

QUIKLOOK 3-FS Valve Diagnostic System



Key Features

- MOV/AOV/Check and solenoid valve capable
- Plug and Play sensor recognition
- (2) Digital input channels to accommodate precise linear and rotary encoders
- (14) Analog input channels
- Analog voltage and current output
- Stand-alone test platform
- No external PC required
- Wireless or wired remote operation via laptops, tablets and smartphones
- Hot swappable battery operation
- Up to 5 hours run time between battery charges
- Automated remote excitation voltage sensing
- Large 15" touch screen display
- Sealed rugged waterproof case

Capable of testing all types of valves, the QUIKLOOK 3-FS (QL3-FS) Valve Diagnostic System acquires clean and accurate data, minimizes setup time, and maximizes ALARA. The powerful, flexible QUIKLOOK-FS software provides a variety of diagnostic tools and time-saving features to simplify valve testing. Support for industry standard sensors as well as a large 15" touch screen and hot-swappable battery power provide convenient setup and easy operation. The QL3-FS represents a major advance in valve testing technology for the nuclear power industry.

Accurate Data, Clean Traces

QL3-FS acquires data with 24-bit resolution and user selectable sample rates from 10 Hz to 50 kHz. This high-resolution acquisition combined with advanced signal processing produces extremely clean traces even in the highest EMI/RFI environments.

Flexible, Time-Saving Software

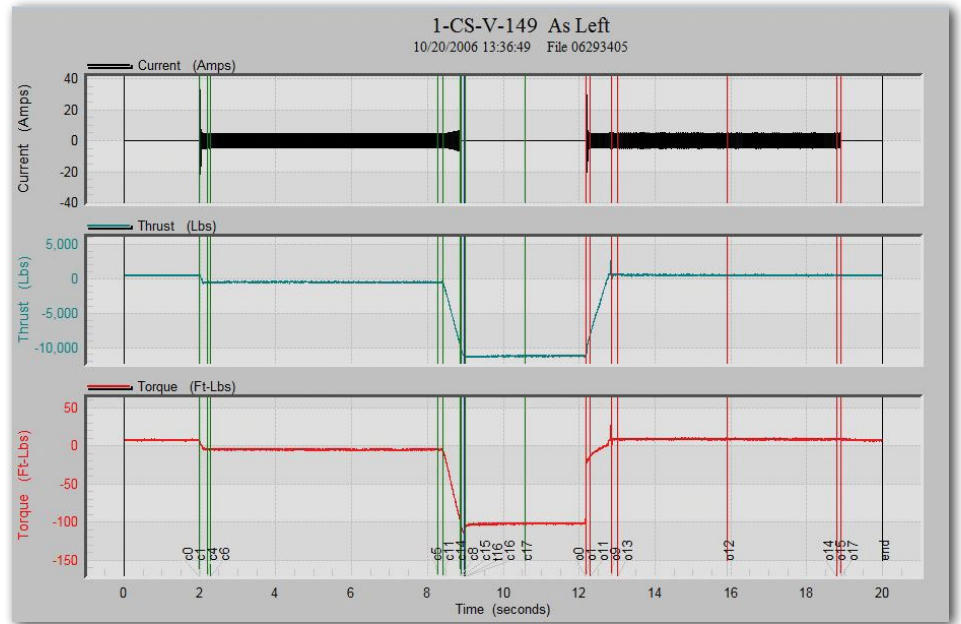
The intuitive QUIKLOOK-FS software is easy to set up and shortens test times. Test and replay capabilities plus advanced triggering functions for unattended "Sentry Mode" data collection increases flexibility. Automated trace marking for AOVs and MOVs as well as automated report generation simplify operation.

Convenient Setup and Operation

Utilizing open source industry standard IEEE P1451.4/2.0 (TEDS) plug and play sensor recognition technology, the QL3-FS greatly reduces test setup time and increases setup data reliability. As a stand-alone system no external PC is required, and the large, integrated 15" touch screen display provides easy access to all QUIKLOOK FS diagnostic tools. The system can also be accessed remotely with a wired or wireless connection. The QL3-FS can be operated on line power or battery power. The two Lithium-Ion battery packs can run the system for over 5 hours and can be "hot swapped" in a matter of seconds.

