

FULL MODULATION SOLUTION

Model 720-DC1 EN/ES

Hydraulically operated, full modulation pressure reducing solution that reduces higher upstream pressure to lower downstream pressure, based on flow or time windows, regardless of fluctuating demand or varying upstream pressure.

BERMAD 700 SIGMA EN/ES series valves are hydraulic, oblique pattern, globe valves with a raised seat assembly and double chamber unitized actuator, that can be disassembled from the body as a separate integral unit. The valves hydrodynamic body is designed for unobstructed flow path and provides excellent and highly effective modulation capacity for high differential pressure applications.

The 720-DC1 is equipped with DELTA a stand-out pressure management controller for system optimization. It provides a calmer network, an improved efficiency and a reduction of leakage and bursts. The end result is a reliable water supply and better service for the client.

The DELTA is a fully remote controlled fail safe battery operated controller. The DELTA logs the data and uses cyber secured technology to transmit the data to a user-friendly cloud platform.

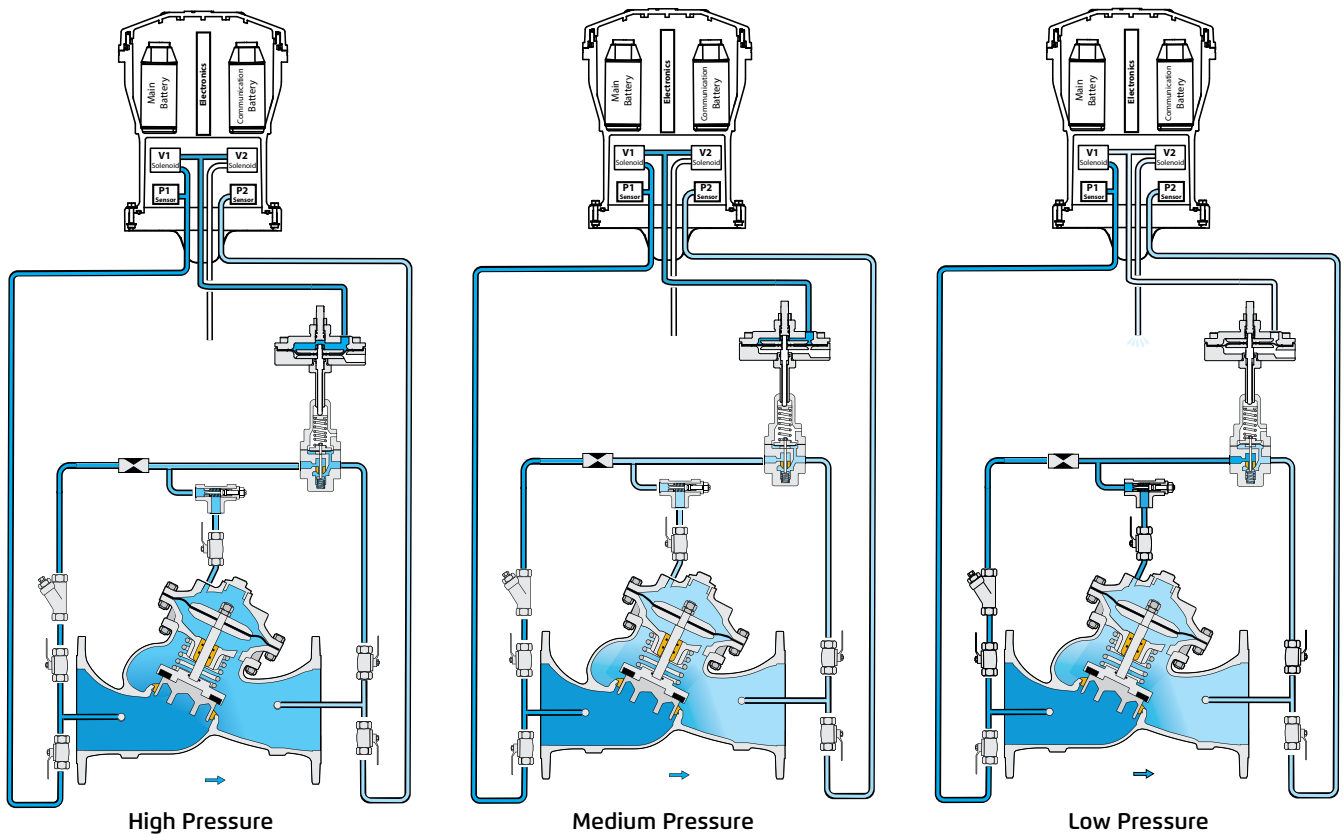


Features and Benefits - Valve

- Designed to - stand up to the toughest conditions
 - Excellent anti-cavitation properties
 - Wide flow range
 - High stability and accuracy
 - Drip tight sealing
- Double chamber design
 - Moderated valve reaction
 - Protected diaphragm
 - Optional operation in very low pressure
 - Moderated closing curve
- Flexible design - Easy addition of features
- Obstacle free flow pass
- V-Port Throttling Plug (Optional) - Very stable at low flow
- Compatible with various standards
- High quality materials
- In-line serviceable - Easy maintenance

