Eighth Annual QUIKLOOK Users Group Meeting

Marion, MA
August 20 & 21st, 2014

Presented by:

Roger W. Masson
Vice President and General Manager

TELEDYNE TEST SERVICES
Everywhereyoulook™

QUG 8 Agenda

TELEDYNE TEST SERVICES
Everywhereyoulook™

8th Annual QUG Conference

QUIKLOOK USERS GROUP

August 20-21, 2014

Day 1, Wednesday, August 20, 2014

Location: Tabor Academy,
66 Spring Street, Marion, MA 02738

8:00 - 8:30 - Registration / Continental Breakfast

8:30 - 9:00 - Welcome & User Survey

HOST: **Roger Masson**
HOST: **Joe Santangelo**

- ✓ Team Introductions
- ✓ User Survey Request

9:00 - 12:00 - QUIKLOOK – Features & Update

- ✓ Hardware Features — HOST : **Michael Sullivan**
- ✓ Software & Calibration Features — HOST : **Jason Haglund**
- ✓ Spring Pack Software Updates — HOST : **Eric Solla**
- ✓ Trace Quality
- ✓ Error Notices
- ✓ Spring Outage Experience – Comanche Peak — HOST : **Michael Richard**
- ✓ Live Demonstration — HOST : **Victor DeLafuente**

12:00 - 1:00 - Lunch

1:00 - 1:30 – Teledyne DALSA

- ✓ CMOS X-Ray Applications / Check Valves — HOST: **Thorsten Achterkirchen**

1:30 - 2:30 - Design / Test Data Software Updates

- ✓ Software Suite Integration — HOST: **Michael Richard**
- ✓ MIDAS WeakLink — HOST: **Eric Solla**
- ✓ ACE 4.1 / ACE TEST
- ✓ MIDAS / MIDAS TEST

2:30 – 3:30 - Interpreting Anomalous Test Traces

- ✓ TTS to provide typical anomalous traces — HOST: **Joe Gomes**
- ✓ Users to bring "mystery" traces — HOST: **Joe Santangelo**
- ✓ TTS and Users to interpret and discuss traces

QUG 8 Agenda

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New Bedford Whaling Museum

New Bedford, Massachusetts

(Just a short walk from The Fairfield Inn)

Date: Wednesday, August 20, 2014
Location: NBWM, 18 Johnny Cake Hill,
New Bedford, MA 02740
Time: 6:00 PM

The New Bedford Whaling Museum is a world-renowned museum that brings to life the rich history of the whaling industry and New Bedford.

- ✓ 6:00 pm - Cocktail Hour in the Logada Room
  Enjoy your Cocktail Hour, Socialize among the Museum's many exhibits.
- ✓ Brief talk by Roger Masson, Vice President and General Manager of Teledyne Test Services
- ✓ 7:00 pm - Buffet Dinner served in the The Jacobs Family Gallery

Located in the heart of New Bedford Whaling National Historical Park, the Museum features interactive exhibits, including the world's largest whaling ship model; displays of fine and decorative arts; collections of cultural artifacts, rare antiquities, scrimshaw and logbooks; and five whale skeletons including the rare blue and northern right.

The Whaling Museum has an exclusive arrangement with Russell Morin Fine Catering - offering exquisite food and beverages and impeccable service.

QUG 8 Agenda

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8th Annual QUG Conference

QUIKLOOK USERS GROUP

August 20-21, 2014

Day 2, Thursday, August 21, 2014

Location: Tabor Academy,
66 Spring Street, Marion, MA 02738

8:00 - 8:30 - Continental Breakfast

8:30 - 9:00 - Quality Assurance Corner

- ✓ QA Notices — HOST: **Richard Shannon**
- ✓ Product SR Status & Accuracies — HOST: **Michael Sullivan**

9:00 – 10:30 - Special Topics

- ✓ BWR Recirc Valve Trending Damage — HOST: **Steve Gallogly**
- ✓ MSIV Testing Options in QUIKLOOK
- ✓ Flowserve MOV Valve Testing — HOST: **Matt Hobbs**
- ✓ Cyber Security – Future of USB Thumb Drives — HOST: **Joe Santangelo**

10:30 – 12:00 - User Topics

- ✓ TTS Website New Look — HOST: **Joe Santangelo**
- ✓ Open Discussion
- ✓ Additional Trace Anomalies (Time Permitting)

12:00 – 1:00 - Lunch

1:00 – 2:30 - Hands-on breakout sessions

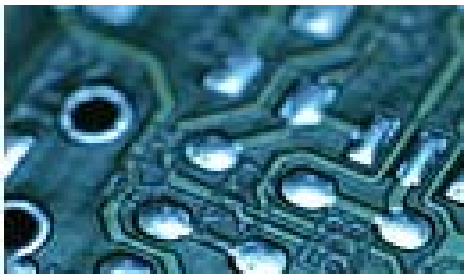
LOCATION: TTS Training RM
513 Mill Street, Marion, MA 02738

- ✓ AOV Tests Using QUIKLOOK 3
- ✓ MOV Tests Using QUIKLOOK 3
- ✓ Check Valve X-Ray Demonstration
- ✓ Spring Pack Calibration Using QUIKLOOK & Spring Pack Calibration Stand
- ✓ MIDAS / ACE Database Software
- ✓ Thread Cuts
- ✓ QSS-CD Installation

Teledyne Technologies, Inc.

