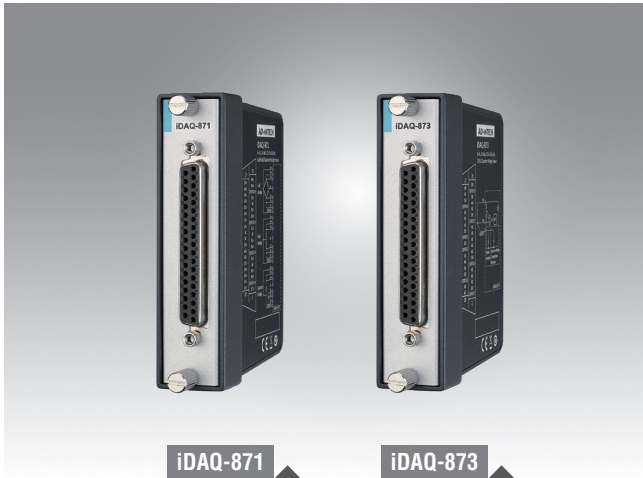


# iDAQ-871

# iDAQ-873

4-ch, 24-bit, 25.6kS/s, Full/Half/  
Quarter Bridge Input iDAQ module

8-ch, 24-bit, 25.6kS/s, Quarter Bridge  
Input iDAQ module



## Features

- High resolution (24-bit)
- All types of bridges supported (full, half and quarter)
- Software-configurable and multiple bridge completion flexibility (iDAQ-871)
- Synchronization along with other iDAQ modules
- Multiple trigger modes for flexible configured acquisition timing
- Built-in digital filter for higher SNR

## Introduction

The iDAQ-871/873 series are designed for bridge-type high-precision data acquisition. There's built-in Wheatstone bridge ready in the measurement channels. The built-in digital filter could also filter down most of the unnecessary noises, which enhanced the measurement accuracy. It's suitable for measurement from sensors like strain gauges and load cells.

## Specifications

### Bridge Input

Item	iDAQ-871	iDAQ-873
ADC Resolution	24-bit	
Channels	4	8
Input Range	$\pm 1$ V/V, $\pm 500$ mV/V, $\pm 250$ mV/V, $\pm 125$ mV/V, $\pm 62.5$ mV/V, $\pm 31.25$ mV/V, $\pm 15.63$ mV/V, or $\pm 7.81$ mV/V	
Bridge Mode	Full, half, quarter	Quarter
Bridge Resistance	120 $\Omega$ , 350 $\Omega$ , 1 k $\Omega$	120 $\Omega$
Shunt Calibration	100 k $\Omega$	
Excitation Voltage	2.5V, 5V	2.5V

- **Digital low-pass filter** Filter type: FIR or SINC1, selectable by sampling rate. Refer to user manual for detail information  
-3 dB bandwidth: Configured along with sampling rate.  
Refer to user manual for detail information
- **Isolation protection** 600 V<sub>DC</sub> Channel to FGND
- **Accuracy** <sup>(1)</sup> Operating temperature within  $\pm 5^\circ\text{C}$  of last, system-calibration temperature ( $25^\circ\text{C}$ )

Items	Within System Calibration Temp.		Over System Calibration Temp.	
	Gain	Offset	Gain	Offset
Calibrated	$\pm 0.05\%$	$\pm 0.05\%$	$\pm 0.20\%$	$\pm 0.25\%$
Uncalibrated <sup>(2)</sup>	$\pm 0.20\%$	$\pm 0.20\%$	$\pm 0.70\%$	$\pm 0.35\%$

- **Shunt calibration** Resistance: 100 k $\Omega$   
Resistance accuracy:  $\pm 0.1\%$  max.  
Resistance drift:  $\pm 100$  ppm/ $^\circ\text{C}$  max.
- **Over-voltage protection**  $\pm 30$  V
- **Acquisition type** Instant or buffered, software configurable
- **Buffered acquisition** Enabled channel combination: Each channel can be enabled/disabled independently by software  
Sample clock rate: 25.6 kHz max., for all channels, simultaneous sampling, software configurable

### Trigger

- **Number of triggers** 2 max., selectable via software
- **Trigger action** Start, delay to start, stop, or delay to stop
- **Trigger delay range** 0 ~ 16,777,215 samples
- **Sample number** 0 ~ 16,777,215 samples

<sup>(1)</sup> For detail specification, please refer to the user manual.

<sup>(2)</sup> System calibration should be taken place before starting the measurement whenever new measurement system is built, otherwise the accuracy would stay uncalibrated.

### Analog Trigger

- **Source** One of the analog input channels, software configurable
- **Input range** Full scale of analog input range
- **Resolution** 24-bit
- **Hysteresis** 1/256 of analog input range, software configurable
- **Accuracy**  $\pm 0.01\%$  of full-scale range max.
- **Polarity** Rising edge or falling edge, software configurable
- **Minimum width** 1/(sample rate)

### Digital Trigger

- **Source** 2 external input sources, via iDAQ chassis/module

### Physical

- **Form factor** iDAQ Module
- **Dimension** 100 x 80 x 25 mm (3.94 x 3.15 x 0.98 in.)
- **Weight** 175 g
- **I/O connector** 37-pin D-SUB

### Environmental

- **Operating temperature**  $-40 \sim 70^\circ\text{C}$  ( $-40 \sim 158^\circ\text{F}$ )
- **Storage temperature**  $-40^\circ\text{C}$  to  $85^\circ\text{C}$  ( $-40^\circ\text{F}$  to  $185^\circ\text{F}$ )
- **Operating humidity** Up to 90% RH, non-condensing
- **Vibration** 5Grms, random vibration
- **Shock** 30G
- **Certification** EMC: CE, FCC

## Ordering Information

- **iDAQ-871** 4-ch, 24-bit, 25.6kS/s, Full/Half/Quarter Bridge Input iDAQ module
- **iDAQ-873** 8-ch, 24-bit, 25.6kS/s, Quarter Bridge Input iDAQ module

### Accessories

- **ADAM-3937-AE** DB-37 Wiring Terminal, DIN-rail Mount
- **PCL-10137-1E** DB-37 Shielded Cable, 1m
- **PCL-10137-2E** DB-37 Shielded Cable, 2m
- **PCL-10137-3E** DB-62 Shielded Cable, 3m