

700 Series

Level Control and Pressure Sustaining Valve with Bi-Level Electric Float

Mod∈l 753-65

- Reservoir level control
- Prioritizing consumers over reservoir filling
- Backup for reservoir supply valves

The Model 753-65 Level Control and Pressure Sustaining Valve with Bi-Level Electric Float is a hydraulically operated diaphragm actuated control valve that controls reservoir filling in response to an electric signal. The valve opens at pre-set low level and shuts off at pre-set high level. During filling, it sustains minimum upstream pressure, regardless of fluctuating flow or reservoir level.



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
 - Reservoir inherent refreshing
- Solenoid controlled
 - Low power consumption
 - □ Normally Open or Normally Closed main valve
- Double chamber
 - Moderated valve reaction
 - Protected diaphragm
- In-line serviceable Easy maintenance
- Flexible design Easy addition of features
- Balanced seal disk High relief flow capacity

Major Additional Features

- Hydraulic float backup **753-65-66**
- Altitude pilot backup 753-65-80
- Closing surge prevention **753-65-49**
- Electrically selected multi-level settings 753-65-45

See relevant BERMAD publications.





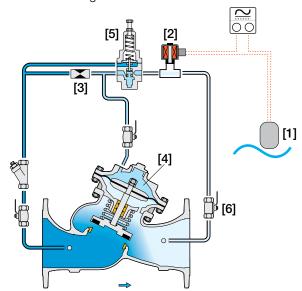
Model 753-65 700 Series

Operation

The Model 753-65 is a pilot controlled valve equipped with an adjustable, 2-Way pressure sustaining pilot, a solenoid pilot* and an electric float switch.**

The float switch [1] closes at pre-set low level to energize the solenoid [2] and opens at pre-set high level to de-energize the solenoid. The restriction [3] continuously allows flow from the valve inlet into the upper control chamber [4]. The pressure sustaining pilot [5], set to minimum allowed system pressure, senses upstream pressure, and together with the solenoid pilot, controls outflow from the upper control chamber. At high level, the solenoid closes causing the main valve to shut off. At low level, the solenoid opens leaving the pressure sustaining pilot to modulate the main valve open while sustaining minimum upstream pre-set pressure. The downstream cock valve [6] enables manual closing.

- * Normally Closed, Normally Open and Last Position main valves are available.
- ** Other switching means are available.



Low Level - Pressure Sustaining Mode

Pilot System Specifications

Standard Materials:

Pilot:

Body: Stainless Steel 316 or Bronze Elastomers: Synthetic Rubber

Spring: Stainless Steel

Solenoid:

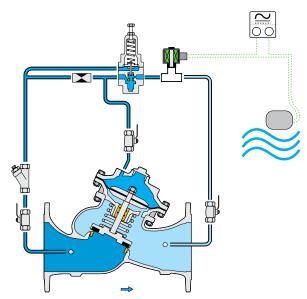
Body: Brass or Stainless Steel Elastomers: NBR or FPM Enclosure: Molded epoxy Tubing & Fittings:

Stainless Steel 316 or Copper & Brass

Accessories:

Stainless Steel 316, Brass and Synthetic Rubber Elastomers Pilot Adjustment Range:

0.5 to 3.0 bar; 7 to 40 psi 0.8 to 6.5 bar; 11 to 95 psi 1 to 16 bar; 15 to 230 psi 5 to 25 bar; 70 to 360 psi



High Level - Valve Closed

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

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.)

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
- Inlet pressure, outlet pressure and flow rate are required for optimal sizing and cavitation analysis



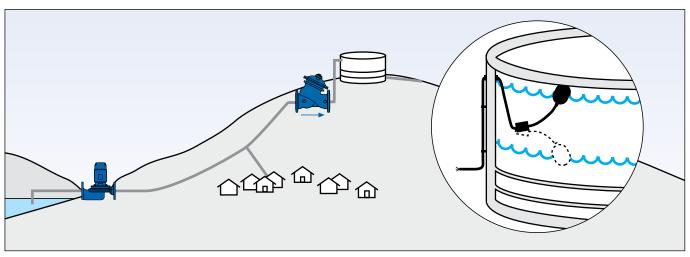


Model 753-65 700 Series

Typical Applications

Level Control and Pressure Sustaining

In this elevated reservoir system, pressure to consumers is prioritized over reservoir filling by adding the pressure sustaining feature to the Model 750-65 Level Control Valve, thereby modifying it to become the Model 753-65 Level Control and Pressure Sustaining Valve.



