

PressureGuard™

Self-Contained Hydraulic Emergency Shutdown Systems
For Rotary or Non API 6A Linear Valves



Design and Construction

Emerson - Actuation Technologies is a recognized leader in automated valve control in remote areas of the world.

Bettis™ actuators provide THE reliable solution for Emergency Shutdown (ESD) service.

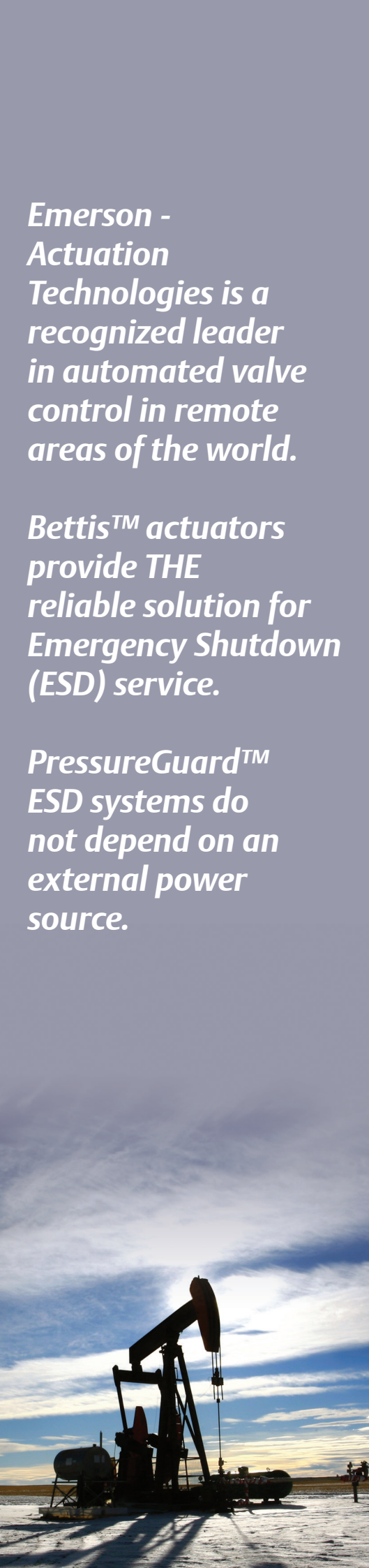
PressureGuard™ ESD systems do not depend on an external power source.

Emerson – Actuation Technologies has been providing reliable solutions for the pipeline, process and production segments of the energy industry and myriad other industries for more than 55 years. They have established themselves as an innovator, with products that fully automate valves under the most rigorous conditions and in some of the most remote areas in the world. Our product quality is supported by ISO 9001 designations indicating full compliance with global standards for quality and documentation.

PressureGuard™ Self-Contained Hydraulic Emergency Shutdown (ESD) Systems provide reliable valve shutdown capability when an external power source is either not available or not dependable. They can be used with rotary hydraulic operators to provide a fail-safe system for use with ball, plug and other quarter-turn valves, as well as non 6A linear operated valves.

