

## 289H LSS Monitors



The 289H Loop Surveillance System (LSS) monitors provide a level of simplicity, versatility, and monitoring capability that is unavailable in most cable pressurization monitoring equipment. Because the 289H monitors have been designed to work with the PressureMAP™ software and utilize the MAP System™ database, they do not require expensive on-board memory and processing equipment. The result: a simpler machine with less components to break down and no need for programming or backups.

The Loop Surveillance System monitors are available in two configurations to provide versatility for your specific monitoring application. The 289H LSS is a full size, expandable central office monitor that accepts a combination of dedicated and subscriber relay cards (16 maximum) to accommodate the most demanding monitoring needs.

Unlike the 298H LSS, which can be ordered with varying quantities and types of relay cards, the 289H-M (Mini) LSS™ monitor is a self-contained, non-expandable unit. It is shipped with a controller card, a utility card and a relay card pre-installed. Relay card options include a 50 point dedicated card, a 25-point subscriber card, or a 36-point Sparton dedicated replacement card. Additionally, the Mini can be ordered with either a tone utility card or a standard non-tone utility card, plus your choice of either LAN or modem communications.

Because of these options, the 289H-M monitor is available in 10 configurations. Each of the model variations is described in the following page.

For customers wishing for a small office monitor, one that can be used either in "stand-alone" mode or in conjunction with PressureMAP, the uM260 Micro Monitor™ is the way to go. This unit is available in two versions: one for modem communications, one for LAN communications. The uM260 monitors up to four binary devices, 16 resistive or milliamper transducers, and one contact control relay. It is also the ideal monitor to use with System Studies' telephone cable theft monitoring application: CopperWATCH™.

### 9800-6302 LSS, 289H Monitor



The 289H LSS monitor represents the second generation of Loop Surveillance System monitors available from System Studies Incorporated. It offers enhanced reading capabilities and improved pair diagnostics, as well as alarm condition alerting. The 289H LSS reads both resistive and loop current transducers on both dedicated and subscriber device circuits.

The monitor is supplied with standard Controller and Utility Cards, and the necessary hardware for mounting in a 23-inch equipment rack. Please note that relay cards, cables, and connector blocks must be ordered separately.

### 9800-6302L LSS, 289H Monitor, LAN Capability

This full-sized 289H LSS chassis is supplied with a LAN Controller Card and a standard Utility Card. As the name implies, the LAN Controller Card makes it possible to access the 289H via a local area network, rather than via dial-up modem. In all other respects, it is identical in function to the 9800-6302 monitor described above. Please note that the "L" designation in the part number for this and other 289H and H-M equipment identifies the LAN Controller Card versus the standard Controller Card.

### 9800-6302T LSS, 289H Monitor, Tone Capability

For customers wishing to take advantage of the tone generation capabilities of the 289H LSS, a full-sized chassis supplied with a Tone Utility Card is available. Please note that the "T" designation in this part number indicates that a Tone Utility Card is supplied rather than a standard Utility Card.

With the Tone Utility Card it is possible to place a pseudo-data tone on all device pairs and a locator tone on individually selected device pairs. (Please note that tone generation capabilities vary slightly depending upon the type of relay cards being used. Contact System Studies for additional information.) As with other full-sized 289H LSS equipment, relay cards must be ordered separately.

### 9800-6302LT LSS, 289H Monitor, LAN and Tone Capability

This 289H LSS chassis is supplied with both a LAN Controller Card and a Tone Utility Card. As one of four 289H LSS ordering options, it provides the most feature-rich combination of innovative components for large-scale office monitoring. Please note that relay cards, cables, and connector blocks must be ordered separately.

**9800-6302MS-25 LSS, 289H-M Monitor, Subscriber, 25-Pair**

This 289H-M LSS monitor provides the capability of monitoring up

to 25 devices on subscriber pairs. It is a self-contained unit consisting of a standard Controller Card, a Utility Card and one subscriber relay card (no LAN access or tone generation capabilities).

Like the other 289H monitors, it does not include a connector block or cables. (These items must be ordered separately.) However, it is shipped with a mounting kit (including brackets for installing the unit in either a 19-inch or 23-inch equipment rack) and an Installation/Operations manual.

**9800-6302MLS-25 LSS, 289H-M Monitor, Subscriber, 25-Pair, LAN Capability**

This version of the 289H-M is equipped with a LAN Controller Card rather than a standard Controller Card and a 25-point subscriber relay card. The LAN Controller makes it possible for two-way communications between the 289H-M and remote systems/users over a local area network. The monitor also contains a standard Utility Card (no tone generation capability).

