

Thermo™-Expansion Valves Series TX7

Technical Bulletin

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.

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



TX7-Z13

R410a / R32 Selection table

Capacity, R410A (kW)		Capacity, R32 (kW)		Type	Part No.	Connection	
Normal flow	Reverse flow	Normal flow	Reverse flow			Inlet x Outlet	Equalizer
32.1	31.7	47.7	46.9	TX7-Z13 m	806811	12 mm x 16 mm	6 mm
32.1	31.7	47.7	46.9	TX7-Z13	806810	1/2" x 5/8"	1/4"
39.9	39.1	59.3	57.8	TX7-Z14 m	806813	16 mm x 22 mm	6 mm
39.9	39.1	59.3	57.8	TX7-Z14	806812	5/8" x 7/8"	1/4"
48.9	47.4	72.7	70.1	TX7-Z15 m	806815	16 mm x 22 mm	6 mm
48.9	47.4	72.7	70.1	TX7-Z15	806814	5/8" x 7/8"	1/4"
80.7	67.7	120	100.2	TX7-Z16 m	806817	22 mm x 28 mm	6 mm
80.7	67.7	120	100.2	TX7-Z16	806816	7/8" x 1-1/8"	1/4"
99.4	81.5	147.9	120.5	TX7-Z17 m	806819	22 mm x 28 mm	6 mm
99.4	81.5	147.9	120.5	TX7-Z17	806818	7/8" x 1-1/8"	1/4"
130.9	113.9	194.7	168.4	TX7-Z18 m	806821	22 mm x 28 mm	6 mm
130.9	113.9	194.7	168.4	TX7-Z18	806820	7/8" x 1-1/8"	1/4"
183.4	165.1	272.9	244.1	TX7-Z19 m	806823	22 mm x 28 mm	6 mm
183.4	165.1	272.9	244.1	TX7-Z19	806822	7/8" x 1-1/8"	1/4"

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

R134a Selection table

Capacity, R134a (kW)		With MOP		Without MOP		Connection	
Normal flow	Reverse flow	Type	Part No.	Type	Part No.	Inlet x Outlet	Equalizer
18.1	17.9	TX7-M13 m	806839	TX7-M03 m	806825	12 mm x 16 mm	6 mm
18.1	17.9	TX7-M13	806838	TX7-M03	806824	1/2" x 5/8"	1/4"
22.5	22	TX7-M14 m	806841	TX7-M04 m	806827	16 mm x 22 mm	6 mm
22.5	22	TX7-M14	806840	TX7-M04	806826	5/8" x 7/8"	1/4"
27.5	26.7	TX7-M15 m	806843	TX7-M05 m	806829	16 mm x 22 mm	6 mm
27.5	26.7	TX7-M15	806842	TX7-M05	806828	5/8" x 7/8"	1/4"
45.4	38.2	TX7-M16 m	806845	TX7-M06 m	806831	22 mm x 28 mm	6 mm
45.4	38.2	TX7-M16	806844	TX7-M06	806830	7/8" x 1-1/8"	1/4"
56.0	45.9	TX7-M17 m	806847	TX7-M07 m	806833	22 mm x 28 mm	6 mm
56.0	45.9	TX7-M17	806846	TX7-M07	806832	7/8" x 1-1/8"	1/4"
73.7	64.1	TX7-M18 m	806849	TX7-M08 m	806835	22 mm x 28 mm	6 mm
73.7	64.1	TX7-M18	806848	TX7-M08	806834	7/8" x 1-1/8"	1/4"
103.3	93	TX7-M19 m	806851	TX7-M09 m	806837	22 mm x 28 mm	6 mm
103.3	93	TX7-M19	806850	TX7-M09	806836	7/8" x 1-1/8"	1/4"

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

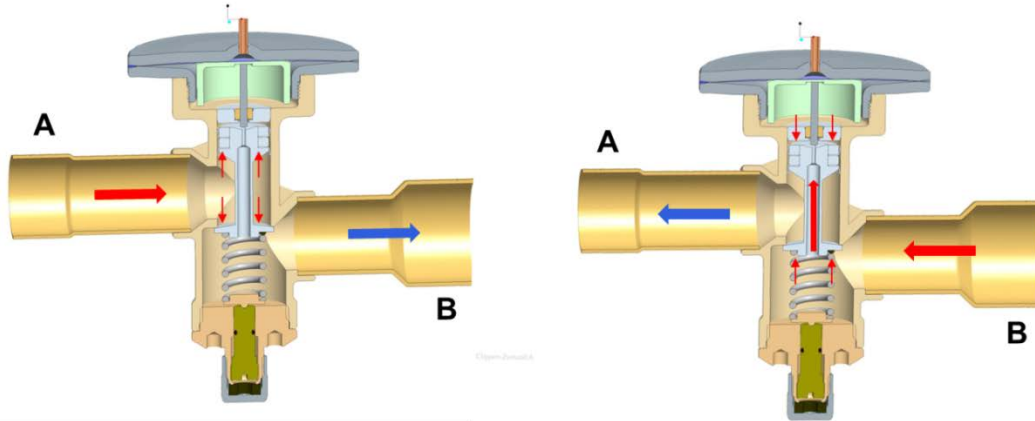
R407C Selection table

Capacity, R407C, (kW)		With MOP		Without MOP		Connection	
Normal flow	Reverse flow	Type	Part No.	Type	Part No.	Inlet x Outlet	Equalizer
28.9	28.6	TX7-N13 m	806868	TX7-N03 m	806853	12 mm x 16 mm	6 mm
28.9	28.6	TX7-N13	806867	TX7-N03	806852	1/2" x 5/8"	1/4"
36.0	35.2	TX7-N14 m	806870	TX7-N04 m	806855	16 mm x 22 mm	6 mm
36.0	35.2	TX7-N14	806869	TX7-N04	806854	5/8" x 7/8"	1/4"
44.1	42.7	TX7-N15 m	806872	TX7-N05 m	806857	16 mm x 22 mm	6 mm
44.1	42.7	TX7-N15	806871	TX7-N05	806856	5/8" x 7/8"	1/4"
72.7	61.1	TX7-N16 m	806874	TX7-N06 m	806859	22 mm x 28 mm	6 mm
72.7	61.1	TX7-N16	806873	TX7-N06	806858	7/8" x 1-1/8"	1/4"
89.7	73.5	TX7-N17 m	806876	TX7-N07 m	806861	22 mm x 28 mm	6 mm
89.7	73.5	TX7-N17	806875	TX7-N07	806860	7/8" x 1-1/8"	1/4"
118.1	102.7	TX7-N18 m	806878	TX7-N08 m	806863	22 mm x 28 mm	6 mm
118.1	102.7	TX7-N18	806877	TX7-N08	806862	7/8" x 1-1/8"	1/4"
165.4	148.9	TX7-N19 m	806880	TX7-N09 m	806865	22 mm x 28 mm	6 mm
165.4	148.9	TX7-N19	806879	TX7-N09	806864	7/8" x 1-1/8"	1/4"

Note: The nominal capacities are based +4°C dew point evaporating temperature, +38°C bubble point (+43°C dew point) condensing temperature and 1 K subcooling. For other operating conditions use the quick selection in this document or the "Controls Navigator" selection tool.

