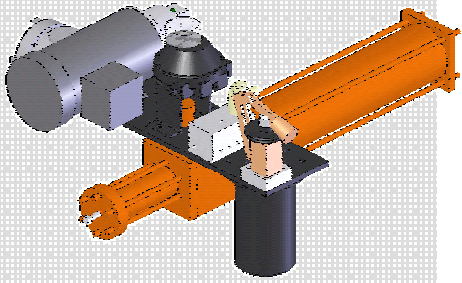


# Control Systems - gas & oil pipelines and stations



## Surrey Fluid Power Ltd. - Controls & Automation Division

Over the years, sfpaautomation has designed and build special telemetry and controls systems for operators on oil, gas pipelines and for station applications. These systems were designed to save costs or improve reliability and reduce maintenance. They have been repeatedly ordered due to their successful implementation. These systems are now available in variants with options for general outdoor or marine service or special service such as direct sweet or sour gas, and for harsh environments requiring low temperature trim and hazardous location certification.



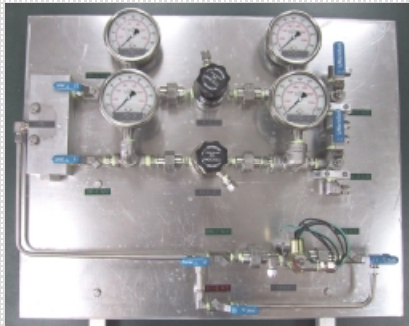
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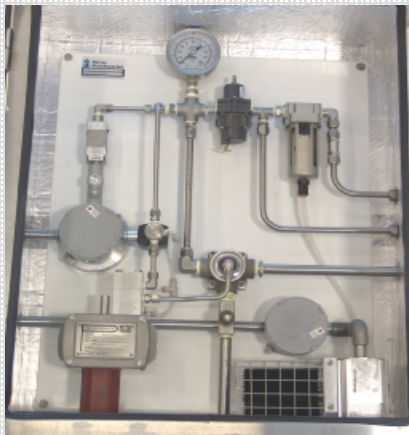
## Ú Fault Tolerant Regulator / Pressure Reducing Valve - Supply



Dual Auto-fail-over regulator with captured exhaust. Reliable low pressure supply for valve control, instrumentation, this system provides automatic fail-over to a secondary circuit, while locking out the failed primary circuit. Fast parts replacement without shutdown is possible using s.s. unions, block & bleed and captured exhaust. This panel is suitable for a many low pressure applications.

- ▣ Sweet gas, nitrogen, air or hydraulic supply
- ▣ Sour Gas Service NACE MR-0175 supply option
- ▣ Solenoid control and pressure sensors option
- ▣ Low temperature trim and CSA Explosion Proof option

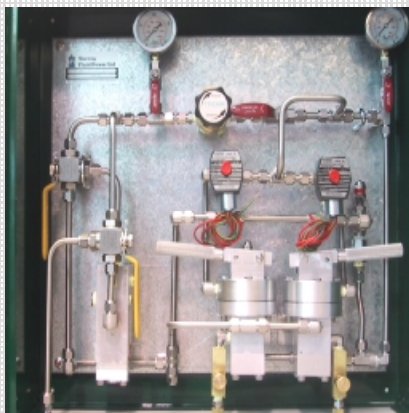
## Ú Safety Valve Control System – pneumatic or hydraulic



Reliable controller: safety valve / relief valve  
Automate any suitable ¼ turn or linear valve for pressure relief operation with automatic or manual reset. Operate any 2 way or 3 way valves for automatic diversion or relief to the downstream using a pneumatic actuator or gas hydraulic operator. Combine relief with block valve service or diverter valve function to reduce complexity and number of operators. (\*40-1000 PSI)

- ▣ Low pressure controls high pressure ANSI process pipeline
- ▣ Self contained full automated pressure relief function
- ▣ Remote solenoid control option, concurrent operation
- ▣ Telemetry option for pressure sensing using Rosemount & Winters pressure sensing devices. HART support.
- ▣ Low temperature trim and CSA Explosion Proof option
- ▣ Valve position feedback system

## Ú Open/Close Valve Control System – pneumatic or direct gas



Manual operation local panel & solenoid remote  
Automate any suitable ¼ turn or linear valve for open/close service using supply gas, air or nitrogen. Control allows actuator to be pressurized only during stroke; zero pressure at end of stroke (double acting actuators) making it suitable for pigging and block service. Single acting systems allow spring return actuator on local pilot or remote solenoid to provide emergency shut down or blow down operation.

