

PRESSURE INDEPENDENT BALANCING & CONTROL VALVE (DN15 - DN32)

LEHRY Pressure Independent Balancing & Control Valve and the series of LEADV actuator are designed for terminal equipment in PAU,AHU,MAU system and for terminal equipment such as plate heat exchanger in heating system. It is used to regulate the flow and simultaneously keep the differential pressure at both ends of the valve constant. Since the valve avoids flow fluctuation caused by the opening or closing of other equipment, the system is able to stable, efficient and energy-saving.



Features

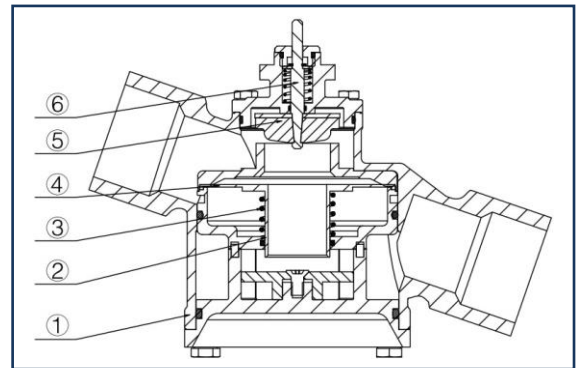
- Equal percentage flow characteristic
- Constant differential pressure is achieved
- Electronic preset of maximum flow facilitates on-site commissioning
- Fault auto-detection and alarm function
- The range with auto-detect function
- The regulator valve core is designed straight travel and provided two actuator, such as regulating and on/off type

Operation Principles

Pressure independent Balancing valve consists of flowing adjustment and dynamic balancing.

The structure of flowing adjustment can achieve to set and regulate.it equipped with actuator which can realize to electronic regulate and shutoff function.

The structure of dynamic balancing can realize to flow constant. Its core part including diaphragm and spring. Diaphragm can induct differential pressure among of entrance and chamber of balancing valve core, and then keep constant differential pressure..



Technical specification:

Dimensions	: DN15-DN32
Working Temperature	: -10~120°C
Working Pressure	: PN25
Fluid Medium	: Water / Ethylene Glycol / Propylene Glycol
Connection	: Threaded Connection
Connection Standard	: EN10226 GB/t 7306.1-2000
Control Deviation	: ≤5%
Working Δ P	: 20-200KPa / 30-300KPa
Working voltage	: 24VAC
Shutoff Pressure	: 30-400Kpa
IP Grade	: IP43
Control Characteristic	: equal percentage

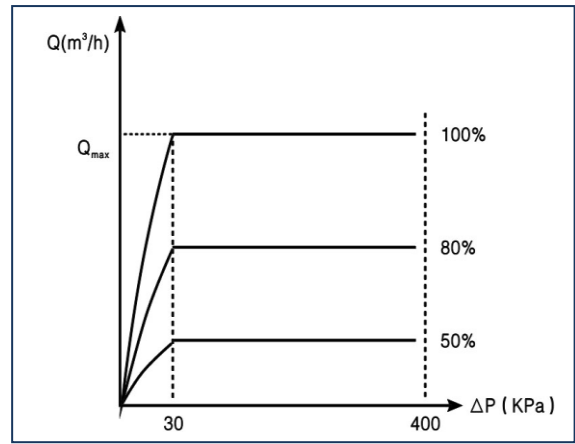
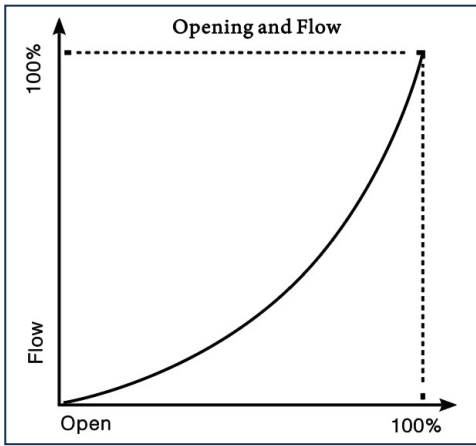
Materials of Construction

SI	Parts	Materials
1	Body	Ductile Iron
2	Core	Stainless Steel
3	Stem	Stainless Steel
4	Membrane	Epdm
5	Spring	Stainless Steel
6	Sealing	Epdm
7	Actuator	Shell : Flame Retardant Pc
8		Internals : Reinforced Pom

Technical Parameters:

Type	DN	Working Δ P (Kpa)	Rated Flow (m³/h)	Actuator Force(N)	Actuating Time (S)
LIV-DV015-OSP02	15	30-400	0.15-1.4	120	50
LIV-DV020-OSP02	20	30-400	0.15-1.4	120	50
LIV-DV025-OSP02	25	30-400	0.2-2.4	200	60
LIV-DV032-OSP02	32	30-400	0.5-4.0	200	60

Flow Characteristics:

