

# System Studies Incorporated

## Tone Utility Card

### Locating and protecting valuable device pairs

One of the most time consuming tasks associated with installing new pressure and flow monitoring devices in a cable pressurization system is locating and confirming assigned device pairs. To simplify this task and help to prevent device pairs from being “stolen” for other purposes, PressureMAP™ and properly equipped 289H and 289H-M LSS™ monitors now provide options for placing tone frequencies on device pairs.

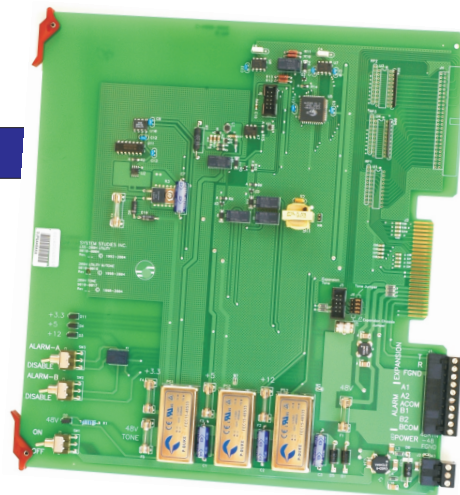
This means that a maintenance technician in the field, equipped with a laptop computer and an inductive tone locating probe, can access PressureMAP directly, instruct the 289H LSS to place a specific tone frequency on the assigned pair (“locator” tone), and use the probe to positively identify the pair. Once the transducer has been installed, the technician can then request a realtime reading from PressureMAP to confirm the proper operation of the device.

Thanks to the Tone Utility Card and improvements in the 289H Dedicated Relay Card, a pseudo-data tone can also be placed on all monitoring pairs connected to a 289H Dedicated Relay Card. This “pair-saver” tone helps to prevent unauthorized use by splicers and other personnel and ensure that pairs assigned for cable pressurization system monitoring remain available for their important monitoring function.

### Functional Components

The Tone Utility Card (Part No. 9010-0016) contains the 48-volt DC power supply and fuses for the 289H/289H-M LSS chassis. It is also equipped with a power switch, an alarm enable/disable switch, and a dual function tone generator. This tone generation device makes it possible to transmit the pseudo-data tone or selected tone frequency on the monitoring device pairs wired to the 289H monitor.

Using PressureMAP’s Diagnostic utility, a technician can route a selected “locator tone” to specified pairs, or place a “pair-saver tone” on all dedicated monitoring devices. PressureMAP also provides options for selecting default frequencies for both the locator tone and the pseudo-data tone.



### Tone Generation Selections

Tone generation controls are available from the 289H LSS Diagnostics Menu in PressureMAP. Three menu options are provided: 1) Get Tone Setting, 2) Set Tone Default, and 3) Route Tone. Each of these options populates a Tone Information Menu with data pertaining to the selection.

The possible frequency selections that can be applied to the Tone Utility Card are as follows:

- High/Low Frequency Alternating Tone  
1700/1300 Hz (data); 580/450 Hz (locate)
- High Frequency Pulsed Tone  
1700 Hz (data); 580 Hz (locate)
- Low Frequency Continuous Tone  
1300 Hz (data); 450 Hz (locate)
- High Frequency Continuous Tone  
1700 Hz (data); 580 Hz (locate)

### Tone Generation Requirements

In order to utilize full tone generation capabilities, the 289H or 289H-M monitor must be equipped with a tone-capable Controller Card (EPROM version B05 or greater), a Tone Utility Card, and one or more Dedicated Relay Cards (all cards manufactured since December, 1998). Pseudo-data tone can be placed only on pairs connected to a 50-pair dedicated relay card (Rev C and above). Locator tone can be placed on both dedicated and subscriber pairs, as well as the dedicated side of a Universal Addressable Monitoring Card (UAMC). No tone capability is available for pairs used with a Sparton Dedicated Replacement Card.

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## Specifications

**Monitor:** 289H LSS, 289H-M LSS

**Controller Card EPROM Requirement:**  
B05 and greater

**Power:**

48 VDC @ 1.0 Amp, input (filtered battery)

3.3 VDC @ 4 Amp, +/- 2% to tone generator  
5 VDC @ 2 Amp, +/- 2% to LSS

12 VDC @ 0.4 Amp, +/- 2% to LSS Power Switch:  
toggle

**Tone Generator:** In data tone mode, tone is routed to all tone-capable dedicated relay cards when pairs are idle. Locate mode is available only from PMAP Diagnostic Menu. When in locate mode, tone is routed to selected pair, and data tone is suspended for entire LSS.