QUIKLOOK-FS Valve Testing & Analysis Software – MOV

The powerful, flexible QUIKLOOK-FS software platform provides a variety of diagnostic tools and time-saving features for the QL3-FS. Capable of testing MOVs and AOVs, common features include start and stop triggers enabling unattended operation; data acquisition rates up to 50,000 samples per second; and data acquisition integrated with Windows-based analysis software with a variety of standard and customizable test reports.



Key MOV Features

Analysis

- Automarking of traces
- Average running loads, lights and stroke times
- Stem Factor and COF calculations
- Analysis of motor power phasing with sensor self-correction feature
- Calculated channels are recalculated when the dependent channel is revised
- FFT may be performed on a trending plot
- Unlimited number of math channels
- Delta Y Function
- Spike Removal

Configuration

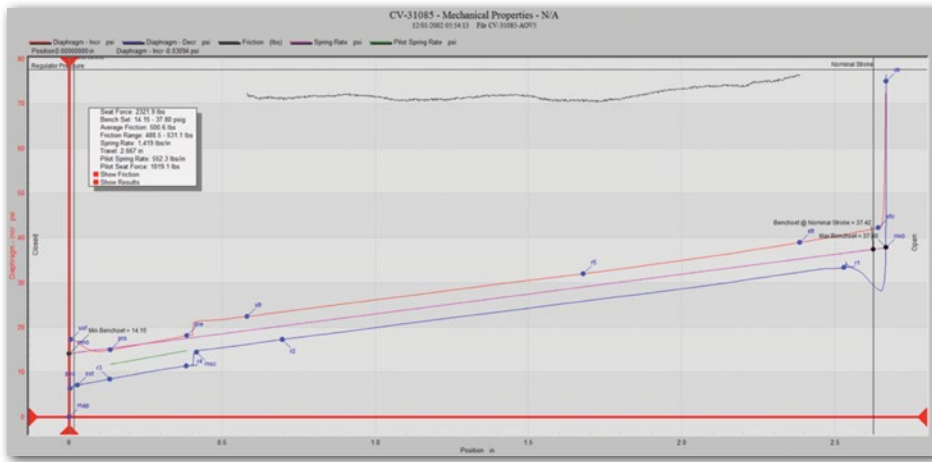
- Channel configuration is automatically loaded through sensor recognition technology
- Up to 16 channels may be configured for acquisition as strain gage, single ended or differential
- Up to 2 channels may be configured for digital inputs
- Channel configuration includes sensor details such as calibration information
- RMS, filter, and motor power channels may be predefined
- C-Clamp sensitivity calculator, Pretension Screen, warning if pretension is lost
- Warning for out-of-cal sensors

Plots

- No limit to the number of traces that can be plotted in a pane; up to 6 panes may be displayed on the screen at once
- Panes are independently resizable
- Plot annotations available: data point values, text and footnotes
- Markers shown on trending plots: none, all, or currently-selected test only
- XY plotting
- Can display markers on XY plots
- Plot preference controls: color/background, maximum number of points, default title, legend style and channel unit groups
- Customized plots can be saved or exported in .pdf format
- FFT Y-axis scaling may be logarithmic or linear; additional resolution choices available
- Marker Filtering

All input channel values are displayed in both volts and engineering units with the ability to zero channels. Other common display features are single-channel bar or pretension level / target range window. Self-check verification is performed on start-up.

QUIKLOOK-FS Valve Testing & Analysis Software – AOV



Our QUIKLOOK-FS software is the result of a collaboration with Emerson Fisher to combine the QUIKLOOK and Flowscanner software packages. Many AOV features have been added including built in design parameters for Fisher Valves, a new “tree” style file structure option and pass / fail criteria for test results.

Key AOV Features

Data Acquisition

- AOV control signal options:
 - 0 to 10 volts
 - -10 to +10 volts
 - 0-24 ma, 0-55 ma
- Tests Performed:
 - Dynamic Scan
 - Step Change
 - Static Point
 - Step Study
 - Stepped Ramp
 - Sensitivity Test
 - HDRL Test
 - Sinewave
 - Drop Test
 - Custom Tests
- QUIKLOOK FS Software can manage up to 16 channels of input data including:
 - Pressures
 - Currents
 - Voltages
 - Strain Gauges (Torque & Thrust)
 - Displacements (Analog & Digital)
- Channel configuration is automatically loaded through sensor recognition
- Acquisition screen supports manual control of the valve with readouts from all channels for valve setup
- Configuration Database with actuator design parameters