Instrumentation | Digital Imaging | Aerospace and Defense Electronics | Engineered Systems






LeCroy

Test Services

Lab & Field

Process & Air Quality

Teledyne Test Services

Location

- Marion, Massachusetts
- La Gaude, France

Teledyne Test Services

Business Focus

- Critical Valve Testing
- Strain Gage Based Sensors and Data Acquisition Systems
- Torque Sensors & Load Cells

Teledyne Test Services

Key Markets

- Nuclear Power Generation Plants
- Industrial Process Control
- Automotive R&D Centers

Teledyne Test Services Team

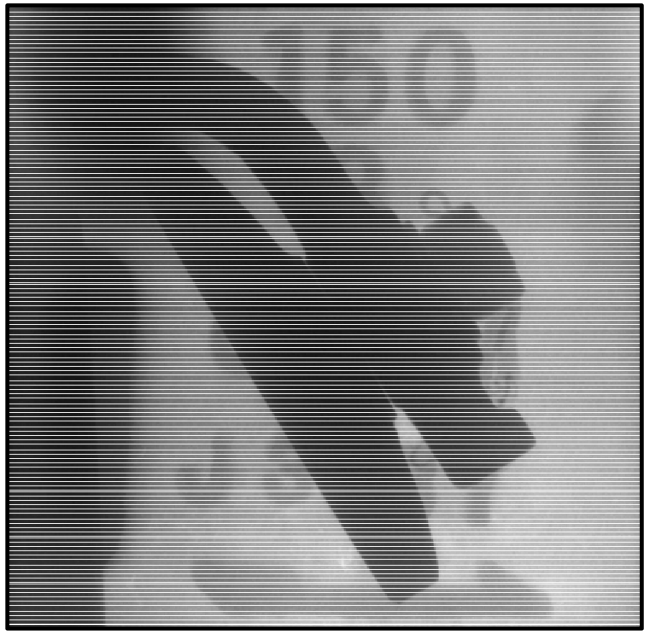
- Roger W. Masson - Vice President and General Manager
- R. Michael Sullivan - Director of Products Business Development
- Michael C. Richard - Senior Software Engineer
- Eric A. Solla – QUIKLOOK Software Engineer
- Matthew J. Hanson - Software Engineer
- Joe Santangelo - Marketing and Technical Director – Asia
- Richard J. Shannon - Quality Assurance Manager
- Joseph E. Gomes - Field Service Supervisor
- Maximo J. Allahua - AOV/MOV/Valve Diagnostic Tester
- Christopher D. Johnson - AOV/MOV/Valve Diagnostic Tester
- Michael S. Laperriere - Jr. AOV/MOV/ Valve Technician
- John M. Stanwood - Product / Field Technician
- Steven Mitchell - Machinist / Field Technician
- Jason J. Haglund - Engineering and Operations Manager
- Kevin W. Lee - Mechanical Engineer
- Ali Jameel - Electrical Engineer
- Lori A. Contant - Administrative Assistant

Teledyne LeCroy Team

- David Graef - Chief Technical Officer
- Peter Algert - General Manager of ETG Group
- Dan Monopoli - Vice President of Marketing
- Jonah Greenblatt - Lead Engineer

Teledyne DALSA Team

- Thorsten Achterkirchen - Vice President & General Manager
- Greg Combs - Account Manager



Emerson Process Management Team

EMERSON™
Process Management

- Bill Fitzgerald - Vice-President, Nuclear Services
- Jeff VonAhnen – Product Line Manger

