



VRG
CONTROLS

RCVC Red Circle Valve Controller

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Platinum Natural Gas Solutions
www.ptngs.com

RCVC Red Circle Valve Controller

Rugged and Intelligent Valve Control with Zero Steady State Emissions for Natural Gas Control Valves

The VRG Red Circle Valve Controller provides accurate positioning of natural gas control valves via electronic signal. The RCVC can accept analog or discrete input signals. The RCVC is compatible with all VRG Controls control valve actuators and may also be installed on virtually any design of pneumatic control valve actuator. The Red Circle Control Valve features zero steady state consumption with an ability to discharge emissions to a suitable nearby pressure system. The high pressure capability of the RCVC system allows for efficient use of more compact pneumatic actuators. The RCVC is equipped with the most advanced programmable control capabilities, diagnostics and operational features to ensure the highest performance and easiest integration on new or retrofit applications.



RCVC Red Circle Valve Controller

Features and Functions Designed For Gas Pipelines

Hi Resolution Color TFT Programmable Display with Intuitive and Easy Read Menu

Rotary Control Switch Provides Non-Invasive Menu Navigation and Setup

4-20 mA Analog Command Signal Input OR ± 24 VDC Discrete Pulse Positioning

ZERO Steady State Emissions with Ability to Discharge to Pressure System for Complete Atmospheric Emissions.

RCVC Electrical Ports and Mounting Brackets Provide Flexible Configuration. 100% Compatible with Existing Becker/GE DNGP & EFP Enclosures for Easy Retrofit

Class 1, Div. 1 Ex Proof Terminal Strip Housing Provides Generous Room for Easy Wire Termination

RCVC May be Installed Directly on Control Valve or Remotely in Control Cabinet or RTU Building

PLUG & PLAY REPLACEMENT FOR BECKER/GE DNGP POSITIONER



RCVC Red Circle Valve Controller

RED  CIRCLE
VALVE CONTROLLER

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RCVC Exclusive Features – Only with VRG!

- **RCVC Override – Apply 24 VDC to OPEN/CLOSE Valve – No Additional Hardware Required**
- **OPEN/CLOSE on loss 24 VDC Power Supply – For Spring Return Actuated Control Valves**
- **Directionally Adjustable Deadband and Pulse Control in OPEN or CLOSE Direction**
- **Alarm Output (24 VDC) to Indicate Failure of:**
 - **Command Signal**
 - **Feedback Signal**
 - **RCVC Placed in Manual Mode**
 - **Any RCVC System Fault**
- **Pulse Control Allows Adjustable “Asymptote Response” to Eliminate Valve Overshoot**
- **Alarm Output (24 VDC) can Register in Control System and/or Trigger a Device Such as Solenoid Valve**
 - **Can Swap Between VPC Control and RCVC Control via Alarm Output**
 - **Anti-Surge Control Valves use Alarm Output for Rapid Surge Response**