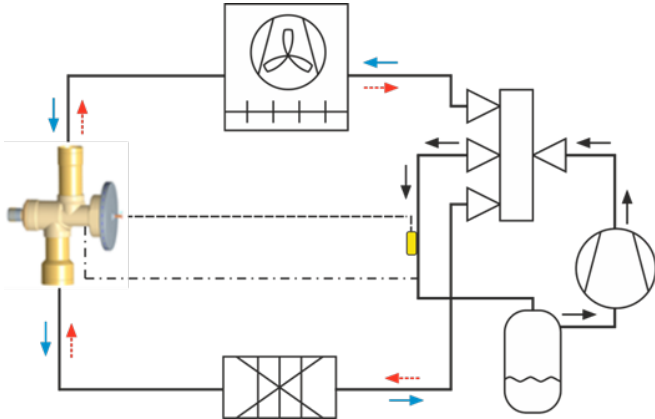
True Bi-flow Design

The valve pin is balanced against inlet pressure changes in both flow directions. The inlet pressure impact negatively performance of Thermo™- Expansion valves.



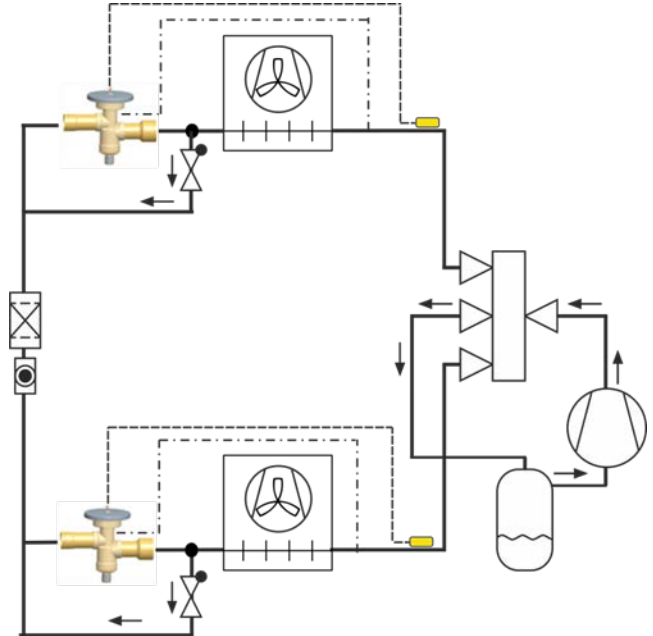
Typical applications in Reversible chillers and heat pumps

Single Bi-Flow (package unit)

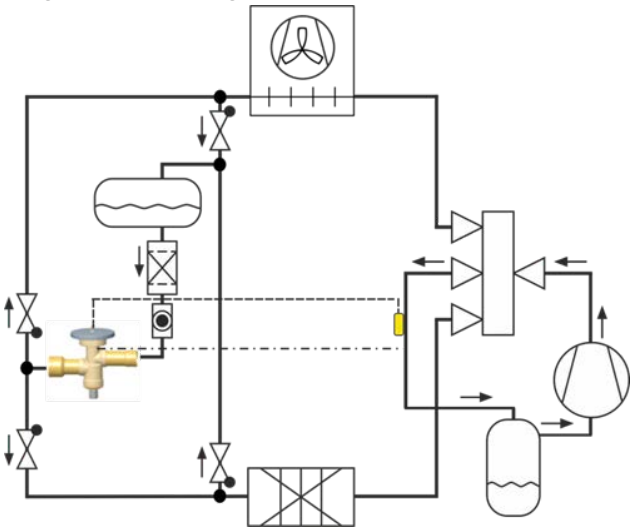


Note:
→ : Flow direction in cooling mode
→ : Flow direction in heating mode
→ : Flow direction independent from heating and cooling mode

Two valves (package or split unit)



Single valve (package unit)



R450A / R513A Selection table

Capacity, R450A (kW)	Capacity, R513A (kW)	With MOP* (R513A)		Without MOP (R450A/R513A)		Connection	
		Type	Part No.	Type	Part No.	Inlet x Outlet	Equalizer
15.9	16.3	TX7-M13 m	806839	TX7-M03 m	806825	12 mm x 16 mm	6 mm
15.9	16.3	TX7-M13	806838	TX7-M03	806824	1/2" x 5/8"	1/4"
19.8	20.3	TX7-M14 m	806841	TX7-M04 m	806827	16 mm x 22 mm	6 mm
19.8	20.3	TX7-M14	806840	TX7-M04	806826	5/8" x 7/8"	1/4"
24.3	24.8	TX7-M15 m	806843	TX7-M05 m	806829	16 mm x 22 mm	6 mm
24.3	24.8	TX7-M15	806842	TX7-M05	806828	5/8" x 7/8"	1/4"
40.1	41.0	TX7-M16 m	806845	TX7-M06 m	806831	22 mm x 28 mm	6 mm
40.1	41.0	TX7-M16	806844	TX7-M06	806830	7/8" x 1-1/8"	1/4"
49.4	50.6	TX7-M17 m	806847	TX7-M07 m	806833	22 mm x 28 mm	6 mm
49.4	50.6	TX7-M17	806846	TX7-M07	806832	7/8" x 1-1/8"	1/4"
65.0	66.6	TX7-M18 m	806849	TX7-M08 m	806835	22 mm x 28 mm	6 mm
65.0	66.6	TX7-M18	806848	TX7-M08	806834	7/8" x 1-1/8"	1/4"
91.1	93.3	TX7-M19 m	806851	TX7-M09 m	806837	22 mm x 28 mm	6 mm
91.1	93.3	TX7-M19	806850	TX7-M09	806836	7/8" x 1-1/8"	1/4"

Note: The nominal capacities are based +4°C dew point 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.

*) TX7 for R134a with MOP shall not be used for R450A.

