

KiDAQ Module 5514A

Measurement module for MEMS capacitive sensors (K-Beam)



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

- **Up to 8 analog input signals**
for 4 single-axis or 2 triaxial MEMS capacitive sensors (K-Beam)
- **Inputs for temperature signals**
- **Sensor supply included**
- **A/D conversion**
20 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	8			
Input connector type	4 x 4-pin pos. Comtronic ¼ – 28 (5514A__C1) or 2 x 9-pin neg. D-Sub (5514A__D1)			
Accuracy	0.01 % typical			
	0.025 % in controlled environment ¹			
	0.05 % in industrial area ²			
Linearity error	0.01 % typical full-scale			
Repeatability	0.003 % typical (within 24 h)			
Isolation voltage	500 VDC channel to channel to power supply to interface ³			
Measurement voltage	Range [V]	Frequency range (-3 dB) [Hz]	Max. deviation [mV]	Resolution [µV]
	±10	0 ... 3 000	±2	1.5
Input resistance	>1 MΩ			
Long term drift	<50 µV / 24 h; <200 µV / 8 000 h			
Temperature influence	on zero		on sensitivity	
	<200 µV / 10 K		<0.01 % / 10 K	
Signal-noise-ratio	>100 dB at 100 Hz		>120 dB at 1 Hz	
Overvoltage protection	±200 V			

Sensor supply

Number	4 (5514A__C1) 2 (5514A__D1)
Voltage	15 VDC
Current	max. 4 x 20 mA resp. 2 x 40 mA (short circuit proof)
Accuracy	<3 %
Load regulation	<0.1 %
Noise	1.2 mV _{rms}

Analog/digital-conversion

Resolution	24 bit
Sample rate	20 kSps per channel
Conversion method	Sigma-Delta (group delay time 600 µs)
Digital filter	IIR, low pass, high pass, band pass, Butterworth 4 th order, 0.1 Hz up to 1 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.

KiDAQ Module 5514A_003-466e-11.19

¹ according EN 61326: 2006, appendix B

² according EN 61326: 2006, appendix A

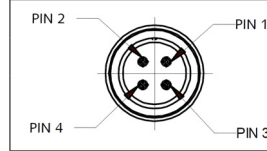
³ noise pulses up to 1 000 VDC, permanent up to 250 VDC

The information corresponds to the current state of knowledge. Kistler reserves the right to make technical changes without advance notice. Liability for consequential damages arising from the application of Kistler products is excluded.

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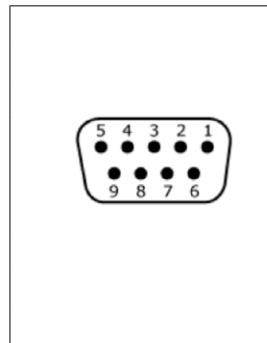
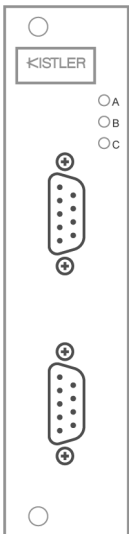
Pin assignment

4 x 4-pin pos. Comtronic ¼ – 28 (Type 5514A__C1)



Pin No.	Function
1	Supply +15 VDC
2	Supply GND
3	Ain – / Temperature
4	Ain +

2 x 9-pin neg. D-Sub (Type 5514A__D1)



Pin No.	Function
1	Supply +15 VDC
2	Supply GND
3	X +
4	Y +
5	Z +
6	X –
7	Y –
8	Z –
9	Temperature

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