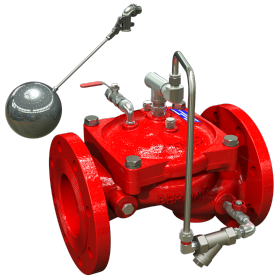
LEVEL CONTROL VALVE WITH MODULATING HORIZONTAL FLOAT

Model FP-450-60

The Model FP 450-60 Level Control Valve with Modulating Horizontal Float is a hydraulically controlled, diaphragm actuated, control valve that controls reservoir filling to maintain a constant "always full" water level, regardless of fluctuating demand.



Features & Benefits

- Safety and reliability
  - Time proven, simple Fail Open design
  - Single piece, rugged elastomeric diaphragm seal - VRSD technology
  - Obstacle-free, uninterrupted flow path
- High performance
  - Very high flow efficiency
  - Main valve with no mechanical moving parts
  - Quiet and Smooth operation
  - Very low opening & closing pressure requirement
- Specifically-designed for fire protection
  - “Always full” reservoir
- Quick and easy maintenance
  - In-line serviceable
  - Fast and easy cover removal
  - Designed for high reliability and easy maintenance

Approvals

ABS TYPE APPROVED PRODUCT	ABS American Bureau of Shipping Type Approval Sizes 1½” - 12"
DNV	Det Norske Veritas Type Approval Sizes 1½” to 12"
Lloyd's Register TA TYPE APPROVED	Lloyd’s Register Type Approval Sizes 1½” - 10”

Typical Applications

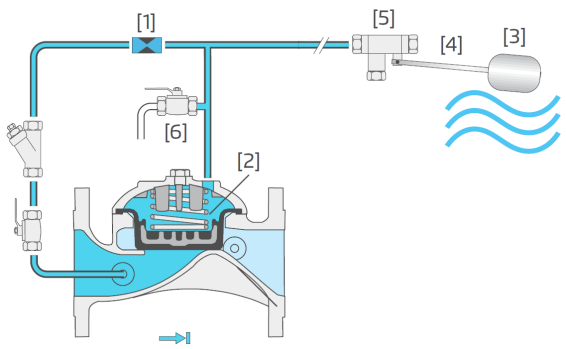
- Low volume reservoirs
- Large surface area reservoirs

Additional Features

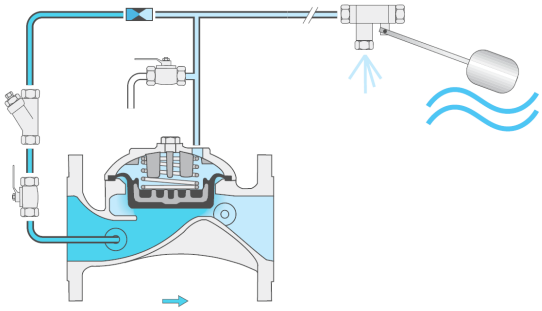
- Valve Position Indicator
- Valve position limit switches
- Large control filter