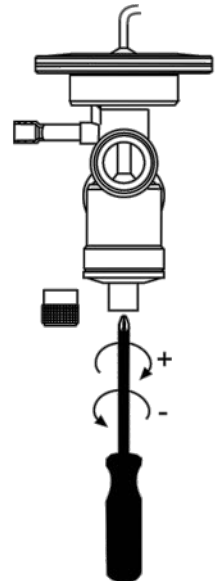
The TX7-xxx with standard charges can be used with systems having R450A, R513A and R32 considering the readjustment of factory setting. The readjusting depends to designed evaporating temperature. The graph below can be used as guideline:

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

Note: ①: This setting results to 5 K static superheat due to the limit of adjusting mechanism.

②: This setting results to 4.5K static superheat due to the limit of adjusting mechanism.

Note: + means clockwise rotation /
- means counterclockwise rotation



Thermo™-Expansion Valves Series TX7

Quick Selection (included 1.5 bar pressure drop for liquid line components and distributor)

Quick selection capacity table is for operation in normal flow direction. For reverse flow direction use the following factors:

Valve size	TX7-..3	TX7-..4	TX7-..5	TX7-..6	TX7-..7	TX7-..8	TX7-..9
Reverse flow versus normal flow capacity	-1%	-2%	-3%	-16%	-18%	-13%	-10%

Condensing temperature (°C)	R410A Capacity in normal flow direction (kW)								Valve type
	Evaporating temperature (°C)								
	10	5	0	-5	-10	-15	-20	-25	
65	26.5	26.9	27.1	27.1	27.0	23.7	20.5	17.3	TX7-Z13
	33.0	33.4	33.6	33.7	33.6	29.5	25.5	21.5	TX7-Z14
	40.4	40.9	41.2	41.3	41.2	36.2	31.2	26.3	TX7-Z15
	66.8	67.6	68.0	68.2	68.0	59.7	51.6	43.5	TX7-Z16
	82.3	83.3	83.9	84.0	83.8	73.6	63.6	53.6	TX7-Z17
	108.4	109.7	110.4	110.6	110.3	96.9	83.7	70.6	TX7-Z18
	151.9	153.7	154.8	155.0	154.6	135.8	117.3	98.9	TX7-Z19
60	28.9	29.5	29.8	30.0	30.0	26.5	23.0	19.5	TX7-Z13
	36.0	36.6	37.1	37.3	37.3	32.9	28.6	24.2	TX7-Z14
	44.1	44.9	45.4	45.7	45.8	40.4	35.0	29.7	TX7-Z15
	72.8	74.1	75.0	75.4	75.6	66.6	57.8	48.9	TX7-Z16
	89.8	91.3	92.4	93.0	93.1	82.2	71.3	60.3	TX7-Z17
	118.2	120.3	121.7	122.4	122.6	108.2	93.8	79.4	TX7-Z18
	165.6	168.5	170.5	171.6	171.8	151.6	131.5	111.3	TX7-Z19
55	30.1	30.9	31.4	31.7	31.9	28.2	24.6	20.9	TX7-Z13
	37.5	38.4	39.0	39.4	39.6	35.1	30.6	26.0	TX7-Z14
	45.9	47.0	47.8	48.3	48.6	43.0	37.4	31.8	TX7-Z15
	75.8	77.6	78.9	79.8	80.2	71.0	61.8	52.5	TX7-Z16
	93.4	95.7	97.3	98.3	98.9	87.6	76.2	64.8	TX7-Z17
	123.0	126.0	128.1	129.5	130.2	115.3	100.3	85.3	TX7-Z18
	172.4	176.5	179.5	181.4	182.4	161.5	140.6	119.5	TX7-Z19
50	30.5	31.4	32.1	32.6	33.0	29.3	25.6	21.8	TX7-Z13
	37.9	39.0	39.9	40.6	41.0	36.4	31.8	27.1	TX7-Z14
	46.4	47.8	48.9	49.7	50.2	44.6	39.0	33.2	TX7-Z15
	76.6	79.0	80.8	82.1	82.9	73.7	64.4	54.9	TX7-Z16
	94.4	97.4	99.6	101.2	102.2	90.8	79.3	67.6	TX7-Z17
	124.3	128.2	131.1	133.2	134.5	119.6	104.5	89.0	TX7-Z18
	174.2	179.7	183.7	186.7	188.5	167.6	146.4	124.8	TX7-Z19
45	30.0	31.3	32.2	32.9	33.4	29.8	26.1	22.4	TX7-Z13
	37.4	38.9	40.0	40.9	41.5	37.1	32.5	27.8	TX7-Z14
	45.8	47.6	49.1	50.1	50.9	45.4	39.8	34.1	TX7-Z15
	75.6	78.6	81.0	82.8	84.0	75.0	65.7	56.2	TX7-Z16
	93.1	96.9	99.8	102.0	103.6	92.4	81.0	69.3	TX7-Z17
	122.7	127.6	131.5	134.3	136.4	121.7	106.7	91.2	TX7-Z18
	171.9	178.8	184.2	188.2	191.1	170.5	149.5	127.9	TX7-Z19
40	28.9	30.5	31.7	32.6	33.3	29.9	26.3	22.6	TX7-Z13
	36.0	37.9	39.4	40.6	41.4	37.1	32.7	28.1	TX7-Z14
	44.1	46.5	48.3	49.7	50.7	45.5	40.1	34.4	TX7-Z15
	72.8	76.7	79.7	82.0	83.8	75.1	66.1	56.8	TX7-Z16
	89.7	94.5	98.3	101.1	103.3	92.6	81.5	70.0	TX7-Z17
	118.2	124.5	129.4	133.2	136.0	121.9	107.3	92.1	TX7-Z18
	165.6	174.4	181.3	186.6	190.5	170.9	150.4	129.1	TX7-Z19
35	27.1	29.1	30.6	31.8	32.7	29.5	26.1	22.5	TX7-Z13
	33.7	36.2	38.1	39.5	40.7	36.7	32.4	28.0	TX7-Z14
	41.3	44.3	46.7	48.5	49.8	45.0	39.8	34.3	TX7-Z15
	68.2	73.2	77.0	80.0	82.3	74.2	65.6	56.6	TX7-Z16
	84.1	90.2	94.9	98.6	101.4	91.5	80.9	69.7	TX7-Z17
	110.8	118.8	125.0	129.9	133.5	120.5	106.5	91.8	TX7-Z18
	155.2	166.4	175.2	182.0	187.1	168.8	149.3	128.6	TX7-Z19

Quick selection (included 1.5 bar pressure drop for liquid line components and distributor)

Quick selection capacity table is for operation in normal flow direction. For reverse flow direction use the following factors:

