

LP-8N, 9N Type Level Control Valve (for Water)

General purpose level control valve for water receiving tank. It is made of cast of cast bronze for body to prevent rust water. And no adjustable part, compact, easy to installation.

FEATURES

- Since the passage to the pilot piping is through of bypass line, intermittent water feeding by the ball tap which caused by water wave, does not influence to water supply quiet and stable water supply is ensured.
- Compact, simple structured, easy to handle.
- Strainer embedded.

SPECIFICATIONS

Model name	LP-8N		LP-9N
	LP8N-F	LP8N-B	LP9N-F
Size	25~50(1"~2")	65~100(2½"~4")	
End connection	Screwed JIS Rc	Flanged JIS 10KFF	
Applicable fluid	Water		
Applicable temperature	5~60°C		
Applicable pressure	0.03~0.75MPa	0.035~0.75MPa	
Materials	Body(Cast bronze) Disc & seat (Brass and Synthetic rubber)	Body(Cast iron) Disc & seat (Brass and Synthetic rubber)	Body(Cast bronze) Disc & seat (Brass and Synthetic rubber)
Valve body pressure test	Hydraulic 1.75MPa		
Painting	—	Body inside:Epoxy resin	—
Accessories	Ball tap(Size 20mm), male and female bushing	Ball tap(Size 20mm)	Ball tap(Size 20mm), male and female bushing

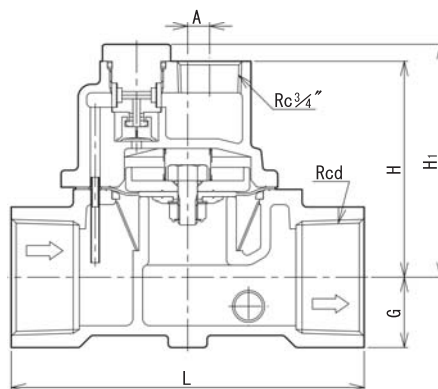
DIMENSIONS

(mm)

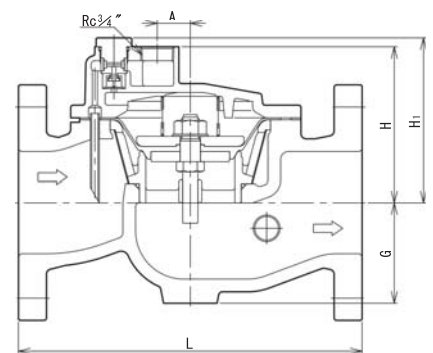
Size	d	L	G		H	H ₁	A	Cv value	Mass(kg)	
			LP-8N Type	LP-9N Type					LP-8N Type	LP-9N Type
25(1")	1"	120	21	—	77	84	15	8	1.5	—
32(1¼")	1¼"	135	25	—	82	89	10	11	2.1	—
40(1½")	1½"	145	29	—	89	96	9	16	2.7	—
50(2")	2"	170	36	—	97	104	3	22	3.9	—
65(2½")	—	270	75	75	123	130	26	60	21	19
80(3")	—	270	79	79	123	130	26	70	21	21
100(4")	—	290	92	89	135	142	39	100	29	28

* Size 65~100mm: Flange code JIS 10KFF

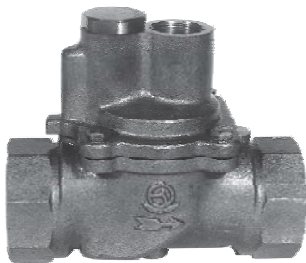
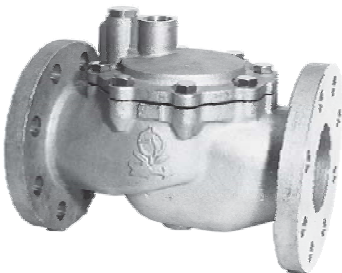
CONSTRUCTION



Size 25~50mm (LP-8N Type)