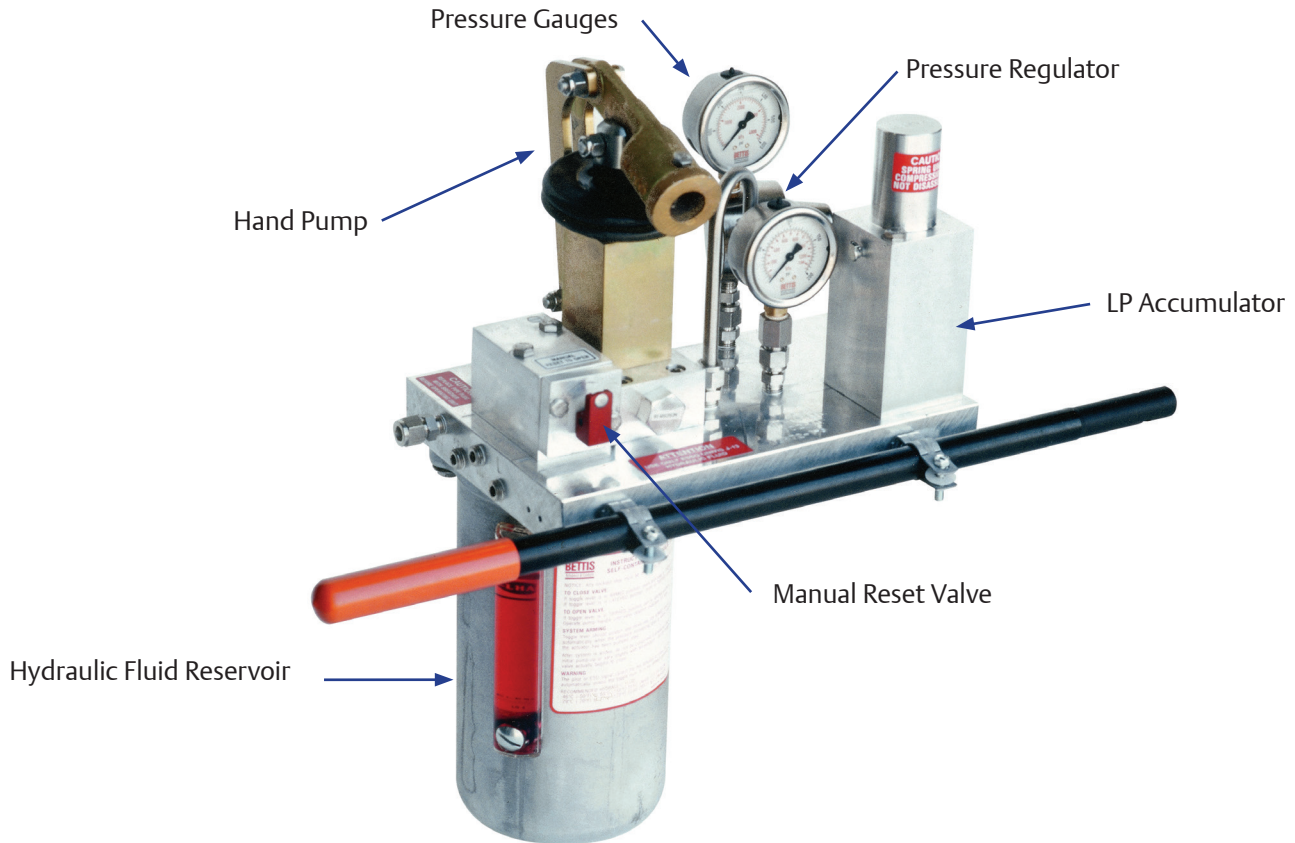
Benefits

- Suitable for remote, unmanned, unpowered and critical service.
- Standard hydraulic model available for all valve sizes and configurations.
- Modular design to simplify maintenance.
- Eliminates need for plant air, fuel gas, electricity or nitrogen backup.
- High pressure, zero leakage control.
- Minimum of working parts
- Adaptable for use with SCADA systems or remote signals.
- Fail safe design.



Product Features – Control System Module

The PressureGuard self-contained hydraulic control systems are supplied with a basic manifolded control package that provides a one-way local control using the handpump. In addition to its reliability, it provides quick and simple maintenance.



Hydraulic Fluid Reservoir

Available in 200-5,000 cu. in. displacements. Fitted with snubber and level indicator.

Hand Pump

Manually transfers hydraulic fluid from the reservoir to force it under pressure into the actuator and control system.

Pressure Gauges

High pressure (top) gauge monitors hydraulic pressure supplied to the actuator. Low pressure (bottom) monitors pressure in the low pressure control circuit.

Pressure Regulator

Reduces actuator high pressure to 100 psig for use of low pressure control components.