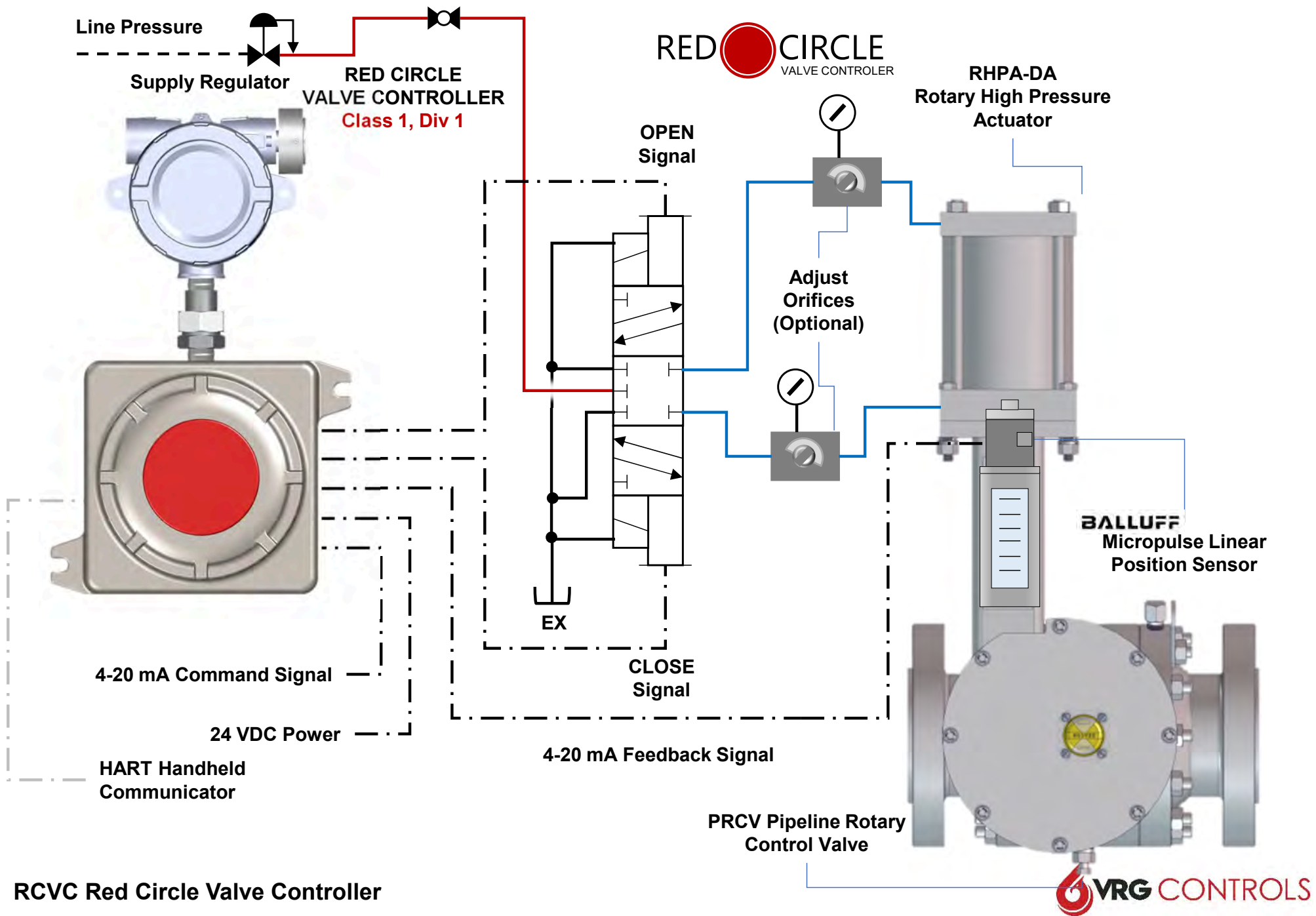


RCVC Standard Features – Designed for Natural Gas

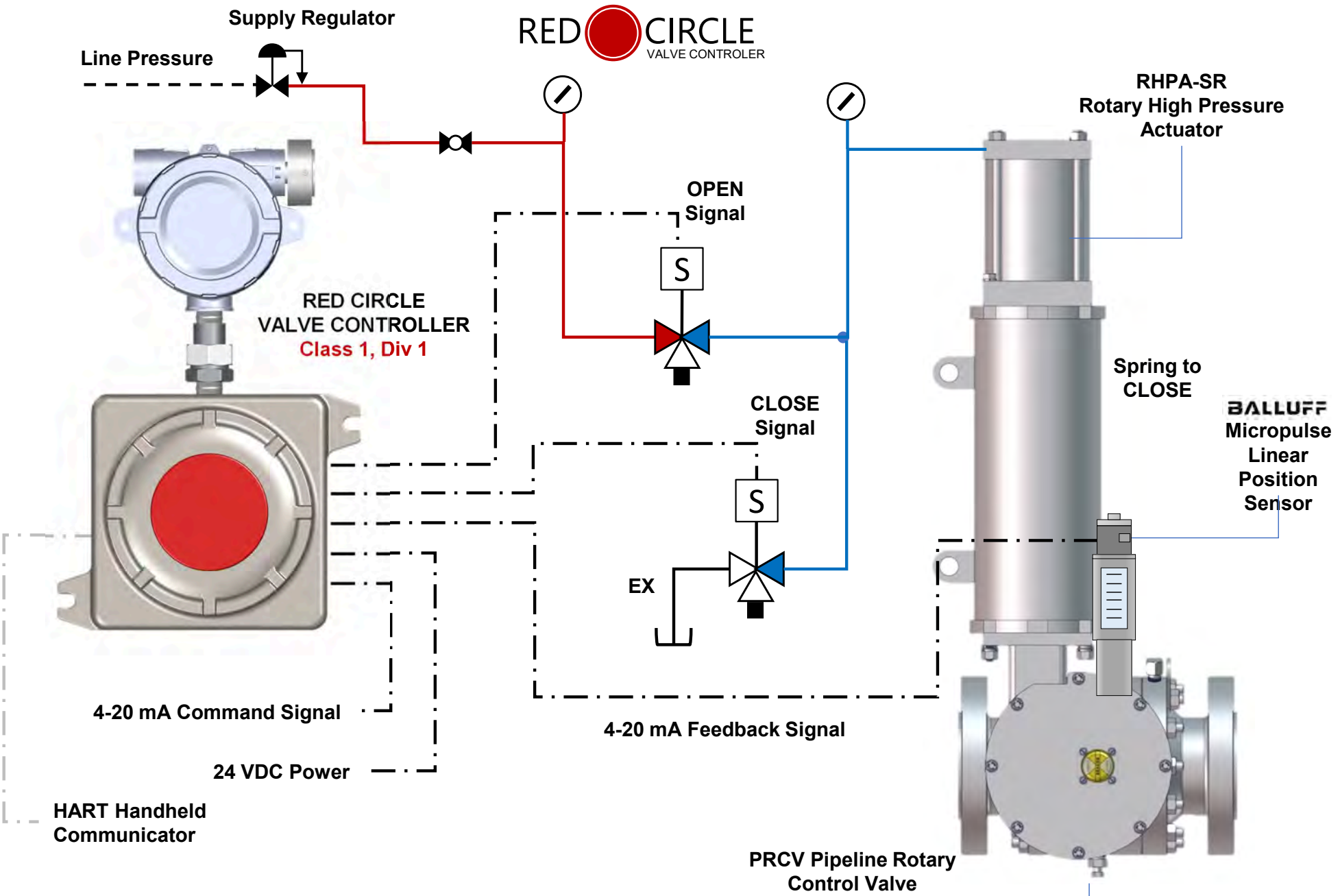
- **Lock Last Position on Loss of 4-20 mA Command and/or 24 VDC Power Supply**
- **Supply Pressure (Pneumatic) from 30 psig to 250 psig**
- **ZERO Steady State Gas Emissions**
- **Gas-Tight to Ensure any Discharge Directed Safely Outside Building or Enclosure**
- **Discharge to a Pressure System up to 200 psig for Complete Elimination of Emissions**
- **Rotary Control Switch Provides Non-Invasive Menu Navigation and Setup**
- **Class 1, Div 1 Explosion Proof Designed for Natural Gas**
- **Easy RCVC Reversible Action (Reverse / Direct)**
- **“RCVC-REM” Version Designed for Remote Install in Building**
- **Solenoid Counter Pulse Signal May be Communicated Remotely**
- **HART Protocol for Advanced Communication and Remote Configuration Features**
- **USB Link for Setup and Diagnostics of RCVC System**
- **Portable Data Settings for Safeguard and Consistent Configuration**



