



ACCELERATING INNOVATION



ACCELERATING
INNOVATION

**[2-1846] Harnessing the Power of Digital
Valve Controllers: Introducing Valve
Reliability Suite™ Solutions**

Disclaimer

The information and/or opinions expressed in this presentation are those of the authors and do not necessarily represent official policy or permission of Emerson or Emerson Exchange.

Important Reminders

Photography and audio/video recording is not permitted in any session, or in the exhibition areas, without press credentials or written permission from Emerson or Emerson Exchange.

Inquiries should be directed to:
EmersonExchange@Emerson.com



JAIME ALVARADO MILLAN

Software Product Manager / Emerson



Nathan Krasnovsky

FIELDVUE™ Product Manager / Emerson



Naman Tahan

Dir. Engineering & Operations / Emerson



Introducing Valve Reliability Suite™ Solutions

Jaime Alvarado Millan

Valve Reliability Suite™ Solutions

Jaime Alvarado Millan

Plantweb Insight™ Valve Health Application

Nathan Krasnovsky

ValveLink™ Software

Naman Tahan

Valve Condition Monitoring

Valve Reliability Suite™

A Proven Response to Operational Reliability Challenges

Planned turnarounds come fast...
Do you feel prepared?

> Operating Expenses are increasing

Are you at risk of experiencing unexpected outages due to a critical valve failure?

> Sustainability is becoming increasingly more important



Valve Reliability Suite™ Benefits

- **Tailored Solutions** to compliment your valve reliability program
- **Strengthen your Workforce** with new software and expert resources
- **Ease your Transition** from reactive to predictive maintenance
- **Actions** and recommendations to quickly resolve issues related to valve maintenance or performance before they impact other equipment or the process

Valve Reliability Suite™



Valve Health Application

Access a **fleet-wide dashboard** with **near real time, read only** valve data. Automatically **prioritizes** targets and **recommends** next actions.

High-level analytics done
by software



ValveLink™ Software

Comprehensive **diagnostic** program for control valve troubleshooting, **tuning** and **calibration**. Aids in **root-cause analysis** of **individual valves**.

Deep-dive analytics done
by user



Valve Condition Monitoring

Remote, online monitoring of **critical valve applications** with **diagnostic analysis**, tag-specific guidance and **periodic reports** from *the valve experts*.

Deep-dive analytics done
by Emerson experts

Plantweb Insight™ Valve Health Application

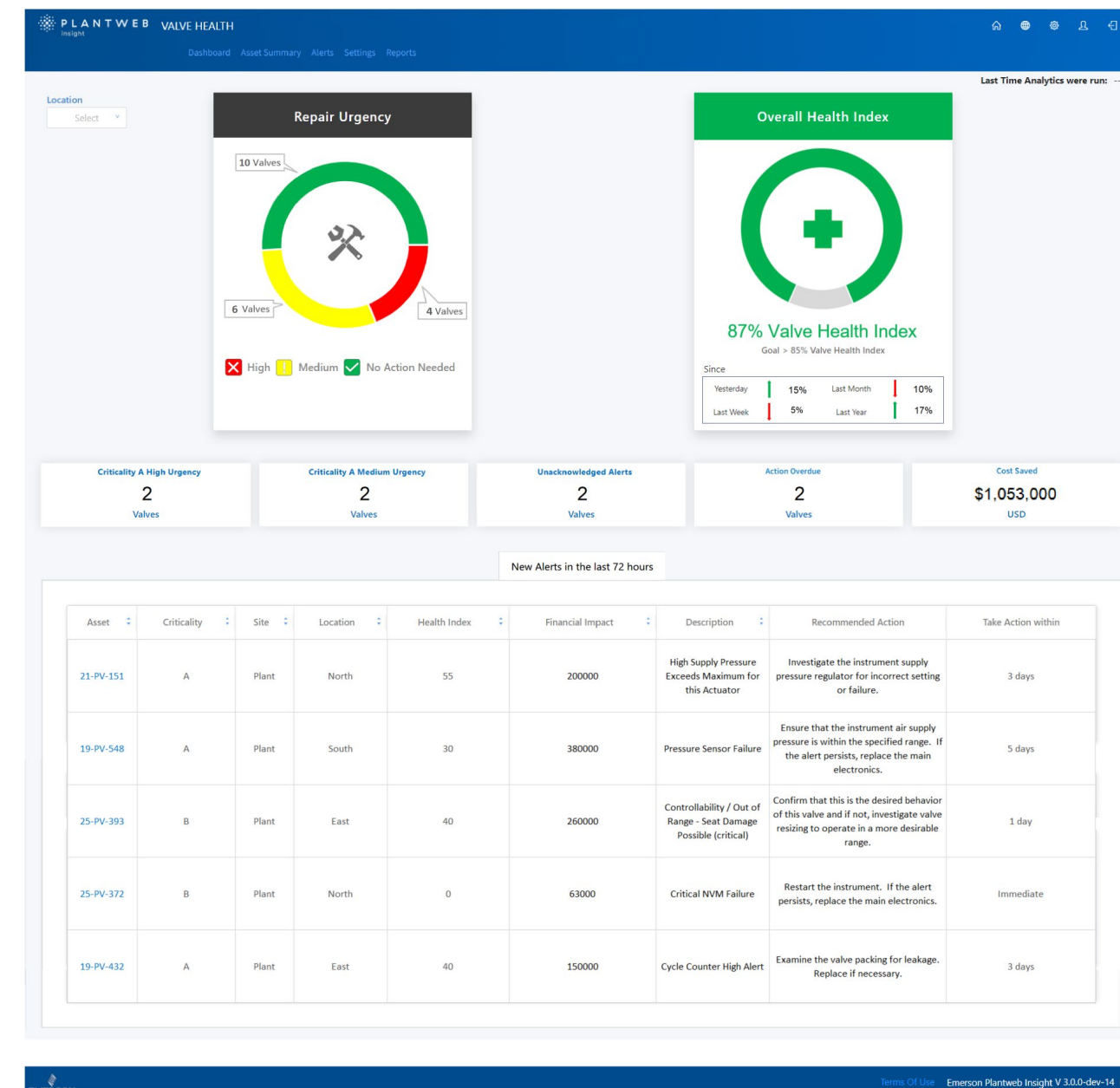
High-level analytics done by software



VALVE HEALTH

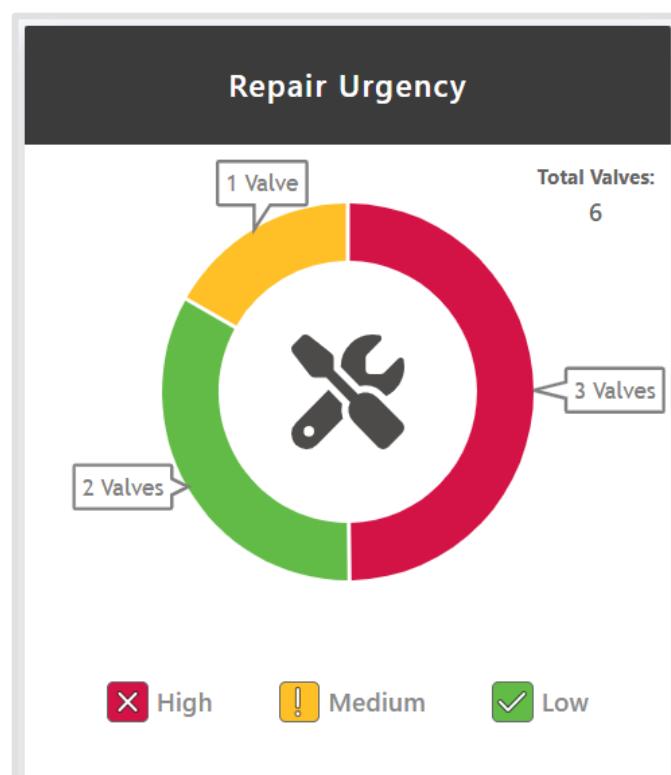
What is the Valve Health App?

