

# Replacement of Firmware 2 (and older) with Firmware 3.1 for Fisher™ FIELDVUE™ DVC6200f Digital Valve Controllers

## Table of Contents

- Management of Change .....2
- Background .....2
- Question & Answer Checklist .....2
- FW2 and FW3.1 Comparison .....3
- Diagnostic Capability Changes and Enhancements .....4**
  - Field Device Diagnostic Alerts ..... 4
  - Control Select Function Block Support ..... 4
  - Block Instantiation ..... 4
  - Certified to ITK 6.2 ..... 4
  - Miscellaneous ..... 4
- Required Updates to User Interface When Upgrading to DVC6200f Instrument with FW3.1 .....5**
- Steps Necessary When Upgrading or Downgrading the Firmware .....6**
- Conclusion .....8



## Management of Change

Management of Change (MOC) is a procedure used to proactively manage changes that have the potential to impact safety or the process within a plant. Evaluating new techniques for improving MOC approval procedures can have an impact on plant efficiency. Historically, upgrading obsolete products or replacing existing process control equipment had been delayed or abandoned due to the extensive paperwork involved in completing a complex MOC approval sheet.

## Background

In order to continue to increase the usefulness and value of the Fisher FIELDVUE DVC6200f digital valve controller, additional features and functions have been implemented within the electronics firmware (FW). These additions include field diagnostic alert categories and smarter response alerts.

Contained in the following sections are design comparisons between the DVC6200f instrument with FW3.1 and FW2 and older. These comparisons demonstrate how the design of technologies allows users to efficiently transition to new, more reliable Fisher products.

## Question & Answer Checklist

- 1**   **Q:** Does the proposed modification cause any changes to the piping and instrumentation diagram (P&ID)?  
**A:** No.
  
- 2**   **Q:** Does the proposed modification change process chemistry, technology, or operating and control philosophies?  
**A:** No.
  
- 3**   **Q:** Does the proposed modification change how the existing plant is operated?  
**A:** **End-user/installer must review the DVC6200f bulletin for block execution time changes and the DVC6200f FW3.1 CFF file for the network settings.**
  
- 4**   **Q:** Does the proposed modification change process flows?  
**A:** No.

- 5** Q: Does the proposed modification change existing pressure relief cases?  
A: No.
- 6** Q: Does the proposed modification change the process description?  
A: No.
- 7** Q: Have the codes and standards to which the new equipment was designed changed?  
A: Yes. The FOUNDATION™ fieldbus specifications have changed and the new firmware complies with the new requirements.
- 8** Q: Does the proposed modification change the materials of construction, such as a change in material form (cast, forged, or alloy)?  
A: No.
- 9** Q: Does the proposed modification introduce new equipment items that require periodic predictive maintenance?  
A: Yes. If user wishes to utilize DVC6200 FW3.1 functionality, spare units should be inspected and upgraded to FW3.1, as applicable.
- 10** Q: Does the proposed modification change existing operator training requirements?  
A: No.

## FW2 and FW3.1 Comparison

Hardware changes: None. The existing mountings can continue to be used.

Hazardous area approval changes: None.

Certification updates: Field diagnostic capability approved to ITK 6.2.

## Diagnostic Capability Changes and Enhancements

The DVC6200f instrument with FW3.1 implements the following diagnostic enhancements and changes:

### Field Device Diagnostic Alerts

The field diagnostic alerts are categorized similar to the NE107 alert categories. Additional field device alert categories include: Maintenance Required, Out of Specification, Check Function, and Failure. The user may integrate their current work flow with set alert categories.

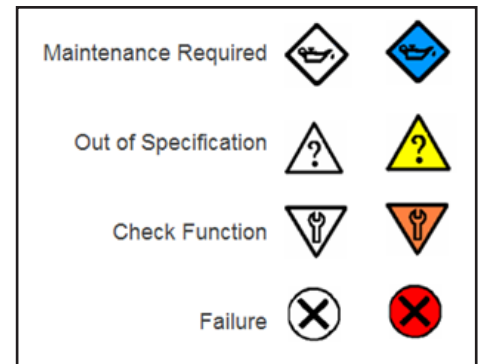


Figure 1. Field Device Alert Categories

### Control Select Function Block Support

Control select block has been added.

### Block Instantiation

Provides support for Foundation™ Fieldbus defined block instantiation.

- Device supports a total of 20 function blocks in addition to one resource and transducer block
  - The blocks that are supported include: AI (4), DI (6), PID (4), OS (3), IS (2), CS (2), AO (1)/ DO (1), MAI (1)
- Function blocks supported in FW2 will be enabled by default

### Certified to ITK 6.2

Tested to the FOUNDATION™ Fieldbus interoperability test kit 6.2.