LP Accumulator

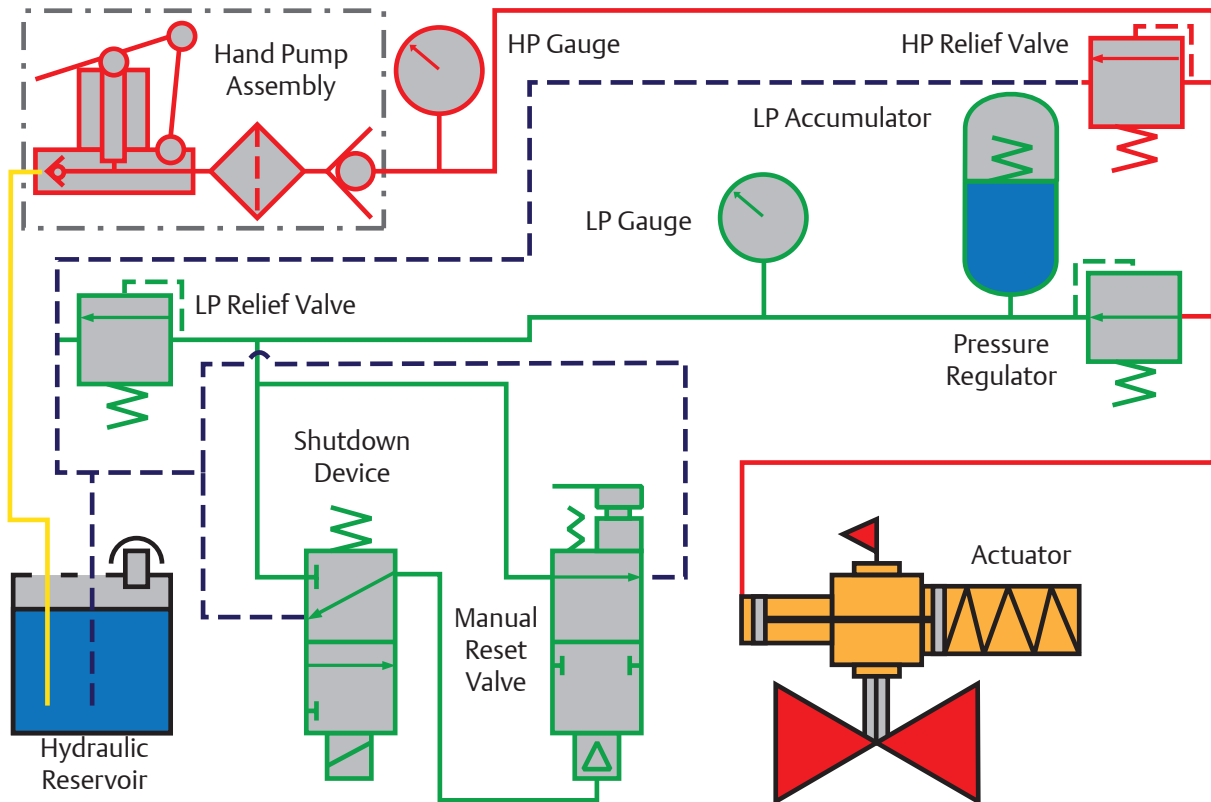
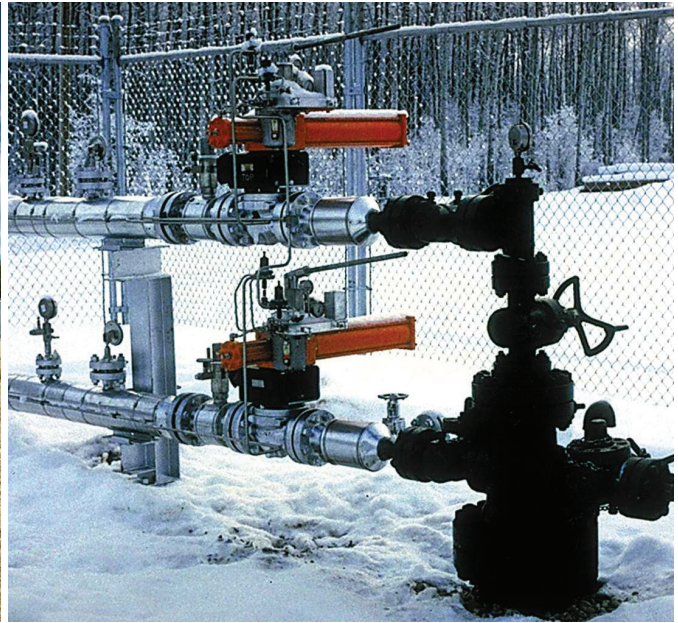
Prevents cyclic transfer of hydraulic fluid from high pressure to low pressure circuits.