RCVC Schematic – Hi Pressure Double Acting Configuration



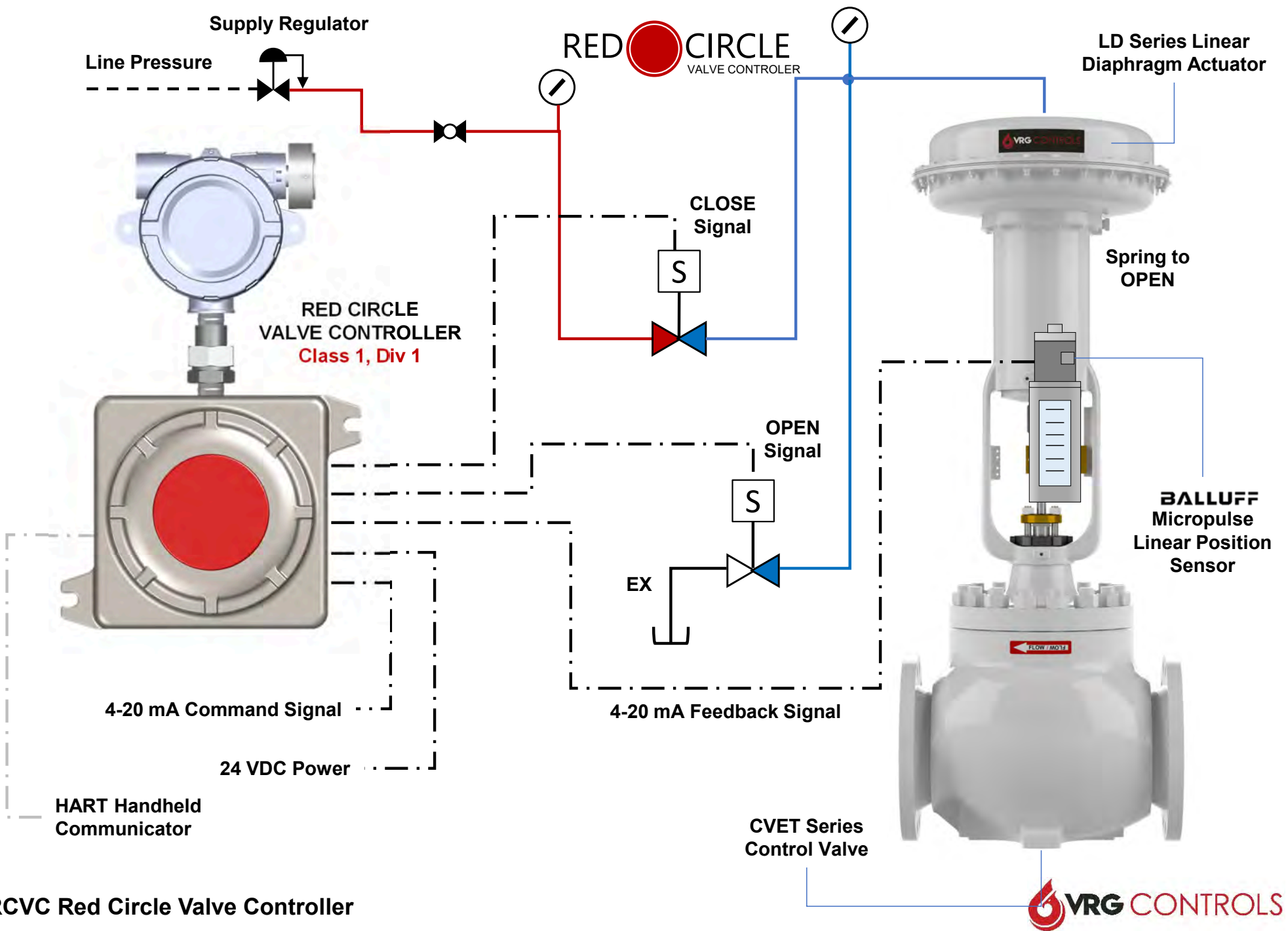
RCVC Schematic – Hi Pressure Single Acting Configuration



