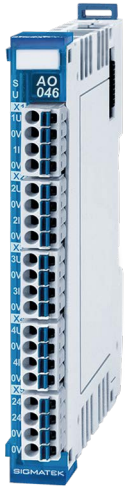


S-DIAS Analog Output Module AO 046



with 4 outputs (voltage/current switchable)

The S-DIAS AO 046 analog output module has four ± 10.8 V or 0-21.6 mA analog outputs with a resolution of 16 bits. The analog outputs are powered by an external +24 V supply. The analog output system is galvanically separated from the potential of the S-DIAS bus.

Analog Output Voltage Specifications

Number of channels	4	
Output range	-10 ... +10 V	0 ... +10 V
Output value	-30,000 ... +30,000	0 ... +60,000
Output range over range	-10.8 ... +10.8 V	0 ... +10.8 V
Output value over range	-32,400 ... +32,400	0 ... +64,800
Resolution	16-bit (ca. 0.3 mV/LSB)	16-bit (ca. 0.15 mV/LSB)
Refresh time of all channels	minimum 100 μ s (corresponds to the S-DIAS cycle time)	
Output voltage capacity	maximum 2 mA	
Allowable capacitive load	maximum 100 nF	
Short circuit protection	yes	
Settling time	200 μ s typical for C < 100 nF (99.9 % of the end value)	
Galvanic isolation	yes (500 V)	
Output precision	± 0.04 % of maximum output value	

Output Accuracy Analog Outputs Voltage

Basic accuracy incl. calibration error and noise 25 °C	0.015 %
Temperature drift 20-40 °C 0-55 °C	0.008 % 0.015 %
Linearity	0.010 %
Crosstalk	< 0.001 %
Total error 20-40 °C 0-55 °C	± 0.035 % (± 3.5 mV) ± 0.045 % (± 4.5 mV)

Analog Output Current Specifications

Number of channels	4	
Output range	0-20 mA	4-20 mA
Output value	0-60,000	12,000-60,000
Output range over range	0-21.6 mA	3.8-21.6 mA
Output value over range	0-64,800	11,400-64,800
Resolution current	16-bit (ca. 0.3 μ A/LSB)	
Refresh time of all channels	minimum 100 μ s (corresponds to the S-DIAS cycle time)	
Settling time	200 μ s typical for L < 0.5 mH at 50 Ω 200 μ s typical for L < 5 mH at 500 Ω	
Load	maximum 500 Ω	
Allowed output inductivity	maximum 0.5 mH at 50 Ω maximum 5 mH at 500 Ω	
Cable break monitor	yes	
Galvanic isolation	yes (500 V)	
Output precision	± 0.17 % of maximum output value	

Output Accuracy Analog Outputs Current

Basic accuracy incl. calibration error and noise 25 °C	0.045 %
Temperature drift 20-40 °C 0-55 °C	0.028 % 0.055 %
Linearity	0.035 %
Crosstalk	< 0.001 %
Total error 20-40 °C 0-55 °C	± 0.140 % (± 28 μ A) ± 0.170 % (± 34 μ A)

Electrical Requirements

External +24 V supply	+18-30 V DC	
Current consumption of the +24 V supply without load on the analog outputs	typically 34 mA	maximum 44 mA
Current consumption of the +24 V supply with a load on the analog outputs per 20 mA	typically 92 mA	maximum 122 mA
Voltage supply from S-DIAS bus	+5 V	
Current consumption on the S-DIAS bus (+5 V supply)	0	0
Voltage supply from S-DIAS bus	+24 V	
Current consumption on the S-DIAS bus (+24 V supply)	typically 22 mA	maximum 26 mA

Voltage Monitoring External +24 V Supply

Supply voltage +24 V	query of the supply voltage with hysteresis: voltage > 18,0 V => LED on, ExternVoltageOk=1 voltage < 16,0 V => LED off, ExternVoltageOk=0 (DC OK-LED shines green)
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Article Number and Miscellaneous

Article number	20-010-046
Dimensions	12.5 x 104.2 x 72 mm (W x H x D)
Standard	UL (in preparation)
Approvals	UL, cUL, CE

Environmental Conditions

Storage temperature	-20 ... +85 °C	
Environmental temperature	0 ... +55 °C	
Humidity	0-95 %, non-condensing	
Operating conditions	pollution degree 2 altitude up to 2000 m	
EMC resistance	in accordance with EN 61000-6-2 (industrial area)	
EMC noise generation	in accordance with EN 61000-6-4 (industrial area)	
Vibration resistance	EN 60068-2-6	3.5 mm from 5-8.4 Hz 1 g from 8.4-150 Hz
Shock resistance	EN 60068-2-27	15 g
Protection type	EN 60529	IP20

Notes