- **All valves** monitored, all the time.
 - I can clearly see if my entire fleet of valves is healthy, or not. My walk arounds have been reduced, my people are safer, and I have confidence that I'll catch issues before they become critical.
- Maintenance **planning**...simplified.
 - I can quickly identify the problem valves that need to be pulled. Maintenance time is optimized around only the valves that need it.
- Valve issues are **interpreted**.
 - I'm not a valve diagnostic expert...but I can easily see what I need to do to fix them. Troubleshooting time is minimized and parts don't need to be expedited.

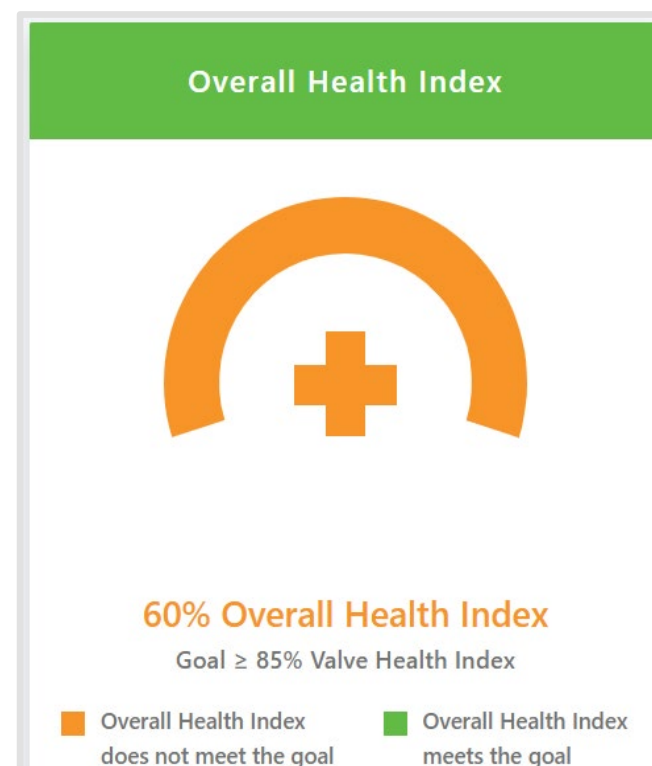


Main Functionalities of the Plantweb Insight™ Valve Health App

REPAIR URGENCY STATUS



HEALTH INDEX



EXPLANATIONS AND RECOMMENDATIONS

Recommended Action	Take Action Within
Check that the instrument supply pressure is above the minimum operating pressure needed to fully stroke the valve. Check for tubing leaks. Check for plugging of the pneumatic passages.	1 day(s) to take action

Main Functionalities of the Plantweb Insight™ Valve Health App

ON-DEMAND REPORTING

Valve Health Analysis Report
Unallocated, Unit 1, Unit 2, Unit 3
From: 12/04/2024
To: 3/05/2025

Urgency	Status	Valves	Valves with all Alerts Acknowledged	Valves with at least one Unacknowledged Alert
High Urgency	Low Urgency	4	0	4
Medium Urgency	Low Urgency	5	0	5
High Urgency	Medium Urgency	5	0	5
Medium Urgency	High Urgency	2	1	1
Low Urgency	Medium Urgency	3	1	2
Low Urgency	High Urgency	1	0	1

Valve Health - Version - 1.4.0.9

PROACTIVE EMAIL NOTIFICATIONS

PLANTWEB VALVE HEALTH

Back to Settings / Email Configuration / Email Configuration

NEW EMAIL CONFIGURATION

Location: Filter by location (Unallocated, Site 1, Location 1, Process Cell 1, Unit 1, Unit 2)

Frequency: 15 MINUTES

Criticality: A, B, C, D

Valve Repair Urgency: High, Medium

Name: _____

To: _____

Subject: Alert Summary for valve - (AssetTag)

Body:

Asset Details: Tag (AssetTag), Criticality (AssetCriticality), Repair Urgency (AssetUrgency), Health Index (AssetHealthIndex/%), Locations (AssetLocation)

Alert Details: Description (AlertDescription), Start Time (AlertStartTime), EndTime (AlertEndTime), Recommended Action (AlertRecommendedAction)

