Eighth Annual QUIKLOOK Users Group Meeting

Marion, MA
August 20 & 21st, 2014

Eric Solla
QUIKLOOK Product Manager

Quiklook Software Update

TELEDYNE TEST SERVICES
Everywhereyoulook™

Quiklook Software

- Version 2013.256
  - Released August 2013
  - Quiklook II
- Version 2013.309
  - Released September 2013
  - Quiklook 3 only
- Version 2014.058
  - Released February 2014
  - Quiklook 3 only
- Version 2014.197
  - Released August 2014
  - Quiklook II & Quiklook 3

Software Error Notices

- Version 2014.058
  - Error Notice 2014.058-1
    - AOV Calculated results for Rotary Valves in metric
    - The units are incorrect for the following results:
      - Seat Force
      - Seat Load
      - Unseating Force
      - Valve Friction – Min, Max, Avg.
    - Units are stated as kg-m or kg-m/mm.
    - Stated results are actually daN-mm and daN-mm/mm.

Software Error Notices

- Error Notice 2014.058-1
  - Workaround:
    - To convert results to kg-m divide results by 980.665
    - Preferred units are N-m. To convert results to N-m divide results by 100.
  - Notes:
    - This error only occurs for rotary valves tested in metric. This error occurs on all versions of QUIKLOOK software prior to and including QUIKLOOK 2014.058 which contains AOV analysis.

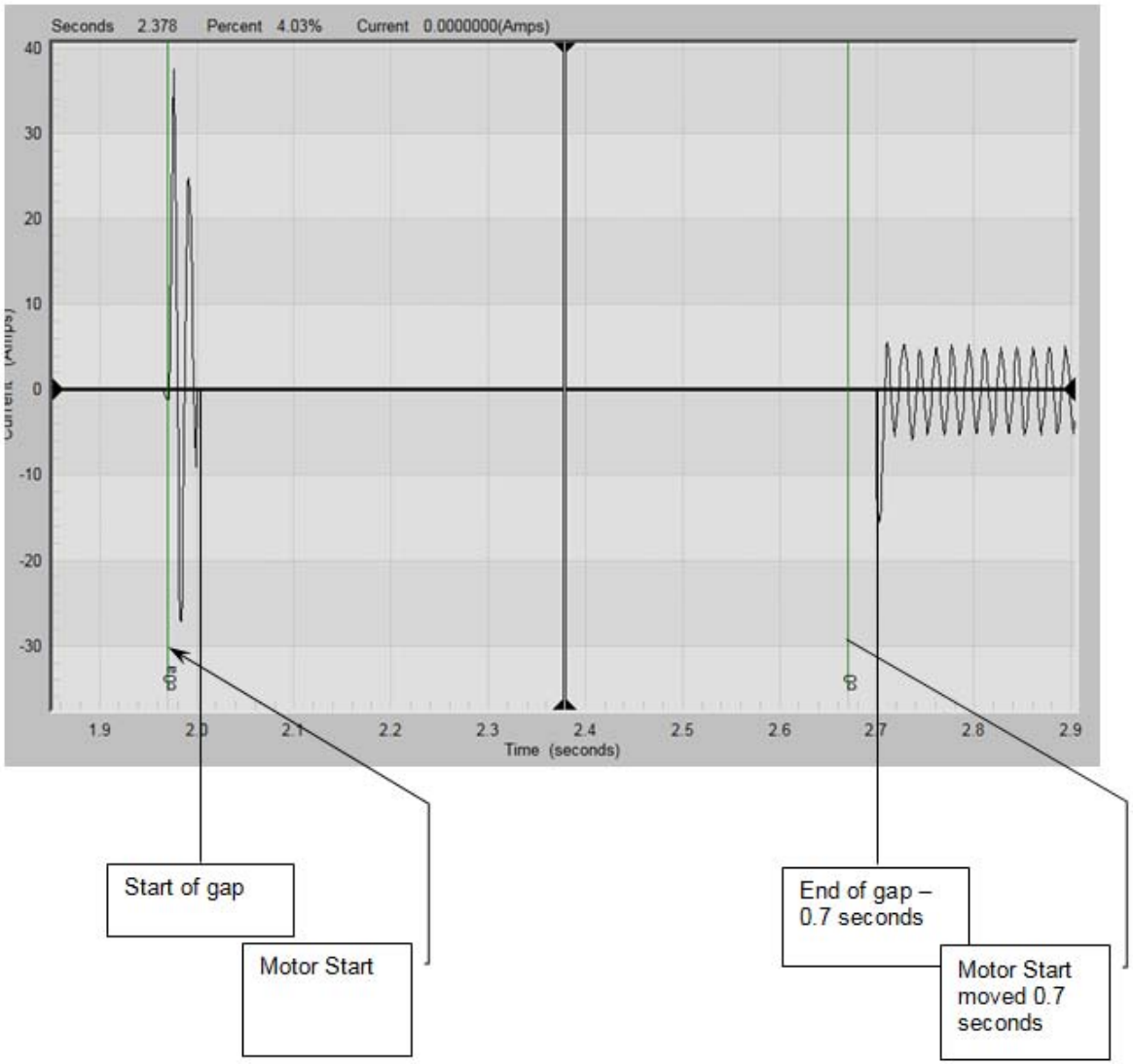
Software Error Notices

- Version 2014.058
  - Error Notice 2014.058-2
    - When acquiring data using a trigger, sometimes a gap will appear in the data right after the trigger time.
      - This gap is extra time inserted into the start of the test.
      - The gap contains no real data and the data after the gap is a continuation of the data before the gap
      - No data is lost.
    - No data is missing from the trace but this gap causes an increase in stroke time.
    - This problem exists for all channels. The gap will be a multiple of 100 milliseconds.

Software Error Notices

- Error Notice 2014.058-1
  - Workaround:
    - To compensate for this, move the marker for motor start forward in time by an amount equal to the gap. This will make all the stroke time and light calculations correct
    - Rerun the test.
  - Notes:
    - This error only occurs in Quiklook 3 Versions 2013.309 & 2014.058

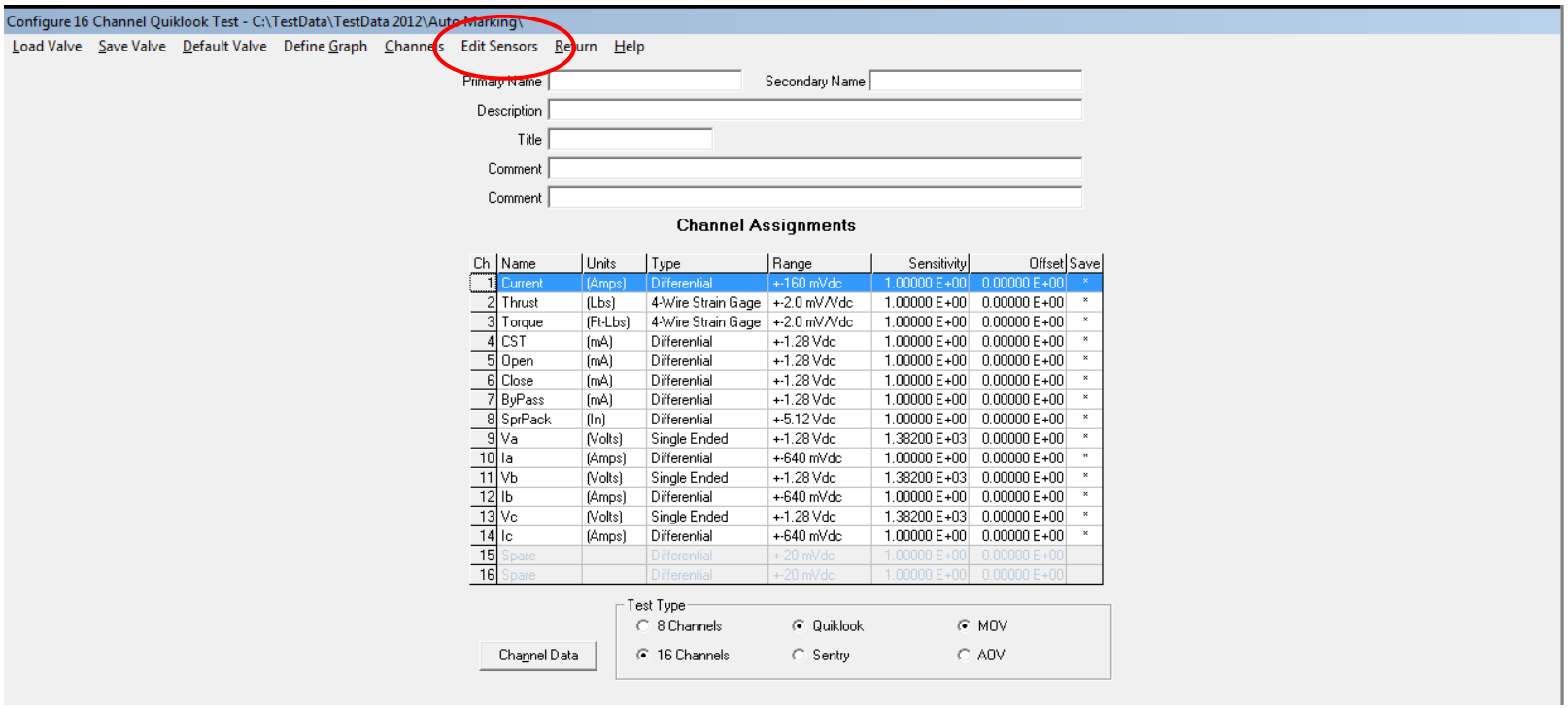
Quiklook Software



2013.256 – New Features

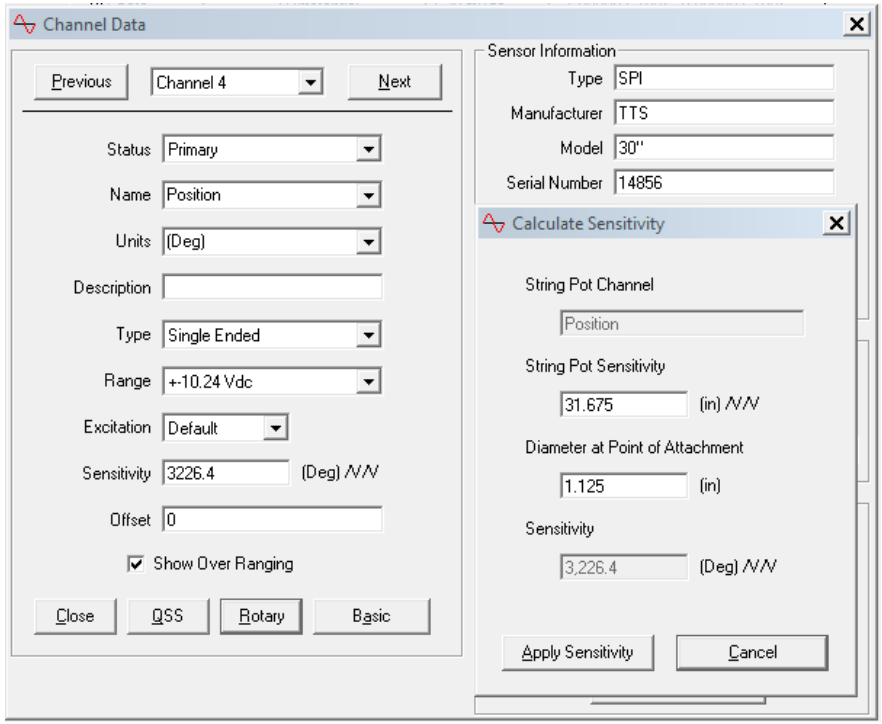
2013.256 – New Features

- Configuration
  - Edit Sensor Database from Configuration Screen



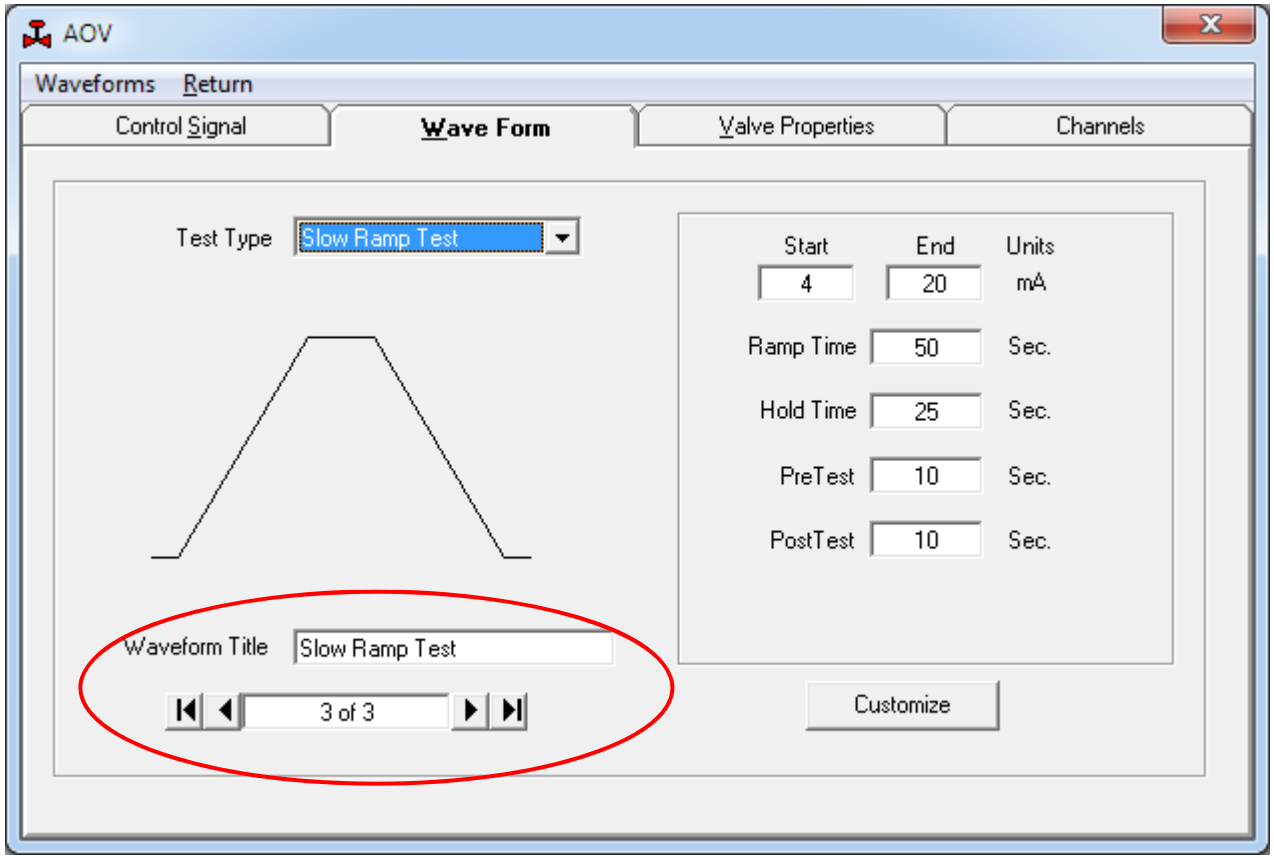
2013.256 – New Features

- Configuration
  - Calculate Rotary Sensitivity – Available for MOV & AOV
  - Remembers String Pot Sensitivity



