SEMPELL MOBILE TEST EQUIPMENT FOR SAFETY VALVES

SESITEST

SESITEST is a mobile computerized pneumatic test system for all spring-loaded safety relief valves and steam pilot valves.

TÜV Rheinland certificated

FEATURES

- Testing during normal plant operation (online conditions)
- Determination of set pressure as pop pressure
- Testing at zero-line pressure is possible
- Determination of Safety Relief Valve (SRV) spring rate
- Short test duration
- Automatic control of test sequence using a laptop
- Minimal loss of process medium
- Quick and simple test equipment setup
- Test results and documentation immediately available
- Test equipment checked by TÜV
- General use for Sempell products and non-Sempell products
- Compact packaging of components

GENERAL APPLICATIONS

The system has been specially designed by Emerson and incorporates all vast experiences in operating and testing safety relief valves.

With using SESITEST time and costs can be reduced significantly during SRV testing.

TECHNICAL DATA

Cases:	Three hard resin cases (625 x 500 x 218 mm) One stainless steel case (600 x 439 x 225 mm)
Connections:	110 V / 220 V power supply 7 bar compressed air supply

SESITEST

SESITEST enables the accurate assessment of set pressure under normal online conditions. With SESITEST there is no need to raise the line pressure or to remove the SRV from the plant. Only the SRV cap must be removed. By using the pneumatic actuator A143 in conjunction with the computerized measuring components, the force required to open the SRV is automatically recorded.

Using this force, the set pressure and other data is calculated. In order to achieve the highest levels of accuracy every A143 is calibrated and inspected by the German TÜV.
The components are packed in four portable cases. This allows easy access to hard-to-reach SRVs.

FIGURE 1 - A143 AND SENSORS

FIGURE 2 - LAPTOP AND PRINTER

A143 PNEUMATIC ACTUATOR

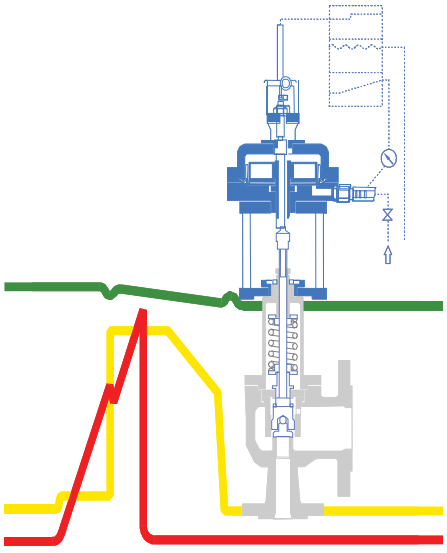
An air operated, low-friction piston applies an opening force to the stem of the SRV. This force makes up the difference between the system pressure and the set pressure. To ensure complete safety, the A143 has been designed to offer no resistance to the free operation of the SRV.

During the test sequence the system pressure, the A143 pneumatic test pressure and the valve lift are continuously monitored by the notebook. The movement of the SRV stem is detected immediately and the computerized equipment automatically triggers the calculation of the set pressure.

The A143 is available with piston diameters of 50 mm, 100 mm and 200 mm. (2", 4" and 8").
The maximum air supply pressure is 7 bar (100 psi). A maximum lift force of 18200 N can be generated. A lift control device can be set up to control the SRV opening.

FEATURES OF A143

- Included in the type test report of Sempell SRV's
- Maximum permissible air pressure 7 bar (100 psi)
- Low-friction piston assembly
- Quick-release air connector
- Quick-release transducer connector
- Suitable for all SRV's
- Quick installation based on few elements
- Every unit is calibrated and inspected by TÜV
- Easy handling due to one-piece design
- Lift control device



A144 MEASUREMENT CASE

The A144 measurement case allows simplified control of the A143. An electronic amplifier is integrated.

The complete test sequence is processed directly by a Windows® based software running on a rugged notebook. The pressure and lift channels are recorded using high precision transducers and a digital amplifier. Beyond these day-to-day requirements additional graphical analysis can be carried out within our software package.

The stainless-steel case of the A144 provides an IP65 protection to the measurement equipment inside. All connectors are capped to minimize the risk of contamination.

