

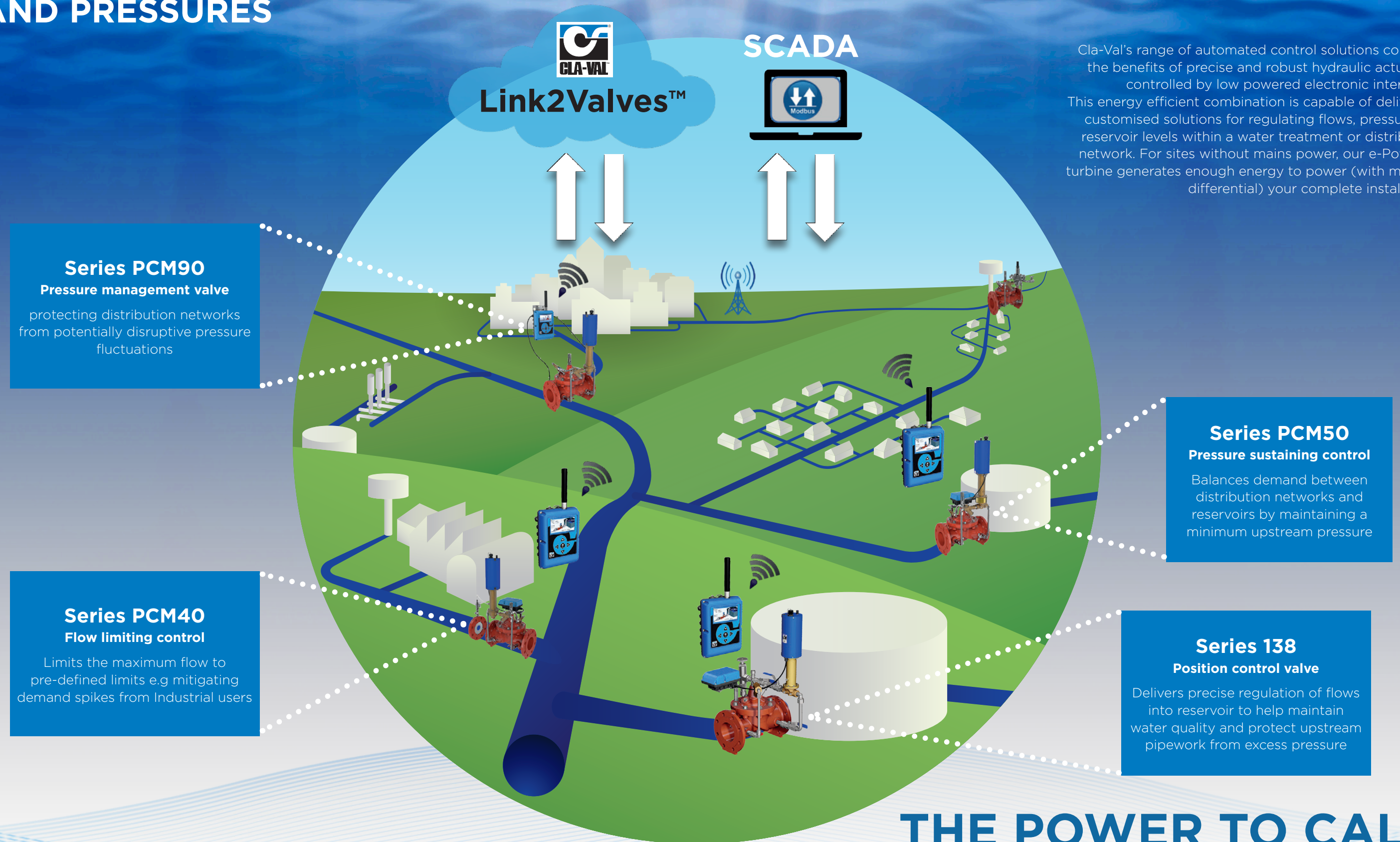


Automation

CONTROL
COMMUNICATION
POWER
INFORMATION



TYPICAL APPLICATIONS FOR MANAGING FLOWS AND PRESSURES



Cla-Val's range of automated control solutions combine the benefits of precise and robust hydraulic actuation, controlled by low powered electronic interfaces. This energy efficient combination is capable of delivering customised solutions for regulating flows, pressures or reservoir levels within a water treatment or distribution network. For sites without mains power, our e-Power IP turbine generates enough energy to power (with minimal differential) your complete installation.