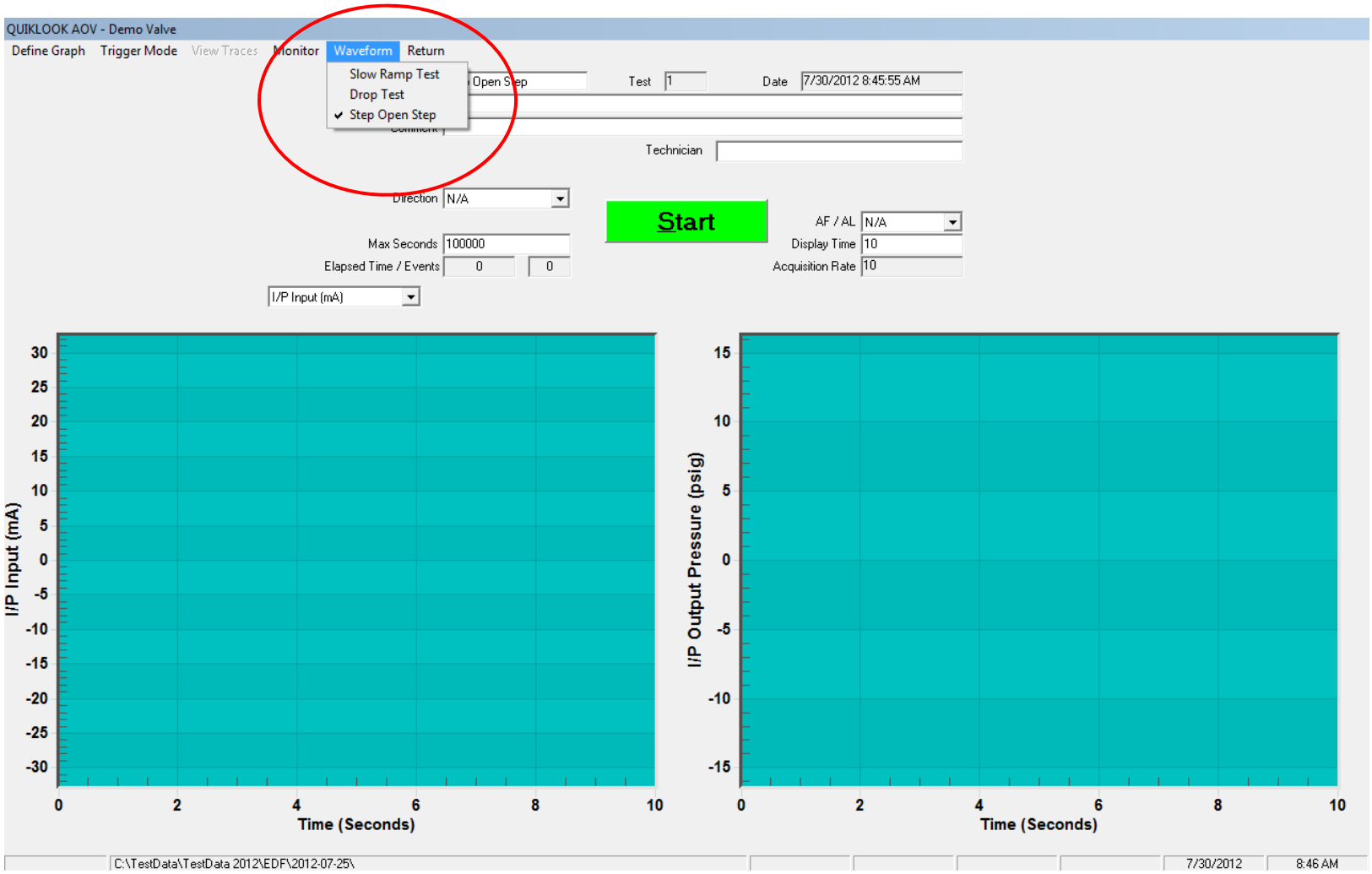
2013.256 – New Features

- AOV Multiple Waveforms



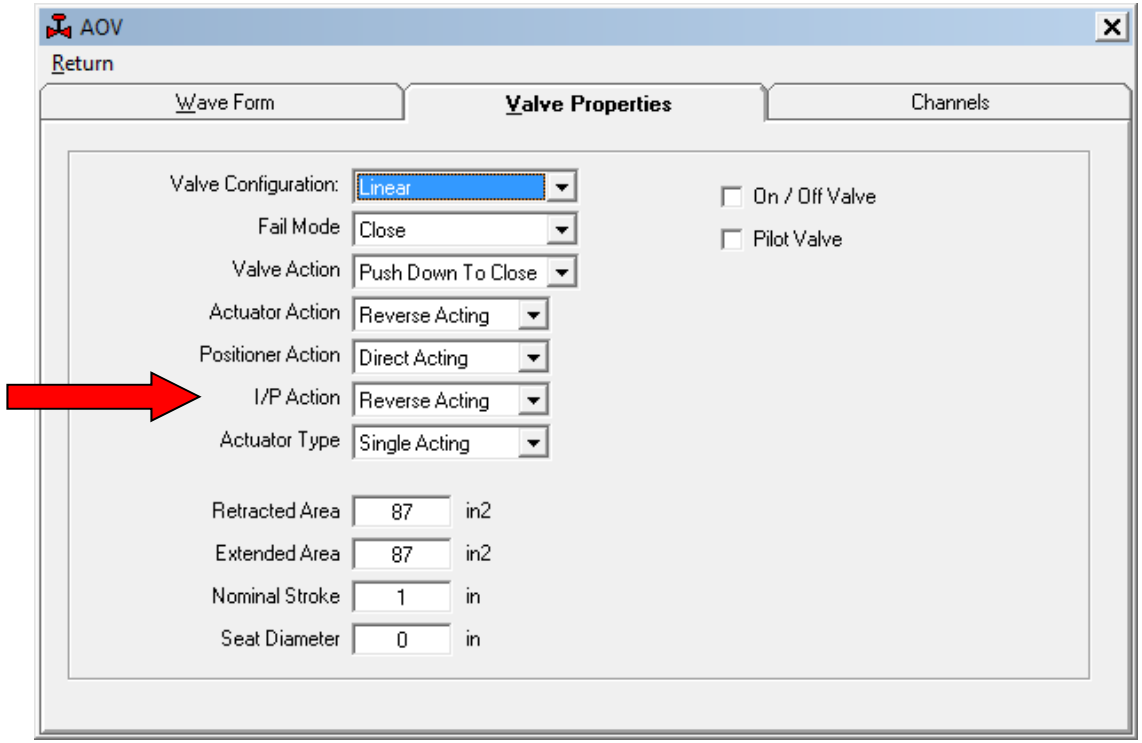
Quiklook Software

2013.256 – New Features

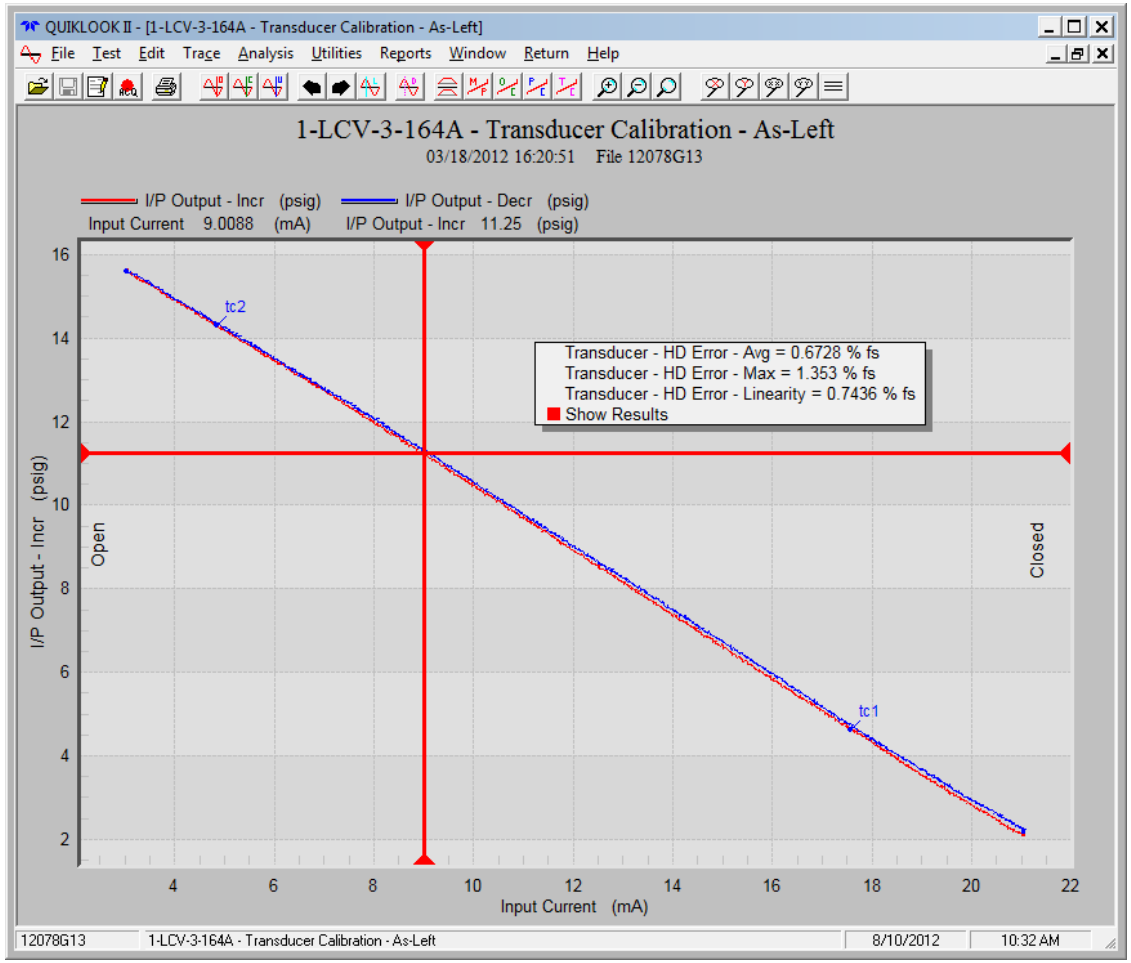


2013.256 – New Features

- Configuration / Analysis
  - Add I/P Action



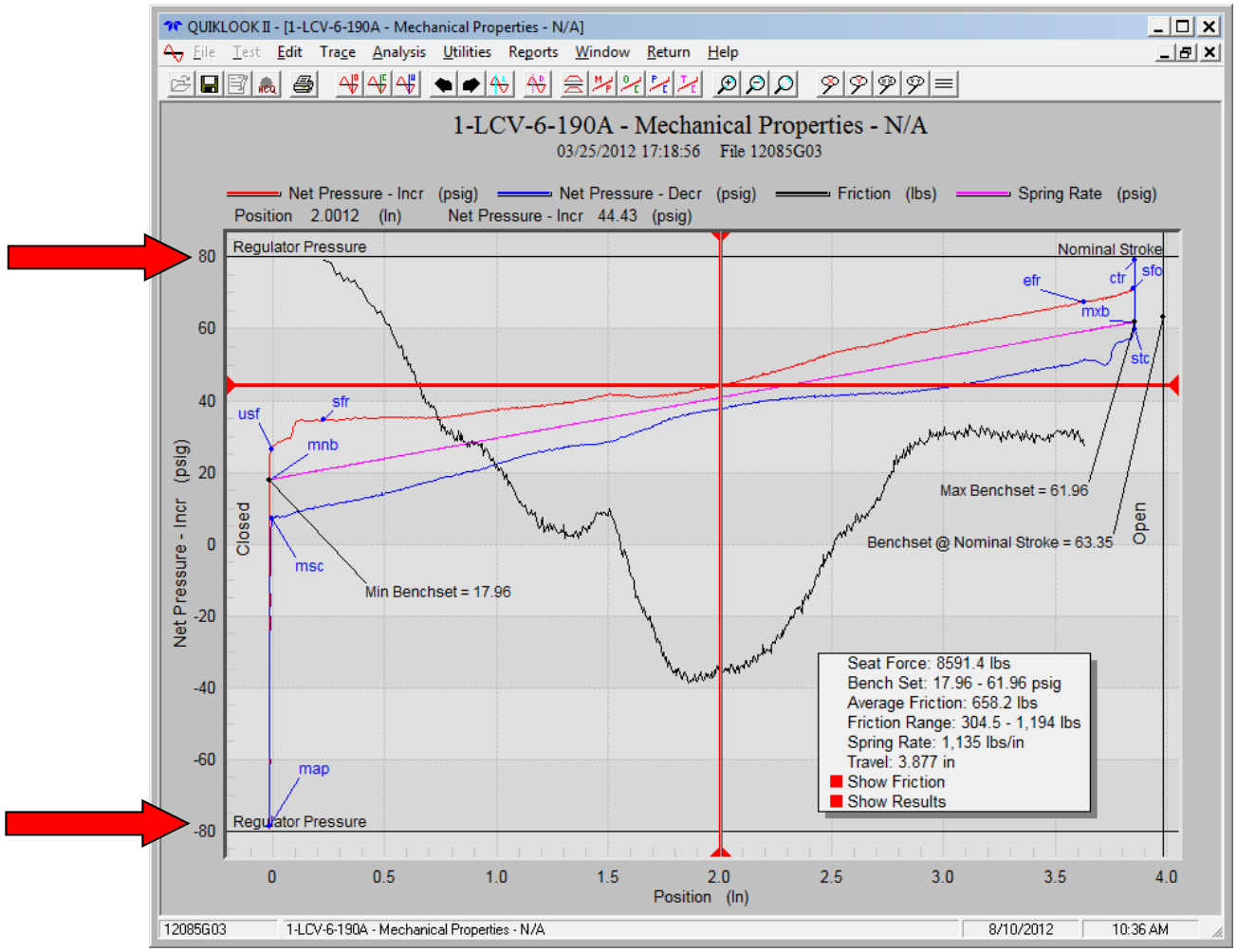
2013.256 – New Features



2013.256 – New Features

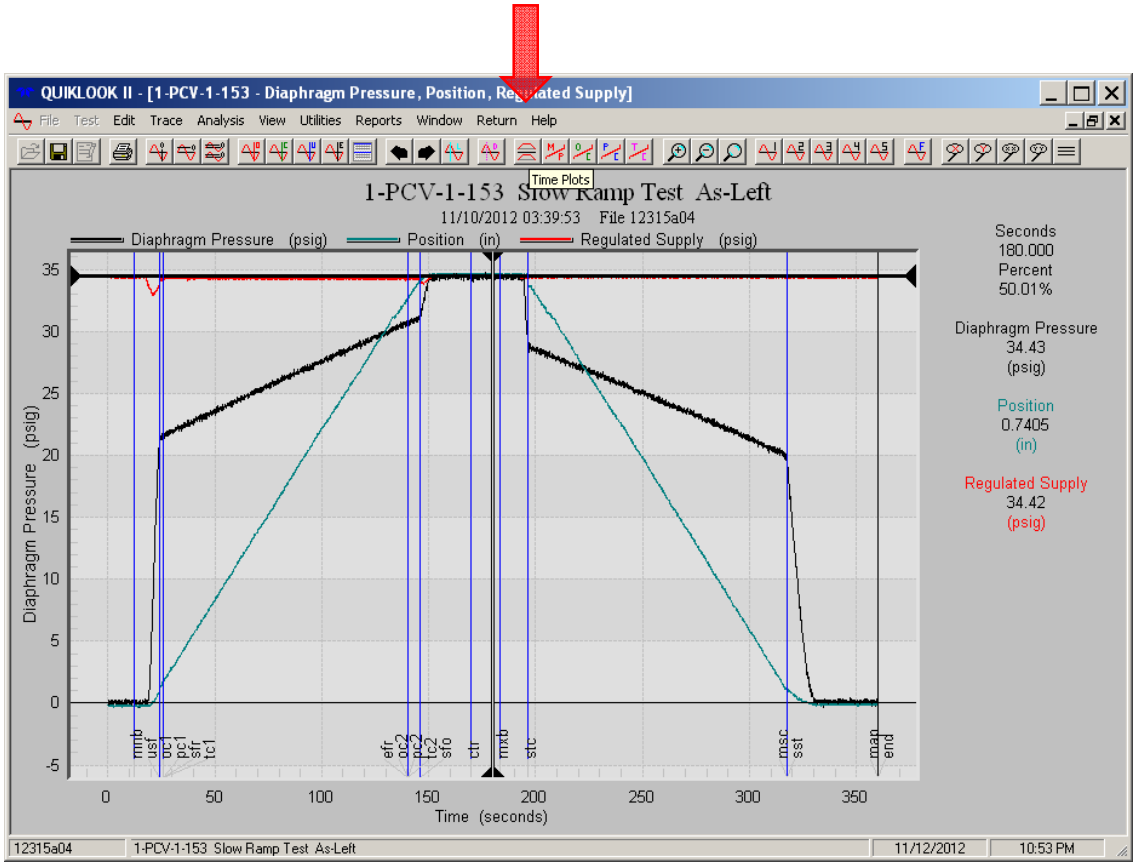
- Analysis
  - Mechanical Properties –
    - Double Acting Valves
    - Add line to show Negative Regulator Pressure

2013.256 – New Features



2013.256 – New Features

- Analysis
  - Time Plot Icon should return to previous configured time plot



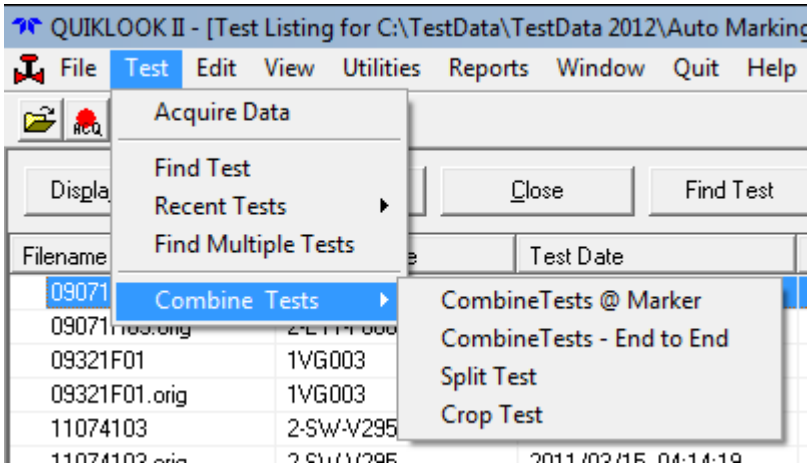
2013.256 – New Features

- Acquisition – Monitor Screen
  - Warning if pressure channels are zeroed with a large offset.
  - Disable zero for I/P Input Channel