Teledyne - Emerson Teaming Agreement

Bill Fitzgerald - Vice-President, Nuclear Services

Utility Attendee Introductions & User Survey Requests

Joe Santangelo - Marketing and Technical Director – Asia

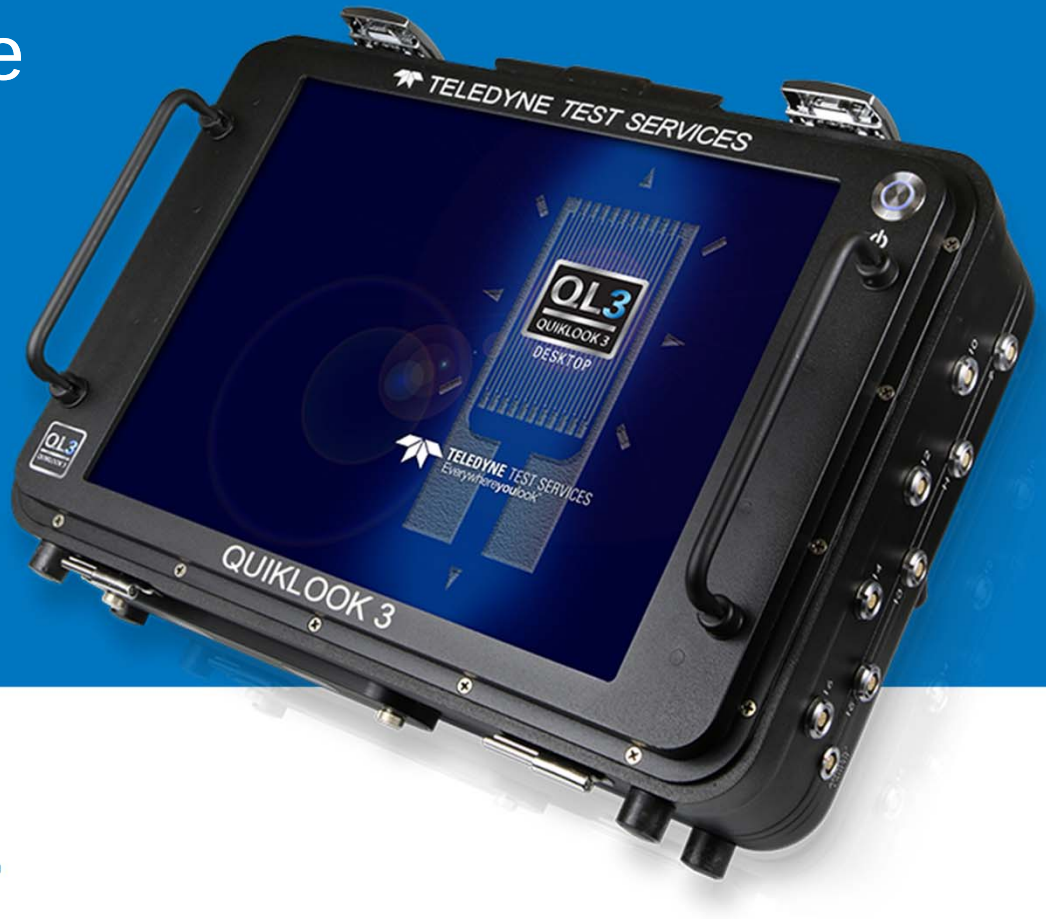
QUIKLOOK
Features & Update

Presented by:

R. Michael Sullivan

Eric A. Solla

Jason J. Haglund



TELEDYNE
TEST SERVICES
Everywhereyoulook™

QUIKLOOK 3 Guiding Principles

World Class Hardware

\+ Right Information

\+ In the Right Place

\+ At the Right Time

= ALARA +Savings

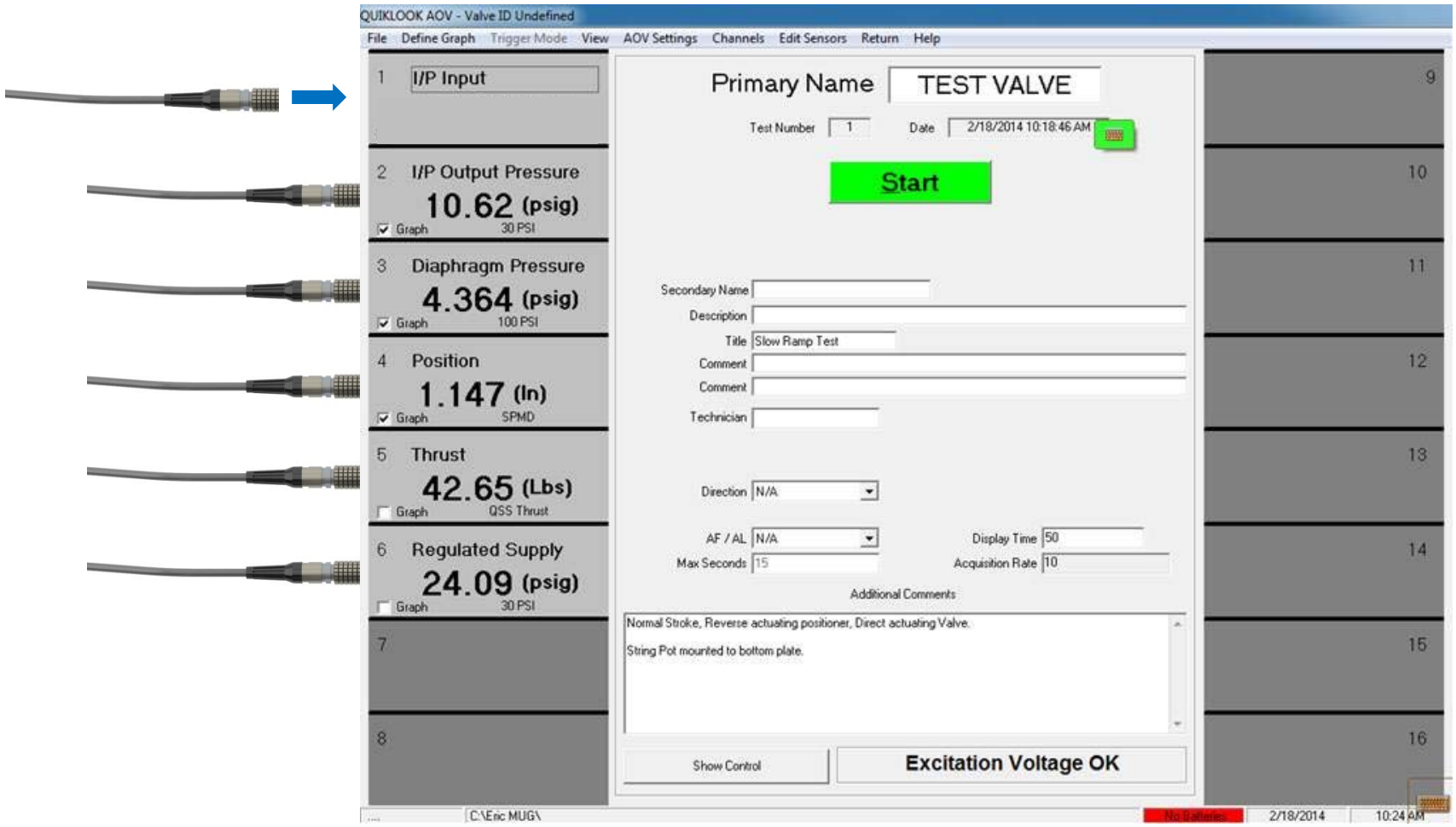
QUIKLOOK 3 Design Objectives

- Improve Ease of Use 
- Reduce Setup, Test Time and Dose 
- Ability to Test a Wide Range of Valves 
- Improve Portability and Versatility 
- Improve Environmental Performance 
- Improve Trace Quality 

