for 4 terminal elements each		
Terminal elements		
2 units		
For 2 cables with 2 mm to 6 mm diameter	6ES7390-5AB00-0AA0	
For 1 cable with 3 mm to 8 mm diameter	6ES7390-5BA00-0AA0	
For 1 cable with 4 mm to 13 mm diameter	6ES7390-5CA00-0AA0	
		Label cover
		10 units (spare part), for modules with 20-pin front connector
		Labeling strips
		10 units (spare part), for modules with 20-pin front connector
		Labeling sheets for machine labeling
		for modules with 20-pin front connector, DIN A4, for printing with laser printer; 10 units
		petrol
		6ES7392-2AX00-0AA0
		light-beige
		6ES7392-2BX00-0AA0
		yellow
		6ES7392-2CX00-0AA0
		red
		for modules with 40-pin front connector, DIN A4, for printing with laser printer; 10 units
		petrol
		6ES7392-2AX10-0AA0
		light-beige
		6ES7392-2BX10-0AA0
		yellow
		6ES7392-2CX10-0AA0
		red
		6ES7392-2DX10-0AA0
		SIMATIC Manual Collection
		6ES7998-8XC01-8YE0
		Electronic manuals on DVD, multilingual: LOGO!, SIMADYN, SIMATIC bus components, SIMATIC C7, SIMATIC distributed I/O, SIMATIC HMI, SIMATIC Sensors, SIMATIC NET, SIMATIC PC Based Automation, SIMATIC PCS 7, SIMATIC PG/PC, SIMATIC S7, SIMATIC Software, SIMATIC TDC
		SIMATIC Manual Collection update service for 1 year
		6ES7998-8XC01-8YE2
		Current "Manual Collection" DVD and the three subsequent updates