Valve size	TX7-..3	TX7-..4	TX7-..5	TX7-..6	TX7-..7	TX7-..8	TX7-..9
Reverse flow versus normal flow capacity	-1%	-2%	-3%	-16%	-18%	-13%	-10%

Condensing temperature (°C)	R134a Capacity in normal flow direction (kW)											R134a	Valve type
	Evaporating temperature (°C)												
	30	25	20	15	10	5	0	-5	-10	-15	-20		
65	17.1	17.6	18.0	18.1	18.2	18.1	18.0	17.7	17.4	15.5	12.8	TX7-M..3	
	21.3	21.9	22.3	22.5	22.6	22.5	22.3	22.0	21.7	19.2	15.9	TX7-M..4	
	26.1	26.8	27.4	27.6	27.7	27.6	27.4	27.0	26.6	23.6	19.5	TX7-M..5	
	43.0	44.3	45.2	45.6	45.7	45.6	45.2	44.6	43.8	38.9	32.2	TX7-M..6	
	53.1	54.6	55.7	56.2	56.4	56.2	55.7	55.0	54.0	48.0	39.7	TX7-M..7	
	69.9	71.9	73.3	74.0	74.2	74.0	73.3	72.4	71.2	63.2	52.3	TX7-M..8	
	97.9	100.8	102.7	103.7	104.0	103.7	102.8	101.4	99.7	88.6	73.3	TX7-M..9	
60	16.4	17.2	17.7	18.0	18.2	18.3	18.2	18.1	17.8	15.9	13.2	TX7-M..3	
	20.4	21.4	22.0	22.4	22.6	22.7	22.6	22.5	22.2	19.8	16.4	TX7-M..4	
	25.0	26.2	27.0	27.5	27.7	27.8	27.7	27.5	27.2	24.2	20.2	TX7-M..5	
	41.3	43.2	44.5	45.3	45.8	45.9	45.8	45.4	44.9	40.0	33.3	TX7-M..6	
	51.0	53.3	54.9	55.9	56.5	56.6	56.5	56.0	55.3	49.3	41.0	TX7-M..7	
	67.1	70.1	72.2	73.6	74.3	74.6	74.3	73.7	72.8	65.0	54.0	TX7-M..8	
	94.0	98.3	101.2	103.1	104.2	104.5	104.2	103.3	102.1	91.1	75.7	TX7-M..9	
55	15.3	16.3	17.1	17.6	18.0	18.1	18.2	18.1	18.0	16.1	13.5	TX7-M..3	
	19.0	20.3	21.3	21.9	22.3	22.5	22.6	22.6	22.4	20.1	16.7	TX7-M..4	
	23.3	24.9	26.0	26.8	27.3	27.6	27.7	27.6	27.4	24.6	20.5	TX7-M..5	
	38.5	41.1	43.0	44.3	45.1	45.6	45.8	45.6	45.3	40.6	33.9	TX7-M..6	
	47.5	50.7	53.0	54.6	55.7	56.2	56.4	56.3	55.8	50.0	41.8	TX7-M..7	
	62.5	66.7	69.8	71.9	73.3	74.0	74.3	74.1	73.5	65.9	55.0	TX7-M..8	
	87.6	93.5	97.8	100.8	102.7	103.7	104.1	103.8	103.0	92.3	77.0	TX7-M..9	
50	13.7	15.1	16.1	16.9	17.4	17.7	17.9	18.0	17.9	16.2	13.5	TX7-M..3	
	17.0	18.8	20.1	21.0	21.6	22.1	22.3	22.4	22.3	20.1	16.8	TX7-M..4	
	20.8	23.0	24.6	25.7	26.5	27.0	27.3	27.4	27.3	24.6	20.6	TX7-M..5	
	34.4	38.0	40.6	42.5	43.8	44.6	45.1	45.2	45.1	40.6	34.1	TX7-M..6	
	42.4	46.8	50.0	52.3	53.9	55.0	55.6	55.8	55.6	50.1	42.0	TX7-M..7	
	55.8	61.6	65.9	68.9	71.0	72.4	73.2	73.4	73.2	65.9	55.3	TX7-M..8	
	78.2	86.4	92.3	96.6	99.5	101.5	102.5	102.9	102.6	92.4	77.4	TX7-M..9	
45	11.3	13.3	14.8	15.8	16.5	17.1	17.4	17.6	17.6	16.0	13.4	TX7-M..3	
	14.1	16.6	18.3	19.6	20.6	21.2	21.6	21.9	21.9	19.9	16.7	TX7-M..4	
	17.2	20.3	22.5	24.1	25.2	26.0	26.5	26.8	26.9	24.3	20.5	TX7-M..5	
	28.4	33.5	37.1	39.7	41.6	42.9	43.8	44.2	44.4	40.2	33.8	TX7-M..6	
	35.1	41.3	45.8	49.0	51.3	52.9	53.9	54.5	54.7	49.5	41.7	TX7-M..7	
	46.2	54.4	60.2	64.5	67.5	69.6	71.0	71.8	72.0	65.2	54.9	TX7-M..8	
	64.7	76.2	84.4	90.4	94.6	97.6	99.5	100.6	100.9	91.4	76.9	TX7-M..9	
40	7.6	10.8	12.9	14.3	15.3	16.1	16.6	16.9	17.1	15.6	13.2	TX7-M..3	
	9.4	13.4	16.0	17.8	19.1	20.0	20.6	21.1	21.3	19.4	16.4	TX7-M..4	
	11.6	16.5	19.6	21.8	23.4	24.5	25.3	25.8	26.1	23.7	20.1	TX7-M..5	
	19.1	27.2	32.3	36.0	38.6	40.5	41.8	42.6	43.1	39.2	33.2	TX7-M..6	
	23.6	33.5	39.9	44.3	47.6	49.9	51.5	52.5	53.1	48.3	40.9	TX7-M..7	
	31.0	44.1	52.5	58.4	62.6	65.7	67.8	69.1	69.9	63.6	53.9	TX7-M..8	
	43.5	61.8	73.6	81.8	87.8	92.0	95.0	96.9	97.9	89.2	75.5	TX7-M..9	
35	6.8	10.2	12.3	13.7	14.8	15.5	16.0	16.4	16.4	15.0	12.8	TX7-M..3	
	8.5	12.7	15.3	17.1	18.4	19.3	19.9	20.3	20.3	18.7	15.9	TX7-M..4	
	10.4	15.5	18.7	20.9	22.5	23.6	24.4	24.9	24.9	22.9	19.5	TX7-M..5	
	17.1	25.6	30.9	34.6	37.2	39.0	40.3	41.2	41.2	37.7	32.1	TX7-M..6	
	21.1	31.6	38.1	42.6	45.8	48.1	49.7	50.7	50.7	46.5	39.6	TX7-M..7	
	27.8	41.6	50.1	56.1	60.3	63.4	65.4	66.8	66.8	61.3	52.2	TX7-M..8	
	39.0	58.3	70.3	78.6	84.5	88.8	91.7	93.6	93.6	85.9	73.1	TX7-M..9	