2013.256 – New Features

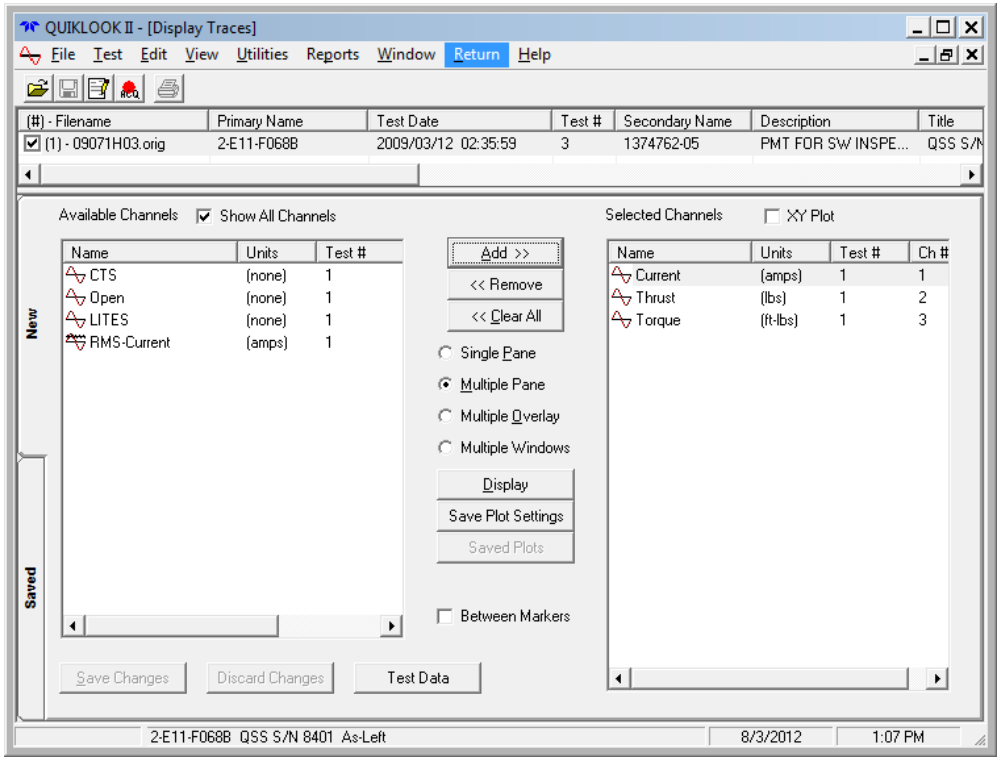
- Test Menu
  - Combine test
    - Combine two tests @ marker
    - Combine two tests end to end
    - Split test into two tests
    - Crop a test saving only data between two markers

    - In each case a new test file will be created leaving the original tests intact.



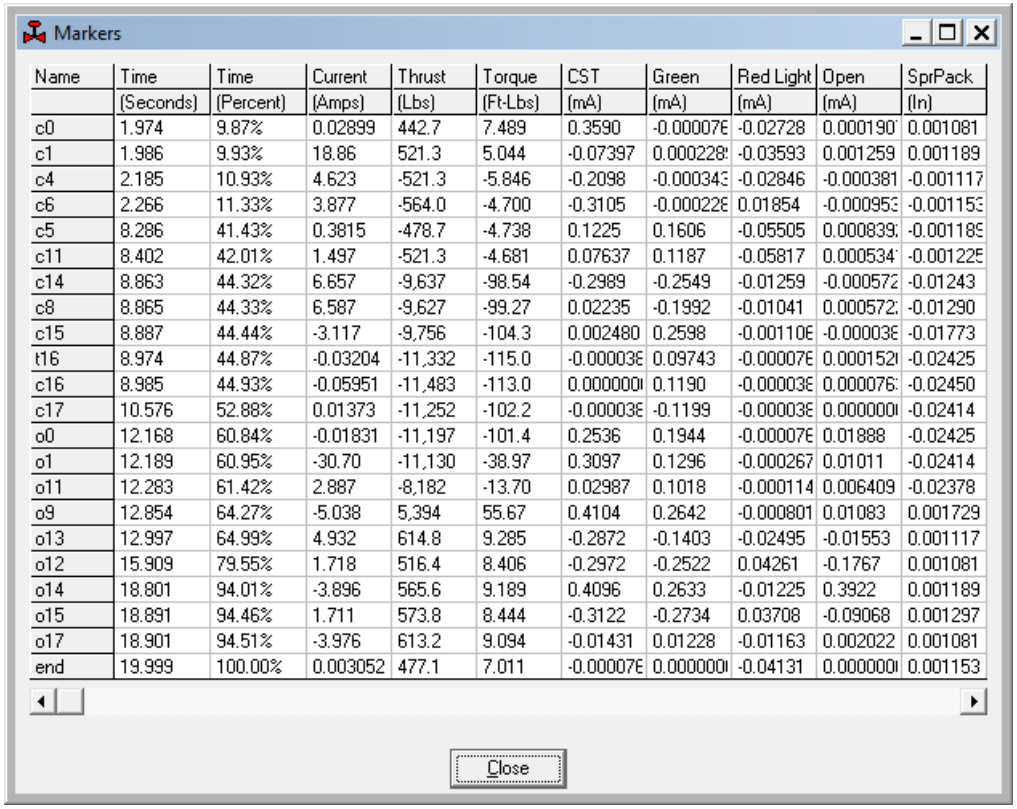
2013.256 – New Features

- Replay
  - Plot between markers



2013.256 – New Features

- Analysis
  - Automark MOV traces



Name	Time (Seconds)	Time (Percent)	Current (Amps)	Thrust (Lbs)	Torque (Ft-Lbs)	CST (mA)	Green (mA)	Red Light (mA)	Open (mA)	SprPack (In)
c0	1.974	9.87%	0.02899	442.7	7.489	0.3590	-0.00007E	-0.02728	0.000190	0.001081
c1	1.986	9.93%	18.86	521.3	5.044	-0.07397	0.000228	-0.03593	0.001259	0.001189
c4	2.185	10.93%	4.623	-521.3	-5.846	-0.2098	-0.000343	-0.02846	-0.000381	-0.001117
c6	2.266	11.33%	3.877	-564.0	-4.700	-0.3105	-0.00022E	0.01854	-0.000953	-0.001153
c5	8.286	41.43%	0.3815	-478.7	-4.738	0.1225	0.1606	-0.05505	0.000839	-0.001189
c11	8.402	42.01%	1.497	-521.3	-4.681	0.07637	0.1187	-0.05817	0.000534	-0.001225
c14	8.863	44.32%	6.657	-9,637	-98.54	-0.2989	-0.2549	-0.01259	-0.000572	-0.01243
c8	8.865	44.33%	6.587	-9,627	-99.27	0.02235	-0.1992	-0.01041	0.000572	-0.01290
c15	8.887	44.44%	-3.117	-9,756	-104.3	0.002480	0.2598	-0.00110E	-0.00003E	-0.01773
t16	8.974	44.87%	-0.03204	-11,332	-115.0	-0.00003E	0.09743	-0.00007E	0.000152	-0.02425
c16	8.985	44.93%	-0.05951	-11,483	-113.0	0.000000	0.1190	-0.00003E	0.000076	-0.02450
c17	10.576	52.88%	0.01373	-11,252	-102.2	-0.00003E	-0.1199	-0.00003E	0.000000	-0.02414
o0	12.168	60.84%	-0.01831	-11,197	-101.4	0.2536	0.1944	-0.00007E	0.01888	-0.02425
o1	12.189	60.95%	-30.70	-11,130	-38.97	0.3097	0.1296	-0.000267	0.01011	-0.02414
o11	12.283	61.42%	2.887	-8,182	-13.70	0.02987	0.1018	-0.000114	0.006409	-0.02378
o9	12.854	64.27%	-5.038	5,394	55.67	0.4104	0.2642	-0.000801	0.01083	0.001729
o13	12.997	64.99%	4.932	614.8	9.285	-0.2872	-0.1403	-0.02495	-0.01553	0.001117
o12	15.909	79.55%	1.718	516.4	8.406	-0.2972	-0.2522	0.04261	-0.1767	0.001081
o14	18.801	94.01%	-3.896	565.6	9.189	0.4096	0.2633	-0.01225	0.3922	0.001189
o15	18.891	94.46%	1.711	573.8	8.444	-0.3122	-0.2734	0.03708	-0.09068	0.001297
o17	18.901	94.51%	-3.976	613.2	9.094	-0.01431	0.01228	-0.01163	0.002022	0.001081
end	19.999	100.00%	0.003052	477.1	7.011	-0.00007E	0.000000	-0.04131	0.000000	0.001153

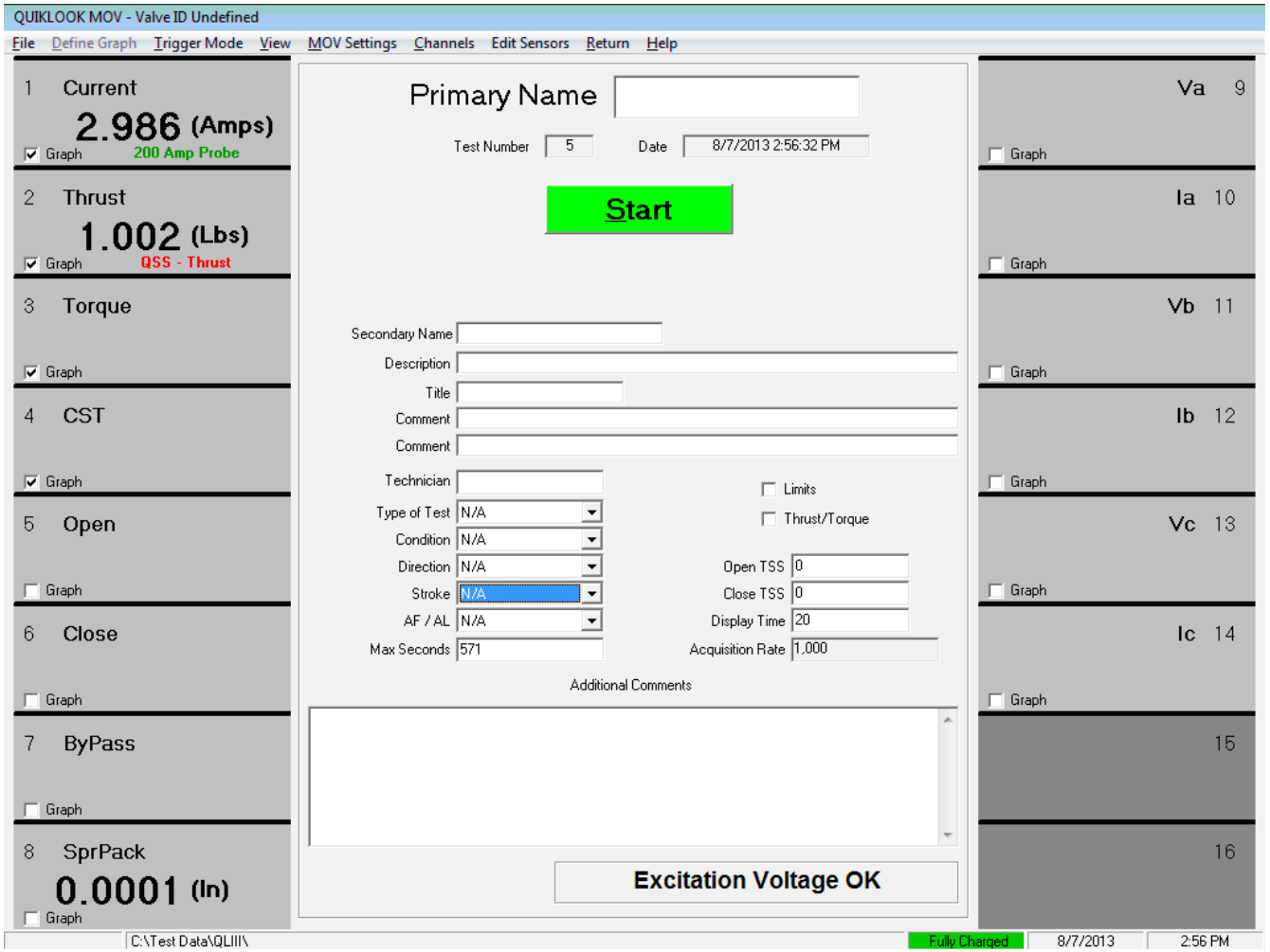
2013.309 – New Features

- Initial Release of Quiklook 3
  - New Data Acquisition Boards
  - Replaced Configure / Acquisition / Monitor Screens with a Single Screen
  - TEDS – Transducer Electronic Data Sheets
  - QL3 contains batteries allowing it to run without AC power.
  - Independent Channel Excitation
  - Increased acquisition rates
  - Increase Marker Names to 5 characters

Quiklook 3 – Software Design Objectives

- Reducing Dose (ALARA)
- Reduce Setup Time
- Reduce Analysis Time
- Reduce Training Requirements
  - ✓ Plug and Play Sensor Recognition – Open Source Industry Standard (TEDS)
  - ✓ Simplified and Consolidated Setup & Acquisition Screens
  - ✓ Remote Voltage Sensing – (6) wire strain gauge feature
  - ✓ Easier Excitation Voltage Check
  - ✓ Battery Operation
  - ✓ Auto Marking
- Support Wide range of Valve Types (AOV, MOV, Check & Solenoid)
  - ✓ Increased Acquisition Rates
- Improve Trace Quality
  - ✓ Improving Signal to Noise Ratio
  - ✓ Eliminating EMF noise from pumps and motors

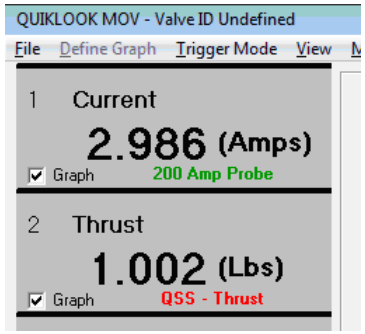
2013.309 – New Features – Acquisition Screen



2013.309 – New Features

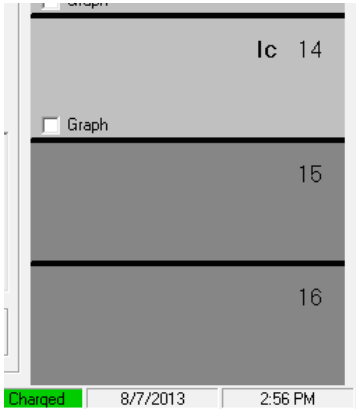
TEDS – Transducer Electronic Data Sheet

IEEE Standard - IEEE P1451.4/2.0



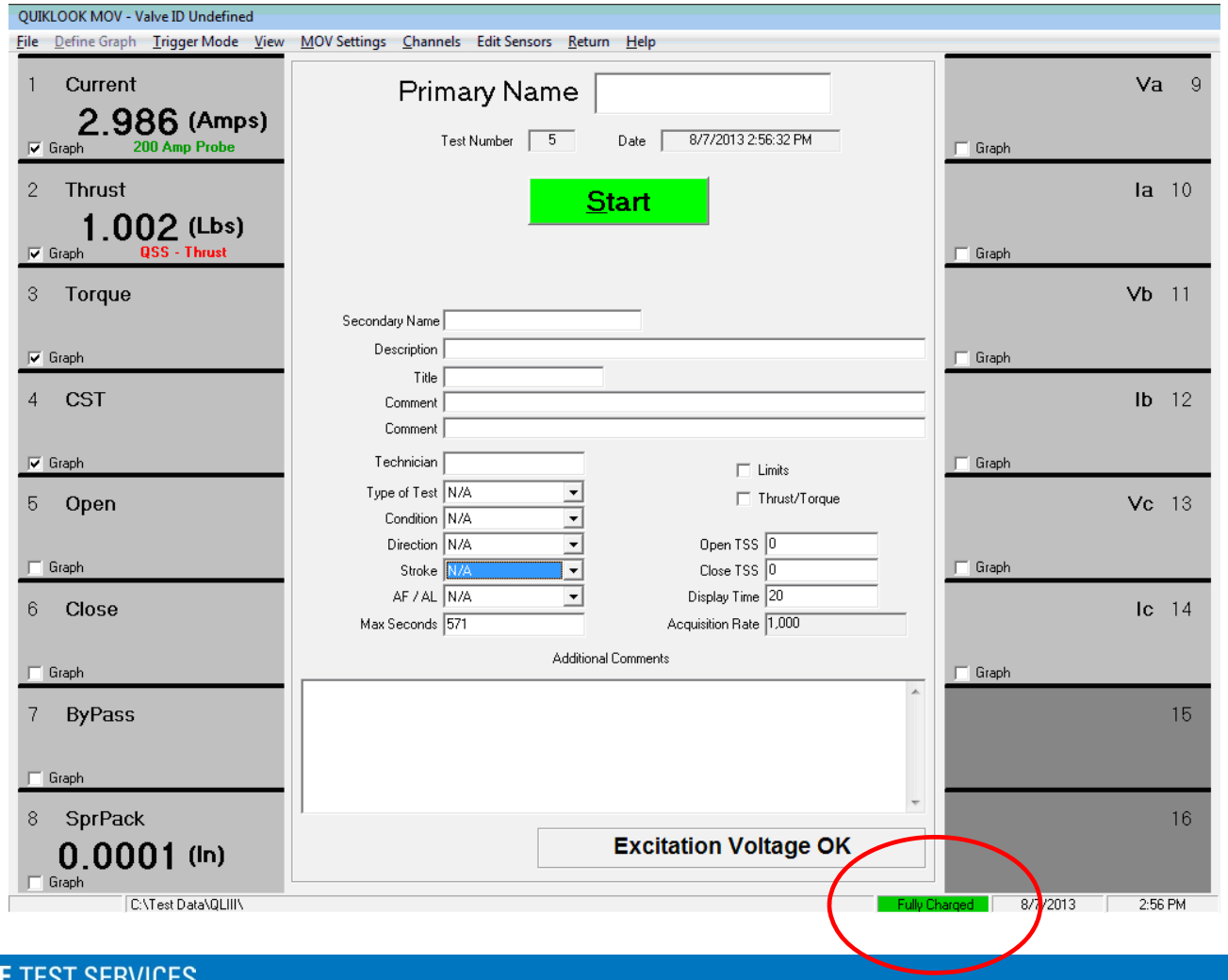
- All Sensors will have a TEDS Chip
- TEDS Chip may contain all - none of the configuration data.
- When sensor is present Channel Values and Units Appear
- Sensor Description is Shown
  - Green – All sensor data is on chip no further configuration is necessary
  - Red – Some configuration data is missing. Configuration should be reviewed
  - Black – Configuration has been reviewed

