System Studies Incorporated

High Resolution Dual Transducer

Merging applications for improved monitoring

Pressure and flow transducers. They've been important components of cable pressurization systems for years. You'll find them in central offices, monitoring panel delivery pressures and flows. In access holes, monitoring cables, manifolds and air pipes. And at remote dryers, monitoring pressure and flow output. You'll find them just about anywhere you need remote pressure and flow information.

Now, thanks to the solid-state technology used in System Studies' high resolution transducers, there's a combination pressure and flow device that makes your job easier and your monitoring system more effective.

The High Resolution Dual Transducer™ combines the precise monitoring capabilities of our pressure transducer (with its extended reading range of 0-30 PSI) with the versatility and accuracy of our flow transducer. Not only is this device unique in design and function, but it is small enough to be installed at locations where access and space limitations are an issue.

Most importantly, it saves you time and money in dual monitoring applications by eliminating the need to purchase and install separate devices. One dual transducer mounted to a central office pipe alarm panel, for example, will monitor both delivery pressure and air flow consumption. And like our other high resolution sensors, the transducer's readings can be manually verified to confirm reading accuracy.

Here's how it works

The High Resolution Dual Transducer is designed to be used with the Flow Finder™ System of Measurement, the 289H Loop Surveillance System™, and the PressureMAP™ monitoring software.

The device consists of a solid-state sensor board, a communications board and two dedicated pairs of conductors. One sensor measures the internal pressure of the Flow Finder at its point of installation, and another measures the minute pressure differential created by the Flow Finder's internal calibrated orifice.

Each of these pressure readings is output separately as an electrical current value in the range of 4 to 20 milliamperes. The values are then read by the 289H LSS and converted into accurate pressure and flow readings by PressureMAP.

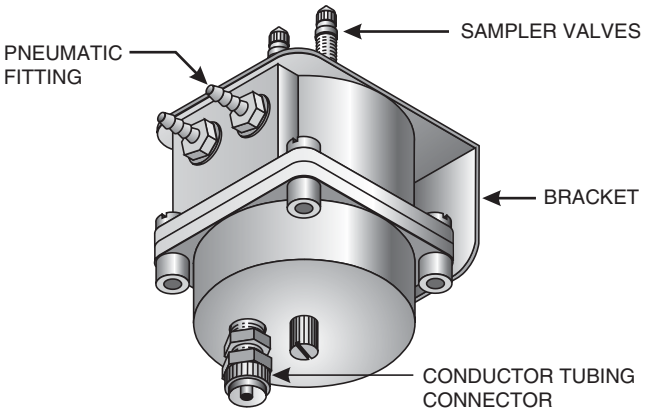
The dual transducer is not only unique in that it contains both pressure and flow sensors, but it can also be placed anywhere on the pipe route where pressure and flow must be measured.

Its 0-30 PSI reading range means that you can monitor delivery pressure without having to install another 5-14.5 PSI pressure device. And because it reads in one-tenth (.1) PSI increments, rather than the one-half (.5) PSI steps of resistive pressure transducers, it can detect and monitor the subtle fluctuations in delivery pressure from a central office dryer.

For flow readings, the dual transducer's flow sensor relies on the range of the Flow Finder being measured. This allows you to place this same transducer both at a distribution panel and at a manifold location in the field.

Installation Applications

The System Studies High Resolution Dual Transducer is the ideal device to install at the pipe alarm panel, the meter panel, and at the end of an air pipe. It can also be placed at any manifold location, and the pneumatic fittings can be tubed directly to the Flow Finder being read. From the built-in access valves located on top the transducer, a technician can manually verify the flow and pressure rates indicated with a Flow Gauge™ or a C pressure gauge.



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To make installation a snap, the High Resolution Dual Transducer has a built-in splicing cavity with two pairs of conductors — one for each sensor. System Studies transducers can be mounted directly to access hole walls using our specially designed bracket, or in the central office using our new monitor rack. They can also be installed at any conventional 5-bank or 10-bank transducer housing.

Model Specifications

The High Resolution Dual Transducer provides stepless flow readings for all five Flow Finder ranges: 9.5 SCFH (269 Liters per Hour, or LPH), 19.0 SCFH (538 LPH), 47.5 SCFH (1,345 LPH), 95.0 SCFH (2,690 LPH) and 475.0 SCFH (13,500 LPH). It can read pressure from 0-30 PSI (0–207 KiloPascals), covering a complete range of possible pressure readings. All System Studies transducers operate on dedicated telephone circuits only. Variations of the basic housing design are provided for use in several applications (please refer to accompanying ordering charts).

Mechanical The transducer housing is constructed of nickel-plated brass with an ABS plastic barrier plate. Dimensions vary depending upon which configuration is ordered.

The mounting bracket, sold with the stand-alone versions of the transducer, is stainless steel. Side holes, used to mount the bracket to a post, wall or panel, are ¼ inch (.6 cm) in diameter and are placed 1¾ inches (4.4 cm) apart. Four 3/16-inch (.5 cm) holes, used to secure the transducer to a transducer housing, are located on top of the bracket.

