Furness Controls

FCO12/14

Pressure and Flow Meaurements

MICROMANOMETERS

FCO12/14

FCO12 2 Range Digital Micromanometer (pictured)

A high quality differential pressure micromanometer with digital display and two ranges giving a total resolution of 1:20,000.

Currently, over 10,000 Furness Controls micromanometers are used in universities and research establishments around the world, measuring pressures in fan testing, heat exchanger design and aeronautics.

The FCO12 and FCO14 instruments feature automatic zero, allowing the instrument to be used accurately, immediately after switch-on. A function switch introduces a square root extractor converting the instrument to an anemometer, measuring velocity in metres/sec. A small Pitot static tube is provided for this purpose, together with a length of twin-core plastic tubing and all housed in a leather carrying case. A variable response control allows the reading of fluctuating pressure and the output signal of 0-5 VDC can be fed to data capture systems.

The micromanometers are based on a capacitance differential pressure transducer of unique design which measures differential pressures from .001 pascal. Each instrument includes a differential pressure transducer, rechargeable battery pack, a readout meter (analogue or digital), a range switch and equalising valve. Additional features are: automatic zero, variable response control and a centre zero function switch.

Where a multiple of pressure input exists, Furness Controls can supply Scanning Boxes for use in conjunction with micromanometers. Please request leaflet FCO91 for further information.

FCO14 3 Range Analogue Micromanometer

The analogue version features a large mirror-scale meter with 100 graduations, each individually calibrated and marked in our factory for the highest resolution and accuracy.

In addition to automatic zero, the instruments all use 4, 'D' size rechargeable batteries, and a separate AC charger unit making the instrument highly versatile.

On the FCO14 analogue instrument, a function switch converts the instrument to a centre zero scaling for measuring differential pressures which vary positive and negative around zero.

The leather case includes a Pitot tube for velocity measurements and the instruction manual giving conversion tables for temperature correction when measuring flow.

The meter gives a linear scale with velocity when the m/s switch is selected so the instrument can be used as an anemometer.

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RANGES

FCO12	10%	100%	metres/sec
Model 1:	±1.999 Pascals	±19.99 Pascals	0-5.6 m/s
Model 2:	±19.99 Pascals	±199.9 Pascals	0-18 m/s
Model 3:	±199.9 Pascals	±1999 Pascals	0-56 m/s
Model 4:	±1.999 kPascals	±19.99 kPascals	0-180 m/s

FCO14	1%	10%	100%	metres/sec
Model 1:	±0.1 Pascals	±1 Pascals	±10 Pascals	0-4 m/s
Model 2:	±1 Pascals	±10 Pascals	±100 Pascals	0-12 m/s
Model 3:	±10 Pascals	±100 Pascals	±1000 Pascals	0-40 m/s
Model 4:	±100 Pascals	±1000 Pascals	±10000 Pascals	0-120 m/s
Model 5:	±200 Pascals	±2000 Pascals	±20000 Pascals	0-180 m/s

SPECIFICATION

Accuracy	±0.5% FS (±1 digit FCO12), (FCO14 display 1% FSD)
Resolution FCO12	1 part in 2,000 each range
FCO14	1 part in 100 each range
Temperature effect on range	±0.5% per 10°C
Temperature effect on zero (manual setting)	±0.04%, 100% range per 10°C
Zero stability on automatic	Drift is less than the readout resolution
Response	Variable damping 20 m/s to 10 seconds
Overload	10 x max DP
Static	±1 bar gauge pressure
Output	±5 V each pressure range; 0-5 V flow range
Supply	Four 'D' size cells, Ni-Cad fitted give 14 hours use on FCO12, 40 hours on FCO14, 200-240 AC or 100-120 AC power unit supplied recharges internal cells in 15 hours.

Furness Controls has a UKAS certified laboratory which offers pressure calibration from 0 to 40 kPa and Flow calibration from 0.1 ml/min to 2000 litres/min

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UKAS QUALITY MANAGEMENT 015