Test Data

- Unlimited comments may be stored with the test
- Channel names and numbers are customizable

Plots

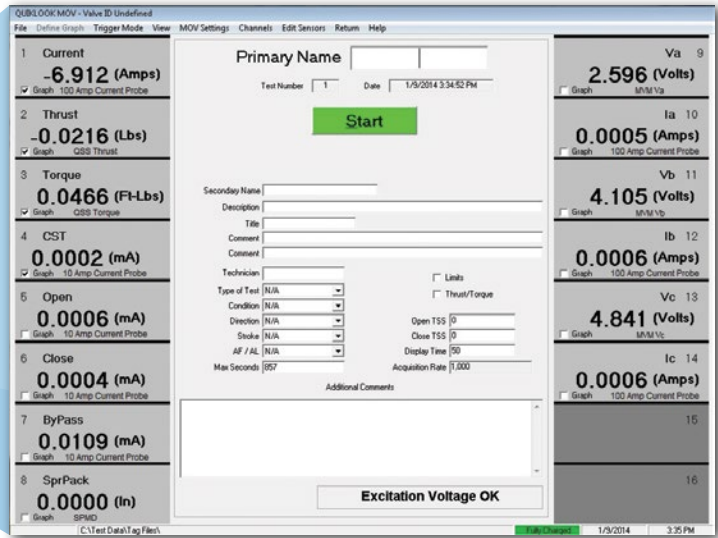
- Predefined plots used for analysis:
 - Overall Calibration
 - Mechanical Properties
 - Transducer Calibration
 - Positioner Calibration
 - Static Point
 - Drop Test
 - Stroke Time
 - Step Study
 - Sensitivity
- Time-based and XY plots
- Customized plots can be saved or exported in .pdf format

Analysis

- Automarking of traces
- Predefined Plots show applicable results on-screen
- Calculated Results Include:
 - Seat Load
 - Service Seat Load
 - Unseating Force
 - Valve Friction
 - Stroke Length
 - Spring Rate
 - Benchset
 - Supply Pressure: Initial, Ave. Min, Max, % Decrease
 - Pilot Stroke Length
 - Pilot Spring Rate
 - Pilot Seat Load
 - Transducer HD Error
 - Positioner HD Error
 - Overall HD Error
 - Stroke Times
 - Pressure Drop
- Unlimited number of math channels

All input channel values are displayed in both volts and engineering units with the ability to zero channels. Other common display features are single-channel bar or pretension level / target range window. Self-check verification is performed on start-up.

SPECIFICATIONS AND ORDERING INFORMATION



Consolidated setup & acquisition screen simplifies operation.

Specifications

| | |
|-------------------------------|---|
| Input Channels | (14) User Programmable with Excitation Voltage Sensing, (2) Digital |
| Input Range | Differential & Single Ended $\pm 10, 30, 100$ & 300 mV, $\pm 1, 3$ & 10 V, Strain Gage $\pm 1, 3$ & 10 mV/V |
| Sensor Excitation | 10 V on all input channels, 28 mA max current per channel |
| System Accuracy | 1% of reading |
| Sample Rate | $10, 100, 1k, 2k, 5k, 10k, 20k, 50k$ s/s (Hardware capable of $200k$ s/s) |
| Analog Output Channels | (1) Selectable $0 - 10$ V, ± 10 V, $0-24$ ma, $0-55$ ma |
| Input Power | $110/220$ VAC ($50/60$ Hz), 9 watts |
| Battery Operation | (2) Hot Swappable Lithium-Ion, $5+$ hours continuous operation |
| Sensor Recognition | IEEE P1451.4/2.0 "TEDS" plug and play on all input channels |
| Operating System | Windows® 7 Pro |
| Ports | (2) USB, (2) Ethernet |
| Languages | English, French, and Spanish |
| Maximum Operating Temperature | 125° F (52° C) |
| Application Software | QUIKLOOK-FS 2015.208 or later |
| Size | 16.5 " x 11.25 " x 5.67 " |
| Weight | 16 lbs. without batteries, 18.5 lbs. with 2 batteries |

Ordering Information

Product Description

QUIKLOOK 3-FS Valve Diagnostic System

Product Code

160600E



508-748-0103
www.valvetest.com

For more information, please visit our website or email
sales_testservices@teledyne.com