- ▣ Low pressure controls high pressure ANSI process pipeline
- ▣ Optional direct gas model, captured exhaust (Entella)
- ▣ Telemetry option for pressure sensing using Rosemount Or Winters pressure devices, and HART support.
- ▣ Low temperature trim and CSA Explosion Proof option

**BETTIS**  
Actuators & Controls  
Valve Automation Center

## Ú LP Direct Gas Emergency Shutdown System & manual station



Low pressure pipeline gas operator with pneumatic pilot  
Automate any suitable ¼ turn or linear valve using low pressure direct gas with automatic shutdown / fail open modes without electrical sensors or signals. A pneumatic pilot triggers on a falling and/or rising pressure set point. A rate of drop system is optional. Pilot provides the 'trigger' to cause the automatic fail-safe stroke. Ultra compact and balanced the system is modular and self contained making it suitable for vaults. Low temperature trim is standard.

- ▣ Bettis power gas storage vessel to fit small pit or vaults
- ▣ Operate line valve on gas pressures as low as 40 PSI.
- ▣ Process pipeline pressures as low as 100 PSI up to ANSI 900 CL.
- ▣ Direct gas model have captured exhaust (Entella)
- ▣ Bettis Pressure pilot on rising and/or falling pressures
- ▣ Bettis Delta-Matic or J1RT2 Rate of Drop system pilot option
- ▣ Isolate the auto pilot shutdown for calibration & manual mode
- ▣ Time delay option on piloted shutdown to phase out transients
- ▣ Manual hand wheel or hydraulic override option

## Ú Emergency Shutdown System – or Blow Down System



Manual operator panel & solenoid remote operator  
Automate any suitable ¼ turn or linear valve for open/close service using supply gas or air. A spring return actuator controlled by a local pilot or remotely via solenoid control valve provides emergency shut down or blow down operation without power.

- ▣ Operate using air or gas as low as 40 PSI an up to 250 PSI
- ▣ Optional direct gas model, captured exhaust (Entella)
- ▣ Lockable manual hand wheel or hydraulic override
- ▣ Telemetry option for pressure sensing using Rosemount & Winters pressure devices, and HART support.
- ▣ Regulated supply & filter option for water and particles
- ▣ Manual Override System: Hydraulic (shown) or hand-wheel
- ▣ SIL Redundant Control & Partial Stroke System Option
- ▣ Integral speed control for open or close stroke
- ▣ Panel or enclosure direct mounted to actuator
- ▣ Balanced 3 point suspension for easy installation
- ▣ Valve position feedback system option
- ▣ Low temperature trim and CSA/UL Explosion Proof

## Ú Precision Control Valve with Fast E.S.D. – direct gas or air



Combine modulation of choke valve with fast fail-safe  
Automate any suitable ¼ turn valve for high repeatability and accuracy and combine with a fast failsafe stroke. Modulating control is done using an ultra low bleed PMV D3x positioner. On a pneumatic signal from a Bettis pressure pilot or a rate of drop system, the differential gap controller switches from modulating (PMV D3x) to ESD mode. A pneumatic Bettis relay and control valve generates a variably fast emergency shut down-stroke. Electric pilot ESD is optional

- ▣ Digital 4-20mA input controller and 4-20mA feedback
- ▣ Operate on air or gas as low pneumatic pressure 35 to 150 PSI
- ▣ Process pipeline pressures as low as 100 PSI up to ANSI 2500 CL.
- ▣ Steady state ultra low bleed and captured exhaust
- ▣ Regulated supply and filter option for water & particles
- ▣ Low temperature trim -50 F , CSA Explosion Proof option
- ▣ Panel or enclosure direct mounted to actuator
- ▣ Balanced 3 point suspension for easy installation



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