

PST CONTROLLER



COMPANY



For over 30 years Paladon Systems has been supplying valve actuators and control systems on a global basis.



Since its inception in 1981, Paladon Systems has continuously developed its design, engineering, organisational, quality and management capabilities. Today Paladon Systems designs and manufactures many valve automation technologies that lead the industry in terms of cost efficiency, operational performance and environmental responsibility.



Paladon Systems' vast experience with supporting the Oil, Gas and Power industries with valve automation solutions for the most critical applications in extreme operating environments has resulted in product designs that offer unsurpassed quality and reliability across all industries and applications.

Holding ISO 9001 certification for over 20 years, today Paladon Systems hold accreditation and approvals from almost all major institutes, engineering companies and end users.

Headquartered in England, Paladon Systems has offices and facilities in Scotland, Italy, Malaysia, the Russian Federation and the United States. With a comprehensive suite of valve automation solutions backed by a dedicated team of field service engineers, Paladon Systems is **Total Valve Control**.



INTRODUCTION

Many oil and gas and chemical industrial process have the inherent potential to jeopardize personnel safety, and cause equipment and environmental damage in the event of a catastrophic failure.

Safety Instrumented Systems (SIS) systems are specifically designed to reduce the chance of catastrophic failure, and mitigate the impact of one should the failure become unavoidable. Common SIS valve automation systems include amongst others; Emergency Shutdown Valves, Emergency Isolation Valves and Emergency Blowdown Valves.

The inherent problem with the above SIS systems is that since the valves typically remain in one position during normal process operation, there is the possibility that the valves will not move to the required emergency position when called to do so.

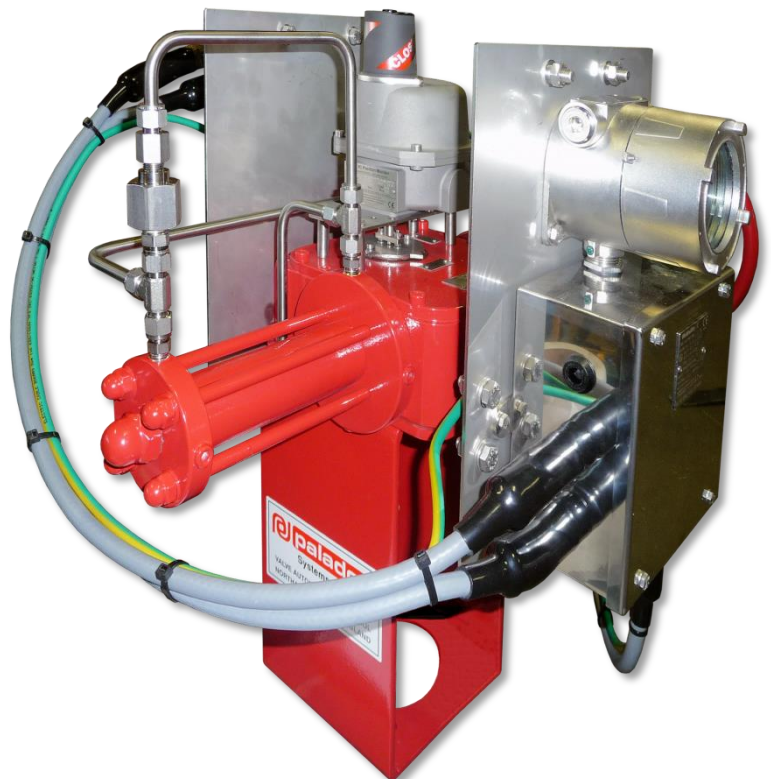
To reduce the Probability of Failure on Demand (PFD), most SIS systems employ Partial valve Stroke Testing (PST). PST involves stroking a valve to a certain position (usually 10 to 15° of total valve travel). By successfully partially stroking a valve towards its emergency position, the likelihood that it will move to full emergency position when called to do so is dramatically increased. In addition, since the valve is only partially stroked, PST can be undertaken without interrupting the normal operation of the process.

The PST Controller is designed to provide manual and automatic partial valve stroke testing of any pneumatic or hydraulic rotary or linear actuated valve system.