Typical Installation

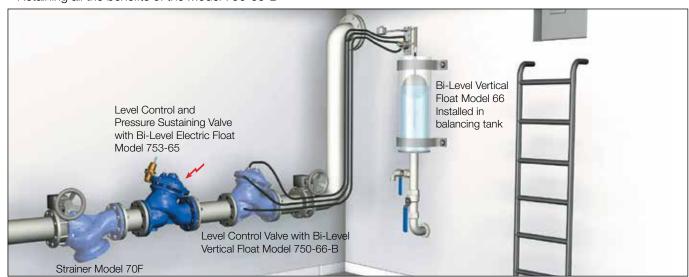
Basement reservoirs in high-rise building

Excellent reservoir level control is achieved by installing BERMAD's Model 750-66-B due to these features:

- On/off service
- Full powered opening & closing
- Low throttling noise
- Non-slam closing characteristic

When prioritizing consumers over reservoir filling is required, rather than adding the pressure sustaining feature to the Model 750-66-B, BERMAD recommends installing a Model 753-65, Normally Open, Level Control and Pressure Sustaining Valve with Bi-Level Electric Float. This enables:

- Adding the required pressure sustaining feature
- Ensuring full backup by a "second line" of protection
- Retaining all the benefits of the Model 750-66-B







700 Series

Technical Data

Size Range: DN40-900; 11/2-36" 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

h (mm / inch)

H (mm / inch)

Weight (Kg/lb)

L (mm / inch)

W (mm / inch)

R (mm / inch)

h (mm / inch)

H (mm / inch)

Weight (Kg/lb)

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)

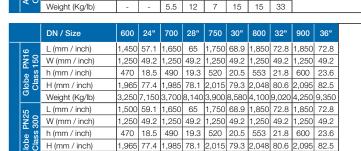
Q = Flow rate (m³/h; gpm)