- Dark Gray Box – Channel Inactive
- Light Gray Box - Channel Active
- Red Box – Channel is Over Ranging
- Channel Name Shows for Active Channels
- Channels wo Sensors will Not be Acquired and will be Turned Off



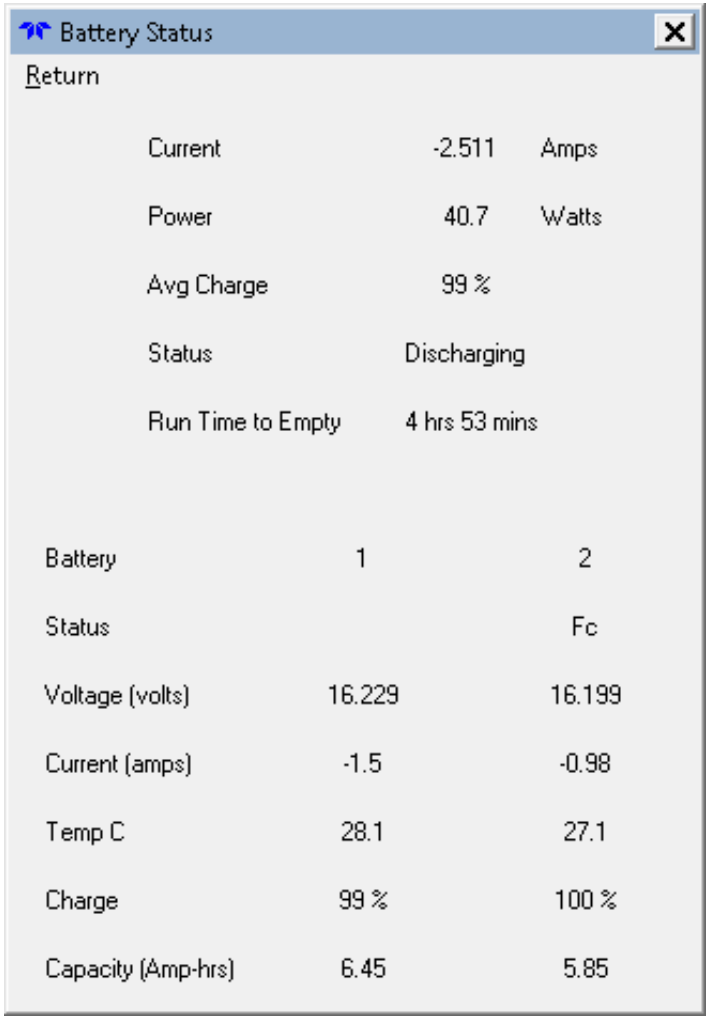
Quiklook Software

2013.309 – New Features



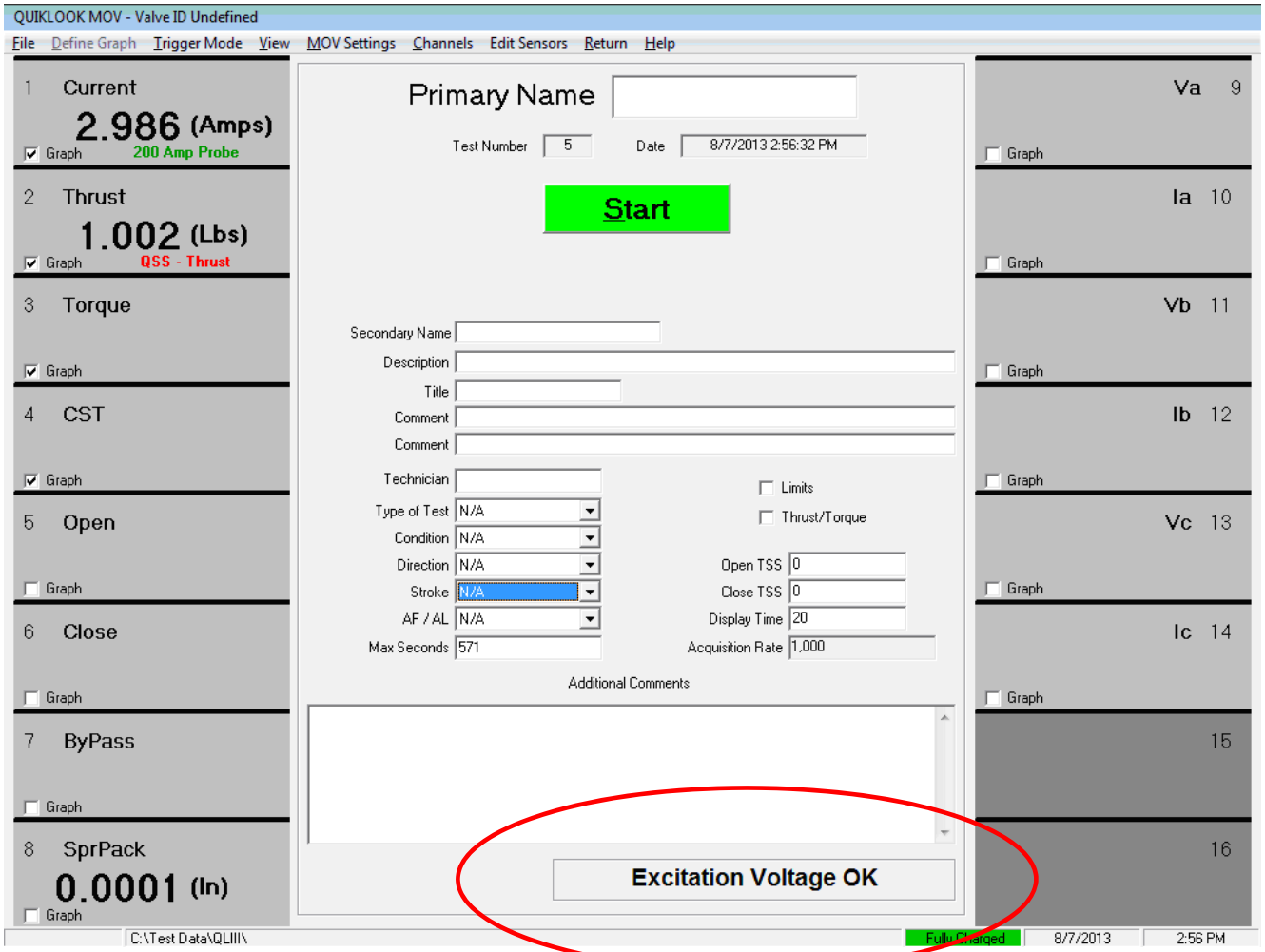
2013.309 – New Features – Battery Status

- Run Time to Empty
- Battery Status:
  - Voltage
  - Current
  - Charge
  - Capacity
  - Temperature



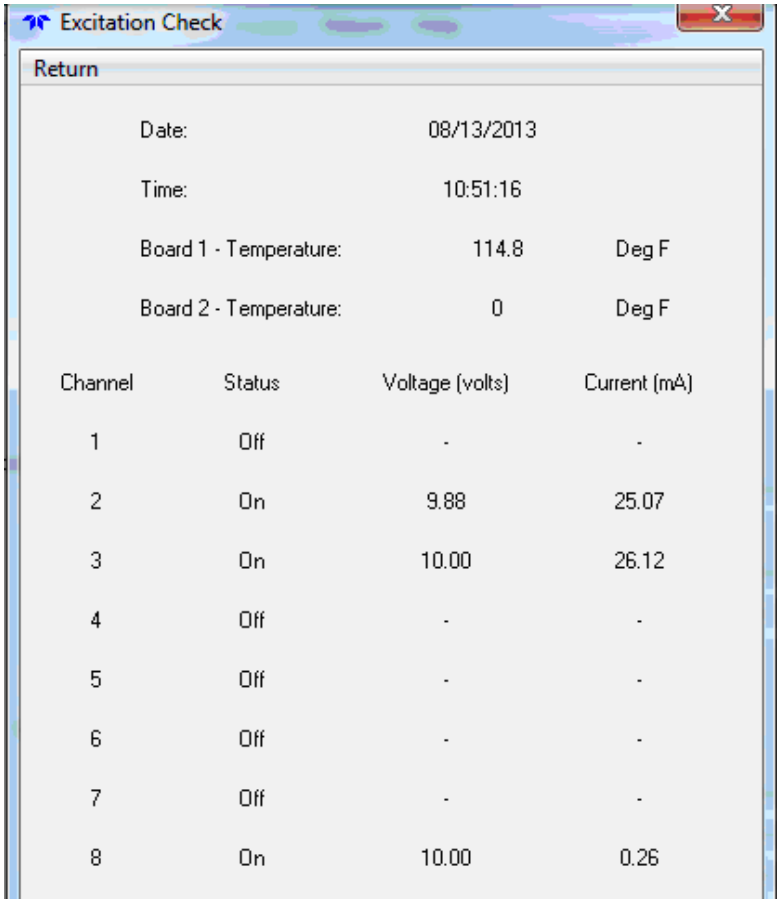
Quiklook Software

2013.309 – New Features



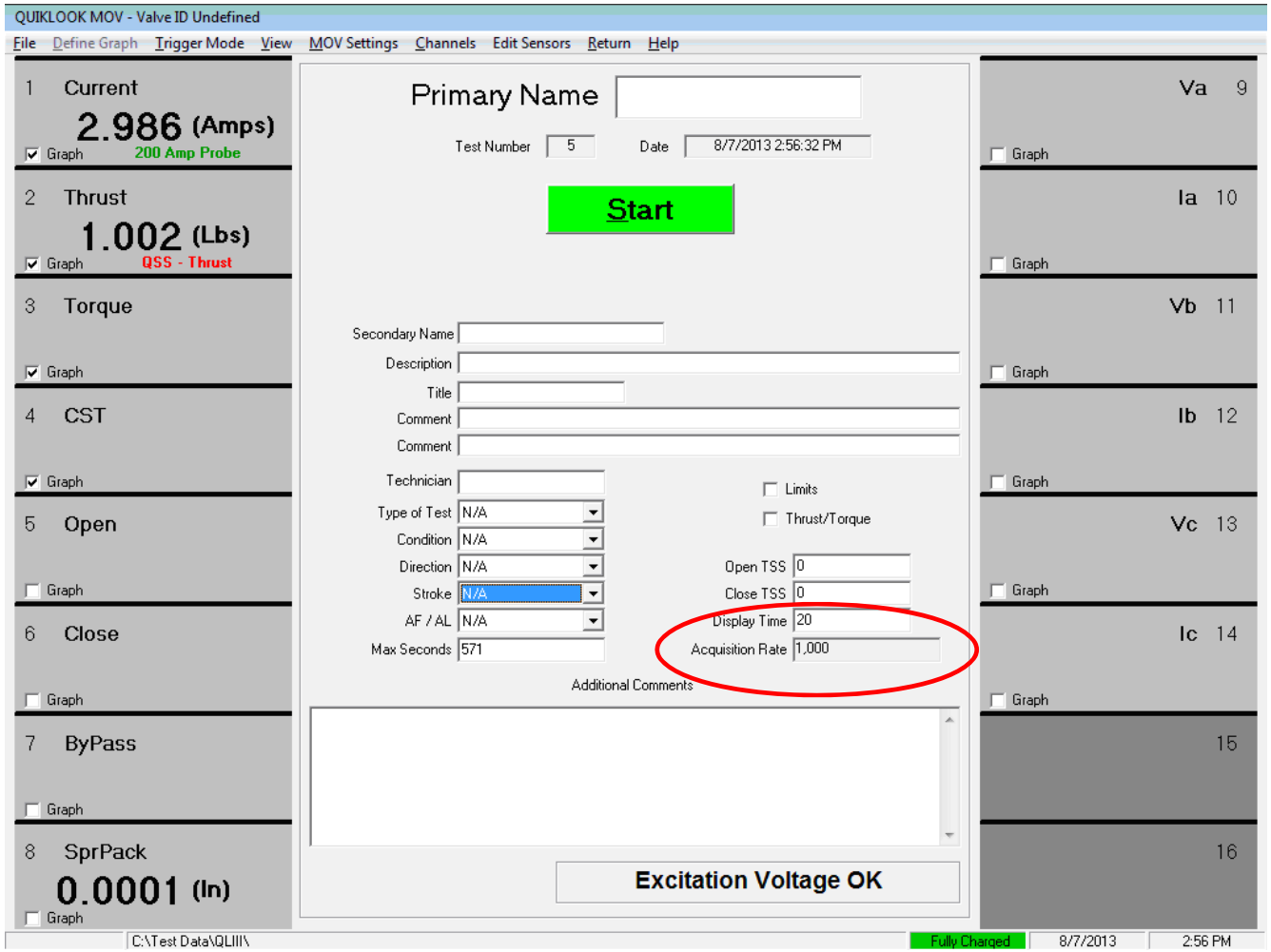
2013.309 – New Features – Excitation Check

- Each Channel has independent Excitation
- Shorting out one channel will not effect the others
- Only Channels with Excitation are Checked
- Board Temperatures are shown
- Excitation Voltage
- Excitation Current