Manual Reset Valve

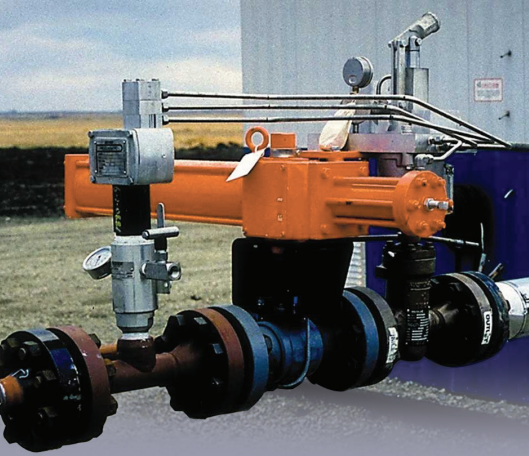
Used to bypass the shutdown device, allowing use of hand pump even when shutdown device is in fail position.



PressureGuard Operation



The PressureGuard self-contained hydraulic module operates in tandem with the Bettis actuator and control signal devices.



Options

PressureMatic™ High/Low Pressure Pilot

PressureMatic senses pipeline or process pressure and outputs a pneumatic or hydraulic signal, responding to high or low pressure conditions. It operates under maximum working pressures to 6,000 psig with field adjustable high set points to 4,450 psig and low set points to 20 psig, determined according to piston size, spring rate and mechanism adjustments. Available as automatic reset pilot valve (P-AR) or manual reset pilot valve (P-MR).



ISO Test Valve

The ISO Test Valve used with the PressureMatic, enables its calibration without shutting down the flow line. It is compact, safe and has a blowout proof stem that prevents removal when the valve is under pressure. The ISO test Valve has a maximum working pressure range of 3,000 psig to 6,000 psig.



*PressureGuard
ESD systems are
reliable and easy to
maintain.*

Bettis PressureGuard™ is manufactured to these worldwide standards as follows;



ISO – 9001
Cert. Num 93-13



Accredited by the Dutch Council
for certification

Emerson brands for most common control accessories:

| | |
|-----------------------------------|----------------|
| Digital Valve Controllers: | Fisher® |
| Positioners: | Fisher® |
| Regulators: | Fisher® |
| Switch boxes: | TopWorx |
| Wireless position monitor: | TopWorx |
| Solenoid valves: | ASCO Numatics™ |



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NORTH & SOUTH AMERICA

19200 Northwest Freeway
Houston TX 77065
USA
T +1 281 477 4100

Av. Hollingsworth
325 Iporanga Sorocaba
SP 18087-105
Brazil
T +55 15 3413 8888

ASIA PACIFIC

No. 9 Gul Road
#01-02 Singapore 629361
T +65 6777 8211

No. 1 Lai Yuan Road
Wuqing Development Area
Tianjin 301700
P. R. China
T +86 22 8212 3300

MIDDLE EAST & AFRICA

P. O. Box 17033
Jebel Ali Free Zone
Dubai
T +971 4 811 8100

P. O. Box 10305
Jubail 31961
Saudi Arabia
T +966 3 340 8650

24 Angus Crescent
Longmeadow Business Estate East
P.O. Box 6908 Greenstone
1616 Modderfontein Extension 5
South Africa
T +27 11 451 3700

EUROPE

Holland Fásor 6
Székesfehérvár 8000
Hungary
T +36 22 53 09 50

Strada Biffi 165
29017 Fiorenzuola d'Arda (PC)
Italy
T +39 0523 944 411

For complete list of sales and manufacturing sites, please visit www.emerson.com/actuationtechnologieslocations or contact us at info.actuationtechnologies@emerson.com

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