THE POWER TO CALM

CONTROL

Cla-Val 138 Series Position control valve

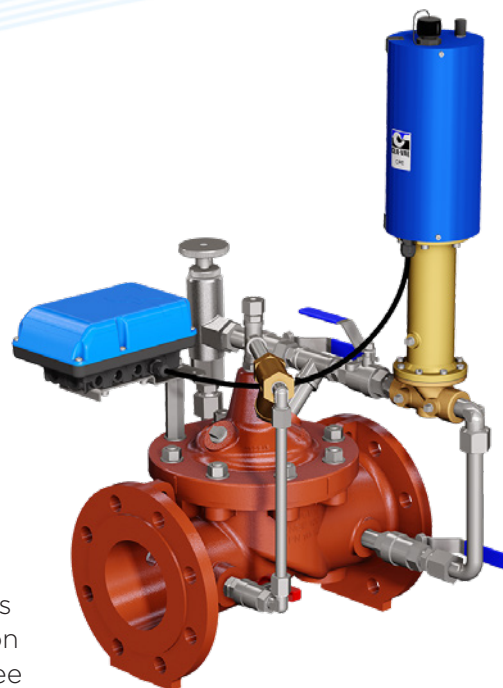
Cla-Val Series 138 Position Control Valves are designed to regulate flow, pressure or other system parameters by changing valve position from full open to shut-off via a 4-20mA command signal.

The motorised pilot, controls the valve position using hydraulically assisted technology. The pilot sub-assembly requires very little torque and is virtually frictionless ensuring long service life.

The actuator features highly accurate motor technology combined with very low energy consumption.

The motorised pilot incorporates factory-configured parameters for full valve stroke, preset rotation speed, and default setting on loss of set point. Actuator parameters can be changed using free issue software and special USB cable.

Operating with 12-24 VDC and in combination with a customer supplied battery backup, the valve can be positioned to a pre-determined default value in the event of power / signal failures. Integrated Modbus allows remote control from SCADA or programming via Cla-Val D22 Electronic valve controller.

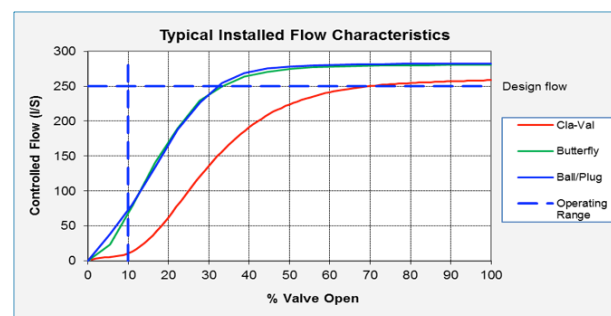


- 12 Watts power consumption
- Operates with only 12-24VDC regardless of valve size or pressure differential
- Unlimited number of starts
- No limits to start or stop times
- High Cavitation resistance*
- Programmable response speeds
- Easily calibrated for full or partial valve stroke
- IP68 Environmental Protection

* Contact Cla-val for more information on anti-cavitation solutions

The CLA-VAL Series 138 valve offers a characteristic curve extremely well adapted to a regulating process within a SCADA supervision system. The illustration above shows the characteristic curves of a typical butterfly valve (green) and ball valve (blue), and the Cla-Val Position Control Valve (red). This highlights the wide regulating range and low opening value of a Cla-Val Valve at low flows. Advantages include:

- Precise control of set-point
- Minimal risk of systems instability
- Minimum set-point overshoot