All images in this catalog are for illustration only

Operation



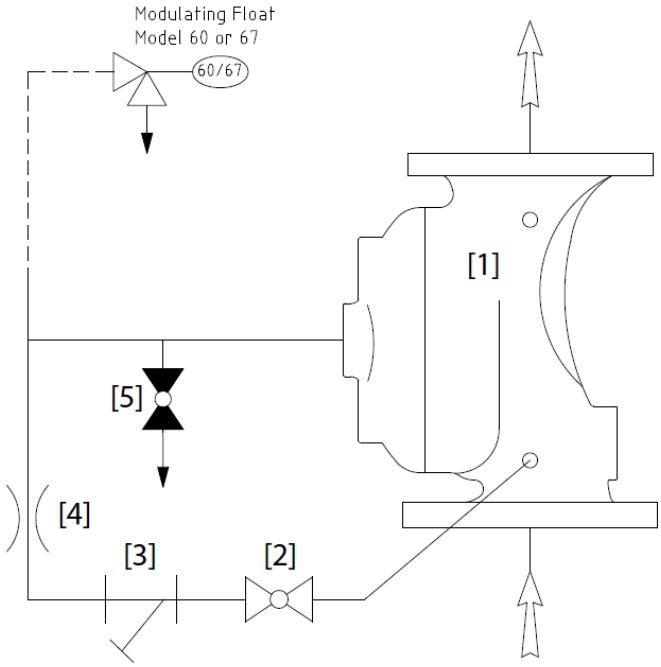
Valve Closed



Valve Open

The Model FP 450-60 is a float controlled valve equipped with a 2-way, horizontal float pilot assembly. The orifice restriction [1] allows flow from the valve inlet into the control chamber [2]. The float [3] is attached to the float pilot arm [4]. The location of the float assembly and the position of the float determines the level setting.
Should the level rise toward the setting, the float pilot [5] throttles, pressure in the control chamber accumulates causing the main valve to also throttle, reducing the filling rate, and eventually closing drip tight.
Should the level fall, the float pilot releases pressure from the control chamber causing the main valve to modulate open.
The ball valve [6] enables manual override opening.

System P&ID



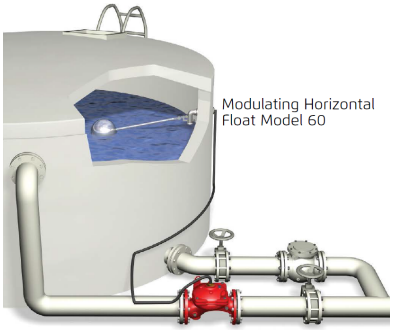
	Components
1	Main Valve
2	Priming Ball Valve
3	Priming Strainer
4	Restriction Orifice
5	Manual Emergency Release

System Installation

The model FP-450-60 is a modulating level valve, keeping the reservoir full at very small increments of volume loss, apposed to other systems that need a certain drop in water level to initiate filling.
This valve is suited for low volume or large surface ares a tanks, where the "always full" characteristics displays its advantage.
The FP-60 float valve must be installed so as to rest on the water surface of the tank.
The main valve may be placed in a more accessible point, to enable easy and reliable maintenance.

Large Fire Water Reservoirs

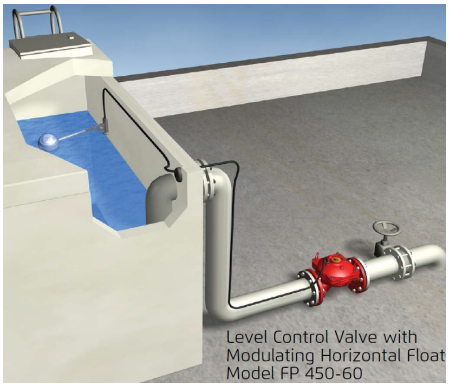
- The valve can be placed in an easily accessible place, remotely operated by the float on the reservoir surface.



Level Control Valve with
Modulating Horizontal Float
Model FP 450-60

Rooftop Reservoirs

- Modulates open immediatly when the level starts dropping, closing securely when full, preventing overflow.



Suggested Specifications

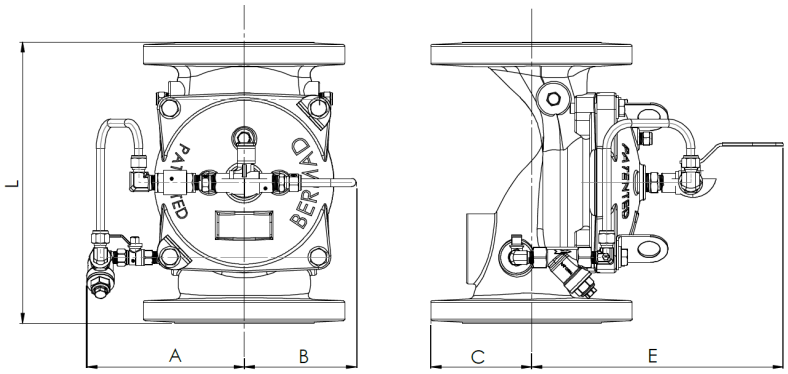
The Level Control Valve shall control reservoir filling to maintain constant water level regardless of fluctuating demand.
Main Valve: The main valve shall be an elastomeric type globe (or angle) valve with a rolling-diaphragm. The valve shall have an unobstructed flow path, with no stem guide or supporting ribs. The body and cover shall be ductile iron. All external bolts and nuts shall be of Stainless Steel 316. All valve components construction material shall be accessible and serviceable without removing the valve from the pipeline.
Actuation: Valve actuation shall be accomplished by a fully peripherally supported, one-piece balanced rolling-diaphragm, vulcanized with a rugged radial seal disk. The diaphragm assembly shall be the only moving part.
Control System: The control system shall consist of a 2-way, stainless steel horizontal float pilot assembly, a restriction orifice, isolating and manual override ball valves, and a filter. All fittings shall be forged brass or stainless steel. The assembled valve shall be hydraulically tested.
Quality Assurance: The valve manufacturer shall be certified according to the ISO 9000 and 9001 Quality Assurance Standard.

