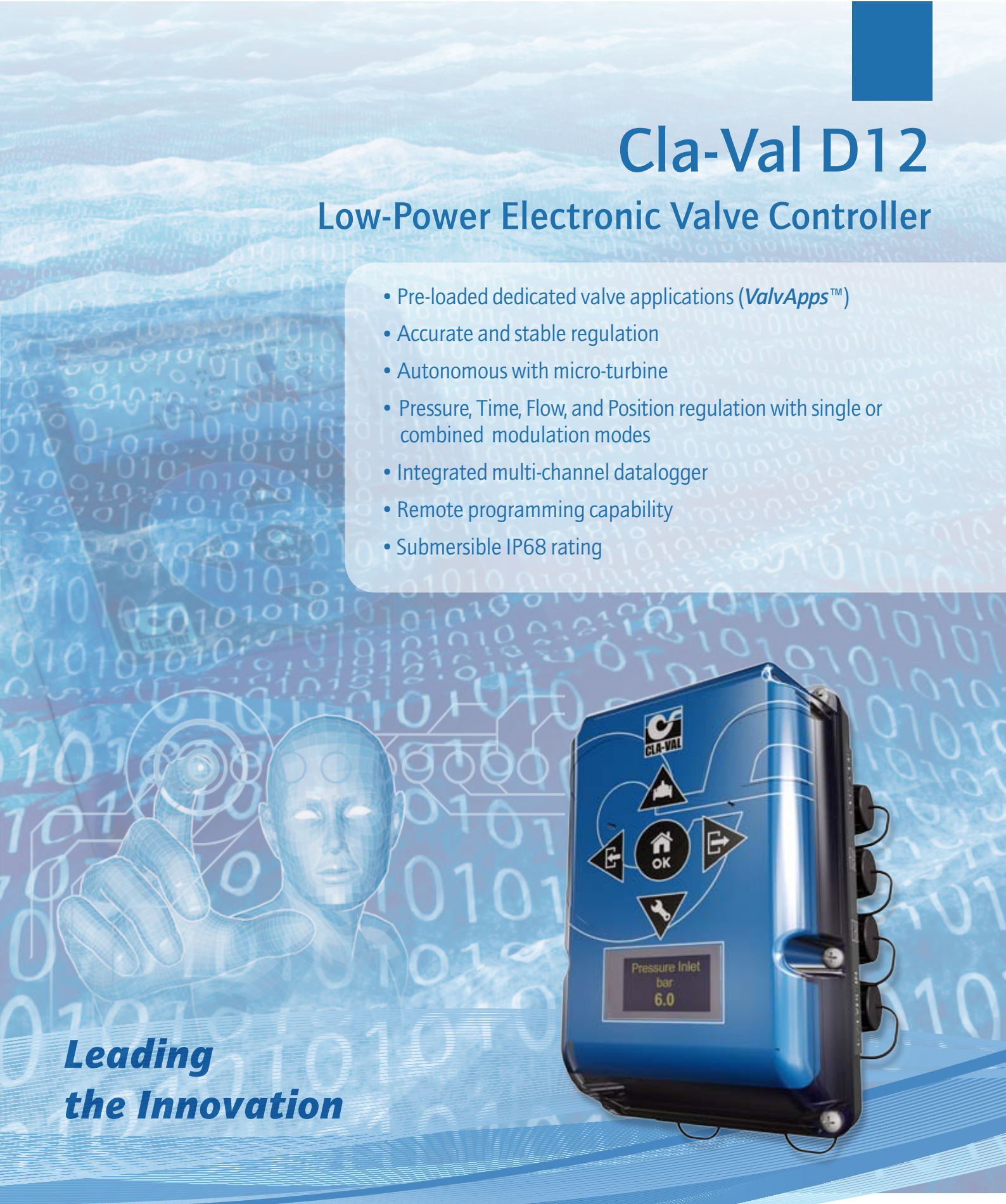
Cla-Val D12

Low-Power Electronic Valve Controller

- Pre-loaded dedicated valve applications (***ValvApps***™)
- Accurate and stable regulation
- Autonomous with micro-turbine
- Pressure, Time, Flow, and Position regulation with single or combined modulation modes
- Integrated multi-channel datalogger
- Remote programming capability
- Submersible IP68 rating



Leading the Innovation

CLA-VAL Europe
AUTOMATIC CONTROL VALVES

CLA-VAL

CLA-VAL D12

Low-Power Electronic Valve Controller

DESCRIPTION

The **CLA-VAL D12** Low-Power Electronic Valve Controller brings pressure management and modulation to a new level of excellence.

It fulfills the needs for an ultra-low-power, integrated and easy-to-use electronic controller, capable of advanced hydraulic regulation in locations where very low or no electrical energy is available.

The D12 implements pre-loaded electronic valve applications called ***ValvApps***™, suited for each situation. Every ***ValvApps***™ is factory programmed to perform the most accurate valve regulation.

The D12 Electronic Controller is capable of Flow or Time based **Pressure modulation**, **Flow regulation** or **Valve position** control with single or combined modulation modes.

