SIEMENS

Data sheet

6ES7332-5HB01-0AB0



SIMATIC S7-300, Analog output SM 332, isolated, 2 AO, U/I; resolution 11/12 bits, 20-pole, Removing/inserting with active backplane bus possible

Figure similar

Load voltage L+ Rated value (DC)	r water to		
Rated value (DC)	Supply voltage		
Reverse polarity protection Yes	Load voltage L+		
Input current from load voltage L+ (without load), max. 135 mA from backplane bus 5 V DC, max. 60 mA Power loss. Power loss. Vp. Analog outputs 2 Voltage output, short-circuit current, max. 25 mA Current output, no-load voltage, max. 18 V Output ranges, voltage • 0 to 10 V • 10 to 10 V Yes • 10 to 10 V Yes • 10 to 20 mA Yes • 20 mA to +20 mA Yes • 20 mA to +20 mA Yes • 20 mA to vitage outputs, min. 1 kΩ • with voltage outputs, capacitive load, max. 1 μF • with current outputs, max. 500 Ω • with current outputs, inductive load, max. 10 mH Cable length • shielded, max. 200 m Analog value generation for the outputs 12 bit, ±10 V, ±20 mA, 4 mA to 20 mA, 1 V to 5 V: 11 bit + sign; 0 V to 10 V, 0 mA to 20 mA. 12 bit • Conversion time (per channel) 0.8 ms Settling time • for resistive load 0.2 ms • for inductive load 0.5 ms; 0.5 ms; 0.5 ms; 0.5 ms; 0.1 mH); 3.3 ms; (10 mH)	 Rated value (DC) 	24 V	
from load voltage L+ (without load), max. 135 mA	Reverse polarity protection	Yes	
From backplane bus 5 V DC, max.	Input current		
Power loss, typ. 3 W Analog outputs	from load voltage L+ (without load), max.	135 mA	
Power loss, typ. 3 W	from backplane bus 5 V DC, max.	60 mA	
Number of analog outputs 2	Power loss		
Number of analog outputs 2	Power loss, typ.	3 W	
Voltage output, short-circuit protection Yes	Analog outputs		
Voltage output, short-circuit current, max. 25 mA Current output, no-load voltage, max. 18 V Output ranges, voltage • 0 to 10 V	Number of analog outputs	2	
Current output, no-load voltage, max. Output ranges, voltage • 0 to 10 V • 1 V to 5 V • -10 V to +10 V Output ranges, current • 0 to 20 mA • -20 mA to +20 mA • 4 mA to 20 mA • with voltage outputs, capacitive load, max. • with voltage outputs, inductive load, max. • with current outputs, inductive load, max. • Soo \(\O \) • with current outputs, inductive load, max. • Soo \(\O \) • With current outputs, inductive load, max. • Soo \(\O \) • Shielded, max. • Conversion time/resolution per channel • Resolution with overrange (bit including sign), max. • Conversion time (per channel) • Conversio	Voltage output, short-circuit protection	Yes	
Output ranges, voltage • 0 to 10 V • 1 V to 5 V • -10 V to +10 V Output ranges, current • 0 to 20 mA • -20 mA to +20 mA • 4 mA to 20 mA • with voltage outputs, min. • with voltage outputs, capacitive load, max. • with current outputs, max. • with current outputs, inductive load, max. • besolution with overrange (bit including sign), max. • Conversion time (per channel)	Voltage output, short-circuit current, max.	25 mA	
	Current output, no-load voltage, max.	18 V	
• 1 V to 5 V • -10 V to +10 V Ves Output ranges, current • 0 to 20 mA • -20 mA to +20 mA • 4 mA to 20 mA • 4 mA to 20 mA • with voltage outputs, min. • with voltage outputs, capacitive load, max. • with current outputs, max. • with current outputs, inductive load, max. • with current outputs, inductive load, max. • wheleded, max. Cable length • shielded, max. Analog value generation for the outputs Integration and conversion time/resolution per channel • Resolution with overrange (bit including sign), max. • Conversion time (per channel) Settling time • for resistive load • for rapacitive load • for inductive load • for inductive load • for inductive load • for inductive load • for inductive load • 0.5 ms; 0.5 ms (1 mH); 3.3 ms (10 mH)	Output ranges, voltage		