Features & Benefits - DELTA Controller

- Full modulation pressure reducing with the DELTA internal solenoids and a BIAS chamber
- 2 pressure regimes by switching between "Low" to "High" set points according to flow rate or time window (Day/Night) Up to 16 flow or time windows
- Highly accurate and stable regulation
- Latch override to fully open the valve at insufficient pressure supply, or fully close in event of pipe burst
- Full communication to Bermad cloud or to other platforms via API or FTP for monitoring and remote setting
- 5 years internal battery operated or external power
- Large capacity data logging
- Intuitive and user friendly platform
- Advanced modern graphs and reports
- Alert and notifications via E-mail



This drawing refers to 1½ – 8"; 40-200 mm sized valves only. For other sizes please refer to the Model's IOM.

Technical Specifications

Main features:

- Valve is "Normally Low" in event of mechanical failure
- Manual override to open and close the valve
- For optimal operation allow to set
 - Fast & slow regulation intervals
 - Dead-band from set-point
- Sensors calibration for all physical units
- Internals
 - 2 clog free high speed internal solenoids for BIAS chamber operation
 - 2 0-20 bar internal pressure sensors +/- 0.5%
- Local Inputs & Outputs
 - 1 Latch outputs (16V DC; 100 mS pulse) for Day/Night control or venting the valve chamber
 - 3 digital inputs for metering and discrete sensors
 - 2 analogue inputs for 4-20mA or 0-10VDC sensors for pressure, level, and metering

Connectivity:

- Built in 4G Modem with 2G fallback
 - Global data sim card for worldwide plug-and-play internet connectivity
 - GPRS Communication
- Local operation of technician software using USB cable

Operation modes:

- Online mode: 24/7 connection between controller and cloud (require external power source)
- Offline mode:
 - Autonomous control operation, predefined cloud communication and real time alerts
 - Designed for power saving when using internal batteries

Power source:

- 2 Lithium batteries for operation in offline mode
- 9-16VDC external power input for online mode operation (solar panel, grid power, etc.)

Integral data logger with more than 150K records, enables comprehensive log registry that can cover long periods of offline operation

Periodic over the air firmware upgrades (FOTA)

