



T Series (NPT)

2-Way and 3-Way Terminal Unit Zone Valves 1/2" – 3/4" – 1"

Neptronic 2-way and 3-way terminal unit zone valves are offered in a wide range of styles and connection types. 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 Cv (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 series) 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 1/2", 3/4" and 1"
- Small dimensions allow for easier installation
- Low Zinc anti-dezincification bronze
- Field replaceable and interchangeable internal cartridges with a wide selection of Cv 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



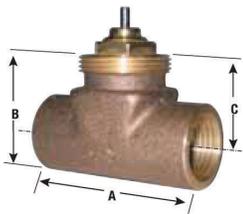
General Specifications for Valve Bodies

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): 400 PSI to 66°C [150°F], 250 PSI to 120°C [250°F]
Maximum test pressure	1200 PSI (8275 kPa)
Maximum differential pressure	50 PSI (349 kPa) can be exceeded, but with possible water noise
Valve stem	“Mirror – maker” burnished stainless steel stems
Stem travel	7/64” (2.8mm) or 5/32” (4mm)
Stem position	Up = valve open (default position), Down = valve closed
Thread Type	NPT
Notes	All dimensions in inches (mm); Weight includes the internal cartridge without union.
Country of fabrication	Made in Canada

2-Way Valves

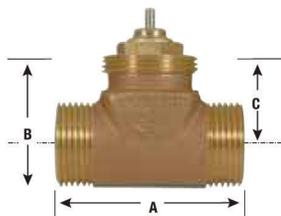
xxxx = Cv (Kv = 0.865 x Cv) value. Refer to nomenclature on page 5.

Female threaded ports in & out



Model	Valve	A	B	C	Weight
T2AxxxxEB1	1/2” valve body	2.29 (58.17)	1.60 (40.64)	1.09 (27.69)	8.5oz (240g)
T2BxxxxEB1	3/4” valve body	2.70 (68.58)	2.20 (55.88)	1.09 (27.69)	12.7oz (360g)
T2CxxxxEB1	1” valve body	3.88 (98.50)	2.84 (71.10)	1.80 (45.70)	33.2oz (940g)

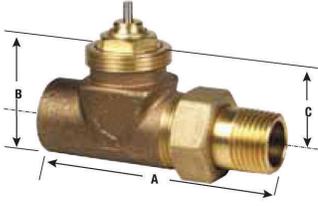
Union connection on both ports



Model	Valve	A	B	C	Weight
T2AxxxxEB2	1/2” threaded unions	2.24 (56.90)	2.24 (56.90)	1.09 (27.69)	7.8oz (220g)
T2AxxxxEB3	1/2” solder unions for 5/8” (16mm) OD copper pipe				
T2BxxxxEB2	3/4” threaded unions				
T2BxxxxEB3	3/4” solder unions for 7/8” (22mm) OD copper pipe				

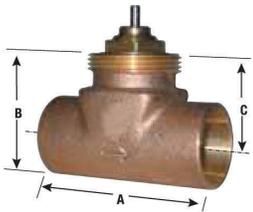


Female threaded port in & union connection port out



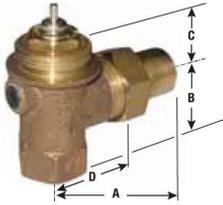
Model	Valve	A	B	C	Weight
T2AxxxxEBU	1/2" threaded unions	3.34 (84.84)	1.76 (44.70)	1.09 (27.69)	10.6oz (300g)
T2BxxxxEBU	3/4" threaded unions	3.90 (99.06)	2.20 (55.88)	1.09 (27.69)	16.9oz (4.80g)
T2CxxxxEBU	1" threaded unions	5.44 (138.00)	2.07 (52.60)	1.24 (31.50)	35.3oz (1000g)

