

Perfect Observe and Control Device

Build Smart Cities

TigerIoT



Globe Valve- Building Automation System Technical Data



TL...S.10 series 2/3 Port, Female Threaded Connection



Equipped with TW500 series electric actuator, the valve has a rich function and compact shape which is suitable for limited space inside of AHU.

Product Features

- **Low leakage rate**

The valve core and valve seat sealing surface are all stainless steel which could avoid the damage caused by debris in medium and ensure the low leakage rate after long time running.

- **V-shaped Sealing Ring Gland+ Spring Auto-compensation**

Due to V-shaped ring of the sealing gland, the effects of the inner hole shrinkage and cylindrical expansion of the sealing gland in the case of pressing by the spring, which ensures the sealing of the stem part is effective for a long time.

- **Equal-percentage Flow Characteristics**

The rangeability of valve is 100:1, equipped with TW...series actuator which can get a perfect equal-percentage control curve.

- **Wide Flow Passage, Low Noise**

The design of wide and smooth flow passage can effectively reduce the noise.

- **High-quality Materials**

The valve body is made of high-quality stainless steel with a much higher strength than brass. The precision casting process gives the valve exquisite appearance.

PN16 series



Series

TW500...

Actuator Rated Stroke

26mm

Nominal Output Force

500N

Icon



Type	Model	DN [mm]	Stroke [mm]	Kvs [m³/h]	ΔPs [kPa]
PN16 2-port water valve  Medium temperature: -10~130°C	TL15-2VBC-S.10-KVS0.63	DN15	10	0.63	1000
	TL15-2VBC-S.10-KVS1.00	DN15	10	1.0	1000
	TL15-2VBC-S.10-KVS1.60	DN15	10	1.6	1000
	TL15-2VBC-S.10-KVS2.50	DN15	10	2.5	1000
	TL15-2VBC-S.10	DN15	10	4	1000
	TL20-2VBC-S.10	DN20	10	6.3	1000
	TL25-2VBC-S.10	DN25	15	10	800
	TL32-2VBC-S.10	DN32	20	16	500
	TL40-2VBC-S.10	DN40	20	25	300
	TL50-2VBC-S.10	DN50	20	40	200
PN16 3-port Mixing  Medium temperature: - -10~130°C	TL15-3VBC-S.10-KVS0.63	DN15	10	0.63	1000
	TL15-3VBC-S.10-KVS1.00	DN15	10	1.0	1000
	TL15-3VBC-S.10-KVS1.60	DN15	10	1.6	1000
	TL15-3VBC-S.10-KVS2.50	DN15	10	2.5	1000
	TL15-3VBC-S.10	DN15	10	4	1000
	TL20-3VBC-S.10	DN20	10	6.3	1000
	TL25-3VBC-S.10	DN25	15	10	800
	TL32-3VBC-S.10	DN32	20	16	500
	TL40-3VBC-S.10	DN40	20	25	300
	TL50-3VBC-S.10	DN50	20	40	200
PN16 3-port Diverting  Medium tem- perature: -10~130°C	TL15-3VBC-S.10-KVS0.63	DN15	10	0.63	500
	TL15-3VBC-S.10-KVS1.00	DN15	10	1.0	500
	TL15-3VBC-S.10-KVS1.60	DN15	10	1.6	500
	TL15-3VBC-S.10-KVS2.50	DN15	10	2.5	500
	TL15-3VBC-S.10	DN15	10	4	500
	TL20-3VBC-S.10	DN20	10	6.3	500
	TL25-3VBC-S.10	DN25	15	10	400
	TL32-3VBC-S.10	DN32	20	16	250
	TL40-3VBC-S.10	DN40	20	25	150
	TL50-3VBC-S.10	DN50	20	40	100

PN25 series



Series TW500...