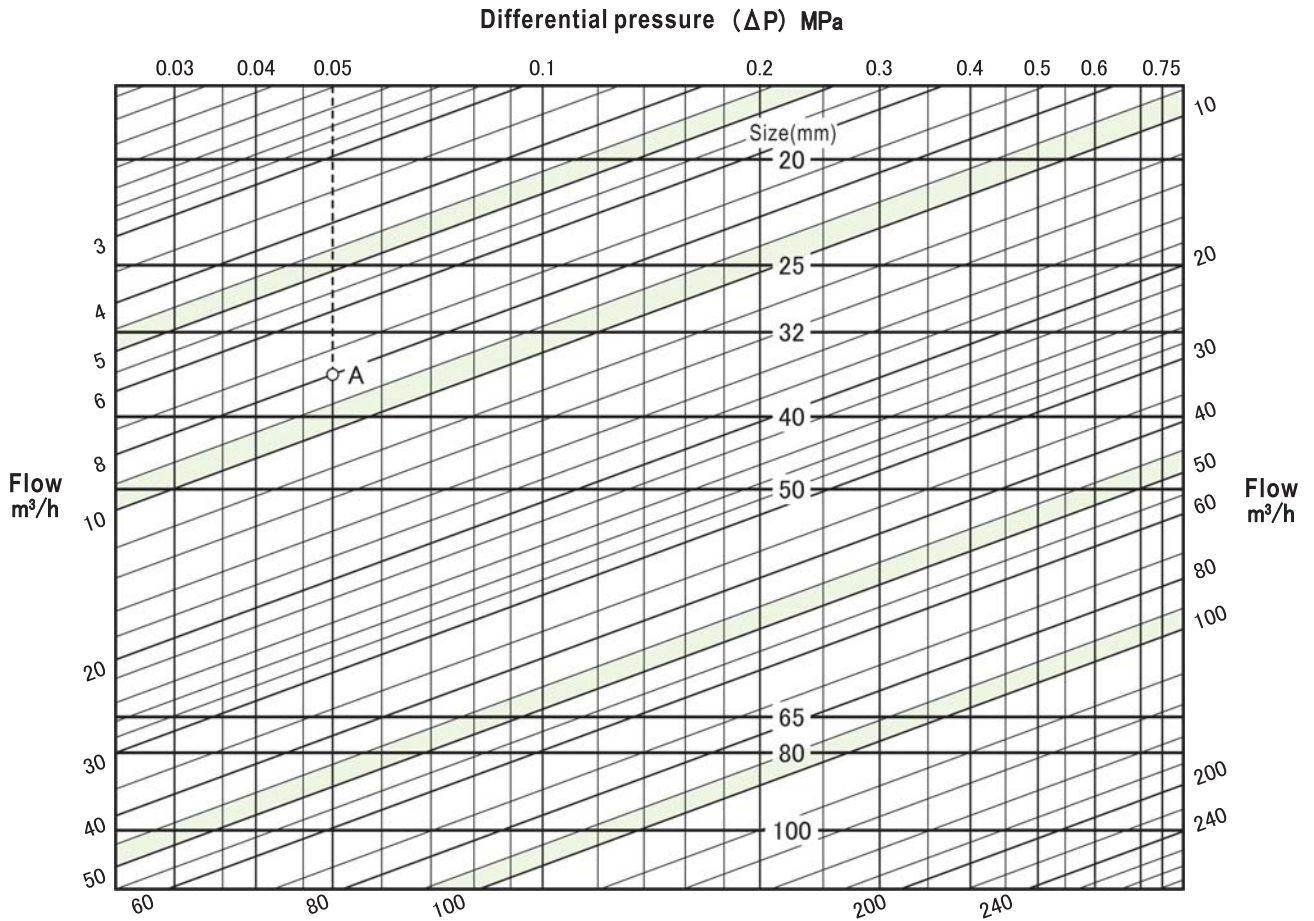
Size 65~100mm (LP-8N, 9N Type)


 Size 25~50mm
(LP-8N Type)

 Size 65~100mm
(LP-8N, 9N Type)

DATA/LP-8N, 9N Type Series Level Control Valve (for Water)

SIZE SELECTION CHART (for Water)

SUITABLE TYPES: LP-8N,9N
 LP-8HN,9HN
 LP-8RN,9RN
 LP-8AN,8AHN,8ARN



● HOW TO USE THE CHART

Example: determine size for meeting the following conditions.
 Water supply pressure: 0.05MPa
 Back pressure: 0MPa
 Flow: 8m³/h

Differential pressure (ΔP) is 0.05MPa.
 The 0.05MPa pressure differential line intersects with the 8m³/h flow curve at point A.
 Since point A is between the 32mm and 40mm size lines, the larger one, which is 40mm, is selected.

DATA/Level Control Valve (FV Valve)

LEVEL CONTROL VALVE ADJUSTMENT (LP series)

■ VALVE CLOSING TIME LP-8HN, 8AHN, 9HN

Although valve closing time has been adjusted at factory before delivery, it needs to be adjusted when there is an abnormal situation.

● Delaying valve closing time

Water hammer may occur if the interval between closing of ball tap and closing of level control valve is too short. To delay valve closing, loosen the lock nut and turn the needle valve in right (clockwise) to reduce the opening degree of needle valve.

