



MODEL

UP-22D

# Universal Control Panel



- Remote or Local Valve Operation
- UL 508A Control Panel
- Supports both AC/DC solenoids
- NEMA 4X Stainless Steel Enclosure
- Panel Mount VC-22D Valve Controller
- High accurate and stable valve control
- AC Filter and fuse protection



## Product Description

The Cla-Val UP-22D is designed to provide state of the art valve control for a variety of fluid control parameters. The UP-22D is supplied with a NEMA 4X stainless steel enclosure and supports both AC and DC solenoid applications. The VC-22D Valve Controller is mounted on an interior sub panel isolating the technician from field wiring. The UP-22D is supplied with an AC noise filter and 60W 24VDC power supply. Additionally, all inputs and outputs are fused, protecting against over currents.

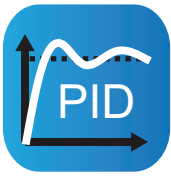
For ease of use, the VC-22D valve controller is pre-loaded with a wide variety of typical valve applications (ValvApp™). Additional custom ValvApps™ can be created by Cla-Val to meet any operation requirement. For example 2 or 3 modulating control functions can be combined into one custom ValvApp™.

## Pre-Loaded Typical ValvApps™ include:

- Flow Control with Mag Meter or e-Flowmeter Feedback
- Pressure Control with Upstream or Downstream Feedback
- Position Control with Position Feedback
- Modulating Level Control with Level and Position or Flow Feedback
- Metering Valve with Position and DP or P1-P2 Feedback
- Ratio Control with 2 Flowmeter feedbacks
- Altitude On/Off Level Control with Delayed Opening and Level Feedback
- Pressure Management with CRD-34 Electronic Pilots and Flow Feedback

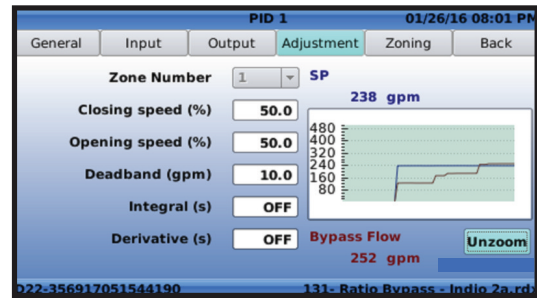


# VC-22D Valve Functions



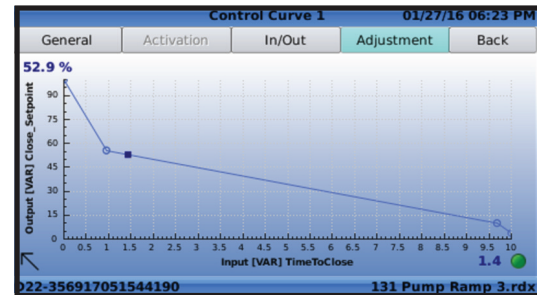
## PID Control

Used in maintaining a control valve at setpoint, multiple PID loops can be programmed with each of them offering local or remote setpoints. A real-time chart view helps to visualize valve response and fine tune valve response. Programmable setpoint ramping prevents hydraulic shocks.



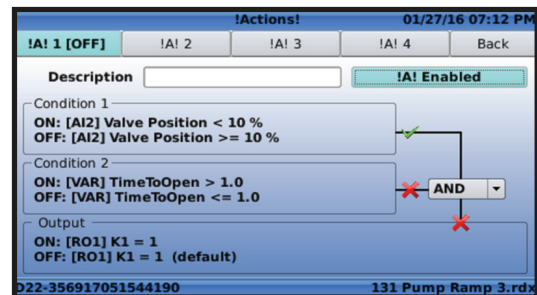
## Control Curves

Offers an easy way to create a relationship between two system variables. Using graphical functions, the user draws the control curve relationship linking pressure, flow, level, and/or time directly on the screen. Up to four control curves allowing independent pump control valve opening and closing or tailored modulating level control.



## Actions

Used to take "action" (or alarms) when programmable conditions (1 or 2) are met by forcing an output relay, solenoid, or 4-20 mA output. The closing relay can be used to send an alarm to SCADA. Up to four actions can be programmed including deadband.