Actuator Rated Stroke 26mm

Nominal Output Force 500N

Icon



Type	Model	DN [mm]	Stroke [mm]	Kvs [m³/h]	ΔPs [kPa]
PN25 2-port water valve  Medium temperature: -10~130°C	TL15-2VBD-S.10-KVS0.63	DN15	10	0.63	1000
	TL15-2VBD-S.10-KVS1.00	DN15	10	1.0	1000
	TL15-2VBD-S.10-KVS1.60	DN15	10	1.6	1000
	TL15-2VBD-S.10-KVS2.50	DN15	10	2.5	1000
	TL15-2VBD-S.10	DN15	10	4	1000
	TL20-2VBD-S.10	DN20	10	6.3	1000
	TL25-2VBD-S.10	DN25	15	10	800
	TL32-2VBD-S.10	DN32	20	16	500
	TL40-2VBD-S.10	DN40	20	25	300
	TL50-2VBD-S.10	DN50	20	40	200
PN25 3-port Mixing  Medium temperature: -10~130°C	TL15-3VBD-S.10-KVS0.63	DN15	10	0.63	1000
	TL15-3VBD-S.10-KVS1.00	DN15	10	1.0	1000
	TL15-3VBD-S.10-KVS1.60	DN15	10	1.6	1000
	TL15-3VBD-S.10-KVS2.50	DN15	10	2.5	1000
	TL15-3VBD-S.10	DN15	10	4	1000
	TL20-3VBD-S.10	DN20	10	6.3	1000
	TL25-3VBD-S.10	DN25	15	10	800
	TL32-3VBD-S.10	DN32	20	16	500
	TL40-3VBD-S.10	DN40	20	25	300
	TL50-3VBD-S.10	DN50	20	40	200
PN25 Diverting  Medium tem- perature: -10~130°C	TL15-3VBD-S.10-KVS0.63	DN15	10	0.63	500
	TL15-3VBD-S.10-KVS1.00	DN15	10	1.0	500
	TL15-3VBD-S.10-KVS1.60	DN15	10	1.6	500
	TL15-3VBD-S.10-KVS2.50	DN15	10	2.5	500
	TL15-3VBD-S.10	DN15	10	4	500
	TL20-3VBD-S.10	DN20	10	6.3	500
	TL25-3VBD-S.10	DN25	15	10	400
	TL32-3VBD-S.10	DN32	20	16	250
	TL40-3VBD-S.10	DN40	20	25	150
	TL50-3VBD-S.10	DN50	20	40	100

PN16 Low temperature series



Series

TW500...

Actuator Rated Stroke

26mm

Nominal Output Force

500N

Icon



Type	Model	DN [mm]	Stroke [mm]	Kvs [m³/h]	ΔPs [kPa]
PN16 2-port water valve  Medium temperature: -40~80°C	TL15-2LBC-S.10-KVS0.63	DN15	10	0.63	1000
	TL15-2LBC-S.10-KVS1.00	DN15	10	1.0	1000
	TL15-2LBC-S.10-KVS1.60	DN15	10	1.6	1000
	TL15-2LBC-S.10-KVS2.50	DN15	10	2.5	1000
	TL15-2LBC-S.10	DN15	10	4	1000
	TL20-2LBC-S.10	DN20	10	6.3	1000
	TL25-2LBC-S.10	DN25	15	10	800
	TL32-2LBC-S.10	DN32	20	16	500
	TL40-2LBC-S.10	DN40	20	25	300
	TL50-2LBC-S.10	DN50	20	40	200
PN16 3-port Mixing  Medium temperature: - -40~80°C	TL15-3LBC-S.10-KVS0.63	DN15	10	0.63	1000
	TL15-3LBC-S.10-KVS1.00	DN15	10	1.0	1000
	TL15-3LBC-S.10-KVS1.60	DN15	10	1.6	1000
	TL15-3LBC-S.10-KVS2.50	DN15	10	2.5	1000
	TL15-3LBC-S.10	DN15	10	4	1000
	TL20-3LBC-S.10	DN20	10	6.3	1000
	TL25-3LBC-S.10	DN25	15	10	800
	TL32-3LBC-S.10	DN32	20	16	500
	TL40-3LBC-S.10	DN40	20	25	300
	TL50-3LBC-S.10	DN50	20	40	200
PN16 3-port Diverting  Medium tem- perature: -40~80°C	TL15-3VBC-S.10-KVS0.63	DN15	10	0.63	500
	TL15-3VBC-S.10-KVS1.00	DN15	10	1.0	500
	TL15-3VBC-S.10-KVS1.60	DN15	10	1.6	500
	TL15-3VBC-S.10-KVS2.50	DN15	10	2.5	500
	TL15-3VBC-S.10	DN15	10	4	500
	TL20-3VBC-S.10	DN20	10	6.3	500
	TL25-3VBC-S.10	DN25	15	10	400
	TL32-3VBC-S.10	DN32	20	16	250
	TL40-3VBC-S.10	DN40	20	25	150
	TL50-3VBC-S.10	DN50	20	40	100