• -10 V to +10 V Output ranges, current • 0 to 20 mA • -20 mA to +20 mA • 4 m A to 20 mA Ves • 4 m A to 20 mA • with voltage outputs, min. • with voltage outputs, capacitive load, max. • with current outputs, max. • with current outputs, inductive load, max. • with current outputs, inductive load, max. • with current outputs, inductive load, max. • shielded, max. Cable length • shielded, max. Analog value generation for the outputs Integration and conversion time/resolution per channel • Resolution with overrange (bit including sign), max. • Conversion time (per channel) • Conversion time (per channel) Settling time • for resistive load • for capacitive load • for capacitive load • for inductive load	• 0 to 10 V	Yes	
Output ranges, current • 0 to 20 mA • 20 mA to +20 mA • 4 mA to 20 mA Ves Load impedance (in rated range of output) • with voltage outputs, min. • with voltage outputs, capacitive load, max. • with current outputs, max. • with current outputs, inductive load, max. • with current outputs, inductive load, max. • shielded, max. Cable length • shielded, max. Analog value generation for the outputs Integration and conversion time/resolution per channel • Resolution with overrange (bit including sign), max. • Conversion time (per channel) • Conversion time (per channel) • Festling time • for resistive load • for capacitive load • for capacitive load • for inductive load	• 1 V to 5 V	Yes	
• 0 to 20 mA • -20 mA to +20 mA • -20 mA to 20 mA Yes • 4 mA to 20 mA Ves Load impedance (in rated range of output) • with voltage outputs, min. • with voltage outputs, capacitive load, max. • with current outputs, max. • with current outputs, inductive load, max. • with current outputs, inductive load, max. 10 mH Cable length • shielded, max. Analog value generation for the outputs Integration and conversion time/resolution per channel • Resolution with overrange (bit including sign), max. • Conversion time (per channel) • Conversion time (per channel) • for resistive load • for capacitive load • for capacitive load • for inductive load • 0.5 ms; 0.5 ms (1 mH); 3.3 ms (10 mH)	• -10 V to +10 V	Yes	
 -20 mA to +20 mA 4 mA to 20 mA with voltage outputs, min. with voltage outputs, capacitive load, max. with current outputs, inductive load, max. to mH Cable length shielded, max. analog value generation for the outputs Integration and conversion time/resolution per channel Resolution with overrange (bit including sign), max. Conversion time (per channel) Settling time for resistive load for capacitive load for apacitive load o.5 ms; 0.5 ms (1 mH); 3.3 ms (10 mH) 	Output ranges, current		
• 4 mA to 20 mA Load impedance (in rated range of output) • with voltage outputs, min. • with voltage outputs, capacitive load, max. • with current outputs, max. • with current outputs, inductive load, max. • with current outputs, inductive load, max. • with current outputs, inductive load, max. Cable length • shielded, max. Analog value generation for the outputs Integration and conversion time/resolution per channel • Resolution with overrange (bit including sign), max. • Conversion time (per channel) Settling time • for resistive load • for capacitive load • for inductive load • for inductive load • for inductive load • for inductive load • for inductive load • outputs 1 kΩ 1 μF 200 Ω 10 mH 200 mA 12 bit; ±10 V, ±20 mA, 4 mA to 20 mA, 1 V to 5 V: 11 bit + sign; 0 V to 10 V, 0 mA to 20 mA: 12 bit 0.8 ms 9 conversion time (per channel) 0.8 ms 10 mH 11 bit; ±10 V, ±20 mA, 4 mA to 20 mA, 1 V to 5 V: 11 bit + sign; 0 V to 10 V, 0 mA to 20 mA: 12 bit 12 bit; ±10 V, ±20 mA, 4 mA to 20 mA, 1 V to 5 V: 11 bit + sign; 0 V to 10 V, 0 mA to 20 mA: 12 bit 13 bit; ±10 V, ±20 mA, 4 mA to 20 mA, 1 V to 5 V: 11 bit + sign; 0 V to 10 V, 0 mA to 20 mA: 12 bit 14 bit; ±10 V, ±20 mA, 4 mA to 20 mA, 1 V to 5 V: 11 bit + sign; 0 V to 10 V, 0 mA to 20 mA: 12 bit 15 bit; ±10 V, ±20 mA, 4 mA to 20 mA, 1 V to 5 V: 11 bit + sign; 0 V to 10 V, 0 mA to 20 mA: 12 bit 16 bit; ±10 V, ±20 mA, 4 mA to 20 mA, 1 V to 5 V: 11 bit + sign; 0 V to 10 V, 0 mA to 20 mA: 12 bit 17 bit; ±10 V, ±20 mA, 4 mA to 20 mA, 1 V to 5 V: 11 bit + sign; 0 V to 10 V, 0 mA to 20 mA: 12 bit 18 bit; ±10 V, ±20 mA, 4 mA to 20 mA, 1 V to 5 V: 11 bit + sign; 0 V to 10 V, 0 mA to 20 mA: 12 bit 18 bit; ±10 V, ±20 mA, 4 mA to 20 mA, 1 V to 5 V: 11 bit + sign; 0 V to 10 V, 0 mA to 20 mA: 12 bit 0 V to 5 V: 11 bit + sign; 0 V to 10 V, 0 mA to 20 mA: 12 bit 0 V to 10 V, 0 mA to 20 mA: 12 bit 0 V to 5 V: 11 bit + sign; 0 V to 10 V, 0 mA to 20 mA: 12 bit 0 V to 10 V to 10 V to 10 V to 10 V	• 0 to 20 mA	Yes	
