Fisher™ easy-Drive™ Firmware Version 1.4.0.9 Control Method Changes

Introduction

Scope of Manual

This instruction manual provides information about the new 4-20mA Virtual Stops control method, the new Dual Contact Stepped control method, and changes to the 4-20mA Level control method for the Gen 2 easy-Drive electric actuator with Firmware Version 1.4.0.9 or newer. Configuration of the new control methods via the easy-Drive Configurator requires Configurator Version 2.4.0.2 or newer. For other information on Fisher easy-Drive actuators, refer to the appropriate easy-Drive actuator instruction manual.

Do not install, operate, or maintain an easy-Drive electric actuator without being fully trained and qualified in valve, actuator, and accessory installation, operation, and maintenance. **To avoid personal injury or property damage, it is important to carefully read, understand, and follow all the contents of this manual, including all safety cautions and warnings.** If you have any questions about these instructions, contact your **Emerson sales office** before proceeding.

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Reference Documentation

This information supplements the information found in the below easy-Drive actuator literature. For additional information or questions please contact your [Emerson sales office](#).

Fisher D3 Valve with Gen 2 easy-Drive Actuator Instruction Manual ([D104161X012](#))

Fisher D4 Valve with Gen 2 easy-Drive Actuator Instruction Manual ([D104188X012](#))

Fisher easy-Drive 200L Instruction Manual ([D104331X012](#))

Fisher easy-Drive 200R Instruction Manual ([D104742X012](#))

4-20mA Virtual Stops Control Method

Control Method Selection

Set Control Method to 4-20mA Virtual Stops via the easy-Drive Configurator. A positioning license is required to select 4-20mA Virtual Stops control method.

Upper and Lower Virtual Stops

Configure the Upper and Lower Stops via the easy-Drive Configurator.
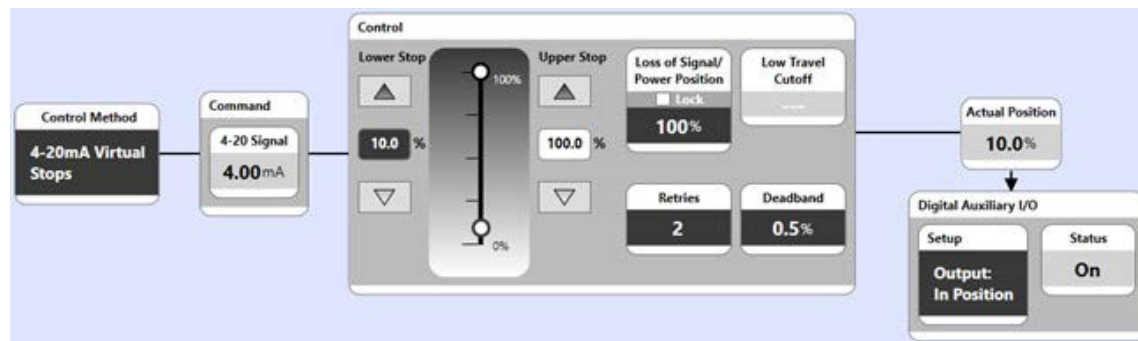
The Lower Virtual Stop can be configured from 0% to 99.9% but must be less than the Upper Virtual Stop. When the Lower Virtual Stop is greater than 0% the actuator will stop closing at the Lower Virtual Stop value. For instance, if the actuator is calibrated from 4-20mA and the Lower Virtual Stop is configured to 10%, a value of 5.6mA or less will drive the actuator to a position of 10% but the actuator will not close further.

Configure the Upper Virtual Stop to a value greater than the Lower Virtual Stop and from 0.1% to 100%. When the Upper Virtual Stop is less than 100% the actuator will stop opening at the Upper Virtual Stop value. For instance, if the actuator is calibrated from 4-20mA and the Upper Virtual Stop is configured to 75%, a value of 16mA or more will drive the actuator to 75% open but the actuator will not open further.

Low Travel Cutoff

If the Lower Virtual Stop is set to a value greater than 0%, the Low Travel Cutoff will no longer apply.

Deadband

When the position being traveled to is equal to the Upper or Lower Virtual Stop, the Deadband will not apply, and the actuator will move to the Virtual Stop position. For example, if the actuator is currently at a position of 20%, the Lower Virtual Stop is at 15%, and the Deadband is set to 10%, a new commanded position of 17% will not result in a move, but a commanded position of 14% will ignore the Deadband value and drive the actuator to 15%. The Deadband applies as normal to travel not at the Virtual Stops.

4-20mA Level Control Method

Control Method Selection

Set Control Method to 4-20mA Level via the easy-Drive Configurator. A positioning license is required to select 4-20mA Level control method.