Performance Margin of error for repeatability in the High Resolution Dual Transducer is less than 1%. The transducer's flow sensor is infinitely readable from zero to full flow in all five Flow Finder ranges. If the Flow Finder being measured is pegged, the High Resolution Dual Transducer will provide stepless and accurate readings up to two times the maximum reading capability of the Flow Finder. Overall measurement stability is unparalleled.

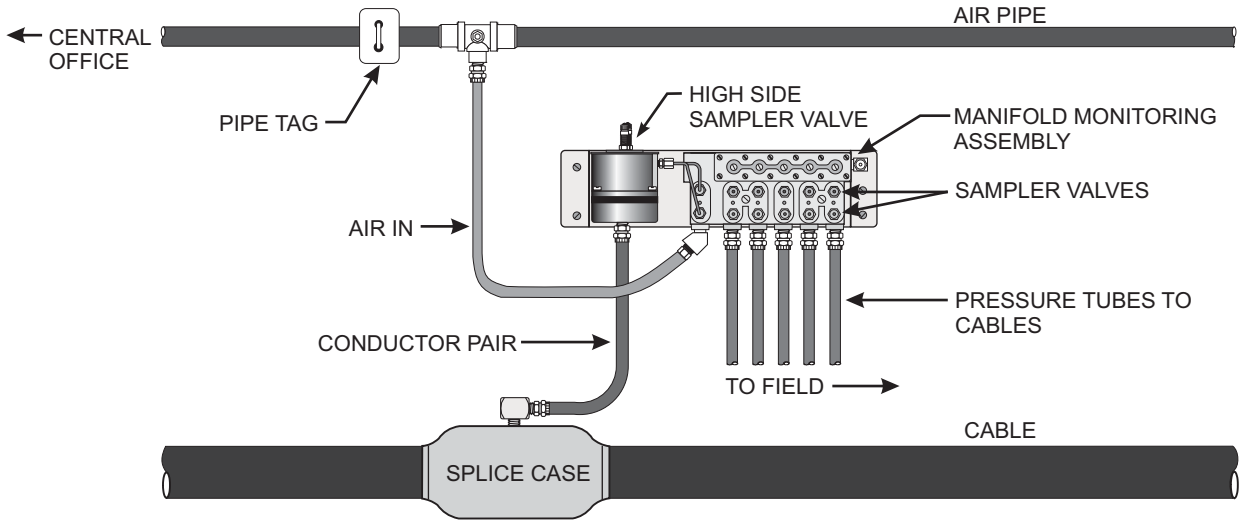
The transducer's pressure sensor reads absolute pressure. Reading variations caused by changes in altitude or barometric pressure are corrected by the PressureMAP/289H Monitoring System, if a System Studies Barometric Transducer is installed in the office.

Pressure/Flow Readings Transducer flow readings can be manually verified with a Flow Gauge using the two tank valve fittings (sampler valves) located on top of the transducer. The two pneumatic fittings on the side of the transducer can be tubed directly to an installed Flow Finder or to a Flow Finder Manifold's™ incoming Flow Finder sampler valves.

Pressure readings can be taken by simply connecting a C pressure gauge to the high pressure side of the two sampler valves located on top of the transducer.

For information on System Studies' High Resolution Pressure Transducer, High Resolution Flow Transducer, Flow Finder, Flow Gauge, Flow Finder Manifold, Barometric Transducer and Manifold Monitoring Assembly, please refer to their respective data sheets.

Specifications subject to change without notification.



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HIGH RESOLUTION DUAL TRANSDUCERS

PART NUMBER	PNEUMATIC FITTING*
4200 STAND-ALONE (this model includes a nickel-plated brass conductor tubing connector, 15 feet of plastic tubing, and 18 feet of 3-pair conductor wire)	BB, BR, SC
4201 CENTRAL OFFICE PANEL MOUNT (this model includes a wire cover assembly with 2 pairs of conductors in a protective sheath).	BB, BR
4202 TRANSDUCER HOUSING MOUNT (this model does not include a wire cover assembly, center barrier plate, or tubing and conductors)	BB, BR
4203 STAND-ALONE (this model is supplied with a 37° flared stainless steel conductor tubing connector; it does not include tubing or conductors)	BB, BR, SC, SCP
4204 STAND-ALONE (this model is supplied with 1/4" nickel-plated brass conductor tubing connector; it does not include tubing or conductors)	BB, BR, SC

Please note that a four digit part number and a two digit pneumatic fitting designation must be specified for each transducer when ordering.

***Pneumatic Fittings:**

BB Transducer supplied with nickel-plated brass, barbed pneumatic connectors.

BR Transducer supplied with nickel-plated brass, barbed pneumatic connectors on a 90° elbow.

SC Transducer supplied with nickel-plated brass connectors. For use with 1/8" pre-formed stainless steel tubing.

Ordering Examples:

If you ordered part number 4204-BB, for example, you would receive a stand-alone High Resolution Dual (Pressure/Flow) Transducer with a 1/4" nickel plated brass conductor tubing connector. It would also be equipped with two nickel-plated brass, barbed pneumatic fitting connectors.

Model number 4200-BB (shown below), is a stand-alone dual tranducer with a nickel-plated brass conductor tubing connector and nickel-plated brass, barbed pneumatic connector fittings. This model would be supplied with 15 feet of plastic tubing, and 18 feet of 3-pair conductor wire.