Thermo™-Expansion Valves Series TX7

TX7 series of Thermo™-Expansion Valves are designed predominantly for AC, heat pumps, close control and industrial process cooling applications. The TX7 is ideal for those applications requiring hermetic / compact size combined with stable and accurate control over wide load and evaporating temperature ranges.

TX7-Z13

Features

- Monoblock, hermetic valve with brazing connections
- 7 sizes up to 180 kW (R410A) · Maximum working pressure: 46 bar
- Factory test pressure: 50.6 bar
- Bi-Flow application
  - Balanced port in normal and reverse flow directions eliminates disturbance forces resulting from condensing pressure
  - Optimum static superheat in normal and reverse flow
  - Capacities performance in normal and reverse flow correlates to capacity of heat pumps in cooling and heating mode
- Power Element with 65 mm diameter enables low partial load (20-25%) performance at stable superheat
- Applicable in systems with digital scroll, step less screw compressors and variable speed compressors
- Floating superheat in reverse flow (heating mode) supports evaporator efficiency during low ambient operating conditions in air cooled reversible chillers
- Laser welded stainless steel power element with a special diaphragm profile provides life expectancy against high pressure during reversed flow via external equalizer.
- Single diaphragm with negligible hysteresis withstands against higher pressure
- Fine tuning by external superheat adjusting mechanism
- Special factory setting upon request. Minimum order quantity 60 pieces

R410a / R32 Selection table

Capacity, R410A [kW]		Capacity, R32 [kW]				Connection	
Normal flow	Reverse flow	Normal flow	Reverse flow	Type	Part No.	Inlet x Outlet	Equalizer
32.1	31.7	47.7	46.9	TX7-Z13 m	**806 811**	12 mm x 16 mm	6 mm
32.1	31.7	47.7	46.9	TX7-Z13	**806 810**	½" x ⅝"	¼"
39.9	39.1	59.3	57.8	TX7-Z14 m	**806 813**	16 mm x 22 mm	6 mm
39.9	39.1	59.3	57.8	TX7-Z14	**806 812**	⅝" x ⅞"	¼"
48.9	47.4	72.7	70.1	TX7-Z15 m	**806 815**	16 mm x 22 mm	6 mm
48.9	47.4	72.7	70.1	TX7-Z15	**806 814**	⅝" x ⅞"	¼"
80.7	67.7	120	100.2	TX7-Z16 m	**806 817**	22 mm x 28 mm	6 mm
80.7	67.7	120	100.2	TX7-Z16	**806 816**	⅞" x 1-⅛"	¼"
99.4	81.5	147.9	120.5	TX7-Z17 m	**806 819**	22 mm x 28 mm	6 mm
99.4	81.5	147.9	120.5	TX7-Z17	**806 818**	⅞" x 1-⅛"	¼"
130.9	113.9	194.7	168.4	TX7-Z18 m	**806 821**	22 mm x 28 mm	6 mm
130.9	113.9	194.7	168.4	TX7-Z18	**806 820**	⅞" x 1-⅛"	¼"
183.4	165.1	272.9	244.1	TX7-Z19 m	**806 823**	22 mm x 28 mm	6 mm
183.4	165.1	272.9	244.1	TX7-Z19	**806 822**	⅞" x 1-⅛"	¼"

Note: The nominal capacities are based +4°C evaporating temperature, +38°C condensing temperature and 1K subcooling. For other operating conditions use the quick selection in this document or the "Controls Navigator" selection tool (download from www.emersonclimate.eu).

R134a Selection table

Capacity, R134a [kW]		With MOP		With MOP		Connection	
Normal flow	Reverse flow	Type	Part No.	Type	Part No.	Inlet x Outlet	Equalizer
18.1	17.9	TX7-M13 m	**806 839**	TX7-M03 m	**806 825**	12 mm x 16 mm	6 mm
18.1	17.9	TX7-M13	**806 840**	TX7-M03	**806 824**	½" x ⅝"	¼"
22.5	22	TX7-M14 m	**806 841**	TX7-M04 m	**806 827**	16 mm x 22 mm	6 mm
22.5	22	TX7-M14	**806 842**	TX7-M04	**806 826**	⅝" x ⅞"	¼"
27.5	26.7	TX7-M15 m	**806 843**	TX7-M05 m	**806 829**	16 mm x 22 mm	6 mm
27.5	26.7	TX7-M15	**806 844**	TX7-M05	**806 828**	⅝" x ⅞"	¼"
45.4	38.2	TX7-M16 m	**806 845**	TX7-M06 m	**806 831**	22 mm x 28 mm	6 mm
45.4	38.2	TX7-M16	**806 846**	TX7-M06	**806 830**	⅞" x 1-⅛"	¼"
56.0	45.9	TX7-M17 m	**806 847**	TX7-M07 m	**806 833**	22 mm x 28 mm	6 mm
56.0	45.9	TX7-M17	**806 848**	TX7-M07	**806 832**	⅞" x 1-⅛"	¼"
73.7	64.1	TX7-M18 m	**806 849**	TX7-M08 m	**806 835**	22 mm x 28 mm	6 mm
73.7	64.1	TX7-M18	**806 850**	TX7-M08	**806 834**	⅞" x 1-⅛"	¼"
103.3	93	TX7-M19 m	**806 851**	TX7-M09 m	**806 837**	22 mm x 28 mm	6 mm
103.3	93	TX7-M19	**806 852**	TX7-M09	**806 836**	⅞" x 1-⅛"	¼"

