

# KiDAQ Module 5522A

## Measurement module for RTD (Pt100, Pt1000) or resistance in 3- or 4- wire technique



### 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**  
Pt100, Pt1000 or resistance in 3- or 4-wire technique
- **A/D conversion**  
10 Sps 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 type	Terminal strip, 2x10 pole, color blue
Accuracy	0.01 % typical
	0.02 Ω in controlled environment <sup>1</sup>
	0.5 Ω in industrial area <sup>2</sup>
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 <sup>3</sup>
Sensor excitation	Pt100: 1 mA (500 μA effective), Pt1000: 100 μA (50 μA effective)
Input resistance	470 MΩ

#### Measurement Pt100

Range	-200 °C...350 °C / -328 °F...662 °F
Accuracy (4-wire)	0.05 °C / 0.09 °F
Resolution	0.1 °mC / 0.18 °mF
Temperature influence	0.02 °C / 10 K 0.036 °F / 10 K

Long term drift	0.01 °C / 24 h, 0.05 °C / 8 000 h 0.018 °F / 24 h, 0.09 °F / 8 000 h
Range	-200 °C...850 °C / -328 °F...1 562 °F
Accuracy (4-wire)	0.08 °C / 0.18 °F
Resolution	0.1 °mC / 0.18 °mF
Temperature influence	0.04 °C / 10 K 0.072 °F / 10 K
Long term drift	0.02 °C / 24 h, 0.1 °C / 8 000 h 0.036 °F / 24 h, 0.18 °F / 8 000 h

#### Measurement Pt1000

Range	-200 °C...850 °C / -328 °F...1 562 °F
Accuracy (4-wire)	0.1 °C / 0.18 °F
Resolution	0.5 °mC / 0.9 °mF
Temperature influence	0.1 °C / 10 K, 0.18 °F / 10 K
Long term drift	0.05 °C / 24 h, 0.4 °C / 8 000 h 0.09 °F / 24 h, 0.72 °F / 8 000 h

KiDAQ Module 5522A\_003-378e-11.19

<sup>1</sup> according EN 61326: 2006, appendix B

<sup>2</sup> according EN 61326: 2006, appendix A

<sup>3</sup> noise pulses up to 1000 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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**Measurement resistance up to 400 Ω**

Range	0 Ω... 400 Ω
Accuracy (4-wire)	0.015 Ω
Resolution	0.000 2 Ω
Temperature influence	0.01 Ω / 10K
Long term drift	10 mΩ / 24 h, 20 mΩ / 8 000 h

**Measurement resistance up to 4 000 Ω**

Range	0 Ω... 4 000 Ω
Accuracy (4-wire)	0.4 Ω
Resolution	0.002 Ω
Temperature influence	0.4 Ω / 10K
Long term stability	100 mΩ / 24 h, 1 500 mΩ / 8 000 h

**Analog/digital-conversion**

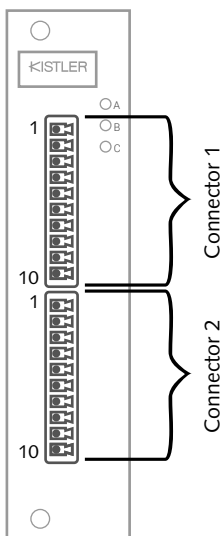
Resolution	24 bit
Sample rate	10 kSps, reduced by averaging to 10 Sps per channel
Conversion method	Sigma Delta
Digital filter	IIR, low pass, Butterworth 1 <sup>st</sup> order, 0.1 Hz up to 10 Hz in steps 1, 2, 5
Averaging	configurable or automated according the selected data rate

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**



Pin No.	Function
1	–
2	A <sub>in</sub> 1
3	A <sub>in</sub> 2
4	A <sub>in</sub> 3
5	GND
6	–
7	A <sub>in</sub> 4
8	A <sub>in</sub> 5
9	A <sub>in</sub> 6
10	GND

KiDAQ Module 5522A\_003-378e-11.19

Measurement	Pin assignment		
Resistance/RTD	<p>2-wire circuit</p>	<p>3-wire circuit</p>	<p>4-wire circuit</p>

**Block diagram**