Thermo™-Expansion Valves Series TX7

Quick selection (included 1.5 bar pressure drop for liquid line components and distributor)

Quick selection capacity table is for operation in normal flow direction. For reverse flow direction use the following factors:

Valve size	TX7-..3	TX7-..4	TX7-..5	TX7-..6	TX7-..7	TX7-..8	TX7-..9
Reverse flow versus normal flow capacity	-1%	-2%	-3%	-16%	-18%	-13%	-10%

Condensing temperature (°C)	R407C Capacity in normal flow direction (kW)									R407C Valve type
	Evaporating temperature (°C)									
	15	10	5	0	-5	-10	-15	-20	-25	
55°C bubble point/ 59.2°C dew point	27.0	27.5	27.7	27.7	27.6	27.5	23.9	19.9	16.5	TX7-N..3
	33.6	34.2	34.4	34.4	34.4	34.2	29.8	24.8	20.5	TX7-N..4
	41.2	41.9	42.2	42.2	42.1	41.9	36.5	30.4	25.1	TX7-N..5
	68.0	69.2	69.6	69.7	69.5	69.1	60.2	50.2	41.4	TX7-N..6
	83.8	85.4	85.8	85.9	85.7	85.2	74.2	61.8	51.1	TX7-N..7
	110.4	112.4	113.0	113.1	112.8	112.2	97.7	81.4	67.3	TX7-N..8
	154.6	157.5	158.3	158.4	158.1	157.3	137.0	114.1	94.2	TX7-N..9
50°C bubble point/ 54.4°C dew point	27.0	27.6	28.1	28.2	28.4	28.2	24.6	20.6	17.1	TX7-N..3
	33.6	34.4	34.9	35.0	35.3	35.1	30.6	25.6	21.3	TX7-N..4
	41.1	42.1	42.8	42.9	43.2	43.0	37.5	31.4	26.1	TX7-N..5
	67.9	69.5	70.7	70.9	71.4	71.0	61.9	51.9	43.1	TX7-N..6
	83.7	85.7	87.1	87.4	88.0	87.5	76.3	64.0	53.1	TX7-N..7
	110.2	112.9	114.7	115.0	115.8	115.3	100.5	84.2	69.9	TX7-N..8
	154.5	158.1	160.8	161.2	162.3	161.5	140.8	118.0	98.0	TX7-N..9
45°C bubble point/ 49.6°C dew point	26.4	27.3	27.9	28.3	28.5	28.4	25.1	21.0	17.4	TX7-N..3
	32.9	33.9	34.6	35.1	35.5	35.3	31.2	26.1	21.7	TX7-N..4
	40.3	41.5	42.4	43.1	43.5	43.3	38.2	32.0	26.5	TX7-N..5
	66.5	68.5	70.1	71.1	71.8	71.5	63.1	52.8	43.8	TX7-N..6
	81.9	84.5	86.3	87.6	88.5	88.1	77.8	65.0	54.0	TX7-N..7
	107.9	111.3	113.7	115.4	116.5	116.0	102.5	85.6	71.1	TX7-N..8
	151.2	155.9	159.3	161.7	163.2	162.6	143.6	120.0	99.7	TX7-N..9
40°C bubble point/ 44.9°C dew point	25.2	26.2	27.3	27.8	28.2	28.4	25.1	21.0	17.6	TX7-N..3
	31.3	32.6	33.9	34.6	35.1	35.3	31.2	26.1	21.9	TX7-N..4
	38.3	40.0	41.6	42.4	43.0	43.3	38.2	32.0	26.8	TX7-N..5
	63.3	66.0	68.6	70.0	70.9	71.5	63.1	52.8	44.3	TX7-N..6
	78.0	81.3	84.6	86.3	87.4	88.1	77.8	65.1	54.6	TX7-N..7
	102.7	107.1	111.3	113.6	115.1	116.0	102.4	85.7	71.9	TX7-N..8
	143.9	150.0	156.0	159.2	161.3	162.5	143.5	120.1	100.7	TX7-N..9
35°C bubble point/ 40.1°C dew point	23.3	25.0	26.0	26.7	27.5	27.8	24.7	20.9	17.5	TX7-N..3
	29.0	31.1	32.3	33.3	34.2	34.6	30.7	26.0	21.8	TX7-N..4
	35.5	38.1	39.6	40.8	41.9	42.4	37.6	31.8	26.7	TX7-N..5
	58.6	62.8	65.4	67.3	69.2	70.0	62.0	52.6	44.1	TX7-N..6
	72.3	77.5	80.7	82.9	85.4	86.3	76.5	64.8	54.4	TX7-N..7
	95.1	102.0	106.2	109.2	112.4	113.7	100.7	85.3	71.6	TX7-N..8
	133.3	142.9	148.8	153.0	157.5	159.3	141.1	119.6	100.3	TX7-N..9
30°C bubble point/ 35.2°C dew point	20.7	22.9	24.5	25.5	26.5	26.9	24.0	20.5	17.3	TX7-N..3
	25.8	28.4	30.5	31.7	32.9	33.5	29.8	25.5	21.5	TX7-N..4
	31.6	34.9	37.3	38.8	40.3	41.0	36.5	31.2	26.3	TX7-N..5
	52.2	57.5	61.7	64.1	66.6	67.7	60.3	51.6	43.4	TX7-N..6
	64.3	70.9	76.0	79.1	82.1	83.5	74.4	63.5	53.5	TX7-N..7
	84.6	93.4	100.1	104.1	108.1	109.9	97.9	83.7	70.5	TX7-N..8
	118.6	130.9	140.2	145.9	151.4	154.0	137.2	117.2	98.7	TX7-N..9
25°C bubble point/ 30.4°C dew point	17.4	20.3	22.4	23.7	24.9	25.6	23.2	19.7	16.7	TX7-N..3
	21.6	25.2	27.8	29.5	31.0	31.8	28.9	24.5	20.8	TX7-N..4
	26.5	30.9	34.1	36.1	38.0	39.0	35.4	30.0	25.5	TX7-N..5
	43.8	51.0	56.3	59.7	62.7	64.3	58.4	49.6	42.1	TX7-N..6
	54.0	62.9	69.4	73.6	77.3	79.3	72.0	61.1	51.9	TX7-N..7
	71.1	82.8	91.4	96.9	101.8	104.4	94.8	80.5	68.3	TX7-N..8
	99.6	116.0	128.1	135.7	142.7	146.3	132.8	112.8	95.7	TX7-N..9