Direct solder connections



Model	Valve	A	B	C	Weight
T2AxxxxEB9	1/2" valve body (for 5/8" (16mm) OD copper pipe)	2.24 (56.90)	1.60 (40.64)	1.09 (27.69)	7.8oz (220g)
T2BxxxxEB9	3/4" valve body (for 7/8" (22mm) OD copper pipe)	2.29 (58.17)	1.60 (40.64)	1.09 (27.69)	8.1oz (230g)

Angle: Female threaded port in & union connection port out

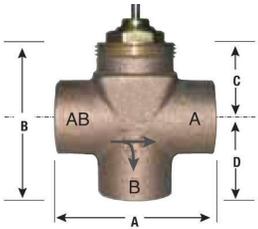


Model	Valve	A	B	C	D	Weight
TAAxxxxEB1	1/2" valve size	2.25 (58.00)	1.13 (28.00)	1.13 (29.00)	1.25 (32.00)	7.8oz (220g)
TABxxxxEB1	3/4" valve size	2.68 (67.00)	1.13 (30.00)	0.75 (19.00)	1.138 (36.00)	8.1oz (230g)
TACxxxxEB1	1" valve size	3.15 (80.00)	1.50 (38.00)	2.37 (60.00)	1.65 (42.00)	32.5oz (920g)

3-Way Valves

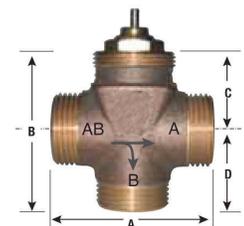
- Stem UP flow AB to A (default position)
- Stem DOWN flow AB to B

Diverting: Female thread on all 3 ports



Model	Valve	A	B	C	D	Weight
TDxxxxED1	1/2" female thread	2.50 (63.50)	2.30 (58.42)	1.13 (28.70)	1.20 (30.48)	11.3oz (320g)

Diverting: Unions on all 3 ports



Model	Valve	A	B	C	D	Weight
TDxxxxED2	1/2" threaded unions	2.24 (56.90)	2.24 (56.90)	1.09 (27.69)	1.15 (29.21)	8.5oz (240g)
TDBxxxxED2	3/4" threaded unions					



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 Cv's 0.5, 1.0, 1.5, 2.0, 2.5, 3.0, 3.5. Can be installed in all 2 way 1/2" valve bodies

Available Cv's 1.0, 1.5, 2.0, 2.5, 3.0, 3.5, 4.5. Can be installed in all 2 way 3/4" valve bodies

Available Cv's 6.0, 6.4, 8.0, 9.0. Can be installed in all 2 way 1" 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 Cv's 1.0, 2.0, 3.0, 3.5

Can be installed in all 3 way 1/2" and 3/4" 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	100 PSI (690kPa)	100 PSI (690kPa)
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%
Cv Equal % - 4mm lift	0.5, 1.0, 1.5, 2.0, 2.5, 3.0, 6.0, 8.0	N/A
Rangeability	100:1	N/A
Cv Linear - 2.8mm lift	N/A	1.0, 2.0, 3.0
- 4mm lift	3.5, 4.5, 6.4, 9.0	3.5, Bottom port Cv 2.0



Nomenclature

T 2 A 0020 EB 1

Type

2: 2-way valve
A: Angled 2-way valve
D: Diverting 3-way valve

Body size

A: 1/2"
B: 3/4"
C: 1"

Cv value

0005: 0.5 Cv	0025: 2.5 Cv	0060: 6.0 Cv
0010: 1.0 Cv	0030: 3.0 Cv	0064: 6.4 Cv
0015: 1.5 Cv	0035: 3.5 Cv	0080: 8.0 Cv
0020: 2.0 Cv	0045: 4.5 Cv	0090: 9.0 Cv

Cartridge

EB: Balanced
ED: 3-way diverting

Port Type

1: Female threaded ports in & out
2: Male threaded unions on both ports
3: Solder unions on both ports
9: Direct solder connection on both ports (female)
U: Female threaded port in & male threaded union port out