Custom Message: _____

Cancel Save

Valve Health - Version - 1.4.0.9

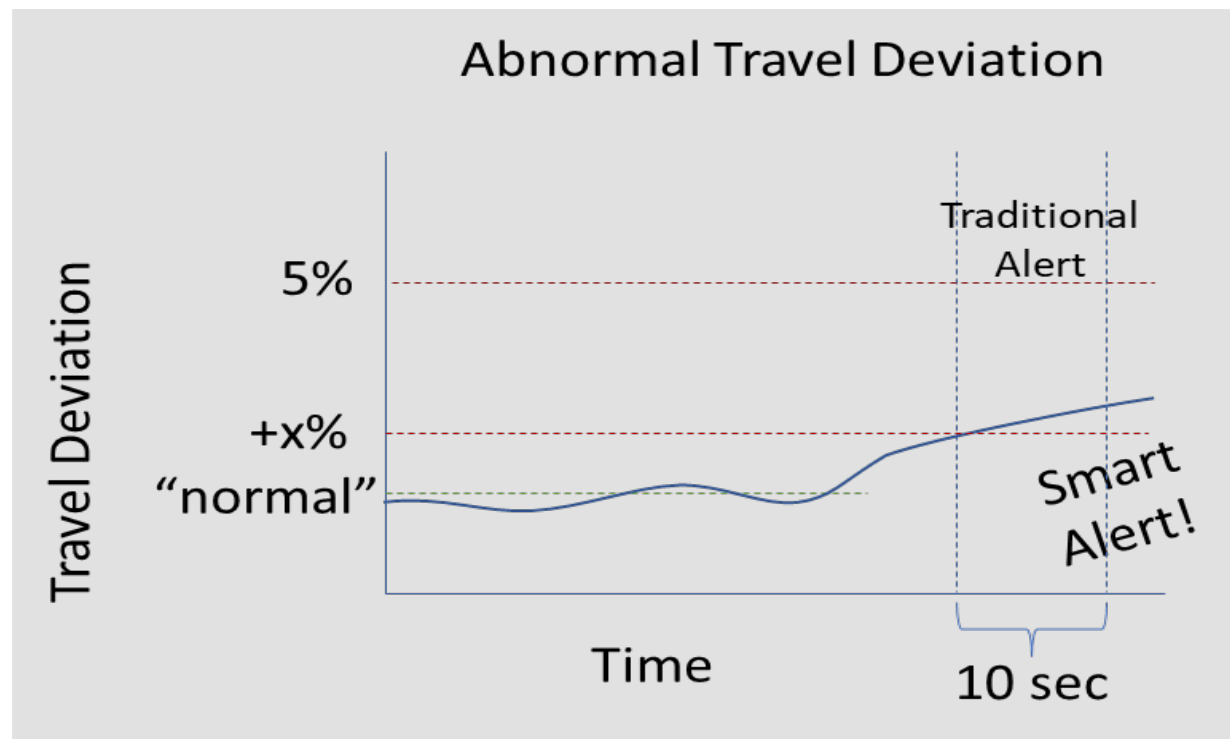
DEVICE ALERTS



Main Functionalities of the Plantweb Insight™ Valve Health App

IN-APP ANALYTICS

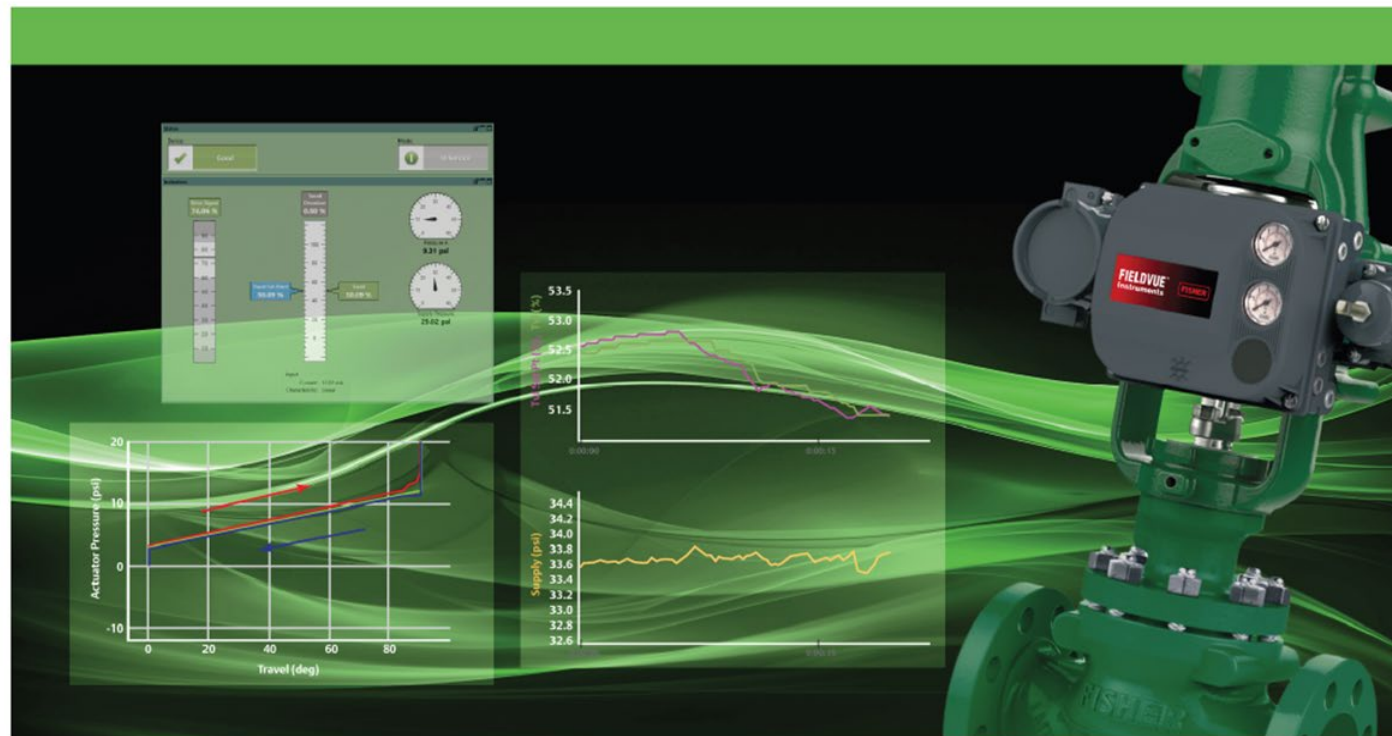
Calibration Shift,
Seat Obstruction,
Plugging,
Seat Erosion,
and more ...



Fisher™ ValveLink™ Software

Deep-dive analytics done by user

What is ValveLink?



