S-DIAS Analog Input Module
AI 023

with 2 resistance or temperature inputs

The AI 023 S-DIAS analog input module has two resistance inputs with five settable measurement ranges from 0-250 Ω, 0-500 Ω, 0-1000 Ω, 0-2500 Ω and 0-5000 Ω. Sup-ported temperature sensors include PT100, PT1000, NI100, NI1000 and various KTY sensors. The module allows a connection with 2 or 4-wire measuring technology. The analog inputs are galvanically separated from the S-DIAS bus.

Analog Input Resistor/Temperature Specifications

Number of channels	2
Measurement range	see the following measurement range table.
AD converter resolution	16-bit
Typical current measurement	< 0.3 ms
Conversion time for all channels	4 ms
Input resistance	> 10 MΩ
Input filter hardware	10 kHz, low pass 2nd order system
Input filter	configurable
Measurement precision	±0.3 % of maximum measurement value
Resistor sensor connection cable	< 100 Ω
Galvanic separation of analog inputs to S-DIAS bus	yes (560 V)
Status display	green LEDs

Measurement Range of Resistor Inputs

Type	**Resistance range**	Measurement value
1	0 ... 250 Ω	0-2500
2	0 ... 500 Ω	0-5000
3	0 ... 1000 Ω	0-10000
4	0 ... 2500 Ω	0-25000
5	0 ... 5000 Ω	0-50000

Measurement Range of Temperature Inputs

Type	Temperature range	Resistance range	Measurement value
Pt100	-200 ... +150 °C	18.5 ... 157.3 Ω	-2000 ... +1500
Pt100	-200 ... +850 °C	18.5 ... 390.5 Ω	-2000 ... +8500
Pt200	-200 ... +150 °C	37.0 ... 314.6 Ω	-2000 ... +1500
Pt200	-200 ... +850 °C	37.0 ... 781.0 Ω	-2000 ... +8500
Pt500	-200 ... +150 °C	92.6 ... 786.6 Ω	-2000 ... +1500
Pt500	-200 ... +850 °C	92.6 ... 1952.4 Ω	-2000 ... +8500
Pt1000	-200 ... +150 °C	185.2 ... 1573.3 Ω	-2000 ... +1500
Pt1000	-200 ... +850 °C	185.2 ... 3904.8 Ω	-2000 ... +8500
NI100	-60 ... +150 °C	69.5 ... 198.6 Ω	-600 ... +1500
NI100	-60 ... +250 °C	69.5 ... 289.2 Ω	-600 ... +2500
NI1000	-60 ... +150 °C	695.2 ... 1986.3 Ω	-600 ... +1500
NI1000	-60 ... +250 °C	695.2 ... 2891.6 Ω	-600 ... +2500
KTY10-62 KTY11-62	-50 ... +150 °C	1035.9 ... 4575.3 Ω	-500 ... +1500
KTY81-110 KTY81-120 KTY81-150	-55 ... +150 °C	490.0 ... 2211.0 Ω	-550 ... +1500
KTY81-121	-55 ... +150 °C	485.1-2189.1 Ω	-550 ... +1500
KTY81-122	-55 ... +150 °C	494.9-2233.0 Ω	-550 ... +1500
KTY84-130 KTY84-150	-40 ... +300 °C	358.8 ... 2623.0 Ω	-400 ... +3000

Electrical Requirements

Voltage supply from S-DIAS bus	+24 V	
Current consumption on the S-DIAS bus (+24 V power supply)	typically 46 mA at +18 V typically 37 mA at +24 V typically 32 mA at +30 V	maximum 50 mA at +18 V maximum 41 mA at +24 V maximum 36 mA at +30 V

Article Number and Miscellaneous

Article number	20-009-023	
Dimensions	12.5 x 104.2 x 72 mm (W x H x D)	
Standard	UL in preparation	
Approvals	CE	

Environmental Conditions

Storage temperature	-20 ... +85 °C	
Environmental temperature	0 ... +60 °C	
Humidity	0-95 %, non-condensing	
Installation altitude above sea level	0-2000 m without Derating > 2000 m with derating of the maximum environmental temperature by 0.5 °C per 100 m	
Operating conditions	pollution degree 2	
EMC resistance	according to EN 61000-6-2:2007 (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