

A world leader in climate and energy technology

The Danfoss Group operates globally with the primary aims of making modern living possible for our stakeholders and being a leader in refrigeration, heating, power electronics, and mobile hydraulics.

We employ 24,000 people, and produce approximately 250,000 components each day at our 76 factories in 25 countries.

We promise leadership in our businesses through reliability, excellence, and innovation – driving true customer satisfaction and solutions within climate and energy.

Extensive experience in all key HVAC/R segments

Danfoss plays a leading role in research, development and production in a wide spectrum of industries, and has been a key player in the HVAC/R field for more than 75 years. Our Refrigeration & Air Conditioning Division designs, produces and markets a comprehensive range of automated solutions and compressors for a wide variety of HVAC/R segments, including:

- Heat Pumps
- Commercial Air Conditioning
- Residential Air Conditioning
- Commercial Refrigeration
- Household, Light Commercial and Mobile Refrigeration
- Wholesalers & Installers
- Industrial Refrigeration
- Food Retail



Learn more at ra.danfoss.com

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AD135086437198en-000502

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Achieve the highest precision flow control - **regardless of the system conditions**

Wide range of thermostatic expansion valves



TU
Celebrating
25 years of
passion for
expansion

Main Features

Stainless steel, hermetically tight solder version

- High connection strength
- High corrosion resistance
- Capillary tube joints of high strength and vibration resistance

Bimetal connections

- Straightforward and fast soldering (no wet cloth or refrigeration pliers required).

Laser-welded **power element** in stainless steel

- Longer diaphragm life
- High pressure tolerance and working pressure
- High corrosion resistance

Compact design

- Small dimensions and low weight

Can be supplied with **MOP** (Maximum Operating Pressure)

- Protects the compressor motor against excessive evaporating pressure during normal operation

Laser welded stainless steel thermostatic element

Capillary tube and bulb in stainless steel

Extremely strong and corrosion resistant

Laser engraved label

Allen key superheat setting screw for easy adjustment

Bi-metal connections

TUBE Thermostatic Expansion Valve

Thermostatic expansion valve

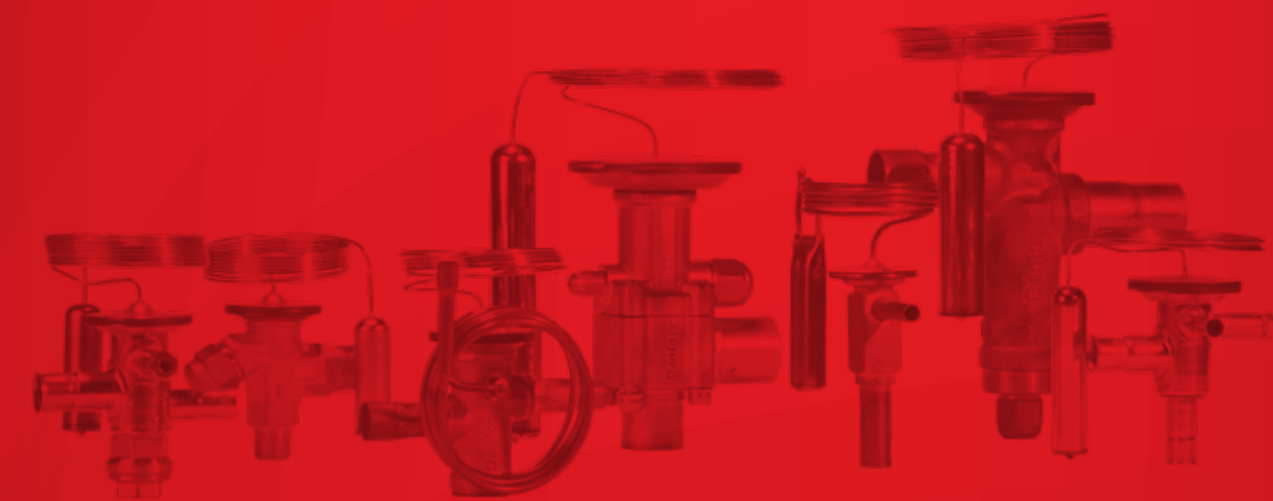
Danfoss' range of Thermostatic Expansion Valves are designed to ensure a precise control of the injection of refrigerant liquid into evaporators. They contribute to **higher system reliability** by preventing liquid migration back to the compressor in case of unstable power or power shut down.