### Miscellaneous

Offline diagnostic, PST, and PD trigger data will survive a power cycle.

#### Stroke History Captured

- FD, AD, PD, and PST diagnostic levels
- Open and close stroke time
- Breakout time
- Device stores 20 sets of stroke history data
- Stroke time exceeded: Field diagnostic alert for the latest stroke

#### Position Latch

- Manual reset
- Latches the valve in the demand position when the set point is normal and the actual valve position is at the demand position. Typically due to low supply pressure.
- Saves the valve from wire draw and other velocity related issues.

Capability	Instrument Level			
	Fieldbus Diagnostics	Advanced Diagnostics	Performance Diagnostics	Partial Stroke Testing (new)*
Field Diagnostic Alerts	X	X	X	X
Block Instantiation	X	X	X	X
Added Control Select Block	X	X	X	X
Partial Stroke Test				X
Initiate PST from any fieldbus host				X
Store multiple diagnostic datasets in the device		X	X	X
Golden Dataset in the device		X	X	X
Stoke History	X	X	X	X
Trigger Data survives power cycle			X	X
No pressure fallback if supply pressure is low	X	X	X	X
Option to trip and latch when valve position crosses a travel threshold	X	X	X	X

Table 1. FIELDVUE DVC6200f Instrument Level Diagnostic Capabilities

\*Valve signature in dynamic scan is replaced with a full stroke test that allows the full stroke test to start from the normal end, thereby potentially shortening the time required to complete the diagnostic.

## Required Updates to User Interface When Upgrading to DVC6200f Instrument with FW3.1

In order to configure and calibrate the DVC6200f with FW3.1 a new DD is required. The new DD will not communicate with a FW2 device. If the installation has a mix of FW2 and FW3.1, instruments loading both of the DDs into the host will be required.

Device Revision	DVC6200f Revision	DD Revision
4	3.1	3
3	3.0	3
2	2	2 or 3

In order to utilize the diagnostic features of the DVC6200f FW3.1, an upgrade to Fisher ValveLink™ software 13.1 is required.

## Steps Necessary When Upgrading or Downgrading the Firmware

**Upgrades include:** FW2 to FW3.1 or FW3.0 to FW3.1

**Downgrades include:** FW3.1 to FW2 or FW3.1 to FW3.0.

**NOTICE:** Any of the above mentioned upgrade or downgrade will cause the instrument to go to the “no power” position when the new firmware is activated. It is necessary to isolate the valve prior to performing this operation or perform it while the process is offline and a process risk analysis deems it safe for the valve to go to the “no power” position.

All writable function block parameters that are not linkable will go to their default values defined by the new firmware; for example, the I/O\_OPTS. All writable resource block parameters will go to their default values.

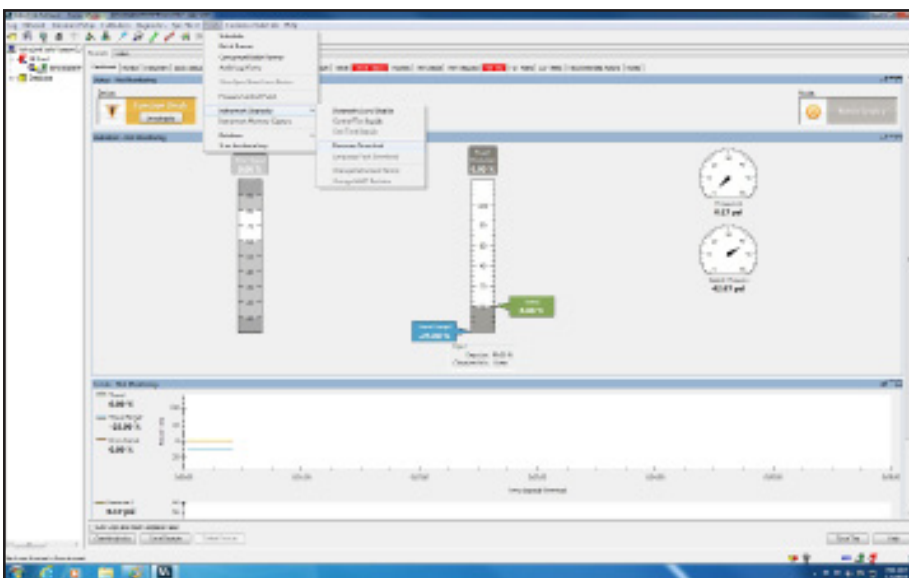
The field diagnostic alert categorization will need to be redone, as we'll be migrating from the three categories in Plantweb alerts to four categories in field diagnostic alerts.