FEATURES OF A144

- Control of the air supply to the A143
- Quick-release air connector
- Quick-release transducer connectors
- Full electronic amplifier
- IP65 protection
- Operational voltage is 110 V / 220 V

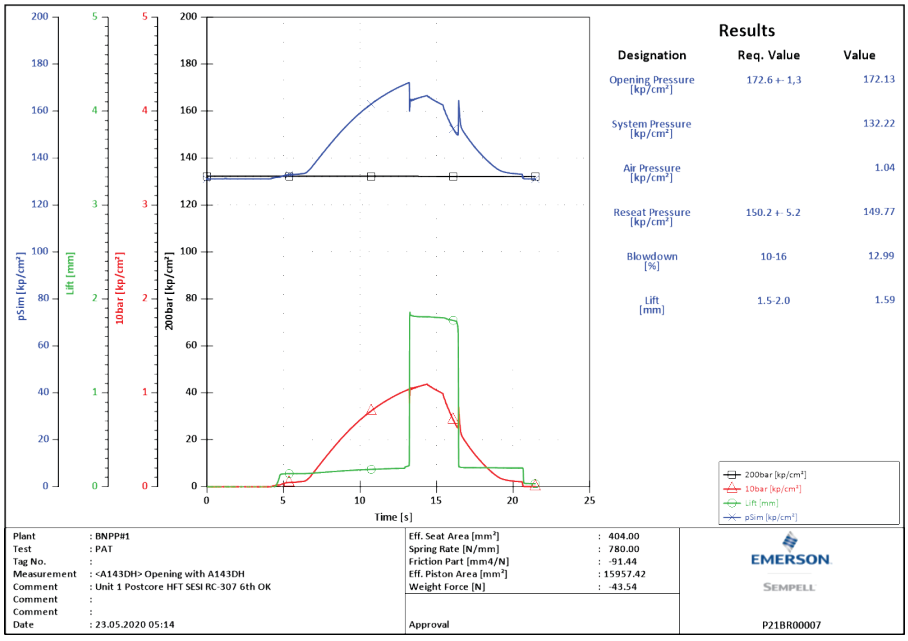
FIGURE 3 - FRONTVIEW OF A144

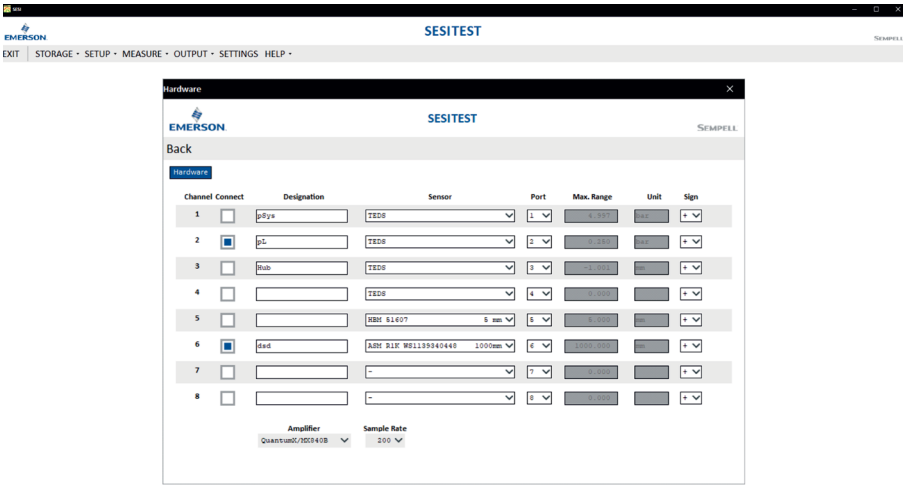
TEST RESULTS

The software allows the selection of various test sequences and output documentation formats and includes a database in which valve identification and test data can be stored.

Additional options of graphical analysis are implemented in the software package.

FIGURE 4 - TYPICAL TEST REPORT





SESITEST SOFTWARE

The in-house developed SESITEST software, which is delivered with every system, provides a wide array of functionalities. Initialization of the system requires only a few steps to select the A143 size and the transducer types, before starting the test sequence. The SESITEST software has been specially designed by Emerson and incorporates our vast experience in operating and testing SRV's. The software also allows the selection of various test sequences and output documentation formats. A database in which valve identification and test data can be stored is included. The measured data can be graphically analyzed. A protocol document is generated. The protocol document can be saved to PDF or be directly printed.

Training

To ensure the correct handling of both hardware and software training is mandatory. The training takes place in the Emerson facility in Korschenbroich, Germany. The training consist of one day of theoretical lessons. Three days of subsequent practical training in our laboratory allow the performance of handling and diagnostic exercises.

Calibration

To ensure the technical soundness of the transducers and the lift device a calibration is mandatory. The recommended interval between calibrations is one year for transducers and three years for the lift device. The calibration is performed by Emerson. A calibration certificate is provided for each item.