Configuration

Calibration

Diagnostics

ValveLink™ Solo

ValveLink™ SNAP-ON™

ValveLink™ DTM

ValveLink™ PLUG-IN for PRM®

ValveLink™ FDM

ValveLink™ Mobile

ValveLink Software Scope

Emerson Solution

DELTA V™
OVATION™
AMS



3rd Party Host Integration

Honeywell
YOKOGAWA 
ABB
invenSys
SUPCON

Range of Operating Systems

Windows 10
Windows 11
Windows Server

Communication Protocols

HART
COMMUNICATION FOUNDATION

Fieldbus
Foundation

FIELDVUE Devices



FIELDVUE Instrument Levels

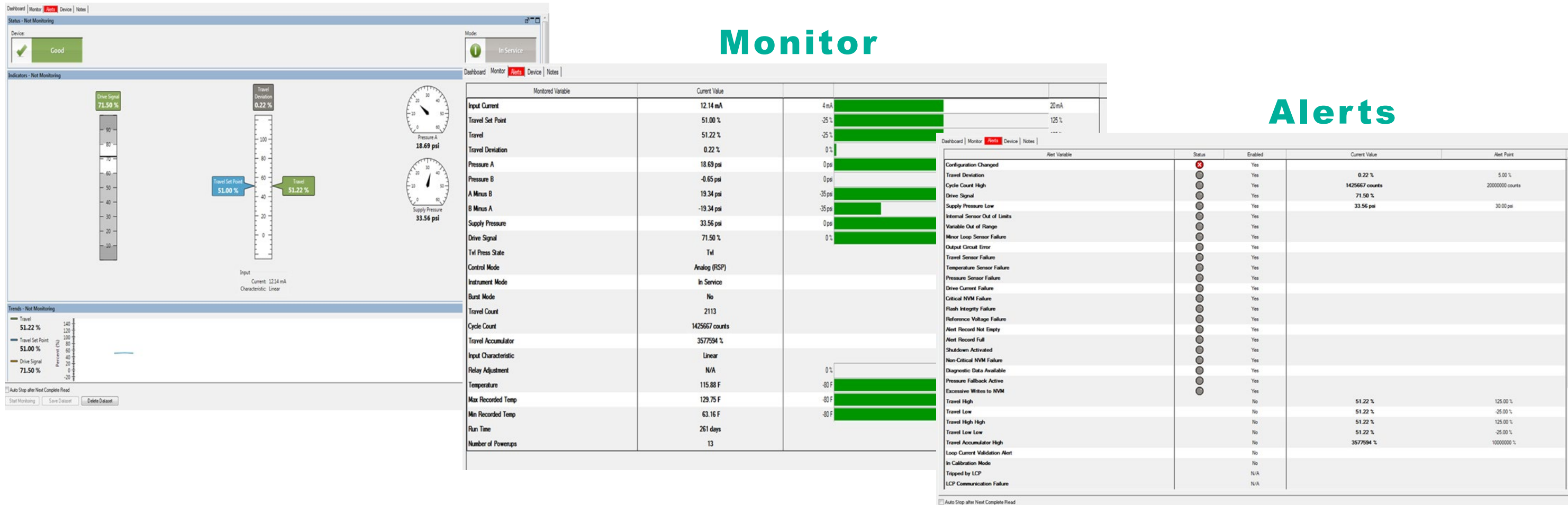
	HC	FD	AD	PD	SIS	PST	ODV
Protocol	HART	FF	HART/FF	HART/FF	HART	FF	HART
Auto Calibration	X	X	X	X	X	X	X
Stabilize/Optimize	X	X	X	X	X	X	X
Alerts	X	X	X	X	X	X	X
Status Monitor	X	X	X	X	X	X	X
Stroke Valve	X	X	X	X	X	X	X
Trending	X	X	X	X	X	X	X
Valve Signature			X	X	X	X	X
Dynamic Error Band			X	X	X	X	X
Drive Signal			X	X	X	X	X
Step Response			X	X	X	X	X
Valve Friction				X	X	X	X
Triggered Profile				X	X	X	X
PD One Button				X			X
Partial Stroke Test					X	X	X

Status Monitor

Dashboard

Monitor

Alerts



At a glance, determine what the status of the valve assembly is.

Online Diagnostics – PD One Button

Supply Pressure
Relay Adjustment
Travel Deviation
I/P and Relay Integrity
Air Mass Flow

NE107 Alert
Red Yellow Green Light
Indicates issue detected and severity

Problem Description

Possible Cause

Recommended Action

The screenshot shows a software interface for online diagnostics. At the top, there are tabs for 'Inputs', 'Configuration', 'Graph Options', 'Graph', 'Event Log', 'Data Points', and 'Notes'. Below the tabs is a table with columns for 'Type', 'Time On (hr:mi...)', 'Time Off (hr:mi...)', and 'Event'. The first row is highlighted in blue and shows an 'Error' type with a red circle icon, a time on of 00:01:13, and the event 'Low supply pressure'. Below the table is a 'Description' field containing the text 'Supply pressure is below nominal specified supply pressure.' Below the description is a table with two columns: 'Possible Cause' and 'Recommended Action'. The first row shows 'Supply pressure low' as the cause and a detailed action plan as the recommendation. At the bottom of the interface are buttons for 'Stop Diagnostic', 'Save Dataset', 'Delete Dataset', 'Close Tag', and 'Help'.

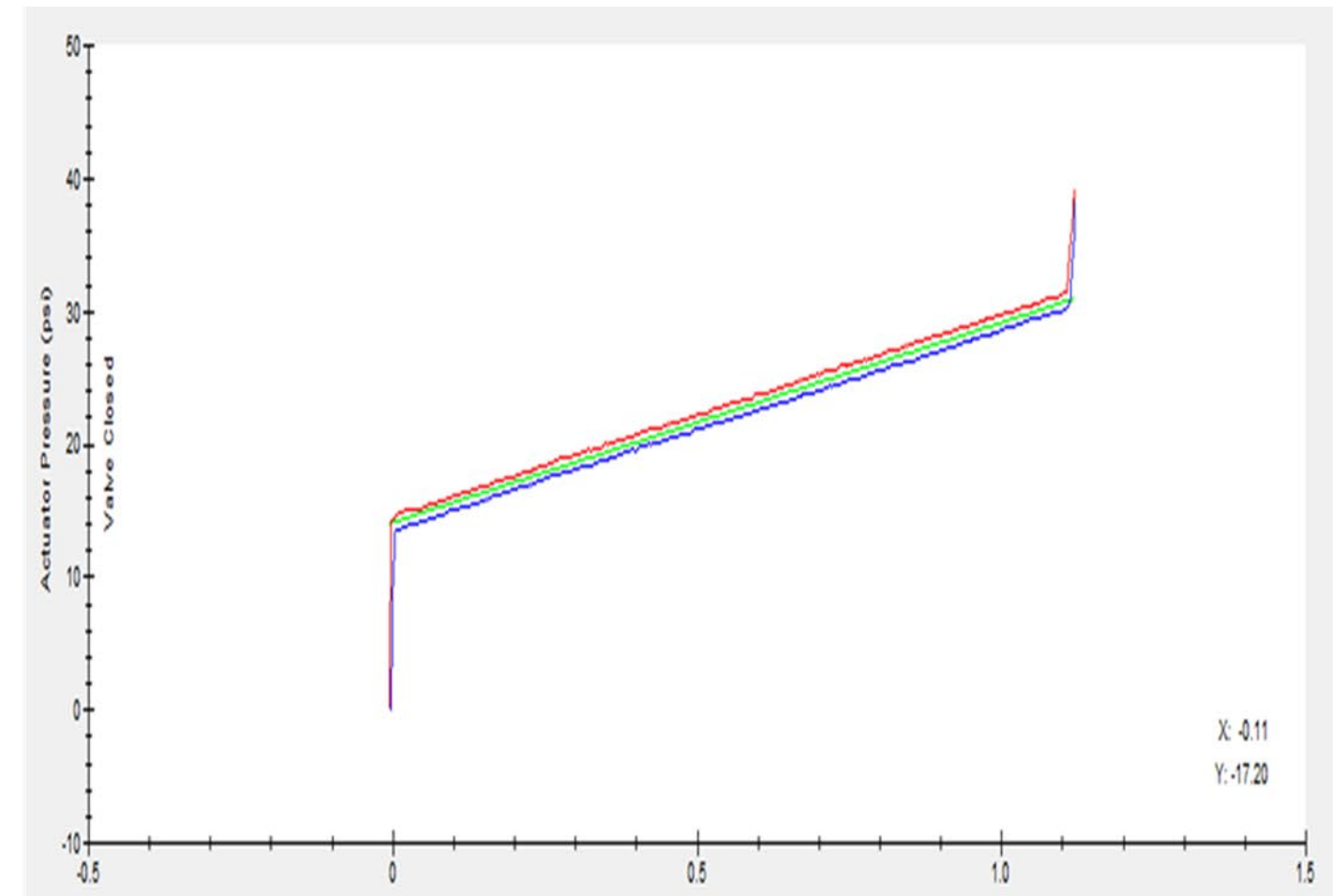
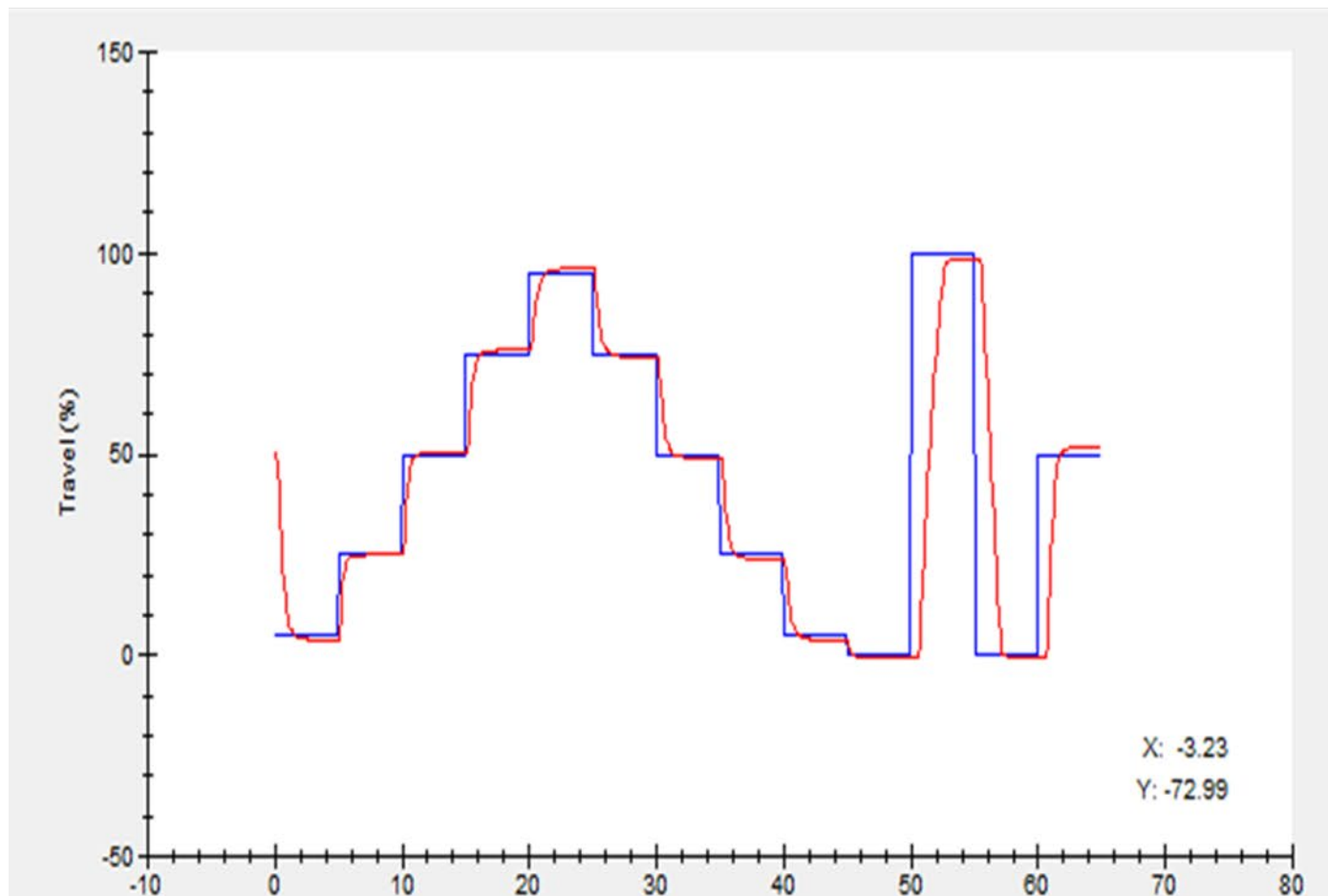
Type	Time On (hr:mi...)	Time Off (hr:mi...)	Event
Error	00:01:13		Low supply pressure
Information	00:00:00		Data collection started
Information	00:00:00		No active alarms detected

