

# Zero Point Calibration

## HART® Communicating Fisher™ FIELDVUE™ DVC6200 Digital Valve Controllers

The Zero Point Calibration procedure allows you replace an existing DVC6200 digital valve controller without performing a travel calibration. This procedure can be used when a situation occurs that requires the partial or complete replacement of a digital valve controller when part of a valve assembly that does not have a process bypass or the process cannot be shut down.

### **⚠ WARNING**

**Personal injury or property damage, caused by unexpected valve movement and an uncontrolled process, could result if this procedure is attempted when the valve is not locked at its present position. If you cannot safely lock the valve in position until this procedure is complete, do not proceed with this procedure.**

### **Notes**

This procedure should only used for the partial or complete replacement of a digital valve controller when the valve does not have a bypass or the process cannot be shut down. Do not proceed with this procedure if the valve has a bypass or the process can be shut down.

This procedure assumes the array was set up properly on the existing DVC6200 and has not been moved or adjusted since setup.

The valve will need to be locked at its present position. This can be accomplished by using a handwheel or other mechanism. If you cannot safely lock the valve in position until this procedure is complete, do not proceed with this procedure.

This procedure requires the use of a 475 Field Communicator, AMS Trex™ Device Communicator, or ValveLink™ software.

This procedure can be used to swap a DVC6200 with another DVC6200. You cannot swap a DVC6000 with a DVC6200 using this procedure. The DVC6200 used to replace the existing digital valve controller must be a new, factory calibrated instrument. This procedure will not work if a previously installed and calibrated digital valve controller is used.

## Zero Point Configuration Process

### HART DD

### **CAUTION**

**The touch screen of the 475 Field Communicator or AMS Trex Device Communicator should only be contacted by blunt items. The use of a sharp instrument can cause damage to the touch screen interface.**

## 475 Field Communicator and AMS Trex Device Communicator

1. If using the 475 Field Communicator, Select the HART Icon from the Main Menu, shown in figure 1.  
If using the Trex Communicator, select Field Communicator from the main menu.

Figure 1. 475 Field Communicator Menu Screen



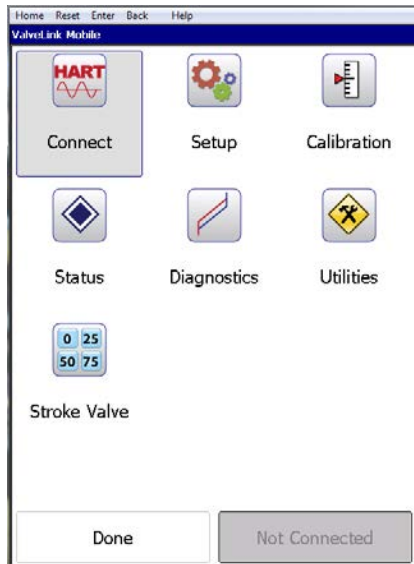
2. From the Online menu select Configure > Guided Setup > Device Setup.
3. Provide the requested information, including: Pressure Units, Relay Type, Control mode (Travel Control, Pressure Control, Fallback-Sensor Failure, Fallback-Sensor/Tvl Deviation), max supply pressure, Actuator manufacturer, Actuator model, Actuator size, Volume Booster/Quick Release.
4. Send the configuration to the instrument.
5. Use factory defaults for setup
6. Select Cancel (475) or Abort (Trex) when prompted to run Auto Tvl Calib.
7. Place the instrument "In Service".

## ValveLink Mobile

### AMS Trex Device Communicator or 475 Field Communicator

1. Select ValveLink Mobile from the Field Communicator Main Menu (see figure 1).
2. Select HART device.
3. Select Connect from the ValveLink Mobile main menu (see figure 2) to connect to the instrument.
4. Select Setup > Setup Wizard.
5. Provide the requested information then select Apply.
6. When prompted to run an Auto Travel Calibration select No.
7. Place the instrument "In Service".

Figure 2. ValveLink Mobile Menu Screen



## ValveLink software

1. Initiate the Setup Wizard either from the Instrument Setup menu or Setup Wizard Icon
2. Select the appropriate Travel/Pressure Control Mode and the Relay Type.
3. Set the desired Pressure Units and the Max Supply Pressure for the application.
4. Select the required Actuator Information including: Actuator Make, Actuator Model, Actuator Size, and designate if a Volume Booster or Quick Exhaust Valve is present.
5. Select Yes when prompted to Use Factory Default Settings.
6. When prompted to run an Auto Travel Calibration select No.
7. Place the instrument "In Service".