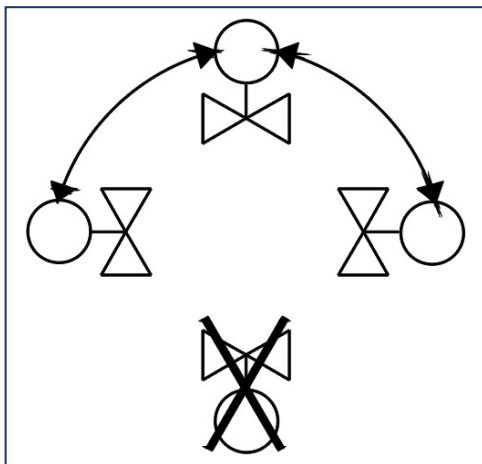


Equal Percentage Control Characteristics

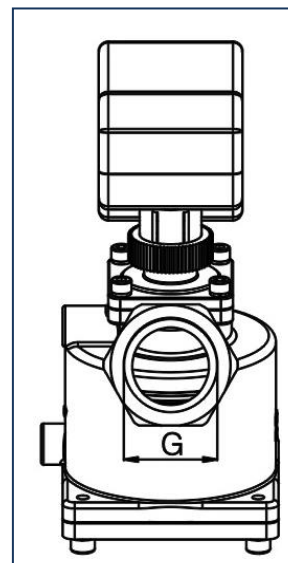
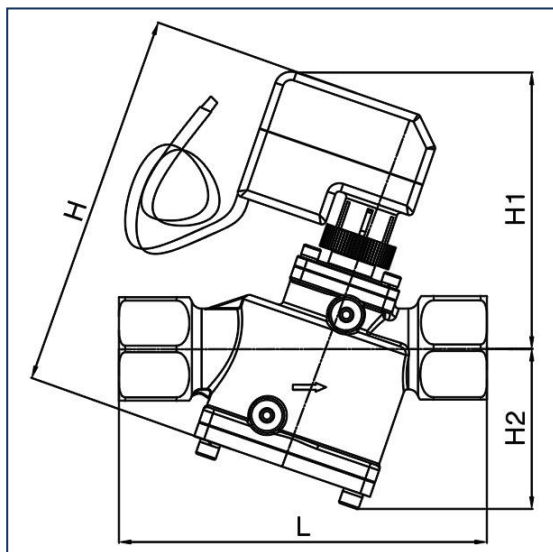
Different Pressure – Flow Characteristics

Installation:

Attention :



- 1) Please read the instructions carefully before installation, check product type and parameter. According to requirements, set working voltage and input signals
- 2) Ensure vertical installation as much as possible, and make room for maintenance.
- 3) The direction of the arrow head on the valve body must accord with the direction of the flow. Wrong installation will lead to clog in the system.
- 4) It is suggested that the design system should be connected by the bypass, and the filling should be done by the by-pass to flush the impurities in the line otherwise the valve will be blocked.
- 5) Before and after installation shall ensure that the valve set aside a certain length of straight pipe, general reserved diameter of 10 times the length of the straight pipe at the inlet pipe, diameter 5 times the length of straight pipe at the export pipe.



Dimensions

(All Dimensions are in MM)

Size	Inch	1/2"	3/4"	1"	1 1/4"
	MM	15	20	25	32
L		120	120	140	178
H		123	123	127	134
H1		122.5	122.5	127	134
H2		55.5	55.5	64.5	75.5
G		G 1/2	G 3/4	75.5	G 1 1/4

PROPORTIONAL INTEGRAL CONTROL ACTUATOR

Application :

This Series LIV-EA-DV valve actuator adopts bilateral control along with Series LIV-DV(DN15-DN32) Electric Control Valve, the actuator can regulate the flow rate of cold or hot water. It is widely used in air conditioning, heating, water treatment and industrial processing systems to control the fluids.

Features :

- ❖ Low voltage AC bilateral keep pace with electrical machine
- ❖ magnetic clutches
- ❖ Action utilize the group of plastic gears to transfer
- ❖ Flame retardant ABS engineering plastic cover
- ❖ Overtime protect function and troubleshoot protect function of control signal install actuator after valve installation, on-site fabrication facilities, its connection flexible and convenient
- ❖ Graphic design of actuator can be closed to the wall, take up little space occupation

Operating Principles :

Used along with Series LIV-DV Electric Control Valve , through receiving BA system regulation signal (0-10V or 4-20mA) or a floating point signal to actuate valve to change flow area of the valve core and seat, control flow area of valve and achieve automatically adjustment.

Actuator with magnetic clutch is drove by bilateral electric machine. When the electric machine pause ,it can be produced stable torsion after magnetic effect. Hence electric machine can stable pause any point without electricity. Actuator produced incremental signal to make electric machine run clockwise or anti-clockwise.

