

Did you know?

Refrigerant R452A

Refrigerants R448A/R449A in comparison with R404A (subject to ban) offer higher discharge temperature up to +30K above normal range in application of low evaporating temperatures. The consequence of such high discharge temperatures would be the oil decomposition and eventually compressor breakdown. To prevent above described issues, it is required to add liquid/vapour injection along with R448A/R449A or the use of different refrigerant such as R452A without liquid/vapour injection.

For retrofitting of systems from R404A to R452A, Emerson Thermo™-Expansion Valves designed for R404A can be used performing a setting readjustment.

Readjustment of Static Superheat Setting of Emerson R404A Thermo-Expansion Valves in Systems with R452A

TI-Series

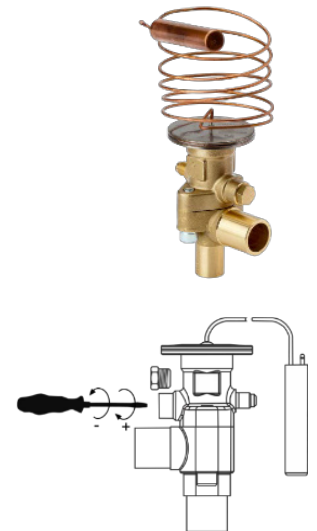
Evaporating temperature (°C)	TI...-SW... Number of turns
-40	3/4
-30	1
-20	1-1/3
-10	1-3/4
0	2-1/4
5	2-1/3



Note: The number of turns in clockwise direction.

T-Series

Evaporating temperature (°C)	XB1019-SW...	XC726-SW...
	Number of turns	
-40	3	4
-35	3.5	4.5
-30	4	5
-25	5	6
-20	5.5	7
-15	6	8
-10	7	9
-5	8	10
0	8.5	11.5
5	9.5	12.5
10	10	13.5



Capacity Changes

Furthermore, the retrofit from R404A to R452A will result in a cooling capacity change for Thermo-Expansion Valves as well as solenoid valves.

In the next table the expansion and solenoid valves capacity changes when used with R452A are indicated, in comparison to their R404A nominal values. Please, take those changes into account when retrofitting.

Condensing temperature (°C)	30°C						40°C						50°C					
	-40	-30	-20	-10	0	10	-40	-30	-20	-10	0	10	-40	-30	-20	-10	0	10
Evaporating temperature (°C)	Capacity Change for Thermo-Expansion Valves and Solenoid Valves from R404A to 452A																	
R452A in comparison to R404A	4.8%	5.2%	5.9%	6.8%	8.4%	5.5%	5.8%	6.3%	6.9%	7.9%	7.1%	7.2%	7.4%	7.8%	8.4%	4.8%	5.2%	5.9%