**9800-6302MTS-25 LSS, 289H-M Monitor, Subscriber, 25-Pair, Tone Capability**

Similar in function to the 9800-6302S-25 described above, this 289H mini includes a Tone Utility Card rather than a standard Utility Card. With the tone card and the 25-point subscriber relay card, it is possible to place a locator tone on selected subscriber device pairs (no pseudo-data tone capability is available with subscriber pairs). The locator tone helps to save valuable time when searching for assigned pairs during transducer installation and/or general troubleshooting.

**9800-6302MLTS-25 LSS, 289H-M Monitor, Subscriber, 25-Pair, LAN/Tone Capability**

The latest card components in this 289H-M make it a popular choice for anyone who needs LAN access to their monitoring system and desires the added capability of placing locator tone on selected subscriber pairs. The monitor is equipped with a LAN Controller Card, a Tone Utility Card and a 25-point subscriber relay card.

**9800-6302MD-50 LSS, 289H-M Monitor, Dedicated, 50-Pair**

This 289H mini monitor contains the necessary components for monitoring a maximum of 50 devices on dedicated pairs. It is equipped with a 50-point dedicated relay card, a standard Controller Card and a Utility Card (no LAN or tone generation capability).

**9800-6302MLD-50 LSS, 289H-M Monitor, Dedicated, 50-Pair, LAN Capability**

Monitor is equipped with a LAN Controller Card, a standard Utility Card, and a 50-point dedicated relay card. The LAN access capability distinguishes this model from the 9800-6302MD-50 described above.

**9800-6302MTD-50 LSS, 289H-M Monitor, Dedicated, 50-Pair, Tone Capability**

This version of the 289H mini is supplied with a standard Controller Card, a Tone Utility Card, and a 50-point dedicated relay card. When used in combination with the dedicated relay card, the Tone Utility Card offers both locator tone and pseudo-data tone capabilities. Locator tone assists in finding assigned device pairs, while the pseudo-data tone helps to prevent working device pairs from being stolen for other purposes.

**9800-6302MLTD-50 LSS, 289H-M Monitor, Dedicated, 50-Pair, LAN/Tone Capability**

Monitor comes with a LAN Controller Card, a Tone Utility Card, and a 50-point dedicated relay card. Mounting brackets for both 19-inch and 23-inch equipment racks are also supplied.

**9800-6302MD-36 LSS, 289H-M Monitor, SPDR, 36-Pair**

This 289H mini monitor is equipped with a 36-point Sparton Dedicated Replacement Card (SPDR), standard Controller Card (no LAN capability) and standard Utility Card (no tone generation capability). The SPDR card contains relays for up to 36 dedicated Sparton pairs, and connects directly to an existing Sparton dedicated block. The SPDR simplifies cutover to the 289H-M by eliminating the need to rewire device pairs and run new jumpers to the 289H-M equipment.

**9800-6302MLD-36 LSS, 289H-M Monitor, SPDR, 36-Pair, LAN Capability**

This 289H mini provides the same simplified cutover capability as described above, but it includes a LAN Controller Card in place of the standard Controller Card. It is also equipped with a standard Utility Card (no tone capability).

**ADDITIONAL MONITORING EQUIPMENT**

While the 289H LSS monitors provide the most versatility and performance capability of any central office monitoring equipment, there are some monitoring requirements that are more applicable to the System Studies monitoring equipment described below. When stand-alone capability is desired for a small office, for example, the uM260 Micro Monitor is the way to go. It also has the added advantage of working with the PressureMAP software to provide even more comprehensive system analysis, dispatching and alarming.

**9800-6260L LSS, uM260 Micro Monitor™, LAN Version**

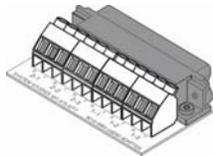
This -48V DC powered stand-alone Micro Monitor provides scanning and alarming capabilities for up to 16 resistive or current loop monitoring devices, four binary contactors, and one contact control output.

The 9800-6260L provides remote communications via a Local Area Network (LAN) and a HTML/Javascript web browser user interface. This LAN version of the uM260 accommodates one alarm center and up to three email alarm notification addresses. It can be operated as a simple stand-alone monitor to provide threshold alarming and alarm distribution, or as a data collection device for PressureMAP.