Terminal Unit Accessories

1/2" Unions	
	AV6112 1/2" Union 1.0" nominal length 1/2" NPT nipple
	AV6134 1/2" Union with 1-1/2" nominal length step up 3/4" NPT nipple
	AV6112D 1/2" Union with 1-1/2" nominal length 1/2" NPT nipple
	AV6112E 1/2" Union with 1-3/4" nominal length 1/2" NPT nipple
	AV6112F 1/2" Union with 2" nominal length 1/2" NPT nipple
	AV6112G 1/2" Union with 2-1/4" nominal length 1/2" NPT nipple
	AV6112H 1/2" Union with 2-1/2" nominal length 1/2" NPT nipple
	AV6312 1/2" solder union for 5/8" (16mm) OD copper pipe (for 1/2" valves)
	AV6334 1/2" solder union step up for 7/8" (22mm) OD copper pipe (for 1/2" valves)
	AV199-13 Pack of 10 "O" rings for 1/2" unions

3/4" Unions	
	AV6534 3/4" union with 1-1/4" nominal length 3/4" NPT nipple
	AV6534F 3/4" union with 2" nominal length 3/4" NPT nipple
	AV6534H 3/4" union with 2-1/2" nominal length 3/4" NPT nipple
	AV199-08 3/4" Pack of 10 "O" rings for 3/4" union

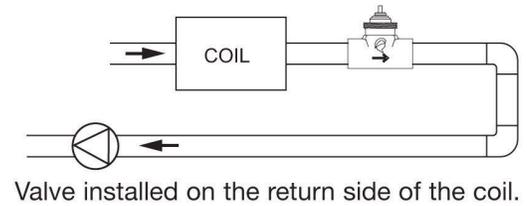
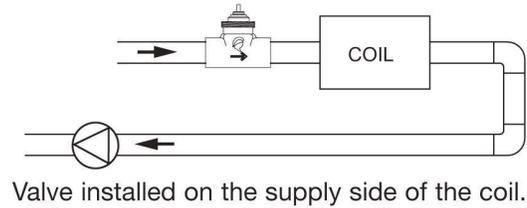
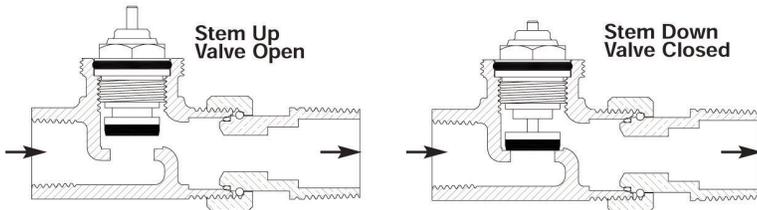
1" Unions	
	AV6810 1" union, with 1-1/4" nominal length 1" NPT nipple

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



Piping Diagrams

2 WAY VALVE BODIES



TERMINAL UNIT BODIES ARE NORMALLY OPEN

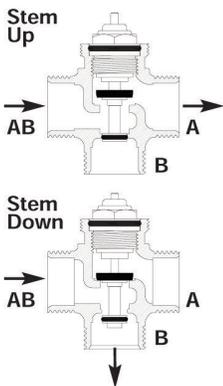
STEM UP: VALVE IS OPEN

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.

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



3 WAY DIVERTING VALVE BODIES

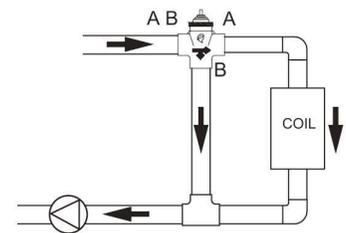
The diverting valve body is installed on the supply side of the coil. The water diverts in the valve and mixes in the "T" the flow enters the common port AB

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.

MANUFACTURER OF ■

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- ACTUATED VALVES
- HUMIDIFIERS
- ELECTRIC HEATERS

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