RCVC Red Circle Valve Controller

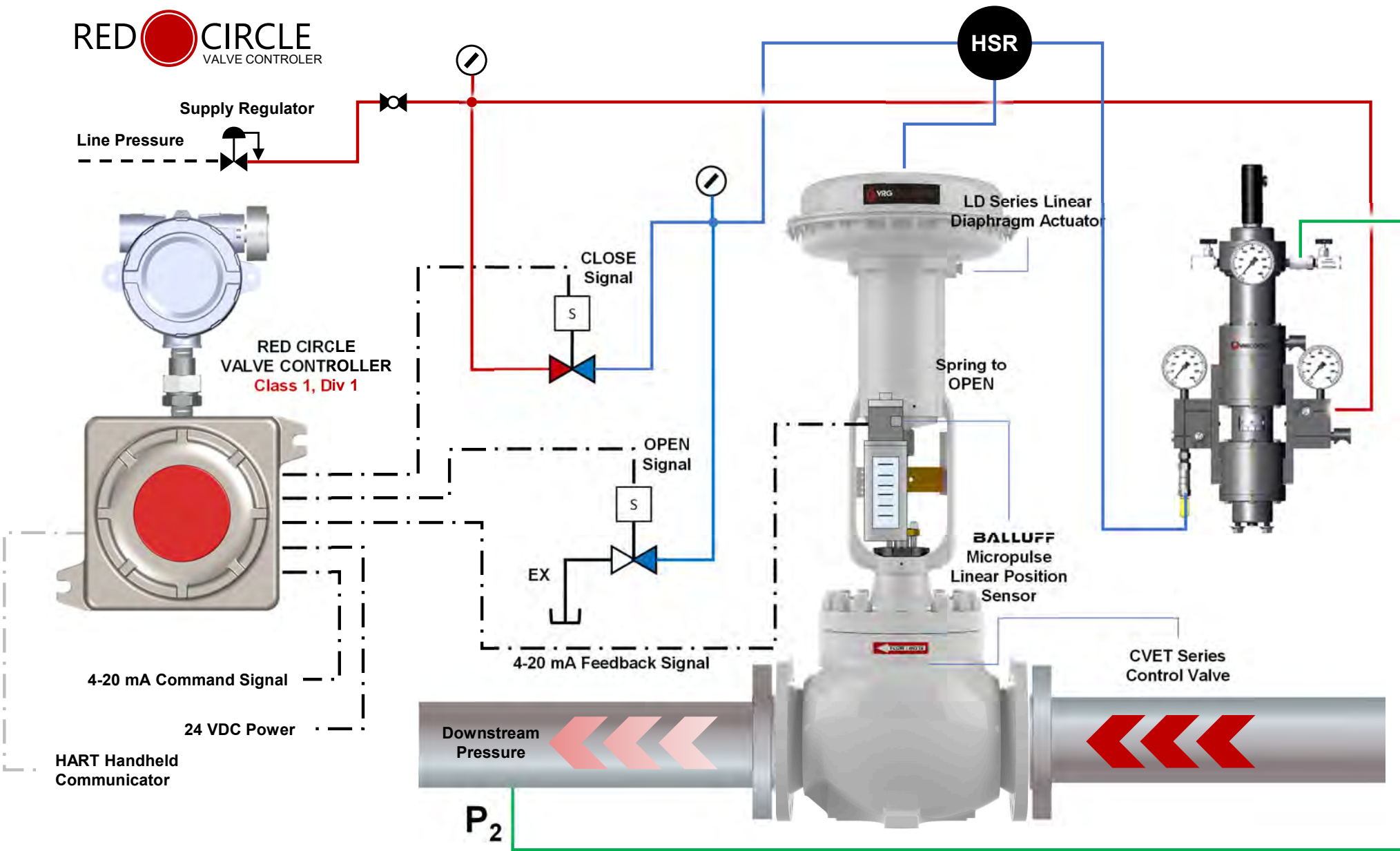


RCVC Schematic – Low Pressure Single Acting Configuration



RCVC Red Circle Valve Controller

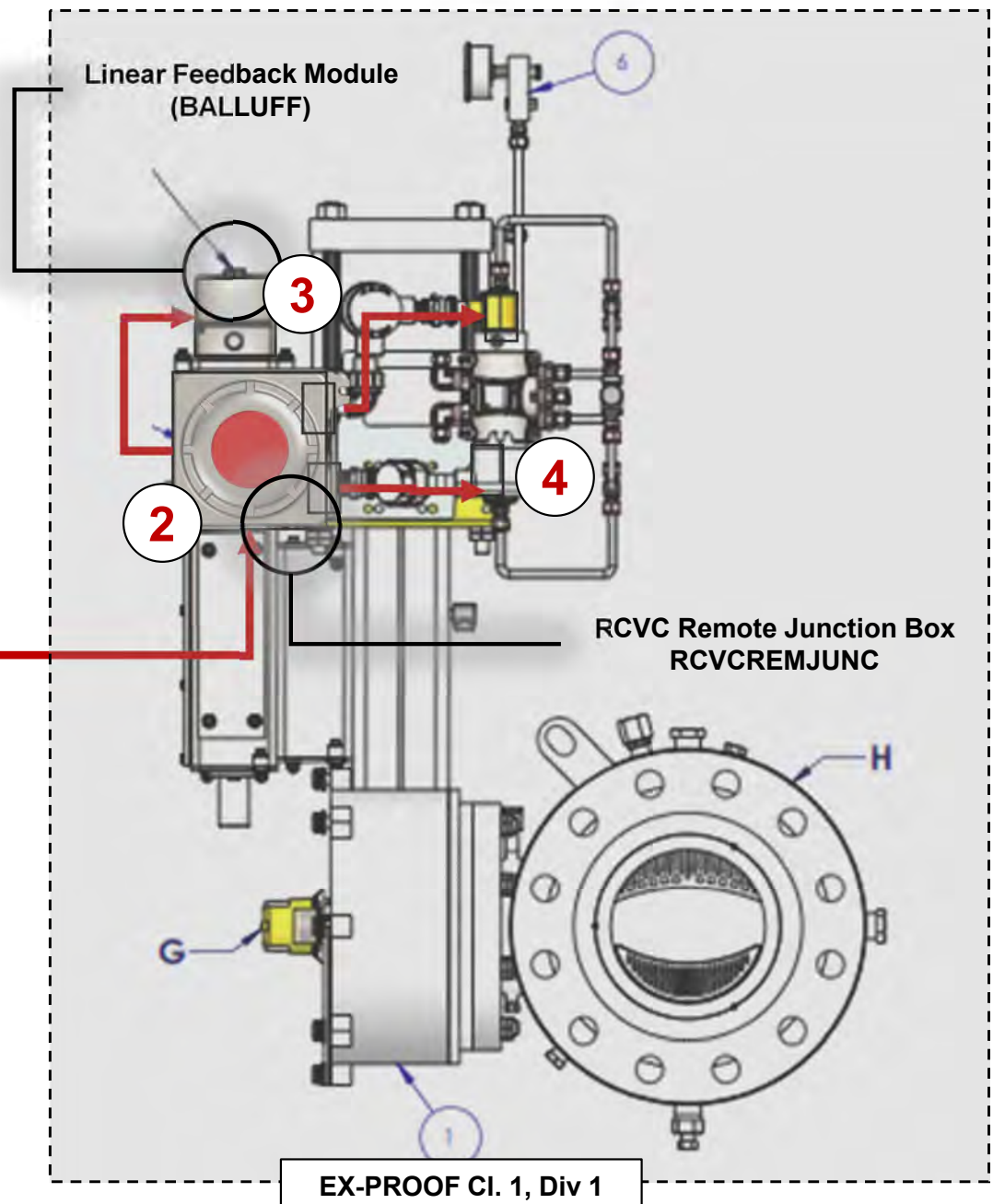
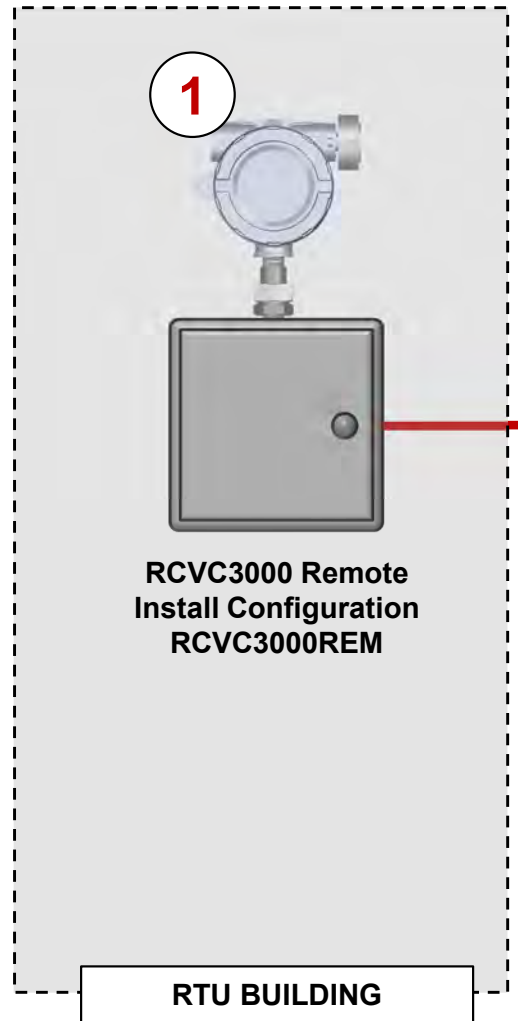
PCO Pressure Control Override – Low Pressure Single Acting





RCVC Remote Installation Configuration

Primary Remote RCVC Components


- 1. RCVC Remote Module
- 2. RCVC Remote Terminal Box
- 3. Balluff Linear Feedback
- 4. RCVCSOLDA (AAA) Solenoid Pack





RCVC Solenoid Pack Selection – Double Acting

| | Double Acting Standard Pressure Solenoid Pack | Double Acting High Pressure Solenoid Pack |
|--------------------|--|--|
| |   |   |
| Supply | 20 – 150 psig | 151 – 250 psig |
| Model | AAA Model SY4X (Internal Pilot) | AAA Model SY4XZ (External Pilot) |
| Voltage | 24 VDC | 24 VDC |
| Type | 3-Position, 5-Way Self-Centering | 3-Position, 5-Way Self-Centering |
| Other Specs | Cv 0.50, 24 VDC, 3-Position, 5-Way, Self-Centering, Internal Pilot, Mod. Temperature (-20F), Aluminum Construction, Universal, UL CSA CE Approved, Ex Proof Cl. 1 Div 1., Buna N Elastomers, .500 NPT Primary Ports, 0.125 NPT Exhaust Ports, Tapped Exhaust | Cv 0.50, 24 VDC, 3-Position, 5-Way, Self-Centering, External Pilot, Mod. Temperature (-20F), Aluminum Construction, Universal, UL CSA CE Approved, Ex Proof Cl. 1 Div 1., Buna N Elastomers, 0.500 NPT Primary Ports, 0.125 NPT EX-Pilot / Exhaust Ports, Tapped Exhaust |

