cable pressure *AirMAIL*

System Studies Incorporated

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There's been a lot going on at System Studies since our last *AirMAIL* issue. For one thing, we have been very busy filling orders for our central office rack assemblies, and we thank you for the business. We're proud to say that these assemblies are built with the finest components and are optimally plumbed and finished to offer years of uninterrupted service.

New versions of our PressureMAP™ and PressureWEB™ software are also now available (see information below on the PressureWEB 3.0 component). These applications contain a number of important new features that will enhance your cable pressurization monitoring and your access to information.

We've also been busy modifying our software and uM260 Micro Monitor™ to perform a specialized application that will help telephone companies prevent financial losses due to copper cable theft. An overview of the application, called CableWatch™, is provided below. Currently, two simultaneous field trials are underway, and interest for the application—both here in the U.S. and internationally—is growing.

Finally, we recently held a very successful 3-day training session here at our Santa Cruz facility, and we're currently in the process of setting up additional training in late Summer/early Fall. Please give us a call if you're interested in attending a Santa Cruz class.

If you'd like to find out more about what we have to offer, log onto Airtalk.com or give us a call at (800) 247-8255 or (831) 477-8904.

PressureWEB™ 3.0 Features Summary

The most recent incremental update for PressureMAP, Version 27.01.01, includes major improvements to PressureWEB. We've listened to your requests for new features and have implemented many of them—along with several ideas of our own. The end result? A much more powerful version of the application. PressureWEB Version 3.0 includes the following new features and improvements:

- New *Leak Location Tool* — a powerful graphing application for single feed and dual feed cables. Combine this tool with the *Online Calculator*, and you've got a faster, more streamlined, web browser-accessible version of our popular Leak-o-Matic Gizmo.

- Multiple *My Offices* Lists. Now you can specify more than just one *My Office* list selection. If you're interested in consolidating selected offices into different groups, this new feature makes it possible. Once you define your lists in *Setup* and assign them a unique name, a drop-down box is provided on each *My Offices* display to give you quick access to all of your office lists.

- Expanded *View Preferences*. If selected in *Setup*, all Device Status Views will include device readings for *Curr, Last, Tdy, -1*, through *-6* and *Wk-1* through *Wk-4*. Normally, just the *Curr, Tdy* and *Wk-1* readings are displayed.

- User-selected *Auto Refresh* Rates. The default refresh rate for PressureWEB screens is five minutes. A new checkbox and drop-down menu in Setup allows you to activate/deactivate auto refresh and choose from the following refresh options: 3, 5, 10, 20, 30 and 60 minutes.

- New View Option *By Reading*. From any of PressureWEB's Device Status View pages, it is now possible to select a view option by reading. When you do, a popup window appears that allows you to enter device reading criteria for the report. You can select a specific device type to view (or leave the text box blank for all device types). You can also define a reading operator (<, <=, >, >=, etc.), set a device reading filter, such as a numeric relationship (5 psi, 6 psi, etc.) or one of many verbose reading possibilities (SHRT, ERR, etc). The popup window also includes a check box to select the *Devices Not Reading* report, which was the previous PressureWEB version's default option.

We're pretty sure you'll be happy with these new PressureWEB improvements, and we know that the capabilities will give you more control in accessing your data and reports. Call for more information!

A Case for Remote Dryer Monitoring

Remote air dryers are vital components of many air pressure systems. They provide much-needed air pressure protection to important cables; yet, in many areas, they are left totally unmonitored. Traditional air pressure monitors are over-sized and over-priced for the application, making them impractical and cost-prohibitive to install.

