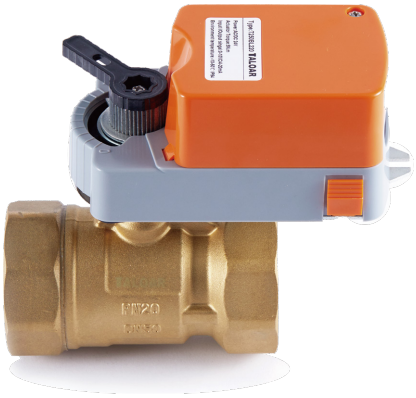
ES and BL Series Motorized Control Valves

Brass threaded motorized control valves of ES100/ES150 and BL220/BL350 series apply to HVAC (heating, ventilation, and air conditioning), and building automation systems. Once the motorized control valves receive signals transmitted by computers or other devices, they can then adjust temperature, pressure and control system parameters such as flow rate and liquid level. The valves are mainly used to convey mediums such as cold water, hot water, and ethylene glycol solution.



Product Features

- **Have the equal percentage flow and the quick opening characteristics.**
- **The control valve's body has a built-in distribution plate that helps the flow control performance more stable.**
- **High-precision control offers precise actions.**
- **Low power consumption and low noise.**
- **Double O-shaped sealing design.**
- **Multiple signal controls: 2-point, 3-point, DC 0-10 V, and DC 4-20 mA.**
- **ABS shell with the advantages of small size and light weight.**
- **Easy installation and maintenance.**

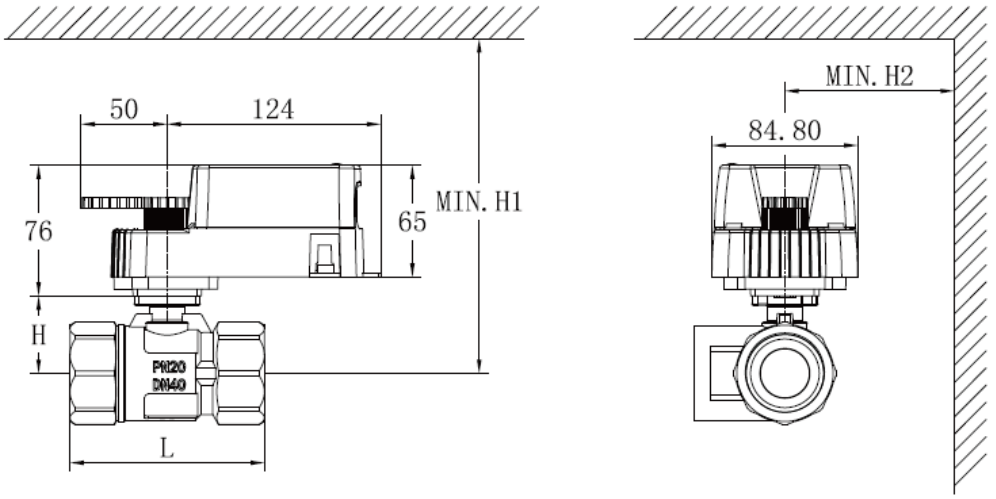
Technical Parameters

Valve Type: Two-way valve,three-way valve
Material: Shell: brass; dall: stainless steel; stem: brass
sealing: RPTFE
Working Pressure: 2.0 Mpa
Medium: Cold water, hot water vapor, and the aqueous solution of ethylene glycol (concentration within 50%)
Medium Temperature: -20℃ ~ 120℃
Flow Characteristic: Equal percentage curve,quick opening characteristic
Leakage Volume: Below 0.01% of kv value
End Type: BSPT or NPT threaded

Actuator Parameters

Electrical Parameters	Rated voltage	AC/DC 24V		AC 230 V
	Rated voltage range	AC 19.2..28.8V	DC 21.6..26.4 V	AC 184 ..2 76 V
	Power consumption	2.2W		3.2W
	Wire specification	4.4A		6.4A
	Terminal specification	Maximum: 2.0 m^2		
Function Parameters	Torque	4Nm/8Nm		
	Suitable ball valve	4Nm: ½"~ 1-½" ; 8Nm: 1-¼"~2"		
	Manual operation	Press the manual button and then manual operation is available.		
	Rotation angle	Maximum: 95°, mechanically adjustable		
	Running time	70 s (no load)		
	Noise	45dB		
Working Environment	Appliance class	Ⅲ (low-voltage and safe)		Ⅱ (double insulated)
	Ingress protection	IP44		
	Working temperature	-20~+50℃		
	Humidity testing	95%RH, no condensation		