**9800-6260M LSS, uM260 Micro Monitor™, Modem Version**

The modem version of the uM260 Micro Monitor provides the same monitoring capabilities as the LAN version described above, except that it is equipped with an on-board 33600 baud modem instead of a TCP/IP Ethernet port. The user interface for this version is a text menu system, with both remote dial-up modem access and direct access via laptop or personal computer (DB-9 connection). The modem version of the Micro Monitor provides for two alarm centers.

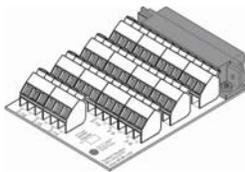
**9010-0060 LSS, uM260 Micro Monitor, Termination Adapter, 6-Pair**



The 9010-0060 Termination Adapter is equipped with 6 pairs of locking jaw terminals with tightening screws to accommodate three transducers and three binary devices. The designated uM260-compatible

device numbers are printed on the circuit board to identify pair termination locations. As viewed from the top of the adapter, numbering starts from left to right, beginning with the transducers (designated as 2-1, 2-1 and 2-3), followed by the binary devices (1-1, 1-2, 1-3).

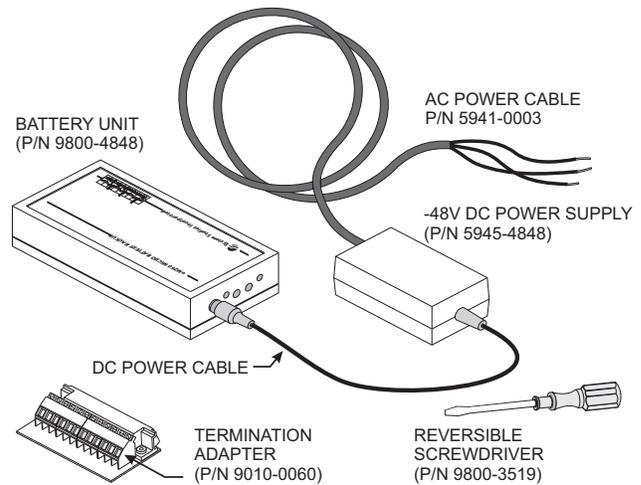
**9010-0062 LSS, uM260 Micro Monitor, Termination Adapter, 21-Pair**



The larger, full-capacity Termination Adapter (Part No. 9010-0062) has 21 pairs of locking jaw terminals for connecting the full complement of transducers, binary devices, and the control relay pair. Once again, device

numbers are printed on the circuit board to identify where the designated pairs should be terminated. Please note that this version of the adapter uses a different wiring order from what is used on the smaller version. The row closest to the amphenol connector is used for the control relay, the contact alarm devices, and the first of 16 possible transducers. The remaining rows complete the termination points for the transducers).

**9800-4848BBU LSS, uM260, Backup Battery Kit**



The uM260 Backup Battery Kit makes it possible to install the uM260 monitor at remote air dryer and CEV locations where 115V AC is used to power equipment. It also offers emergency backup power to the uM260 and the ability to detect AC power failures.

Includes:

- 9800-4848 Backup Battery Unit
- 5945-4848 Power Supply (115V AC to -48V DC)
- 5941-0003 Supplies with hard-wired DC power cable with plug-in adapter to battery unit
- 9010-0060 AC power cable
- 9010-0060 Termination adapter (for 3 transducers and 3 binary devices)
- 9800-3519 Reversible screwdriver

**9900-0260 LSS, uM260, Rack Mount Panel Kit**



This Rack Mount Panel Kit simplifies the process of mounting the uM260 Micro Monitor in a standard 23-inch wide equipment rack. The Rack Mount Panel Kit includes a 1.75-inch by 23-inch panel/bracket (shown here), and two sizes of mounting screws (10 x 24 and 12 x 24) with trim washers and nuts. The low profile of the Rack Mount Panel makes it possible to accommodate tight equipment rack installation requirements, while providing easy access to the uM260 monitor and cable connector.

9800-4849

LSS, Remote Dryer Monitoring Kit



The Remote Dryer Monitoring Kit is a self-contained, encased monitoring assembly designed for installation at a remote air dryer location. It can be installed either inside the dryer cabinet or placed on the pole below it. The kit is comprised of a rugged plastic cast containing the modem version of the uM260 Micro Monitor (Part No. 9800-6260M), our uM260 Backup Battery Kit

(see components described above), and a Flow Measurement Assembly.