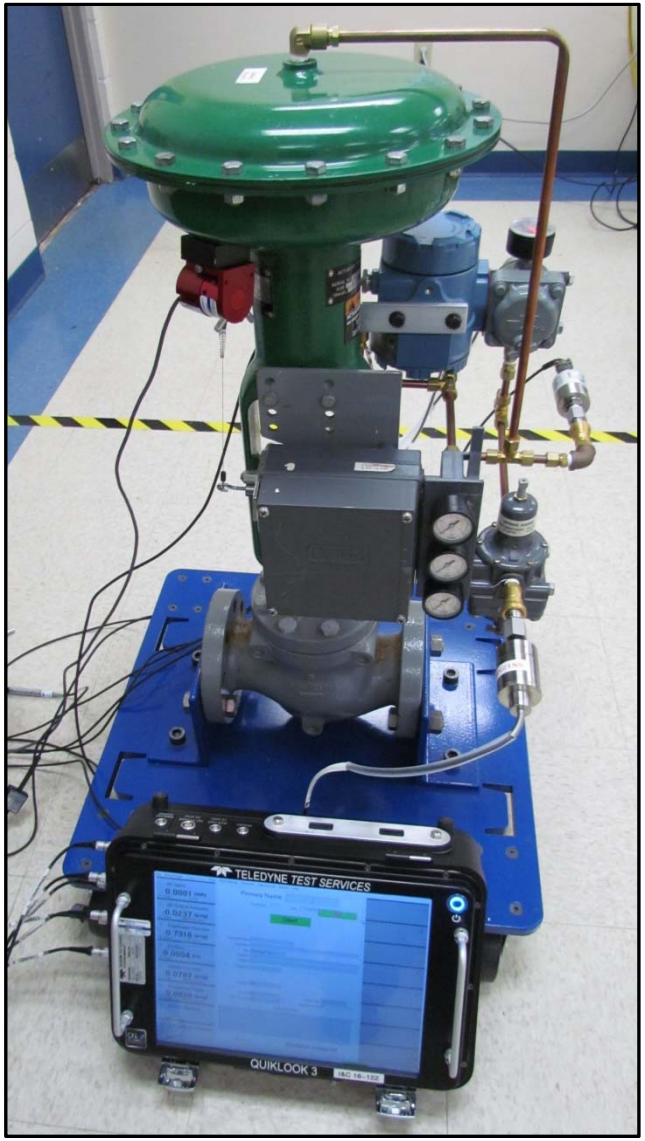
QUIKLOOK 3 Typical Savings

- Man-Hour Savings Per Outage — 160 (Containment); 250 (BOP/Office)
- Combined Tester & Engineering Savings - $ per Outage — $40,000
- Annual Maintenance & License Fees — $120,000
- One Time Capital Savings — $360,000

QUIKLOOK 3


QUIKLOOK AOV - Valve ID Undefined
File Define Graph Trigger Mode View AOV Settings Channels Edit Sensors Return Help
1 I/P Input
2 I/P Output Pressure
10.62 (psig)
Graph 30 PSI
3 Diaphragm Pressure
4.364 (psig)
Graph 100 PSI
4 Position
1.147 (In)
Graph SPMD
5 Thrust
42.65 (Lbs)
Graph QSS Thrust
6 Regulated Supply
24.09 (psig)
Graph 30 PSI
7
8
9
10
11
12
13
14
15
16
Primary Name TEST VALVE
Test Number 1
Date 2/18/2014 10:18:46 AM
Start
Secondary Name
Description
Title Slow Ramp Test
Comment
Comment
Technician
Direction N/A
AF / AL N/A
Max Seconds 15
Display Time 50
Acquisition Rate 10
Additional Comments
Normal Stroke, Reverse actuating positioner, Direct actuating Valve.
String Pot mounted to bottom plate.
Show Control
Excitation Voltage OK
C:\Eric MUG\
No Batteries
2/18/2014
10:24 AM

