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Product Name :
Impulse Swirl Meter Range Instrument

Product Code :
LBNY-0005-1700002



Description :

The unit is designed for blow or suction induced flow and can be assembled for operation in either the upward or downward mode, whichever is most convenient. The Aeroweb honeycomb matrix is suspended within a cylindrical, aluminum housing with the skirt of the matrix immersed in an annular oil reservoir in the base which serves both as an air seal and a viscous damper. A set of weights is provided with the instrument to facilitate static calibration of the strain gauge with an accuracy of 2%. The matrix is mounted on an axle in the frame and supported by precision ball bearings while the torque arm connected to the axle acts on a Wheatstone Bridge strain gauge transducer. Cussons Display Unit, used in conjunction with the swirl meter, is a mains operated instrument complete with power supplies, which converts the strain gauge measurement into a four element, LED digital readout.

Application:

In automotive and truck size engines for instance, a pressure drop of 254 mm water gauge is normally used. The illustration shows a typical test rig layout arranged for downward air flow, in which the clients manometer registers a constant pressure drop across the model which must always be high enough to ensure fully turbulent flow in order that the results can be applied to his own particular engine configuration.

Technical Specification :

The strain gauge transducer is rated at 220g, measured as a positive or negative force; the length of the torque arm is such as to enable torque values up to 1×10^{-1} Nm to be measured. The matrix is connected via a torque arm to a strain gauge transducer which is calibrated by suspending weights over pulleys either side of the torque arm. The unit can be arranged for flow in an upward or downward direction and is supplied complete with adaptor plate having a pilot bore of diameter 50 mm. The comprises a honeycomb matrix mounted within a

cylindrical housing, the dimensions of the individual cells of the matrix being suitable for arresting the swirl of the incoming air. The front panel carries the 4 digit phosphorescent display, a mains on/off switch and zero and span potentiometers. The display unit together with all the signal conditioning boards is contained in a steel case complete with carrying handle. If removed it can be mounted in a rack case.



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