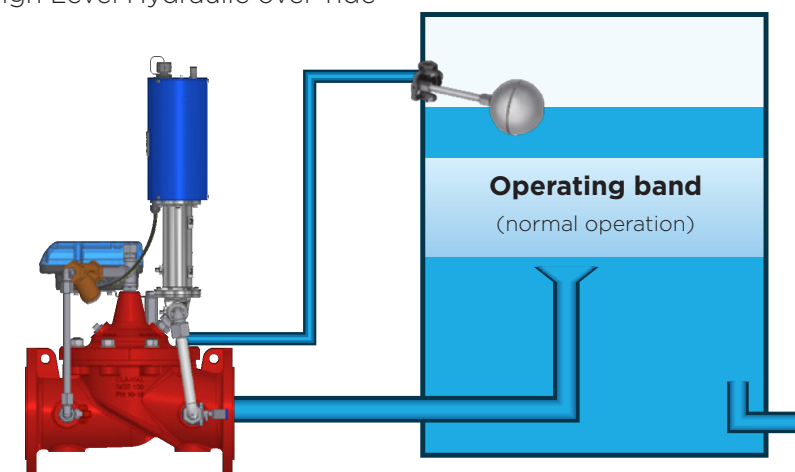


TYPICAL VALVE APPLICATIONS

Cla-Val 138 Series

Options for combining the flexibility of a 138 Series Position Control Valve with the security of hydraulic overrides

Position Control +
High Level Hydraulic over-ride



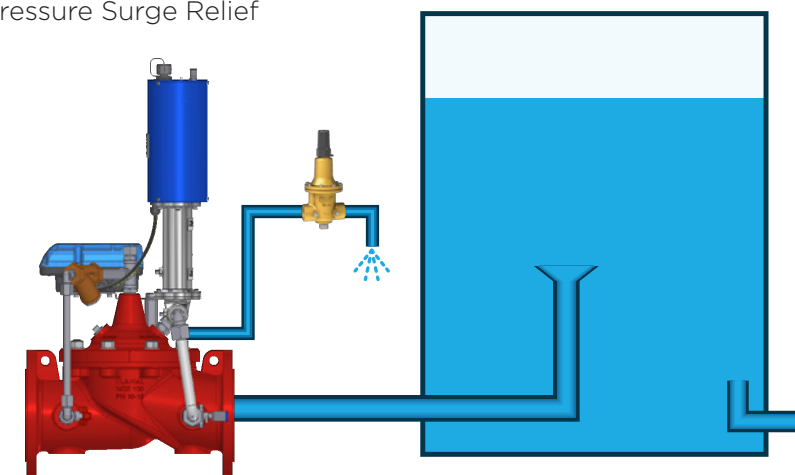
The Cla-Val Series 138L-21/CFM2 provides remote management of reservoir level with the protection of hydraulic back-up to avoid overflow in the event of power failure.

Alternative option

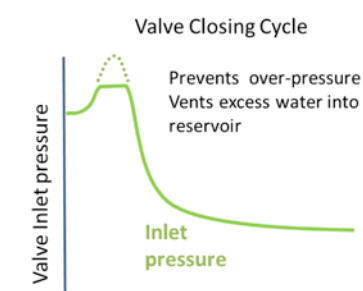
- Altitude control – no need for a float in the tank



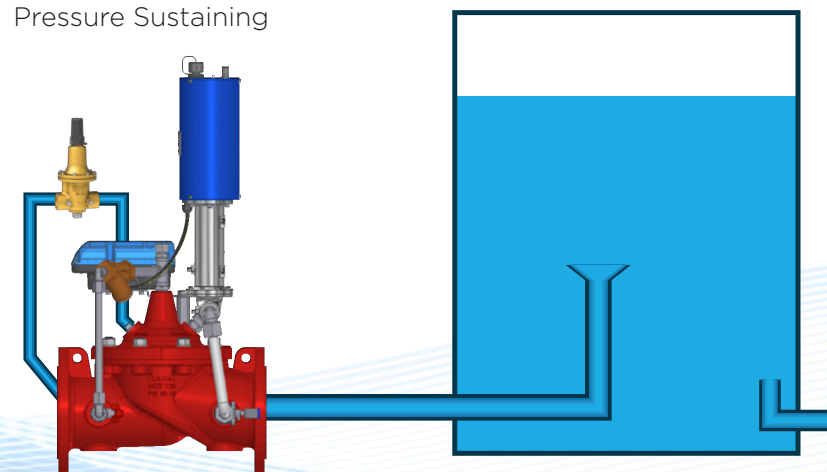
Position Control +
Pressure Surge Relief