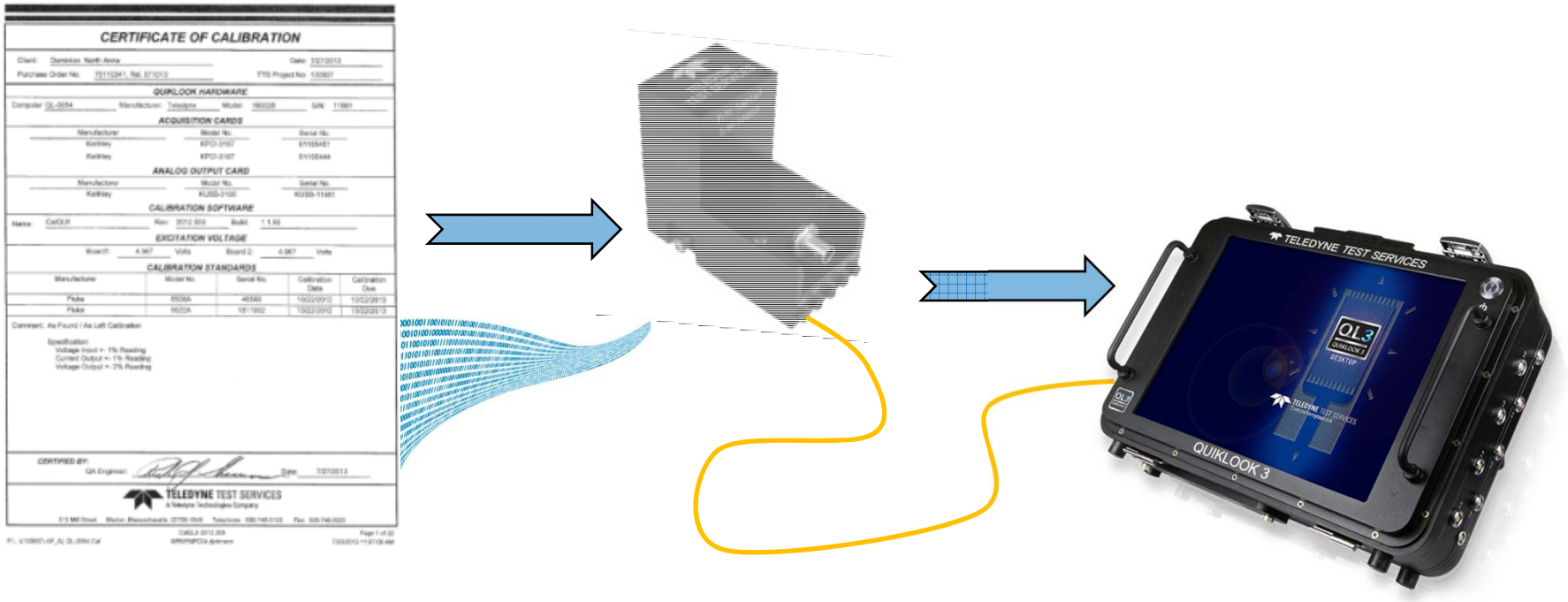
QUIKLOOK 3 Valve Diagnostic Test System



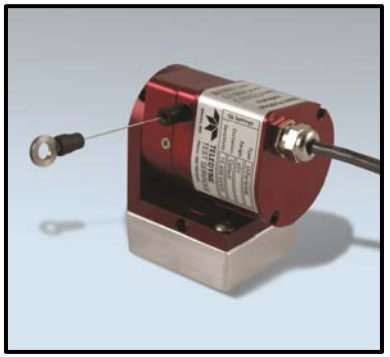
QUIKLOOK 3 Hardware

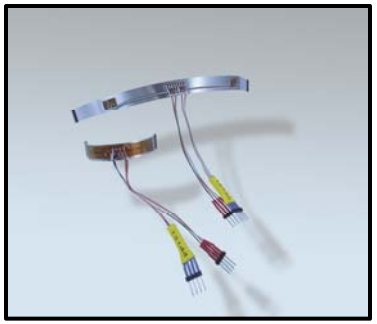
Plug and Play Sensor Recognition

- Open Source Industry Standard (TEDS) - IEEE P1451.4/2.0
- TEDS (Transducer Electronic Data Sheet)
- All calibration and setup data is electronically stored on the sensor
- Transferred to QUIKLOOK when the sensor is plugged in

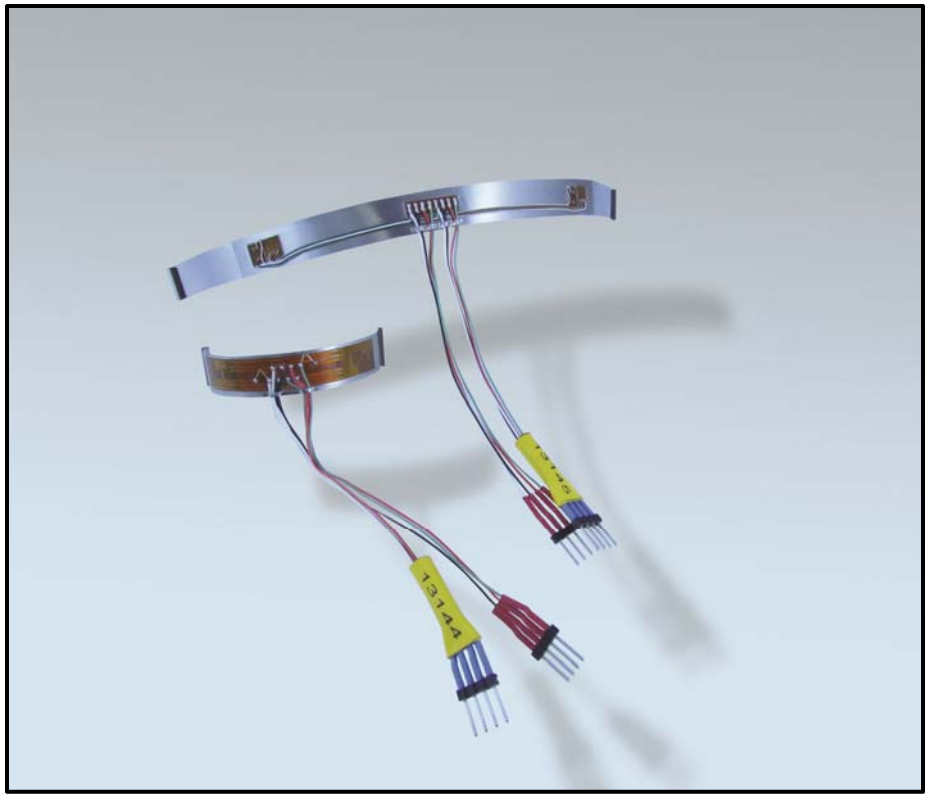


QUIKLOOK 3 Sensors





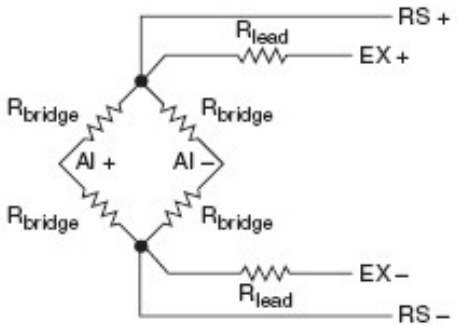
Smart Stem & Quick Stem Sensor (QSS)

