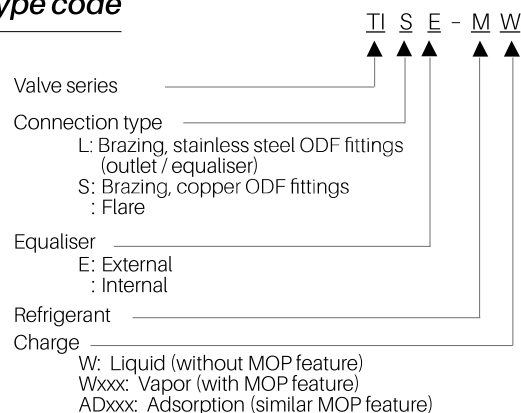


# Thermo™ - expansion valves series TI with interchangeable orifices

## Features

- Laser-welded diaphragm / power element with large diameter for high reliability and maximum lifetime
- Constant superheat across wide application ranges
- Easy and precise superheat setting by internal fine threads
- Three styles of connections:
  - TILE: Stainless steel brazed fittings eliminate the need of wet rags during brazing
  - TIS(E): Copper brazed fittings (valve requires wet rag during brazing)
  - TI(E): Flare
- With capacities between 0.5kW and 19.4 kW (R448A) ideally suited for service work
- Internal or external equaliser
- Cleanable / exchangeable inlet strainer in orifice assembly
- Inlet brazing adapter
- Capillary tube length 1.5 m
- Max. allowable pressure PS: 45 bar
- Temperature range TS: -45...+75°C
- CE Marking acc. PED not required

## Type code



TILE



TIE

## Selection table for orifice assembly with strainer for inlet connection

|          |             | Nominal Capacity (kW) |         |         |         |         |         |         |         |
|----------|-------------|-----------------------|---------|---------|---------|---------|---------|---------|---------|
| Type     |             | TIO-00X               | TIO-000 | TIO-001 | TIO-002 | TIO-003 | TIO-004 | TIO-005 | TIO-006 |
| Part No. |             | 800 532               | 800 533 | 800 534 | 800 535 | 800 536 | 800 537 | 800 538 | 800 539 |
| A1       | R134a       | 0.3                   | 0.8     | 1.9     | 3.1     | 5.0     | 8.3     | 10.1    | 11.7    |
|          | R22         | 0.5                   | 1.3     | 3.2     | 5.3     | 8.5     | 13.9    | 16.9    | 19.5    |
|          | R404A/R507  | 0.4                   | 1.0     | 2.3     | 3.9     | 6.2     | 10.1    | 12.3    | 14.2    |
|          | R407C       | 0.5                   | 1.4     | 3.5     | 5.7     | 9.2     | 15      | 18.3    | 21.1    |
|          | R410A       | 0.6                   | 1.5     | 3.7     | 6.2     | 9.9     | 16.2    | 19.7    | 22.8    |
|          | R448A       | 0.5                   | 1.3     | 3.2     | 5.3     | 8.5     | 13.9    | 16.9    | 19.4    |
|          | R449A       | 0.5                   | 1.3     | 3.1     | 5.2     | 8.3     | 13.5    | 16.5    | 19.0    |
|          | R513A/R450A | 0.3                   | 0.7     | 1.7     | 2.8     | 4.5     | 7.5     | 9.1     | 10.6    |
|          | R452A       | 0.4                   | 1.0     | 2.4     | 4.0     | 6.4     | 10.5    | 12.8    | 14.8    |
| A2L      | R1234ze     | 0.2                   | 0.6     | 1.5     | 2.4     | 3.9     | 6.5     | 7.9     | 9.1     |
|          | R455A       | 0.5                   | 1.2     | 3.0     | 5.0     | 8.1     | 13.2    | 16.0    | 18.5    |
|          | R454C       | 0.4                   | 1.1     | 2.6     | 4.3     | 7.0     | 11.4    | 13.8    | 16.0    |
|          | R1234yf     | 0.2                   | 0.6     | 1.4     | 2.2     | 3.6     | 6.0     | 7.3     | 8.4     |
|          | R32         | 0.9                   | 2.3     | 5.6     | 9.2     | 14.8    | 24.1    | 29.3    | 33.9    |

**Note:** Nominal conditions: Evaporating Temperature +4°C (dew point), Condensing Temperature +38°C (bubble point), Subcooling 1 K.  
For selection of other operation conditions, please use Copeland Select software.

