

## Level Control Valve with Bi-Level Electric Float

### Model 750-65

- Reservoir filling
  - Very low supply pressure
  - Low noise generation
  - Energy cost critical systems
  - Systems with poor water quality
- Reservoir outflow
  - Distribution routing
  - Sewerage “fill and flush” systems



The Model 750-65 Level Control Valve with Bi-Level Electric Float is a hydraulically operated, diaphragm actuated control valve that controls reservoir filling in response to an electric float switch signal, opening at pre-set low level and shutting off at pre-set high level.

The double chamber actuated Model 750-65-B is powered to fully open and close even at very low pressure.

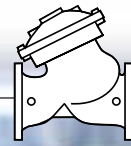
### Features and Benefits

- **Line pressure driven** – Independent operation
- **Bi-Level electric float switch**
  - On/off service
  - Low cavitation damage
  - No hydraulic sensing tubes
  - Simplified float installation and setting
  - Suited to various float switches
- **Solenoid controlled**
  - Low power consumption
  - Normally Open or Normally Closed main valve
- **Double chamber**
  - Full powered closing
  - Low throttling noise
  - Non-slam closing characteristic
  - Protected diaphragm
- **External installation**
  - Easy access to valve and float
  - Less wear and tear
- **In-line serviceable** – Easy maintenance

### Major Additional Features

- Full powered opening & closing – **750-65-B**
- Closing surge prevention – **750-65-49**
- Hydraulic float backup – **750-65-66**
- Altitude pilot backup – **750-65-80**
- Relief override – **750-65-3Q**
- Pressure sustaining valve – **753-65**
- Flow control valve – **757-65-U**
- Level sustaining – **75A-65**

See relevant BERMAD publications.



## Operation

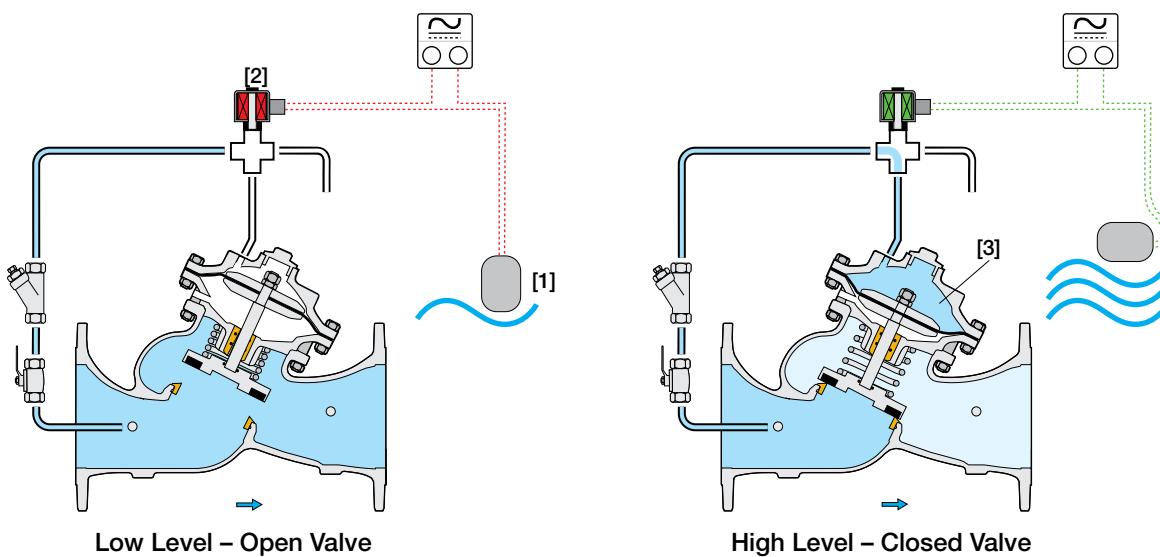
The Model 750-65 is a solenoid controlled valve equipped with a bi-level electric float switch\* and a solenoid pilot.\*\* The float switch [1] closes at pre-set low level, energizing the solenoid [2], and opens at pre-set high level, de-energizing it. Should the level drop, the solenoid is energized, causing the upper control chamber [3] to vent, opening the main valve. Should the level rise, the solenoid is de-energized, and pressure is applied to the upper control chamber harnessing line pressure to close the main valve.

For 8" (200 mm) valves and larger, an accelerator quickens valve response.

For low pressure applications use the Model 750-65-B with double chamber operation.

