T Series (BSPT)

2-Way and 3-Way Terminal Unit Zone Valves DN15 – DN20 – DN25

Neptronic 2-way and 3-way terminal unit zone valves are offered in a wide range of Kv values. These commercial grade valve bodies are made of low Zinc anti-dezincification bronze. All valve bodies are service and maintenance free and feature interchangeable internals that enable Kv values to be changed without removing the valve from the line simply by changing the internal cartridge.

Applications

Use in association with Neptronic linear actuated valves (VM & VT) for:

- Fan coil units
- VAV reheat coils
- In floor HTG
- Small heating and cooling coils
- Chilled beams
- Baseboard radiation units

Features

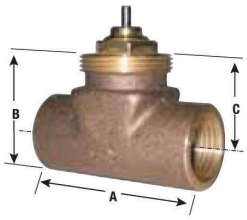
- 2-way and 3-way valves available in DN15, DN20 and DN25
- Small dimensions allow for easier installation
- Low Zinc anti-dezincification bronze
- Field replaceable and interchangeable internal cartridges with a wide selection of Kv values
- 1.5 million cycles (3 million repositions)
- Packings with burnished mirror finish stainless steel stems
- Micro machined accurate parabolic, characterized plugs
- Made in Canada

General Specifications for Valve Bodies

Body material	Low zinc bronze, alloy C84400 Contains less than 10% Zinc, which prevents dezincification. Dezincification can cause pores to form in the alloy and results in leakage over time.
Pressure rating	ANSI 250 (PN25): 27 bar (400 PSI) to 66°C [150°F], 17 bar (250 PSI) to 120°C [250°F]
Maximum test pressure	8275 kPa (1200 PSI)
Maximum differential pressure	345 kPa (50 PSI) can be exceeded, but with possible water noise
Valve stem	"Mirror – maker" burnished stainless steel stems
Stem travel	2.8mm or 4mm
Stem position	Up = valve open (default position), Down = valve closed
Thread Type	BSPT
Notes	All dimensions in inches (mm); Weight includes the internal cartridge without union.
Country of fabrication	Made in Canada

2-Way Valves

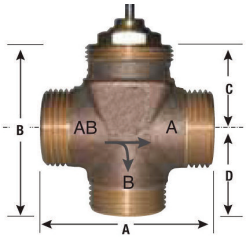
Female threaded ports in & out



Model	Valve	A	B	C	Weight
T2AxxxxEB7	DN15 valve body	2.29 (58.17)	1.60 (40.64)	1.09 (27.69)	8.5oz (240g)
T2BxxxxEB7	DN20 valve body	2.70 (68.58)	2.20 (55.88)	1.09 (27.69)	12.7oz (360g)
T2CxxxxEB7	DN25 valve body	3.88 (98.50)	2.84 (71.10)	1.80 (45.70)	33.2oz (940g)

3-Way Valves

Diverting: Union connection on all 3 ports



Model	Valve	A	B	C	D	Weight
TDAxxxxED8	DN15 threaded unions	2.24 (56.90)	2.24 (56.90)	1.09 (27.68)	1.15 (29.21)	8.5oz (240g)
TDBxxxxED8	DN20 threaded unions					

- Stem UP flow AB to A (default position)
- Stem DOWN flow AB to B

Internal Cartridges

EB TYPE CARTRIDGE (2-Way Valves)
Balanced cartridge used for high close-off pressure applications for hot and chilled water and 50% glycol.

Available Kv's 0.43, 0.86, 1.3, 1.72, 2.15, 2.58, 3.0.
Can be installed in all 2 way DN15 valve bodies
Available Kv's 0.86, 1.3, 1.72, 2.15, 2.58, 3.0, 3.87.
Can be installed in all 2 way DN20 valve bodies
Available Kv's 5.16, 5.5, 6.9, 7.75.
Can be installed in all 2 way DN25 valve bodies

ED TYPE CARTRIDGE (3-Way Valves)
Used for 3 way valve bodies for hot and chilled water and 50% glycol.

Select from available Kv 0.86, 1.72, 2.58, 3.0
Can be installed in all 3 way DN15 and DN20 valve bodies

Replaceable Cartridge Type	EB Type (2 way valve)	ED Type (3 way valve)
Valve seat	Integral bronze	Integral bronze
Valve disc./plunger	EPDM / brass	EPDM / brass
Valve spring	Stainless Steel	Stainless Steel
Packing	Double EPDM	Double EPDM
Max. Close-off pressure	(690 kPa) 100 PSI	(690 kPa) 100 PSI
Recommended differential pressure	50 PSI (3.4 bar) can be exceeded,but with possible water noise	50 PSI (3.4 bar) can be exceeded,but with possible water noise
Stroke	4mm	2.8mm & 4mm
Tight close off	100%	100%
Water rated	(250°F / 120°C)	(250°F / 120°C)
Glycol rated	To 50%	To 50%
Kv Equal % - 4mm lift Rangeability Kv Linear - 2.8mm lift - 4mm lift	0.43, 0.86, 1.3, 1.72, 2.15, 2.58, 5.16, 6.9 100:1 N/A 3.0, 3.87, 5.5, 7.75	N/A N/A 0.86, 1.72, 2.58 3.0, Bottom port 1.72