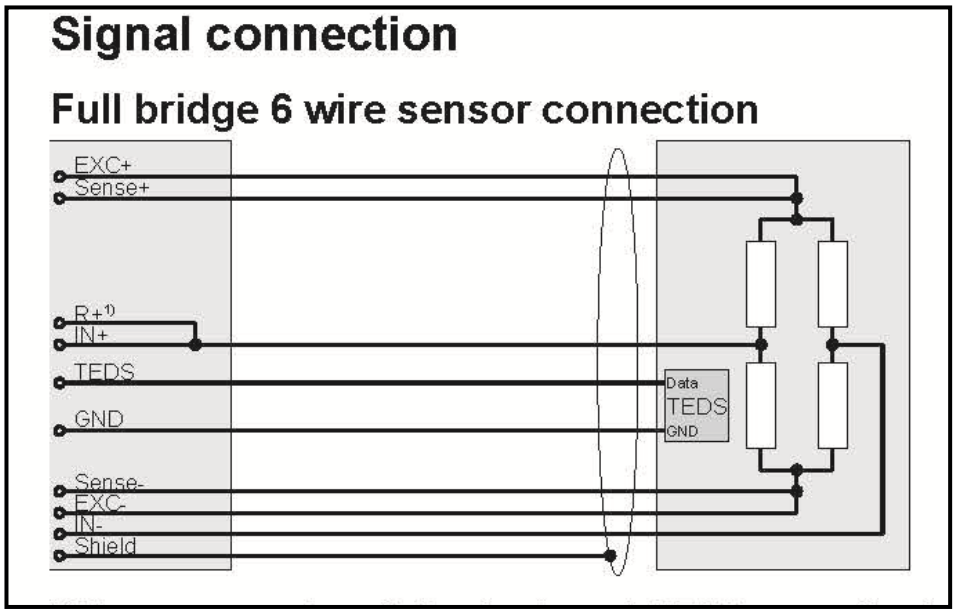


QUIKLOOK 3 Hardware

Voltage Sense

- Eliminate the need for a Voltage Drop Box

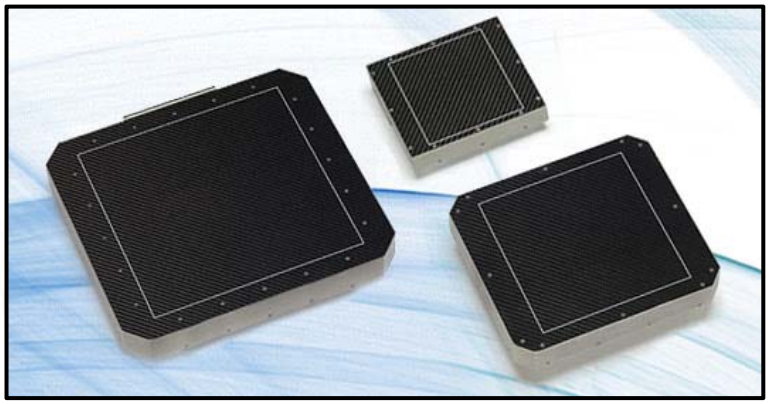


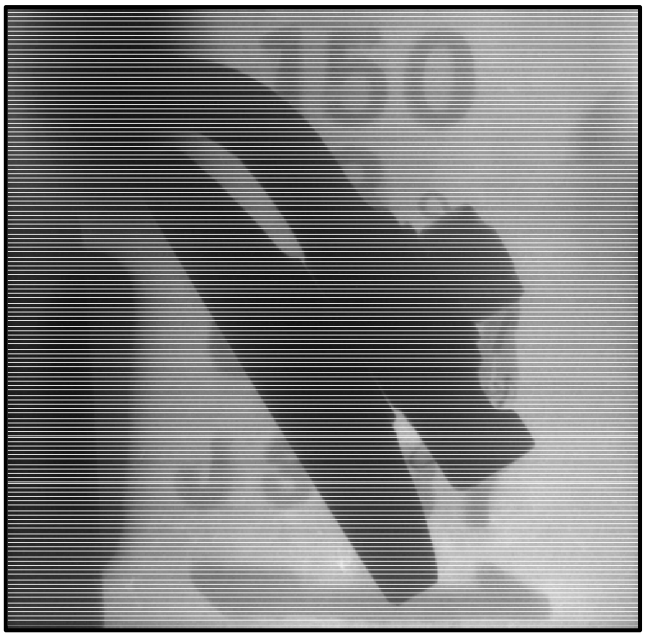


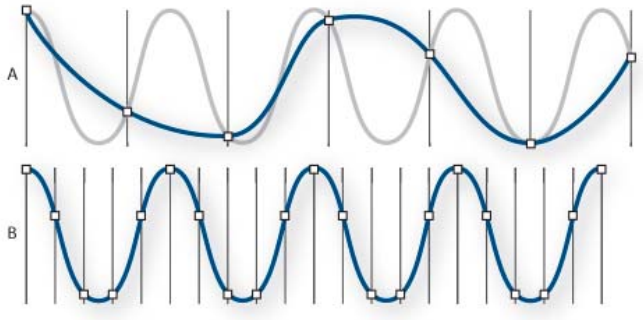
QUIKLOOK 3 Hardware

Increased Maximum Acquisition Rate (up to 200,000 s/s)

- Sample Rate 10 to 50,000 s/s, 16CH's simultaneously acquired
- Hardware capable of 200,000 s/s
- Check Valve Testing Requires (10k-50k s/s)