Load impedance (in rated range of output) • with voltage outputs, min. • with voltage outputs, capacitive load, max. • with current outputs, max. • with current outputs, inductive load, max. • with current outputs, inductive load, max. 10 mH Cable length • shielded, max. 200 m Analog value generation for the outputs Integration and conversion time/resolution per channel • Resolution with overrange (bit including sign), max. • Conversion time (per channel) Settling time • for resistive load • for capacitive load • for inductive load • for inductive load • for inductive load • for inductive load • o.5 ms; 0.5 ms (1 mH); 3.3 ms (10 mH)	• -20 mA to +20 mA	Yes	
 with voltage outputs, min. with voltage outputs, capacitive load, max. with current outputs, max. with current outputs, inductive load, max. with current outputs, inductive load, max. 10 mH Cable length shielded, max. Analog value generation for the outputs Integration and conversion time/resolution per channel Resolution with overrange (bit including sign), max. Conversion time (per channel) 8 ms Settling time for resistive load for capacitive load for inductive load 0.5 ms; 0.5 ms (1 mH); 3.3 ms (10 mH) 	• 4 mA to 20 mA	Yes	
 with voltage outputs, capacitive load, max. with current outputs, max. with current outputs, inductive load, max. 1 μF with current outputs, inductive load, max. 10 mH Cable length shielded, max. 200 m Analog value generation for the outputs Integration and conversion time/resolution per channel Resolution with overrange (bit including sign), max. Part of the outputs of the output of the out	Load impedance (in rated range of output)		
 with current outputs, max. with current outputs, inductive load, max. 10 mH Cable length shielded, max. 200 m Analog value generation for the outputs Integration and conversion time/resolution per channel Resolution with overrange (bit including sign), max. 12 bit; ±10 V, ±20 mA, 4 mA to 20 mA, 1 V to 5 V: 11 bit + sign; 0 V to 10 V, 0 mA to 20 mA: 12 bit Conversion time (per channel) Settling time for resistive load for capacitive load for inductive load 0.5 ms; 0.5 ms (1 mH); 3.3 ms (10 mH) 	with voltage outputs, min.	1 kΩ	
with current outputs, inductive load, max. Cable length shielded, max. Analog value generation for the outputs Integration and conversion time/resolution per channel Resolution with overrange (bit including sign), max. Conversion time (per channel) Settling time for resistive load for capacitive load for inductive load for inductive load o.5 ms; 0.5 ms (1 mH); 3.3 ms (10 mH) omax. 10 mH 200 m 10 mH 200 m 10 mH 200 m 10 mH 200 m 10 mH 10 mH 200 m 10 mH	 with voltage outputs, capacitive load, max. 	1 μF	
Cable length • shielded, max. Analog value generation for the outputs Integration and conversion time/resolution per channel • Resolution with overrange (bit including sign), max. • Conversion time (per channel) Settling time • for resistive load • for capacitive load • for inductive load • shielded, max. 200 m 12 bit; ±10 V, ±20 mA, 4 mA to 20 mA, 1 V to 5 V: 11 bit + sign; 0 V to 10 V, 0 mA to 20 mA: 12 bit 0.8 ms 0.2 ms 3.3 ms • for inductive load 0.5 ms; 0.5 ms (1 mH); 3.3 ms (10 mH)	with current outputs, max.	500 Ω	
