

November 2021

# Spence™ Type SP/P Safety Pilot



*Figure 1. Type SP/P Safety Pilot*

## Features

- Self-Contained
- Spring-Operated
- Normally Closed
- Packless Construction
- Fluid, Gas and Vapor Applications
- Accurate Regulation Unaffected by Service Conditions
- Easy in-line Maintenance

## Introduction

Type SP/P safety pilot is used to prevent the pressure from building up in case of:

1. Failure of the Type D pilot in an open position on the primary pressure regulator.
2. Failure of the main valve in an open position on the secondary pressure regulator.

This safety pilot is purely a standby pilot used as a safety feature and under normal conditions does no pressure regulation.

# Type SP/P

## Specifications

This section lists the specifications for Type SP/P. Factory specifications are stamped on the nameplate fastened on the pilot at the factory.

<p><b>Available Configuration<sup>(1)</sup></b> <b>Type EDSP/P:</b> Complete regulator setup with Type E main valve, Type D pilot and Type SP/P safety pilot <b>Type E5DSP/P:</b> Complete regulator setup with Type E5 main valve, Type D pilot and Type SP/P safety pilot</p> <p><b>Maximum Operating Pressure<sup>(2)</sup></b> <b>Bronze:</b> 250 psig / 17.2 bar <b>Carbon Steel:</b> 600 psig / 41.4 bar</p> <p><b>Maximum Operating Temperature<sup>(2)</sup></b> <b>Bronze:</b> 400°F / 204°C <b>Carbon Steel:</b> 750°F / 400°C</p>	<p><b>Spring Pressure Range<sup>(2)</sup></b> 5 to 13 psig / 0.35 to 0.90 bar 13 to 30 psig / 0.90 to 2.07 bar 31 to 65 psig / 2.14 to 4.48 bar 66 to 120 psig / 4.55 to 8.27 bar 121 to 175 psig / 8.35 to 12.1 bar</p> <p><b>Materials of Construction</b> <b>Body:</b> Bronze and carbon steel <b>Stem, Disc, Seat and Diaphragm:</b> Stainless steel <b>Gasket:</b> Graphite <b>Spring:</b> Inconel®</p> <p><b>Applications</b> Where overpressure could cause personal injury or damage.</p> <p><b>Approximate Weight</b> 8 lbs / 3.6 kg</p>
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1. Please refer to Types E and E5 Main Valve and Type D Pilots for complete specifications.

2. The pressure/temperature limits in this Bulletin and any applicable standard or code limitation should not be exceeded.

## Principle of Operation

The safety pilot inlet is connected to the restriction tee at bottom of primary main valve, which has a restriction on the Type D pilot side, but none on the safety pilot side. This means that when the safety pilot opens, it can always bleed off the pressure under the main valve diaphragm faster than the Type D pilot can build it up through the restriction, thus causing the primary main valve to close.

The control pipe of the safety pilot is connected to the house side and the safety pilot is set for a slightly higher pressure than is normally carried on the house side. If, for any reason, the house pressure builds up, the safety pilot will throttle the primary main valve to maintain the house pressure at the setting of the safety pilot.

## Installation

The safety pilot is connected to the outlet of the No. 7A restriction tee of the Type E main valve. The control pipe is connected downstream where the system is being protected.

Install Type SP/P safety pilot in such a way that the flow will be in the same direction as that indicated by the body arrow. Emerson provides an instruction manual with every unit shipped. Refer to this for complete installation, operation, and maintenance instructions. Included is a complete list of individual parts and recommended spare parts.

Safety pilot operation within ratings does not preclude the possibility of damage from debris in the lines or from external sources. A safety pilot should be inspected for damage periodically and after any overpressure condition. Ensure that the operating temperature and pressure capabilities listed in Specifications section are not exceeded.

