

Research Grade Isometric and Isotonic Transducers



Previous



Next

Table of Contents

Product Index

Search

Home

Contact Us



Previous



Next

These Research Grade Isometric and Isotonic Transducers supply excitation voltage to a self-contained transducer and convert the pico-farad changes of capacitance into high level DC voltages using a patented electronic circuit (U.S. Patent #4,142,144). This circuit is extremely sensitive and stable, producing up to 5 VDC for direct connection to Standard Signal Conditioners, Data Acquisition Systems, Modular Universal Oscillographs, Student Oscillographs, Flatbed Strip Chart Servo Recorders, and X-Y Plotters. All transducers have a small external transducer element hard-wired to a small amplifier. This amplifier is hard-wired to a

wall type transformer. The transformer reduces line voltage to 12 VDC and is both UL- and CSA-listed. For 230 VAC, 50 Hz operation the transformer is VDE-listed. These Transducers are factory-calibrated to deliver 5 VDC for full rated load and are still linear for 100% overload (4 VDC). They have offset (tare) controls. The Transducer amplifier has a 3-digit backlit LCD display that shows the output voltage. A standard BNC output connector is located at the rear of the amplifier. These amplifiers can be stacked for multiple use.



BS4 72-4480 to BS4 72-4485 Research Grade Isometric Transducer

Specifications

Output Impedance	10,000 Ω
Sensitivity	< 1 part in 1,000
Accuracy Output Voltage	±1%
Output Connector	Standard BNC
Linearity	±1%
Drift	Negligible after 5 min. warm-up
Amplifier Adjustments	Range selector and offset
Display	LCD, 7.6 mm (0.3 in) numbers
Weight	908 g (2 lb)
Transducer, H x W x D	32 x 45 x 32 mm (1-1/4 x 1-3/4 x 1-1/4 in)
Amplifier, H x W x D	51 x 95 x 86 mm (2 x 3-3/4 x 3-3/8 in)
Mounting Handle, OD x L:	
Model 1	12.7 x 51 mm (0.5 x 2 in)
Model 2	9.5 x 91.4 mm (0.375 x 3.6 in)

Research Grade Isometric Transducer

- Self-powered transducer and amplifier in one
- Transducers are available with three different sensitivities
- Each Transducer has two selectable ranges

This Isometric Transducer approaches the ideal of measuring isometric contraction force without motion. It is available with three different force ranges. Each Transducer has an X10 range selector switch providing two ranges.

This Transducer measures force by measuring the change in capacitance of a stiff beam between two plates. Beam deflection is measured in microns.

Two models are now available. The only difference between the models is the length and diameter of the mounting rod. Model 1 has a 12.7mm OD by 51mm long mounting rod. Model 2 has a 9.5 mm OD by 91.4mm long mounting rod.

Research Grade Isometric Force Transducer

Power		Sensitivity Deflection Per Gram Load	Selectable Force Ranges	Offset Control Max. Tare	2 VDC Output Voltage Per
115 VAC, 60 Hz	230 VAC, 50 Hz				

Model 1 with 12.7 x 51mm (0.5 x 2in) Mounting Rod (OD x L)

BS4 72-4490 \$	BS4 72-4493	10.0 μm	0 to 0.5 g 0 to 5.0 g	0.2 g 2.5 g	0.5 g 5.0 g
BS4 72-4491 \$	BS4 72-4494	1.0 μm	0 to 5.0 g 0 to 50 g	2.5 g 25 g	5 g 50 g
BS4 72-4492 \$	BS4 72-4495	0.1 μm	0 to 50 g 0 to 500 g	25 g 250 g	50 g 500 g

Model 2 with 9.5 x 91.4mm (0.375 x 3.6in) Mounting Rod (OD x L)

BS4 72-4480 \$	BS4 72-4483	10.0 μm	0 to 0.5 g 0 to 5.0 g	0.2 g 2.5 g	0.5 g 5.0 g
BS4 72-4481 \$	BS4 72-4484	1.0 μm	0 to 5.0 g 0 to 50 g	2.5 g 25 g	5 g 50 g
BS4 72-4482 \$	BS4 72-4485	0.1 μm	0 to 50 g 0 to 500 g	25 g 250 g	50 g 500 g



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