RCVC Solenoid Pack Selection – Single Acting

| | Single Acting High Pressure Solenoid Pack | Single Acting Low Pressure Solenoid Pack |
|--------------------|---|--|
| |   |   |
| Supply | 41 - 150 psig | 20 – 40 psig |
| Model | ASCO EV8327G052 (QTY 2) | ASCO 8262G220 (QTY 2) |
| Voltage | 24 VDC | 24 VDC |
| Type | 2-Position, 3-Way One Port Plugged 2/2 | 2-Position, 2-Way |
| Other Specs | Cv 0.50, 24 VDC, 2-Position, 3-Way (One Port Plugged), Low Temp. (-40F), Stainless Steel Body, Universal, UL CSA CE Approved, Ex Proof Cl. 1 Div. 1., Buna N Elastomers, 0.250 NPT Ports, Tapped Exhaust. One (1) for CLOSE and One (1) for OPEN. | Cv 0.50, 24 VDC, 2-Position, 2-Way, Low Temp (-40F), Stainless Steel Body, Universal, UL CSA CE Approved, Ex Proof Cl. 1 Div 1., Buna N Elastomers, 0.250 NPT Ports, Tapped Exhaust. One (1) for CLOSE and One (1) for OPEN. |

RCVC Feedback and Limit Switch Components

| | Rotary Feedback Module | Linear Feedback Module |
|-------------------------|--|--|
| | <p>ROTARY FEEDBACK NOT PREFERRED</p>  <p>WESTLOCK CONTROLS CORPORATION</p> |  <p>BALLUFF</p> |
| Model | Westlock 2007X-2-SPDT | Balluff BTL7-E501-M0153-J-DEXC-TA12 |
| Type | Rotary Limit Switch ONLY Assembly | Micropulse Linear Position Sensor |
| Limit Switches | SP-DT, DP-DT, QTY 2 or 4 Mechanical or Proximity Type | Not Available |
| Visual Indicator | Beacon High Visibility Position Indicator | Linear Travel Scale (10% Increments) |
| Other Specs | 90 Degree Rotary Limit Switches, w High Visibility Beacon Travel Indicator, Area Classification Cl 1 Div 1 Groups C&D / T6, NAMUR Output Shaft, Various Limit Switch Configurations, Powder Coat Aluminum Housing, Available w Optional 4-20 mA Analog Feedback (Passive Use Only) | 4-20 mA Micropulse Transducer, 0.250 FNPT Elec. Connections, UL CSA CE Approved, Ex Proof Cl. 1 Div 1, Stroke Lengths Available: 4, 6, 8, 12 and "SHORT LENGTH" 2.0 IN or less adjustable, Linear Feedback Mounting Kits Available |

RCVC Primary Module Specifications

| | |
|-----------------------------|--|
| Model: | RCVC-2000 Red Circle Valve Controller |
| Installation: | Valve Mount or Remote Installation |
| Diagnostics: | Onboard Graphical Performance Evaluation |
| Display: | High Resolution, Programmable, Multi-Color Display |
| Command Signal: | 4 – 20 mA Analog OR 24 VDC Discrete Pulse |
| Feedback Signal: | 4 – 20 mA (Internal or External Loop Power) Remote/Local Trigger Counter Digital Feedback |
| Deadband: | Adjustable 0.1% to 2.0% Travel, Typically Set 0.5% Standard |
| Hysteresis: | 0.5% Full Scale (with standard Rotary Position Feedback Module) |
| Linearity: | 0.5% Full Scale (with standard Rotary Position Feedback Module) |
| Failure Mode: | OPEN, CLOSE, or LOCK on Loss Command Signal |
| Consumption: | ZERO STEADY-STATE Bleed to Pressure System Capable |
| Rating: | EXPLOSION PROOF, Class 1, Div. 1 |
| Connections: | ½ FNPT Pneumatic Connections Port ¾ FNPT Electrical Connections |
| Temperature: | -20°F to +120°F (-29°C to +49°C) |
| Compatibility: | Dimensions, Ports, Connections 100% Compatible with Existing GE/Becker DNGP Replacement |
| Communication: | HART Protocol Compliant, USB Computer Interface |
| Manual Override: | Local Manual Valve Positioning Onboard |
| Adjustment: | Non-Intrusive Local Thumbwheel Adjustment |
| Area Classification: | Class 1, Div. 1 EXPLOSION PROOF |