PN25 Low temperature series



Series TW500...

Actuator Rated Stroke 26mm

Nominal Output Force 500N

Icon

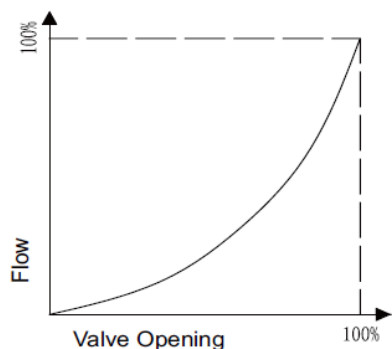


Type	Model	DN [mm]	Stroke [mm]	Kvs [m³/h]	ΔPs [kPa]
PN25 2-port water valve  Medium temperature: -40~80°C	TL15-2LBD-S.10-KVS0.63	DN15	10	0.63	1000
	TL15-2LBD-S.10-KVS1.00	DN15	10	1.0	1000
	TL15-2LBD-S.10-KVS1.60	DN15	10	1.6	1000
	TL15-2LBD-S.10-KVS2.50	DN15	10	2.5	1000
	TL15-2LBD-S.10	DN15	10	4	1000
	TL20-2LBD-S.10	DN20	10	6.3	1000
	TL25-2LBD-S.10	DN25	15	10	800
	TL32-2LBD-S.10	DN32	20	16	500
	TL40-2LBD-S.10	DN40	20	25	300
	TL50-2LBD-S.10	DN50	20	40	200
PN25 3-port Mixing  Medium temperature: -40~80°C	TL15-3LBD-S.10-KVS0.63	DN15	10	0.63	1000
	TL15-3LBD-S.10-KVS1.00	DN15	10	1.0	1000
	TL15-3LBD-S.10-KVS1.60	DN15	10	1.6	1000
	TL15-3LBD-S.10-KVS2.50	DN15	10	2.5	1000
	TL15-3LBD-S.10	DN15	10	4	1000
	TL20-3LBD-S.10	DN20	10	6.3	1000
	TL25-3LBD-S.10	DN25	15	10	800
	TL32-3LBD-S.10	DN32	20	16	500
	TL40-3LBD-S.10	DN40	20	25	300
	TL50-3LBD-S.10	DN50	20	40	200
PN25 Diverting  Medium tem- perature: -40~80°C	TL15-3LBD-S.10-KVS0.63	DN15	10	0.63	500
	TL15-3LBD-S.10-KVS1.00	DN15	10	1.0	500
	TL15-3LBD-S.10-KVS1.60	DN15	10	1.6	500
	TL15-3LBD-S.10-KVS2.50	DN15	10	2.5	500
	TL15-3LBD-S.10	DN15	10	4	500
	TL20-3LBD-S.10	DN20	10	6.3	500
	TL25-3LBD-S.10	DN25	15	10	400
	TL32-3LBD-S.10	DN32	20	16	250
	TL40-3LBD-S.10	DN40	20	25	150
	TL50-3LBD-S.10	DN50	20	40	100

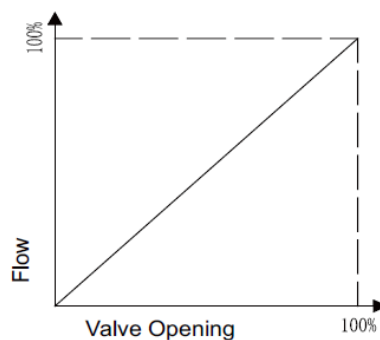
Remarks:

