



# Model CPC

## Electronic Actuated Positioning Pilot Control



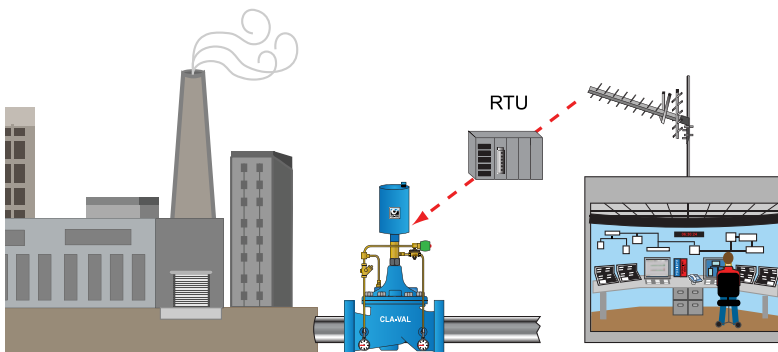
- **Precise Valve Position Control**
- **Completely Self-contained**
- **High Energy Efficiency with Low Operation Friction**
- **Direct Control of Valve Opening and Closing**
- **Combines with Pressure, Flow or Level Control**
- **Ideal for SCADA Control**
- **Optional 133VF Valve-Mounted Flow Monitoring**

The Cla-Val CPC Electronic Actuated Positioning Control regulates flow through Cla-Val Main Valves by changing valve position from full open to shut-off. The CPC consists of electronic actuator and hydraulic pilot sub-assembly. The CPC controls valve position by hydraulically limiting valve opening with hydraulically-assisted pilot modulating main valve.

The pilot sub-assembly has two calibrated orifices that are positioned proportional to valve position to vary Cla-Val basic valve control chamber operating pressure. The CPC actuator creates slight changes in orifice position and in turn operating pressure hydraulically changes valve position. The pilot sub-assembly requires very little torque and is virtually frictionless for long service life. The actuator features high repeatable-accuracy brush-less motor technology and low energy consumption. Precision, no-contact hall-effect internal position sensor assures durability. The CPC is factory pre-configured to full stroke, preset rotation speed, and default setting on loss of set point. Actuator parameters can be changed using free downloadable software and special USB cable. Valve fully-closed position is assured by signaling solenoid to lock control pressure in main valve operating chamber when valve is very close to seat (adjustable). Operating on 24 VDC and with customer supplied battery backup, the CPC can eliminate downtime due to power failures.

Note: When retrofitting an existing valve, high capacity cover bearing must be installed. This requires removing the valve cover. Consult factory for details.

### Typical Applications



Model 138-01 Electronic Position Process Control Valve

The CPC Electronic Actuated Positioning Control is used with 138 Series Electronic Actuated Control Valves in high rise building chill water circulating system applications. Building SCADA control systems often use multiple circulating system parameters to control valve position for optimizing water circulating system. Also, 138 Series valves are used in large water transmission systems where several system parameters must be controlled by one valve. SCADA system monitors various water distribution system parameters, such as downstream pressure, upstream pressure, tank level, time of day, flow rates in several zones, etc., and then remotely changes 138 Series valve position to meet several system requirements as all parameters continue changing.

Cla-Val 138 Series valves can have optional 133VF Flow Metering System installed for flow rate monitoring. Consult factory for details.



## CPC Purchase Specifications

The Electronic Actuated Positioning Pilot Control shall have an integral hydraulic pilot and electronic controller contained in an IP-68 rated submersible enclosure to provide interface between remote telemetry and valve position control. It will compare a remote analog command signal with an internal position sensor signal and adjust the hydraulic pilot control mechanism to a new valve position. Remote analog signal input shall be optically isolated and reverse polarity protected. 4 - 20 mA actuator position feedback output shall be supplied standard. The valve assembly and all components shall be rated for continuous duty.

If power fails, the control pilot valve shall continue main valve control to last set-point command. If the remote position signal is lost the actuator shall be programmable to go to either the 4 mA, Last, or 20 mA command positions. 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 instruction to be supplied in a separate kit.

The Electronic Actuated Positioning Pilot Control shall be Cla-Val Model CPC as manufactured by Cla-Val, Newport Beach, CA.

## CPC Mechanical Specifications

**Pressure Connection** 3/8" NPT

**Valve Connections:** Positioning Pilot mounting thread to match valve cover center port.

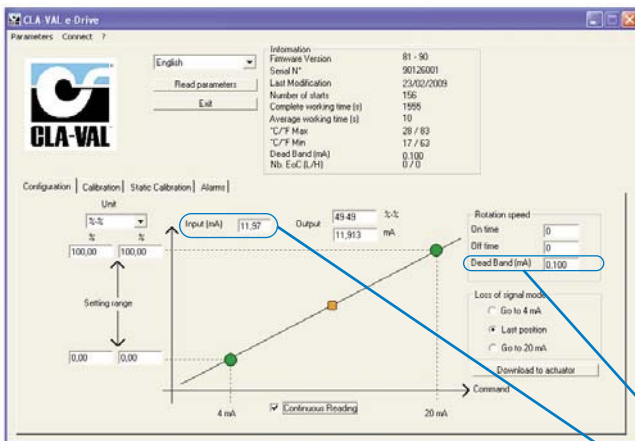
**Temperature Range**  
Water: to 180°F

**Materials**  
Pilot Control:  
\_\_\_ Housing Stainless Steel Type 316  
Trim: Stainless Steel Type 316  
Rubber: Buna-N® Synthetic Rubber

Available with optional materials at additional cost.  
Consult factory for details

### Options:

- Re-ranging software - free download from [www.cla-val.com](http://www.cla-val.com). Ranging software makes it easy to set low (4mA) and high (20mA) set-point limits.



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

## CPC Electronic Actuator Specifications

**Operation:** Continuous duty

**Supply Power Input:** 24V DC, Stand by 80mA, Service 800 mA

**Remote Set point Input:** 4-20mA, analog signal (isolated and reverse-polarity protected with resettable fuse)

**Alarm Output:** Dry-contact closure (High/Low)

**Position Feedback Signal:** 4-20 mA Output

**Speed of Rotation:** Adjustable On/Off time

**Diagnostic:** LED Indicating operating program and fault mode using green and red light

**Loss of Power Position:** Actuator will remain in last commanded position.

**Loss of Signal Position:** Programmable - 4 mA, Last, or 20 mA

**Electrical Connections:** Single, permanently attached 10 m cable with color-coded power and signal wires  
Two permanently attached 10 m cables for limit switch output

**Parameter Changing Interface:** Plug & Play / NT / 2000 / XP / Vista

### Enclosure Specifications:

Environmental Protection: IP-68 (Temporary submersible)  
Ambient Temperature: 15° to 150° F (-10° to 80° C)

### Materials

**Enclosure:** Anodized Aluminum

**Coupling Assembly:** Stainless Steel

**Gear Train:** Stainless Steel, permanently lubricated

## CPC Programming

- Provides Dynamic Readings
- Dead Band Prevents Actuator from reacting to minor signal fluctuations
- Enables customers to verify "clean" input signal from SCADA.



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## When Ordering, Please Specify

- Catalog No. CPC
- Materials - Pilot Control