KEY FEATURES

- Valve travel confirmation by Position Transmitter to allow for automatic documentation of test results
- Position and time of transit operation
- Documentation by means of memory card or download
- PST can be initiated by:
 - ▶ Handheld infrared controller
 - ▶ Digital signal
 - ▶ Pre-programed schedule
 - ▶ External data link
- When PST is initiated, the valve will automatically move to a preset position, and immediately return to its normal position after PST operation
- Data logging during PST to ensure full system availability and compliance
- PST data logging with comprehensive diagnostics package
- Support for HART, Foundation Fieldbus and Profibus communication
- Safety function ensures any emergency command will override PST
- ATEX certified



KEY BENEFITS

■ Increased System Availability

By partially moving a valve on a regular basis, the PFD is dramatically reduced without impacting normal process operation.

■ Reduced Testing Costs

Since the PST can be undertaken automatically, or manually from a remote location, expensive manual field tests can be eliminated without affecting system availability.

■ Reduced Maintenance Costs

With comprehensive data logging during PST, potential valve failures can be identified long before they become critical and affect normal process operation, endanger plant personnel or result in damage to equipment or the environment. Analysis of the logged data allows operators to implement cost effective predictive maintenance programs and avoid unnecessary maintenance activities.

■ System Failure Alarm

In the event that a valve fails to move during PST, the test is immediately aborted and an alarm generated.

■ Automatic Compliance

Automatic PST with date stamped data logs allows operators to prove compliance with any mandatory testing requirements.

■ Robust, Compact and Cost Effective System

The PST Controller is supplied as part of a fully manifolded SIS valve automation system. The fully manifolded system reduces the likelihood of leakage through poorly installed tubing connections and/or through exposed tubing which is vulnerable to mechanical damage during transit or normal operation.



SPECIFICATIONS

■ User Adjustments

All adjustments are made using an Intrinsically Safe infrared keypad with user feedback on the LCD screen. Access to these adjustments is protected by a hard-wired remote enable and an internal pass code. On the HART and Foundation Fieldbus versions, adjustments are undertaken via the communications channel.