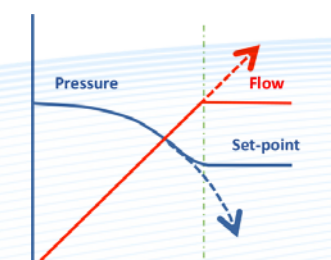
The Cla-Val Series 138L-21/N1 provides remote management of reservoir level with hydraulic surge relief control to protect pressure sensitive upstream pipework.



Position Control +
Pressure Sustaining



The Cla-Val Series 138L-36 provides remote management of reservoir level with hydraulic pressure sustaining control to protect upstream pipework from low pressure.



CONTROL

Cla-Val Series PCM90

Pressure Reducing Control with remote set-point

The Cla-Val Series PCM90 Electronic Actuated Pressure Reducing Control Valve combines precise control of field proven Cla-Val hydraulic pilots and simple, remote valve control.

The Cla-Val Series PCM90 Pressure Reducing Valve automatically reduces a higher inlet pressure to a steady lower downstream pressure regardless of changing flow rate and/or varying inlet pressure.

This valve is an accurate, pilot-operated regulator capable of holding downstream pressure to a pre-determined limit. The valve uses a CRD-34 pilot control, consisting of a hydraulic pilot and integral controller, that accepts a remote set-point command input and makes set-point adjustments to the pilot.

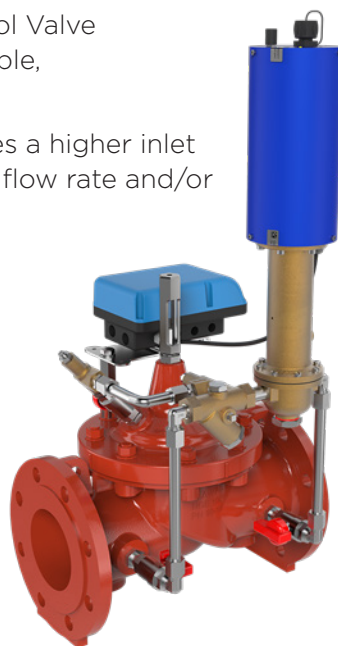
The recommended control method is simple remote set-point change from a Remote Telemetry Unit (or via a Cla-Val D22 controller) to the CRD-34 where the 4-20 mA command signal is proportional to the desired downstream pressure set-point.

Free downloadable software is available from Cla-Val website for this purpose. The CRD-34 can also accommodate control systems where the RTU compares pressure transmitter signal to the remote set point command signal. The RTU adjusts the CRD-34 with 4-20 mA command signal incorporating an adequate deadband to prevent actuator dithering after the two signals agree. Integrated Modbus allows remote control to SCADA and/or programming via Cla-Val D22 Electronic valve controller.

Internal continuous electronic monitoring of actuator position results in virtually instantaneous position change with no backlash or dithering when the control signal is changed. In the event of a power or control input failure, the CRD-34 pilot remains in hydraulic control virtually assuring system stability under changing conditions.

Operating with 12-24 VDC and in combination with a customer supplied battery backup, the valve can be positioned to a pre-determined default downstream pressure value in the event of power / signal failures.