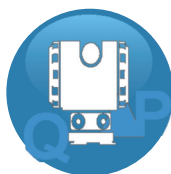
## Retransmission

Used to retransmit any input signal, variable, or calculation to a SCADA system. Up to four input signals such as pressure, flow, or level can be redirected through the 4-20 mA outputs.



## Totalizer

Keeps track of total volume as a function of time. Customizable units & reset functionality allow for simplified set-up and configuration. Can be used for volume (or batch) control applications limiting water volume taken from supplier per day or into tank trucks.



## DP Metering

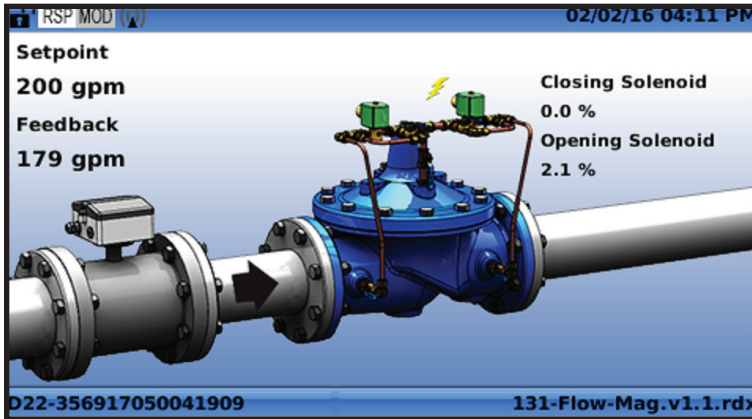
A built-in function to calculate flowrate based on valve position and DP. The returned flow value can be displayed and controlled without a separate flow meter. A metering ValvApp with this feature is included in the standard internal library. All standard Cla-Val valve sizes curves are included.



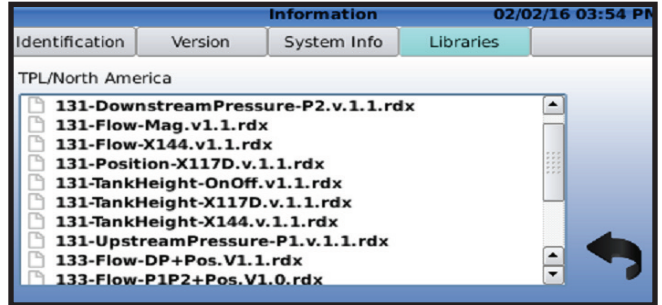
## Data Logging and Log File

All input and output values are logged according to a programmable schedule. Default logging is every 5 minutes but can be as low as 1 minute or at customized intervals. 4 GB SD card memory allows greater than 80,000,000 values storage. Data is stored in MS-Excel (CSV) readable format. Transfer is by USB.

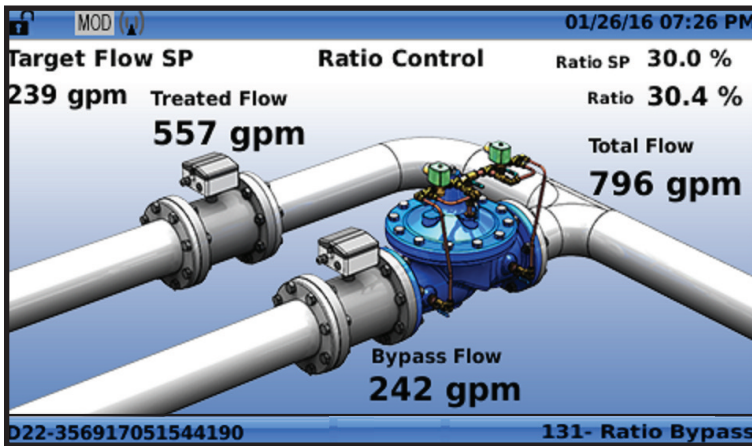
# Standard & Custom ValvApps™



## Standard ValveApps™



At startup the user can select from an internal library of Standard ValveApps designed for the most common control applications such as flow, pressure, level, position, or pressure management. Pre-configured graphics displays actual valve installation and minimizes startup time.



