Cla-Val D22

Electronic Valve Controller

- Pre-Loaded typical valve applications (*ValvApps*™)
- Accurate and Stable regulation
- Time, Flow, Level or Pressure with single or combined modulation modes
- Simple Control Curve programming
- Multiple PID Functionality
- Integrated Multi-Channel data logger
- Remote and Local programming capability
- Submersible IP68 rating

Leading the Innovation

CLA-VAL Europe
AUTOMATIC CONTROL VALVES

CLA-VAL

CLA-VAL D22

The First Controller with integrated *ValvApps*™

DESCRIPTION

The **CLA-VAL D22** electronic controller sets a new industry standard.

It fulfills the need for an efficient, integrated and simple electronic controller which is: templates of standard electronic valve applications called ***ValvApps***™ stored in each of the **CLA-VAL D22** Controllers.

Every single ***ValvApps***™ is factory programmed to perform the most accurate valve regulation. Scaling of variables and parameters are locally configured to fine tune the valve for smooth regulation.

ValvApps™ are designed for single function controls as well as complex solutions. Through the ***ValvApps***™ CLA-VAL has translated, in a simple way, the best proven engineering know-how where efficient and economical new challenges can be met.

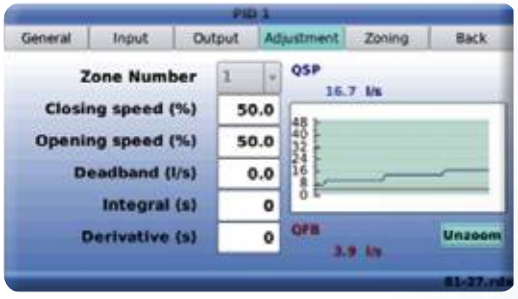
Unique embedded electronic security and fail-safe parameters allow users to protect their water systems and capital investment. Electronic controls can also be combined with hydraulic controls to create dual functions or independent fail-safe capabilities.

Designed with the latest technology and manufactured from high quality electronic components the **CLA-VAL D22** PCB is fully tropical coated to ensure maximum humidity protection. The I/O's are protected against wrong wiring. A resettable fuse is used to protect against over voltage / reverse polarity.

D22 CONTROLLER KEY FUNCTIONS

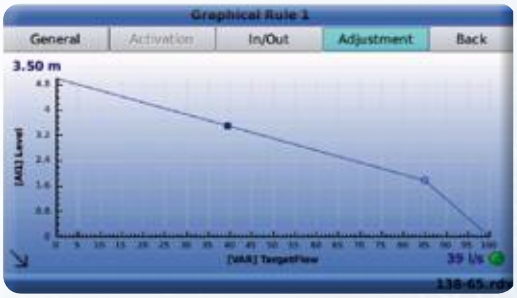
PID

Maintains the valve at a preset set-point. Up to 4 PID loops can be programmed, each of them offering local or remote set-point. Real-time chart view helps to visualize valve response and fine tune the **D22** Controller accordingly. Perfect valve control is achieved by CLA-VAL features such as programmable set-point ramping to prevent hydraulic shocks. There is no need for external specialized consultants to program the **CLA-VAL D22**.



Control Curves

Offer an easy way to create a relationship between 2 system variables. Using graphical functions the user draws the Control Curve relationship linking pressure, flow, level and/or time directly on the D22 screen. Up to 4 Control Curves can be profiled allowing specific adaptation such as seasonal adjustments. No external computer is required.



Actions

Used to take "action" (or alarms) when a programmable condition is met by forcing an output: relay, solenoid, 4-20 mA output. The closing relay can be used to send an alarm to a supervision system. Up to 4 Actions can be programmed including appropriate hysteresis or dead band configuration.

