

# LEE TECH TALK

## TECHNICAL APPLICATION NEWS BRIEF

### LATCHING SOLENOID VALVES PROVIDE NUMEROUS BENEFITS FOR ENVIRONMENTAL MONITORS

#### The Challenge

The growing global market for environmental monitors is driving designers to produce portable devices which feature extensive battery life and are well-suited to their remote, end-use environments. These monitors typically employ solenoid valves to calibrate or auto-zero a sensor, pilot samples through a microfluidic chip, or exhaust system pressure. The current design challenge for portable monitors requires highly efficient miniature solenoid valves to lessen the burden on a system's battery and reduce overall system-level size and weight.



#### The Solution

The Lee Company's line of miniature LHL Series latching solenoid valves are uniquely suited for the rugged and extensive life of hand-held environmental monitors. With energy consumption as low as 5.5 mJ/switch, Lee magnetically-latched solenoid valves feature ultra-low power, nearly zero leakage, and long cycle life - all in an extremely compact (7mm) profile and light weight package (as low as 2.5 grams). The numerous options available for mounting, drive voltage and sealing material provide off-the-shelf system-level versatility. To further optimize a valve for its mission-critical task, performance customization is readily available with The Lee Company's experienced team of engineers.

#### The Benefits

Requiring only momentary (10-30ms) voltage pulses to switch flow states, and featuring exceptionally low leakage, environmental monitors utilizing LHL Series solenoid valves benefit from reduced pump demand and lower power consumption. This ultimately leads to extended periods of field service and increased battery life. Superb flow capabilities facilitate faster sampling rates and reduced calibration time, which are critical in rapidly changing conditions. The LHL Series' miniature footprint and light weight allow for compact hand-held designs that are very easy to transport and use.

#### Potential Applications

Whether for chemical threat detection, ocean monitoring, detecting greenhouse gas emissions, or other air sampling applications, the miniature, low power, latching LHL Series is essential to a portable system's design. Air quality monitors require minimized device size since they are often carried continuously or mounted remotely. Hand-held explosive detection monitors require samples to be processed quickly and consistently, and therefore benefit from the LHL Series' high flow capacity and reliability. Remote ocean monitoring requires extensive cycle life and high reliability to minimize servicing units in extreme conditions.

#### Lee LHL Series Latching Solenoid Valves

With features like ultra-low power consumption, compact size, low leakage, long life, and high flow capacity, the LHL Series latching valves have long been an outstanding choice for portable, battery powered environmental monitors. Backed by The Lee Company's exceptional application and technical support, the LHL Series latching solenoid valves set the standard for high performance and reliability.

#### THE LEE COMPANY

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