

KiDAQ Module 5512A

Measurement module for IEPE sensors (Piezotron) and voltage



Description

KiDAQ is a general purpose data acquisition system to measure more than 20 different analog and digital signal types. The wide selection of signal conditioning and data acquisition modules enables perfectly fitted system configurations, exactly to the customer's requirements. All modules are available in the KiDAQ housing options Rack, Portable and DIN Rail which allows the use in different applications and environments.

Key features

- **4 analog input signals**
IEPE sensors (Piezotron), voltage
- **A/D conversion**
100 kSps sampling rate per channel, 24 Bit resolution
- **Galvanic isolation**
Channel to channel to power supply and to interface
isolation voltage 500 VDC



Technical data

Analog inputs

Number	4			
Input connector types	Terminal strip, 2x10 pole, color blue (5512A_A1)/ BNC neg (5512A_B1)			
Accuracy	0.01% typical			
	0.025% in controlled environment ¹⁾			
	0.05% in industrial area ²⁾			
Linearity error	0.01% of the final value typical			
Repeatability	0.003% typical (within 24 h)			
Isolation voltage	500 VDC channel to channel to power supply to interface ³⁾			
Sensor identification	TEDS ⁴⁾			
Measurement voltage	Range [V]	Frequency range (-3 dB) [Hz]	Max. deviation [mV]	Resolution [μ V]
	± 10	0 ... 23,000	± 2	1.2
	± 1	0 ... 20,000	± 0.2	0.120
	± 0.1	0 ... 20,000	± 0.020	0.012
Input resistance	$>1 \text{ M}\Omega$			
Long term drift	$<20 \mu\text{V}/24 \text{ h}$, $<200 \mu\text{V}/8,000 \text{ h}$			

Temperature influence	on zero	on sensitivity	range $\pm 1 \text{ V}$	
	$<50 \mu\text{V}/10 \text{ K}$	$<0.01\%/10 \text{ K}$		
Signal-noise-ratio	$>90 \text{ dB}$ at 1 kHz		$>120 \text{ dB}$ at 1 Hz	
	Measurement IEPE sensor	Range [V]	Frequency range (-3 dB) [Hz]	Max. deviation [mV]
	± 10	0.1 ... 20,000	± 10	40
	± 1	0.1 ... 20,000	± 1	4
Sensor supply voltage	24 V ($\pm 10\%$)			
Sensor supply current	4 mA ($\pm 10\%$)			
Temperature influence	on zero	on sensitivity		
	$<10 \mu\text{V}/10 \text{ K}$	$<0.025\%/10 \text{ K}$		

KiDAQ Module 5512A_003-375e-01.20

¹⁾ according EN 61326: 2006, appendix B
²⁾ according EN 61326: 2006, appendix A
³⁾ noise pulses up to 1,000 VDC, permanent up to 250 VDC
⁴⁾ not yet supported in software

Analog/digital-conversion

Resolution	24 bit
Sample rate	100 kSps per channel
Conversion method	Sigma-Delta (group delay time 380 µs)
Digital filter	IIR, low pass, high pass, band pass, Butterworth 4 th order, 1 Hz up to 10 kHz in steps 1, 2, 5
Averaging	configurable or automated according the selected data rate

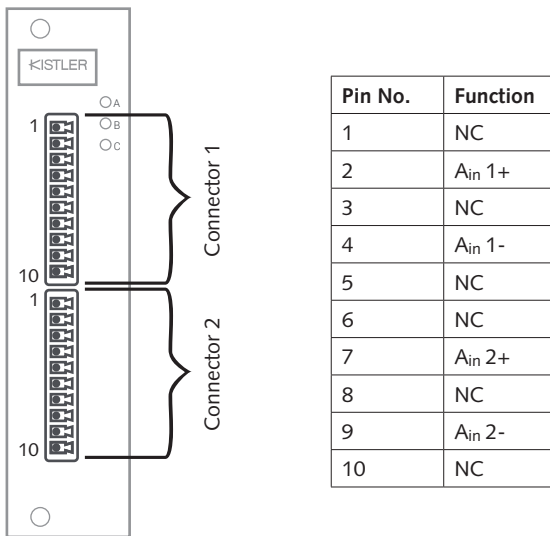
Further technical data please refer to data sheet “KiDAQ System Datasheet” 003-335e.