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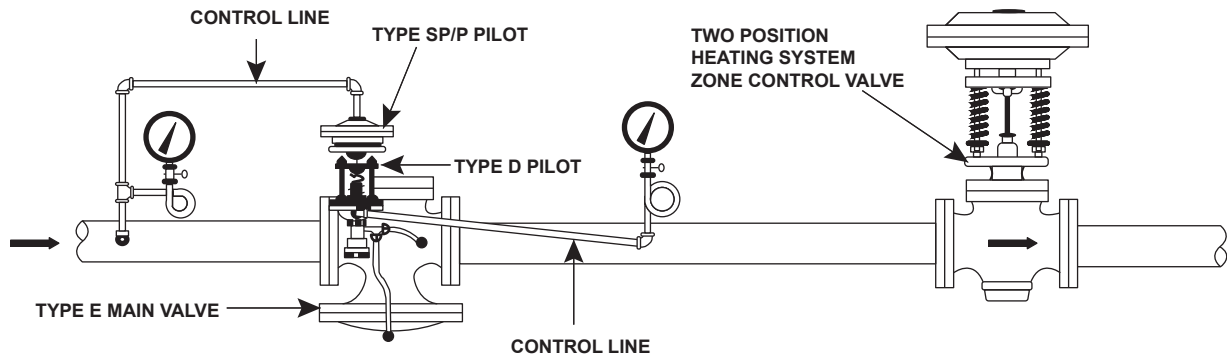


Figure 2. Type SP/P Safety Pilot Installation Drawing

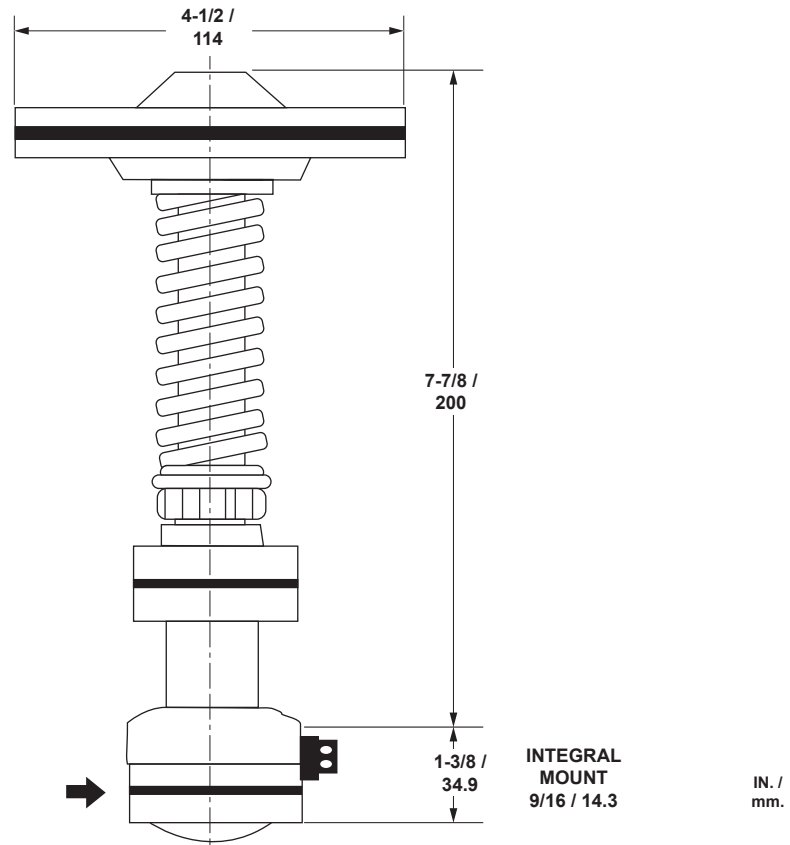


Figure 3. Type SP/P Safety Pilot Dimension

# Type SP/P

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## Ordering Information

When ordering, complete the ordering guide on this page. Refer to the Specifications section on page 2.

Review the description to the right of each specification and the information in each referenced table or figure. Specify your choice whenever a selection is offered.

## Ordering Guide

### Body Material (Select One)

- Bronze
- Carbon Steel

### Pressure Range (Select One)

- 5 to 13 psig / 0.35 to 0.90 bar
- 13 to 30 psig / 0.90 to 2.07 bar
- 31 to 65 psig / 2.14 to 4.48 bar
- 66 to 120 psig / 4.55 to 8.27 bar
- 121 to 175 psig / 8.35 to 12.1 bar

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