CLA-VAL **CRL-34**

Electronic Actuated Pressure Sustaining Pilot Control

- **Simplified Remote Valve Set-Point Control**
- **Modbus RTU Communication**
- **Easy integration with D22 Electronic Valve Controller**
- **10 to 32 VDC Input Power**
- **Isolated Input**
- **Reverse Polarity Protection**
- **IP-68 Submersible**

The CLA-VAL Model **CRL-34** Electronic Actuated Pressure Sustaining Pilot provide remote set-point adjustment and accurate upstream pressure control on **CLA-VAL PCM 50** Series Control Valves. Remote set-point command signals can originate from any SCADA-type control system using an analog 4-20 mA signal, by contact closure for CW/CCW rotation or through Modbus RTU.

The **CRL-34** senses valve inlet pressure with a valve mounted hydraulic connection. Operating on 10 to 32 VDC and consuming very little power, it is an ideal control system for remote valve sites that may be solar or turbine powered. Existing manually-set **CLA-VAL 50 Series** Pressure Sustaining control valves can be retrofitted with **CRL-34** to add remote set-point control of upstream pressure. Verification of Upstream/Inlet pressure may be sent to a SCADA system from a customer supplied pressure sensor attached to the valve inlet.

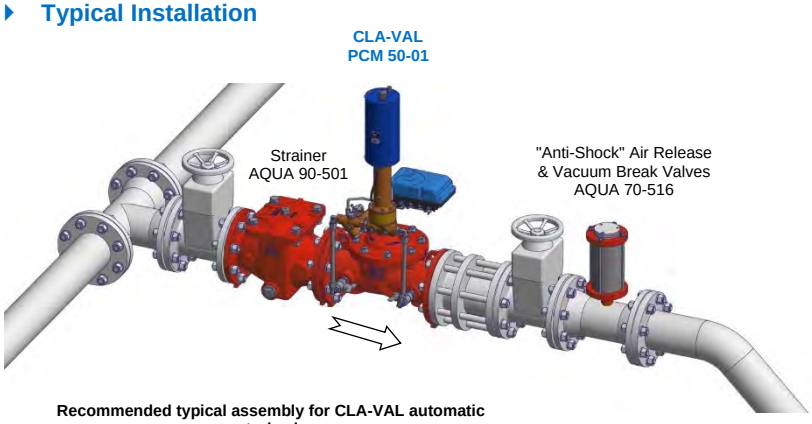
The **CRL-34** consists of a hydraulic pilot and integral controller that accepts a remote set-point and positions the pilot to maintain a pressure at the valve inlet within preset limits. Pressure settings are linear between across the pressure range and calibrated to the specific spring range. A Special USB connector cable and free to download software can be used to change this range if required. Internal setting can also be modified through Modbus. Continuous internal monitoring of actuator position results in smooth transitions between pilot set-points with no backlash or dithering. Should power or control input fail, this pilot remains in automatic hydraulic control assuring system stability under all conditions.

Typical Application

The **CRL-34** is installed on **CLA-VAL PCM 50** Series valves that maintain upstream pressure and require this pressure to be changed from a remote location. It can be an effective solution for lowering costs associated with "confined space" requirements by eliminating the need for entry in valve structure for set-point adjustment. It is ideal for reservoir inlet management, where it can be programmed to adjust upstream pressures based on the demands of the network or reservoir. Flow information can also be provided from the main valve, see the **CLA-VAL e-FlowMeter**.

Additional pilot controls (hydraulic and/or electronic), are also available to perform multiple functions to meet exact system requirements.

Typical Installation



Recommended typical assembly for CLA-VAL automatic control valves
The H-Strainer AQUA 90-501 combined with the "anti-shock" air release & vacuum break valve AQUA 70-516 are added system products for the best CLA-VAL regulation.