Dimensions

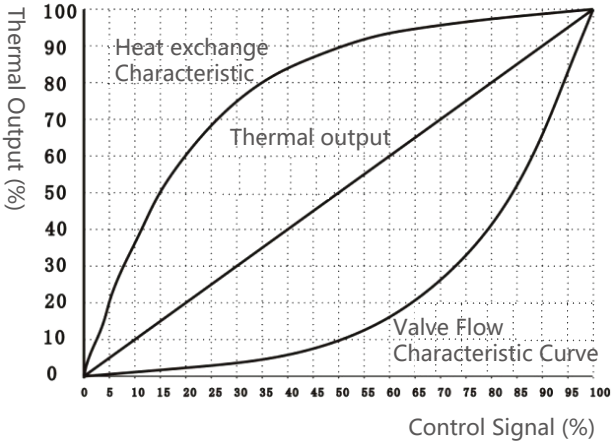


Model/Dimension	mm	In	mm		Minimum installation space	
			L	H	H1	H2
T215ES100/BL220	15	1/2	63	30	180	72
T220ES100/BL220	20	3/4	73	35	185	72
T225ES100/BL220	25	1	94	38	188	72
T315ES150/BL350	15	1/2	63	32	180	72
T320ES150/BL350	20	3/4	66	35	185	72
T325ES150/BL350	25	1	94	38	188	72

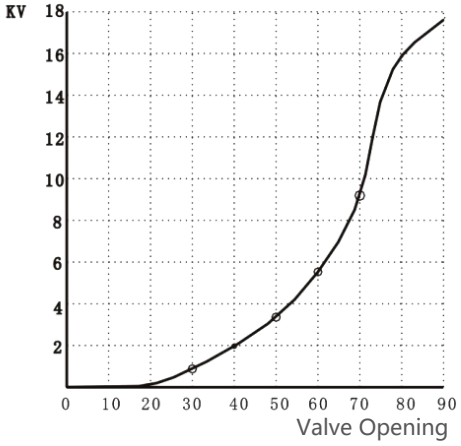
Model/Dimension	mm	In	mm		Minimum installation space	
			L	H	H1	H2
T232ES100/BL220	32	1-1/4	108.5	43.5	190	80
T240ES100/BL220	40	1-1/2	117	48	195	80
T250ES100/BL220	50	2	139	53	200	80
T332ES150/BL350	32	1-1/4	98.5	43.5	190	80
T340ES150/BL350	40	1-1/2	106	48	195	80
T350ES150/BL350	50	2	123	53	200	80

Flow Characteristics

Thermal Output Characteristics



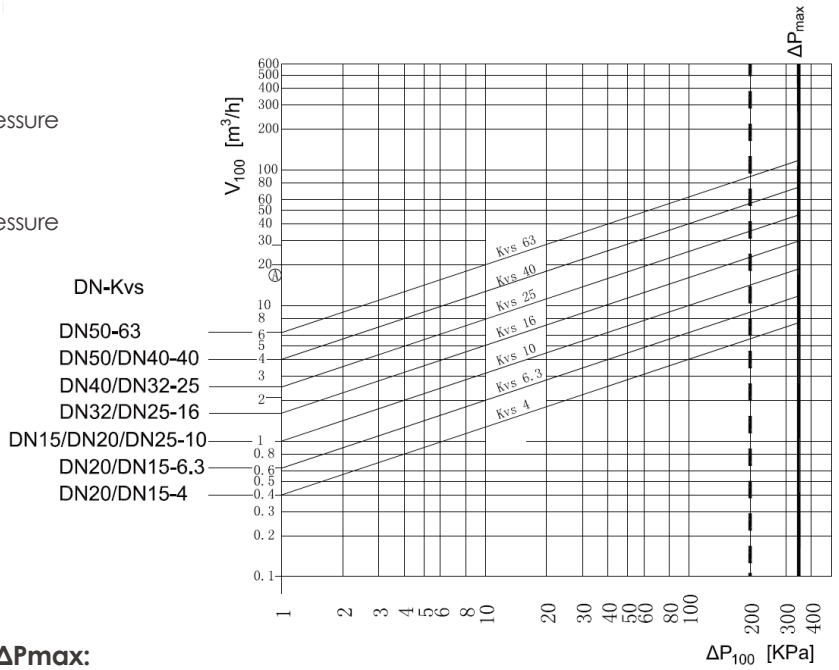
Measured Valve Flow Characteristic



Valve Selection

ΔPmax: The maximum allowable differential pressure when the valve is fully opened under normal working conditions.
ΔPmax: The maximum allowable differential pressure under low-noise condition.
ΔP_{100}: Differential pressure when the ball valve is fully opened.
V_{100}: Rated flow rate when the differential pressure is at ΔP_{100}.

$$vs = \frac{V_{100}}{\sqrt{\frac{\Delta P_{100}}{100}}}$$



DN-Kvs

DN50-63
DN50/DN40-40
DN40/DN32-25
DN32/DN25-16
DN15/DN20/DN25-10
DN20/DN15-6.3
DN20/DN15-4

Maximum allowable differential pressure ΔPmax:
0.4 Mpa (0.2 Mpa is the differential pressure under low-noise operation)
Shutoff pressure differential ΔP_S: 1.4 Mpa

Note: Shutoff differential pressure ΔP_S: The shut-off differential pressure when the actuator is fully closed with the allowable leakage.

Electrical Wiring Diagrams