## Custom ValveApps™

Special requirements can easily be handled by importing Custom ValveApps from the USB port. Program files may be either pre-programmed into the controller or sent by email and downloaded into the controller. All within minutes. Typical non-standard applications include ratio (blending), multiple functions, multiple inputs, custom graphics, differential pressure, temperature, salinity, electrical conductivity, parallel valves, etc.



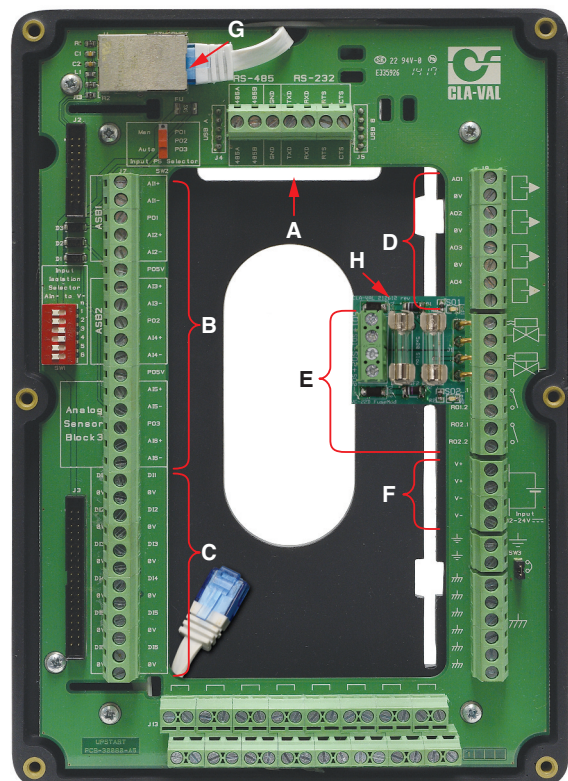
# Inputs, Outputs & Communications

## Features

- A) RS-232/485
- B) Six 4-20 mA Analog Inputs
- C) Six Digital inputs
- D) Four 4-20 mA Analog Outputs
- E) Two Solenoid + Two Relay Outputs
- F) 12 - 24 VDC Power
- G) Ethernet Connection (External)



Typical installation with mounting bracket



# UP-22D Universal Control Panel Product Specifications

<b>Inputs</b>	<b>Power Supply</b>
6x Analog 4-20 mA (fused)	85 - 260 VAC Input
6x Digital (dry contact max 5 VDC @ 0.1A - 100 Hz max)	60W @ 24VDC to VC-22D Controller
Reverse polarity and short circuit protection	AC Filter with Surge Protection
Optocoupler isolation @ CMR 1000 V - 2 wires insulated	<b>Communications</b>
<b>Outputs</b>	Modbus TCP / Ethernet
4x 4-20 mA Analog (fused)	Modbus RTU / RS-485
2x Solenoid solid state relay VAC or 24 VDC options	USB
2x Mechanical relay 24 VDC - 240 VAC @ 1 A max.	VNC
Reverse polarity & short circuit protection	GPRS modem quad band (consult factory)
<b>Control Parameters</b>	<b>Enclosure &amp; Display</b>
Proportional band 0-100% / independent opening and closing	24" (609 mm) H x 20" (508 mm) W x 10" (254 mm) D
Deadband 0 - full scale	Weight 55 lbs (25 kg)
Cycle time 0 - 60 sec	304 Stainless Steel
Integral and Derivative available	Quarter-Turn Padlock Handle
Output limits - % of Cycle Time / Independent opening and closing	Mounting holes on back of enclosure
Multi-zone tuning - up to 4 zones	NEMA 4X, IP66
4x PID loops	5 mechanical pushbuttons
4x Actions or Alarms - 1 or 2 triggering conditions	Silicon sealed polycarbonate screen
4x Control Curves (graphically programmed)	4.3" color display 480 x 272 - 24 bit
Setpoint ramping	Password 5-digit
Input signal filter 0-100%	Temperature range 14 to 158 F (-10 to 70 C)
Flow Totalizer (usable for volume control)	
<b>Logging &amp; Data Storage</b>	
Configurable logging intervals	
Real-time back-up on 4 GB SD card	
Memory protection 10 year lithium battery	
CSV file format MS-Excel compatible	
File transfer to USB memory	