The kit is available in four flow ranges:

- 0-9.5 SCFH (Part No. 9800-4849W)
- 0-19 SCFH (Part No. 9800-4849X)
- 0-47.5 SCFH (Part No. 9800-4849Y)
- 0-95 SCFH (Part No. 9800-4849Z)

Please note that the part number designations listed above pertain to a uM260 with an on-board modem. If LAN communications are desired please contact our Sales Department.



The words 289H LSS™, 289H-M LSS™, and uM260 Micro Monitor™ are trademarks of System Studies Incorporated.

**289H LSS Specifications**

Model #	Name	Components / Features	Material Specs
9800-6302	289H LSS	<ul style="list-style-type: none"> <li>• Includes standard Utility Card</li> <li>• Includes standard Controller Card</li> </ul> <hr/> <ul style="list-style-type: none"> <li>• Accepts subscriber, dedicated and SPDR relay cards</li> <li>• Works with all CO switches</li> <li>• Accessed directly by PressureMAP</li> <li>• No programming required</li> <li>• No backups or restorals</li> <li>• Self calibrating</li> <li>• Open pair detection</li> <li>• Reads subscriber, dedicated, addressable devices</li> <li>• Expandable for large offices</li> <li>• PMAP alerting capability</li> <li>• Device pair diagnostics capabilities</li> <li>• Easily upgraded</li> </ul>	21.5 inches (54.6 cm) x 12.5 inches (31.8 cm) x 12 inches (30.5 cm) (width)  Cover: Aluminum Chassis: CF10-18, Cold Finished Steel  Ship Weight: 39 lbs (17.67 kg) Chassis Only
9800-6302L	289H with LAN Capability	<ul style="list-style-type: none"> <li>• Includes LAN Controller Card for two way communications with PressureMAP via company LAN</li> <li>• Includes standard Utility Card</li> </ul> <hr/> Features same for all models (see above)	Same for all models (see above)
9800-6302T	289H with Tone Capability	<ul style="list-style-type: none"> <li>• Includes standard Controller Card</li> <li>• Includes Tone Utility Card (depending upon type of relay cards used, can provide pseudo-data tone and/or locator tone)</li> </ul> <hr/> Features same for all models (see above)	Same for all models (see above)
9800-6302LT	289H with LAN and Tone Capability	<ul style="list-style-type: none"> <li>• Includes LAN Controller Card for two way communications with PressureMAP via company LAN</li> <li>• Includes Tone Utility Card (depending upon type of relay cards used, can provide pseudo-data tone and/or locator tone)</li> </ul> <hr/> Features same for all models (see above)	Same for all models (see above)

