

# Switch Box Retrofits

## Fisher™ FIELDVUE™ 4400 Digital Position Transmitter

Retrofit your switch boxes or limit switches with a 4400 digital position transmitter to minimize shifts and drifts in valve position feedback. Traditional switches depend on mechanical connections to detect valve position. These mechanical connections may be impacted by vibration and changes in ambient temperature and cam adjustments for switch positions susceptible to shift and drifting. The 4400 offers precise non-contact 4 to 20 mA position feedback and includes two 1 ampere solid-state limit switches, providing more accurate and reliable valve position feedback.

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### NOTE

This retrofit is suitable for installations in accordance with 4400 hazardous area approval requirements. It is also suitable for installations with no hazardous area approval requirements.

Refer to the 4400 Instruction Manual ([D104738X02](#)) for hazardous area approvals information. Wiring connections must be in accordance with local, regional, and national codes for the specific installation.

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### NOTE

When performing a retrofit note the following:

- This retrofit is only for switch boxes with two limit switches.
  - In order for the limit switches to function the 4400 must have power and that power must be connected to the loop terminals
  - Retrofits **only** provide the limit switch feedback. The 4-20 mA analog feedback will not be accurate.
  - The type of discrete input dictates the wiring method used. Refer to Wiring Methods below to determine which wiring method is appropriate for your retrofit.
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## Wiring Methods

There are two possible replacement wiring strategies, based on the discrete input of the original switch boxes; sinking or sourcing.

### Sinking Discrete Inputs

Sinking discrete inputs monitor the current flow coming in from the switch. A common power (positive) wire is used with a sinking discrete input. See Figure 1 for wiring diagram.

### Sourcing Discrete Inputs

Sourcing discrete inputs monitor the current flow going out to the switch. A common return (negative) wire is used with a sourcing discrete input. See Figure 2 for wiring diagram.

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**NOTE**

The power supply and ground for the 4400 4-wire scheme loop and switches must originate and terminate from the same power source.

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**WARNING**

**Select wiring and/or cable glands that are rated for the environment of use (such as hazardous area, ingress protection and temperature). Failure to use properly rated wiring and/or cable glands can result in personal injury or property damage from fire or explosion.**

**Wiring connections must be in accordance with local, regional and national codes for any given hazardous area approval.**

**Failure to follow the local, regional and national codes could result in personal injury or property damage from fire or explosion.**

**To avoid personal injury resulting from electrical shock, do not exceed maximum input voltage specified on the product nameplate. If the input voltage specified differs, do not exceed the lowest specified maximum input voltage.**

**Personal injury or property damage caused by fire or explosion may occur if electrical connections are attempted in a potentially explosive atmosphere or in an area that has been classified as hazardous. Confirm that area classification and atmosphere conditions permit the safe removal of the terminal box cover before proceeding.**

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**NOTE**

Do not use magnetic screwdrivers inside the 4400 terminal box, as they can cause the LED to flicker or change color

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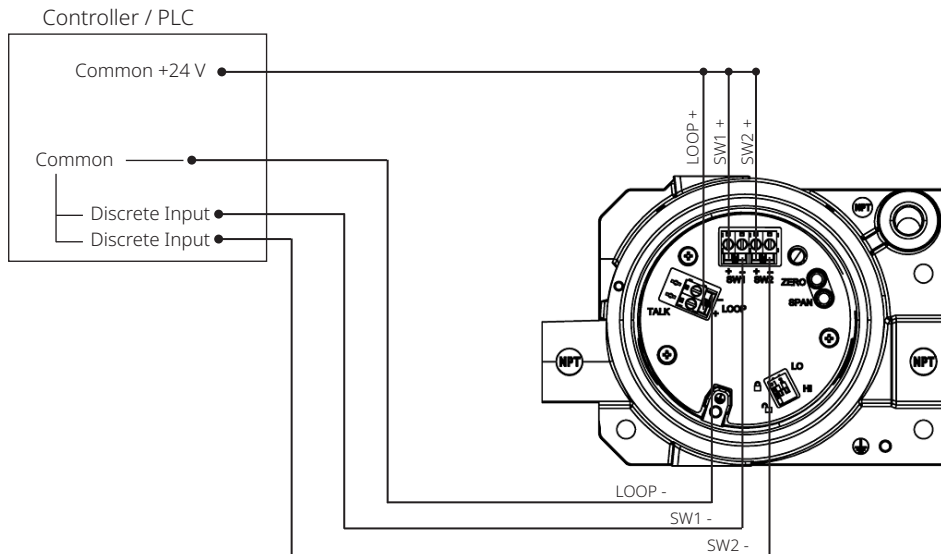
## Related Information

Refer to Instruction Manual [D104738X02](#) for all other information pertaining to the 4400 digital position transmitter.



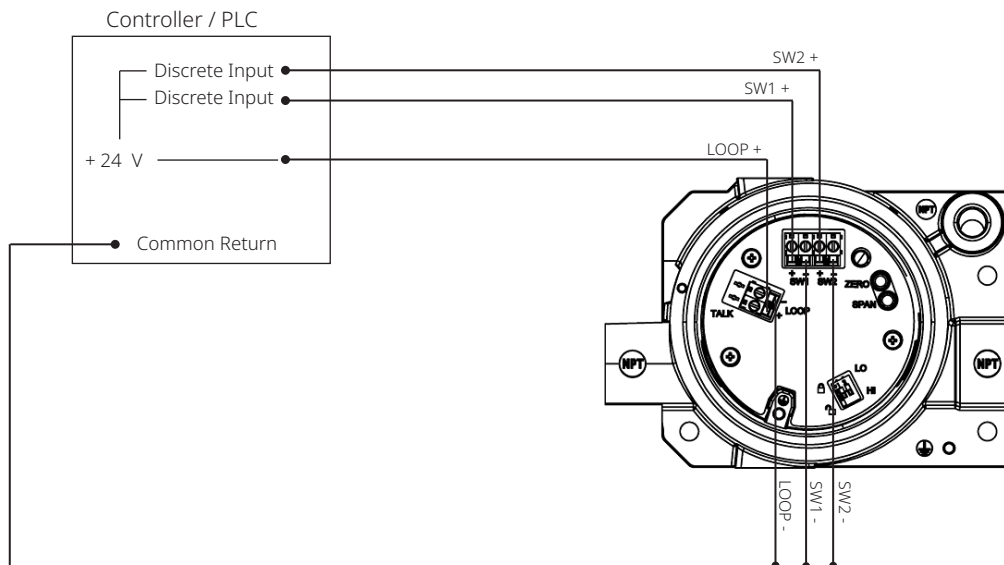
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**Figure 1. Sinking Discrete Inputs Wiring**



NOTE:  
THE POWER SUPPLY AND GROUND FOR THE 4400 4-WIRE SCHEME LOOP AND SWITCHES MUST ORIGINATE AND TERMINATE FROM THE SAME POWER SOURCE.

**Figure 2. Sourcing Discrete Inputs Wiring**



NOTE:  
THE POWER SUPPLY AND GROUND FOR THE 4400 4-WIRE SCHEME LOOP AND SWITCHES MUST ORIGINATE AND TERMINATE FROM THE SAME POWER SOURCE.



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