1. If the NPT threads is required, the model TL** is changed to TLN**

Flow Characteristics



A-AB Equal-percentage Flow Characteristics



B-AB Equal-linear Flow Characteristics

Relationship between Differential Pressure and Flow

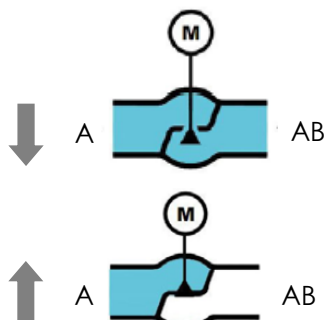
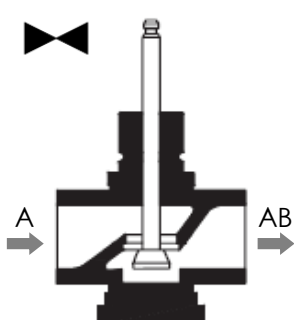
$$Kvs = \frac{V}{\sqrt{\frac{\Delta P}{100}}}$$

ΔP : Differential pressure when valve is full open (Unit: KPa)

V: Rating flow at the ΔP (Unit: m³/h)

Kvs: Nominal flow coefficient, which refers to the flow when medium (Density = 1g/cm³) goes through the full open control valve, whose ΔP is 100KvPa.

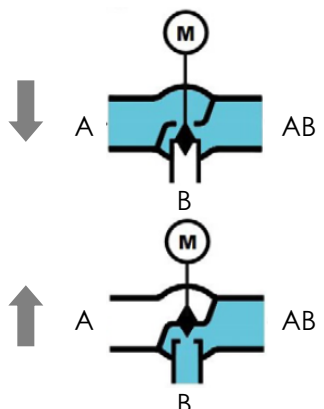
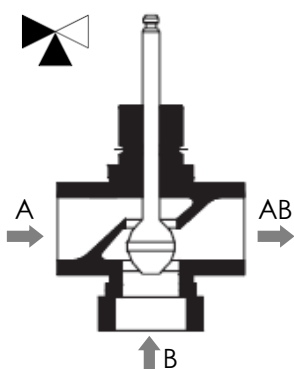
Structure Characteristics



2-port Valve

When the valve stem is at lower limit, the valve will be opened from A to AB.

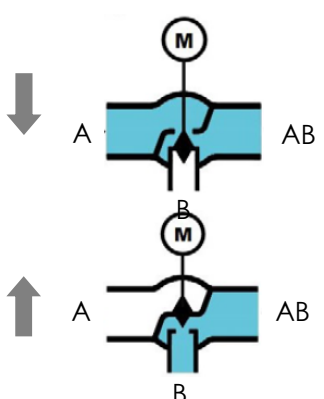
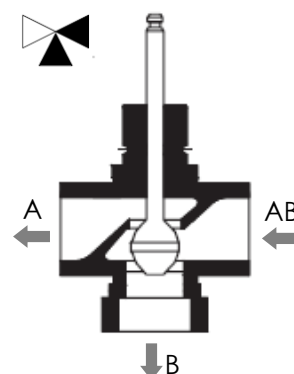
When the valve stem is at upper limit, the valve will be closed from A to AB.



3-port Mixing Valve

When actuator stem is at lower limit, the valve will be opened from A to AB and closed from B to AB.

When actuator stem is at upper limit, the valve will be closed from A to AB and opened from B to AB.



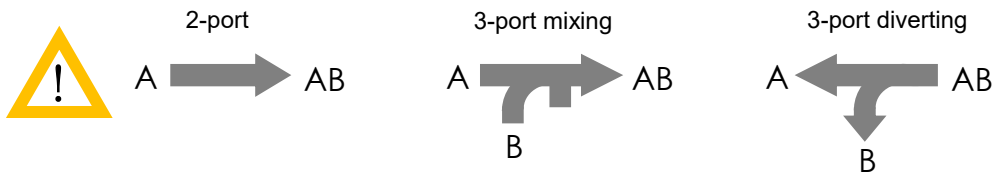
3-port Diverting Valve

When actuator stem is at lower limit, the valve will be opened from A to AB and closed from B to AB.

