

## 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

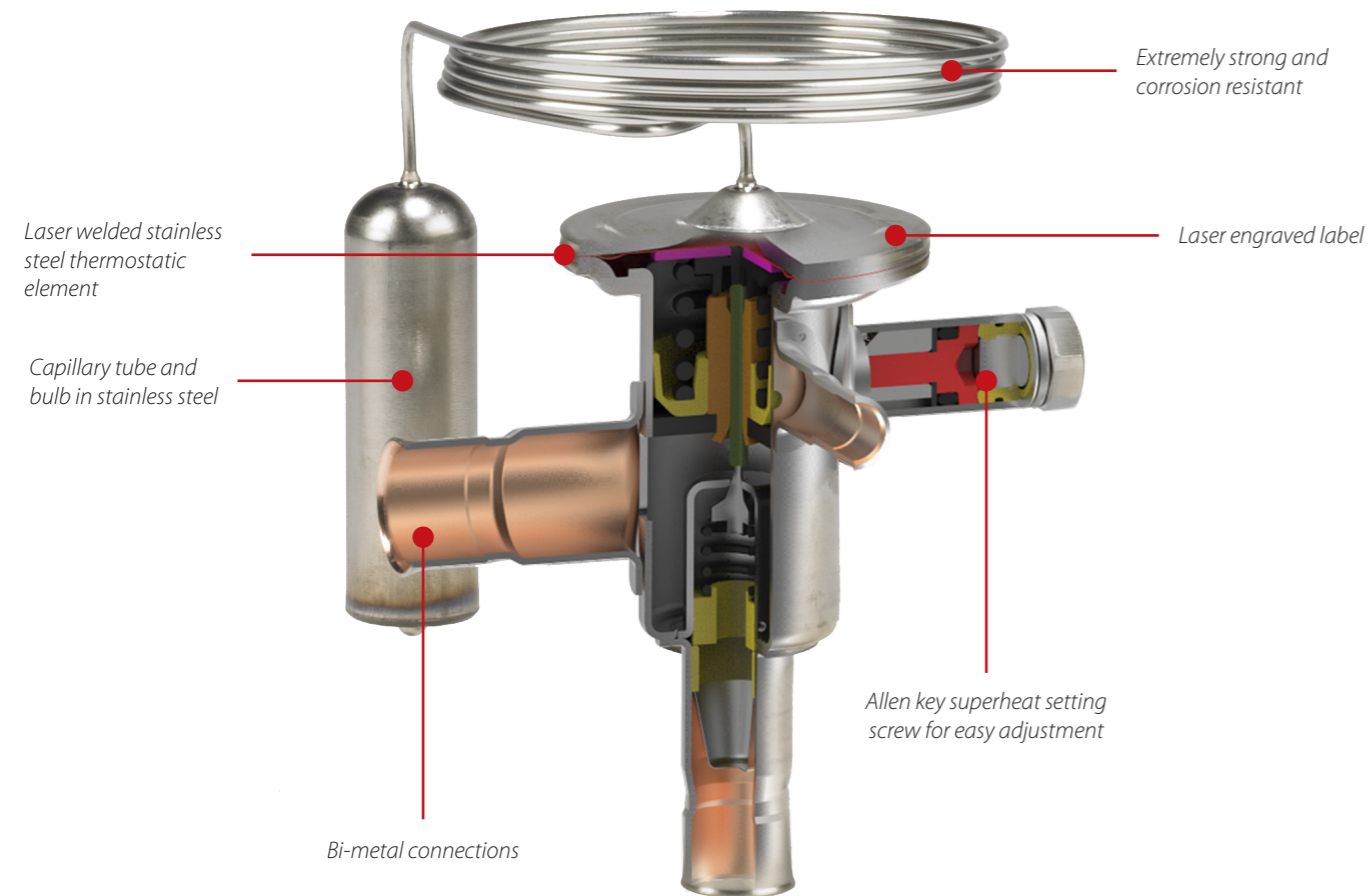
**Compact design**

- Small dimensions and low weight

Can be supplied with **MOP**

(Maximum Operating Pressure)

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



TUBE Thermostatic Expansion Valve



For more information, please check [Coolselector.danfoss.com](http://Coolselector.danfoss.com)

