X-DIAS DMS-Input Module
XAI 022

with 2 analog inputs

The X-DIAS DMS-Input Module XAI 022 is used to analyze measuring bridges (e.g. strain gauge load cells). The module has 2 analog inputs. With a 24-bit resolution, measurement values with an overall accuracy of 0.035 % are provided.

Analog Input Specifications

Number of channels		2				
Bridge supply voltage		+5 V				
Load cell rated values		0,25 mV/V	0,5 mV/V	1 mV/V	2 mV/V	16 mV/V
Measurement range		±1,875 mV	±3,75 mV	±7,5 mV	±15 mV	±120 mV
Measurement value		±8388608 d				
		if the input is open, the hardware class supplies -2147483632.				
Resolution		24-bit				
Hardware filter		180 Hz, 1st Order				
Filter setting, conversion time and noise-free resolution	filter word	2	...	5	...	1023
	filter type	Sinc4	...	Sinc4	...	Sinc4
	Cut-off frequency (-3 dB)	144 Hz	...	57,7 Hz	...	0,282 Hz
	conversion time	4 ms	...	9 ms	...	1702 ms
	noise-free resolution	15,5-bit	...	16-bit	...	20-bit
Sensor break detection		yes				

Load per channel	75-5000 Ω (using one channel) 150-5000 Ω (using both channels)	
Noise	±0,0031 % referred to the full scale value for filter Word 2	
Temperature drift	±0,001 % / °C bezogen auf den Messbereichsendwert	
Overall accuracy	±0,035 % related to the measuring range end value	
Calibration data nullvoltage protected	yes	
Calibratable	no	

Electrical Requirements

Voltage supply from S-DIAS bus	+24 V DC ±20 % (SELV/PELV) UL: NEC Class 2	
Protection class	III	
Current consumption on the S-DIAS bus (+24 V supply) without load on the measuring bridge supply voltage	typically 28 mA	maximum 36 mA
Current consumption on the S-DIAS bus (+24 V supply) with maximum load on both measuring bridge supply voltage	typically 55 mA	maximum 71 mA

Article Number and Miscellaneous

Article number	21-009-022	
Dimensions	12.5 x 101.8 x 62.7 mm (W x H x D)	
Printed circuit board coating	no	
Approvals	CE	yes
	UL	designed according to UL
	Functional Safety	no
	UKCA	no

Environmental Conditions

Storage temperature	-40 ... +85 °C	
Environmental temperature	-25 ... +60 °C	
Humidity	0-95 %, non-condensing	
Installation altitude above sea level	0-2000 m without derating > 2000 m up to a maximum of 5000 m with derating of the maximum environmental temperature by 0.5 °C per 100 m	
Operating conditions	pollution degree 2	
Noise emission	≤ 70 dB	
EMC resistance	EN 61000-6-2 (industrial area)	
EMC noise generation	EN 61000-6-4 (industrial area)	
Vibration resistance	EN 60068-2-6	3.5 mm von 5-8.4 Hz 1 g von 8.4-150 Hz
Shock resistance	EN 60068-2-27	15 g (147.15 m/s²)
Protection type	EN 60529/NEMA 250	IP20/Type1