Depending on type, the Thermostatic Expansion Valves are delivered with connections in SAE flare or solder connections in either copper or stainless steel/copper bi-metal. The valves diaphragm assemblies are laser welded which ensures a long lifetime of the system.

Danfoss Thermostatic Expansion Valves are available as complete valves (fixed orifice) or parts programme, i.e. with separate valve body and orifice assemblies.

Danfoss has an extensive experience as industry leader thanks to its recognised innovation. This experience is reflected in every feature of its Thermostatic Expansion Valve programme, which ensures the optimal performance for every HVAC/R application.

In 2020, the company celebrates its passion for expansion with the 25th anniversary of the TU valves and the release of new Electric Expansion Valves ETS 5M for VRF, CRAC units and residential heat pumps.



Reliable function • Laser Welding • Wide capacity range



They are compatible with the several major refrigerants. For more information, please check **Coolselector.danfoss.com**

Choose the optimum solution



Type		TD1 series		T2 series		TUA series		TUB series		TCAE		TCBE		TR6 ⁽⁵⁾		TGE series		TE 5 - TE 55 series				
		• Designed for small applications • Wide temperature range		• Standard valve for multiple applications		• Compact design and light weight • With steel / copper bi-metal connections for fast soldering		• Compact design and light weight • With steel / copper bi-metal connections for fast soldering		• Compact design and light weight • With steel / copper bi-metal connections for fast soldering		• Compact design and light weight • With steel / copper bi-metal connections for fast soldering		• Compact design and light weight • With steel / copper bi-metal connections for fast soldering		• With dual diaphragm for long lifetime		• Supplied as Parts programme - element, orifice and valve body				
Main applications	A/C Systems																					
	Transport Refrigeration																					
	Display Cabinets																					
	Ice Making Machine																					
	Water Chiller																					
	Computer Room																					
	Cold Room																					
	Heat Pumps																					
	Commercial Refrigeration																					
Orifice type		Fixed		Exchangeable		Exchangeable		Fixed		Exchangeable		Fixed		Fixed		Fixed		Exchangeable				
Superheat		Fixed / Adjustable		Adjustable		Adjustable		Adjustable		Adjustable		Adjustable		Adjustable		Adjustable		Adjustable				
Equalisation		Internal	External	Internal	External	Internal	External	Internal	External	External	External	External	External	External	External	External	External	External	External			
R134a/R513A		TD 1	TDE 1	T2	TE2	TUA TUAE		TUB TUBE		TCAE		TCBE		—		TGE		TE 5 - TE 55				
R404A/R452A/R448A/R449A		TD 1	TDE 1	T2	TE2									—		TGE		TE 5 - TE 55				
R410A/R452B/R454B ⁽¹⁾		—	—	—	—									TR 6		TGE		—				
Max. working pressure (PS)		34 bar		34 bar		34 bar (R410A: 42.5 bar)		34 bar (R410A: 42.5 bar)		34 bar (R410A: 45.5 bar)		34 bar (R410A: 45.5 bar)		45.5 bar		46 bar		28 bar				
