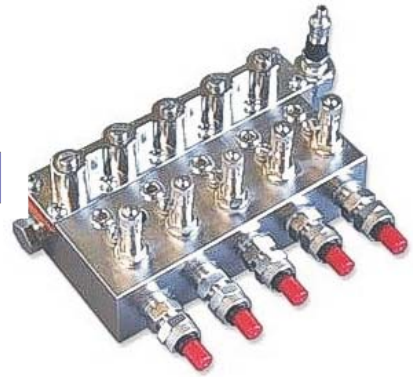


# Flow Bank



## Providing dual feed protection in a single feed system

There are some distinct advantages of dual feed air pressure systems over single feed systems. For one thing, they provide air to the cables from two directions. If a cable leak develops, the dual air sources supply pressure protection to the cable on both sides of the leak. The converging air flow reduces the area of risk where a potential cable failure can occur.

Single feed systems do not offer this degree of protection. The major weakness of a single feed system is the fact that cables are fed from one source only, from one direction. When a cable leak occurs, pressure drops at the leak and levels off from the leak to the cable endpoint. Depending upon the severity and location of the leak, a large segment of the cable could be left totally unprotected.

Single feed systems can also be expensive to build and maintain. Because they require pressure transducers on all cables at prescribed distances, equipment installation and maintenance costs can add up quickly. And despite these inevitable costs, you're still left with a single feed system. One with improved monitoring, at best, but with no real improvement in cable protection.

Until now, there has been no inexpensive way to provide dual feed protection to a single feed system. You'd either have to add air pipe, portable air sources, or live with inadequate cable protection.

### Protection you can bank on

The Flow Bank™ (Part No. 3076) from System Studies Incorporated changes all that. It's a simple air distribution mechanism that joins cables together pneumatically to increase cable protection. The Flow Bank makes it possible for cables with adequate or high pressure to provide additional air to cables that have low pressure. Designed to be placed every 1,000 to 1,500 meters in a single feed system, a cable route with multiple Flow Banks becomes an effective dual feed system.

What's more, monitoring requirements are greatly simplified when using the Flow Bank. Instead of installing pressure transducers on individual cables along the route, one High Resolution Pressure Transducer™ at each Flow Bank will do the job. This transducer monitors the combined cable pressures created by the Flow

Bank. Dispatching and alarming is then based on the analysis and comparison of the pressure transducer readings from adjacent Flow Banks.

### Here's how it works

The Flow Bank functions like a flow routing manifold, allowing air to flow freely from one or more cables into another. Cables are pneumatically connected to the Flow Bank via (1 cm) to (0.6 cm) plastic tubing. If a leak develops in one of the cables, those with higher pressure will flow through the Flow Bank and into the cable with the lowest pressure. There are no check valves in the Flow Bank, nor plastic tubing, to impede the flow of air in either direction.

Each of the in/out ports in the Flow Bank is equipped with a specially designed Flow Finder™ that provides accurate flow rates when used with the Flow Direction Gauge™ (Part No. 3105). This flow gauge reads from 0.0 to 0.95 Standard Cubic Feet per Hour (SCFH), or 0 to 27 Liters per Hour (LPH), with an extended reading capability of up to 2.5 SCFH (70 LPH).

The gauge face indicates which direction the air is flowing—either toward the Flow Bank or toward the cable.

### As a leak locating tool

When a leak occurs in a cable, it will cause the pressure in the Flow Bank to drop. This drop will be indicated by the High Resolution Pressure Transducer installed at the Flow Bank. The leak also creates a flow increase. When measured with the Flow Direction Gauge, the cable with the leak will show an increase in flow toward the cable. The amount of flow measured depends upon the size of the leak, the pneumatic resistance of the cable, and the distance between the leak and the Flow Bank.

The other cables attached to the Flow Bank will feed the cable with the leak. The Flow Direction Gauge will indicate flow rates for these cables in the direction of the Flow Bank (to the left on the gauge face).

Using this information, a technician can then perform the necessary Zero Leak Projections and Air Flow Calculations to locate the leak.

### A protected investment

The Flow Bank also provides protection to the cables should one of the pneumatic tubes be accidentally cut. And as a result of calibrated restrictions built-in to the



Flow Bank, maximum flow to a cable with 5 PSI (.73 kiloPascals) pressure is limited to 4 SCFH (113 LPH). This prevents the leaking cable from draining or depleting the pressure in the adjoining cables.

The cable pressure is further safeguarded during the flow reading process. Using the Flow Direction Gauge, air flows are measured directly without having to temporarily turn off the air and reroute it through a portable flow rater. The cable pressure will never be accidentally left off.

### Model specifications

The Flow Bank (Part No. 3076) is designed for utility hole installation. One bank will feed up to five cables. Multiple banks can be grouped together to feed as many cables as necessary at one location.

**Mechanical** The Flow Bank housing is constructed of nickel-plated brass. Other metal parts are either stainless steel or nickel-plated brass. The Flow Bank is 3 inches (7.6 cm) high, 2 (6.4 cm) inches deep and 5

inches (13.3 cm) across. Mounting holes are centered and placed 3 inches (7.6 cm) apart. The gasket is made of durable silicone rubber.

**Operating Range** The System Studies Flow Bank has been thoroughly tested and confirmed for reliable operation within the following perimeters:

- Operating Temperature Range: -40°F to +220°F
- Maximum Pressure Range: Will withstand 20 PSI (3 kPa) over the above operating temperature range.

**Shipping Weight** 5 pounds (2.3 kg)

### Flow Bank ordering

Flow Banks are available with two types of fittings. Please see the accompanying ordering chart for more information.

The words Flow Bank, High Resolution Pressure Transducer, Flow Finder, and Flow Direction Gauge are trademarks of System Studies Incorporated.

## FLOW BANK / FLOW DIRECTION GAUGE

PART NUMBER		FITTINGS*
9800-3076	FLOW BANK (For Five Cables)	BS, BT
9800-3105	FLOW DIRECTION GAUGE	N/A

Please note that in addition to a part number, it is necessary to specify a Fitting designation when ordering a Flow Bank.

#### \*Fittings:

- BS** Flow Bank supplied with nickel-plated brass, standard tubing connectors. For use with 3/8 inch plastic tubing.
- BT** Flow Bank supplied with nickel-plated brass tubing connectors. For use with 1/4 inch plastic tubing.

#### Ordering Examples:

If you ordered Part Number 9800-3076-BT, for example, you would receive a Flow Bank equipped with 1/4 inch tube to 1/4 inch NPT-M fittings on each of the five flow ports. A 9800-3076-BS would specify a Flow Bank with nickel-plated brass tubing connectors on each of the flow ports.