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

Wide range of thermostatic expansion valves

**Future proof**

Qualified for A2L and natural refrigerants



Choose the optimum solution



Type		TD1 series	T2 series	TUA series	TUB series	TCAE	TCBE	TR6 <sup>(5)</sup>	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										
	Cold Room										
	Heat Pumps										
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 • TD 1    External • TDE 1	Internal • T2    External • TE2	Internal • TUA    External • TUA E	Internal • TUB    External • TUBE	External	External	External	External	External	
	Max. working pressure (PS)	34 bar	34 bar	34 bar (R410A: 45.5 bar)	34 bar (R410A: 4.5 bar)	34 bar (R410A: 45.5 bar)	34 bar (R410A: 45.5 bar)	45.5 bar	46 bar	28 bar	
Technical Specifications	Capacity for:	R134a/R513A	0.4 – 3.8 kW • 0.1 – 1.1 TR	0.5 – 8.6 kW • 0.1 – 2.5 TR <sup>(2)</sup>	0.2 – 7.7 kW • 0.1 – 2.2 TR <sup>(2)</sup>		7.7 – 16.5 kW • 2.2 – 4.7 TR <sup>(2)</sup>		–	6 – 102 kW • 1.5 – 29 TR	5 – 165 kW • 1.5 – 47 TR
		R448A/R449A	0.9 – 6.7 kW 0.2 – 1.9 TR	0.9 – 19.8 kW • 0.2 – 5.7 TR <sup>(3)</sup> 0.8 – 19.1 kW • 0.2 – 5.5 TR <sup>(4)</sup>	0.4 – 13.9 kW • 0.1 – 4.1 TR <sup>(3)</sup> 0.4 – 13.6 kW • 0.1 – 4.2 TR <sup>(4)</sup>		17.6 – 25.1 kW • 5.1 – 7.4 TR <sup>(3)</sup> 16.9 – 23.9 kW • 4.9 – 7 TR <sup>(4)</sup>		–	–	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
		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
		R404A	0.4 – 4.2 kW • 0.1 – 1.2 TR	–	–	–	–	–	–	7 – 105 kW • 2 – 30 TR	7 – 183 kW • 2 – 52 TR
		R1234yf	Not Approved	0.5 – 7.3 kW • 0.1 – 2.1 TR	0.3 – 6.6 kW • 0.1 – 1.9 TR		–		–	Not Approved	5.6 – 24.8 kW • 1.6 – 7.1 TR <sup>(1)</sup>
		R454C	Not Approved	0.8 – 14.8 kW • 0.2 – 4.2 TR	0.5 – 11.2 kW • 0.1 – 3.2 TR		–		–	Not Approved	9.1 – 40.7 kW • 2.6 – 11.6 TR <sup>(1)</sup>
		R455A	<sup>(6)</sup>	0.9 – 18.3 kW • 0.2 – 5.2 TR	0.5 – 12.9 kW • 0.1 – 3.7 TR		–		–	Not Approved	10.3 – 46.1 kW • 2.9 – 13.1 TR <sup>(1)</sup>
		R410A	–	–	–	–	–	–	–	12 – 182 kW • 3.5 – 52 TR	–
		R452B	–	–	–	–	–	–	–	12 – 208 kW • 3.5 – 59 TR	–
	R454B	–	–	–	–	–	–	–	14 – 229 kW • 4 – 65 TR	–	
	R290	0.6 – 5.6 kW • 0.16 – 1.6 TR	Not Approved	0.49 – 27.9 kW • 0.14 – 7.9 TR		–		–	10 – 152 kW • 3 – 43 TR	Not Approved	
	Standard temperature ranges available		-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	
		–	-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	–	
Valve body configuration	Angleway / Straightway	Angleway	Straightway	Angleway / Straightway	Straightway	Straightway	Straightway	Straightway	Straightway	Angleway / Straightway	
Connections	Copper solder	SAE Flare / Copper solder	Bi-metal 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	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	Stainless steel	Stainless steel	Stainless steel	Stainless steel	Stainless steel	Stainless steel	Stainless steel	Stainless steel	Stainless steel	

<sup>(1)</sup> Capacity data is only for TE 5 - <sup>(2)</sup> Capacities are for R513A only - <sup>(3)</sup> Capacities are for R448A only - <sup>(4)</sup> Capacities are for R449A only

<sup>(5)</sup> TR6 is for North America only - <sup>(6)</sup> Approved but capacity data not available yet