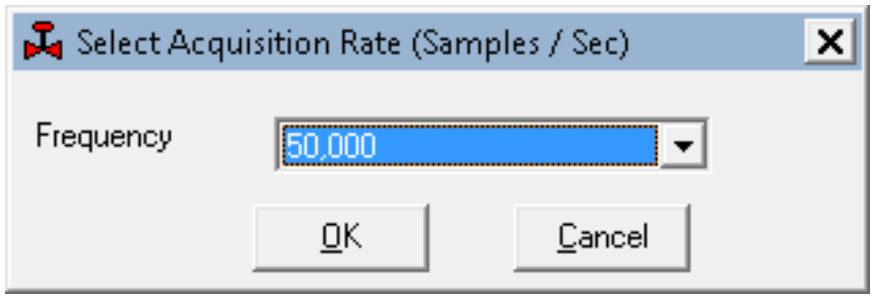
Quiklook Software

2013.309 – New Features

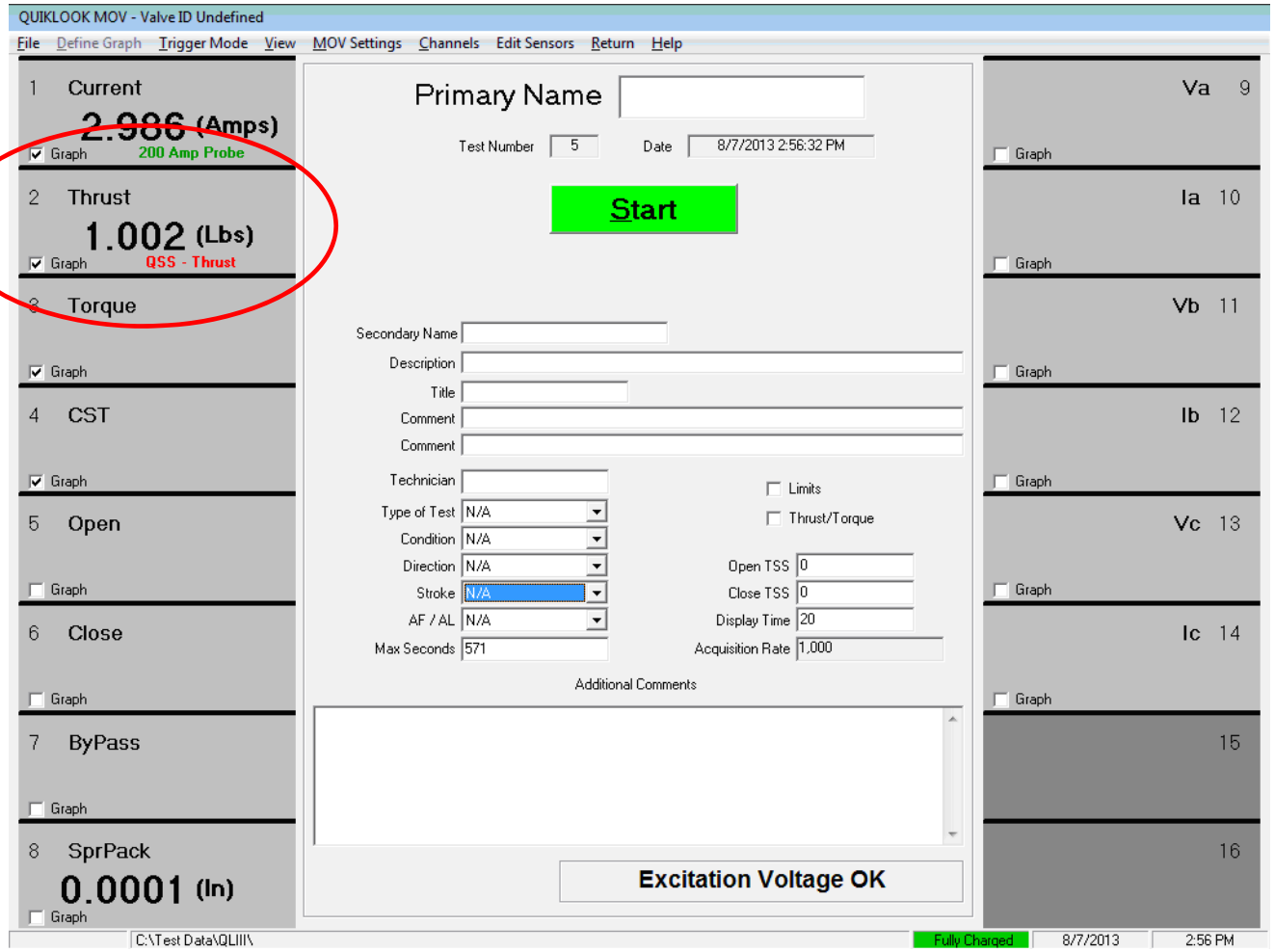


2013.309 – New Features – Acquisition Rates

- 10 Hz (AOV Default)
- 25 Hz
- 50 Hz
- 100 Hz
- 200 Hz
- 500 Hz
- 1,000 Hz (MOV Default)
- 2,000 Hz
- 5,000 Hz
- 10,000 Hz
- 20,000 Hz
- 50,000 Hz

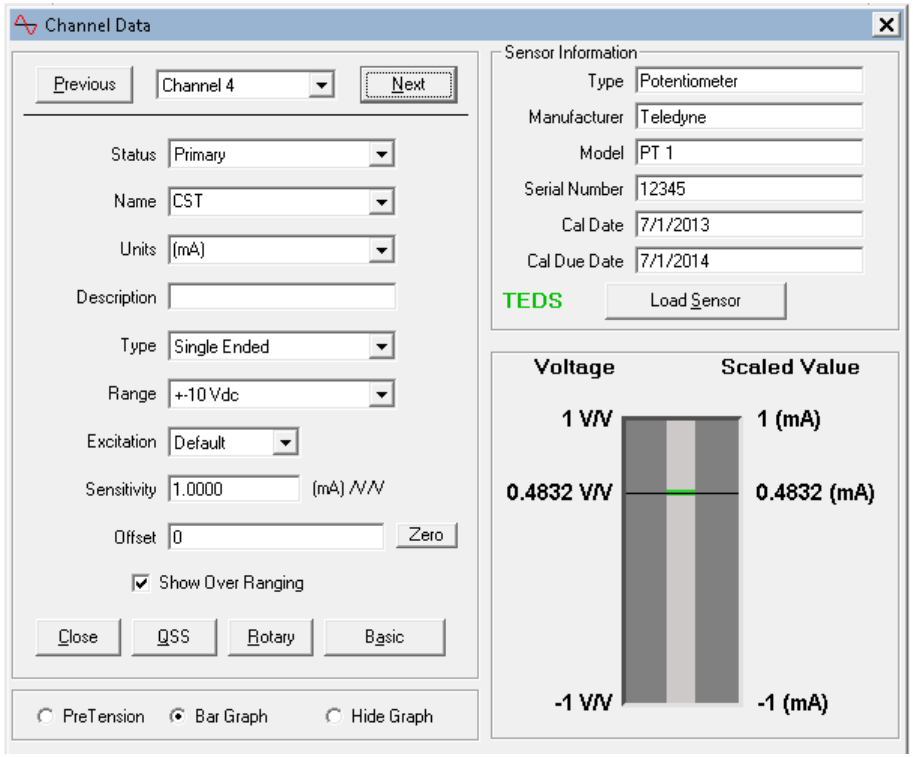


2013.309 – New Features



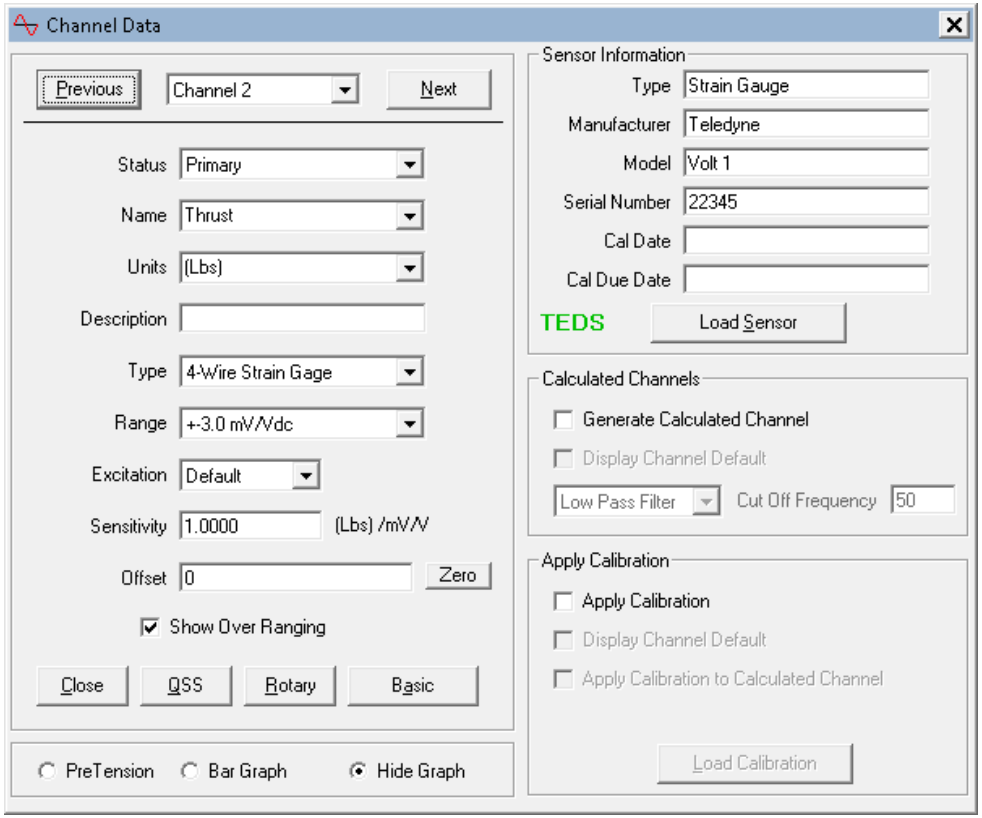
2013.309 – New Features – Channel Setup

- Same Basic Setup Form as Previous Versions
- Information fill in by TEDS:
  - Same as “Load Sensor”
  - Type
  - Range
  - Excitation
  - Sensitivity
  - Sensor Information
- Graph showing live values
- Actual Voltage on left
- Scaled values using setup on right
- Green band shown representing noise band
- (Peak to Peak values for current)
- Zero button next to offset to zero channel



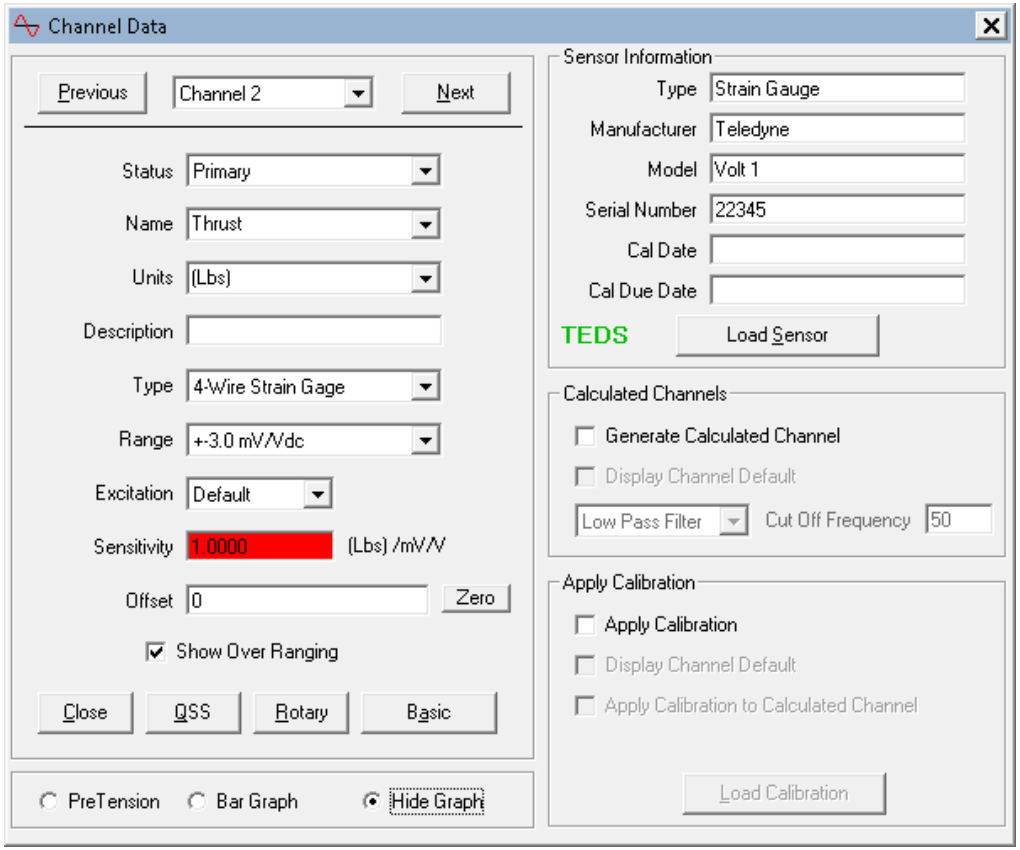
2013.309 – New Features – Channel Setup

- Hide Graph
  - Gives access to Calculated Channels (MOV only)



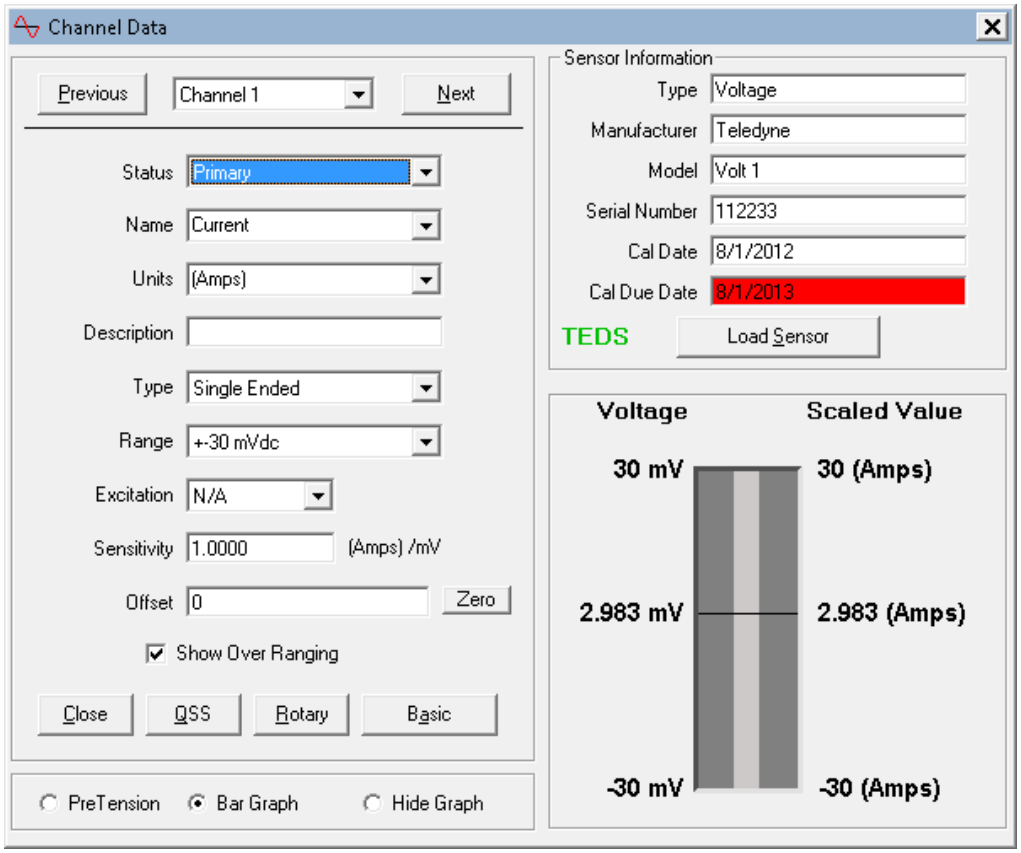
2013.309 – New Features – Channel Setup

- Red on Sensitivity Field indicates that setup information was not on the TEDS chip
- Red background will only appear on first review
- After review TEDS description on main form will turn Black



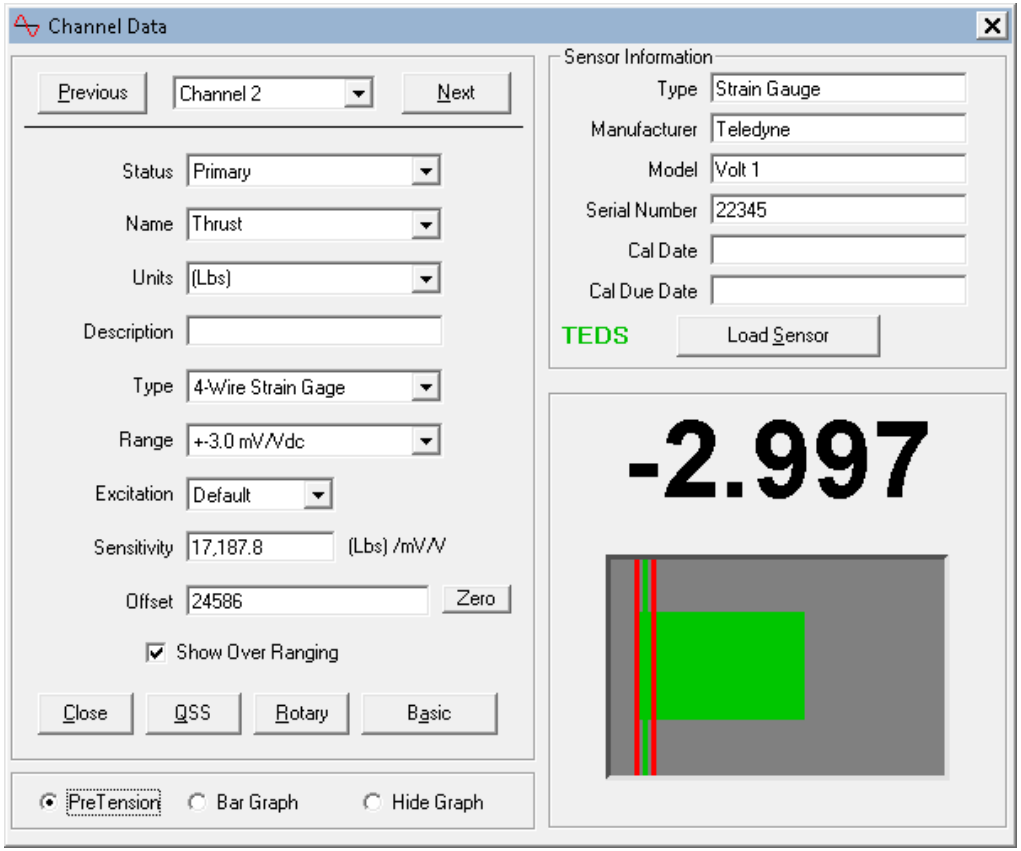
2013.309 – New Features – Channel Setup

- An out of date calibration will also cause a Red Flag
- This Red Flag will not go away and will remain on main screen