Quick selection (included 1.5 bar pressure drop for liquid line components and distributor)

Quick selection capacity table is for operation in normal flow direction. For reverse flow direction use the following factors:

Valve size	TX7-..3	TX7-..4	TX7-..5	TX7-..6	TX7-..7	TX7-..8	TX7-..9
Reverse flow versus normal flow capacity	-1%	-2%	-3%	-16%	-18%	-13%	-10%

Condensing temperature (°C)	R32 Capacity in normal flow direction (kW)								Valve type
	Evaporating temperature (°C)								
	10	5	0	-5	-10	-15	-20	-25	
65	46.1	47.1	47.9	48.5	48.9	43.4	38.0	32.5	TX7-Z13
	57.3	58.5	59.5	60.2	60.8	54.0	47.2	40.3	TX7-Z14
	70.2	71.7	72.9	73.8	74.5	66.2	57.9	49.4	TX7-Z15
	115.9	118.4	120.4	121.9	122.9	109.2	95.5	81.6	TX7-Z16
	142.9	146.0	148.4	150.2	151.5	134.7	117.8	100.6	TX7-Z17
	188.1	192.2	195.4	197.8	199.5	177.3	155.1	132.5	TX7-Z18
	263.6	269.3	273.8	277.2	279.5	248.5	217.3	185.7	TX7-Z19
60	47.4	48.7	49.7	50.4	51.0	45.4	39.8	34.1	TX7-Z13
	59.0	60.5	61.7	62.7	63.4	56.5	49.5	42.4	TX7-Z14
	72.3	74.2	75.7	76.8	77.7	69.2	60.6	51.9	TX7-Z15
	119.3	122.4	124.9	126.8	128.2	114.2	100.1	85.7	TX7-Z16
	147.1	150.9	153.9	156.3	158.1	140.8	123.4	105.7	TX7-Z17
	193.7	198.7	202.7	205.8	208.1	185.4	162.5	139.1	TX7-Z18
	271.4	278.4	284.0	288.4	291.6	259.8	227.7	195.0	TX7-Z19
55	47.6	49.1	50.3	51.3	52.0	46.4	40.8	35.0	TX7-Z13
	59.2	61.1	62.6	63.7	64.6	57.7	50.7	43.5	TX7-Z14
	72.6	74.8	76.7	78.1	79.2	70.8	62.2	53.3	TX7-Z15
	119.8	123.5	126.6	128.9	130.8	116.8	102.6	88.0	TX7-Z16
	147.7	152.3	156.0	158.9	161.2	144.0	126.5	108.5	TX7-Z17
	194.4	200.5	205.4	209.3	212.3	189.6	166.5	142.9	TX7-Z18
	272.4	281.0	287.8	293.3	297.4	265.7	233.4	200.2	TX7-Z19
50	46.9	48.7	50.1	51.3	52.2	46.7	41.2	35.4	TX7-Z13
	58.3	60.5	62.3	63.7	64.9	58.1	51.2	44.0	TX7-Z14
	71.4	74.1	76.3	78.1	79.5	71.2	62.7	53.9	TX7-Z15
	117.9	122.4	126.0	128.9	131.2	117.6	103.5	89.0	TX7-Z16
	145.3	150.8	155.3	158.9	161.8	144.9	127.6	109.7	TX7-Z17
	191.3	198.6	204.5	209.3	213.0	190.8	168.0	144.5	TX7-Z18
	268.1	278.3	286.6	293.3	298.4	267.4	235.4	202.4	TX7-Z19
45	45.3	47.4	49.1	50.5	51.7	46.4	41.0	35.3	TX7-Z13
	56.3	58.9	61.1	62.8	64.2	57.7	51.0	43.9	TX7-Z14
	69.0	72.2	74.9	77.0	78.7	70.7	62.5	53.8	TX7-Z15
	113.9	119.2	123.6	127.1	129.9	116.8	103.1	88.9	TX7-Z16
	140.4	147.0	152.3	156.7	160.1	144.0	127.1	109.6	TX7-Z17
	184.8	193.5	200.6	206.3	210.9	189.6	167.4	144.3	TX7-Z18
	259.0	271.1	281.1	289.1	295.5	265.6	234.6	202.2	TX7-Z19
40	42.9	45.4	47.5	49.2	50.5	45.6	40.4	34.9	TX7-Z13
	53.3	56.4	59.0	61.1	62.8	56.7	50.2	43.4	TX7-Z14
	65.3	69.2	72.3	74.9	76.9	69.5	61.6	53.2	TX7-Z15
	107.8	114.2	119.4	123.6	127.0	114.7	101.6	87.8	TX7-Z16
	132.9	140.8	147.2	152.4	156.6	141.4	125.3	108.3	TX7-Z17
	174.9	185.3	193.8	200.7	206.2	186.1	165.0	142.6	TX7-Z18
	245.1	259.7	271.6	281.2	288.9	260.8	231.2	199.8	TX7-Z19
35	39.6	42.6	45.1	47.2	48.8	44.3	39.4	34.2	TX7-Z13
	49.2	53.0	56.1	58.6	60.6	55.0	49.0	42.5	TX7-Z14
	60.3	65.0	68.8	71.9	74.3	67.4	60.0	52.1	TX7-Z15
	99.5	107.3	113.5	118.6	122.7	111.3	99.1	86.0	TX7-Z16
	122.7	132.2	140.0	146.2	151.2	137.3	122.2	106.0	TX7-Z17
	161.5	174.1	184.3	192.5	199.1	180.7	160.9	139.5	TX7-Z18
	226.4	244.0	258.2	269.8	279.1	253.2	225.4	195.5	TX7-Z19

Thermo™-Expansion Valves Series TX7

Quick Selection (included 1.5 bar pressure drop for liquid line components and distributor)

Quick selection capacity table is for operation in normal flow direction. For reverse flow direction use the following factors:

Valve size	TX7-..3	TX7-..4	TX7-..5	TX7-..6	TX7-..7	TX7-..8	TX7-..9
Reverse flow versus normal flow capacity	-1%	-2%	-3%	-16%	-18%	-13%	-10%

