

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

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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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

Thermostatic expansion valve

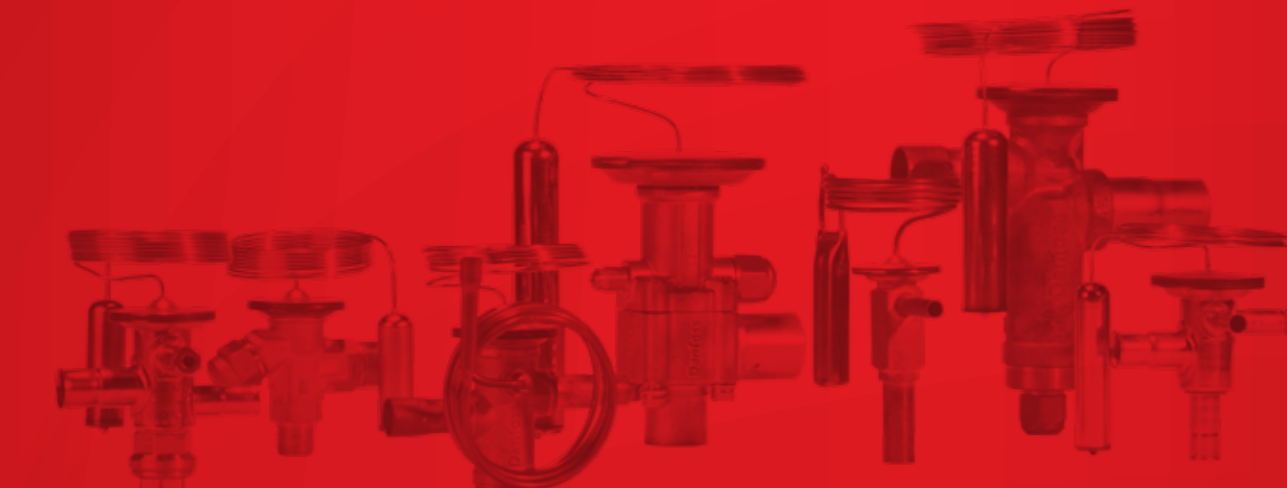
Danfoss' range of Thermostatic Expansion Valves are designed to ensure a precise control of the injection of refrigerant liquid into evaporators. They contribute to **higher system reliability** by preventing liquid migration back to the compressor in case of unstable power or power shut down.

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	• 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										
Main Characteristics (sub types)										
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	
R134a/R513A	TD 1 TDE 1	T2 TE2					-	TGE	TE 5 - TE 55	
R404A/R452A/R448A/R449A	TD 1 TDE 1	T2 TE2	TUA TUAE	TUB TUBE	TCAE	TCBE	-	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⁾		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⁾		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		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 – -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	
Materials										
Element	Stainless steel	Stainless steel	Stainless steel	Stainless steel	Stainless steel	Stainless steel	Stainless steel	Stainless steel	Stainless steel	
Valve body	Brass	Brass	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