Description
Supply pressure is below nominal specified supply pressure.

Possible Cause	Recommended Action
Supply pressure low	Increase supply pressure. Supply pressure should be 5 psig above the upper bench set. For piston actuators, supply pressure should be at least 40 psig. Check the nominal supply pressure and bench set entries in the ValveLink specification sheet. (From the main menu, select Spec Sheet Valve and Actuator Actuator). Check the calibration of the supply pressure sensor.

Without disturbing the process, monitor the operation of the FIELDVUE positioner and detect issues before they become problems.

Offline Diagnostics – Step Response / Total Scan



Offline tests to move the valve and determine performance, friction, etc.

Effective Use of FIELDVUE™ DVC6200 Instrument Diagnostics

Effective Use of FIELDVUE™ DVC6200 Instrument Diagnostics HART® Communication Protocol

Fisher™ FIELDVUE instruments offer state-of-the-art diagnostic tools providing a window into the health of valve assembly assets. However, crafting a maintenance strategy to take advantage of these tools can be a daunting task. These basic steps will provide immediate value and build momentum toward broader utilization.



Commissioning/Diagnostic Tools

ValveLink™ Mobile with AMS
Trex Device Communicator
or 475 Field Communicator



AMS ValveLink SNAP-ON™
Software



ValveLink Solo &
ValveLink DTM Software



Commissioning/Diagnostic Tests by Instrument Level

HART Communicating (HC) Tier Diagnostic Tests

- Collect a detailed setup and save dataset
- Perform a status monitor while in service and save the data set
 - Save data sets for 4mA, 12mA, and 20mA

Advance (AD) Tier Diagnostics

- Run HC Tier Tests
- Run a Total Scan
- Run a Valve Step Response Tests
 - 3 Set Point Step Test*
 - 0, 100, 0
 - Ramp Time = 0
 - Collection Time = 10 seconds
 - Performance Step Test*
 - Predefined 25 step test
 - Ramp Time = 0
 - Collection Time = 10 seconds



*Preconfigured tests (shown above) are available in ValveLink Software version 13.1 or greater

Performance Diagnostics (PD) Tier

- Run HC and AD Tier Tests
- Read Triggered Data (if Data Available Alert is active) and save dataset
- Run a One Button Sweep Diagnostic Test
- Run a Valve Friction Test and save dataset

Commissioning

Commissioning Steps

- Follow the mounting and installation guidelines per the Fisher FIELDVUE DVC6200 Quick Start Guide
- Run the setup wizard
- Run the Auto Travel Calibration
- Configure the instrument, per the table to the right