■ Environment

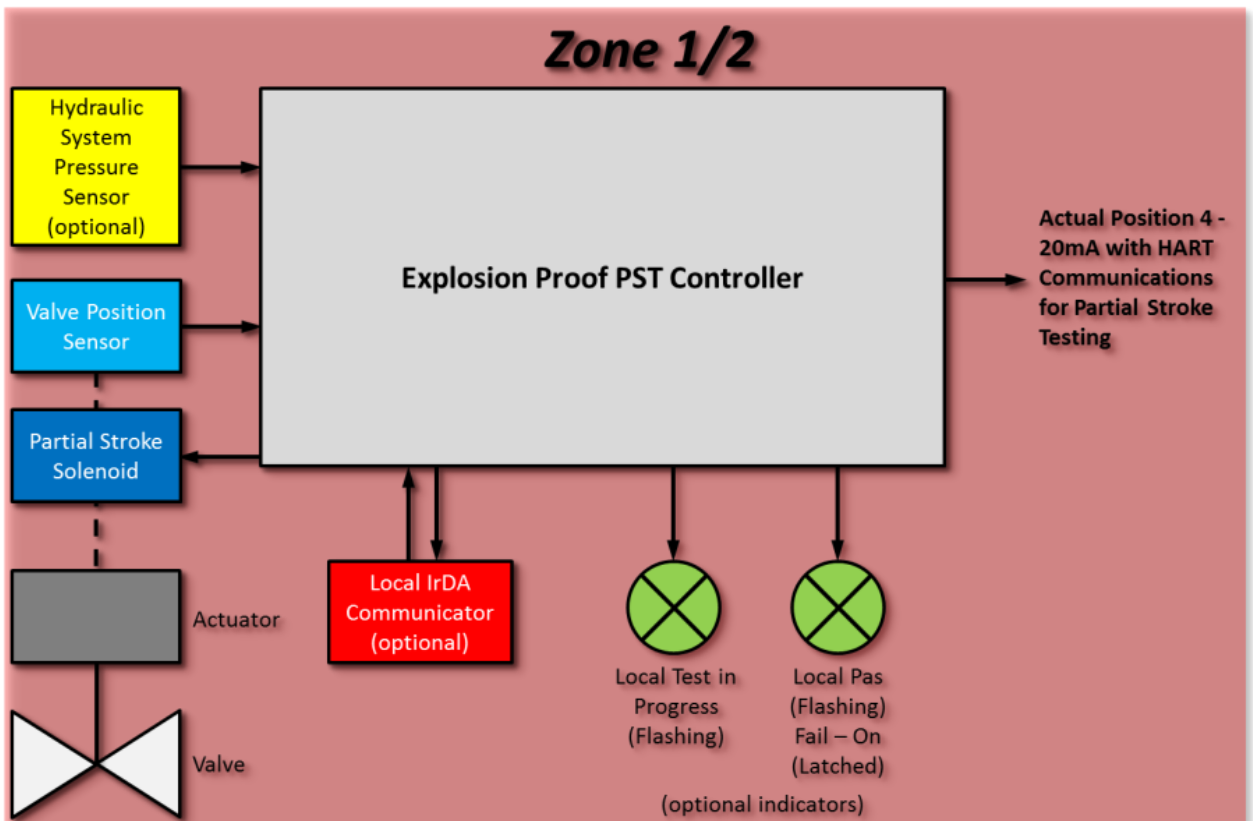
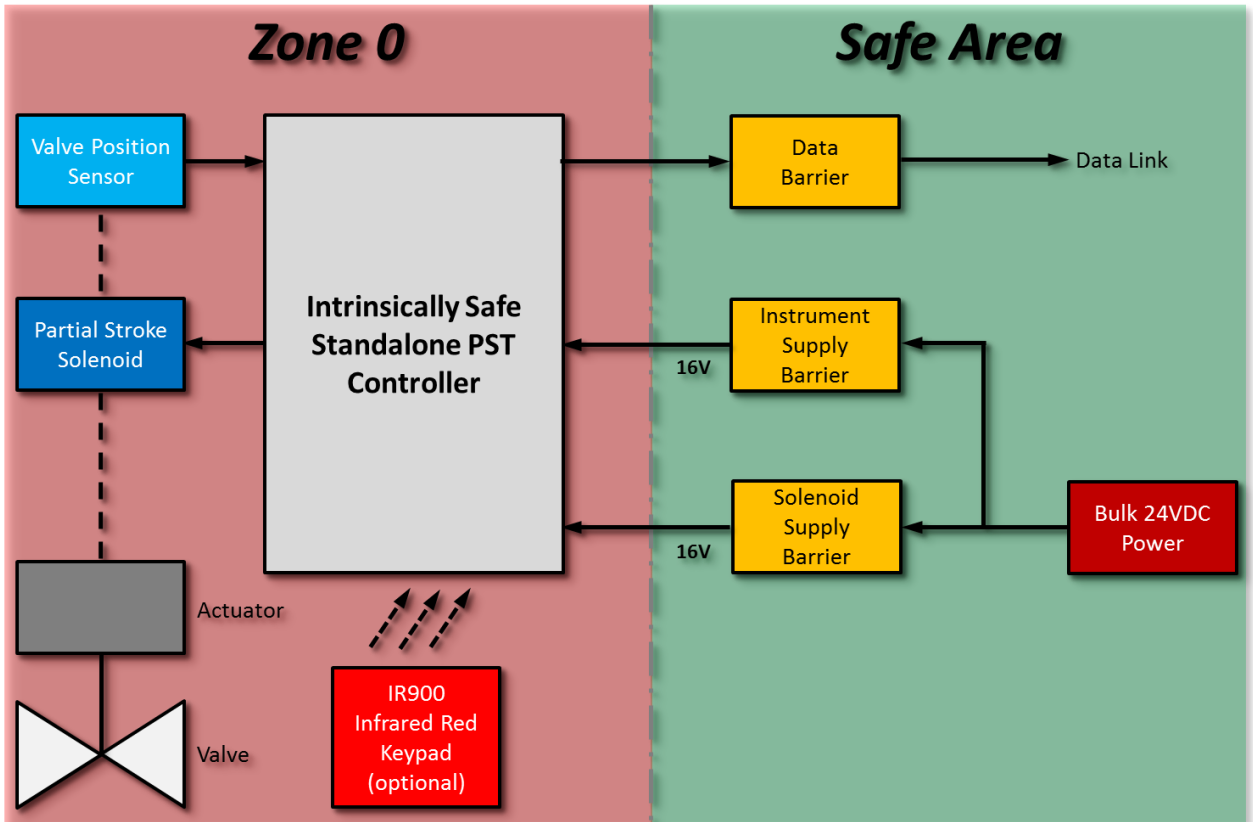
Operating temperature: -20°C to +55°C (-4 to +131°F)