## Brazing adapter for TILE and TIS(E)

| Type       | Part No. | Connection, ODF |        |
|------------|----------|-----------------|--------|
|            |          | (mm)            | (inch) |
| TIA-M06    | 802 500  | 6.0             | -      |
| TIA-M10    | 802 501  | 10.0            | -      |
| TIA-014    | 802 502  | -               | 1/4"   |
| TIA-038    | 802 503  | -               | 3/8"   |
| Gasket Set | 803 780  | 100 pieces      |        |



# TI valve bodies without orifice and nut

| Refrigerant              |          | Outlet/Equalizer Connection        | Type                | Part No. | Type               | Part No. | MOP (°C) | Evaporating Temperature Range (°C) |
|--------------------------|----------|------------------------------------|---------------------|----------|--------------------|----------|----------|------------------------------------|
| A1                       | A2L      |                                    | External Equalizer  |          | Internal Equalizer |          |          |                                    |
| R404A/R507<br><br>R452A* |          | Brazing Stainless Steel Fittings * | TILE-SW (12 mm)     | 802465   |                    |          | -        | -45 ... +20                        |
|                          |          |                                    | TILE-SW (1/2")      | 802466   |                    |          | -        | -45 ... +20                        |
|                          |          | Brazing Copper Fittings **         | TISE-SW (12 mm)     | 802462   | TIS-SW (12 mm)     | 802461   | -        | -45 ... +20                        |
|                          |          |                                    | TISE-SW (1/2")      | 802464   | TIS-SW (1/2")      | 802463   | -        | -45 ... +20                        |
|                          |          |                                    | TISE-SAD10 (1/2")   | 802479   | TIS-SAD10 (1/2")   | 802478   | +10      | -45 ... 0                          |
|                          |          |                                    | TISE-SW75 (12 mm)   | 802471   |                    |          | 0        | -45 ... -3                         |
|                          |          |                                    | TISE-SW75 (1/2")    | 802472   |                    |          | 0        | -45 ... -3                         |
|                          |          |                                    | TISE-SAD-20 (12 mm) | 802474   |                    |          | -20      | -45 ... -27                        |
|                          |          |                                    | TISE-SAD-20 (1/2")  | 802475   |                    |          | -20      | -45 ... -27                        |
|                          |          | Flare Fittings                     | TIE-SW              | 802460   | TI-SW              | 802459   | -        | -45 ... +20                        |
|                          |          |                                    | TIE-SAD10           | 802477   |                    |          | +10      | -45 ... 0                          |
|                          |          |                                    | TIE-SW75            | 802470   | TI-SW75            | 802469   | 0        | -45 ... -3                         |
|                          |          |                                    | TIE-SAD-20          | 802473   |                    |          | -20      | -45 ... -27                        |
| R134a<br>R450A*          | R1234ze* | Brazing Stainless Steel Fittings * | TILE-MW (12 mm)     | 802451   |                    |          | -        | -45 ... +20                        |
|                          |          |                                    | TILE-MW (1/2")      | 802452   |                    |          | -        | -45 ... +20                        |
|                          |          | Brazing Copper Fittings **         | TISE-MW (12 mm)     | 802448   | TIS-MW (12 mm)     | 802447   | -        | -45 ... +20                        |
|                          |          |                                    | TISE-MW (1/2")      | 802450   | TIS-MW (1/2")      | 802449   | -        | -45 ... +20                        |
|                          |          |                                    | TISE-MW55 (12 mm)   | 802457   |                    |          | +14      | -45 ... +11                        |
|                          |          |                                    | TISE-MW55 (1/2")    | 802458   |                    |          | +14      | -45 ... +11                        |
|                          |          | Flare Fittings                     | TIE-MW              | 802446   | TI-MW              | 802445   | -        | -45 ... +20                        |
|                          |          |                                    | TIE-MW55            | 802456   | TI-MW55            | 802455   | +14      | -45 ... +11                        |
| R407C                    |          | Brazing Stainless Steel Fittings * | TILE-NW (12 mm)     | 802486   |                    |          | -        | -45 ... +20                        |
|                          |          |                                    | TILE-NW (1/2")      | 802485   |                    |          | -        | -45 ... +20                        |
|                          |          | Brazing Copper Fittings **         | TISE-NW (12 mm)     | 802438   | TIS-NW (12 mm)     | 802437   | -        | -45 ... +20                        |
|                          |          |                                    | TISE-NW (1/2")      | 802440   | TIS-NW (1/2")      | 802439   | -        | -45 ... +20                        |
|                          |          | Flare Fittings                     | TIE-NW              | 802436   | TI-NW              | 802435   | -        | -45...+20                          |
| R410A                    | R32*     | Brazing Stainless Steel Fittings * | TILE-ZW (12 mm)     | 802488   |                    |          | -        | -35...+20                          |
|                          |          |                                    | TILE-ZW (1/2")      | 802489   |                    |          | -        | -35...+20                          |
|                          |          |                                    | TILE-ZW175 (12 mm)  | 802490   |                    |          | +16.4    | -35...+15                          |
|                          |          |                                    | TILE-ZW175 (1/2")   | 802491   |                    |          | +16.4    | -35...+15                          |
| R448A /<br>R449A         |          | Brazing Stainless Steel Fittings * | TILE-BW (12 mm)     | 802418   |                    |          | -        | -45...+20                          |
|                          |          |                                    | TILE-BW (1/2")      | 802419   |                    |          | -        | -45...+20                          |
|                          |          | Brazing Copper Fittings **         | TISE-BW (12 mm)     | 802416   | TIS-BW(12 mm)      | 802414   | -        | -45...+20                          |
|                          |          |                                    | TISE-BW (1/2")      | 802417   | TIS-BW(1/2")       | 802415   | -        | -45...+20                          |
|                          |          |                                    | TISE-BW30 (12 mm)   | 802494   |                    |          | -15      | -45...-18                          |
|                          |          |                                    | TISE-BW30 (1/2")    | 802495   |                    |          | -15      | -45...-18                          |
|                          |          | Flare Fittings                     | TIE-BW              | 802413   | TI-BW              | 802412   | -        | -45...+20                          |