Setup Parameter	Factory Default Settings	Recommended Initial Settings
HART Tag	As Specified On Order	Fill in Plant Information
Message	Blank	Fill in Plant Information
Descriptor	Blank	Fill in Plant Information
Date	Factory Calibration Date	Set to Current Date
Valve Serial Number	Blank	Fill in Valve Serial Number
HC Tier / AD Tier / PD Tier		
Travel Deviation Alert Enabled	Yes	Yes
Travel Deviation Alert Point	5%	5%
Travel Deviation Time	9.99 seconds	5 seconds
Supply Pressure Alert Enable	Yes	Yes
Supply Pressure Alert Point	.345 Bar (5 psi)	Single Acting: 0.20 Bar (3 psi) above upper bench set Double Acting: 0.68 Bar (10 psi) below nominal
Drive Signal Alert Enable	Yes	Yes
Diagnostic Data Avail Enable**	No	Yes
Alert Record Enable	No	Yes
Alert Record Not Empty Enable*	No	Yes
Alert Record Full Enable*	No	Yes
Cycle Counter	0	0
Travel Accumulator	0	0
Online Diagnostics – PD One Button		
PD Tier Only		
Trigger Profile Enable**	Disabled	Enable
Trigger Profile Variables**	Travel / Travel Setpoint	Travel / Travel Setpoint / Drive Signal / Supply Pressure
Triggered Profile Events**	None	Travel Deviation
Trigger Record Length**	60 Sec	60 Sec

*Requires a work practice to regularly check/clear the alert

**Functionality with Performance Diagnostics Tier

FISHER™

Emerson Automation Solutions
Flow Controls
Marshalltown, Iowa, 50158 USA
Sorocaba, 18087 Brazil
Cernay, 68700 France
Dubai, United Arab Emirates
Singapore 128461 Singapore

- Fisher.com
- Facebook.com/FisherValves
- LinkedIn.com/groups/Fisher-3941826
- Twitter.com/FisherValves

To learn more, visit
Emerson.com/FisherDVC6200

© 2017 Fisher Controls International LLC. All rights reserved. Fisher, FIELDVUE, ValveLink, and AMS ValveLink SNAP-ON are marks owned by one of the companies in the Emerson Automation Solutions business unit of Emerson Electric Co. Emerson, and the Emerson logo are trademarks and service marks of Emerson Electric Co. All other marks are the property of their respective owners. The contents of this publication are presented for informational purposes only, and while every effort has been made to ensure their accuracy, nothing herein is to be construed as a warranty or guarantee, express or implied, regarding the products or services described herein or their use, performance, merchantability or fitness for a particular purpose. Individual results may vary. All sales are governed by our terms and conditions, which are available upon request. We reserve the right to modify or improve the design or specifications of our products at any time without notice. In responsibility for proper selection, use and maintenance of any product or service remains solely with the purchaser and end user. 01527090012 / M0101 / Mar17