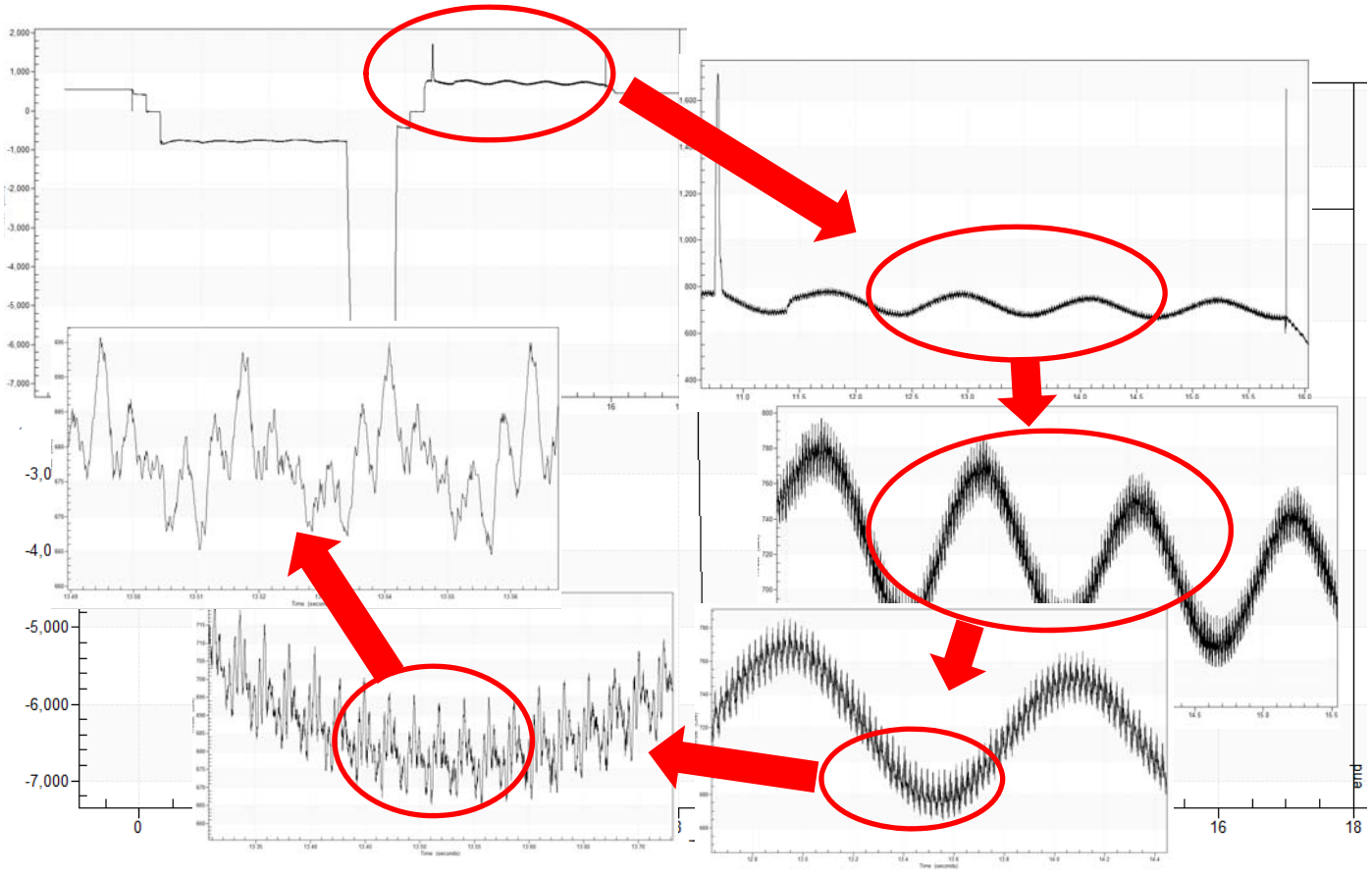




QUIKLOOK 3 Hardware

High End Data Acquisition Technology

- 16 Individual Op Amp with independent Excitation Sources
- Signal to noise ratio reduction – Trace Quality



QUIKLOOK 3 Hardware

Drop Box Use

- Setup Test, Start, Close Case and Walk Away

QUIKLOOK 3 Hardware

Display Interface

- 15” LCD Display
- Hardened (Armor) Resistive Touch Screen

QUIKLOOK 3 Hardware

Interaction

- Virtual keyboard

QUIKLOOK 3 Hardware

External Connection

- (2) USB ports and Bluetooth connectivity for external keyboard / peripherals
- (2) Ethernet ports for Network connectivity
- USB or Ethernet Data Transfer

QUIKLOOK 3 Hardware

Battery Operation

- 5+ hours of operation on full charge
- Hot swappable batteries
- In system charging
- Desktop Quick Charger available

QUIKLOOK 3 Hardware

Waterproof Rating

- Sealed to Prevent Ingress of Contamination
- Weather Tight for De-Con Wash Down (Opened or Closed Case)
- All connections on Outside of Case

QUIKLOOK 3 Hardware

Weight and Size Reduction

- Size: **16.5**” x **11.3**” x **5.7**”

  (419 mm X 287 mm X 145 mm)

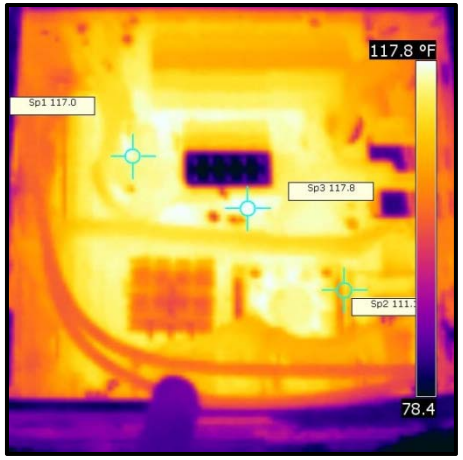
- Weight: **16** lbs. without batteries

  18.5 lbs. with (2) battery packs

QUIKLOOK 3 Hardware

Reduce Internal Heat Sources

- External power supply
- Improved internal heat sinks
- Maintained aluminum case



High Temperature Operation

- QL3 - 125°F (52C) Ambient
- QL2.5 - 110°F (43C)
- QLII - 105°F (40.5C)

QUIKLOOK 3 Hardware

VOIP: Audio / Voice Communication to Laptop

- Wired or Wireless
- Simplified USB Connection

QUIKLOOK 3 Hardware

RealVNC® Remote Desktop

- Wired and wireless remote connectivity (Laptop, iPad, Tablet, iPhone, etc.)
- Maintain data collection reliability through local collection, subsequent transfer

Why is it better?