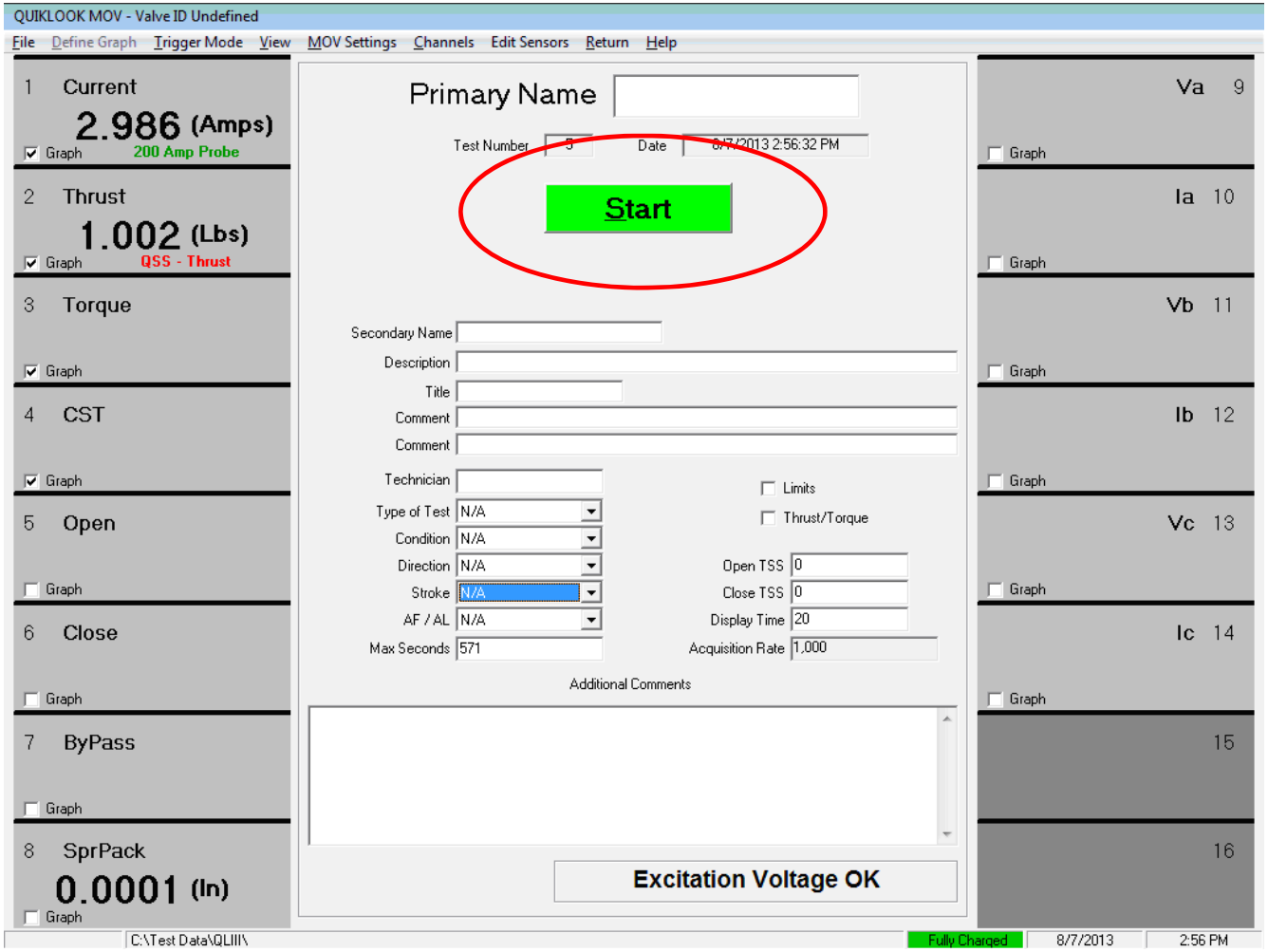


2013.309 – New Features – Channel Setup

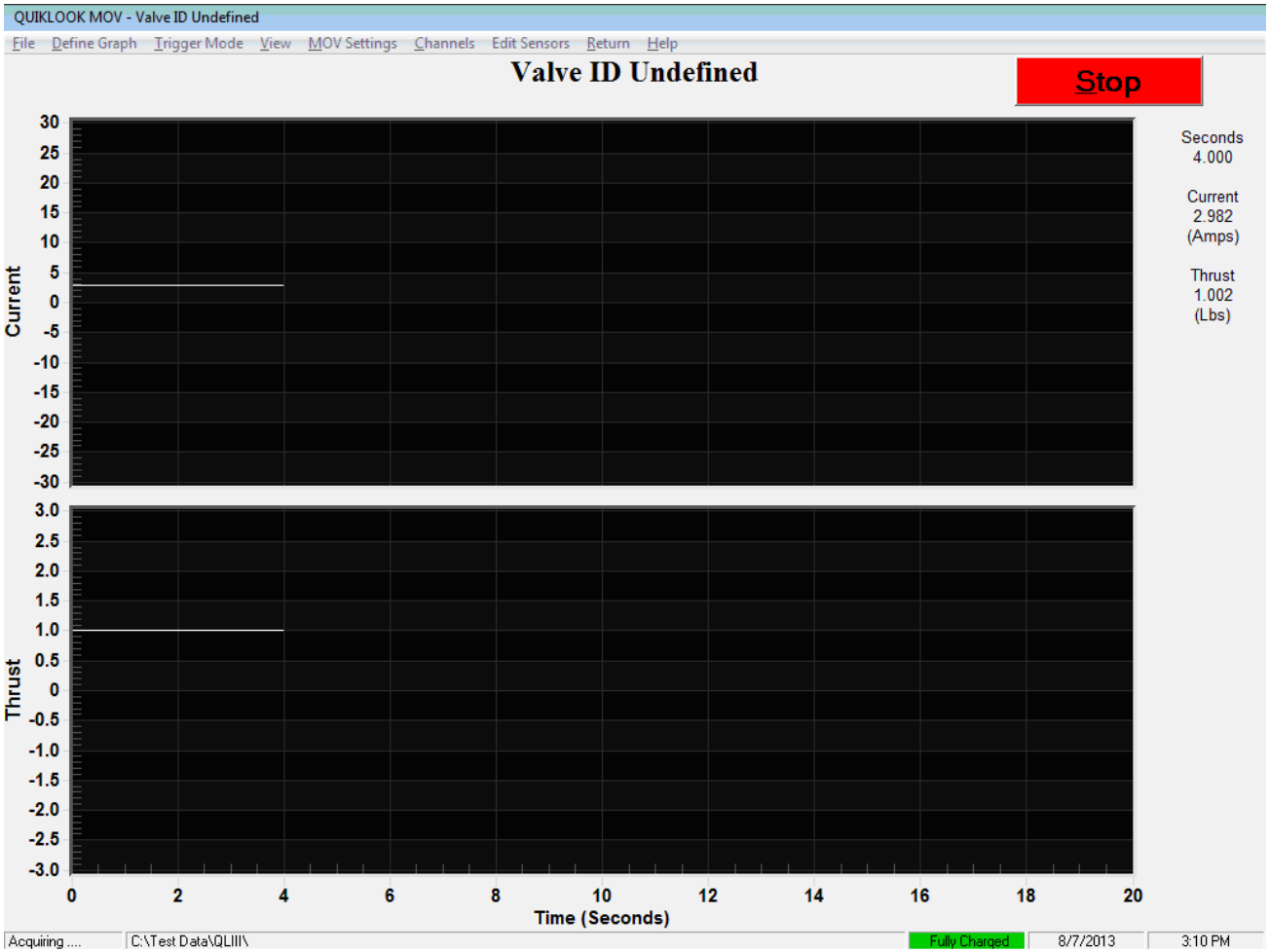
- PreTension Graph (C Clamps)
- Same as Monitor Screen in QLII
- Turns Green between -2.7 & -3.0 mV/V



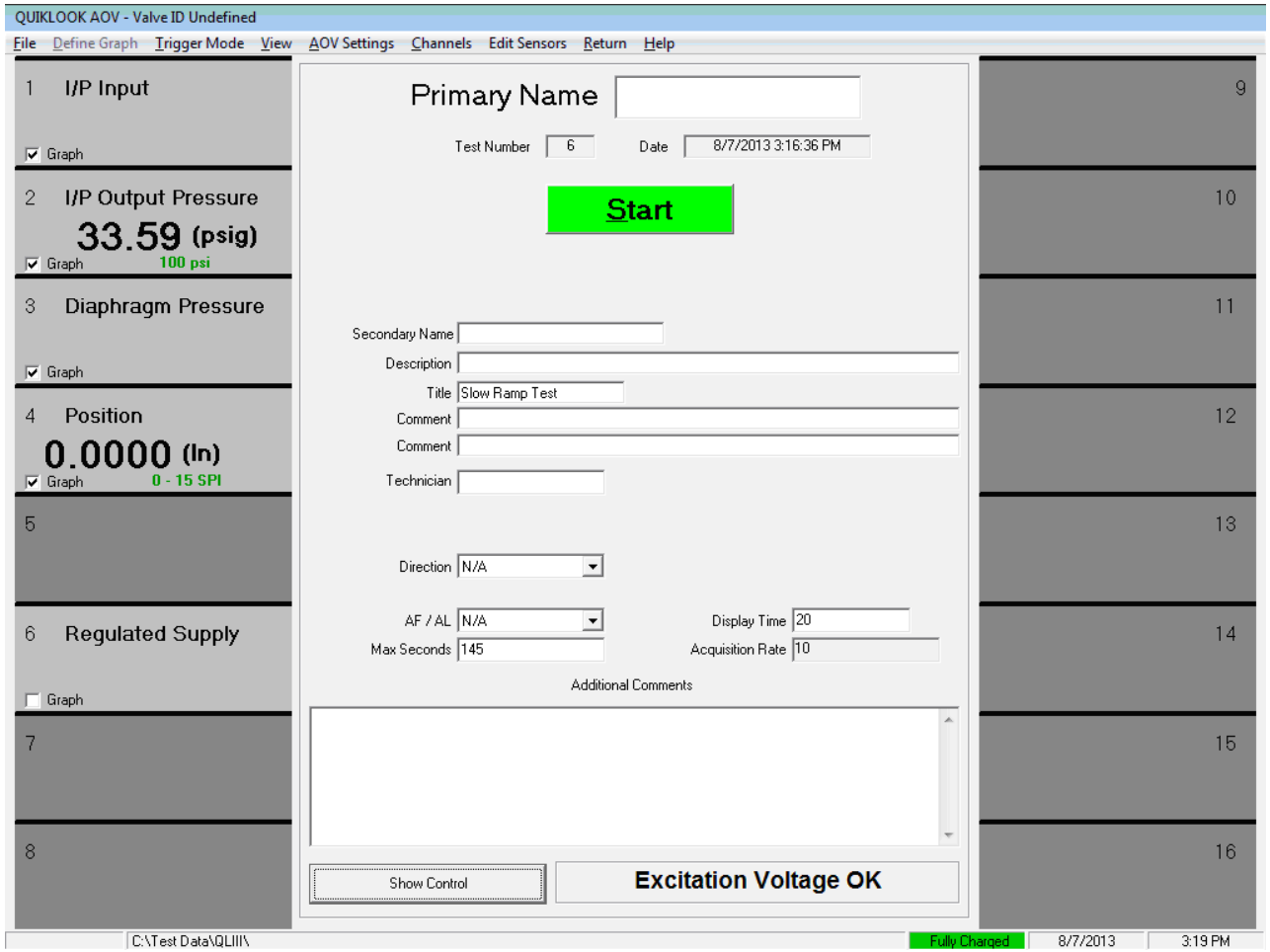
2013.309 – New Features – Acquiring Data



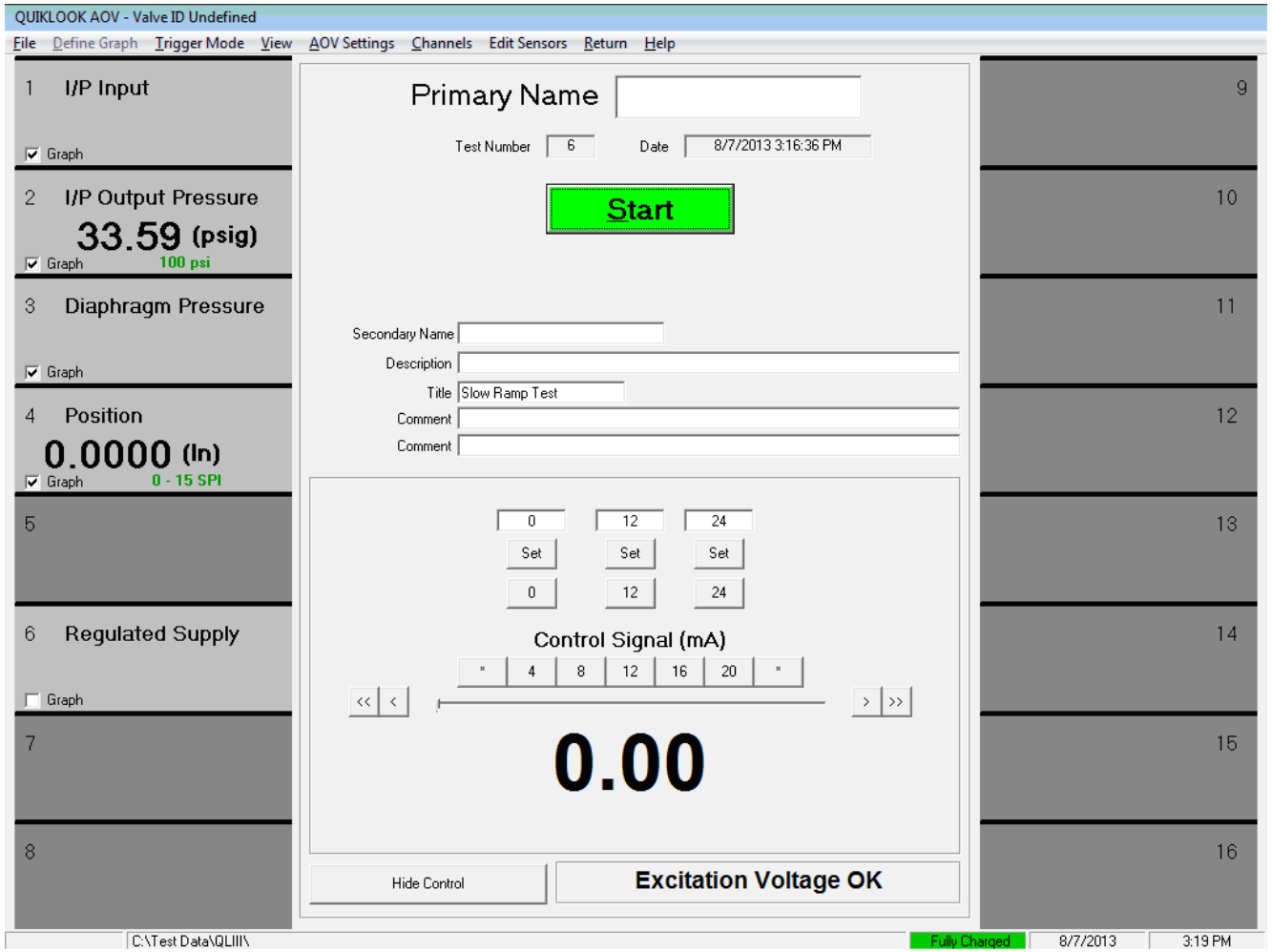
2013.309 – New Features – Acquiring Data