Technical Specifications	Capacity for:	R407C	0.5 – 5.3 kW 0.1 – 1.5 TR		0.9 – 19.7 kW 0.2 – 5.6 TR		0.4 – 14 kW 0.1 – 3.9 TR		0.4 – 13.9 kW 0.1 – 3.9 TR		17.8 – 25.3 kW 5.0 – 7.1 TR		17.8 – 25.3 kW 5.07 – 7.1 TR		10.6 – 24.6 kW 3 – 7 TR		9 – 148 kW 2.5 – 42 TR		11 – 232 kW 3 – 66 TR			
		R134a/ R513A	0.4 – 3.8 kW 0.1 – 1.1 TR		0.5 – 8.6 kW ⁽²⁾ 0.1 – 2.5 TR ⁽²⁾		0.2 – 7.7 kW ⁽²⁾ 0.1 – 2.2 TR ⁽²⁾		0.2 – 7.7 kW ⁽²⁾ 0.1 – 2.2 TR ⁽²⁾		7.7 – 16.5 kW ⁽²⁾ 2.2 – 4.7 TR ⁽²⁾		7.7 – 16.5 kW ⁽²⁾ 2.2 – 4.7 TR ⁽²⁾		-		6 – 102 kW 1.5 – 29 TR		5 – 165 kW 1.5 – 47 TR			
		R404A	0.4 – 4.2 kW • 0.1 – 1.2 TR		-		-		-		-		-		-		7 – 105 kW • 2 – 30 TR		7 – 183 kW • 2 – 52 TR			
		R448A/ R449A	0.9 – 6.7 kW 0.2 – 1.9 TR		0.9 – 19.8 kW • 0.2 – 5.7 TR ⁽³⁾ 0.8 – 19.1 kW • 0.2 – 5.5 TR ⁽⁴⁾		0.4 – 13.9 kW • 0.1 – 4.1 TR ⁽³⁾ 0.4 – 13.6 kW • 0.1 – 4.2 TR ⁽⁴⁾		0.4 – 13.9 kW • 0.1 – 4.1 TR ⁽³⁾ 0.4 – 13.6 kW • 0.1 – 4.2 TR ⁽⁴⁾		17.6 – 25.1 kW • 5.1 – 7.4 TR ⁽³⁾ 16.9 – 23.9 kW • 4.9 – 7 TR ⁽⁴⁾		17.6 – 25.1 kW • 5.1 – 7.4 TR ⁽³⁾ 16.9 – 23.9 kW • 4.9 – 7 TR ⁽⁴⁾		-		-		9 – 225 kW 2.5 – 64 TR			
		R452A	0.7 – 5.6 kW • 0.2 – 1.6 TR		0.6 – 15.8 kW • 0.2 – 4.4 TR		0.2 – 7.2 kW • 0.1 – 2.1 TR		0.2 – 7.2 kW • 0.1 – 2.1 TR		12.6 – 18.1 kW • 3.6 – 5.2 TR		12.6 – 18.1 kW • 3.6 – 5.2 TR		-		-		7 – 172 kW • 2 – 49 TR			
		R410A	-		-		-		-		-		-		-		-		12 – 182 kW • 3.5 – 52 TR		-	
		R452B	-		-		-		-		-		-		-		-		12 – 208 kW • 3.5 – 59 TR		-	
		R454B	-		-		-		-		-		-		-		-		14 – 229 kW • 4 – 65 TR		-	
	Standard temperature ranges available	-40 – 10 °C		-40 – 10 °C		-40 – 10 °C		-40 – 10 °C		-40 – 10 °C		-40 – 10 °C		-40 – 10 °C		-10 – 15 °C		-40 – 10 °C		-40 – 10 °C		
		—		-40 – -5 °C		-		-40 – -5 °C		-		-40 – -5 °C		-40 – -5 °C		—		—		-40 – -5 °C		
		—		-40 – -15 °C		-40 – -15 °C		-40 – -15 °C		-40 – -15 °C		-40 – -15 °C		-40 – -15 °C		—		—		-40 – -15 °C		
		—		-60 – -25 °C		-60 – -25 °C		-60 – -25 °C		-60 – -25 °C		-60 – -25 °C		-60 – -25 °C		—		—		-60 – -25 °C		
		-25 – 10 °C		—		—		—		—		—		—		—		-25 – 10 °C		—		
		—		—		—		—		—		—		—		—		-30 – 15 °C		—		
		-25 – 15 °C		—		—		—		—		—		—		—		—		—		
	Valve body configuration		Angleway / Straightway		Angleway		Straightway		Angleway / Straightway		Straightway		Angleway / Straightway		Straightway		Straightway		Angleway / Straightway			
	Connections		Copper solder		SAE Flare / Copper solder		Bi-metal solder		Bi-metal solder		Bi-metal solder		Bi-metal solder		Copper solder / Flare / Threaded version		Copper solder / Flare / MIO / ORFS		Brass solder / Flange / Flare			
	Approvals		UL (angleway only)		GOST / EAC		GOST		GOST		GOST		GOST		UL · GOST		UL · GOST		GOST			
	Element		Stainless steel		Stainless steel		Stainless steel		Stainless steel		Stainless steel		Stainless steel		Stainless steel		Stainless steel		Stainless steel			
Valve body		Brass		Stainless steel		Stainless steel		Stainless steel		Stainless steel		Stainless steel		Brass		Brass		Brass				
Bulb and capillary tube		Copper		Stainless steel		Stainless steel		Stainless steel		Stainless steel		Stainless steel		Stainless steel		Stainless steel		Stainless steel				

⁽¹⁾R452/4B only for TG and TER452/4B only for TG and TE -⁽²⁾Capacities are for R513A only -⁽³⁾Capacities are for R448A only -⁽⁴⁾Capacities are for R449A only -⁽⁵⁾TR6 is for North America only