shielded, max. Analog value generation for the outputs Integration and conversion time/resolution per channel Resolution with overrange (bit including sign), max. Conversion time (per channel) Settling time for resistive load for capacitive load for inductive load shielded, max. 200 m 12 bit; ±10 V, ±20 mA, 4 mA to 20 mA, 1 V to 5 V: 11 bit + sign; 0 V to 10 V, 0 mA to 20 mA: 12 bit 0.8 ms Settling time 0.2 ms 3.3 ms 6 for inductive load 0.5 ms; 0.5 ms (1 mH); 3.3 ms (10 mH)	with current outputs, inductive load, max.	10 mH	
Analog value generation for the outputs Integration and conversion time/resolution per channel • Resolution with overrange (bit including sign), max. • Conversion time (per channel) Settling time • for resistive load • for capacitive load • for inductive load • for inductive load • 12 bit; ±10 V, ±20 mA, 4 mA to 20 mA, 1 V to 5 V: 11 bit + sign; 0 V to 10 V, 0 mA to 20 mA: 12 bit 0.8 ms 12 bit; ±10 V, ±20 mA, 4 mA to 20 mA, 1 V to 5 V: 11 bit + sign; 0 V to 10 V, 0 mA to 20 mA: 12 bit 0.8 ms 12 bit; ±10 V, ±20 mA, 4 mA to 20 mA, 1 V to 5 V: 11 bit + sign; 0 V to 10 V, 0 mA to 20 mA: 12 bit 0.8 ms 12 bit; ±10 V, ±20 mA, 4 mA to 20 mA, 1 V to 5 V: 11 bit + sign; 0 V to 10 V, 0 mA to 20 mA: 12 bit 0.8 ms	Cable length		
Integration and conversion time/resolution per channel • Resolution with overrange (bit including sign), max. • Conversion time (per channel) • Conversion time (per channel) • for resistive load • for capacitive load • for inductive load • for inductive load • Resolution per channel 12 bit; ±10 V, ±20 mA, 4 mA to 20 mA, 1 V to 5 V: 11 bit + sign; 0 V to 10 V, 0 mA to 20 mA: 12 bit 0.8 ms • Conversion time (per channel) 0.2 ms • for inductive load • for inductive load • for inductive load 0.5 ms; 0.5 ms (1 mH); 3.3 ms (10 mH)	• shielded, max.	200 m	
 Resolution with overrange (bit including sign), max. 12 bit; ±10 V, ±20 mA, 4 mA to 20 mA, 1 V to 5 V: 11 bit + sign; 0 V to 10 V, 0 mA to 20 mA: 12 bit Conversion time (per channel) Settling time for resistive load for capacitive load for inductive load 0.5 ms; 0.5 ms (1 mH); 3.3 ms (10 mH) 	Analog value generation for the outputs		
mA to 20 mA: 12 bit • Conversion time (per channel) Settling time • for resistive load • for capacitive load • for inductive load • for inductive load 0.5 ms; 0.5 ms (1 mH); 3.3 ms (10 mH)	Integration and conversion time/resolution per channel		
Settling time • for resistive load • for capacitive load • for inductive load • for inductive load 0.2 ms 3.3 ms • for inductive load 0.5 ms; 0.5 ms (1 mH); 3.3 ms (10 mH)	• Resolution with overrange (bit including sign), max.		
 for resistive load for capacitive load for inductive load 0.2 ms 3.3 ms for inductive load 0.5 ms; 0.5 ms (1 mH); 3.3 ms (10 mH) 	Conversion time (per channel)	0.8 ms	
 for capacitive load for inductive load 3.3 ms 0.5 ms; 0.5 ms (1 mH); 3.3 ms (10 mH) 	Settling time		
• for inductive load 0.5 ms; 0.5 ms (1 mH); 3.3 ms (10 mH)	for resistive load	0.2 ms	
	 for capacitive load 	3.3 ms	
Errors/accuracies	for inductive load	0.5 ms; 0.5 ms (1 mH); 3.3 ms (10 mH)	
	Errors/accuracies		

Operational error limit in overall temperature range	Operational error limit in overall temperature range		
 Voltage, relative to output range, (+/-) 	0.5 %		
 Current, relative to output range, (+/-) 	0.6 %		
Basic error limit (operational limit at 25 °C)			
 Voltage, relative to output range, (+/-) 	0.4 %		
 Current, relative to output range, (+/-) 	0.5 %		
Interrupts/diagnostics/status information			
Diagnostics function	Yes; Parameterizable		
Alarms			
Diagnostic alarm	Yes; Parameterizable		
Diagnoses			
Diagnostic information readable	Yes		
Diagnostics indication LED			
 Group error SF (red) 	Yes		
Potential separation			
Potential separation analog outputs			
 between the channels 	No		
 between the channels and backplane bus 	Yes		
 Between the channels and load voltage L+ 	Yes		
 between the channels and the power supply of the electronics 	Yes		
Isolation			
Isolation tested with	500 V DC		
connection method			
required front connector	20-pin		
Dimensions			
Width	40 mm		
Height	125 mm		
Depth	117 mm		
Weights			
Weight, approx.	220 g		

last modified: