



Upgrade and service with ease Extend lifetime with modular design

Thermostatic expansion valves Type TE5-55

Flexible

Upgrade with backward compatible

valve technology. Mix and match parts for optimal performance and for program for minimum stock.





TE5-55 – Thermostatic expansion valve

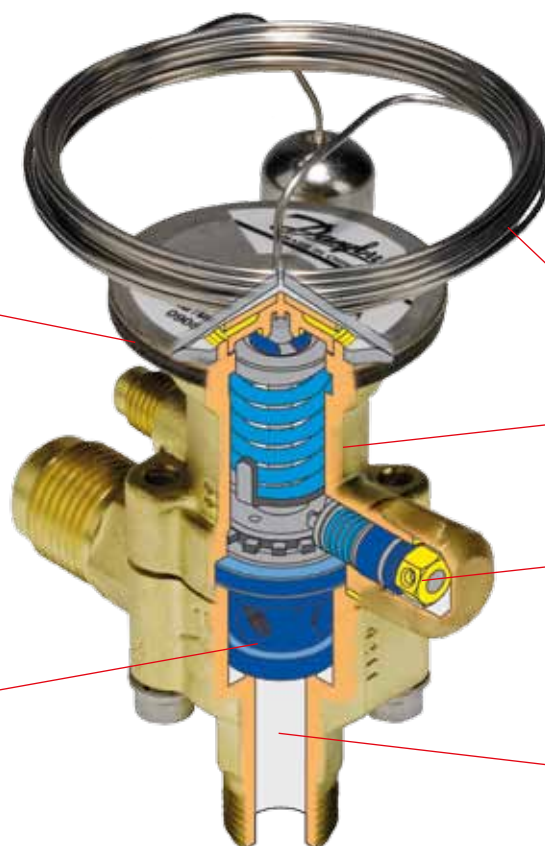
Thermostatic expansion valves TE5-55 regulate the injection of refrigerant liquid into evaporators for medium sized plants (rated capacities from 19 to 356 kW for R22). Injection is controlled by the refrigerant superheat. Therefore the valves are especially suitable for liquid injection in "dry" evaporators where the superheat at the evaporator outlet is proportional to the evaporator load.

Features

Laser-welded power element in stainless steel

- longer diaphragm life
- high pressure tolerance and working pressure
- high corrosion resistance

To ensure long operating life, the valve cone and seat are made of a special alloy with particularly good wear qualities.



Stainless steel capillary tube and bulb

- high corrosion resistance
- high strength and vibration resistance

Large parts program ensures minimal stocks

Easy adjustment of superheat setting

More connection possibilities

- solder x solder
- flare x flare
- flanges
- straightway or angleway

Features

Mix and Match parts program
Stainless steel power element, capillary tube and bulb
Easy to mount bulb strap
Dual diaphragm
Max. working pressure 28 bar
Wide balanced capacity range

Values

- Smaller stock, less parts
- No corrosion, no broken tube
- Easy mounting
- Long lifetime - high reliability
- Wider application area
- Easy selection

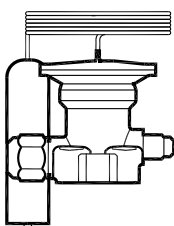
Technical data and ordering

Thermostatic element - including bulb strap **R407C**

Valve type	Pressure equalization	Capillary tube	Code no.	
			Range N -40 to +10°C	
	1/4 in. / 6 mm	m	Without MOP	MOP +15°C
TEZ 5	Ext. ¹⁾	3	067B3278	067B3277
TEZ 12	Ext.	3	067B3366	067B3367
TEZ 20	Ext.	3	067B3371	067B3372
TEZ 55	Ext.	3	067G3240	067G3241

¹⁾ Pressure equalization, please contact Danfoss.

Thermostatic element - including bulb strap. **R134a**



Valve type	Pressure equalization	Capillary tube	Code no.		
			Range N -40 to +10°C		Range NM -40 to -5°C
	1/4 in. / 6 mm	m	Without MOP	MOP +15°C	MOP 0°C
TEN 5	Ext. ¹⁾	3	067B3297	067B3298	067B3360
TEN 12	Ext.	3	067B3232	067B3233	
TEN 12	Ext.	5	067B3363		
TEN 20	Ext.	3	067B3292	067B3293	
TEN 20	Ext.	5	067B3370		
TEN 55	Ext.	3	067G3222	067G3223	
TEN 55	Ext.	5	067G3230		

¹⁾ Pressure equalization, please contact Danfoss.

Thermostatic element - including bulb strap **R404A/R507**

Valve type	Pressure equalization	Capillary tube	Code no.					
			Range N -40 to +10°C		Range NM -40 to -5°C	Range NL -40 to -15°C	Range B -60 to -25°C	
	1/4 in. / 6 mm	m	Without MOP	MOP +15°C	MOP 0°C	MOP -10°C	Without MOP	MOP -20°C
TES 5	Ext. ¹⁾	3	067B3342		067B3357	067B3358	067B3344	067B3343
TES 12	Ext.	3	067B3347		067B3345	067B3348		067B3349
TES 12	Ext.	5	067B3346					067B3350
TES 20	Ext.	3	067B3352		067B3351	067B3353		067B3354
TES 20	Ext.	5	067B3356					067B3355
TES 55	Ext.	3	067G3302		067G3303	067G3304		067G3305
TES 55	Ext.	5	067G3301					067G3306

¹⁾ Pressure equalization, please contact Danfoss.

Thermostatic element - including bulb strap **R22/R407C**

Valve type	Pressure equalization	Capillary tube	Code no.					
			Range N -40°C to +10°C		Range NM -40 to -5°C	Range NL -40 to -15°C	Range B -60 to -25°C	
	1/4 in. / 6 mm	m	Without MOP	MOP +15°C	MOP 0°C	MOP -10°C	Without MOP	MOP -20°C
TEX 5	Ext. ¹⁾	3	067B3250	067B3267	067B3249	067B3253	067B3263	067B3251
TEX 12	Ext.	3	067B3210	067B3227	067B3207	067B3213		067B3211
TEX 12	Ext.	5	067B3209					067B3212
TEX 20	Ext.	3	067B3274	067B3286	067B3273	067B3275		067B3276
TEX 20	Ext.	5	067B3290					067B3287
TEX 55	Ext.	3	067G3205	067G3220	067G3206			067G3207
TEX 55	Ext.	5	067G3209					067G3217

¹⁾ Pressure equalization, please contact Danfoss.

Bulb strap (delivered with the valve) and spare

Type	Length	Max. diameter of suction line	Code no.
TE5 and TE12	225 mm	2 1/8" (54 mm)	068U1347
TE20 and TE55	350 mm	3 1/2" (89 mm)	067N0555

Technical data and ordering

Orifice assembly



Valve type	R22 Rated capacity Range N: -40°C to 10°C kW	R22 Rated capacity Range B: -60°C to -25°C kW	R407C Rated capacity Range N: -40°C to 10°C kW	R134a Rated capacity range N: -40°C to 10°C kW	R404A/507 Rated capacity range N: -40°C to 10°C kW	R404A/507 Rated capacity range B: -60°C to -25°C kW	Orifice no.	Code no.
TEX 5	11.1	6.4	10.8	7.0	8.7	5.7	0.5	067B2788
TEX 5	18.8	11.0	18.3	12.0	14.6	9.9	1	067B2789
TEX 5	26.1	15.8	25.6	16.9	20.1	14.4	2	067B2790
TEX 5	33.9	19.5	33.0	21.7	26.3	17.3	3	067B2791
TEX 5	44.8	25.9	43.9	29.0	34.6	22.9	4	067B2792
TEX 12	60.0	35.6	58.8	39.0	50.6	24.2	5	067B2708
TEX 12	72.7	42.0	71.2	47.5	61.0	28.4	6	067B2709
TEX 12	84.5	46.4	81.4	55.8	70.6	31.0	7	067B2710
TEX 20	113.6	55.0	104.0	69.5	77.6	43.8	8	067B2771
TEX 20	131.5	57.5	113.5	78.4	84.5	44.0	9	067B2773
TEX 55	156.3	68.2	148.4	102.8	118.4	52.3	10	067G2701
TEX 55	190.0	77.8	177.4	124.7	143.2	58.9	11	067G2704
TEX 55	228.8	95.3	215.3	154.7	170.3	71.0	12	067G2707
TEX 55	281.0	131.4	273.6	190.8	209.8	100.2	13	067G2710

The rated capacity is based on:

Evaporating temperature

Condensing temperature

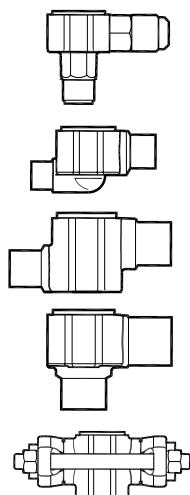
Refrigerant temperature ahead of valve

$t_e = +4^\circ\text{C}$ for range N and $t_e = -30^\circ\text{C}$ for range B

$t_c = +38^\circ\text{C}$

$t_1 = +37^\circ\text{C}$

Valve body



Type	Connection Inlet x Outlet		Code no.			
	in.	mm	Flare angleway	Solder angleway	Solder straightway	Solder flanges
TE 5	$\frac{1}{2} \times \frac{5}{8}$ $\frac{1}{2} \times \frac{7}{8}$ $\frac{5}{8} \times \frac{7}{8}$ $\frac{7}{8} \times 1\frac{1}{8}$		067B4013	067B4009 ¹⁾ 067B4010 ¹⁾ 067B4011 ¹⁾ 067B4034 ²⁾	067B4007 ¹⁾ 067B4008 ¹⁾ 067B4032 ¹⁾ 067B4033 ²⁾	
TE 5		12 x 16 12 x 22 16 x 22 22 x 28	067B4013	067B4004 ¹⁾ 067B4005 ¹⁾ 067B4012 ¹⁾ 067B4037 ²⁾	067B4002 ¹⁾ 067B4003 ¹⁾ 067B4035 ¹⁾ 067B4036 ²⁾	
TE 12	$\frac{5}{8} \times \frac{7}{8}$ $\frac{7}{8} \times 1$ $\frac{7}{8} \times 1\frac{1}{8}$			067B4023 ²⁾	067B4021 ²⁾	067B4025 ¹⁾ 067B4026 ¹⁾
TE 12		16 x 22 22 x 25 22 x 28		067B4017 ²⁾	067B4016 ²⁾	067B4027 ¹⁾ 067B4015 ¹⁾
TE 20	$\frac{7}{8} \times 1\frac{1}{8}$	22 x 28		067B4023 ²⁾ 067B4017 ²⁾	067B4021 ²⁾ 067B4016 ²⁾	
TE 55	$1\frac{1}{8} \times 1\frac{3}{8}$	28 x 35		067G4004 ³⁾ 067G4002 ³⁾	067G4003 ³⁾ 067G4001 ³⁾	

¹⁾ ODF x ODF

²⁾ ODF x ODF

³⁾ ODM x ODM

ODF = Internal diameter

ODM = External diameter

When the subcooling $\neq 4$ K then:

1. Table value x Factor = Plant capacity
2. Plant capacity / Factor = Table value

Example:

Refrigerant = R404A

$Q_{nom} = 10$ kW

$t_e = -10^\circ\text{C}$

$t_c = 45^\circ\text{C}$

$Dt_{sub} = 25$ K

Selection:

1. TE5, Orifice 03 = 15.3 kW x 1.46 = 22.34 kW → Valve too large

Right selection:

2. 10 kW / 1.46 = 6.85 kW → TE5, Orifice 01



Thermostatic element

Orifice

Valve body

Product range

The range is build up on four valve sizes covering the capacity range combined with the orifice program.

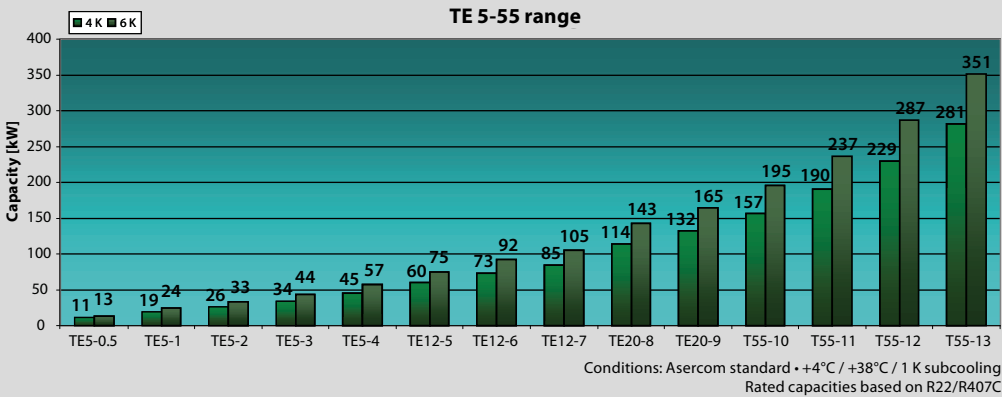


Parts program

The mix and match parts program give the possibility of designing exactly the valve needed within refrigerant, capacity and connection type.



Capacity range without gap or overlap



A reliable solution

The performance of the expansion valve is one of the key figures in a refrigeration plant. Correct dimensioning and adjustment is a must if the plant has to work perfectly.

The range of thermostatic expansion valves covers all applications. The wide TE range makes selection easy to get exactly the valve you need for your application and the MIX and MATCH feature provides optimal flexibility. With only a few parts, you can design your valve based on – refrigerant, capacity and connection.



Air conditioning application



Refrigeration application



Freezing application

The Danfoss expansion valve program consists of:



Thermostatic expansion valves in stainless steel for smaller plants



Thermostatic expansion valves for smaller and medium sized plants



Electronically controlled expansion valves for smaller plants



Electronically controlled expansion valves for medium sized plants



Electronically controlled expansion valves for larger plants