**289H-M LSS Specifications**

Model #	Name	Components / Features	Material Specs
9800-6302MS-25	289H-M LSS with Subscriber Card	<ul style="list-style-type: none"> <li>• Contains standard Controller Card</li> <li>• Contains standard Utility Card</li> <li>• Contains 25-point Subscriber Relay Card</li> </ul> <hr/> <ul style="list-style-type: none"> <li>• No programming or data input</li> <li>• No backups or restorals</li> <li>• PMAP alerting capability</li> <li>• Device pair diagnostics capabilities</li> </ul>	3.5 inches (8.9 cm) x 15 inches (38.1 cm) x 11.5 inches (30.5 cm)  Cold rolled steel, chassis and cover  14 lbs (6.3 kg)
9800-6302MLS-25	289H-M LSS with Subscriber Card & LAN Controller Card	<ul style="list-style-type: none"> <li>• Includes LAN Controller Card for two way communications with PressureMAP via company LAN</li> <li>• Includes standard Utility Card (no Tone capability)</li> <li>• Contains 25-point Subscriber Relay Card</li> </ul> Features same for all models (see above)	Same for all models (see above)
9800-6302MTS-25	289H-M LSS with Subscriber Card, and Tone Utility Card	<ul style="list-style-type: none"> <li>• Includes standard Controller Card</li> <li>• Includes Tone Utility Card for generating locator tone on selected device pairs</li> <li>• Contains 25-point Subscriber Relay Card</li> </ul> Features same for all models (see above)	Same for all models (see above)
9800-6302MLTS-25	289H-M LSS with Subscriber Card, LAN Controller Card, and Tone Utility Card	<ul style="list-style-type: none"> <li>• Includes LAN Controller Card for two way communications with PressureMAP via company LAN</li> <li>• Includes Tone Utility Card for generating locator tone on selected device pairs</li> <li>• Contains 25-point Subscriber Relay Card</li> </ul> Features same for all models (see above)	Same for all models (see above)
9800-6302MD-50	289H-M LSS with 50-point Dedicated Card	<ul style="list-style-type: none"> <li>• Contains standard Controller Card</li> <li>• Contains standard Utility Card</li> <li>• Contains 50-point Dedicated Relay Card</li> </ul> Features same for all models (see above)	Same for all models (see above)
9800-6302MLD-50	289H-M LSS with 50-point Dedicated Card, and LAN Controller Card	<ul style="list-style-type: none"> <li>• Includes LAN Controller Card for two way communications with PressureMAP via company LAN</li> <li>• Contains standard Utility Card</li> <li>• Contains 50-point Dedicated Relay Card</li> </ul> Features same for all models (see above)	Same for all models (see above)
9800-6302MTD-50	289H-M LSS with 50-point Dedicated Card, and Tone Utility Card	<ul style="list-style-type: none"> <li>• Includes standard Controller Card</li> <li>• Includes Tone Utility Card for generating both locator tone and pseudo-data tone on selected device pairs</li> <li>• Contains 50-point Dedicated Relay Card</li> </ul> Features same for all models (see above)	Same for all models (see above)
9800-6302MLTD-50	289H-M LSS with 50-point Dedicated Card, LAN Controller Card, and Tone Utility Card	<ul style="list-style-type: none"> <li>• Includes LAN Controller Card for two way communications with PressureMAP via company LAN</li> <li>• Includes Tone Utility Card for generating both locator tone and pseudo-data tone on selected device pairs</li> <li>• Contains 50-point Dedicated Relay Card</li> </ul> Features same for all models (see above)	Same for all models (see above)
9800-6302MD-36	289H-M LSS with 36-point SPDR Card	<ul style="list-style-type: none"> <li>• Contains standard Controller Card</li> <li>• Contains standard Utility Card</li> <li>• Contains 36-point Sparton Dedicated Replacement Card</li> </ul> Features same for all models (see above)	Same for all models (see above)
9800-6302MLD-36	289H-M LSS with 36-point SPDR Card and LAN Controller Card	<ul style="list-style-type: none"> <li>• Includes LAN Controller Card for two way communications with PressureMAP via company LAN</li> <li>• Includes standard Utility Card</li> <li>• Contains 36-point Sparton Dedicated Replacement Card</li> </ul> Features same for all models (see above)	Same for all models (see above)

**uM260 Micro Monitor Specifications**

Model #	Name	Components / Features	Material Specs
9800-6260L	uM260 Micro Monitor (LAN Version)	<ul style="list-style-type: none"> <li>• Communications: RJ-45 10/100 Ethernet TCP/IP, port number 1001</li> <li>• Power: -48V DC, LED power-on indicator</li> <li>• Device connection: 25-pair female amphenol</li> <li>• Ports: One (1) DB-9 serial connection for PC or laptop</li> <li>• On-board RAM: 1kb</li> <li>• Fuse Protection: 100mA</li> <li>• User Interface: HTML/Javascript, or text menu</li> <li>• Monitoring capacity: 20 devices (4 binary; 16 resistive or current loop TDs)</li> <li>• Controls: One (1) monitored contact control relay (alarm activated)</li> <li>• Scanning: Continuous</li> <li>• Alarming: One (1) per device</li> <li>• Alarm centers: One (1), with up to 3 email addresses</li> <li>• Mounting: Rack, vertical or horizontal</li> </ul>	<p>9.25 in (23.5 cm) wide, 5.14 in (13.0 cm) deep, 1.25 in (3.18 cm) high 1.25 lbs (0.56 kg)</p>
9800-6260M	uM260 Micro Monitor (Modem Version)	<ul style="list-style-type: none"> <li>• Communications: 9600 2400 baud (default baudrate: 9600)</li> <li>• Power: -48V DC, LED power-on indicator</li> <li>• Device connection: 25-pair female amphenol</li> <li>• Ports: One (1) DB-9 serial connection for PC or laptop</li> <li>• Connector: RJ-11</li> <li>• On-board RAM: 1kb</li> <li>• Fuse Protection: 100mA</li> <li>• User Interface: Text menus</li> <li>• Monitoring capacity: 20 devices (4 binary; 16 resistive or current loop TDs)</li> <li>• Controls: One (1) monitored contact control relay (alarm activated)</li> <li>• Scanning: Continuous</li> <li>• Alarming: One (1) per device</li> <li>• Alarm centers: Two (2), modem delivery</li> <li>• Mounting: Rack, vertical or horizontal</li> </ul>	<p>Same for all models (see above)</p>