**REQUIRES PAIRED SOLENOID VALVE(S) ASSEMBLY
PAIRED VALVE POSITION TRANSMITTER**

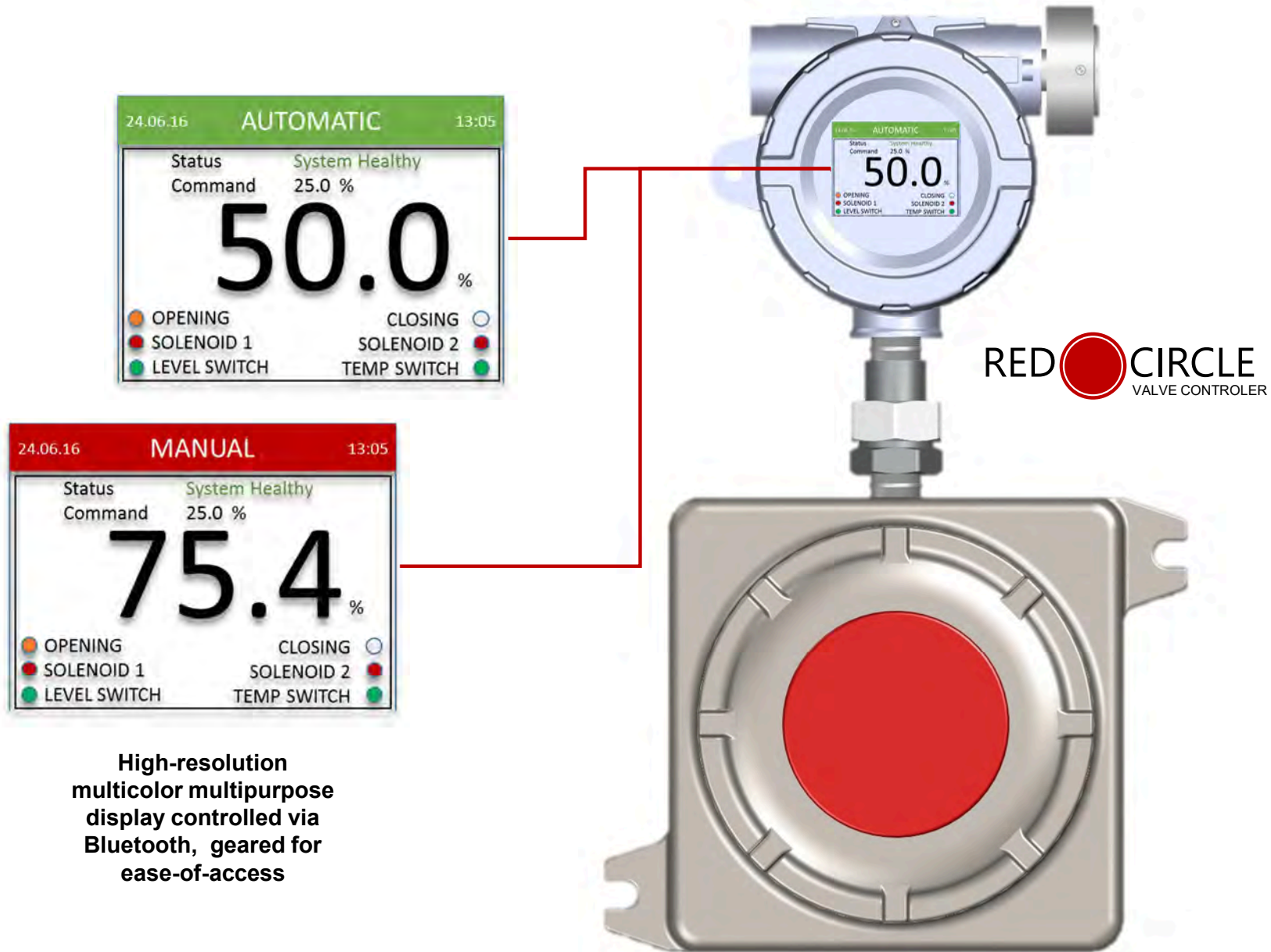
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RED CIRCLE
VALVE CONTROLLER

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Easy Setup and Configuration via Menu Driven Platform



