

SIMATIC S7-1500 Advanced Controllers

I/O modules

Analog modules

SM 532 analog output modules

Overview



- 2, 4 and 8-channel analog output modules
- Optionally with extremely short conversion times
- For connecting analog actuators without additional amplifiers
- Even solves more complex automation tasks

Technical specifications

Article number	6ES7532-5NB00-0AB0 S7-1500, AQ 2XU/I ST	6ES7532-5HD00-0AB0 S7-1500, AQ 4XU/I ST	6ES7532-5HF00-0AB0 S7-1500, AQ 8XU/I HS	6ES7532-5ND00-0AB0 S7-1500, AQ 4XU/I HF
General information				
Product type designation	AQ 2xU/I ST	AQ 4xU/I ST	AQ 8xU/I HS	AQ 4xU/I HF
Product function				
• I&M data	Yes; I&M0 to I&M3	Yes; I&M0 to I&M3	Yes; I&M0 to I&M3	Yes; I&M0 to I&M3
• Output range scalable	No	No	No	No
Engineering with				
• STEP 7 TIA Portal configurable/ integrated as of version	V13 / V13.0.2	V12 / V12	V14 / -	V14 / -
• STEP 7 configurable/integrated as of version	V5.5 SP3 / -	V5.5 SP3 / -	V5.5 SP3 / -	V5.5 SP3 / -
• PROFIBUS as of GSD version/ GSD revision	V1.0 / V5.1	V1.0 / V5.1	V1.0 / V5.1	V1.0 / V5.1
• PROFINET as of GSD version/ GSD revision	V2.3 / -	V2.3 / -	V2.3 / -	V2.3 / -
Operating mode				
• Oversampling	No	No	Yes	No
• MSO	Yes	Yes	Yes	Yes
CiR – Configuration in RUN				
Reparameterization possible in RUN	Yes	Yes	Yes	Yes
Calibration possible in RUN	Yes	Yes	Yes	Yes
Supply voltage				
Type of supply voltage	DC	DC	DC	DC
Rated value (DC)	24 V	24 V	24 V	24 V
Reverse polarity protection	Yes	Yes	Yes	Yes
Analog outputs				
Number of analog outputs	2	4	8	4
Cycle time (all channels), min.	3.2 ms; independent of number of activated channels	3.2 ms; independent of number of activated channels	125 µs; independent of number of activated channels	125 µs; independent of number of activated channels
Output ranges, voltage				
• 0 to 10 V	Yes	Yes	Yes	Yes
• 1 V to 5 V	Yes	Yes	Yes	Yes
• -5 V to +5 V	No	No	No	No
• -10 V to +10 V	Yes	Yes	Yes	Yes

Technical specifications (continued)

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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
Connection of actuators				
• for voltage output two-wire connection	Yes	Yes	Yes	Yes
• for voltage output four-wire connection	Yes	Yes	Yes	Yes
• for current output two-wire connection	Yes	Yes	Yes	Yes
Load impedance (in rated range of output)				
• with voltage outputs, min.	1 k Ω ; 0.5 k Ω m at 1 to 5 V	1 k Ω ; 0.5 k Ω m at 1 to 5 V	1 k Ω	1 k Ω ; 0.5 k Ω m at 1 to 5 V
• with voltage outputs, capacitive load, max.	1 μ F	1 μ F	100 nF	1 μ F
• with current outputs, max.	750 Ω	750 Ω	500 Ω	750 Ω
• with current outputs, inductive load, max.	10 mH	10 mH	1 mH	10 mH
Cable length				
• shielded, max.	800 m; for current, 200 m for voltage	800 m; for current, 200 m for voltage	200 m	800 m; for current, 200 m for voltage
Analog value generation for the outputs				
Integration and conversion time/resolution per channel				
• Resolution with overrange (bit including sign), max.	16 bit	16 bit	16 bit	16 bit
• Conversion time (per channel)	0.5 ms	0.5 ms	50 μ s; independent of number of activated channels	125 μ s; independent of number of activated channels
Settling time				
• for resistive load	1.5 ms	1.5 ms	30 μ s; see additional description in the manual	0.2 ms; see additional description in the manual
• for capacitive load	2.5 ms	2.5 ms	100 μ s; see additional description in the manual	1.8 ms; see additional description in the manual
• for inductive load	2.5 ms	2.5 ms	100 μ s; see additional description in the manual	2 ms; see additional description in the manual
Errors/accuracies				
Basic error limit (operational limit at 25 °C)				
• Voltage, relative to output range, (+/-)	0.2 %	0.2 %	0.2 %	0.06 %
• Current, relative to output range, (+/-)	0.2 %	0.2 %	0.2 %	0.1 %
Isochronous mode				
Isochronous operation (application synchronized up to terminal)	No	No	Yes	Yes
Execution and activation time (TCO), min.			100 μ s	100 μ s
Bus cycle time (TDP), min.			250 μ s	250 μ s
Interrupts/diagnostics/status information				
Diagnostics function	Yes	Yes	Yes	Yes
Substitute values connectable	Yes	Yes	Yes	Yes
Alarms				
• Diagnostic alarm	Yes	Yes	Yes	Yes

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Diagnostic messages				
• Monitoring the supply voltage	Yes	Yes	Yes	Yes
• Wire-break	Yes; Only for output type "current"	Yes; Only for output type "current"	Yes; Only for output type "current"	Yes; Only for output type "current"
• Short-circuit	Yes; Only for output type "voltage"	Yes; Only for output type "voltage"	Yes; Only for output type "voltage"	Yes; Only for output type "voltage"
• Overflow/underflow	Yes	Yes	Yes	Yes
Diagnostics indication LED				
• RUN LED	Yes; Green LED	Yes; Green LED	Yes; Green LED	Yes; Green LED
• ERROR LED	Yes; Red LED	Yes; Red LED	Yes; Red LED	Yes; Red LED
• Monitoring of the supply voltage (PWR-LED)	Yes; Green LED	Yes; Green LED	Yes; Green LED	Yes; Green LED
• Channel status display	Yes; Green LED	Yes; Green LED	Yes; Green LED	Yes; Green LED
• for channel diagnostics	Yes; Red LED	Yes; Red LED	Yes; Red LED	Yes; Red LED
• for module diagnostics	Yes; Red LED	Yes; Red LED	Yes; Red LED	Yes; Red LED
Potential separation				
Potential separation channels				
• between the channels and backplane bus	Yes	Yes	Yes	Yes
Isolation				
Isolation tested with	707 V DC (type test)	707 V DC (type test)	707 V DC (type test)	2 000 V DC between the channels and the supply voltage L+; 2 000 V DC between the channels and the backplane bus; 2 000 V DC between the channels; 707 V DC (type test) between the supply voltage L+ and the backplane bus
Ambient conditions				
Ambient temperature during operation				
• horizontal installation, min.	0 °C			
• horizontal installation, max.	60 °C			
• vertical installation, min.	0 °C			
• vertical installation, max.	40 °C			
Decentralized operation				
Prioritized startup	No	No	No	Yes
Dimensions				
Width	25 mm	35 mm	35 mm	35 mm
Height	147 mm	147 mm	147 mm	147 mm
Depth	129 mm	129 mm	129 mm	129 mm
Weights				
Weight, approx.	200 g	310 g	325 g	300 g
Other				
Note:	Supplied incl. 40-pole push-in front connectors			

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