4-20mA Level Max Position

The 4-20mA Level Max Position has been added to firmware versions 1.4.0.9 and greater. Configure the Max Position to a value from 0.1% to 100%. The Max Position also must be greater than the Analog Level Open Position.
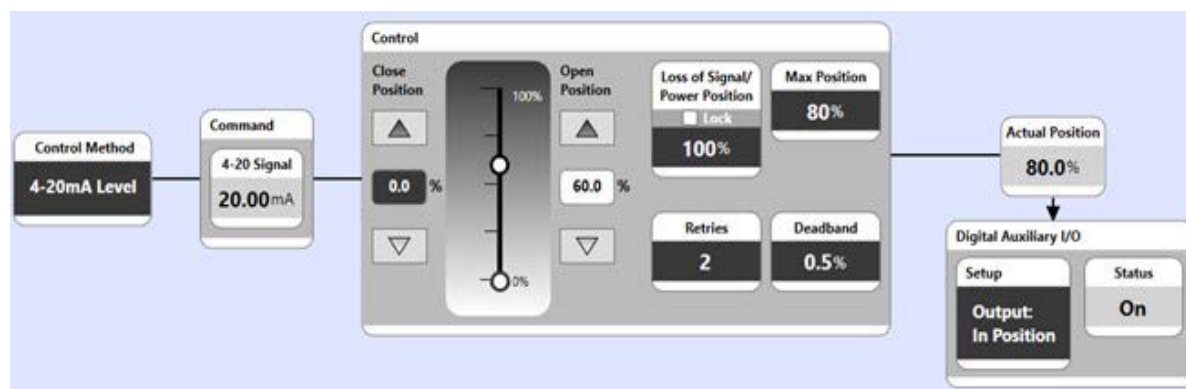
When the commanded position is greater than the Open Position, the actuator will open no further than the value of the Analog Level Max Position. For example, if the Open Position is configured to 60% and the Max Position is set to 80%, a command value from 13.6mA to 16.8mA will open the actuator to the equivalent position (60 to 80%). A commanded value of 16.8mA or greater will open to 80% but no further.
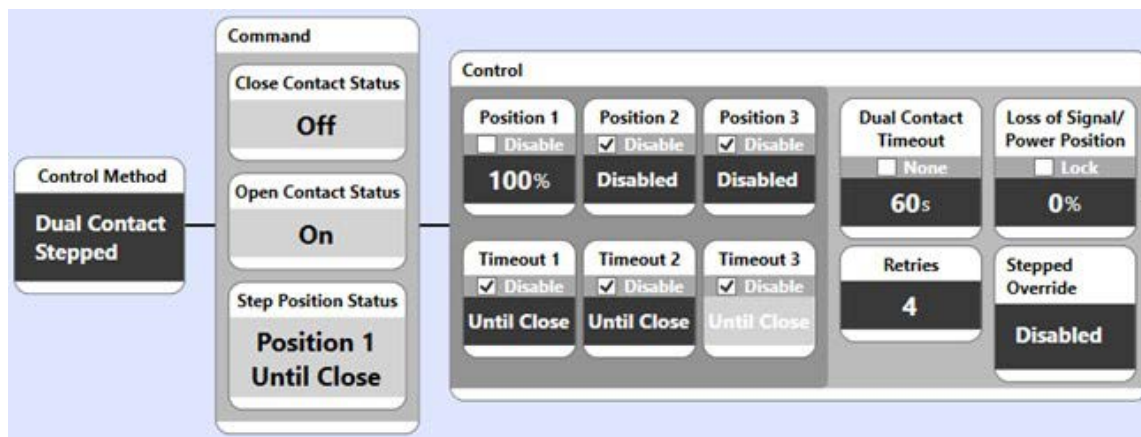
Dual Contact Stepped Control Method

Control Method Selection
Set Control Method to Dual Contact Stepped via the easy-Drive Configurator.

Stepped Positions and Timeouts
Configure the three stepped Positions via the easy-Drive Configurator.

Each of the Positions can be configured to a value between 0 and 100% or Disabled, at least one Position must be enabled. Each Timeout can be configured to a value between 1 and 60,000 seconds or Disabled. At least one Timeout for an enabled Position must be Disabled (Until Close) and Timeout 3 is always Disabled.

Upon receiving an Open command, the actuator will move to the first enabled Position in numerical order. It will remain at that Position until the number of seconds specified for that Position number's Timeout, or until a Close command is received if the Timeout is Disabled. After the actuator remains at the Position for the specified time, it will move to the next enabled Position in numerical order and remain at that Position until the number of seconds specified for that Position number's Timeout, or until a Close command is received if the Timeout is Disabled.

Stepped Position Status

The Step Position Status indicates the current Position that the actuator is positioned to, as well as the time remaining at that position. The status will also indicate if the actuator is at a Loss of Signal/Power Position or in a Stepped Override position.
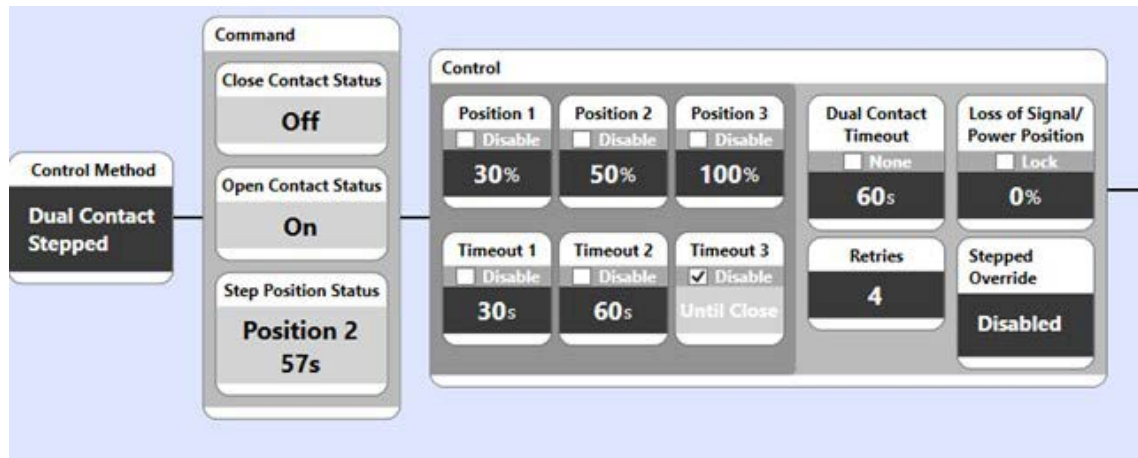
Stepped Override

Stepped Override can be used to override the current Stepped Position. If set to Disabled, Dual Contact Stepped Control Method will position normally as described above. It may also be configured to Close or Open, positioning the actuator as indicated.

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