The function block schedule, parameter values, and communication configuration will not migrate when the device firmware is upgraded or downgraded, so the instrument and communications have to be reconfigured and downloaded.

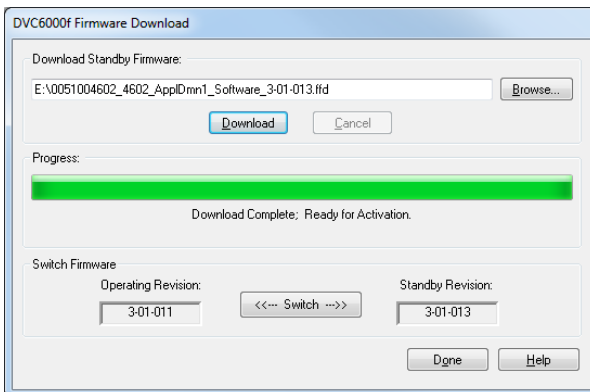
If the host is writing to any transducer or resource block parameters, verify that the writes are to the appropriate parameter as parameter names in the transducer block have changed to conform to the FOUNDATION fieldbus transducer block specifications (FF906).

The physical act of upgrading or downgrading the firmware can be achieved as follows:

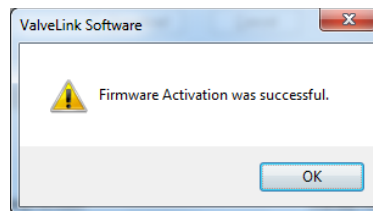
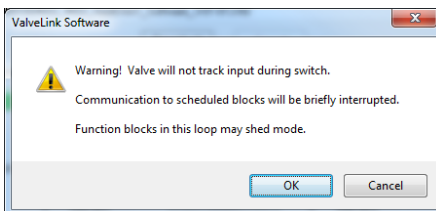
- Launch ValveLink™ software and open the appropriate tag.
- Tools > Instrument Upgrades > Firmware download



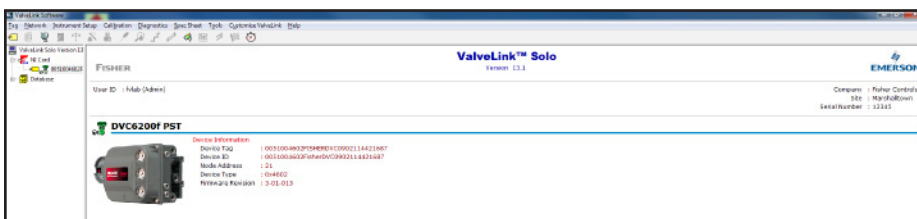
- Verify if the desired firmware is either active or is in standby



- If the desired firmware is not in either of the location, then browse to the appropriate firmware file and download the file to the device. The download will overwrite the file in the standby location. Downloading the firmware file to the device can be performed when the process is operating normally.
- When ready to switch the operating firmware in the device, after taking the precautions noted earlier and loading the appropriate DD file in the host, switch the firmware by clicking the switch button.
- A warning and action completion message will be presented by the ValveLink software.



- Close the tag and verify that the firmware upgrade or downgrade is complete by reading the firmware revision using the ValveLink software device overview screen.



- In some instances, the upgrade will cause the device to go to a default spare address and this will cause ValveLink software to lose communication with the device. Shutting down and relaunching the ValveLink software will bring the device to an active address and communication to ValveLink will be restored. The device will need to be recommissioned by the host.

## Conclusion

The FIELDVUE DVC6200f digital valve controller continues to be the most reliable digital valve controller in production. The design philosophy allows users the flexibility to transition to the current DVC6200f instrument firmware.

Please refer to the Fisher FIELDVUE DVC6200f digital valve controller product bulletins, quick start guide, and instruction manuals available from your Emerson sales office or Emerson.com.

 <http://www.Facebook.com/FisherValves>

 <http://www.Twitter.com/FisherValves>

 <http://www.YouTube.com/user/FisherControlValve>

 <http://www.Linkedin.com/groups/Fisher-3941826>

To find the Emerson sales contact in your area, scan or click the QR code.



© 2017 Fisher Controls International LLC. All rights reserved.

### Emerson Automation Solutions Fisher

Marshalltown, Iowa 50158 USA  
Sorocaba, 18087 Brazil  
Cernay, 68700 France  
Dubai, United Arab Emirates  
Singapore 128461 Singapore  
[www.Fisher.com](http://www.Fisher.com)

Fisher, FIELDVUE, and ValveLink 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 designs or specifications of our products at any time without notice. Responsibility for proper selection, use and maintenance of any product or service remains solely with the purchaser and end user.