Condensing temperature (°C)	R450A Capacity in normal flow direction (kW)							Valve type
	Evaporating temperature (°C)							
	10	5	0	-5	-10	-15	-20	
65	15.9	15.7	15.5	15.3	14.9	13.2	10.9	TX7-M..3
	19.7	19.6	19.3	19.0	18.6	16.4	13.5	TX7-M..4
	24.2	24.0	23.7	23.3	22.8	20.1	16.6	TX7-M..5
	39.9	39.6	39.1	38.4	37.6	33.2	27.3	TX7-M..6
	49.2	48.8	48.2	47.3	46.3	40.9	33.7	TX7-M..7
	64.7	64.3	63.4	62.3	61.0	53.9	44.4	TX7-M..8
	90.7	90.0	88.9	87.4	85.5	75.5	62.2	TX7-M..9
60	15.9	15.9	15.8	15.6	15.3	13.6	11.3	TX7-M..3
	19.7	19.7	19.6	19.4	19.0	16.9	14.0	TX7-M..4
	24.2	24.2	24.0	23.7	23.3	20.7	17.1	TX7-M..5
	39.9	39.9	39.6	39.2	38.5	34.2	28.3	TX7-M..6
	49.2	49.2	48.9	48.3	47.5	42.2	34.9	TX7-M..7
	64.8	64.8	64.3	63.6	62.5	55.5	45.9	TX7-M..8
	90.8	90.8	90.1	89.1	87.6	77.8	64.4	TX7-M..9
55	15.6	15.8	15.8	15.7	15.5	13.8	11.5	TX7-M..3
	19.5	19.6	19.6	19.5	19.2	17.2	14.3	TX7-M..4
	23.8	24.0	24.0	23.8	23.6	21.0	17.5	TX7-M..5
	39.4	39.6	39.6	39.4	38.9	34.7	28.9	TX7-M..6
	48.5	48.9	48.8	48.5	48.0	42.8	35.6	TX7-M..7
	63.9	64.3	64.3	63.9	63.2	56.4	46.9	TX7-M..8
	89.5	90.1	90.1	89.5	88.5	79.0	65.7	TX7-M..9
50	15.2	15.4	15.5	15.5	15.4	13.8	11.6	TX7-M..3
	18.9	19.2	19.3	19.3	19.2	17.2	14.4	TX7-M..4
	23.1	23.5	23.6	23.6	23.5	21.1	17.6	TX7-M..5
	38.1	38.8	39.0	39.0	38.8	34.8	29.1	TX7-M..6
	47.0	47.8	48.1	48.1	47.8	42.9	35.8	TX7-M..7
	61.9	62.9	63.4	63.4	63.0	56.5	47.2	TX7-M..8
	86.7	88.1	88.8	88.8	88.3	79.2	66.1	TX7-M..9
45	14.4	14.8	15.1	15.2	15.2	13.7	11.5	TX7-M..3
	17.9	18.4	18.7	18.9	18.9	17.0	14.3	TX7-M..4
	21.9	22.6	22.9	23.1	23.1	20.9	17.5	TX7-M..5
	36.2	37.3	37.9	38.2	38.2	34.4	28.9	TX7-M..6
	44.7	45.9	46.7	47.0	47.1	42.5	35.6	TX7-M..7
	58.8	60.5	61.5	61.9	62.0	55.9	46.9	TX7-M..8
	82.4	84.7	86.1	86.8	86.8	78.3	65.7	TX7-M..9
40	13.3	13.9	14.4	14.6	14.7	13.4	11.3	TX7-M..3
	16.6	17.3	17.9	18.2	18.3	16.6	14.0	TX7-M..4
	20.3	21.3	21.9	22.3	22.4	20.4	17.2	TX7-M..5
	33.5	35.1	36.1	36.7	37.0	33.6	28.4	TX7-M..6
	41.3	43.2	44.5	45.3	45.7	41.4	35.0	TX7-M..7
	54.4	56.9	58.6	59.6	60.1	54.6	46.0	TX7-M..8
	76.3	79.8	82.1	83.6	84.2	76.5	64.5	TX7-M..9
35	11.9	12.8	13.4	13.8	14.1	12.9	10.9	TX7-M..3
	14.8	15.9	16.7	17.2	17.5	16.0	13.6	TX7-M..4
	18.1	19.5	20.4	21.0	21.4	19.6	16.6	TX7-M..5
	29.9	32.1	33.7	34.7	35.4	32.4	27.5	TX7-M..6
	36.9	39.6	41.5	42.8	43.6	39.9	33.9	TX7-M..7
	48.6	52.2	54.7	56.4	57.4	52.5	44.6	TX7-M..8
	68.1	73.1	76.6	79.0	80.4	73.6	62.5	TX7-M..9

Quick Selection (included 1.5 bar pressure drop for liquid line components and distributor)

Quick selection capacity table is for operation in normal flow direction. For reverse flow direction use the following factors:

Valve size	TX7-...3	TX7-...4	TX7-...5	TX7-...6	TX7-...7	TX7-...8	TX7-...9
Reverse flow versus normal flow capacity	-1%	-2%	-3%	-16%	-18%	-13%	-10%