■ Supported Communication Protocols & Methods

- ▶ HART
- ▶ Foundation Fieldbus
- ▶ Profibus
- ▶ Modbus
- ▶ Local infrared communicator

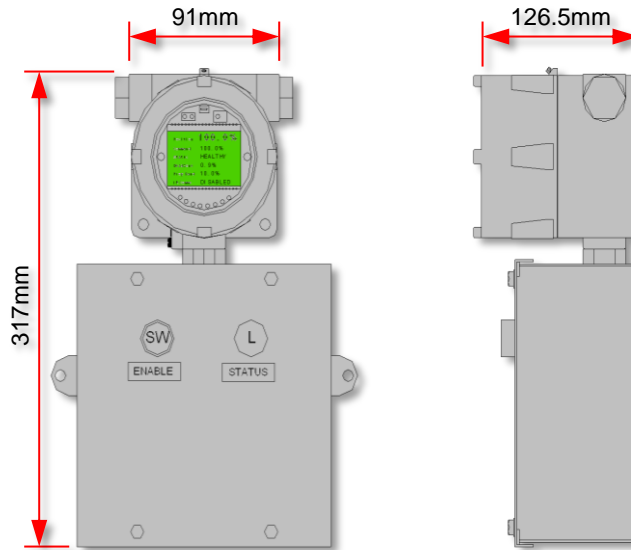


BASIC ARCHITECTURE OPTIONS

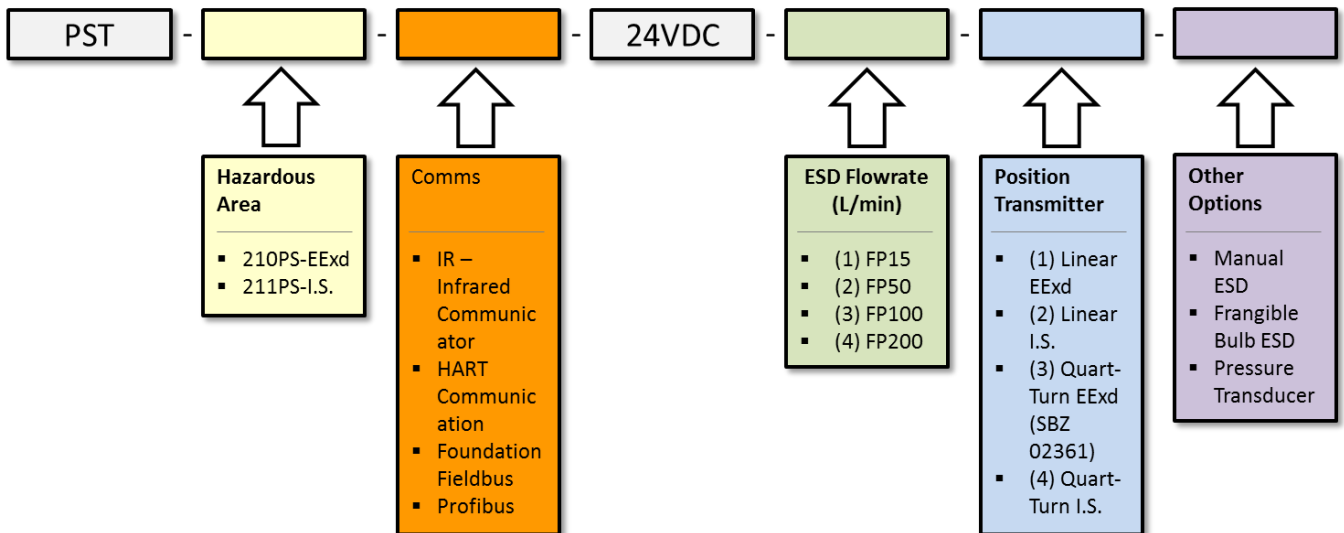


DIMENSIONS

The PST Controller is mounted within an Exd enclosure and all electronics tropicalized for operation in the most demanding environments.



MODEL NUMBERS



Example: PST-210PS-EEXD-IR-24VDC-FP50-3-*

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**UVDB**

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