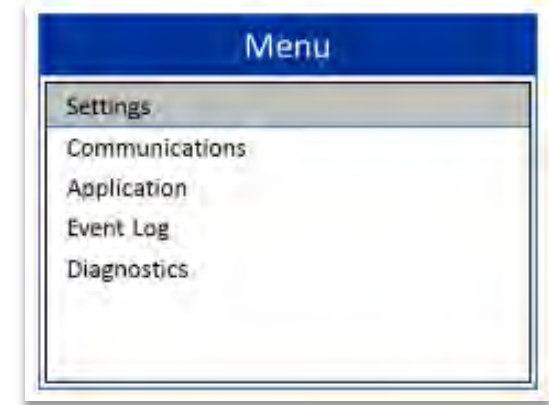
Sample of RCVC Menu Screens



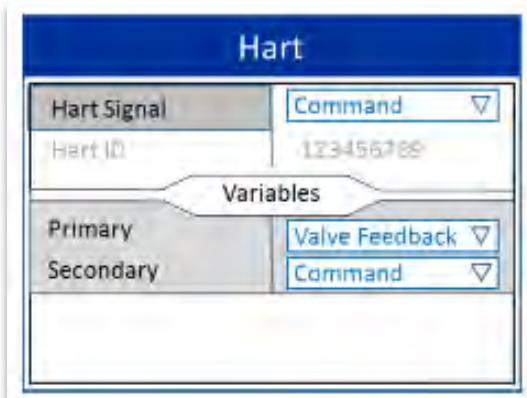
AUTOMATIC Mode



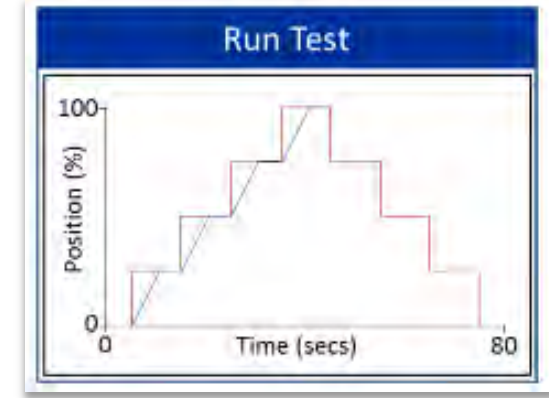
MANUAL Mode



Main Top Level Setup Menu



HART Top Level Menu



Example STEP TEST Output Graph



RCVC Application – Kinder Morgan – Rye NY Meter Station FCV

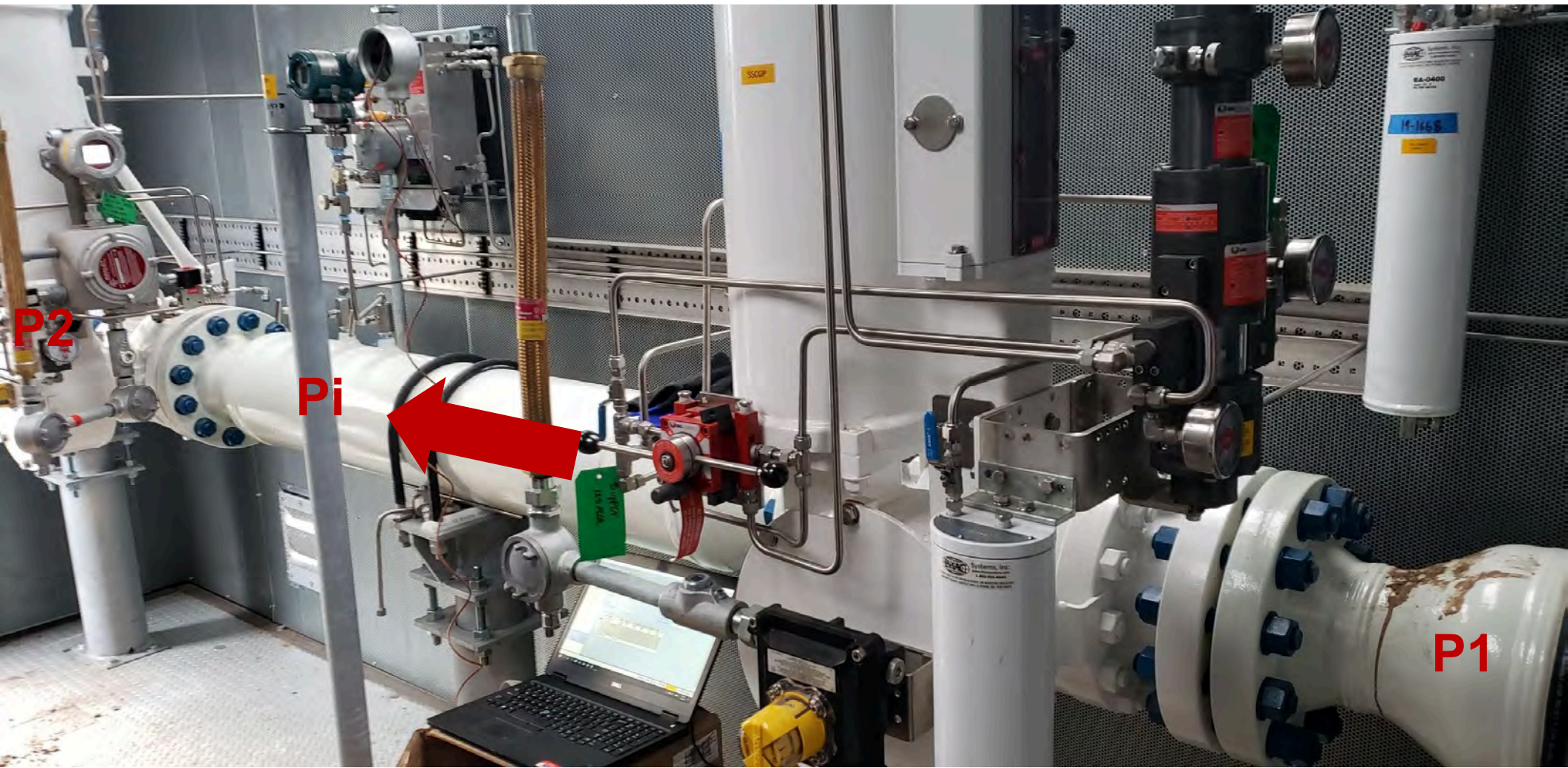


Direct Mount / Double Acting



Below Ground Control Valve

RCVC Application – SSCGP VPC 1st Stage Cut w RCVC Flow Control



RCVC Red Circle Valve Controller

RCVC Application – NICOR Electronic Pressure Control