**Tone Detection:**

Data Tone: inductive probe or Butt set

**Locate Tone:** inductive probe

**LED:** one (1) 48 Volt, power-on

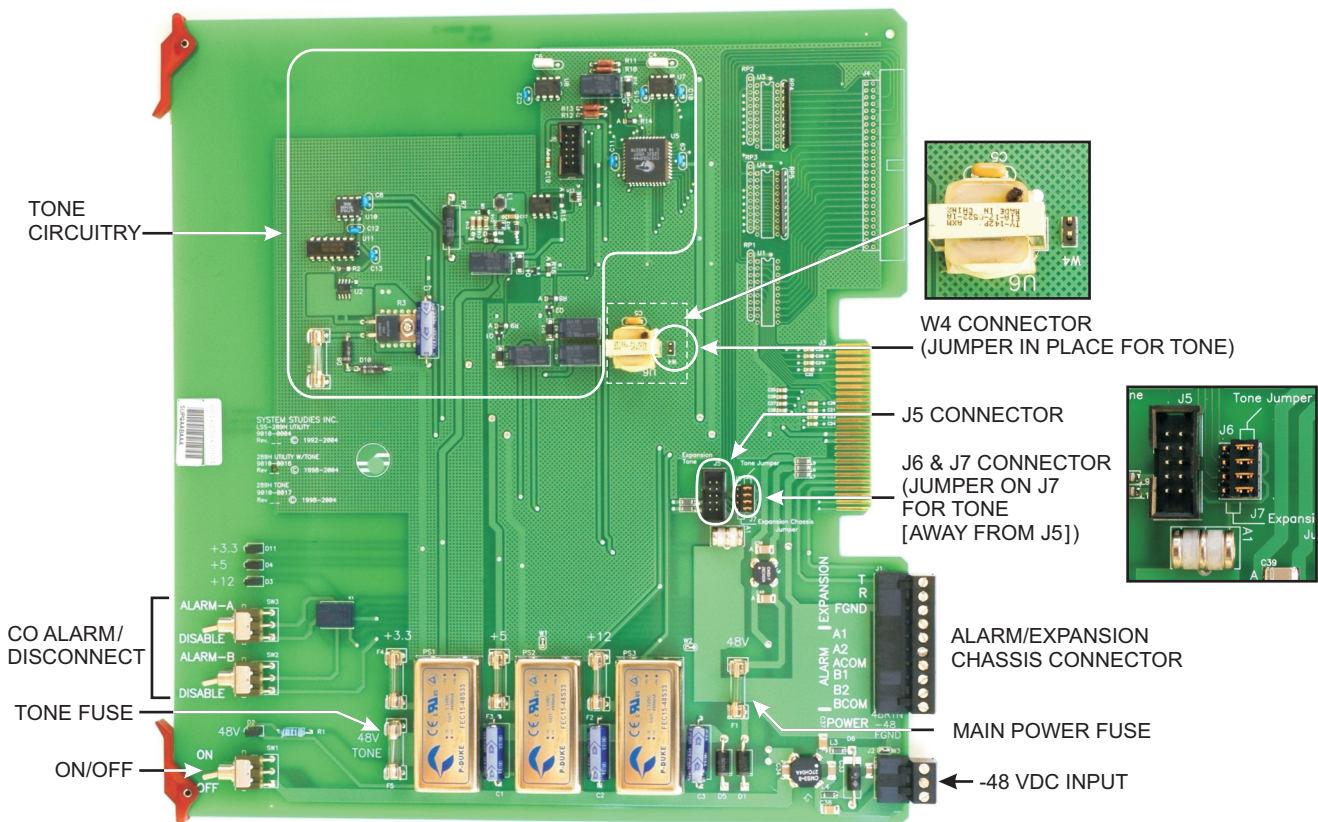
**Main Fuse:** 1.6A slow blow

**Supply Fuses:** one (1) 12 Volt, 0.5 A slow blow;  
two (2), 5 Volt, 1.6A

**Alarm Disable Switches:** two (2)

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

Specification subject to change without notice.



**TONE UTILITY CARD (P/N 9010-0016) REV. B**