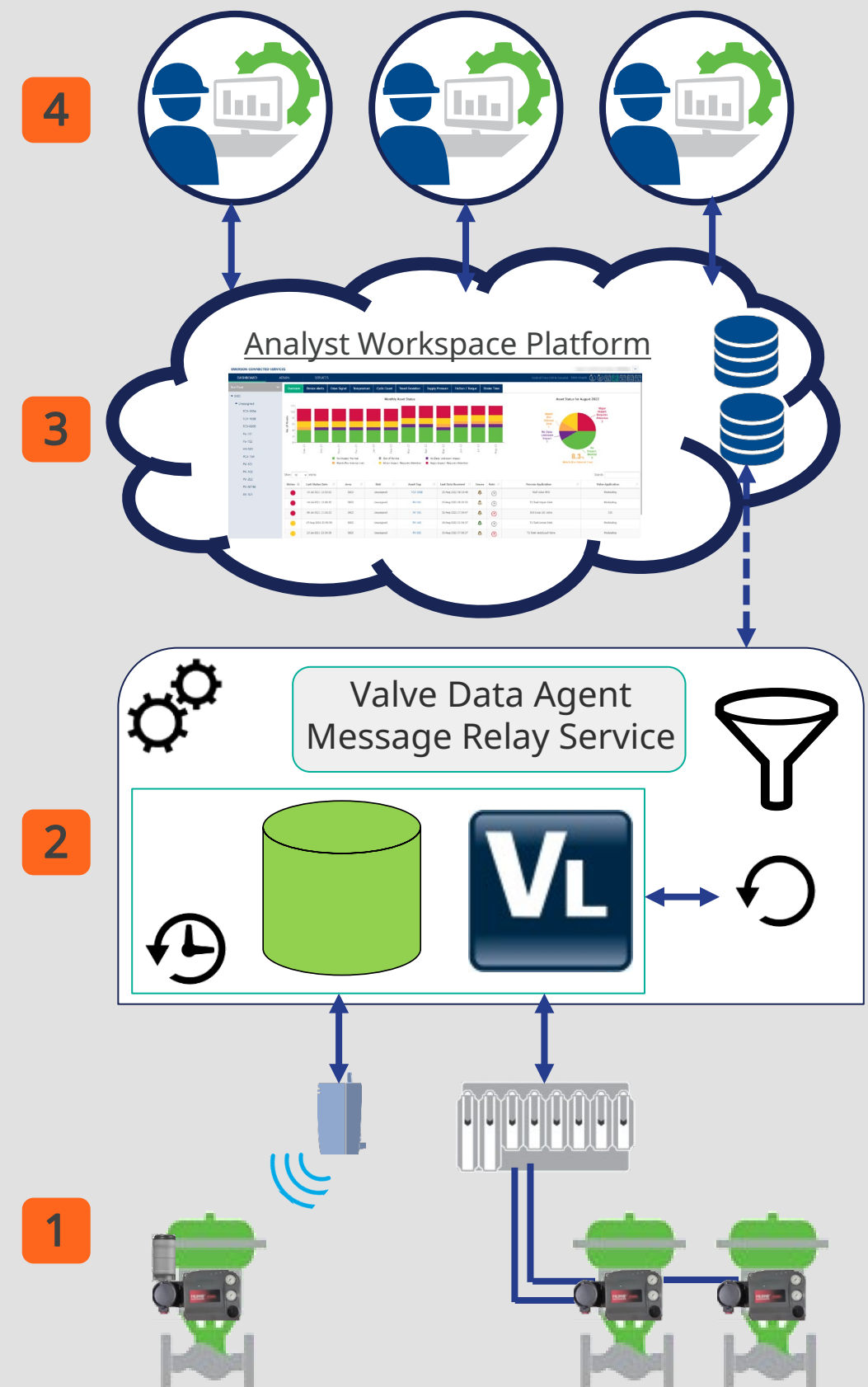
Valve Condition Monitoring

Deep-dive analytics done by Emerson experts

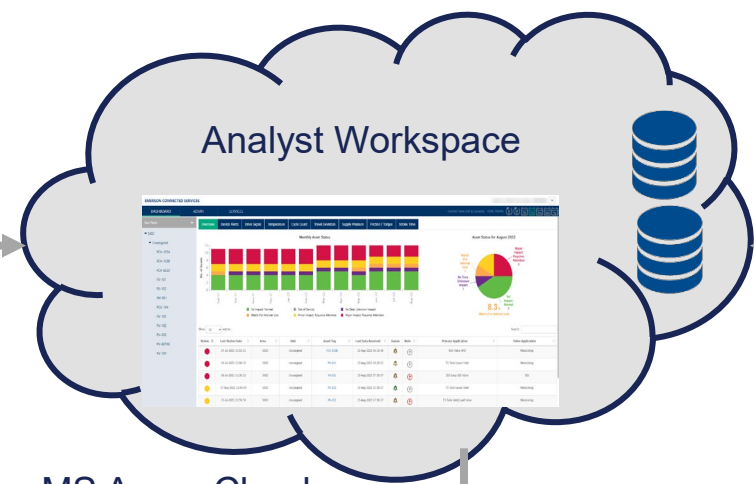
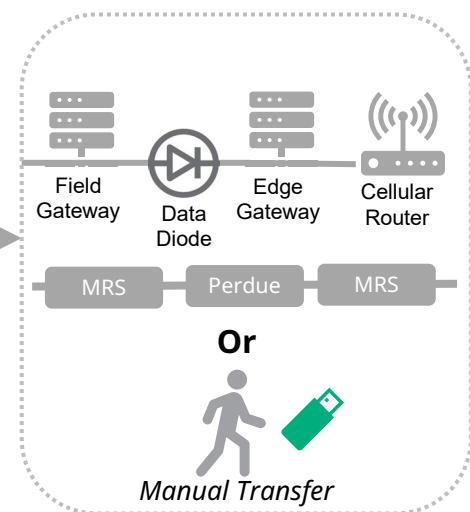
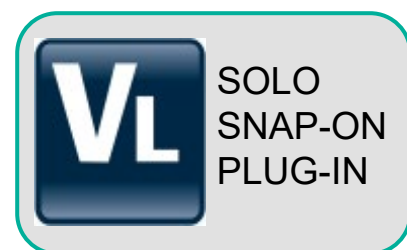
What is Valve Condition Monitoring ?

A **service offering** that provides customers access to Emerson Valve **Experts** for reviewing, **analyzing**, and recommending actions based on control valve data.

- 1 Customer's Host System: **FIELDVUE™** positioners connected via HART or FF protocols.
- 2 Valve Data Agent: Generates and records **valve data**, filters, transforms, and sends it to the Azure cloud application.
- 3 **Analyst Workspace** Platform: Receives and processes data from On-Premise.
- 4 Emerson Valve **Experts**: Review data, **report** findings, and **discuss** recommendations with customer.



Valve Condition Monitoring Service



MS Azure Cloud (internal)

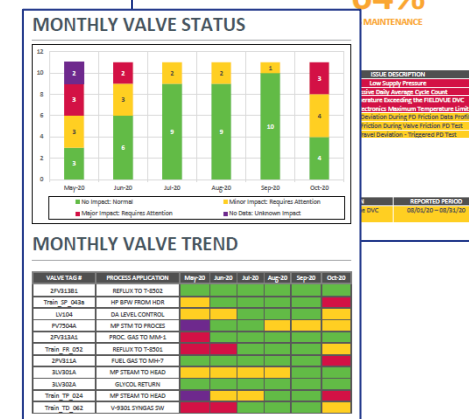
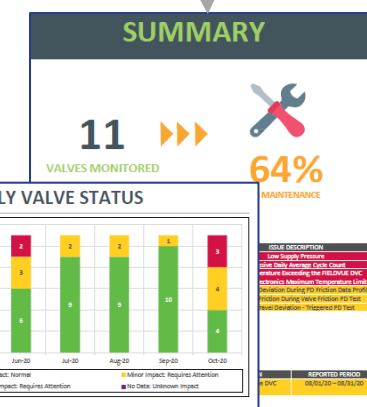
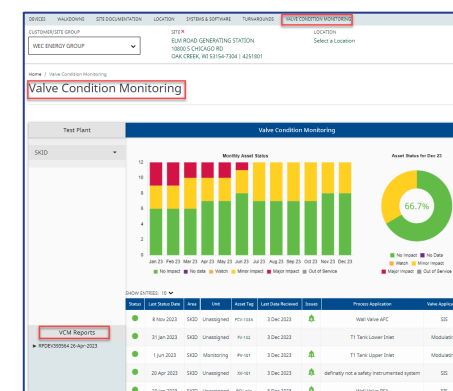


Characteristics:

- Valves walked-down and ValveLink specs. updated
- Deep-dive analytics done by Emerson experts
- Access to Valve Certified Experts (Emerson Analysts are an Extension of the Site Team)
- Focused on Critical Valves

Data collected and analyzed:

Status Monitor – PD Tests – Device Alerts and PD Events – Offline Scans - Spec Sheet - Systems health check documents.

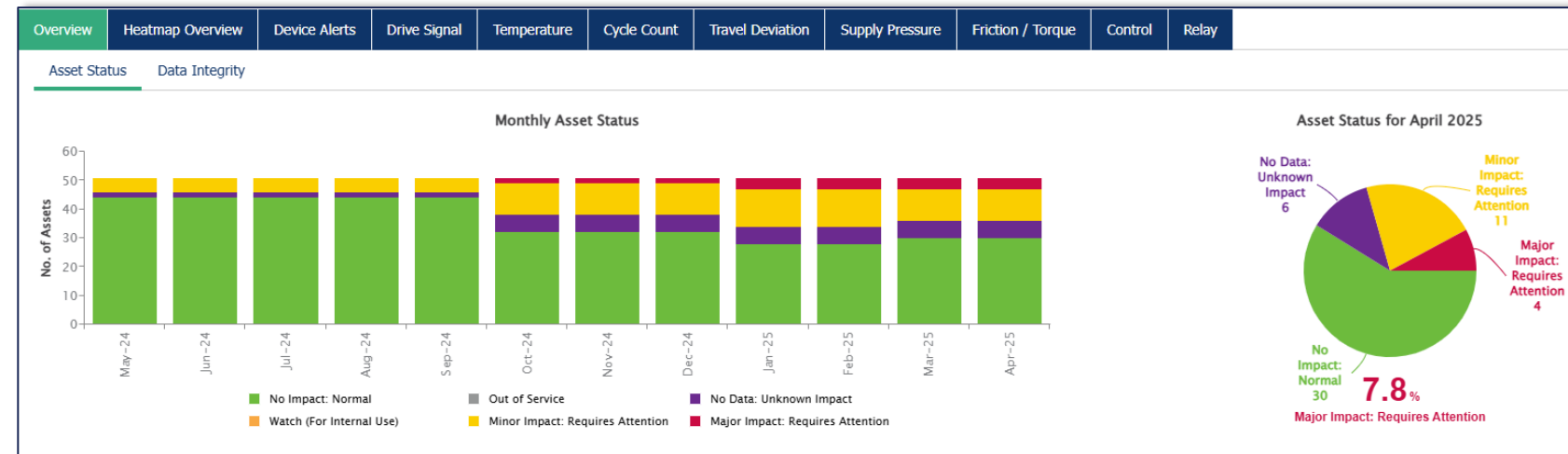


Monthly / Quarterly Report and Meeting

How Is Data Analyzed?

Analyst Workspace is an Emerson **cloud-based** application for reviewing and analyzing **massive** amounts of online diagnostics information.

