



—MODELS— **CRD-31**

Electronic Actuated Pressure Reducing Pilot Control



- Simplified Remote Valve Setpoint Control
- 24VDC Input Power
- Easy Interfacing to SCADA Systems
- Accurate Pressure Control
- Reliable Hydraulic Operation
- Rugged Durable Design

The Cla-Val Model CRD-31 Electronic Actuated Pressure Reducing Pilot Control is designed to be retrofitted to existing hydraulic operated valves where remote setpoint change, as directed by a SCADA or other similar control system, is desired. The CRD-31 is installed on valves to maintain a constant downstream pressure. Operating on 24 VDC and consuming less than 100 mA under load (occurring only during setpoint change) and 25 mA at no load, it is an ideal control system for remote valve sites (i.e. solar powered).

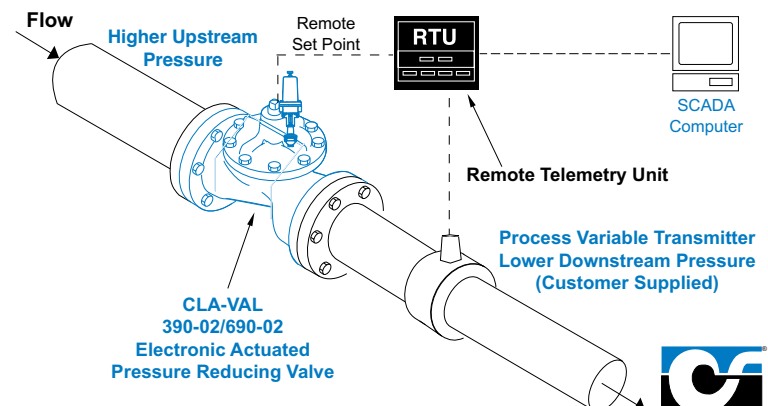
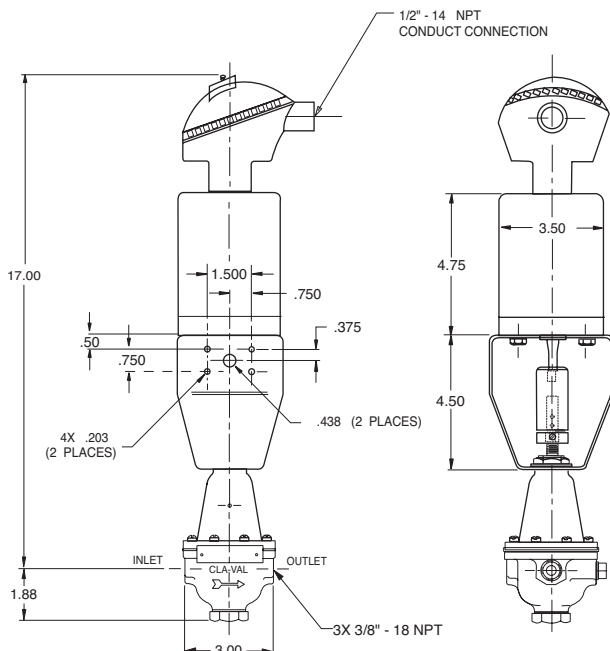
The CRD-31 consists of a hydraulic pilot and integral controller that accepts a 4-20 mA remote setpoint and precisely positions the pilot to maintain a valve outlet pressure within a predetermined zero and span setting. Default settings are set to minimum spring range adjustment at 4 mA and maximum at 20 mA. Pressure settings are linear between these values. Optional Range Parameter Kit is required to change pressure range limits.

A separate pressure sensor signal (customer supplied) may also be sent to a supervisory control system for verification of pressure setting.

Continuous internal monitoring (pat. pend) of actuator position results in accurate pressure changes with no backlash or dithering. Built-in electronic limits prevent over ranging. In the event of a power or control input failure, the CRD-31 pilot remains in hydraulic control assuring system stability under changing conditions.

Typical Applications

The CRD-31 is installed on valves that maintain downstream pressure and require this pressure to be changed from a remote location. It is also an effective solution for lowering costs associated with "confined space" requirements by eliminating the need for entry in valve structure for setpoint adjustment. Additional pilot controls, hydraulic and/or electronic, are also available to perform multiple functions to fit exact system requirements.



CRD-31 Purchase Specifications

The Electronic Actuated Pressure Reducing Pilot Control shall have an integral hydraulic pilot and electronic controller contained in a NEMA 4X enclosure to provide interface between remote telemetry and valve setpoint control. It will compare a remote analog command signal with an internal position sensor signal and adjust the hydraulic pilot control spring mechanism to a new setpoint position. The actuator speed will be factory set to less than one RPM with a maximum range of nine turns. Actuator position feedback output shall be supplied standard. The remote command input 4-20 mA analog signal must be automatically ranged in engineering units within the range set by built-in electronic limiters. Supplied electronic range limiters shall reduce total range to a portion of pilot spring range.

If the Remote Setpoint signal is lost or power fails, the valve shall remain under control of the pressure reducing hydraulic control sub-assembly. No adjustments shall be necessary to the actuator except to the low and high position range adjustment. Range adjustment shall be accomplished only with valve manufacturer's components and instructions to be supplied in a separate kit.

The Electronic Actuated Pressure Reducing Pilot Control shall be Cla-Val Model CRD-31 as manufactured by Cla-Val, Newport Beach, CA.

Mechanical Pilot System Specifications

Adjustment Ranges

2 to 30 psi
15 to 75 psi
30 to 300 psi

Temperature Range

Water: to 180°F

Materials

Standard Pilot System Materials

Pilot Control: Bronze ASTM B62
Trim: Stainless Steel Type 303
Rubber: Buna-N® Synthetic Rubber

Optional Pilot System Materials

Pilot Systems are available with optional Aluminum, Stainless Steel or Monel materials at extra cost.
Note: Available with remote sensing control. Consult Factory

Electronic Actuator - Specifications

Supply Power Input: 24 VDC (+/- 10%) at 2 Amps
No Load draw: 25 mA
Max. Load draw: 100 mA

Remote Command Input: 4-20 mA analog signal, 12 to 36 VDC compliant, 220 ohm burden. Non-Isolated (return wire is referenced to power supply common wire)

Position Feedback Signal: 5 K high precision potentiometer (three-wire signal) output. Supplied standard

Speed of Rotation: Approximately 270 degrees per minute (non-adjustable)

Total Number of Turns: 9 (factory pre-set maximum)

Position Limiters: Built-in Electronic type, factory set to maximum range, field settable to desired range with Range Parameter Kit.

Loss of Signal or Loss of Power:
Actuator will remain in last commanded position.

Terminal Block: Accepts up to #16 AWG solid or strand wire

Actuator Mechanical Specifications:

Enclosure and Wiring
Junction Box: NEMA 4X, Anodized Aluminum
Bracket: Anodized Aluminum
Coupling: Assembly: Brass, Nickel Plated
Gear Train: Stainless Steel, permanently lubricated

When Ordering, Please Specify

1. Catalog No. CRD-31
2. Adjustment Range
3. X57 Mounting Kit (Specify Valve Size)

Options: Range Parameter Kit. Includes Windows-based software and special 6' connecting cable. Kit is required when changing range parameters or when servicing pilot control to restore range parameters.



E-CRD-31

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