

# Thermo™ – Expansion Valves

## Series TIH



Many years of experience and deep expertise with mechanical expansion valves helps us to achieve more competitive, secure and sustainable systems. Emerson Commercial and Residential Solutions is continually and successfully expanding its product offering with new features and performance in order to meet today's market of high-efficiency system requirements.

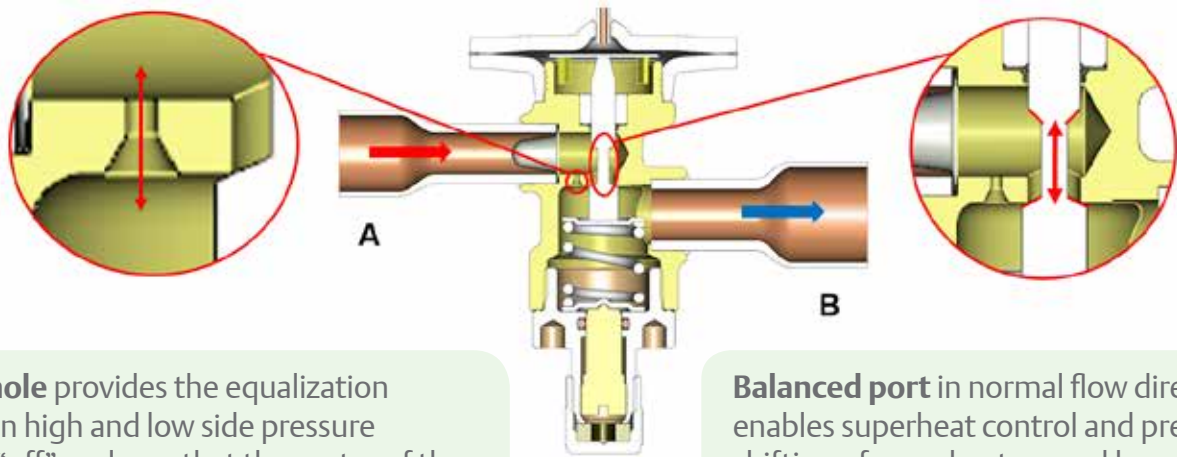
Alco Controls' high-quality range of Thermo-Expansion Valves are designed predominantly for heat pumps, air conditioning, small chillers, precision cooling and refrigeration. The valves are ideal for applications requiring hermetic/compact size combined with stable and accurate control over wide load and evaporating temperature ranges.

### Features

- Compact size and hermetic design
- Up to 33kW for R410A, 49 kW for R32
- Brazing connections (imperial and metric) with straight through configuration
- Stainless steel power element resists corrosion
- Large diaphragm provides smoother and consistent valve control
- Internal or external equalizer
- External superheat adjustment
- Standard with integrated 100 mesh size strainer at inlet of valve
- Packaging with 20 pieces necked including bulb fastening accessories and single operating instruction
- Balanced port design
- Bleed hole function on request

### Capacity table

Refrigerant	Nominal Capacity (kW)								
	Size								
	2	3	4	5	6	7	8	9	A
R32	5.4	9.0	12.5	18.4	21.8	31.0	34.6	39.7	49.4
R410A	3.6	6.0	8.4	12.4	14.6	20.8	23.2	26.7	33.2
R452B	4.1	6.9	9.6	14.2	16.7	23.8	26.6	30.5	38.0
R454B	4.2	6.9	9.7	14.2	16.8	23.9	26.7	30.7	38.2
R134a	2.4	4.0	5.6	8.2	9.7	13.8	15.4	17.7	22.0
R513A	2.2	3.6	5.0	7.4	8.8	12.5	13.9	16.0	19.9
R407C	3.3	5.4	7.6	11.2	13.2	18.8	21.0	24.1	30.0
R448A	3.1	5.1	7.2	10.6	12.5	17.8	19.9	22.8	28.4
R449A	3.0	5.0	7.0	10.3	12.2	17.4	19.4	22.3	27.7



**Bleed hole** provides the equalization between high and low side pressure during “off” cycle, so that the motor of the compressor can start with minimum torque.

Due to the many variables, each application must be tested to determine the correct size of bleed hole.

**Balanced port** in normal flow direction enables superheat control and prevents shifting of superheat caused by variation of condensing pressure

## Nomenclature

	<b>TIH-</b>	⏏	⏏	⏏	⏏	⏏	⏏
<b>Refrigerant</b>	Z: R410A/R32/R452B/R454B	N: R407C					
	M: R134a	C: R513A					
	B: R448A/R449A	P: R290*					
<b>Charge and equalizer type</b>	0: Liquid, Internal equalizer						
	1: MOP, Internal equalizer						
	2: Liquid, External equalizer						
	3: MOP, External equalizer						
<b>Capacity Code</b>	2, 3, 4, 5, 6, 7, 8, 9, A**						
<b>Connection Unit</b>	: Imperial	m: Metric					
<b>Others</b>	Bxxx: Bleed hole with size in mm						
	Sxxx: Special setting / MOP						
<b>Specials</b>	...-FLR*: R290 Version						

## Technical overview

Maximum working pressure PS	46 bar
Factory test pressure PT	50.6 bar
Medium temperature range TS	-40...+70°C
Power element	Stainless steel, laser welded
Connections	Copper ODF
Gross weight	270-305 g (depend on the valve size)
Label	Laser printing

*Note: \*) Please see the Product Guide 2019 for Hydrocarbons product guide for TIH-P...-FLR versions*

*\*\*\*) Versions with capacity code “A” are delivered standard without strainer*

[climate.emerson.com/en-gb](http://climate.emerson.com/en-gb)

**Emerson Commercial & Residential Solutions**

Emerson Climate Technologies GmbH - Pascalstrasse 65 - 52076 Aachen, Germany

Tel. +49 (0) 2408 929 0 - Fax: +49 (0) 2408 929 570 - Internet: [climate.emerson.com/en-gb](http://climate.emerson.com/en-gb)

The Emerson logo is a trademark and service mark of Emerson Electric Co. Emerson Climate Technologies Inc. is a subsidiary of Emerson Electric Co. Copeland is a registered trademark and Copeland Scroll is a trademark of Emerson Climate Technologies Inc.. All other trademarks are property of their respective owners. Emerson Climate Technologies GmbH shall not be liable for errors in the stated capacities, dimensions, etc., as well as typographic errors. Products, specifications, designs and technical data contained in this document are subject to modification by us without prior notice. Illustrations are not binding.

© 2020 Emerson Climate Technologies, Inc.

**EMERSON. CONSIDER IT SOLVED.™**