- **Simplified, electronic remote valve set point control**
- **Ideal for use with Cla-Val D22 Electronic Valve Controller**
- **Use to adjust pressure set points to save water**
- **Isolated inputs**
- **12-24 VDC Input Power**
- **Reverse Polarity Protection**
- **Environmentally sealed to IP68**



Typical Application

Protecting water distribution network from potentially disruptive pressure fluctuations. Remote control of pressure set-point are transmitted via SCADA or GSM via the Cla-Val Link2Valve web platform.

CONTROL

Cla-Val Series PCM50

Pressure Sustaining Control with remote set-point

The Cla-Val Series PCM50 Electronic Actuated Pressure Sustaining Control valve combines precise control of field proven Cla-Val hydraulic pilots and simple, remote valve control.

The Cla-Val Series PCM50 is a hydraulically operated, pilot controlled, modulating valve designed to maintain constant upstream pressure within close limits.

This valve can be used for pressure sustaining, back pressure or unloading functions in a by-pass system. The valve uses a CRL-34 pilot control, consisting of a hydraulic pilot and integral controller, that accepts a remote set-point command input and makes set-point adjustments to the pilot.

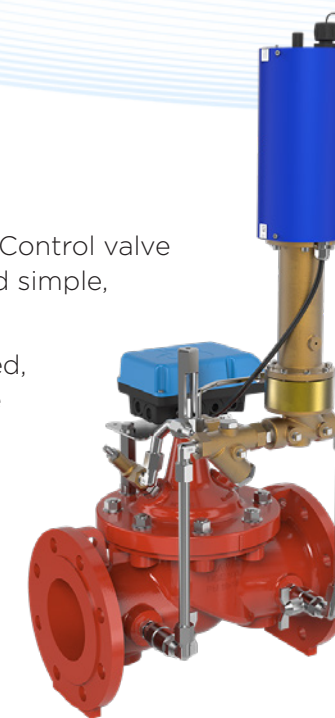
The recommended control method is simple remote set point change from a Remote Telemetry Unit (or via a Cla-Val D22 controller) to the CRL-34 where the 4-20 mA command signal is proportional to the desired upstream pressure set-point.

Free downloadable software is available from the Cla-Val website for this purpose. The CRL-34 can also accommodate control systems where the RTU compares pressure transmitter signal to the remote set point command signal. The RTU adjusts the CRL-34 with 4-20 mA command signal incorporating an adequate deadband to prevent actuator dithering after the two signals agree. Integrated Modbus allows remote control to SCADA and/or programming via Cla-Val D22 Electronic valve controller.

Internal continuous electronic monitoring of actuator position results in virtually instantaneous position change with no backlash or dithering when the control signal is changed. In the event of a power or control input failure, the CRL-34 pilot remains in hydraulic control virtually assuring system stability under changing conditions.

Operating with 12-24 VDC and in combination with a customer supplied battery backup, the valve can be positioned to a pre-determined default upstream pressure value in the event of power / signal failures.

- **Simplified, electronic remote valve set point control**
- **Ideal for use with Cla-Val D22 Electronic Valve Controller**
- **Use to adjust pressure set points to save water**
- **Isolated inputs**
- **12-24 VDC Input Power**
- **Reverse Polarity Protection**
- **Environmentally sealed to IP68**



Typical Application

Pressure sustaining control balances demand between distribution networks and reservoirs by maintaining optimal upstream pressure. Sustaining setpoints are transmitted via SCADA or GPRS (via the Cla-Val Link2Valve web platform).

COMMUNICATION

Cla-Val Model: D22 Electronic Valve Controller

Cla-Val: D22 is an intelligent valve controller designed to enable remote operation of electronic valves in water treatment facilities or potable water distribution systems. The D22 Valve Controller also serves as an interface between a SCADA system and other devices installed on or around the valve (such as a flow meter). Designed for easy user interface, the valve controller is pre-loaded with the most common valve applications (ValvApps™). The valve controller can also be customized with additional ValvApps™ to meet any operational requirement. Alternatively, logged data and control curves can be downloaded from the Cla-Val Link2Valves web portal. This requires an optional SIM card and antenna.

