cable pressure AirMAIL
System Studies Incorporated

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In This Issue

Silver Software

Over 25 years ago System Studies introduced its first soft ware Management Analysis Program, PressureMAP™. Today every major U.S. telco and many operating companies outside of the United States utilize PressureMAP to monitor their valuable outside plant.

Later this year we will be introducing PressureMAP Version 27, which includes PressureMAP, AlarmMAP™, ReportMAP™, CableMAP™ and PressureWEB™. This latest version of the software will be com patible with either the SCO UNIX 5.0.7 operating system or the Linux operating system (Red Hat Enterprise 4.2 and CentOS 5.2). Future development of the product will be geared toward Linux, due to its lower licensing fees and numerous performance and support advantages.

To find out about the new features and capabilities that have been added to Version 27, check out ***PressureMAP***, ***Latest Version Enhancements*** in the ***Software*** section of AirTalk.com. Or, if you prefer to speak with us di rectly, you can call (800) 247-8255.

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Delivery Pressure

In this airMAIL issue we'll take a look at the relationship between delivery pressure and cable pressure. Delivery pressure is the measured output in pounds per square inch (psi) at one of the air sources on a route—for example, an air pipe manifold, remote dryer, distribution panel or pipe panel. If cable pressure is low, it's understandable to think that you might have a leak somewhere out there on the cable. But the reality is, many times low cable pressure is the result of low delivery pressure.

One of the biggest traps you can get into is scanning a printout from a route and yellow-marking all the cable pressure transducers (UP, AP and BP devices) that are reading below standard. If delivery pressures are below standard, you can spend hours, even days working on cables without significantly improving cable protection.

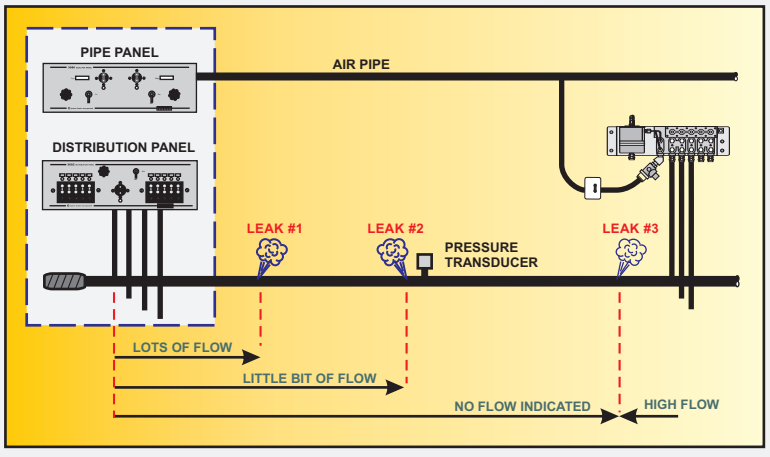
That why it's important first to take a look at delivery pressure. There are several reasons why delivery pressure might be low:

1. Regulated output is too low. For example, a distribution panel needs to provide a solid 10 psi to the cables in the vault. If it's set below 10 psi, you're working with a deficit. Several companies put a SP device (Source Pressure TD) on their panels specifically to monitor the delivery pressure.

2. Too many sheath miles of cable are being fed by the air source. There are guidelines that specify how many sheath miles should be fed by an air pipe and what allowable air usage is for an air source (air pipe manifold, distribution panel, remote dryer, etc.). In a system with 6,000 foot manifold spacing, for example, the Optimum Air Usage for a 5-port manifold is roughly 10 Standard Cubic Feet per Hour (2 SCFH per tube). The air pipes used in this type of system should feed no more than 20 sheath miles of cable. Slightly higher manifold consumption standards and lower total air pipe sheath mileage guidelines pertain to systems with closer manifold spacing.

3. High flows. A major cable leak near an air pipe manifold results in increased air consumption and a significant drop in delivery pressure at the manifold. A pipe leak has the potential of consuming an even larger amount of air, and it can reduce delivery pressures to all of the manifolds on the route. Well-monitored systems utilize endpipe pressure transducers (EP devices) to provide immediate warning when high flows cause a drop in air pipe pressure. So don't just look at underground pressure transducers (UPs), look at EPs. They can tell you a lot about the cable route.

The example here illustrates the value of looking at air consumption when leak locating. Low pressure information tells you there's something wrong with cable protection, but it doesn't direct you to the source of the problem. Air flow information helps you identify where to look for the leak.



If you have any questions about any of the information in this article, or would like us to help you with a specific leak locating problem, please give us a call. We'll be happy to provide whatever assistance we can.

Office Distribution Panels

When you think about it, tracking the movement of the flow rater balls on the office distribution panel provides only limited information for leak locating. They simply do not tell you as much as you'd think.

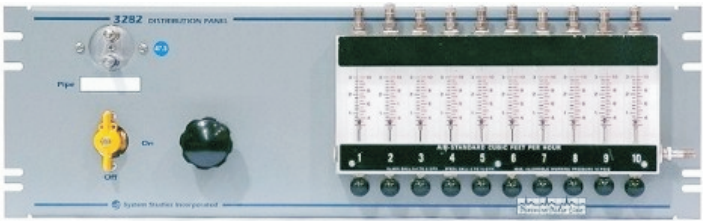
Distribution Panel (Old Style)

Let's say you have a route with 6,000 foot air pipe manifold spacing. Due to the pneumatic resistance in a cable, a leak that is greater than 1500 feet away will show little or no flow increase at the panel. You can stare at those balls until you're dizzy, but they're not going to move much unless there's a leak relatively close by. For example, you could have a cable leak on the CO side of the first air pipe manifold location and not even know it.

On the other hand, if you see that one of the flow rater balls has moved up the flow rater scale, you've got a leak within the first 1500 feet of cable. Now you can take a pressure measurement, read the flow rate, determine the cable's pneumatic resistance, and calculate a zero leak projection (ZLP). The ZLP will indicate the maximum distance for your search area.

If the calculated ZLP is 920 feet, for example, the leak causing the increased flow reading could be anywhere within this distance. It can be footsteps away in the vault or outside the building 919 feet down the cable. At least you know you've got a leak, and you know where not to look for it.

For successful leak locating the distribution panel should be considered one of many tools or sources of information. You also need to rely on air flow and air pressure information from a variety of sources—particularly the transducers installed in the office and at air source and end of pipe locations.



Product Notice

Due to the unavailability of various Dial-a-Ducer™ on-board components and housing materials, System Studies has been forced to discontinue the manufacture and sale of this small dial-up, multi-sensor product. Please note, however, that we will continue to repair returned Dial-a-Ducers, subject to specified service charges and parts availability.

Discontinued Product
Dial-a-Ducer
Part No. 9800-4350

Dial-a-Ducer Replacement

To accommodate requests for an alternative, small-capacity air pressure monitoring option, System Studies offers two versions of our uM260 Micro Monitor™. One provides dial-up modem communications (Part No. 9800-6260M), and the other works on a Local Area Network (Part No. 9800-6260L). Either version can be operated as a stand-alone monitor or used in conjunction with PressureMAP™. The uM260 Micro Monitor extends the monitoring capability of the Dial-a-Ducer to 20 devices—4 binary contact alarms and 16 resistive or current loop transducers.

If you'd like more information about this Dial-a-Ducer replacement, check out the uM260 data sheet on our website or give us a call.