The Remote Programming capability of the D12 allows sophisticated regulation profiles to be created, and changes made to the valve's set-point via the **CLA-VAL *Link2Valves***™ web platform, avoiding the inconvenience of sending an operator into the field.

D22 CONTROLLER KEY FUNCTIONS

PID

Maintains the valve at a defined set-point. Up to 4 PID loops can be programmed. Real-time chart view helps visualize the valve response and fine tune the controller accordingly. Perfect valve control is achieved by CLA-VAL features, such as programmable set-point ramping to prevent hydraulic shocks.

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, position and/or time. Up to 4 Control Curves can be profiled, allowing specific adaptation such as seasonal adjustments.

There is no need for external specialized consultants to program the **CLA-VAL D12 Low-Power Electronic Valve Controller!**

Data logging and log file

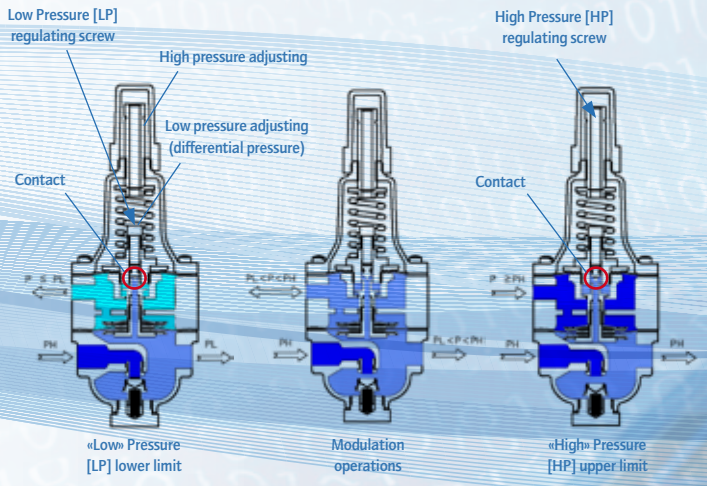
All input and output values can be logged in the internal rolling memory, allowing the storage of 80,000,000 values. Memory is extended to 2 GB with SD card storage. Data are stored in MS-Excel (CSV) readable format and can be transferred to an USB key, or transmitted to a server, via GPRS for instance.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

Logged data can be accessed and visualised from the CLA-VAL ***Link2Valves***™ web platform, also allowing remote modification of the device settings.

D12 OPERATION

Pressure Modulation

The D12 Low-Power Electronic Controller regulates the valve's downstream pressure via the **CLA-VAL CVM Low-Power Actuator** combined with the **CPM Hydraulic Pilot**.



Position Control

Valve position/flow regulation is achieved by the D12 controlling the **CLA-VAL CVP Low-Power Position Actuator.**

The D12 controller and CVM/CVP actuators are totally autonomous and completely independent of any external power when using the **CLA-VAL e-Power-MP turbine**. The turbine requires only 6 l/min flow with a pressure differential of 6 mhd for the entire system electrical needs!

SPECIFICATION

Power Supply

- 6 VDC to 24 VDC
  (compatible with CLA-VAL e-Power MP / 2 MP turbines)
- Protection :
  - Reverse polarity & short circuit
  - 80°C stop high temperature
- Distribution: 2x 5 VDC or 12 VDC for sensor devices
  (20 ms 0-5 V and 120 ms 4-20 mA energizing)
- Consumption :
  - 10 mA stand-by
  - 30 mA nominal in use
  - 2000 mA max. load draw

Inputs

- 2x analog 0-5 V for pressure sensors
- 2x analog 4-20 mA (or 0-5 V / 0-10 V)
- 4x digital (dry contact)
- 4 VDC to 24 VDC / 10 mA stand-by, 2000 mA max. load draw
  (autonomous power supply by e-Power MP)

Outputs

- 4x latching solenoids (6 VDC)

Logging & Data Storages

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

Communication

- GPRS Modem Quad band
- Wi-Fi interface for configuration
- USB-A (application import/export)
- Optional antenna

Enclosure & Display

- PC/ABS plastic UV resistant
- IP68 standard allowing full immersion 2 m water / 1 month
- 2x LED Status indicator (green/red)
- OLED display 1.5" 128 x 64
- 5x ILS (magnetic) contacts and magnetic stick for navigation
- Mounting bracket in stainless steel
- Temperature Range: -10 °C to + 60 °C (electronic only)

Connection

- 8x SOURIAU pre-defined circular UTS sockets (no wiring needed)
- 1x USB-A connector (for external USB key)

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
- 4x Loop zoning
- 4x PID loops
- 4x Conditional actions
- 4x Control curves
- Configurable units and decimal points
- Analog Output ramping 1 - 3600 sec.
- Input signal filter 1 to 60 sec.

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WATERWORKS

From the reservoir to the customer tap, the CLA-VAL Company has developed more than 3,500 Automatic Control Valve models.

Accurately controlling pressure, tank level and flows within water networks is the result of more than 80 years of unparalleled expertise.

CLA-VAL

WWW.CLA-VAL.CH

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