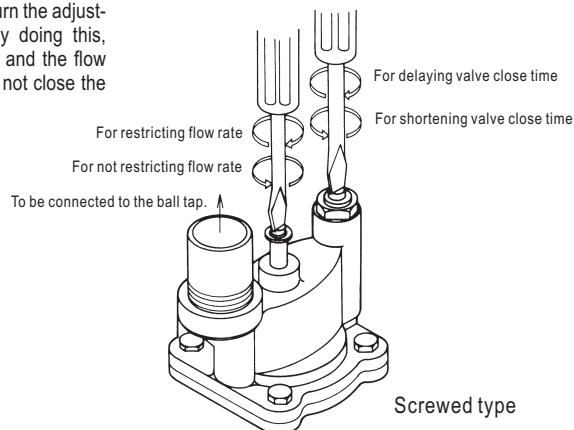
● Shortening valve closing time

The closing water level may be too high or overflow may occur if the interval between closing of ball tap and closing of level control valve is too long. To solve such problems, loosen the lock nut and turn the needle valve in the left (counterclockwise) to increase the opening degree of needle valve.

■ FLOW ADJUSTMENT LP-8HN, 8AHN, 9HN LP-8RN, 8ARN, 9RN

The flow of water will be extremely large and there will be excessive vibration and noise if the water pressure or the head drop of pressure is excessively large. To solve such problems, turn the adjustment screw in right (clockwise). By doing this, the stroke of the valve is shortened and the flow amount and velocity are limited (do not close the screw completely).

Adjustment of valve close time and flow



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LEVEL CONTROL VALVE

WATER DRAINING AND RE-FEEDING FOR LEVEL CONTROL VALVE FOR APPLICATIONS IN COLD DISTRICT

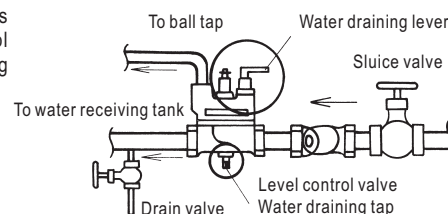
■ DRAINING

- Close the valve controlling water supply to reduce water level of water receiving tank, and then open the ball tap.
- Raise the lever of level control valve (and the drain tap in the case of straight type valve) to drain water. Close the tap after water is drained completely.

■ RE-FEEDING (resuming water supply)

Open the water supply valve and start water supply. After 2~3 minutes, check if water is supplied by secondary valve and level control valve, and then pull down the water draining lever to allow normal water supply.

Water draining and re-feeding (resuming water supply)



CAUTIONS RELATED TO USAGE OF LEVEL CONTROL VALVE

Depending on the location of water receiving tank, the sound of water flowing in the outlet piping of level control valve may cause claim from people living nearby.

Therefore, considerations on how to reduce the sound of flowing water have to be paid if the water receiving tank is located at a place where people are living in the vicinity.

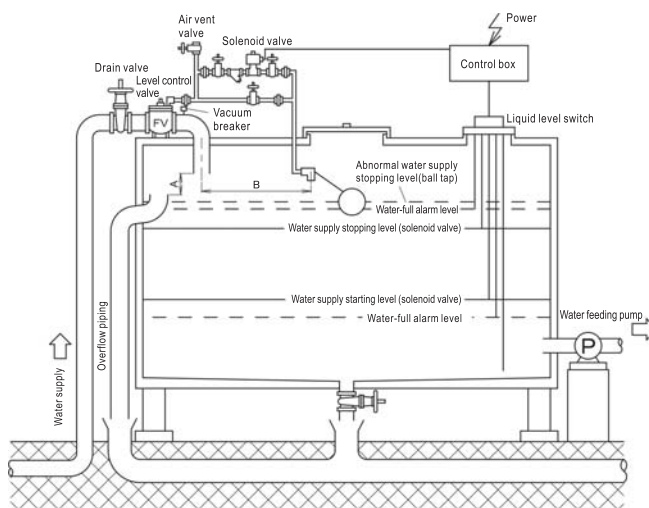
■ EXAMPLE

To control water level, use the level switch to detect water level and open/close the master valve by operating the pilot-operating solenoid valve.

In case of water level in the tank raised up by some happen such as solenoid valve of unoperated, the ball tap will close as safety device, then level control valve stops to supply water.

