

4.28 Analog Output Module SM 332; AO 4 x 12 bits; (6ES7332-5HD01-0AB0)

Order number

6ES7332-5HD01-0AB0

Characteristics

The analog output module SM 332; AO 4 x 12 bits has the following characteristic features:

- 4 Output channels
- The individual output channels can be programmed as
 - Voltage outputs
 - Current outputs
- Resolution 12 bits
- Programmable diagnostics
- Programmable diagnostic interrupt
- Programmable substitute value output
- Isolated against backplane bus interface and load voltage

Terminal connection and block diagram of analog output module SM 332; AO 4 x 12 bits

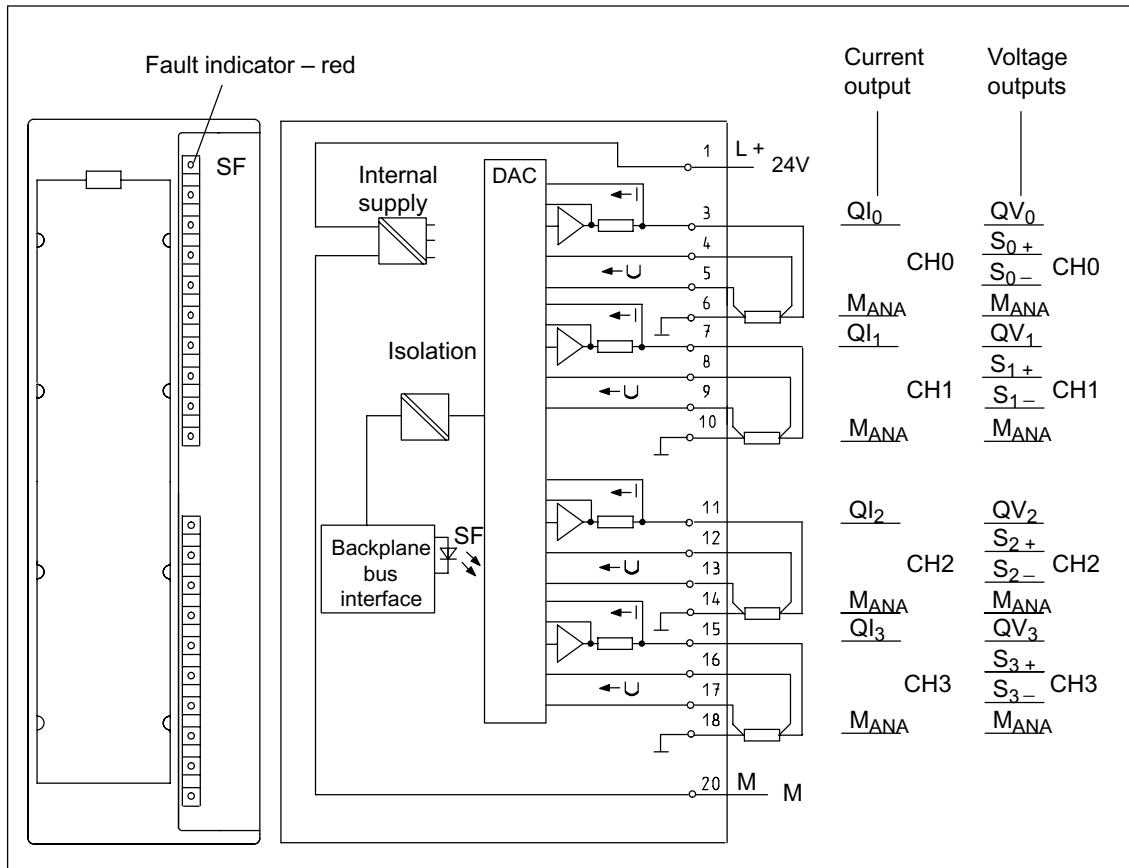


Figure 4-53 Module View and Block Diagram of the Analog Output Module SM 332; AO 4 x 12 bits

Technical specifications of the SM 332; AO 4 x 12 bits

Dimensions and Weight		Analog value generation	
Dimensions W x H x D (in millimeters)	40 x 125 x 117	Resolution including sign	
Weight	Approx. 220 g	± 10 V; ± 20 mA; 11 bits + sign 4 to 20 mA; 1 to 5 V	
Data for Specific Module		0 to 10 V; 0 to 20 mA 12 bits	
Supports clocked operation	No	Conversion time (per channel)	max. 0.8 ms
Number of outputs	4	Settling time	
Length of cable		- For resistive load 0.2 ms - For capacitive load 3.3 ms - For inductive load 0.5 ms (1 mH)	3.3 ms (10 mH)
Shielded	max. 200 m		
Voltages, Currents, Potentials		Suppression of interference, Limits of Error	
Rated load voltage L +	24 VDC	Crosstalk between the outputs	> 40 dB
Reverse polarity protection	Yes	Operational limit (in the entire temperature range, with reference to the output range)	
Isolation		- Voltage outputs ± 0.5 % - Current outputs ± 0.6 %	
Between channels and backplane bus	Yes	Basic error (operational limit at 25 °C, referred to output range)	
Between channels and power supply of the electronics	Yes	- Voltage outputs ± 0.4 % - Current outputs ± 0.5 %	
Between the channels	No	Temperature error (with reference to the output range)	± 0.002 %/K
Between channels and load voltage L+	Yes	Linearity error (with reference to the output range)	± 0.05 %
Permitted potential difference		Repeatability (in steady state at 25 °C, referred to output range)	± 0.05 %
Between S– and M_{ANA} (U_{CM})	3 VDC	Output ripple; range 0 to 50 kHz (referred to output range)	± 0.05 %
Between M_{ANA} and M_{internal} (U_{ISO})	75 VDC / 60 VAC		
Insulation tested with	500 VDC		
Current consumption			
From the backplane bus	max. 60 mA		
From the load voltage L+ (no load)	max. 240 mA		
Power dissipation of the module	typ. 3 W		
		Status, interrupts, diagnostics	
		Interrupts	
		Diagnostic interrupt	Parameters can be assigned
		Diagnostic functions	Programmable
		Group error display	Red LED (SF)
		Diagnostic information readable	Possible
		Substitute value can be applied	Yes, programmable

Data for Selecting an Actuator			
Output ranges (rated values)		Destruction limit against voltages/currents applied from outside	
• Voltage	±10 V 0 to 10 V 1 to 5 V	• Voltage at outputs to M _{ANA}	max. 18 V continuous; 75 V for max. 1 s (duty factor 1:20)
• Current	±20 mA 0 to 20 mA 4 to 20 mA	• Current	max. 50 mA DC
Load resistance (in the nominal range of the output)		Connection of actuators	
• For voltage outputs	min. 1 kΩ	• For voltage output	
– capacitive load	max. 1 μF	– Four-conductor connection (measuring circuit)	Possible
• For current outputs	max. 500 Ω	• For current output	
– At U _{CM} < 1V	max. 600 Ω	– Two-conductor connection	Possible
– Inductive load	max. 10 mH		
Voltage outputs			
• Short-circuit protection	Yes		
• Short-circuit current	max. 25 mA		
Current outputs			
• No-load voltage	max. 18 V		

4.28.1 Commissioning the SM 332; AO 4 x 12 bits

Note

When switching on and off the rated load voltage (L+), wrong intermediate values can occur across the output for approximately 10 ms.

Parameter

You will find a description of the general procedure for assigning parameters to analog modules in Section 4.7.

You will find an overview of the programmable parameters and their default values in Table 4-42, on page 4-43.