Warm up time

All declarations are valid after a warm up time of 45 minutes.

Pin assignment

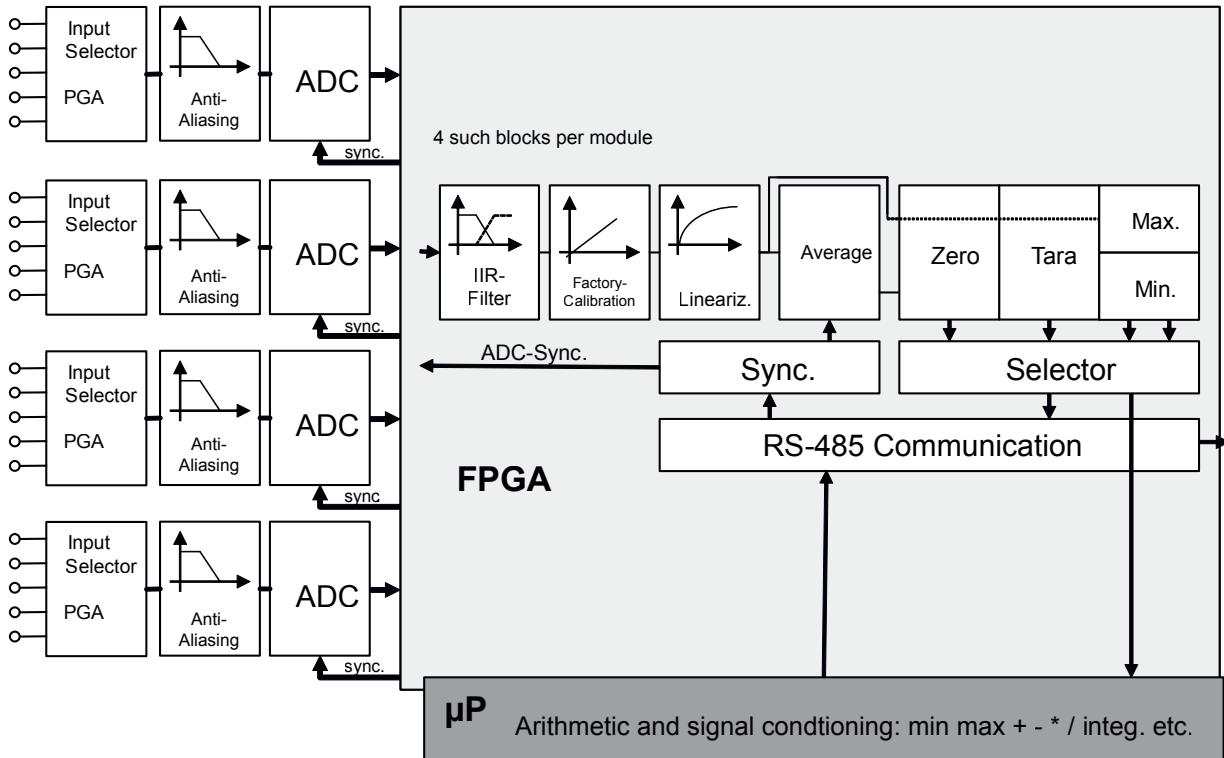
Terminal strip, 2x10 pole, color blue (5512A_A1)



Measurement	Pin assignment
Voltage	
IEPE sensor	

KiDAQ Module 5512A_003-375e-01.20

Block diagram



KiDAQ Module 5512A_003-375e-01.20