Note: The nominal capacities are based +4°C evaporating temperature, +38°C condensing temperature and 1K subcooling. For other operating conditions use the quick selection in this document or the "Controls Navigator" selection tool (download from www.emersonclimate.eu).

R407C Selection table

Capacity, R407C [kW]		With MOP		With MOP		Connection	
Normal flow	Reverse flow	Type	Part No.	Type	Part No.	Inlet x Outlet	Equalizer
28.9	28.6	TX7-N13 m	**806 868**	TX7-N03 m	**806 853**	12 mm x 16 mm	6 mm
28.9	28.6	TX7-N13	**806 867**	TX7-N03	**806 852**	½" x ⅝"	¼"
36.0	35.2	TX7-N14 m	**806 870**	TX7-N04 m	**806 855**	16 mm x 22 mm	6 mm
36.0	35.2	TX7-N14	**806 869**	TX7-N04	**806 854**	⅝" x ⅞"	¼"
44.1	42.7	TX7-N15 m	**806 872**	TX7-N05 m	**806 857**	16 mm x 22 mm	6 mm
44.1	42.7	TX7-N15	**806 871**	TX7-N05	**806 856**	⅝" x ⅞"	¼"
72.7	61.1	TX7-N16 m	**806 874**	TX7-N06 m	**806 859**	22 mm x 28 mm	6 mm
72.7	61.1	TX7-N16	**806 873**	TX7-N06	**806 858**	⅞" x 1-⅛"	¼"
89.7	73.5	TX7-N17 m	**806 876**	TX7-N07 m	**806 861**	22 mm x 28 mm	6 mm
89.7	73.5	TX7-N17	**806 875**	TX7-N07	**806 860**	⅞" x 1-⅛"	¼"
118.1	102.7	TX7-N18 m	**806 878**	TX7-N08 m	**806 863**	22 mm x 28 mm	6 mm
118.1	102.7	TX7-N18	**806 877**	TX7-N08	**806 862**	⅞" x 1-⅛"	¼"
165.4	148.9	TX7-N19 m	**806 880**	TX7-N09 m	**806 865**	22 mm x 28 mm	6 mm
165.4	148.9	TX7-N19	**806 879**	TX7-N09	**806 864**	⅞" x 1-⅛"	¼"

Note: The nominal capacities are based +4°C evaporating temperature, +38°C condensing temperature and 1K subcooling. For other operating conditions use the quick selection in this document or the "Controls Navigator" selection tool (download from www.emersonclimate.eu).

R450A / R513A Selection table

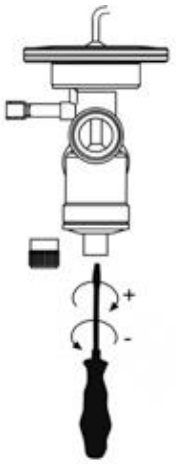
Capacity, R450A [kW]	Capacity, R513A [kW]	With MOP		With MOP		Connection	
		Type	Part No.	Type	Part No.	Inlet x Outlet	Equalizer
15.9	16.3	TX7-M13 m	**806 839**	TX7-M03 m	**806 825**	12 mm x 16 mm	6 mm
15.9	16.3	TX7-M13	**806 840**	TX7-M03	**806 824**	½" x ⅝"	¼"
19.8	20.3	TX7-M14 m	**806 841**	TX7-M04 m	**806 827**	16 mm x 22 mm	6 mm
19.8	20.3	TX7-M14	**806 842**	TX7-M04	**806 826**	⅝" x ⅞"	¼"
24.3	24.8	TX7-M15 m	**806 843**	TX7-M05 m	**806 829**	16 mm x 22 mm	6 mm
24.3	24.8	TX7-M15	**806 844**	TX7-M05	**806 828**	⅝" x ⅞"	¼"
40.1	41.0	TX7-M16 m	**806 845**	TX7-M06 m	**806 831**	22 mm x 28 mm	6 mm
40.1	41.0	TX7-M16	**806 846**	TX7-M06	**806 830**	⅞" x 1-⅛"	¼"
49.4	50.6	TX7-M17 m	**806 847**	TX7-M07 m	**806 833**	22 mm x 28 mm	6 mm
49.4	50.6	TX7-M17	**806 848**	TX7-M07	**806 832**	⅞" x 1-⅛"	¼"
65.0	66.6	TX7-M18 m	**806 849**	TX7-M08 m	**806 835**	22 mm x 28 mm	6 mm
65.0	66.6	TX7-M18	**806 850**	TX7-M08	**806 834**	⅞" x 1-⅛"	¼"
91.1	93.3	TX7-M19 m	**806 851**	TX7-M09 m	**806 837**	22 mm x 28 mm	6 mm
91.1	93.3	TX7-M19	**806 852**	TX7-M09	**806 836**	⅞" x 1-⅛"	¼"