Outdoor installation: IP68 certified with UV protection

Standard compliance: CE & FCC

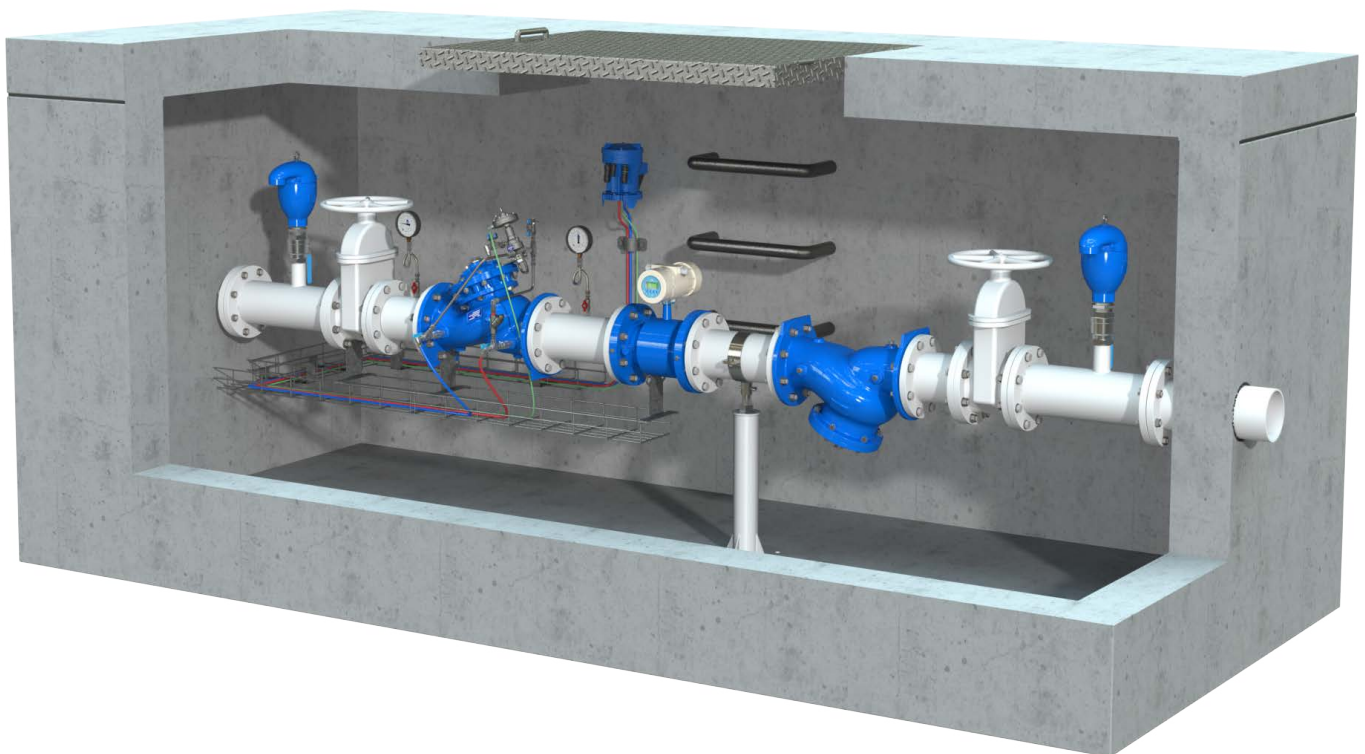
Industrial grade electronic components: -35°C to 75°C

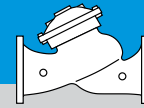
Push type connectors for quick and easy wiring without need for special tools

BERMAD Cloud Features:

- Cyber protected login:
 - Multi-user connectivity for enhanced management and technical support
 - Individual access level authorization (Edit settings, Read only)
- Global Account management:
 - Language and time zone selection
 - User privileges
 - Unit selection (Metric, Imperial)
- Dynamic dashboard:
 - Geo-referenced map with global view of your pressure management project
 - Current status of DELTA controllers
 - Up-to-date pressure & flow settings
 - Quick access to the DELTA management tools
 - Setup and programming
 - Wizard for guided unit config
- Alert control:
 - Alert status log and Mail notification
 - Alert management tools:
 - Thresholds of several levels for each of the measured values
 - Alert notifications per user level of authorization and position
- Log information:
 - System state, operation events & alerts
 - Periodic sensor data acquisition
 - Watermeter flow & accumulations
 - Pressures
 - Analogue sensor data
 - Battery voltage level
- Report generator:
 - Personalized reports for operation and traceability
 - Export to Excel file

Typical Installation





Main Valve

Valve Patterns: "Y" (Globe)

Size Range:

EN Series: 1½-16"; 40-400 mm

ES Series: 2½-24"; 65-600 mm

Pressure Rating: 25 bar; 400 psi

End Connections: Flanged (all standard)

Plug Types: Flat disc, V-port, Cavitation cage

Temperature Rating: 60°C; 140°F for Cold water applications

Optional higher temperature: Available on request

Standard Materials:

Body & actuator: Ductile Iron

Bolts, nuts & studs: Stainless Steel

Internals: Stainless Steel, Tin Bronze & Coated Steel

Diaphragm: Fabric-reinforced synthetic rubber

Seals: Synthetic rubber

Coating: Dark blue Fusion bonded epoxy

Control System

Standard Materials:

Accessories: Stainless Steel, Bronze & Brass

Tubing: Stainless Steel or Copper

Fittings: Stainless Steel or Brass

Pilot Standard Materials:

Body: Stainless Steel, Bronze or Brass

Elastomers: Synthetic Rubber

Spring: Stainless Steel

Internals: Stainless Steel

Pilot Options:

Various pilots and calibration springs are available.

Select according to valve size and operating conditions.

For more details check pressure reducing pilots product pages.

Notes

- Inlet pressure, outlet pressure and flow rate are required for optimal sizing and cavitation analysis
- Recommended continuous flow velocity: 0.1-6.0 m/sec; 0.3-20 ft/sec
- Minimum operating pressure: 0.7 bar / 10 psi. For lower pressure requirements consult factory

For detailed Engineering & Specification data, IOM and CAD Drawings, visit the Model Page on the [BERMAD](https://www.bermad.com) website.