

Pulsation Testing

Square Root Error and Gauge Line Errors Indicators

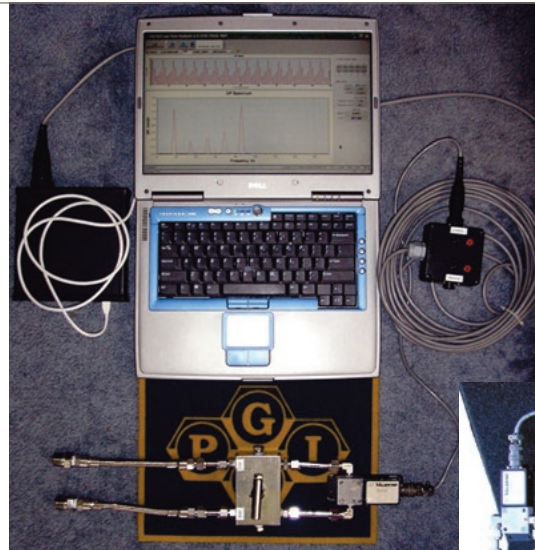


Detecting Errors in Measurement

Parker's SRE-6 and GLE-6 Indicators are test devices designed to quantify Square Root and Gauge Line Errors in natural gas orifice flow measurement. They identify inaccuracies caused by compressor-induced pulsation and differential pressure discrepancies.

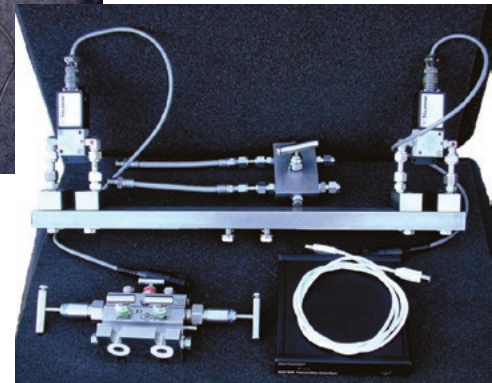
SRE-6

- SRE carrying case with foam
- USB transmitter interface assembly
- Validyne transmitter, manifold and tubing assembly
- SRE interface cable assembly
- SRE6-01 software
- SRE Installation, Operation & Maintenance (IOM) manual



SRE-6

GLE-6



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GLE-6

- GLE carrying case with foam
- Two (2) Validyne transmitter cable assemblies
- Coequal DP to DP adapter kit
- Double flange integral manifold
- USB transmitter interface
- Two (2) Validyne transmitter, manifold and tubing assemblies
- Interface cable box assembly
- Stabilizer connector flange kit
- 90° double flange manifold
- GLE6 software
- GLE / SRE Installation, Operation & Maintenance (IOM) manual

All necessary calibration equipment, connections, hardware and fittings are also included.



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Square Root Error Indicator

Most natural gas flow measurement in the United States is performed by measuring pressure drop at two points (pressure differential) induced by an orifice plate. The gas flow rate (Q) is calculated using the basic formula $Q = K / rPXP$. The fixed orifice coefficient (K) is derived from a formula found in the latest edition of AGA Report Number 3. Differential pressure (rP) and line pressure (P) are measured either using mechanical chart recorders or electronic transmitters, remotely or direct mounted to the pressure taps, using a configuration of instrumentation valves, manifolds, and tubing.

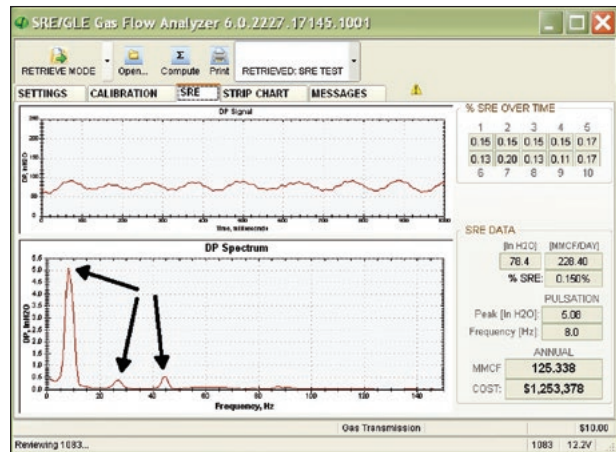
Percent Square Root Error (%SRE) is measured with a device manufactured and marketed by Parker called the Square Root Error (SRE) Indicator. The indicator is used by field technicians to measure the severity and calculate %SRE. The %SRE is measured at operating conditions and is used to approximate the primary element error induced by pulsation and to determine whether corrective action is necessary.

Gauge Line Error Indicator

Parker developed its initial Gauge Line Error (GLE) in 1990, while our most current SRE / GLE Indicator includes the ability to perform both %SRE and GLE tests, thus measuring and quantifying both Square Root Error and Gauge Line Error.

Gauge Line Error (GLE) exists when the differential pressure (rP) at the taps does not equal the differential pressure (rP) at the end of the gauge lines. GLE is typically caused by either pulsation or other flow phenomena.

The GLE Indicator compares the differential pressure at the orifice taps with the differential pressure at the end of the gauge lines. Any difference between the two signals would be associated with gauge line error.



SRE / GLE Test Example

A graph exhibits three separate pulsation peaks. The operator can isolate the pulsation source by using new software filtering capability and modifying conditions in the new field. Minimizing and eliminating the pulsation source can ultimately improve the meter's measurement accuracy.

Safety Guide – See www.parker.com/safety.

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