Note: The nominal capacities are based +4°C evaporating temperature, +38°C condensing temperature and 1K subcooling. For other operating conditions use the quick selection in this document or the "Controls Navigator" selection tool (download from www.emersonclimate.eu).

The TX7-xxx with standard charges can be used with systems having R450A, R513a, R32 and R22 considering the readjustment of factory setting. The readjusting depends to designed evaporating temperature. The graph below can be used as guideline:

Refrigerant/ Type	Charge code	Evaporating temperature [°C]			
		5	0	-10	-20
		Number of turn			
R450A	M0/M1	+4.5	+4	+3	+2.5
R513A	M0/M1	-3 ❶	-3 ❷	-3	-2
R32	Z1	-1	-	-	+2

Note: ❶: This setting results to 4.4 K static superheat due to the limit of adjusting mechanism.
❷: This setting results to 4.8K static superheat due to the limit of adjusting mechanism.



Note: + means clockwise rotation / - means counterclockwise rotation

R22 Selection table

Capacity, R22 [kW]		With MOP		With MOP		Connection	
Normal flow	Reverse flow	Type	Part No.	Type	Part No.	Inlet x Outlet	Equalizer
27.5	27.2	TX7-N13 m	**806 868**	TX7-N03 m	**806 853**	12 mm x 16 mm	6 mm
27.5	27.2	TX7-N13	**806 867**	TX7-N03	**806 852**	½" x ⅝"	¼"
34.2	33.5	TX7-N14 m	**806 870**	TX7-N04 m	**806 855**	16 mm x 22 mm	6 mm
34.2	33.5	TX7-N14	**806 869**	TX7-N04	**806 854**	⅝" x ⅞"	¼"
41.9	40.6	TX7-N15 m	**806 872**	TX7-N05 m	**806 857**	16 mm x 22 mm	6 mm
41.9	40.6	TX7-N15	**806 871**	TX7-N05	**806 856**	⅝" x ⅞"	¼"
69.1	58.1	TX7-N16 m	**806 874**	TX7-N06 m	**806 859**	22 mm x 28 mm	6 mm
69.1	58.1	TX7-N16	**806 873**	TX7-N06	**806 858**	⅞" x 1-⅛"	¼"
85.2	69.9	TX7-N17 m	**806 876**	TX7-N07 m	**806 861**	22 mm x 28 mm	6 mm
85.2	69.9	TX7-N17	**806 875**	TX7-N07	**806 860**	⅞" x 1-⅛"	¼"
112.2	97.6	TX7-N18 m	**806 878**	TX7-N08 m	**806 863**	22 mm x 28 mm	6 mm
112.2	97.6	TX7-N18	**806 877**	TX7-N08	**806 862**	⅞" x 1-⅛"	¼"
157.2	141.5	TX7-N19 m	**806 880**	TX7-N09 m	**806 865**	22 mm x 28 mm	6 mm
157.2	141.5	TX7-N19	**806 879**	TX7-N09	**806 864**	⅞" x 1-⅛"	¼"

Refrigerant/ Type	Charge code	Evaporating temperature [°C]			
		5	0	-10	-20
		Number of turn			
R22	N0/N1	-4	-4	-3	-3.5

See "Controls Navigator" selection tool for more information

Technical Data

Maximum working pressure PS	46 bar
Burst pressure	230 bar
Factory test pressure PT	50.6 bar
Medium temperature range TS	-25...+70°C
Storage temperature	-30...+70°C
Compatibility	R410A, R134a, R407C, R32, R450A, R513A

Connections	Copper ODF
Capillary tube length	1.5 m
Power elements	Stainless steel, Laser welded
Label	Laser printing
Gross weight	Approx. 0.54...0.6 kg (depend on the valve size)
Marking	CE is not required, EAC & UL (pending)

Charge	Refrigerant	Recommended evaporating temperature range [°C]	Maximum bulb temperature [°C]
M0	**R134a**	-25...+30	88
N0	**R407C**	-25...+20	71
M1 MOP 3.8 bar	**R134a**	-25...+10	120
N1 MOP 6.9 bar	**R407C**	-25...+14	120
Z1 MOP 12.1 bar	**R410A/ R32**	-40...+14	120