System Studies Incorporated

uM260 Micro Monitor

Bringing low cost monitoring capability to small central offices and environmental hut locations

Finding the right size monitor for all of your cable pressurization system monitoring needs just got a whole lot easier. Not only does System Studies offer two versions of our popular 289H Loop Surveillance System™ monitor, we now have a new, inexpensive cable pressurization system monitor that can be used both in small central offices or environmental huts to monitor the isolated pressurized plant.

The new –48VDC-powered uM260 Micro Monitor™ provides scanning and alarming capabilities for up to 16 resistive or current loop monitoring devices, four binary contactors, and one contact control output. Device data can be accessed via analog modem or Local Area Network. To accommodate these communications methods and keep costs low, two versions of the uM260 monitor are offered: one with an on-board 33600 baud modem (Part No. 9800-6260M) and the other with a TCP/IP Ethernet port (Part No. 9800-6260L).

Not only are these communications options available for the new monitor, there are also two user interface modes provided: a text menu user interface for modem sessions, and a web browser (HTML/Javascript) interface for LAN communications. Both modes provide access to system setup (data entry) and device data (read only) via password-controlled logins. Like a typical cable pressurization monitor, the uM260 Micro Monitor provides alarm notification when pressure or flow readings cross pre-defined alarm thresholds or when binary devices change from their normal, non-alarm state. The 9800-6260L (LAN version) accommodates one alarm center and up to three email alarm notification addresses. The 9800-6260M (modem version) provides for two alarm centers.

Applications

The uM260 Micro Monitor can be used as a simple stand-alone unit to provide threshold alarming and alarm distribution, or as a data collection device for PressureMAP™ and PressureMAP Server™. In both applications the Micro Monitor makes small office monitoring an affordable reality. And, unlike other monitors, the new uM260 can be installed on the field side of a section of fiber optic feeder cable and used to monitor devices on copper pairs.

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The uM260 contains a small controller board equipped with relays for 20 monitoring devices and one contact control relay. A 25-pair amphenol cable connector, located at the back of the unit, provides the incoming electrical connection for the monitoring devices. And to simplify device wiring, System Studies provides two direct plug-in Termination Adapters. Part No. 9010-0060 can be used to terminate three transducer pairs and three binary device pairs. Part No. 9010-0062 has 21 pairs of terminal jaws to accommodate the full monitoring capability of the uM260.

In addition to its 20-device monitoring capability, one of the more useful applications of the uM260 Micro Monitor is its ability to automatically activate an output contact control switch when a designated monitoring device goes into alarm. There are numerous possibilities for this application. For example, the control switch could be used to turn on a remote nitrogen tank when a monitored cable generates a low pressure alarm. Or it could be used in the central office to activate a fan when temperature exceeds a setpoint. Whether the output contact control is coupled for automatic activation with another monitoring device or activated manually, the feature provides an important and easily accessible remote switching capability.

How it Works

The uM260 continually scans all installed monitoring points approximately three times a minute. For each device scanned the monitor identifies the type of device (pressure, flow, binary) and device output (resistive, current loop), makes a reading, converts and stores the device reading, and tests for an alarm condition. An altitude designation, entered during the data entry process, provides barometric pressure correction for all installed 4-20mA current loop devices.

Once each device has been scanned, the monitor processes any alarms that were detected during the process and calls the designated alarm center(s). The uM260 then begins the next scan cycle, and repeats the process described above.

In the uM260's stand-alone (non-PressureMAP) mode, flow devices will always alarm when air flow exceeds the threshold. Similarly, pressure devices will alarm when pressure decreases below the threshold. Binary contacts can be set as either normally open or normally closed, and they will alarm when they reach the state that is opposite the designated normal state. Alarms are sent only once to each enabled alarm center, beginning with Alarm Center #1. They will remain

in the Alarm Center files until existing communications sessions are closed. Incoming user connections are disabled until alarms have been sent.

When used with PressureMAP, the uM260 functions much like any other monitor, providing readings for analysis and possible alarm distribution by PressureMAP. If a uM260 threshold alarm meets PressureMAP's criteria for an alarm, the information is distributed to one or more alarm centers along with pertinent dispatching information.

Whether the uM260 is used in the stand-alone mode or with PressureMAP, users can dial-in or telnet into the monitor to access device information and perform data editing (if they have the proper authorization).

Setup and Operation

The requirements for setting up the uM260 monitor for operation are relatively simple and straightforward. The process involves installing the actual hardware, hooking up the power supply (-48VDC), obtaining a phone line or IP address, and completing the wiring of the monitoring devices. With adequate advance preparation, these procedures can be performed smoothly in a relatively short period of time.

From a data entry standpoint, it is necessary to access the monitor via the Edit mode and build the database for the office. This process includes changing the default User and Edit mode passwords (if desired), entering the office name and elevation (for barometric altitude correction of 4-20 mA transducers), and defining the Alarm Center(s), including the phone numbers (Modem version) or email IP addresses (LAN version). Once the office has been set up, monitoring device information can be entered for each of the four binary devices and 16 resistive or current loop transducers. Binary devices are designated as Device Numbers 1-1 through 1-4, and the transducers are Device Numbers 2-1 through 2-16. The output contact closure device is designated as Device Number 3-1. It can be turned on and off manually through the Edit mode or tied to alarming function of one of the 20 monitoring devices.

uM260 Micro Monitor (Part No. 9800-6260)

Specifications

Part Numbers:
- 9800-6260M (Modem-equipped)
- 9800-6260L (LAN Ethernet port)

Monitoring Capability:
- 16 4-20mA or resistive TDs
- 4 binary contacts (set for normally open by default)
- Continuous scanning
- 1 alarm per device

Controls:
- 1 output contactor (1A max)
- Can be tied to device alarm

User Interface:
- Text Menu (modem/LAN versions)
- HTML/Javascript (LAN version)

Communications LAN Version:
- 10/100 Ethernet TCP/IP
- Port number, 10001
- Connector, RJ-45

Modem Version:
- 9600 – 2400 baud
- 9600, default baud rate
- Connector, RJ-11

Ports: One (1), Serial Connector, DB-9 female

Device Connection:
- Standard 25-pair amphenol

On-Board RAM: 1KB

Mounting: Rack, vertical or horizontal

Dimensions:
- 9.25 in Wide x 5.14 in Deep x 1.25 in High

Weight: 1.25 lbs

Power:
- Requires -48V DC
- Conductors (not supplied): 22 gauge (50 ft or less from -48V frame power; 18 gauge (50 ft or greater)
- Maximum power draw: 0.2 amps
- Typical power draw: 0.033 amps
- On-board LED power-on indicator

Fuse Protection:
- On-board, 0.1 amps
- Recommended CO battery fuse bay, 1/4 amps

Operating Temperature:
-40° F (-40° C) to +167° F (+75° C)
(Note: Operating the unit at either extreme for extended periods will shorten the life of the unit.)

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