2013.309 – New Features - AOV



2013.309 – New Features - AOV



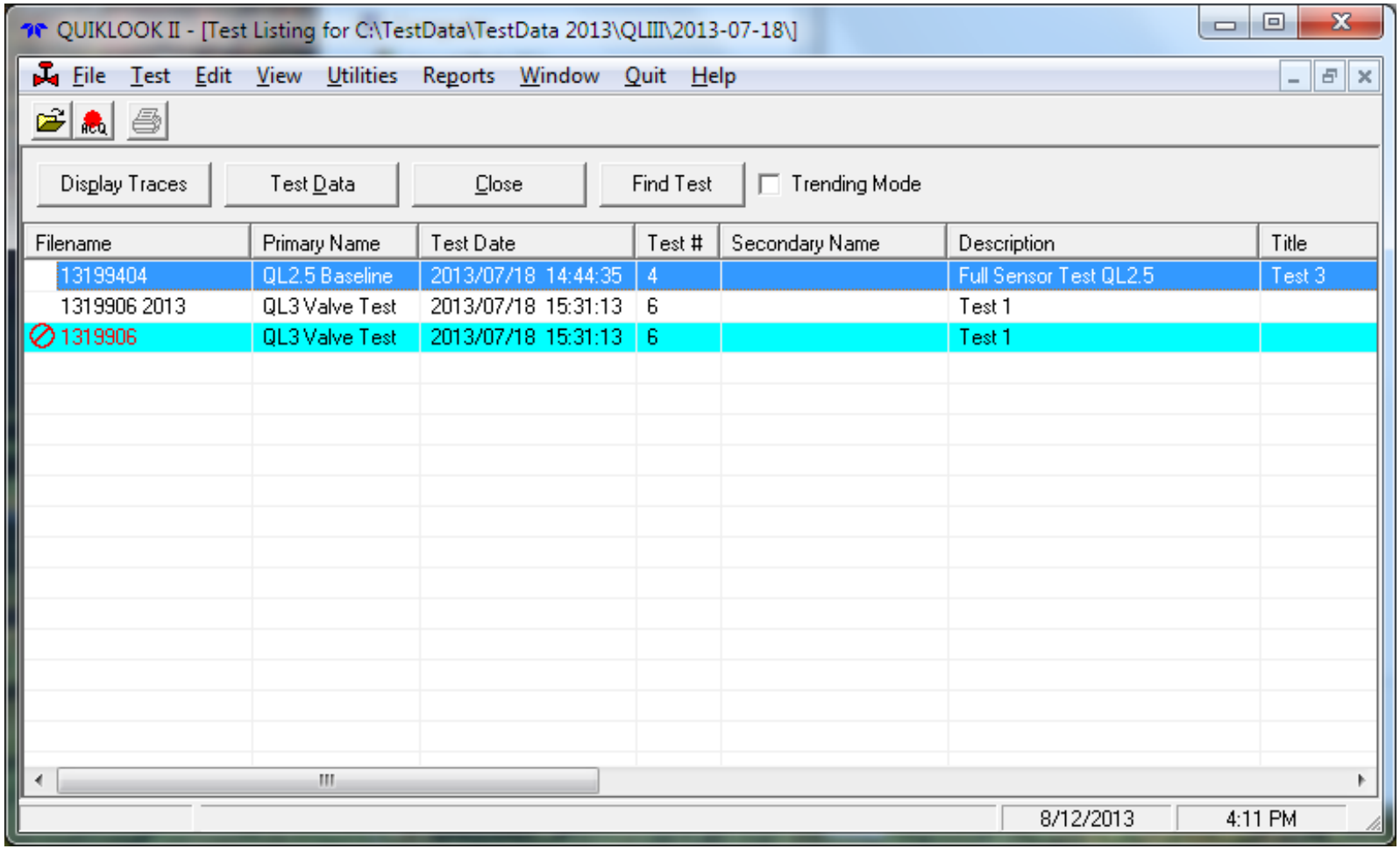
Quiklook Software

2013.309 – New Features - AOV

2013.309 – New Features – Software Compatibility

- Tests taken with Quiklook 3 will be incompatible with previous versions of Quiklook.
- Tests taken with previous versions of Quiklook will be compatible with QL 3
- The c00 file will still be maintained for compatibility with Midas
- When purchasing a Quiklook 3 all desktop installs of Quiklook should be upgraded
- Quiklook II systems do not have to be upgraded but may be

2013.309 – New Features – Software Compatibility



2014.058 – New Features

- Minor Release of Quiklook 3
  - Sometimes after a test was complete while using triggers the test would be lost
  - Default Trigger not set properly
  - Changed Sensor Logic-
    - If no sensors detected then no acquisition - No channels disabled
    - If Active Channels Without Sensors then Warning. If Yes selected then channels without sensors disabled.
    - If Trigger Channel has no sensor then message and acquisition cannot continue. No channels disabled.

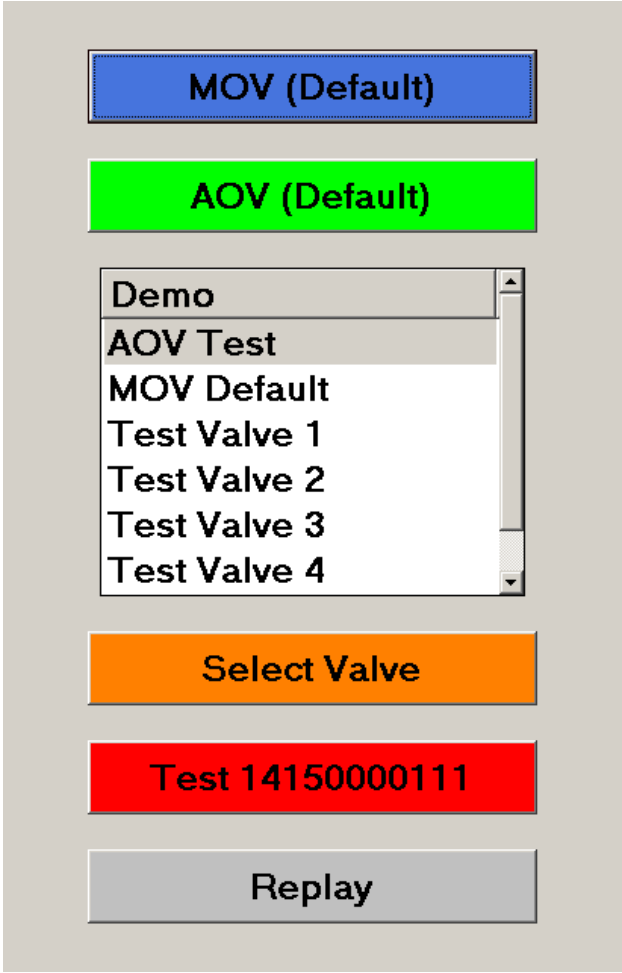
2014.197 – New Features

- QL3 – Redirector
- Save stem geometry for cof in tag
- Threads per inch in fractions
- Added Excitation method “Power Supply” to allow for the use of Piezo Electric pressure transducers
- Preference for Time Plot to be Single or Multi pane for AOV after acquisition
- Speed improvements while scanning for sensors
- QLII Acquisition

2014.197 – New Features - Redirector

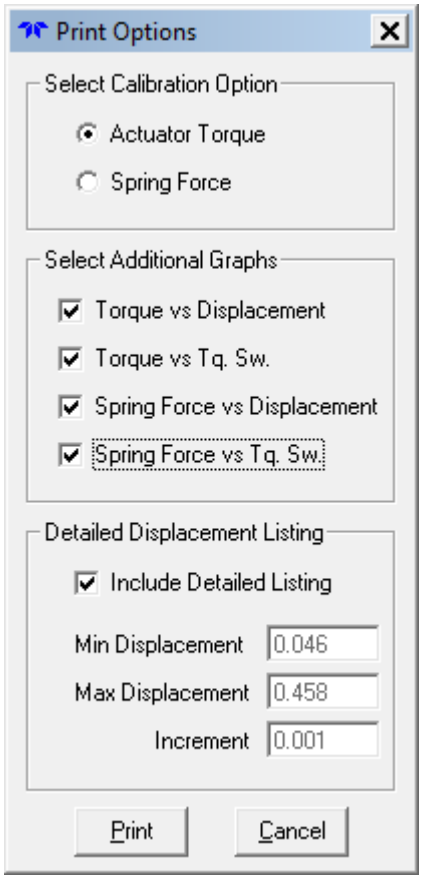
- Preference Setting would set a base directory
- Each Subdirectory Name would be a Valve ID
- Each Directory will contain one configuration file
- When Quiklook starts you will be presented with a list of Valve IDs based on directory names
- Quiklook will then go directly into the acquisition screen using the configuration for the selected valve

2014.197 – New Features - Redirector



2014 – New Features – Spring Pack Software

- Changed Report
  - Changed Table on front page
  - Added Graphs
  - Added Detailed Listing
- Measured X-Dim is now calculated
- Added option to show coefficients in Spring Force



2014 – New Features – Spring Pack Software

CERTIFICATE OF CALIBRATION

Test: 14198X05 Cal Date: 07/17/2014 13:19:52

Valve ID: 3PSW-6 Spring Pack: 0901-211 SMB Type: 2

Work Order #: S. P. Serial #: Measured X-Dim (in): 0.64

CALIBRATION STANDARD

Manufacturer	Model No.	Serial No.	Calibration Date	Calibration Due
Teledyne	160025V2.5	16451	3/15/2014	3/15/2015

Generic / Limitorque Curve			Calibrated / Test Results	
Tq Sw Setting	Nominal Displacement (in)	Nominal Torque (ft-lbs)	Actuator Torque (ft-lbs)	Spring Force (lbs)
1.00	0.046	188.0	196.6	649.8
1.25	0.080	244.4	254.7	841.7
1.50	0.115	300.8	312.8	1033.6
1.75	0.149	357.3	370.8	1225.4
2.00	0.183	413.7	428.9	1417.3
2.25	0.218	470.1	486.9	1609.2
2.50	0.252	526.5	545.0	1801.0
2.75	0.286	582.9	603.0	1992.9
3.00	0.321	639.3	661.1	2184.8
3.25	0.355	695.8	719.2	2376.6
3.50	0.389	752.2	777.2	2568.5
3.75	0.424	808.6	835.3	2760.4
4.00	0.458	865.0	893.3	2952.2

2014 – New Features – Spring Pack Software

CERTIFICATE OF CALIBRATION

Test: 14198X05 Cal Date: 07/17/2014 13:19:52

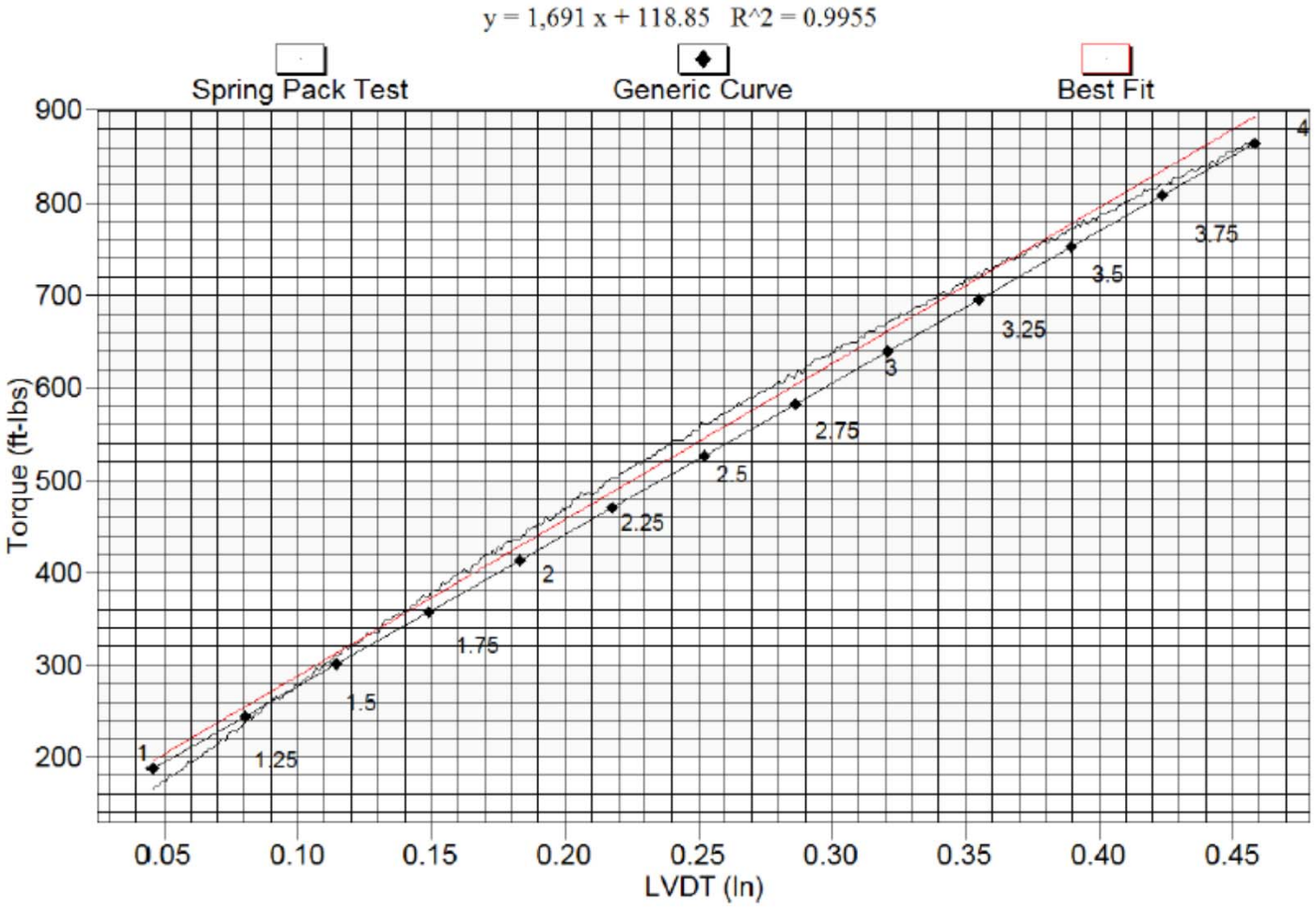
Valve ID: 3PSW-6 Spring Pack: 0901-211 SMB Type: 2

Work Order #: S. P. Serial #: Measured X-Dim (in): 0.64

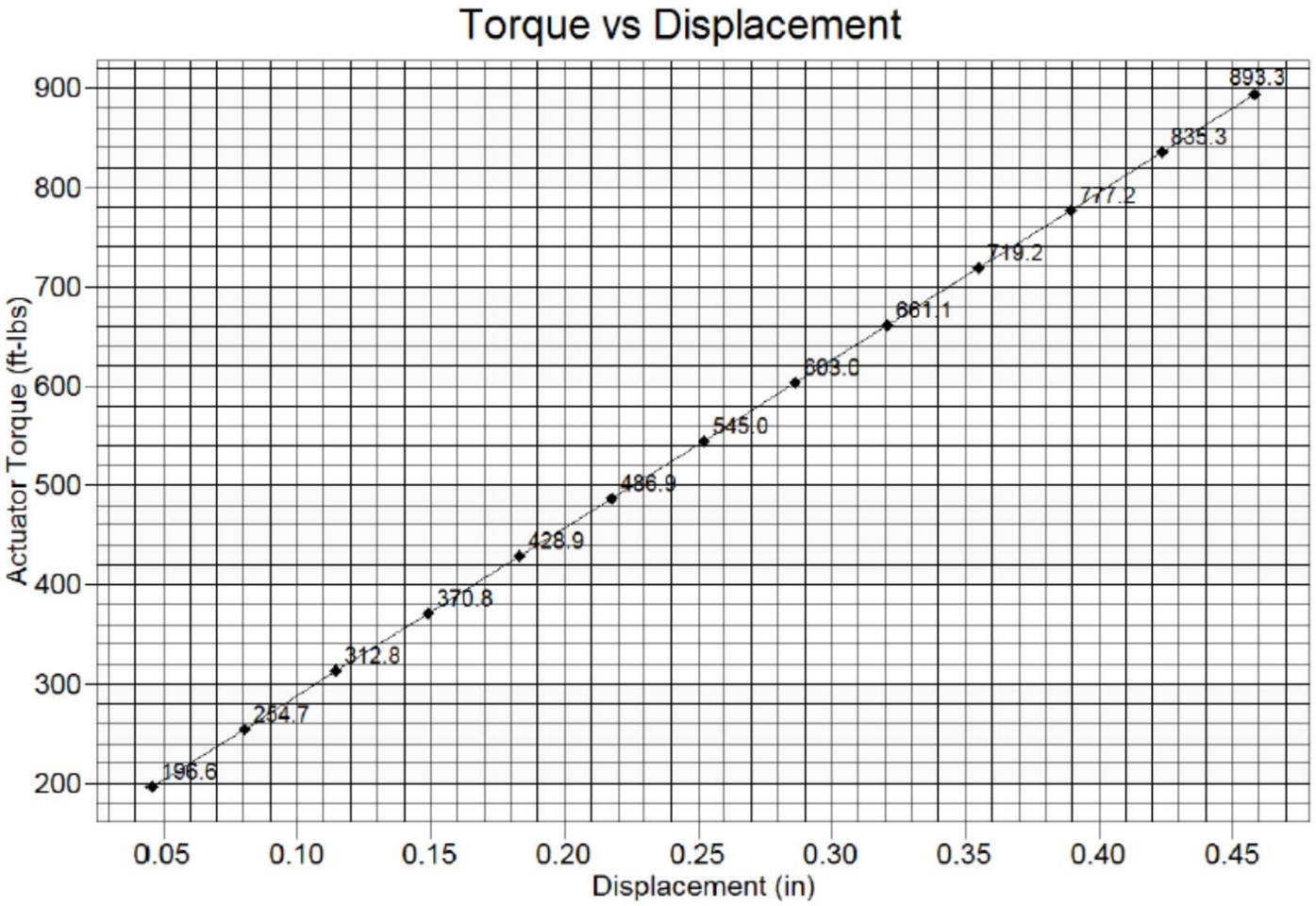
Detailed Calibrated Results

Nominal Displacement (in)	Actuator Torque (ft-lbs)	Spring Force (lbs)
0.046	196.6	649.8
0.047	198.3	655.4
0.048	200.0	661.0
0.049	201.7	666.6
0.050	203.4	672.2
0.051	205.1	677.8
0.052	206.8	683.3
0.053	208.5	688.9
0.054	210.2	694.5
0.055	211.9	700.1
0.056	213.5	705.7
0.057	215.2	711.3
0.058	216.9	716.9
0.059	218.6	722.5
0.060	220.3	728.1
0.061	222.0	733.6
0.062	223.7	739.2
0.063	225.4	744.8
0.064	227.1	750.4
0.065	228.8	756.0
0.066	230.5	761.6
0.067	232.1	767.2
0.068	233.8	772.8
0.069	235.5	778.3
0.070	237.2	783.9