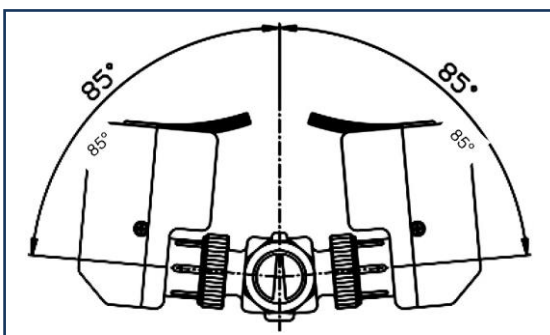
Technical specification:

Type	LIV-EADV-120-10	LIV-EADV-120-20	LIV-EADV-200-10	LIV-EADV-200-20
Voltage	24VAC	220VAC	24VAC	220VAC
Frequent	50/60HZ	50/60HZ	50/60HZ	50/60HZ
Power	3VA	3VA	3VA	3VA
Torque	120 - 140N	120 - 140N	200 - 250N	200 - 250N
Operating Time	50Hz: 10s/mm 60Hz: 8.3s/mm			
IP Grade	IP43			
Control Signal	0(2)-10VDC, 0(4)-20mA			
Feedback	0-10VDC			
Shell	Flame-retardant ABS Plastic			

Product Type:

Type	Torque	Voltage	Regulating
LIV-EADV020-10	120N	24VAC	Proportional Control Actuator
LIV-EADV120-20	120N	220VAC	Proportional Control Actuator
LIV-EADV200-10	200N	24VAC	Proportional Control Actuator
LIV-EADV200-20	200N	220VAC	Proportional Control Actuator

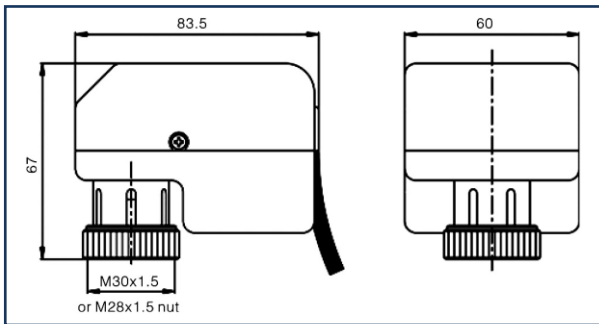
Installation:



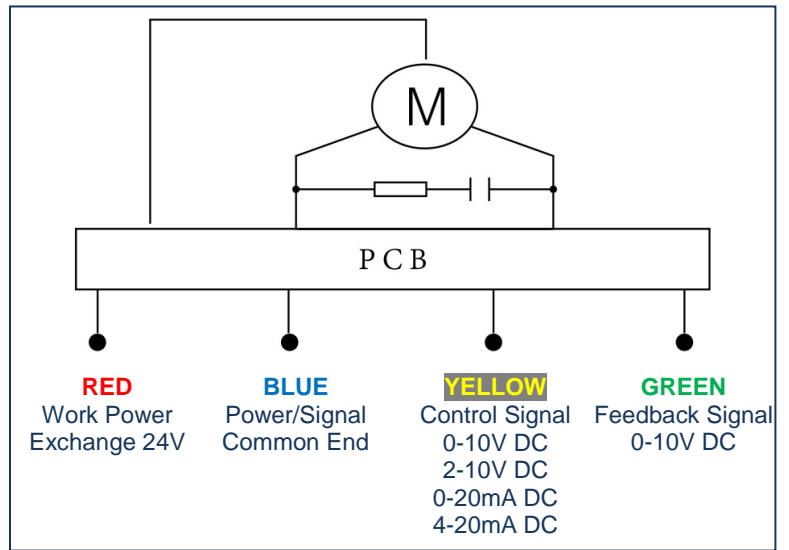
Attention

- 1) Protect the Actuator, Avoid Leakage to damage parts and power
- 2) Actuator can not be covered by thermal insulation material
- 3) When repairing drives, the power should be turned off in case of damage to the machine or caused by leakage.\
- 4) Do Not attempt to connect or remove the wires when the power supply is connected

Dimension (mm):



Actuator Wiring Diagrams:



Wiring Specifications:

Study Status : After Power is on, set JP1 Switch as request (refer to the following list). First, Switch “4” of JP1 to position ON, then press SW1 STUDY/REPOSITON button, buzzer will sound every 5 seconds, and the actuator stem is going down (opening valve) until gears are blocked (has reached the maximum stroke). Then the stem will go upward until gears are blocked again (has been in the initial position). Buzzer will make a long sound to indicate the study status is over. MCU will keep the data in memory even power is off.

Then Switch “4” of JP1 back to position OFF to transform to running status. If this step is missed, the actuator will operate as usual, but it will sound ever 5 seconds and go throught the study status every time when power is on.

Running Status: The actuator will reposition (sear the initial position) every time when power is on. It will close the valve at first, and then the buzzer will make a long sound to indicate the actuator is ready for control signal.

Study/running status shift: If user needs to switch study/running status, make sure the JP1 has been set correctly, then press SW1 STIDU/REPOSITON button, Don't need to cut off Power

Jp1 SWITCH SETTING					PCB	
Control Signal	0~10V DC	2~10V DC	0~20mA DC	4~20mA DC		
Status Switch	OFF ON	OFF ON	OFF ON	OFF ON		
Running State	DA State	OFF ON	OFF ON	OFF ON		
	RA state	OFF ON	OFF ON	OFF ON		
Study State	DA State	OFF ON	OFF ON	OFF ON		
	RA State	OFF ON	OFF ON	OFF ON		
Default Setting						OFF ON

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