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"
B	ES	Kv / Cv - Flat	54	62	57	66	60	69	65	75	145	167	395	456	610	705	905	1,045	1,520	1,756	-	-	2,250	2,599	-	-	4,070	4,701
	700E	Kv / Cv - V-Port	46	53	48	56	51	59	55	64	123	142	336	388	519	599	769	888	1,292	1,492	-	-	1,913	2,209	-	-	3,460	3,996
Flow		Kv / Cv - "Y" Flat	42	49	50	58	55	64	115	133	200	230	460	530	815	940	1,250	1,440	1,850	2,140	1,990	2,300	3,310	3,820	3,430	3,960	3,550	4,100
	700E	Kv / Cv - "Y" V-Port	36	41	43	49	47	54	98	113	170	200	391	450	693	800	1,063	1,230	1,573	1,820	1,692	1,950	2,814	3,250	2,916	3,370	3,018	3,490
		L (mm / inch)	230	9.1	230	9.1	290	11.4	310	12.2	350	13.8	480	18.9	600	23.6	730	28.7	850	33.5	-	-	1,100	43.3	-	-	1,250	49.2
ပ္သ	. 25	W (mm / inch)	150	5.9	165	6.5	185	7.3	200	7.9	235	9.3	300	11.8	360	14.2	425	16.7	530	20.9	-	-	626	24.6	-	-	838	33
	116;	h (mm / inch)	80	3.1	90	3.5	100	3.9	105	4.1	125	4.9	155	6.1	190	7.5	220	8.7	250	9.8	-	-	320	12.6	-	-	385	15.2
	M.	H (mm / inch)	240	9.4	250	9.8	250	9.8	260	10.2	320	12.6	420	16.5	510	20.1	605	23.8	725	28.5	-	-	895	35.2	-	-	1,185	46.7
		Weight (Kg/lb)	10	22	10.8	23.8	13.2	29	15	33	26	57.2	55	121	95	209	148	326	255	561	-	-	437	960	-	-	1,061	2,334
		L (mm / inch)	-	-	-	-	-	-	310	12.2	350	13.8	480	18.9	600	23.6	730	28.7	850	33.5	-	-	-	-	-	-	-	-
김	25	W (mm / inch)	-	-	-	-	-	-	200	7.9	235	9.3	320	12.6	390	15.4	480	18.9	550	21.7	-	-	-	-	-	-	-	-
700-EN	116;	h (mm / inch)	-	-	-	-	-	-	100	3.9	118	4.6	150	5.9	180	7.1	213	8.4	243	9.6	-	-	-	-	-	-	-	-
	PN I	H (mm / inch)	-	-	-	-	-	-	305	12	369	14.5	500	19.7	592	23.3	733	28.9	841	33.1	-	-	-	-	-	-	-	-
		Weight (Kg/lb)	-	-	-	-	-	-	21	46.2	31	68.2	70	154	115	253	198	436	337	741	-	-	-	-	-	-	-	-
		L (mm / inch)	205	8.1	210	8.3	222	8.7	250	9.8	320	12.6	415	16.3	500	19.7	605	23.8	725	28.5	733	28.9	990	39	1,000	39.4	1,100	43.3
PN16	150	W (mm / inch)	155	6.1	165	6.5	178	7	200	7.9	223	8.8	320	12.6	390	15.4	480	18.9	550	21.7	550	21.7	740	29.1	740	29.1	740	29.1
		h (mm / inch)	78	3.1	83	3.3	95	3.7	100	3.9	115	4.5	143	5.6	172	6.8	204	8	242	9.5	268	10.6	300	11.8	319	12.6	358	14.1
ged "≻	Cg	H (mm / inch)	239	9.4	244	9.6	257	10.1	305	12	366	14.4	492	19.4	584	23	724	28.5	840	33.1	866	34.1	1,108	43.6	1,127	44.4	1,167	45.9
aug		Weight (Kg/lb)	9.1	20	10.6	23	13	29	22	49	37	82	75	165	125	276	217	478	370	816	381	840	846	1,865	945	2,083	962	2,121
700 Flanged 25 "Y"		L (mm / inch)	205	8.1	210	8.3	222	8.7	264	10.4	335	13.2	433	17	524	20.6	637	25.1	762	30	767	30.2	1,024	40.3	1,030	40.6	1,136	44.7
70(PN25	300	W (mm / inch)	155	6.1	165	6.5	185	7.3	207	8.1	250	9.8	320	12.6	390	15.4	480	18.9	550	21.7	570	22.4	740	29.1	740	29.1	750	29.5
Ē	SS	h (mm / inch)	78	3.1	83	3.3	95	3.7	105	4.1	127	5	159	6.3	191	7.5	223	8.8	261	10.3	295	11.6	325	12.8	357	14.1	389	15.3
`	Clas	H (mm / inch)	239	9.4	244	9.6	257	10.1	314	12.4	378	14.9	508	20	602	23.7	742	29.2	859	33.8	893	35.2	1,133	44.6	1,165	45.9	1,197	47.1
		Weight (Kg/lb)	10	22	12.2	27	15	33	25	55	43	95	85	187	146	322	245	540	410	904	434	957	900	1984	967	2,132	986	2,174
35	8	L (mm / inch)	155	6.1	155	6.1	212	8.3	250	9.8																		
16:	5 25	W (mm / inch)	122	4.8	122	4.8	122	4.8	163	6.4	†		K	\$						5	DEC	:ify	wt	nen	OP	d∈r	פַחוֹי] :



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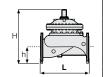
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- Size
- Main model
- Additional features
- Pattern
- Body material
- End connection
- Coating
- Voltage & main valve position
- Tubing & Fittings materials
- Operational data (according to model)
- Pressure data
- Flow data
- Reservoir level data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



3,500 7,700 3,700 8,140 3,900 8,580 4,100 9,020 4,250 9.370