Note: \*) TILE Brazing without wet rag

\*\*) TISE Brazing with wet rag

\*\*\*) Superheat readjustment required - see Operating Instruction

## TI valve bodies without orifice and nut

| Refrigerant |         | Outlet/Equalizer Connection        | Type               | Part No. | Type               | Part No. | MOP (°C) | Evaporating Temperature Range (°C) |
|-------------|---------|------------------------------------|--------------------|----------|--------------------|----------|----------|------------------------------------|
| A1          | A2L     |                                    | External Equalizer |          | Internal Equalizer |          |          |                                    |
| R513A       |         | Brazing Stainless Steel Fittings** | TILE-CW (12 mm)    | 802166   |                    |          | -        | -30...+20°C                        |
|             |         |                                    | TILE-CW (1/2")     | 802167   |                    |          | -        | -30...+20°C                        |
|             |         | Brazing Copper Fittings***         | TISE-CW (12 mm)    | 802168   | TIS-CW (12 mm)     | 802170   | -        | -30...+20°C                        |
|             |         |                                    | TISE-CW (1/2")     | 802169   | TIS-CW (1/2")      | 802171   | -        | -30...+20°C                        |
|             |         | Flare Fittings                     | TIE-CW             | 802172   | TI-CW              | 802173   | -        | -30...+20°C                        |
|             | R454C   | Brazing Stainless Steel Fittings** | TILE-LW (12 mm)    | 802150   |                    |          | -        | -35...+20°C                        |
|             |         |                                    | TILE-LW (1/2")     | 802151   |                    |          | -        | -35...+20°C                        |
|             |         | Brazing Copper Fittings***         | TISE-LW (12 mm)    | 802152   | TIS-LW (12 mm)     | 802154   | -        | -35...+20°C                        |
|             |         |                                    | TISE-LW (1/2")     | 802153   | TIS-LW (1/2")      | 802155   | -        | -35...+20°C                        |
|             |         | Flare Fittings                     | TIE-LW             | 802156   | TI-LW              | 802157   | -        | -35...+20°C                        |
|             | R455A   | Brazing Stainless Steel Fittings** | TILE-KW (12 mm)    | 802158   |                    |          | -        | -35...+20°C                        |
|             |         |                                    | TILE-KW (1/2")     | 802159   |                    |          | -        | -35...+20°C                        |
|             |         | Brazing Copper Fittings***         | TISE-KW (12 mm)    | 802160   | TIS-KW (12 mm)     | 802162   | -        | -35...+20°C                        |
|             |         |                                    | TISE-KW (1/2")     | 802161   | TIS-KW (1/2")      | 802163   | -        | -35...+20°C                        |
|             |         | Flare Fittings                     | TIE-KW             | 802164   | TI-KW              | 802165   | -        | -35...+20°C                        |
|             | R1234yf | Brazing Stainless Steel Fittings** | TILE-FW (12 mm)    | 802174   |                    |          | -        | -35...+20°C                        |
|             |         |                                    | TILE-FW (1/2")     | 802175   |                    |          | -        | -35...+20°C                        |
|             |         | Brazing Copper Fittings***         | TISE-FW (12 mm)    | 802176   | TIS-FW (12 mm)     | 802178   | -        | -35...+20°C                        |
|             |         |                                    | TISE-FW (1/2")     | 802177   | TIS-FW (1/2")      | 802179   | -        | -35...+20°C                        |
|             |         | Flare Fittings                     | TIE-FW             | 802180   | TI-FW              | 802181   | -        | -35...+20°C                        |

Note: \*) TILE Brazing without wet rag

\*\*) TISE Brazing with wet rag

\*\*\*) Superheat readjustment required - see Operating Instruction

## Connections

| Body                               | Inlet Connection                              |                                                                              | Outlet                                        | External Equalizer*                           |
|------------------------------------|-----------------------------------------------|------------------------------------------------------------------------------|-----------------------------------------------|-----------------------------------------------|
|                                    | Brazing with Adapter                          | Flare                                                                        |                                               |                                               |
| TI(E)<br>Flare connections         | -                                             | 5/8"-18 UNF Flare suitable for<br>6 mm, 8 mm, 10 mm, 1/4", 5/16", 3/8" tubes | 3/4" - 16 UNF Flare:<br>for 12 mm, 1/2" tubes | 7/16" - 20 UNF Flare:<br>for 6 mm, 1/4" tubes |
| TIS(E) / TILE<br>Braze connections | TIA - M06 (6 mm ODF)<br>TIA - M10 (10 mm ODF) |                                                                              | 12 mm ODF                                     | 6 mm ODF                                      |
|                                    | TIA - 014 (1/4" ODF)<br>TIA - 038 (3/8" ODF)  |                                                                              | 1/2 ODF                                       | 1/4" ODF                                      |

Note: \*) TIE, TISE and TILE