## Alignment Verification

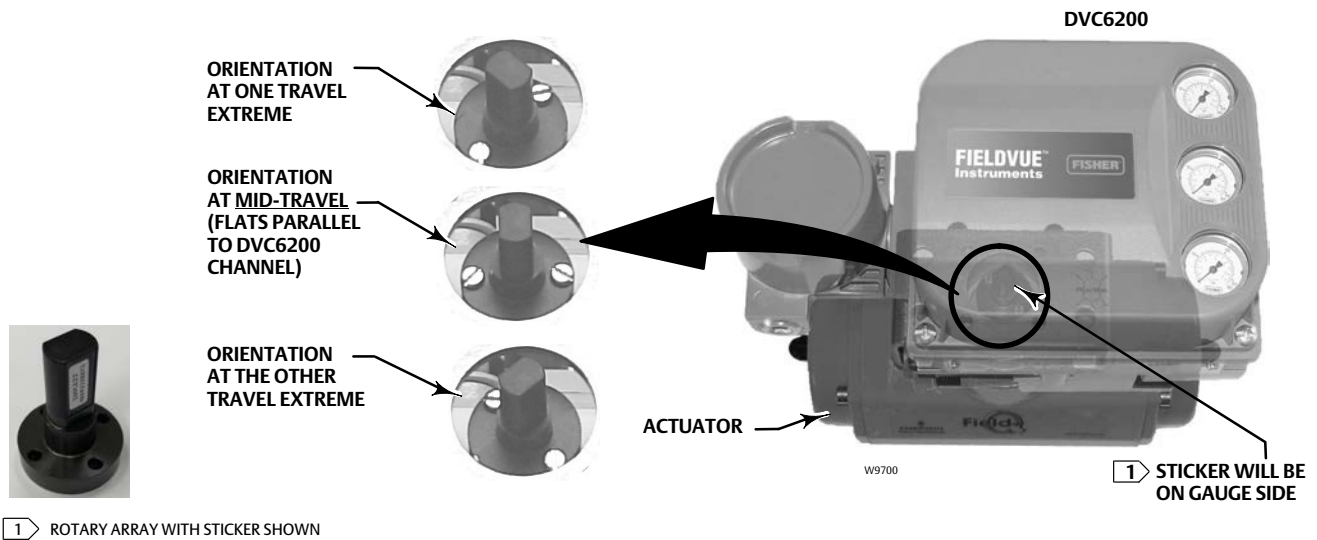
### Note

The rotary end mount array is the only array that must be verified. If the array is not at mid-travel, remove and reposition prior to mounting the DVC6200.

All other arrays can be mounting in any direction, as they are not affected by north south polarity.

Alignment of the rotary array can impact the ability of the DVC6200 digital valve controller to properly follow the setpoint. To ensure proper operation, the array must be mounted to the actuator with the label facing the gauge side of the positioner when the valve is at 50% (mid) travel, see figure 3 below. If the array position is different, the array should be removed and reoriented prior to mounting the DVC6200.

Figure 3. Rotary Array Orientation



## To change a DVC6200 on the valve

### **⚠ WARNING**

Avoid personal injury or property damage from sudden release of process pressure or bursting of parts. Before proceeding with any Installation procedures:

- Always wear protective clothing, gloves, and eyewear to prevent personal injury or property damage.
- Do not remove or uncouple the actuator from the valve while the valve is still pressurized.
- The valve will need to be locked at its present position. If you cannot safely lock the valve in position until this procedure is complete, do not proceed with this procedure.
- After the valve has been safely locked in position, disconnect any operating lines providing air pressure, electric power, or a control signal to the actuator. Be sure the actuator cannot suddenly open or close the valve.
- Use lock-out procedures to be sure that the above measures stay in effect while you work on the equipment.
- Check with your process or safety engineer for any additional measures that must be taken to protect against process media.

### **Note**

The lack of a travel calibration can impact the accuracy of the position feedback. While this does not impact the positioner's ability to control the process, it can influence the results of specific diagnostic tests. These tests include: Valve Signature, Dynamic Error Band, and Step Response.

Block the valve into position either with a handwheel, with a pneumatic bypass arrangement that includes a regulator and pressure gauge, or by mechanically locking the valve. Remove the existing digital valve controller by disconnecting mounting hardware, being careful NOT to loosen or move the magnetic array that is connected to the valve stem block. The magnetic array will remain on the valve and its position must remain the same. Install the new DVC6200 over the existing array assembly.

**⚠ WARNING**

**Personal injury or property damage, caused by unexpected valve movement, could result if the digital valve controller is put in service with the connector arm or array moved from its original position.**

**If the connector arm or array is moved, the digital valve controller must be calibrated before putting it in service. Refer to the appropriate instruction manual or quick start guide for calibration information.**

Ensure that air and signal is supplied to the digital valve controller and remove mechanism for locking the valve in place. Allow for a slow transition from manual to auto loop control.

**Note**

For a DVC6200 on a DeltaV system go to Detailed Setup to ensure the input units are set to 0 - 100%.

**Note**

To ensure greater accuracy, perform an auto travel calibration on the digital valve controller when conditions allow.

## Related Documents

- Fisher FIELDVUE DVC6200 Series Digital Valve Controller Quick Start Guide ([D103566X012](#))
- Fisher FIELDVUE DVC6200 HW2 Digital Valve Controller Instruction Manual ([D103605X012](#))
- Fisher FIELDVUE DVC6200 HW1 Digital Valve Controller Instruction Manual (Supported) ([D103409X012](#))

These documents are available from your [Emerson sales office](#) or Local Business Partner, or at [www.Fisher.com](http://www.Fisher.com).

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

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