■ CAUTIONS ON PIPING

- Interval A should be at least 1.7 times plus 5mm of pipe diameter (adjust based on the area of water receiving tank).
- Interval B should be as large as possible (>1m) or equipped with fluctuation preventing device to prevent the fluctuation of the floater of ball tap.
- Install a strainer at the primary side of level control valve.
- If the secondary piping of level control valve is very long or there are many bending parts on the piping also spout is possibly under water level, install a vacuum breaker right after the secondary side of the valve.



- Before installing level control valve, carry out sufficient flushing to clean the pipe. The valve should be vertical to horizontal pipe.
- Use union joint or flanged joint for piping of size 20~50mm valve.
- To make maintenance easier, install union joint next to the level control valve of pilot piping and install stop valve between union joint and ball tap.
- The diameter of pilot piping must not be smaller than the diameter of the pipe for connecting level control valve.
- The ball tap should be installed nearing the manhole for easy checking and maintenance.
- For applications in cold district, perform sufficient thermal insulation to protect damage of level control valve from freezing.

DATA/Level Control Valve

PILOT-OPERATING SOLENOID VALVE (to be ordered separately)

During water feeding to tank, pilot type solenoid valve in pilot piping line is possibly uncontrollable due to pressure drops, so that select the correct direct type solenoid valve according to table of suitable solenoid valve.

TABLE OF SUITABLE SOLENOID VALVES

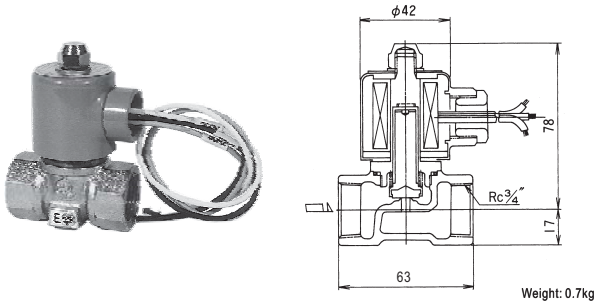
○:Good :Bad

Level control valve		DS-11N (Normally closed)	WS-12 (Normally closed)	WS-12C (Normally open)
Model name	Size			
LP-8N	20~50mm	○	○	○
LP-8HN	65~100mm		○	○
LP-8RN				
LP-8AN, 8AHN, 8ARN	20~50mm	○	○	○
LP-9N, 9HN, 9RN	65~100mm		○	○
WVL-02	80~400mm		○	○
Other level control valves			○	○

* For WVL-02 Type Size 250mm and bigger, use WS-12, 12C Type Size 25mm.
 For cold district use, select LP-8ARN Type and WS Type solenoid valve.
 To protect from freeze, wrap the body with thermal insulation, except coil part.

DS-11N Type Solenoid Valve (Normally closed)

CONSTRUCTION



Note: The size and weight are those of size 20mm valve.

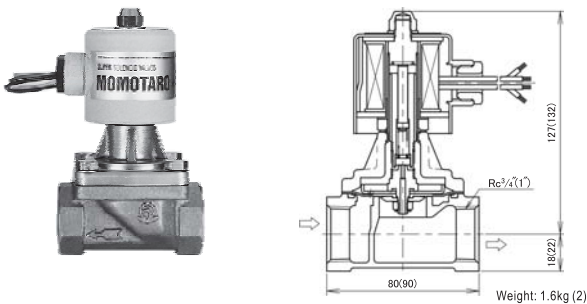
SPECIFICATIONS

Type	Common use	
Model	DS-11N	
Code name	DS11N-J1	DS11N-J2
Size	20 or 15mm (3/4" or 1/2")	
Applicable pressure	0~0.75MPa	
Materials	Body(Cast bronze), Disc & seat(Stainless steel)	
Rated voltage	AC100V 50/60Hz	AC200V 50/60Hz
Rated current	0.19A	0.10A
Starting current	0.57A	0.29A
Protection	Dust & drip proof	
Cv value	0.45	

* For outdoor use, use the TB-03 Type Series terminal box.

WS-12 Type Solenoid Valve (Normally closed)

CONSTRUCTION



※Special voltage are also available.

Note: The number in () is for size 25mm valve.