System Studies has addressed this dilemma with the introduction of a self-contained, pre-wired Remote Dryer Monitoring Kit (Part No. 9800-4849). This new product consists of a rugged, water-resistant plastic case that can be mounted inside the dryer cabinet or outside on the pole below the dryer. The case contains the modem version of our uM260 Micro Monitor™ (Part No. 9800-6260M) and our uM260 Backup Battery Kit (Part No. 9800-4848BBU).
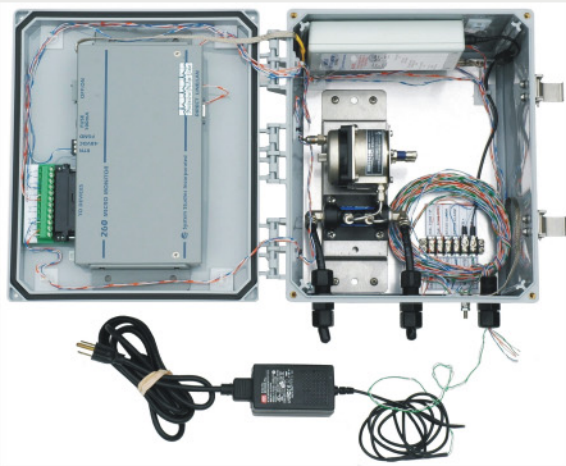
The Backup Battery Kit includes a -48V DC power supply, which converts 115V AC power at the dryer to -48V DC (required for the uM260). It also includes a backup battery, which temporarily powers the monitor if disruption of AC power occurs. Included with the battery and power supply are the necessary power cables, plus an AC alarm pair and a power pair for the uM260.

A Flow Measurement Assembly™, complete with a High Resolution Dual (pressure/flow) Transducer and a pneumatically connected Flow Finder™, provides monitoring capability for delivery pressure and air consumption at the remote dryer installation.

Monitoring pairs are pre-wired to a 6-pair Termination Adapter (Part No. 9010-0060) that has been inserted into the uM260's amphenol cable connector. The incoming power pair from the -48V DC power supply, as well as the dial-tone pair (for the uM260's modem) and a dryer alarm pair are all pre-connected to a terminal strip mounted to the bottom of the case.

Combined, these components make it possible to monitor and alarm for pressure drops and flow rate increases in the monitored cable(s). They also offer temporary backup power to the uM260 if AC power fails, plus the ability to generate an alarm for this condition.

The Remote Dryer Monitoring Kit is available in four Flow Finder ranges: W (0-9.5 SCFH), X (0-19 SCFH), Y (0-47.5 SCFH) and Z (0-95 SCFH). To find out more about this kit and how it can serve your needs, check out the datasheet on our website (http://www.airtalk.com/site_map2.html) or give us a call.

Good Manhole Habits

During the decades that we've been involved in air pressure, we've worked with just about every operating company—large and small—in some capacity or another. This experience has revealed that, basically, all underground plant is the same no matter what part of the country you're in. Of course, that doesn't mean that the quality of craftsmanship doesn't vary from area to area. In fact, there are noticeable differences in the way maintenance technicians go about their work. That's why we'd like to pass along a few simple tips that could make your task of leak locating easier and more productive.

Clean Tools to Guarantee Accurate Measurements

One of the most important and overlooked parts of the air pressure system is the lowly valve cap. At some time or another, you've probably had to replace one or more valves because water got inside and corroded the metal from the inside out. Even in dry environments, valves without caps will deteriorate from dust collecting in that tiny gap between the valve body and the valve stem. It only takes a second to replace a valve cap, and doing so will save a lot of hard work down the road.

Tag Tubes Now and Save Time Later

Another good idea, and a big time saver later, is to tag tubes in the manhole. Several years ago we learned that the maintenance technicians in one of the large telcos had a procedure for tagging each tube with a color coded piece-out wire as it was installed both at the pressure transducer or manifold position and at the splice case that it fed. They used 19 or 22 gauge wire because there is more color definition with the larger wires and, thus, easier to identify. Obviously, this is only one technique, but it's a helpful one when leak locating since a technician can easily associate the high flow found at a manifold, for example, with a particular cable in the manhole. The technician doesn't have to trace the tubing from end-to-end to make sure he/she is working on the right cable. Whether you use piece-out wire, plastic tags or other means, it's a good practice to tag tubes when working in manholes. It will help to save somebody—maybe yourself—a lot of time later on.

Identify Cables and Pipes at Pedestals and in Manholes

If the practice in your area—as it is in many parts of the country—is to have high valves in the necks of manholes or in pedestals outside of the manhole, it is an absolute must that you know which cable or pipe you are working with. If you take the time once to make sure the information is identified and recorded accurately, you'll save yourself a lot of extra work in the long run.

While, admittedly, the information mentioned above doesn't help to make you a better leak locator, it does say something about your organizational capabilities and the quality of your craftsmanship. If you take care of the little details, you're sure to see time savings later on.

Do You Have a Cable Theft Problem in Your Area?