\* Other switching means are available.

\*\* Normally Closed and Normally Open main valves are available.



## Pilot System Specifications

### Standard Materials:

#### Solenoid:

Body: Brass or Stainless Steel

Elastomers: NBR or FPM

Enclosure: Molded epoxy

#### Tubing & Fittings:

Stainless Steel 316 or Copper & Brass

#### Accessories:

Stainless Steel 316, Bronze, Brass and Synthetic

Rubber Elastomers

#### Float switch

**Max. Current:** 16A@250V

**Fluid specific weight:** 0.95-1.10

**Working temperature:** Water up to 60°C (140°F)

#### Dimensions:

Length – 124 mm (4.9")

Width – 90 mm (3.5")

Cable length – 4.9 m (16 ft.)

### Solenoid Electrical Data:

#### Voltages:

(ac): 24, 110-120, 220-240, (50-60Hz)

(dc): 12, 24, 110, 220

#### Power Consumption:

(ac): 30 VA, inrush; 15 VA (8W), holding or

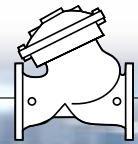
70 VA, inrush; 40 VA (17.1W), holding

(dc): 8-11.6W

Values might vary according to specific solenoid model

#### Notes:

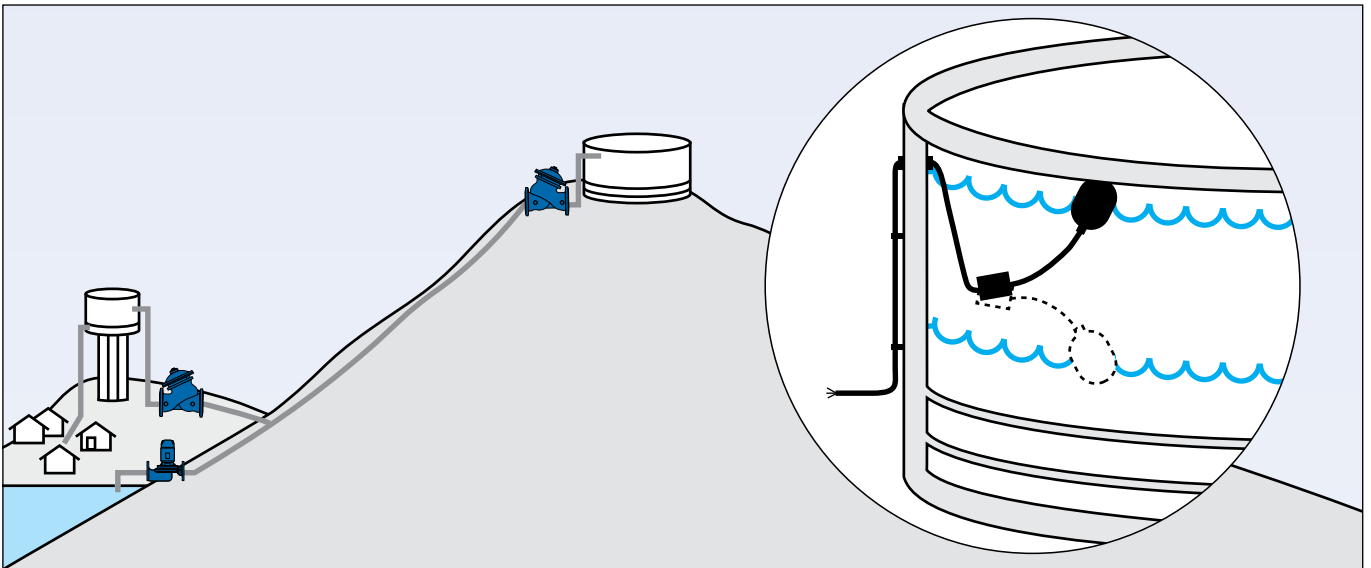
- Recommended continuous flow velocity:  
0.3-6.0 m/sec ; 1-20 ft/sec
- Minimum operating pressure: 0.7 bar ; 10 psi.  
For lower pressure requirements consult factory