Condensing temperature (°C)	R513A Capacity in normal flow direction (kW)							Valve type
	Evaporating temperature (°C)							
	10	5	0	-5	-10	-15	-20	
65	15.3	15.1	14.9	14.5	14.1	12.4	10.1	TX7-M..3
	19.1	18.8	18.5	18.1	17.6	15.4	12.6	TX7-M..4
	23.4	23.1	22.7	22.1	21.5	18.9	15.4	TX7-M..5
	38.6	38.1	37.4	36.6	35.5	31.2	25.5	TX7-M..6
	47.5	47.0	46.1	45.1	43.8	38.4	31.4	TX7-M..7
	62.6	61.8	60.7	59.3	57.7	50.6	41.4	TX7-M..8
	87.7	86.7	85.1	83.1	80.8	70.9	58.0	TX7-M..9
60	15.7	15.6	15.4	15.2	14.9	13.1	10.8	TX7-M..3
	19.5	19.4	19.2	18.9	18.5	16.3	13.4	TX7-M..4
	23.9	23.8	23.5	23.1	22.6	20.0	16.5	TX7-M..5
	39.4	39.3	38.8	38.2	37.4	33.0	27.2	TX7-M..6
	48.6	48.4	47.9	47.1	46.1	40.7	33.5	TX7-M..7
	64.0	63.7	63.0	62.0	60.7	53.6	44.1	TX7-M..8
	89.7	89.3	88.3	86.9	85.0	75.1	61.8	TX7-M..9
55	15.7	15.8	15.7	15.6	15.3	13.6	11.3	TX7-M..3
	19.6	19.6	19.6	19.4	19.1	16.9	14.0	TX7-M..4
	24.0	24.1	24.0	23.7	23.4	20.8	17.2	TX7-M..5
	39.6	39.7	39.6	39.2	38.6	34.3	28.4	TX7-M..6
	48.8	48.9	48.8	48.3	47.5	42.3	35.0	TX7-M..7
	64.2	64.4	64.2	63.6	62.6	55.6	46.0	TX7-M..8
	90.0	90.3	90.0	89.1	87.7	78.0	64.5	TX7-M..9
50	15.5	15.7	15.7	15.7	15.6	13.9	11.6	TX7-M..3
	19.2	19.5	19.6	19.5	19.3	17.3	14.4	TX7-M..4
	23.6	23.9	24.0	23.9	23.7	21.2	17.6	TX7-M..5
	38.9	39.4	39.6	39.5	39.1	35.0	29.1	TX7-M..6
	47.9	48.6	48.8	48.7	48.2	43.1	35.9	TX7-M..7
	63.1	64.0	64.3	64.1	63.5	56.8	47.2	TX7-M..8
	88.4	89.6	90.1	89.8	89.0	79.5	66.2	TX7-M..9
45	14.9	15.3	15.5	15.6	15.5	14.0	11.7	TX7-M..3
	18.5	19.0	19.2	19.3	19.3	17.4	14.5	TX7-M..4
	22.7	23.3	23.6	23.7	23.7	21.3	17.8	TX7-M..5
	37.4	38.4	38.9	39.1	39.1	35.1	29.4	TX7-M..6
	46.1	47.3	48.0	48.3	48.1	43.3	36.2	TX7-M..7
	60.7	62.3	63.2	63.5	63.4	57.0	47.7	TX7-M..8
	85.1	87.3	88.6	89.0	88.8	79.9	66.8	TX7-M..9
40	13.9	14.6	14.9	15.2	15.3	13.8	11.6	TX7-M..3
	17.3	18.1	18.6	18.9	19.0	17.2	14.5	TX7-M..4
	21.3	22.2	22.8	23.1	23.2	21.1	17.7	TX7-M..5
	35.1	36.6	37.6	38.2	38.4	34.8	29.2	TX7-M..6
	43.2	45.1	46.3	47.0	47.3	42.8	36.1	TX7-M..7
	56.9	59.4	61.0	61.9	62.3	56.4	47.5	TX7-M..8
	79.8	83.3	85.5	86.8	87.3	79.0	66.5	TX7-M..9
35	12.6	13.5	14.1	14.5	14.7	13.5	11.4	TX7-M..3
	15.7	16.8	17.6	18.0	18.3	16.7	14.2	TX7-M..4
	19.2	20.6	21.5	22.1	22.5	20.5	17.4	TX7-M..5
	31.7	34.0	35.5	36.5	37.1	33.9	28.7	TX7-M..6
	39.1	41.9	43.8	45.0	45.7	41.7	35.4	TX7-M..7
	51.5	55.2	57.6	59.3	60.2	55.0	46.6	TX7-M..8
	72.2	77.3	80.8	83.1	84.4	77.0	65.2	TX7-M..9

Thermo™-Expansion Valves Series TX7

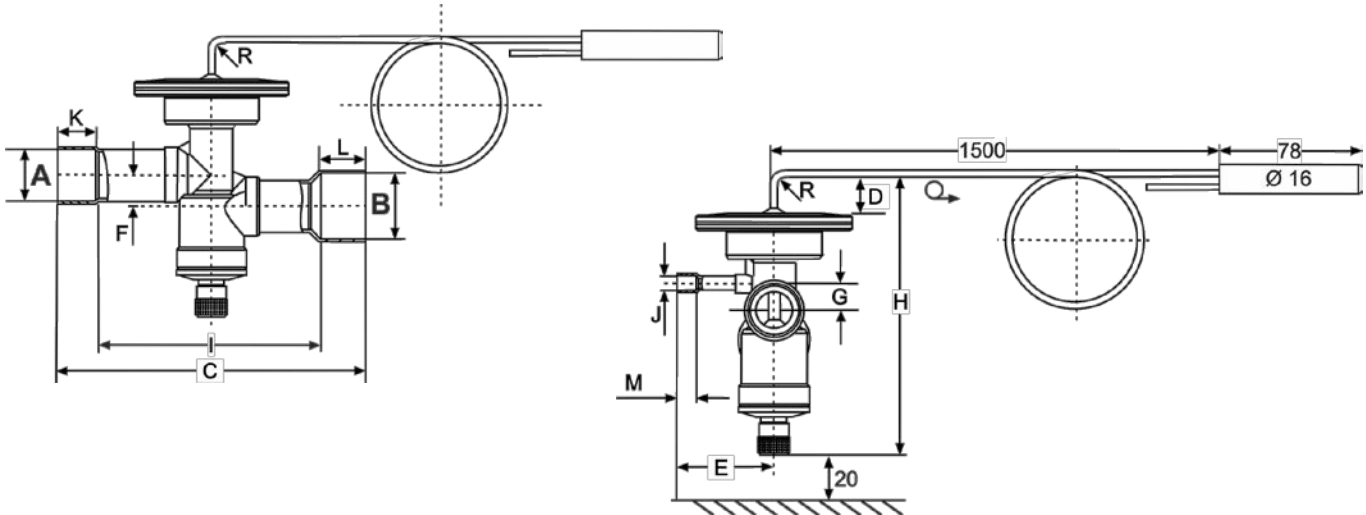
Technical Data

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, Not suitable for use with ammonia (R717)

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, UL

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

Dimensions (mm)



Size/ Type	Inlet *	Outlet *	External equalizer J ODF	Min. overall height (mm) H	Distance between inlet & outlet pipes (mm) I	Min. capillary tube bending height ** (mm) D	Other (mm)						
	A ODF	B ODF					C	E	F	G	K	L	M
TX7-..3	1/2"	5/8"	1/4"	106	109.8	10	130	39	13	8	9.1	11.1	8
TX7-..3M	12mm	16mm	6mm										
TX7-..4	5/8"	7/8"	1/4"		103								
TX7-..4M	16mm	22mm	6mm										
TX7-..5	5/8"	7/8"	1/4"		109								
TX7-..5M	16mm	22mm	6mm										
TX7-..6	7/8"	1-1/8"	1/4"										
TX7-..6M	22mm	28mm	6mm										
TX7-..7	7/8"	1-1/8"	1/4"										
TX7-..7M	22mm	28mm	6mm										
TX7-..8	7/8"	1-1/8"	1/4"										
TX7-..8M	22mm	28mm	6mm										
TX7-..9	7/8"	1-1/8"	1/4"										
TX7-..9M	22mm	28mm	6mm										

Note: *) Indication for normal flow direction

**) Bending radius R = 5 mm

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