By now most everyone affiliated with cable pressurization in the telecommunication industry knows that the threat of "losing a cable" no longer pertains just to a service outage caused by moisture/water intrusion. Copper cables, both pressurized and non-pressurized, are being stolen with increasing frequency by thieves looking for a quick cash-in-hand payoff.

That's why we developed a cable theft monitoring application that offers quick-response alarming and search area notification when a cut in a monitored cable is detected. Our cable theft monitoring solution is comprised of a Linux-based industrial grade PC equipped with specialized alarming software (CableWATCH™), a uM260 Micro Monitor™, and the use of one or more designated conductor pairs for each monitored cable (see illustration).

Each conductor pair, called a monitoring pair, is equipped with multiple electrical resistors (up to 15). When read by the uM260, the monitoring pair's electrical resistance value will indicate if pair continuity exists along the entire loop or if the cable has been cut. When multiple calibrated resistors are installed in parallel along the pair at spaced intervals, the MAP Engine software can determine the approximate location of the cable cut in feet or kilo feet from the central office.
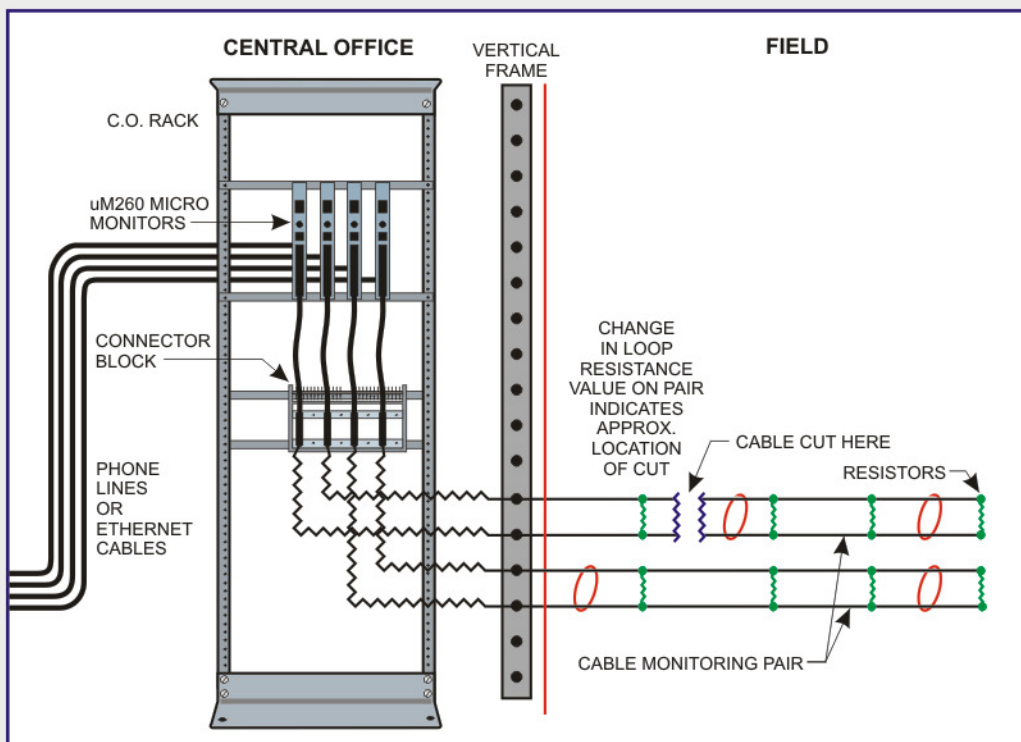
What makes the uM260 Micro Monitor and CableWATCH monitoring software so valuable in deterring cable theft are its rapid reading and reporting cycles. The monitor provides continual electrical resistance readings for a maximum of 16 monitoring pairs. These pairs are read approximately three times a minute. If the uM260 Monitor detects a resistance value on one of the monitoring pairs that deviates from the normal resistance reading for that pair, it issues an alert to the CableWATCH software.

The software compares the reported resistance reading with data from its table of resistance values for all of the resistors installed on the loop and determines the approximate location of the severed pair/cable. An instantaneous alarm is then issued to designated telephone company individuals, security personnel, and/or law enforcement officials via email, cell phone text message, etc. A rapid response by these individuals can lead to the apprehension of the thieves while they are still in the process or removing and/or transporting the stolen cable.

If cable theft is a problem in your area, give us a call. We're confident that we can help you out.