## Typical Applications

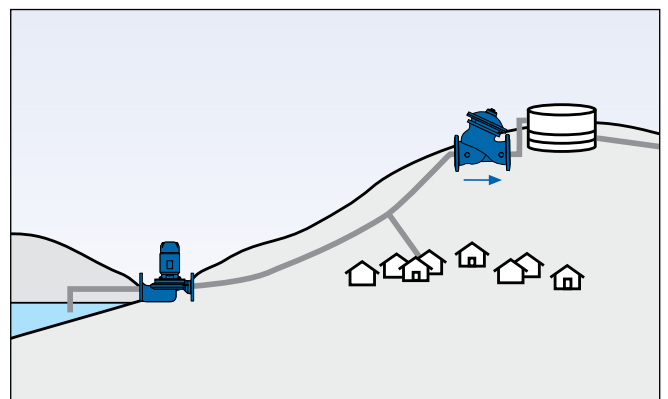
Reservoirs vary in their characteristics – location, elevation, filling & emptying, flow & pressure, surface area, etc. These various characteristics require various level control valve solutions.

The Model 750-65 is the ideal solution for level control in reservoirs – shallow and deep, low and high elevation, rooftop and basement, in water towers, and wherever electric power is available.



### Pumping to Uphill Reservoir

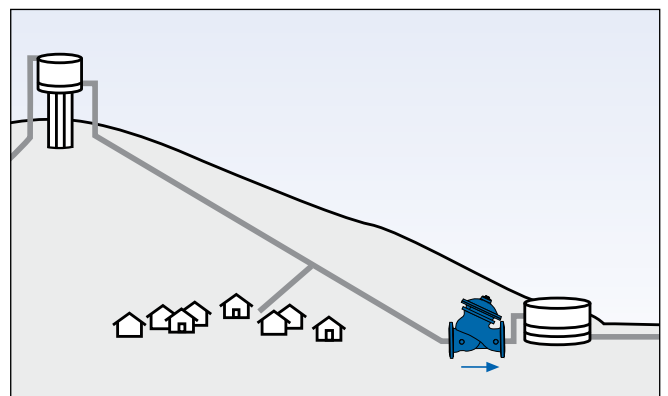
In a reservoir system where a **pump provides pressure**, consumers are prioritized over reservoir filling by installing the **Model 753-65** Level Control and Pressure Sustaining Control Valve.

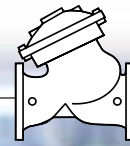


### Gravity Filling a Downhill Reservoir

Where a **reservoir provides pressure** to consumers and fills a lower elevation reservoir, the consumers should be prioritized over filling the lower reservoir. Defining the pressure set-point for the standard level control and pressure sustaining valve is usually impossible, as there is only a very small potential differential pressure to operate the valve.

The solution: Rather than controlling the pressure during filling, control the filling flow ensuring sufficient pressure for consumers. Install the **Model 757-65-U** Level and Flow Control Valve.





### Technical Data

**Size Range:** DN40-900 ; 1½-36"

**End Connections (Pressure Ratings):**

**Flanged:** ISO PN16, PN25 (ANSI Class 150, 300)

**Threaded:** BSP or NPT

**Others:** Available on request

**Valve Patterns:** "Y" (globe) & angle, globe (DN600-900 ; 24"-36")

**Working Temperature:** Water up to 80°C ; 180°F

**Standard Materials:**

**Body & Actuator:** Ductile Iron

**Internals:** Stainless Steel, Bronze & coated Steel

**Diaphragm:** Synthetic Rubber Nylon fabric-reinforced

**Seals:** Synthetic Rubber

**Coating:** Fusion Bonded Epoxy, RAL 5005 (Blue) approved for drinking water or Electrostatic Polyester Powder

### Differential Pressure Calculation

$$\Delta P = \left( \frac{Q}{Kv; Cv} \right)^2$$

**ΔP** = Differential Pressure for fully open valve (bar; psi)

**Q** = Flow rate (m³/h; gpm)

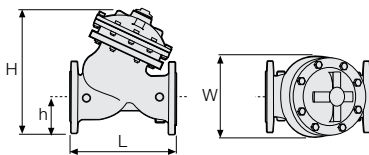
**Kv** = Metric system - valve flow coefficient  
(flow in m³/h at 1 bar ΔP with 15°C water)