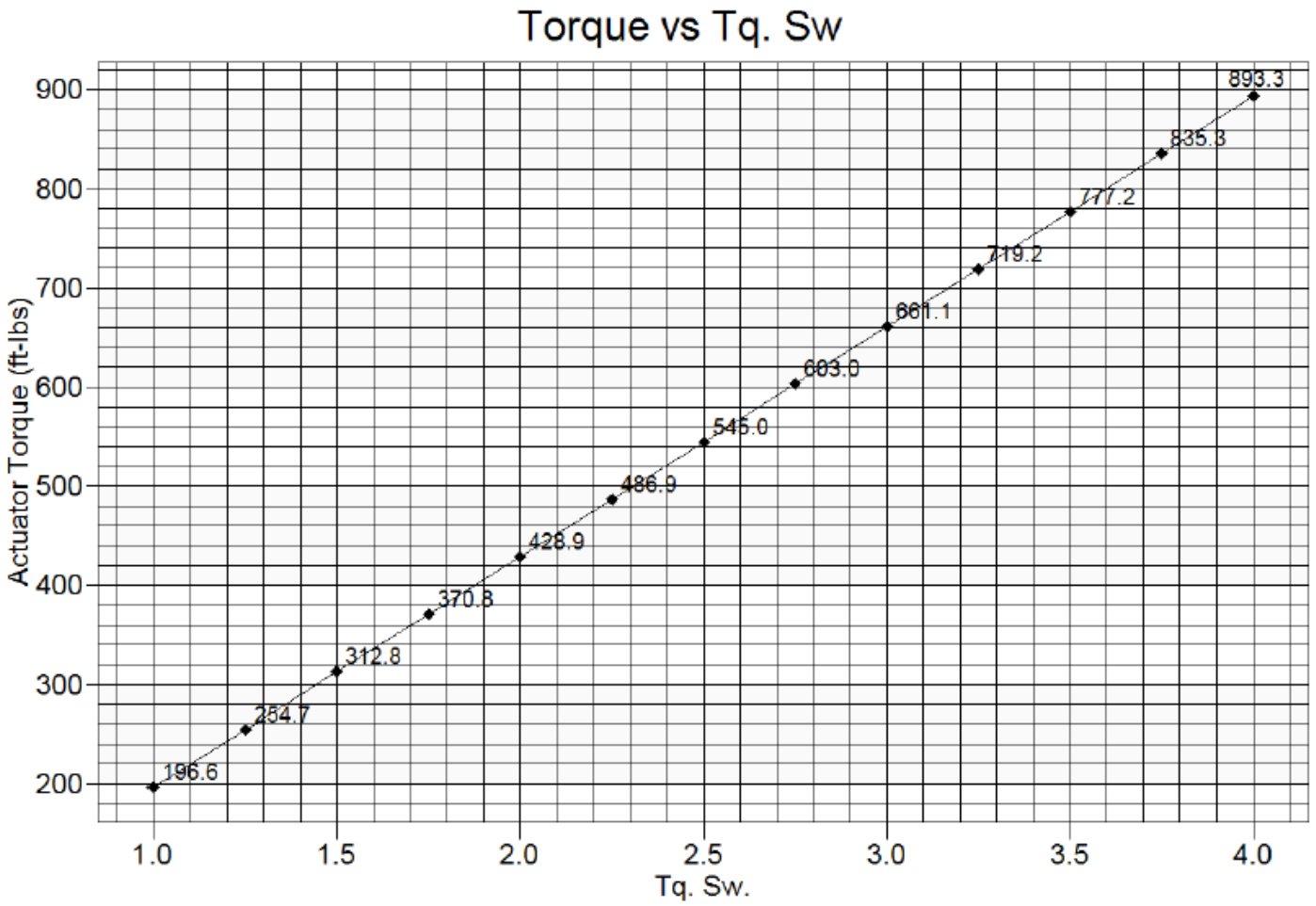
2014 – New Features – Spring Pack Software



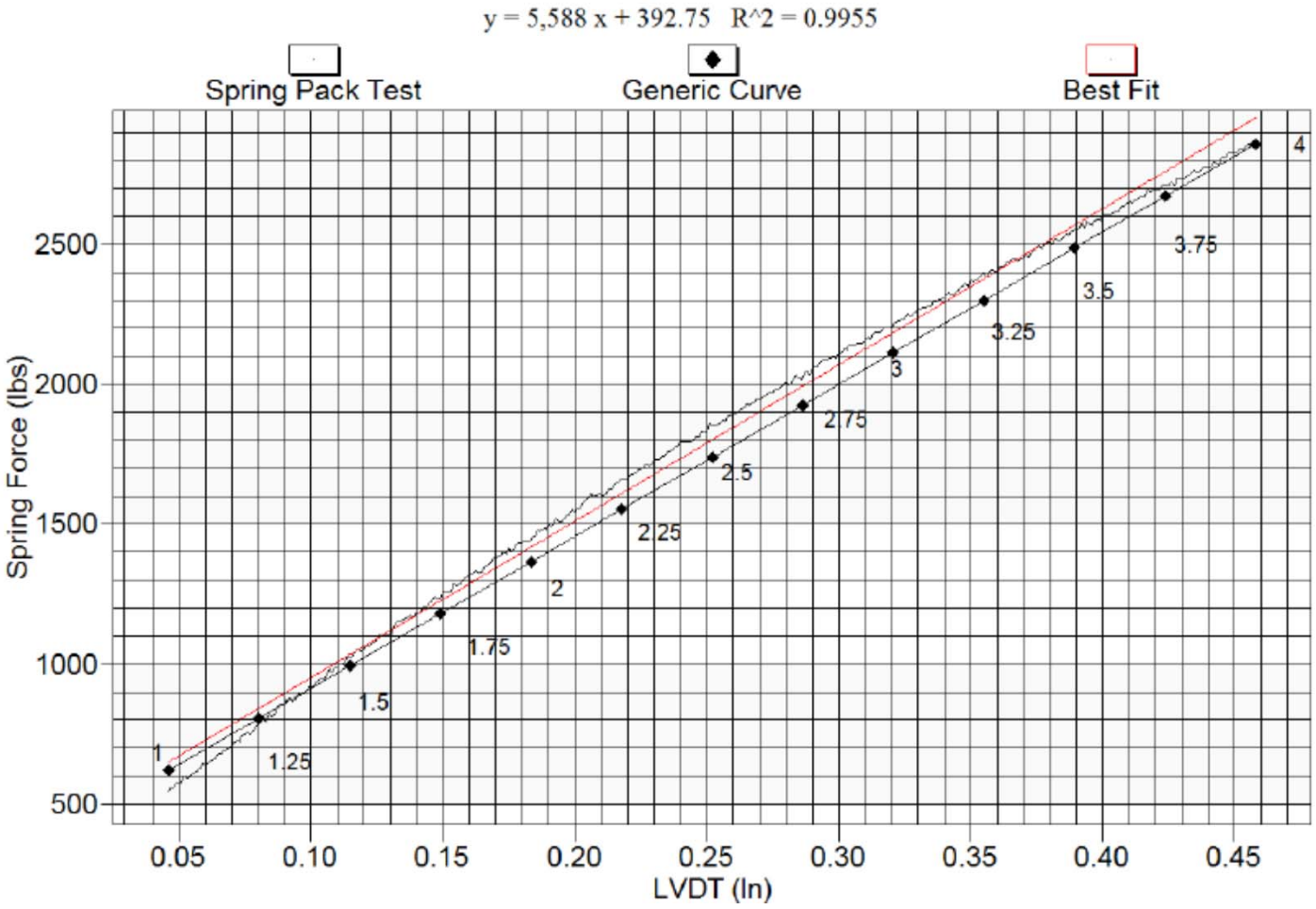
2014 – New Features – Spring Pack Software



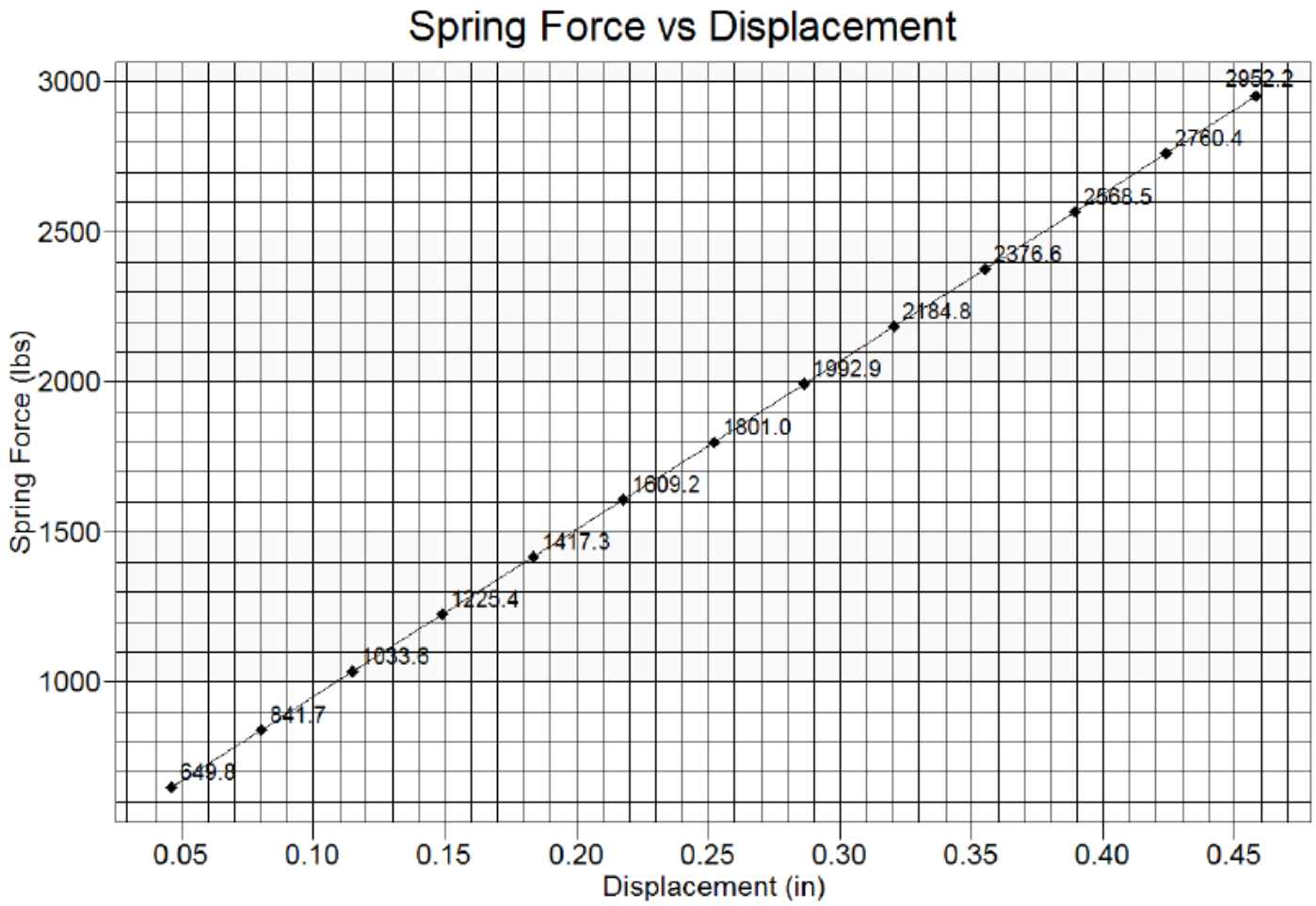
2014 – New Features – Spring Pack Software



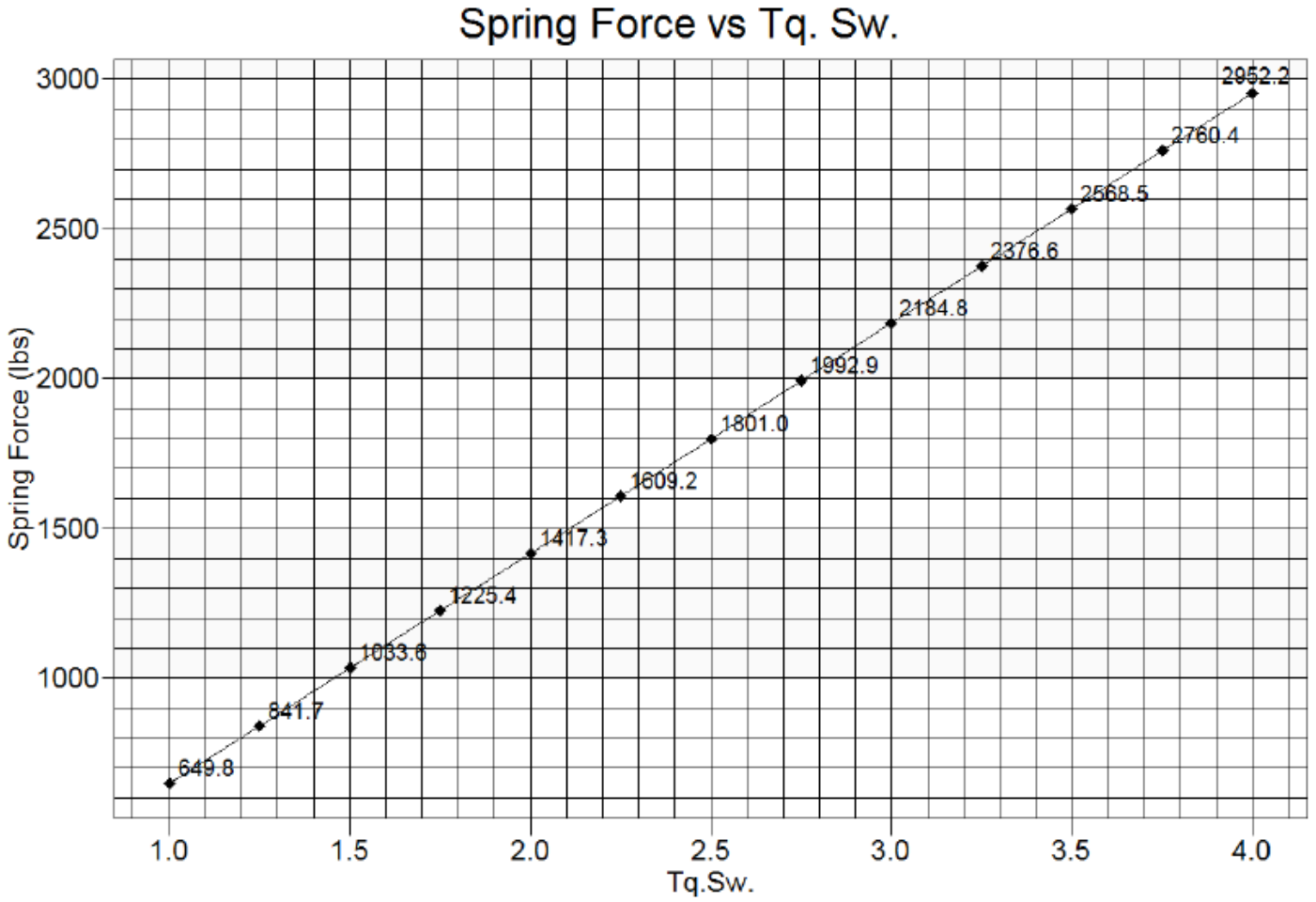
2014 – New Features – Spring Pack Software



2014 – New Features – Spring Pack Software



2014 – New Features – Spring Pack Software



2014 – New Features – Calibration Software

- Export to Excel
- Added additional information to Report
  - Added Quiklook Version
  - Added Analog Out board
- Custom Report Footer
- Added additional Fluke Standards to Approved List

2015 – New Features

- C-Clamp pretension indication on main screen
- Cursor Options – Hide Cursor
- Delta Y
- Overlay tests with different acquisition rates
- Overlay of Torque or Thrust on Mechanical properties Plot
- Encoder Channels
- Refine the QUIKLOOK 3 testing platform to take the best from both Quiklook and FlowScanner in the AOV testing domain. This update will build on features that both Quiklook and FlowScanner users like.

Any Questions?

THANK YOU

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