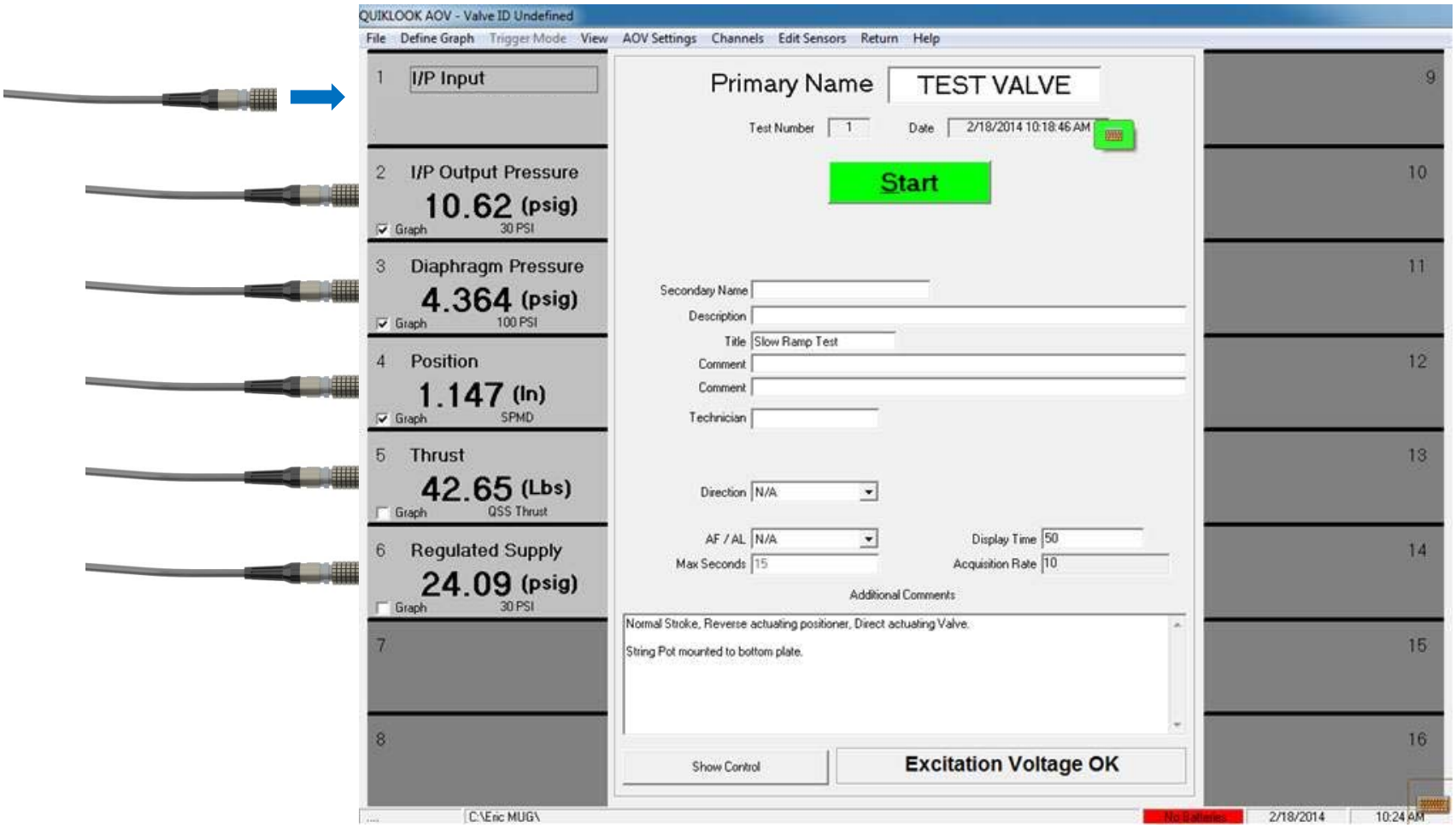
- Reliable / Ease of Use
- Two active screens
- Wired with no distance limitations
- Smart Phone / Tablet Apps

QUIKLOOK 3 Hardware

	Specifications
Input Channels	(16) User Programmable with Excitation Voltage Sensing
Input Range	Differential & Single Ended ± 10, 30, 100 & 300 mV, ±1, 3 & 10 V, Strain Gage ±1 ,3 & 10 mV/V
Sensor Excitation	10 V on all input channels, 28 mA max current
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, 4 - 20 mA, 10 – 55mA
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, (1) Audio, (1) 12vdc Output
Languages	English, French, and Spanish
Maximum Operating Temperature	125° F (52° C)
Application Software	QUIKLOOK 2013.309 or later
Size	16.5” x 11.25” x 5.67”
Weight	16 lbs. without batteries, 18.5 lbs. with 2 batteries

QUIKLOOK 3 Software

Main Acquisition Screen – Single Screen For Configuration, Monitor & Acquisition



Any Questions?

THANK YOU

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