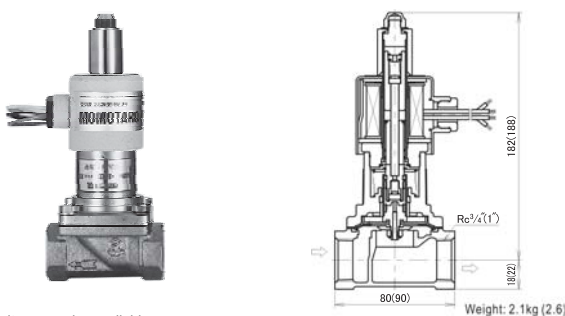
SPECIFICATIONS

Model	WS-12	
Code name	WS12-F	
Size	20(3/4")	25(1")
Applicable pressure	0~1.0MPa	
Materials	Body(Cast bronze), Disc & seat(Stainless steel and Synthetic rubber)	
Rated voltage	Common use: AC100V 50/60Hz or AC200V 50/60Hz	
Rated current	AC100V:0.28A	AC200V:0.14A
Starting current	AC100V:1.0A	AC200V:0.5A
Protection	Dust & drip proof	
Cv value	7	10

* For outdoor use, use the TB-03 Series terminal box.

WS-12C Type Solenoid Valve (Normally open)

CONSTRUCTION



※Special voltage are also available.

Note: The number in () is for size 25mm valve.

SPECIFICATIONS

Model	WS-12C	
Code name	WS12C-F	
Size	20(3/4")	25(1")
Applicable pressure	0~1.0MPa	
Materials	Body(Cast bronze), Disc & seat(Stainless steel and Synthetic rubber)	
Rated voltage	Common use: AC100V 50/60Hz or AC200V 50/60Hz	
Rated current	AC100V:0.30A	AC200V:0.15A
Starting current	AC100V:1.30A	AC200V:0.70A
Protection	Dust & drip proof	
Cv value	7	10

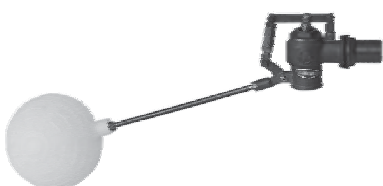
* For outdoor use, use the TB-03 Series terminal box.

DATA/Level Control Valve

LB-2N Type Pilot Ball tap (Standard accessories)

Standard accessory for level control valve. Pilot ball tap works with level control valve and maintain a fixed level of water tank.

※ If level control valve is replaced, the ball tap should also be replaced.



■ SPECIFICATIONS

Model name	LB-2N
Code name	LB2N-F
Applicable fluid	Water
Applicable pressure	0~0.75MPa
Applicable temperature	5~60°C
Materials	Body(Cast bronze), Float(Polyethylene)
Valve body pressure test	Hydraulic 1.75MPa

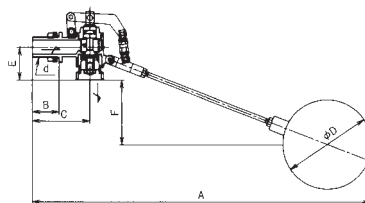
■ DIMENSIONS

(mm)

Size	d	A	B	C	D	E	F	Mass(kg)
20(3/4")	G 3/4"	450	35	75	115	42	60(110)	0.75(1)

Figures in () are for cold district and level control valve with Size 65mm or bigger.

■ CONSTRUCTION



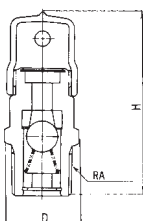
VD-2N Type Vacuum Breaker (Optional item) for outlet side of Level control valve

The operation of level control valve may become unstable if the outlet side piping is too long or the piping is a vertical piping. To maintain stable operation of the valve, install vacuum breaker on the pipe right after the outlet side of level control valve.

Note: Select VD-5N (see page 125) for indoor piping of water supply or air conditioning system.



■ CONSTRUCTION



■ SPECIFICATIONS

Model name	VD-2N
Code name	VD2N-F
Opening operation	Negative pressure -0.003MPa or more
Closing operation	Positive pressure 0.01MPa or more
Materials	Body(Brass or Cast bronze), Disc(Synthetic rubber), Ball(Polyethylene), Strainer(Stainless steel)

■ DIMENSIONS

(mm)

Size	A	D	H	Mass(kg)	Applicable size of level control valve
15(1/2")	1/2"	25.5	63	0.1	20~32mm
20(3/4")	3/4"	32.5	87	0.16	40~50mm
25(1")	1"	40	99	0.29	65mm or bigger

■ CAPACITY (Air)

(kg/h)

Size	-0.003MPa	-0.006MPa	-0.01MPa
15(1/2")	0.94	1.30	1.65
20(3/4")	1.40	1.95	2.50
25(1")	1.95	2.70	3.40

● Convert kg/h → m³/h (Standard state) (for reference only)
Density of air is 1.226kg/m³ (15°C, 1atm)

$$m^3/h \text{ (Standard state)} = \frac{\text{Value in above table (kg/h)}}{1.226 \text{ (kg/m}^3\text{)}}$$