Complementary Products

1. D22 Valve Controller
2. e-Power IP Generator
3. e-FlowMeter

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CRL-34 Purchase Specification

The CRL-34 Electronic Actuated Pressure Sustaining Pilot Control shall have an integral hydraulic pilot and electronic controller contained in an IP68 rated submersible enclosure to provide an interface between remote telemetry and valve set-point 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 set-point position. Remote analog signal input shall be isolated and reverse polarity protected. 4-20 mA actuator position feedback output shall be supplied as standard. A second command control input shall be from dry-contact switch closure for clockwise or counter clockwise actuator rotation. Assembly shall be factory calibrated to the spring range listed below. If power fails, the control pilot valve shall continue to control main valve to last set-point command. If the remote set-point signal is lost the actuator shall be programmable to go to either the 4 mA, Hold Last set-point, or 20 mA command set-point. No mechanical adjustments shall be necessary to the actuator. The low and high position range adjustment shall be accomplished only with valve manufacturer's components and instructions to be supplied in a separate kit. The assembly shall be supplied with 10 m of cable.

The Electronic Actuated Pressure Sustaining Pilot Control shall be CLA-VAL Model **CRL-34** manufactured by CLA-VAL Europe.

Pilot Control Subassembly Specifications

Adjustment Ranges:

4.0 mA	20.0 mA
0.1 bar	5.3 bar
1.4 bar	10 bar

Materials:

Pilot Control: UNS C87850 Low Lead Bronze

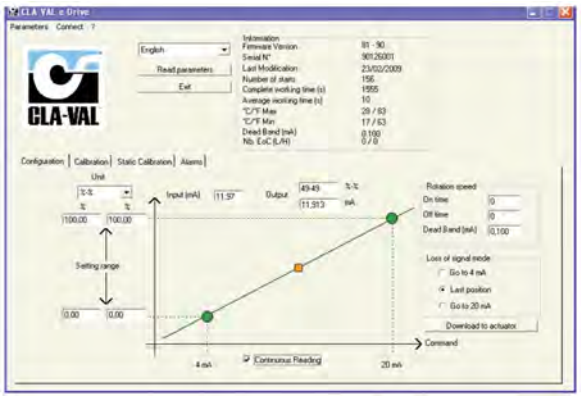
Trim: Stainless Steel type 303

Rubber: Buna-N® Synthetic Rubber

Available with optional Stainless Steel or Monel materials at additional cost. Consult factory for details.

Options

- Re-ranging software is available as a free download from www.cla-val.ch. The software makes it easy to set low (4 mA) and high (20 mA) set-point limits.



- USB connection cable required when changing range parameters or restoring range parameters after servicing the pilot control subassembly.

CRL-34 Electronic Pilot Specification

Supply Power Input:

- 10 V to 32 VDC
- 12 Watts Max at 230 psi
- No Load draw: 30 mA

Remote Command Inputs:

- 4-20mA, analog signal (isolated and reverse-polarity protected)
- 2x Dry contact closure (CW/CCW)
- Modbus RTU

Position Feedback Signal:

4-20 mA

Alarm Output:

Dry-contact closure (High/Low) or Modbus

Speed of Rotation:

Adjustable On/Off time, max 16 rpm

Diagnostic:

LED Indicator

Loss of Power:

Actuator will remain in last commanded position.

Loss of Signal Position:

Programmable - 4 mA, Hold last set-point, or 20 mA

Electrical Connections:

- 1x 10 m shielded cable (12-wire)
  Wire section: 0.22 mm^2 - Cable diameter: 6.9 mm
- 1x 6 pin Souriau™ connector for Modbus communication
- 1x 3 pin Lumberg™ Connector for computer connection/maintenance

Mechanical Specifications:

Environmental Protection Class: IP-68 (validated 1 month at 0.2 bar)

Ambient Temperature: -10°C to 80°C (electronic only)

Materials:

Enclosure and Bracket: Anodized Aluminum

Coupling Assembly: Stainless Steel

Gear Train: Stainless Steel, permanently lubricated