Signal Retransmission

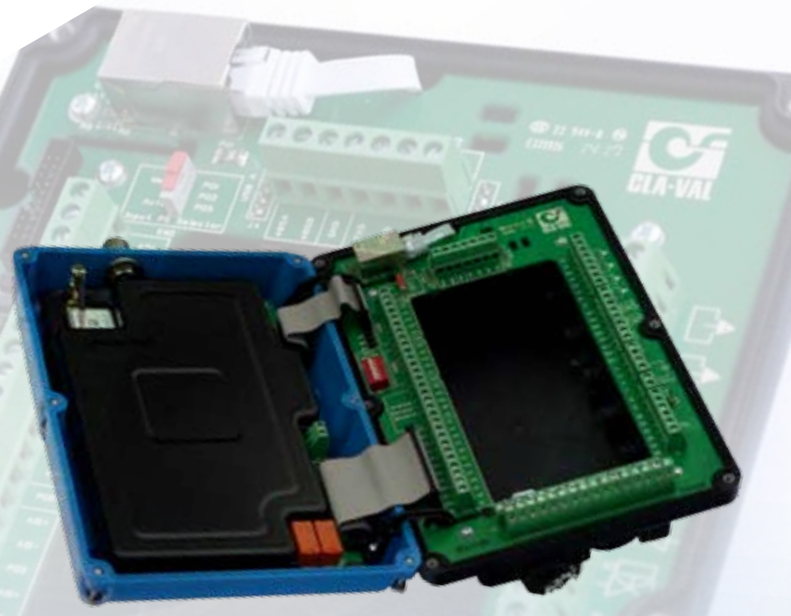
Used to retransmit any input signal, variable, or calculation to a supervision system. Up to 4 input signals such as pressure, flow or level can be redirected through the 4-20 mA outputs. Pulses received from a flow meter are converted into a 4-20 mA signal and retransmitted.

Data logging and log file

All input and output values can be logged. With an internal rolling memory 128 Mbytes, 80,000,000 values can be logged. Memory is extended to 2 GB SD card storage. Data is stored in MS-Excel (CSV) readable format and can be transferred by USB key or transmitted via GPRS. Recording speed can be set to: 1 min, 5 min, 15 min, 60 min or customized.

All actions, such as configuring, programming or locally displaying are recorded in a log file on the SD card allowing full and transparent traceability.

SPECIFICATION



Inputs

- 6x Analog 4-20 mA / 0-5 V / 0-10 V – resolution 10 bit
- 6x Digital (dry contact – max. 5 VDC @ 0.1 A – 100 Hz max.)
- Reverse polarity & short circuit protection
- Analog input max. 32 VDC over voltage protection (Optocoupler isolation @ CMR 1000 V - 2 wires insulated)

Outputs

- 4x 4-20 mA Analog – resolution 10 bit – impedance 500 Ω
- 2x Solenoid solid state relay 24 VDC @ 0.5 A – binary or proportional
- 2x Mechanical relay 24 VDC – 240 VAC @ 6 A max.
- Reverse polarity & short circuit protection
- Analog output max. 32 VDC over voltage protection (Digital input and Analog output are wired with the same common)

Logging & Data Storage

- Rugged Linux based system
- Real-time backup on 2 GB SD card
- Logging intervals configurable
- Memory protection 10 years lithium battery

Communication

- Modbus RTU / RS485
- Modbus TCP / Ethernet 100 Base T
- GPRS modem quad band
- USB A / B
- RS 232
- Optional Antenna
- Optional Wi-Fi / VNC

Power Supply

- 12 – 24 VDC
- Consumption: 1.9 W stand-by, 3 W in use, 30 W max.
- Optional CLA-VAL e-Power IP Turbine
- Max. 32 VDC over voltage protection
- Reverse polarity & short circuit protection

Enclosure & Display

- Dimensions H 223 x W 153 x D 89 mm / weight 1.4 kg
- IP68 standard allowing full immersion 2m water / 1 month
- PC/ABS plastic UV resistant
- 5 mechanical push buttons
- Silicon sealed polycarbonate screen
- 4.3" color dislay 272 x 480 - 24 bit
- IP68 cable gland or Souriau connector
- Mounting bracket in stainless steel
- Temperature range: - 10°C to +70°C

Control Parameters

- Password protection
- Proportional band 0 - 100% / 1% increment / independent opening-closing
- Dead band 0 – full scale of set-point signal
- Cycle time 0 – 60 sec. / 1 sec. increment
- Integral band 0 – 60 sec.
- Derivative band 0 – 60 sec.
- 4x Loop zoning
- 4x PID loops
- 4x Conditional actions
- 4x Signal I/O retransmission
- 4x Control curves
- Configurable units and decimal points
- Analog Output ramping 1 – 3600 sec.
- Input signal filter 1 to 60 sec.
- Input totalizer

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WATERWORKS

From the reservoir to the customer tap, the CLA-VAL Company has developed more than 3,000 Automatic Control Valve models.

Accurately controlling pressure, tank level and flows within water networks is the result of more than 75 years of unparalleled expertise.

CLA-VAL

WWW.CLA-VAL.CH