Technical Data

Available Sizes:
Flanged- 1½, 2, 2½, 3, 4, 6, 8, 10 & 12"
Grooved- 2, 3, 4, 6, & 8"

Pressure Rating:
ANSI#150 - 17.2 bar | 250 psi
Grooved - 17.2 bar | 250 psi

Elastomer:
HTNR - Fabric Reinforced High Temperature Compound - See engineering data



Valve Size	L #150 mm | in	L Grooved mm | in	A mm | in	B mm | in	C mm | in	øD in	E mm | in	F mm | in	G mm | in	Weight #150 kg | lb
DN40 | 1½"	205 | 8.1	-	149 | 5.9	175 | 6.9	64 | 2.5	-	55 | 2.2	-	-	14 | 31
DN50 | 2"	205 | 8.1	205 | 8.1	149 | 5.9	175 | 6.9	78 | 3	-	55 | 2.2	-	-	15 | 33
DN65 | 2½"	205 | 8.1	-	149 | 5.9	180 | 7	92 | 3.6	-	55 | 2.2	-	-	17 | 37
DN80 | 3"	257 | 10.1	250 | 9.8	149 | 5.9	217 | 8.5	97 | 3.8	-	29 | 1.1	-	-	26 | 57
DN100 | 4"	320 | 12.6	320 | 12.6	149 | 5.9	224 | 8.8	119 | 4.7	-	243 | 9.5	-	-	38 | 84
DN150 | 6"	415 | 16.3	415 | 16.3	149 | 4.9	252 | 9.9	145 | 5.7	-	315 | 12.4	-	-	82 | 181
DN200 | 8"	500 | 19.7	-	189 | 15.1	285 | 10.6	174 | 14.3	-	350 | 13.8	-	-	145 | 320
DN250 | 10"	605 | 23.8	-	443 | 17.4	295 | 11.6	210 | 8.3	-	382 | 15	-	-	161 | 354
DN300 | 12"	725 | 28.5	-	481 | 18.9	363 | 14.3	252 | 9.9	-	430 | 7	-	-	249 | 549

Valve Code Designations

FP | 6" | 450-60 | H | C | A5 | ER | NN | 6nF

Category	Code
Standard	FP
Seawater	FS

Valve Size	
1½"	40 mm
2"	50 mm
2½"	60 mm
3"	80 mm
4"	100 mm
6"	150 mm
8"	200 mm
10"	250 mm
12"	300 mm

Installation	Code
Vertical	V
Horizontal	H

Material Body & Cover [1]	Code
Ductile Iron A356 [2]	C
Steel ASTM A216 WCB [2]	S

Notes:
(1) Other materials available see engineering data
(2) Coated internally and externally
(3) Supplied loose
(4) Consult BERMAD for availability
(5) For valves up to and including 10"

End Connections	Code
ANSI#150RF	A5
ANSI#150FF	a5
ISO PN16	16
Grooved ANSI C606	VI

Coating	Code
High Build Epoxy	ER
Zinc Based High Build Epoxy [5]	ZR

Tubing & Fittings	Code
Stainless Steel	NN
Monel 400	MM

Factory Supplied Additional Items	Code
General Purpose NEMA-4 Pressure Switch	P
Pressure Gauge Assembly [3]	6
S.S Glycerin Pressure Gauge Assembly [3]	6n
Monel Pressure Gauge Assembly [3]	6m
Large Control Filter	F
Valve Position Indicator	I
S.S 316 Trim Accessories	N
Pressure Transmitter [3]	Q

*More options available – consult BERMAD