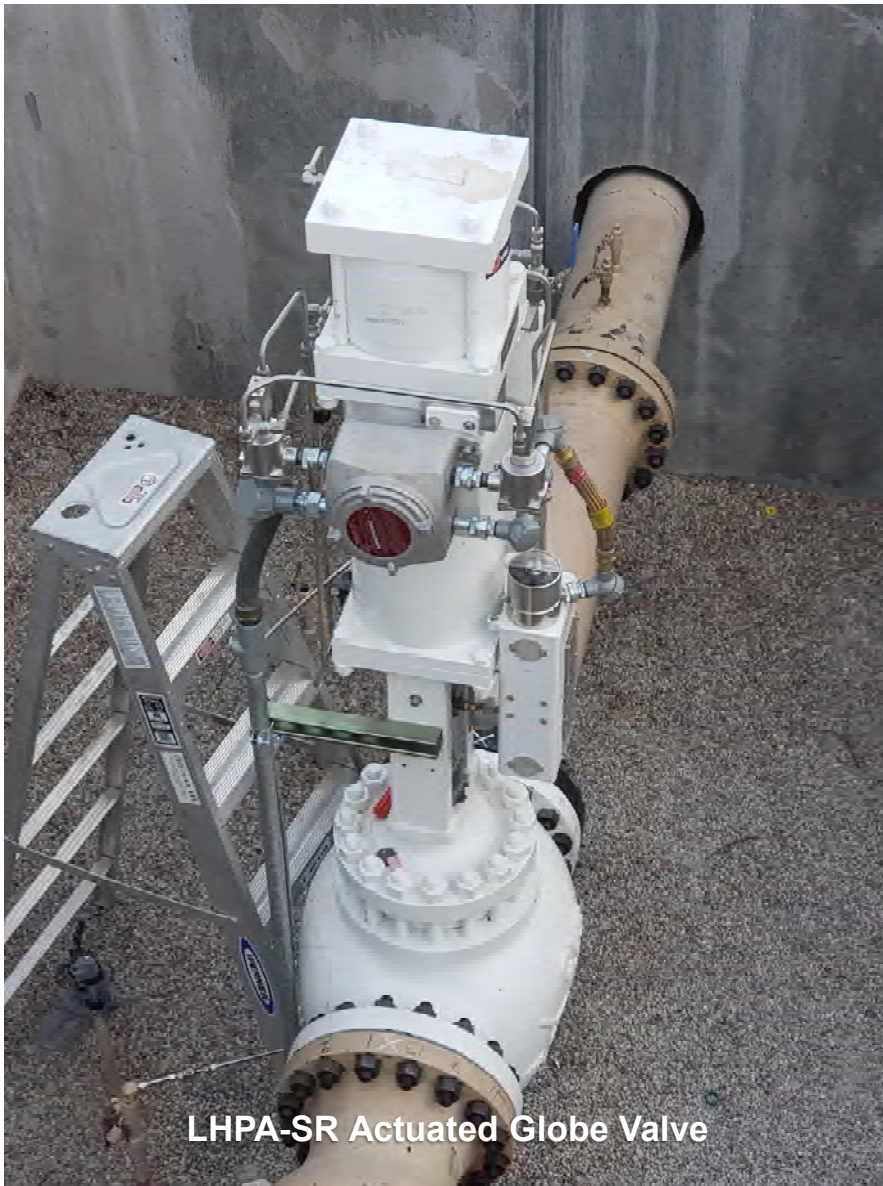
RCVC Red Circle Valve Controller

RCVC Application – SWG Corp. – Remote RCVC Installation

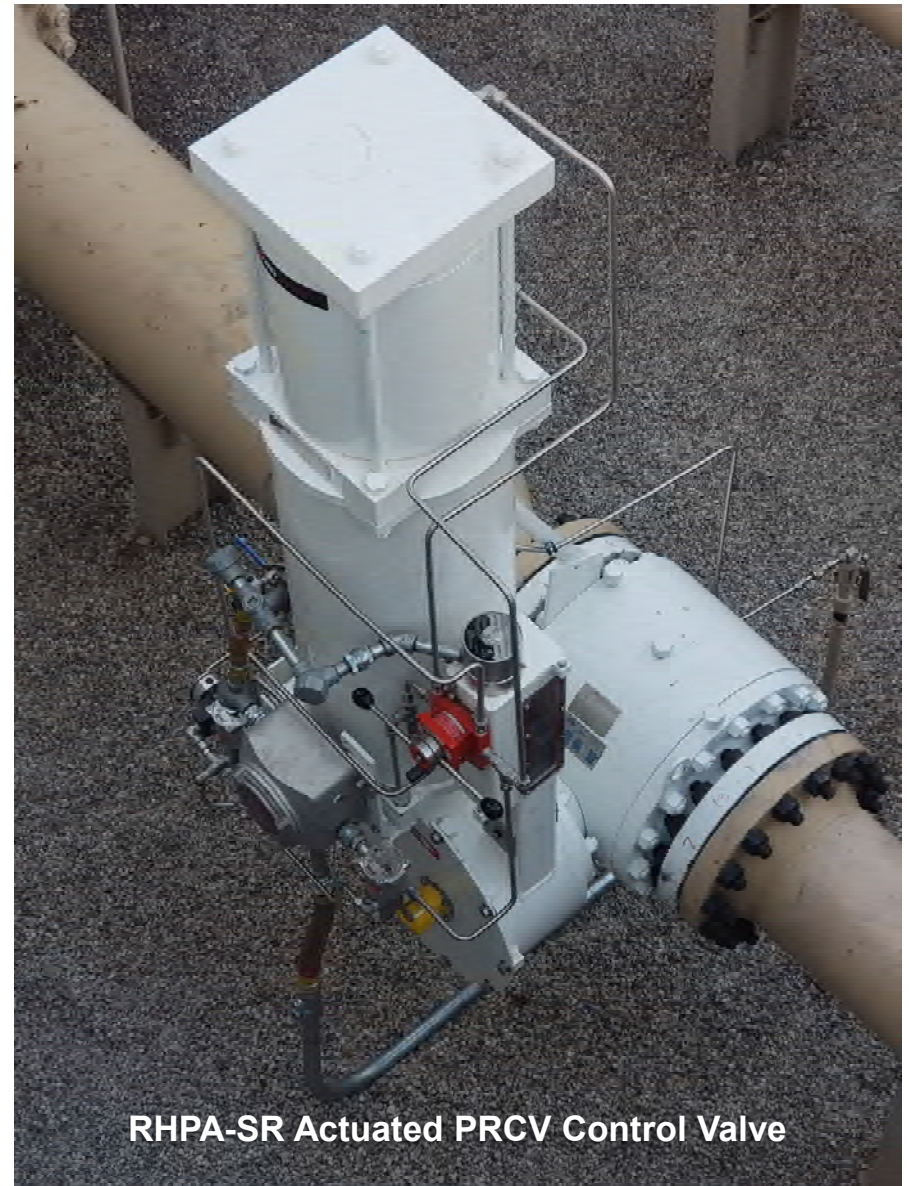


Remote Mount RCVC Configuration

RCVC Application – SWG Corp. – Remote RCVC Installation



LHPA-SR Actuated Globe Valve

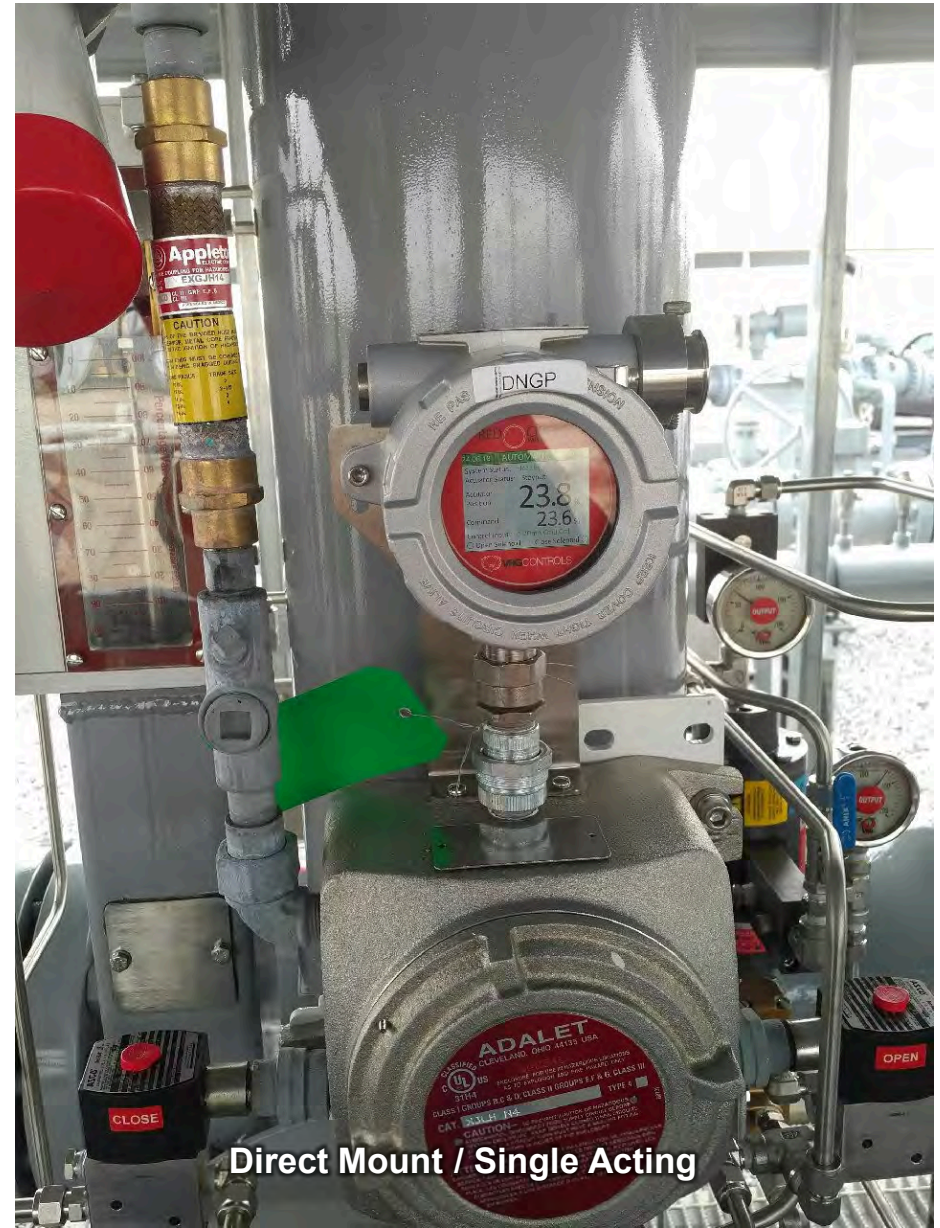


RHPA-SR Actuated PRCV Control Valve

RCVC Application – BWPL Little Gypsy – High Pressure Spring Return



Direct Mount / Single Acting



Direct Mount / Single Acting

Our Contact Information

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