**Cv** = US system - Valve flow coefficient  
(flow in gpm at 1 psi ΔP with 60°F water)

$$Cv = 1.155 Kv$$

### Flow Data & Dimensions Table

| DN / Size    |                               | 40                   | 1.5" | 50 | 2" | 65 | 2.5" | 80 | 3" | 100 | 4" | 150 | 6" | 200 | 8" | 250 | 10" | 300 | 12" | 350 | 14" | 400 | 16" | 450 | 18" | 500 | 20" |  |  |
|--------------|-------------------------------|----------------------|------|----|----|----|------|----|----|-----|----|-----|----|-----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|
| Flow Data    | 700 & 700ES                   | Kv / Cv - Flat       |      |    |    |    |      |    |    |     |    |     |    |     |    |     |     |     |     |     |     |     |     |     |     |     |     |  |  |
|              | 700 & 700EN                   | Kv / Cv - "Y" Flat   |      |    |    |    |      |    |    |     |    |     |    |     |    |     |     |     |     |     |     |     |     |     |     |     |     |  |  |
|              | 700 & 700EN                   | Kv / Cv - "Y" V-Port |      |    |    |    |      |    |    |     |    |     |    |     |    |     |     |     |     |     |     |     |     |     |     |     |     |  |  |
| 700-ES       | PN16; 25                      | L (mm / inch)        |      |    |    |    |      |    |    |     |    |     |    |     |    |     |     |     |     |     |     |     |     |     |     |     |     |  |  |
|              |                               | W (mm / inch)        |      |    |    |    |      |    |    |     |    |     |    |     |    |     |     |     |     |     |     |     |     |     |     |     |     |  |  |
|              |                               | h (mm / inch)        |      |    |    |    |      |    |    |     |    |     |    |     |    |     |     |     |     |     |     |     |     |     |     |     |     |  |  |
|              |                               | H (mm / inch)        |      |    |    |    |      |    |    |     |    |     |    |     |    |     |     |     |     |     |     |     |     |     |     |     |     |  |  |
|              |                               | Weight (Kg/lb)       |      |    |    |    |      |    |    |     |    |     |    |     |    |     |     |     |     |     |     |     |     |     |     |     |     |  |  |
| 700-EN       | PN16; 25                      | L (mm / inch)        |      |    |    |    |      |    |    |     |    |     |    |     |    |     |     |     |     |     |     |     |     |     |     |     |     |  |  |
|              |                               | W (mm / inch)        |      |    |    |    |      |    |    |     |    |     |    |     |    |     |     |     |     |     |     |     |     |     |     |     |     |  |  |
|              |                               | h (mm / inch)        |      |    |    |    |      |    |    |     |    |     |    |     |    |     |     |     |     |     |     |     |     |     |     |     |     |  |  |
|              |                               | H (mm / inch)        |      |    |    |    |      |    |    |     |    |     |    |     |    |     |     |     |     |     |     |     |     |     |     |     |     |  |  |
|              |                               | Weight (Kg/lb)       |      |    |    |    |      |    |    |     |    |     |    |     |    |     |     |     |     |     |     |     |     |     |     |     |     |  |  |
| 700 Flanged  | "Y" PN16 Class 150            | L (mm / inch)        |      |    |    |    |      |    |    |     |    |     |    |     |    |     |     |     |     |     |     |     |     |     |     |     |     |  |  |
|              |                               | W (mm / inch)        |      |    |    |    |      |    |    |     |    |     |    |     |    |     |     |     |     |     |     |     |     |     |     |     |     |  |  |
|              |                               | h (mm / inch)        |      |    |    |    |      |    |    |     |    |     |    |     |    |     |     |     |     |     |     |     |     |     |     |     |     |  |  |
|              |                               | H (mm / inch)        |      |    |    |    |      |    |    |     |    |     |    |     |    |     |     |     |     |     |     |     |     |     |     |     |     |  |  |
|              |                               | Weight (Kg/lb)       |      |    |    |    |      |    |    |     |    |     |    |     |    |     |     |     |     |     |     |     |     |     |     |     |     |  |  |
|              | "Y" PN25 Class 300            | L (mm / inch)        |      |    |    |    |      |    |    |     |    |     |    |     |    |     |     |     |     |     |     |     |     |     |     |     |     |  |  |
|              |                               | W (mm / inch)        |      |    |    |    |      |    |    |     |    |     |    |     |    |     |     |     |     |     |     |     |     |     |     |     |     |  |  |
|              |                               | h (mm / inch)        |      |    |    |    |      |    |    |     |    |     |    |     |    |     |     |     |     |     |     |     |     |     |     |     |     |  |  |
|              |                               | H (mm / inch)        |      |    |    |    |      |    |    |     |    |     |    |     |    |     |     |     |     |     |     |     |     |     |     |     |     |  |  |
|              |                               | Weight (Kg/lb)       |      |    |    |    |      |    |    |     |    |     |    |     |    |     |     |     |     |     |     |     |     |     |     |     |     |  |  |
| 700 Threaded | "Y" PN16; 25 Class 150; 300   | L (mm / inch)        |      |    |    |    |      |    |    |     |    |     |    |     |    |     |     |     |     |     |     |     |     |     |     |     |     |  |  |
|              |                               | W (mm / inch)        |      |    |    |    |      |    |    |     |    |     |    |     |    |     |     |     |     |     |     |     |     |     |     |     |     |  |  |
|              |                               | h (mm / inch)        |      |    |    |    |      |    |    |     |    |     |    |     |    |     |     |     |     |     |     |     |     |     |     |     |     |  |  |
|              |                               | H (mm / inch)        |      |    |    |    |      |    |    |     |    |     |    |     |    |     |     |     |     |     |     |     |     |     |     |     |     |  |  |
|              |                               | Weight (Kg/lb)       |      |    |    |    |      |    |    |     |    |     |    |     |    |     |     |     |     |     |     |     |     |     |     |     |     |  |  |
|              | Angle PN16; 25 Class 150; 300 | L (mm / inch)        |      |    |    |    |      |    |    |     |    |     |    |     |    |     |     |     |     |     |     |     |     |     |     |     |     |  |  |
|              |                               | W (mm / inch)        |      |    |    |    |      |    |    |     |    |     |    |     |    |     |     |     |     |     |     |     |     |     |     |     |     |  |  |
|              |                               | R (mm / inch)        |      |    |    |    |      |    |    |     |    |     |    |     |    |     |     |     |     |     |     |     |     |     |     |     |     |  |  |
|              |                               | h (mm / inch)        |      |    |    |    |      |    |    |     |    |     |    |     |    |     |     |     |     |     |     |     |     |     |     |     |     |  |  |
|              |                               | H (mm / inch)        |      |    |    |    |      |    |    |     |    |     |    |     |    |     |     |     |     |     |     |     |     |     |     |     |     |  |  |