- Highly accurate and stable valve control
- Programmed Control Curves for specialized level or pressure management control
- Internal logging to verify system performance
- Environmentally sealed to IP-68

FEATURES



PID Control - Maintains a control valve at set-point. Up to 4 PID loops available. Independent opening and closing speed adjustment.



Control Curves - Allow the user to draw control curve relationships e.g Level vs Flow or Flow vs Pressure directly onto the D22 screen.



Flow calculator - Returns an accurate flow rate without the need for a separate flow meter.



Actions - Takes "action" (or alarms) on an input, output or variable when a programmable condition is met.



Totaliser - Keeps track of total volume as a function of time. Customisable units and reset functionality for simplified set-up and configuration.



Re-Transmission - Retransmit any input, variable or calculation to a SCADA system. Retransmission outputs include 4-20mA or Digital.



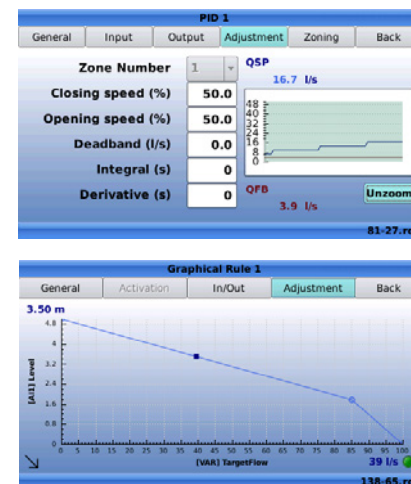
Data Logging - Up to 80 Million values Input and output values can be logged in rolling memory or extended with an SD card. Data can be transferred to USB stick or transmitted via GPRS.



Communication - Options include: MODBUS RTU /RS485, RS232, MODBUS TCP / Ethernet 100 Base T.



GPRS - Allowing 2 Way communication between device and Cla-Val Link2Valves Web Platform.



POWER

Electrical power generator Model: e-Power IP

The Cla-Val e-Power IP turbine is a self-contained power generation system designed to be mounted into the bypass of Cla-Val Automatic Control Valves. They use the hydraulic energy of the system to power products including: Sensors, Actuators, Loggers. They are suitable for Retrofit to an existing Cla-Val Control Valve or can be specified on a new valve making them ideal for isolated locations and confined spaces.

- Power Range: 12V-24V up to 14 Watts
- Rapid Deployment
- Retrofits to an existing Cla-Val Control Valve
- Failsafe defaults
- Ideal for isolated locations and confined spaces
- Vandal proof
- Environmentally Sealed to IP68



INFORMATION

Valve Stem Position transmitter Model: e-Lift-34

The Cla-Val Model e-Lift-34 Valve Position Transmitter is an accurate monitor of valve position. Through an industry standard 4-20 mA output, the e-Lift-34 delivers the accuracy required for computer-guided control valve systems (SCADA). The electronic components are enclosed in a rugged, IP68 enclosure suitable for wall mounting. Two buttons are directly integrated within the Junction box allowing simple commissioning without the need for special tools.

- Accurately Monitors Valve Position
- Environmentally Sealed to IP68
- Compact and Rugged Construction
- Valve diagnostics / performance



Flow Measurement Model: e-Flowmeter

The Cla-Val Model e-Flowmeter is a vortex shedding insertion electronic flow meter designed to provide accurate flow measurement data, thus avoiding associated installation costs of a separate in-line flowmeter. e-Flowmeters accuracy has been independently tested and validated by independent 3rd party laboratories.

- Simple to fit or retrofit to existing Cla-val valves
- Accuracy: 2% full scale
- Environmentally Sealed to IP68
- Flexible - A choice of 4-20mA or Pulse output



Pressure Transmitter

The Cla-Val Pressure transmitters provide an industry standard 4-20mA output over a pressure range 0-16 bar. Complete with a 10m Flying lead.

- Environmentally Sealed to IP68
- Accuracy: 0.5% full scale
- Power: 7-33 VDC
- 1/4" BSP/M Process Connection