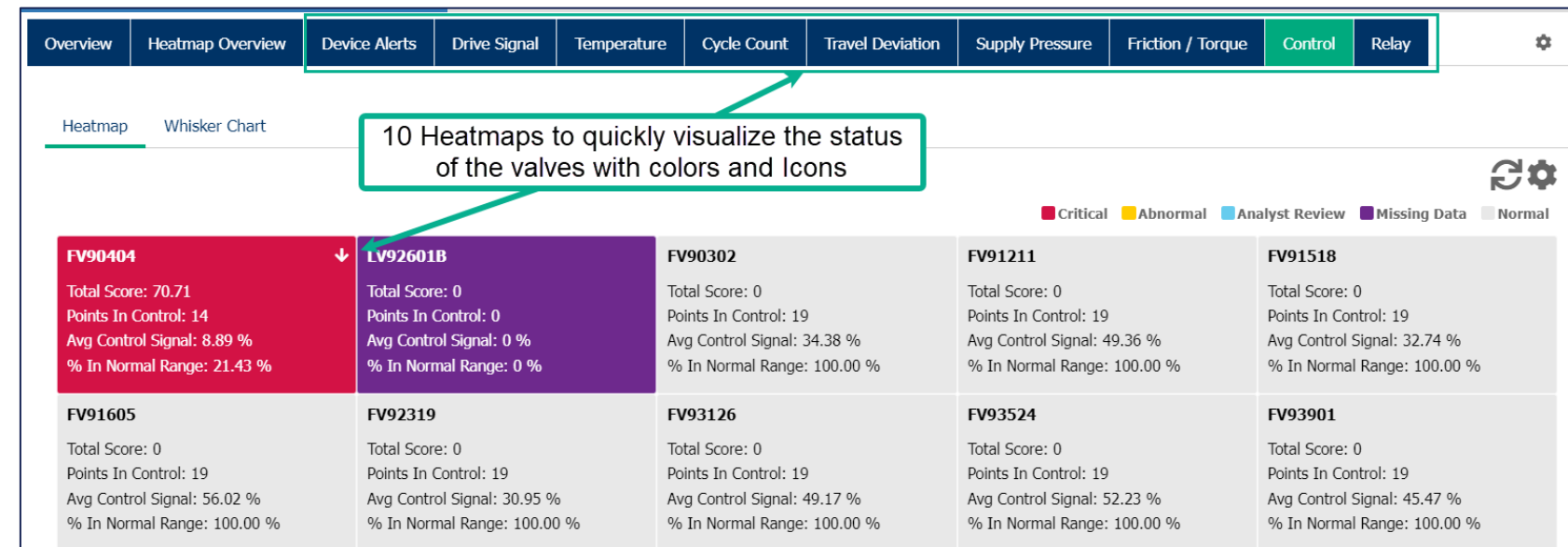
- Used internally by Emerson Lifecycle Services analysts



Key Benefits:

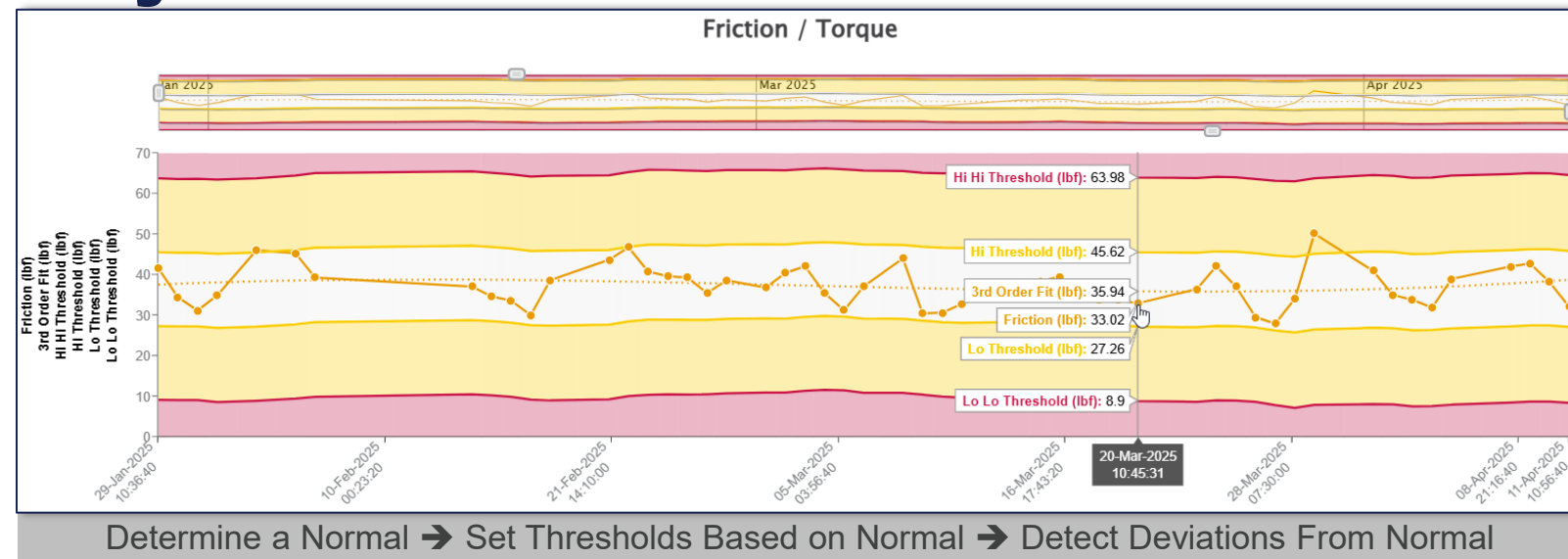
Indicates where the problem is (Anomaly Detection) using **Heatmaps** tiles:

Device Alerts – Drive Signal – Temperature – Cycle Count – Travel Deviation – Supply Pressure – Friction/Torque – Stroke Time – Control - Relay



Trending Charts / Time-Series Analysis

- **Dynamic thresholds:** See beyond the data points - Detect behaviors that only appear with a large data pool.
- Option to **trend multiple parameters**
- Performance Diagnostics (PD) Data: See and analyze the high-resolution data.
- Issues reporting and tracking with **PIR** (Problem-Impact-Recommendation) Library



Valve Reliability Suite™



Valve Health Application

Access a **fleet-wide dashboard** with **near real time, read only** valve data. Automatically **prioritizes** targets and **recommends** next actions.

High-level analytics done
by software



ValveLink™ Software

Comprehensive **diagnostic** program for control valve troubleshooting, **tuning** and **calibration**. Aids in **root-cause analysis** of **individual valves**.

Deep-dive analytics done
by user



Valve Condition Monitoring

Remote, online monitoring of **critical valve applications** with **diagnostic analysis**, tag-specific guidance and **periodic reports** from *the valve experts*.

Deep-dive analytics done
by Emerson experts

Visit the Valve Health App, ValveLink, and Valve Condition Monitoring Exhibits

Find More Information

[Emerson's Valve Reliability Suite™ Solutions | Emerson GB](#)

Contacts

jaime.alvaradomillan@emerson.com

naman.Tahan@emerson.com

nathan.krasnovsky@emerson.com



EMERSON EXCHANGE 2025

ACCELERATING
INNOVATION

Thank You