### Specify when ordering:

- Size
- Main model
- Additional features
- Pattern
- Body material
- End connection
- Coating
- Voltage & main valve position
- Tubing & Fittings materials
- Operational data (according to model)
- Pressure data
- Flow data
- Reservoir level data
- Settings

\* Use BERMAD's Waterworks Ordering Guide

| DN / Size            |                | 600   | 24"   | 700   | 28"   | 750   | 30"   | 800   | 32"   | 900   | 36"   |
|----------------------|----------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Globe PN16 Class 150 | L (mm / inch)  | 1,450 | 57.1  | 1,650 | 65    | 1,750 | 68.9  | 1,850 | 72.8  | 1,850 | 72.8  |
|                      | W (mm / inch)  | 1,250 | 49.2  | 1,250 | 49.2  | 1,250 | 49.2  | 1,250 | 49.2  | 1,250 | 49.2  |
|                      | h (mm / inch)  | 470   | 18.5  | 490   | 19.3  | 520   | 20.5  | 553   | 21.8  | 600   | 23.6  |
|                      | H (mm / inch)  | 1,965 | 77.4  | 1,985 | 78.1  | 2,015 | 79.3  | 2,048 | 80.6  | 2,095 | 82.5  |
|                      | Weight (Kg/lb) | 3,250 | 7,150 | 3,700 | 8,140 | 3,900 | 8,580 | 4,100 | 9,020 | 4,250 | 9,350 |
| Globe PN25 Class 300 | L (mm / inch)  | 1,500 | 59.1  | 1,650 | 65    | 1,750 | 68.9  | 1,850 | 72.8  | 1,850 | 72.8  |
|                      | W (mm / inch)  | 1,250 | 49.2  | 1,250 | 49.2  | 1,250 | 49.2  | 1,250 | 49.2  | 1,250 | 49.2  |
|                      | h (mm / inch)  | 470   | 18.5  | 490   | 19.3  | 520   | 20.5  | 553   | 21.8  | 600   | 23.6  |
|                      | H (mm / inch)  | 1,965 | 77.4  | 1,985 | 78.1  | 2,015 | 79.3  | 2,048 | 80.6  | 2,095 | 82.5  |
|                      | Weight (Kg/lb) | 3,500 | 7,700 | 3,700 | 8,140 | 3,900 | 8,580 | 4,100 | 9,020 | 4,250 | 9,370 |

