S-DIAS Multi I/O Module
IO 011

with 6 digital inputs
8 short-circuit proof digital outputs
1 analog voltage input
1 analog current input

The module has 6 digital inputs (+24 V/3.5 mA/ 0.5 ms) and 8 short circuit proof digital outputs (+24 V/0.5 A), these support read-back (0.5 ms). The voltage supply for the digital outputs are monitored for under voltage.

Additionally, the module has an analog ±10 V input and an analog current input (0-20 mA or 4-20 mA). The resolution of the two analog inputs is 16 bits.

Digital Input Specifications

	Number	6	
	Input voltage	typically +24 V	maximum +30 V
	Signal level	low: < +5 V	high: > +15 V
	Input current	3.7 mA at +24 V	
	Input delay	typically 0.5 ms	

Digital Output Specifications

	Number	8
	Short-circuit proof	yes
	Maximum permitted continuous load current / channel	0.5 A
	Maximum total current (all 8 outputs)	4 A (100 % of on-time)
	Maximum braking energy of outputs (inductive load)	maximum 1 Joule/channel
	Residual current output (off)	≤ 10 µA
	Turn-on delay	< 100 µs
	Turn-off delay	< 150 µs
	Read-back signal level	low: < +8 V / high: > +14 V
	Input delay	typically 0.5 ms
	Maximum allowed voltage on the digital output when switched off	A voltage supplied to the digital output pin from external must not exceed the voltage on the supply pin (24 V) by more than 0.7 V.

Voltage Monitor

	Power supply +24 V	supply voltage > 18 V (DC OK-LED lights green)

Analog ±10 V Input Specifications

	Number of channels	1	
	Measurement range	-10 ... +10 V	0 ... +10 V
	Measurement value	-10,000 ... +10,000 or -30,000 ... +30,000 (at full range)	0 ... +10,000 or 0 ... +30,000 (at full range)
	Input type	difference input	
	Resolution	16-bit (ca. 0.3 mV/LSB)	
	Conversion time for all channels	depending on the selected timing Speed mode: 15.26 µs Time offset mode: corresponds to the S-DIAS cyclic time	
	Common mode range	±12 V	
	Input resistance	typically 660 kΩ	
	Cable break monitor	yes	
	Input filter hardware	typically 1 kHz, low pass 3rd order system	
	Input filter software	configurable, low pass 1st order system	
	Basic accuracy	±0.20 % of maximum measurement value	
	Total accuracy (0-60 °C)	±0.30 % of maximum measurement value	

Analog Current Input Specifications

Number of channels	1	
Measurement range	0-20 mA	4-20 mA
Measurement value	0-20,000 or 0-60,000 (at Full-Range)	4,000-20,000 or 12,000-60,000 (at Full-Range)
Input type	difference input	
Resolution current	16-bit (ca. 0.3 µA/LSB)	
Conversion time for all channels	depending on the selected timing Speed mode: 15.26 µs Time offset mode: corresponds to the S-DIAS cyclic time	
Common mode range	±10 V	
Input resistance	typically 50 Ω	
Cable break monitor	no	yes, settable via software between 0-4 mA (default: 3 mA)
Short-circuit monitor	no	yes, settable via software between 0-4 mA (default: 3 mA)
Input filter hardware	typically 1 kHz, low pass 3rd order	
Input filter software	configurable low pass 1st order system	
Basic accuracy	±0.30 % of maximum measurement value	
Total accuracy (0-60 °C)	±0.50 % of maximum measurement value	

Electrical Requirements

Power supply +24 V	18-30 V DC	
Current consumption of the +24 V supply	corresponds to the load on the digital outputs	
Voltage supply from S-DIAS bus	+5 V	
Current consumption on the S-DIAS bus (+5 V power supply)	typically 60 mA	maximum 65 mA
Voltage supply from S-DIAS bus	+24 V	
Current consumption on the S-DIAS bus (+24 V power supply)	typically 20 mA	maximum 25 mA
UL standard	for UL: must be supplied with SELV / PELV and Limited Energy	

Article Number and Miscellaneous

Artikel number	20-013-011
Dimensions	12.5 x 104.2 x 72 mm (W x H x D)
Standard	UL 508 (E247993)
Approvals	UL, cUL, CE

Environmental Conditions

Storage temperature	-20 ... +85 °C	
Environmental temperature	0 ... +60 °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