Nomenclature

T 2 A 0020 EB 7

Type
2: 2-way valve
D: Diverting 3-way valve

Body size
A: DN15
B: DN20
C: DN25

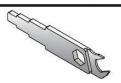
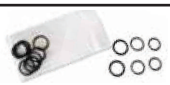
Kv value

0005: 0.43 Kv	0025: 2.15 Kv	0060: 5.16 Kv
0010: 0.86 Kv	0030: 2.58 Kv	0064: 5.50 Kv
0015: 1.30 Kv	0035: 3.00 Kv	0080: 6.90 Kv
0020: 1.72 Kv	0045: 3.87 Kv	0090: 7.75 Kv

Cartridge
EB: Balanced
ED: 3-way diverting

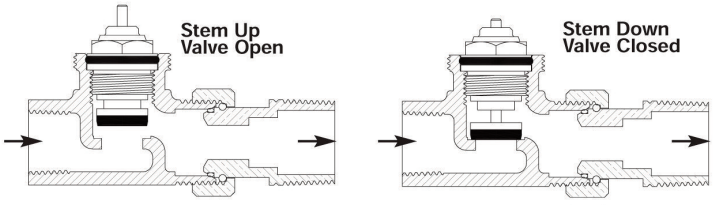
Port Type
7: Female threaded ports in & out (BSPT)
8: Threaded unions on all ports (BSPT)

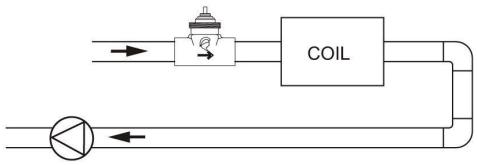
Terminal Unit Accessories

Terminal Unit Accessories			
	**AVP20** Cap plug to replace any 1/2", 3/4" valve cartridge for pipe flushing.		**AV199-14** Pack of 10 "O" rings for internal cartridges for 1" valve bodies
	**AVP116** Cap plug to replace any 1" valve cartridge for pipe flushing.		**OM1100** Manual adjuster for all valve bodies
	**VM1125** 1/2" union ball valve (select and add union)		**AV08** Spud tool for union nipple installation
	**AVMAV18-20** (Pack of 20) Air vent		**AVK100** Union selection kit. Consisting of different size and length unions
	**AV199-03** Pack of 10 "O" rings for internal cartridges for 1/2" and 3/4" valve bodies		

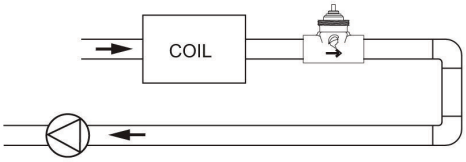
Piping Diagrams

2 WAY VALVE BODIES





Valve installed on the supply side of the coil.



Valve installed on the return side of the coil.

The valve body must be installed in the direction indicated on the valve body cavity

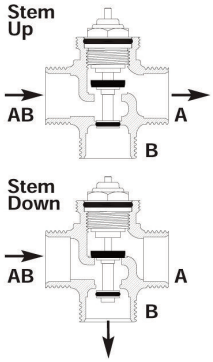
TERMINAL UNIT BODIES ARE NORMALLY OPEN

STEM UP: VALVE IS OPEN

STEM DOWN: VALVE IS CLOSE

When used in conjunction with direct acting actuators they become normally open valve assemblies.

When used in conjunction with reverse acting actuators they become normally closed valve assemblies.



3 WAY DIVERTING VALVE BODIES

The diverting valve body is installed on the supply side of the coil.

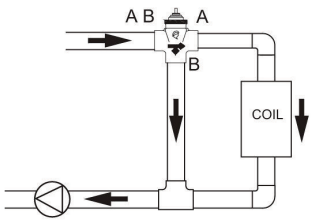
The water diverts in the valve and mixes in the "T" the flow enters the common port AB

The side port A must be connected to the supply of the coil

The bottom port B must be connected to the bypass around the coil.

STEM UP: FLOW AB-A

STEM DOWN: FLOW AB-B



SOLDER INSTRUCTIONS

If direct solder bodies are used, remove the stem packing cartridge during installation.
Heat will damage the packing. If solder unions are used, solder the unit without the sealing O-ring.