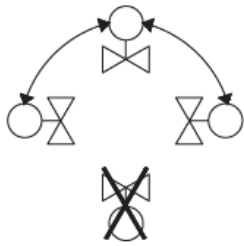
When actuator stem is at upper limit, the valve will be closed from A to AB and opened from B to AB.

Connection with Pipeline

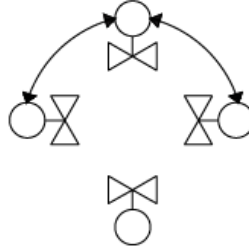
1. Valve can be installed on the water supply pipe or return water pipe (installed on the return water pipe can control the water flow more smoothly, meanwhile the return water temperature is lower which can extends the service time of valve).
2. Filter and check valve are recommended to be installed.
3. When the medium is steam, install drain valve in the pipe can remove the condensed water, or it will affect the service time of valve.
4. Please note that the medium flow direction in valve should be consistent with the medium of pipeline.



5. Please pay attention to the valve mounting orientation.



Medium is chilled/hot water
Downward installation is forbidden

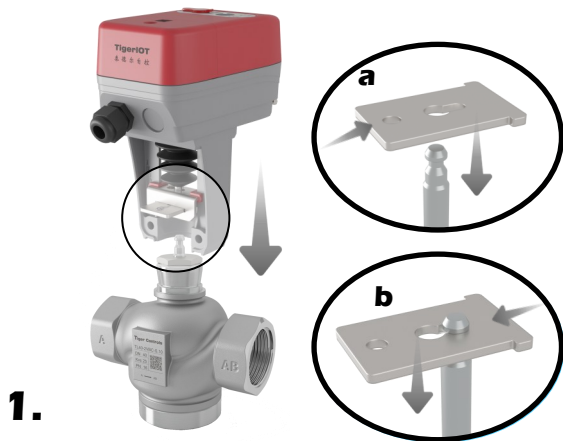


Medium is steam
Any installation position is OK

Connection with Actuator

You can complete the installation with the actuator's Allen wrench. It doesn't need further tools or any adjustment. The actuator can start stroke test. Warning! Prohibit installing outdoors to avoid PCB damage due to the condensation and water. Rain cover and heating belt are necessary incase of outdoor installation.

- Connection with TW500...



1.

Use an Allen wrench to loosen the bottom slider of the actuator, press the clamp plate in the direction shown in Figure a, and let the valve stem pass through the clamp plate hole. When the low end of the actuator fits the valve end face, release the clamp plate as shown in Figure b, and fix the valve stem in the clamp groove.



2.

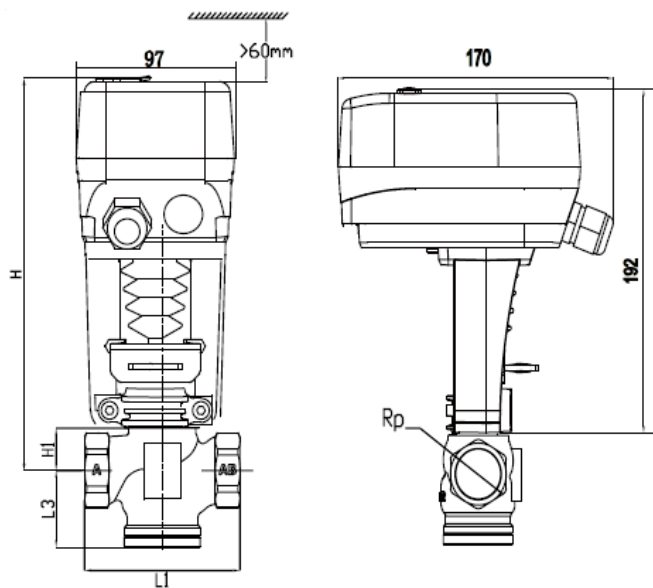
Place the slider into the actuator and tighten the two screws.



3.

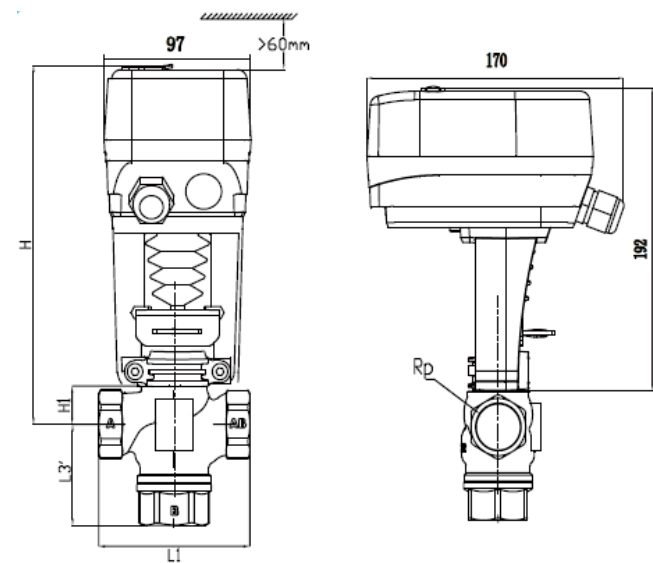
This is how the valve and actuator should look after correct assembly.

Dimension Figure for 2-port



DN	Rp	L1 (mm)	L3 (mm)	H1 (mm)	H (mm)	N.W. kg
DN15	1/2"	81	39	29	221	0.71
DN20	3/4"	86	39	29	221	0.82
DN25	1"	115	43	34.5	226.5	1.13
DN32	1-1/4"	122	52.5	35	227	1.55
DN40	1-1/2"	140	60	43	235	2.07
DN50	2"	158	68	56.5	248.5	2.82

Dimension Figure for 3-port



DN	Rp	L1 (mm)	L3 (mm)	H1 (mm)	H (mm)	N.W. kg
DN15	1/2"	81	56	29	221	0.71
DN20	3/4"	86	56	29	221	0.84
DN25	1"	115	64	34.5	226.5	1.14
DN32	1-1/4"	122	76.5	35	227	1.54
DN40	1-1/2"	140	83.5	43	235	2.06
DN50	2"	158	95	56.5	248.5	2.9

• Functional data

Nominal size	DN15-DN50
Nominal pressure	PN16
Flow characteristics 2-port 3-port	A-AB: equal-percentage flow characteristics A-AB: equal-percentage flow characteristics B-AB: equal-linear flow characteristic
Rangeability	>100:1
Leakage rate 2-port 3-port	≤0.01% kvs A-AB: ≤0.01% of kvs; B-AB: ≤0.02% of kvs
Permissible medium	
Water valve (-25~130°C)	Chilled/hot water
Low temperature valve(-40~80°C)	Ionized water, ethylene glycol solution, industrial refrigerant
Connection standard	Female threaded connection ISO7-1

• Spare Parts Material

Valve body	Stainless steel ¹⁾
Valve Stem	Stainless steel
Valve core	Stainless steel
Sealing ring	PTFE ²⁾

Note: 1) The default material is 304 stainless steel, 316,316L, duplex steel 2205, duplex steel 310S can be optional.

2) Low temperature valve series adopts low temperature sealing material.

• Environmental condition

Running	
Ambient temperature:	-25~+65°C
Ambient humidity:	≤95% RH non-condensation
Storage	
Ambient temperature:	-25~+65°C
Ambient humidity:	≤95% RH non-condensation

• Certificates

CE Certification	
PED directive	2014/68/EU
System Certification	
QMS	GB/T19001-2016 / ISO9001:2015
EMS	GB/T24001-2016 / ISO14001:2015
OHSAS	GB/T45001-2020 / ISO45001:2018



TigerIoT

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