

Series TMX

Thermostatic expansion valves with balanced port, interchangeable cartridges, separate solder or flare base and adjustable superheat

Specification-Data



Application

General refrigeration and original equipment.

Plants with one or more circuits, refrigerated cabinets, deep freezing plants, milk cooling units, water chillers, air conditioning systems, cold stores, heat pumps.

For plants with single and multiple injection, with high or low flow resistance, for all kind of distributors.

TMXB: with **external pressure equalization**;
base flare/flare connection, direct passage.

TMXL: with **external pressure equalization**;
base solder/solder connection, angle and direct passage.

Specification/Technical Data

- 1 capacity adaptable from 10 to 72 kW by interchangeable cartridges.
- 1 gas charged diaphragm operated valve of high sensitivity.
- 1 no influence of the condensing pressure on the superheat setting (balanced port).
- 1 extreme durability thanks to welded stainless steel head and stainless steel diaphragm.
- 1 adjustable superheat setting.
- 1 with pressure limitation (MOP).
- 1 refrigerants:
R 134 a, R 401 A, R 12, R 22, R 407 C, R 407 A, R 404 A, R 507, R 402 A, R 23, R 124, R 227, other refrigerants on request.
- 1 evaporating temperature ranges: see table on page 2.
- 1 max. test pressure: 32 bar (applied to all connections simultaneously).
- 1 max. suction pressure: 22 bar
- 1 max. ambient temperature: 100°C
- 1 max. bulb temperature: gas charge: 140 °C
liquid charge: 70 °C
- 1 static superheat: 3,5 K
- 1 capillary length: 2 m
- 1 brass body

Thermal charge and temperature ranges

1. Gas charge

Designation on type label: G

1a. Pressure limitation

MOP-valves protect the compressor by limiting the increase of suction pressure.

The MOP-value should be chosen for the max. permissible suction pressure of the compressor and 3 - 5 K higher than the typical evaporating temperature of the system.

TMX-valves ordered without any MOP-specification will be delivered automatically with MOP +10 °C.

Attention:

With gas charged valves supplied with MOP the bulb must always be colder than the capillary and the thermal head of the valve, both when the system is operating and when it is off cycle. If due to the construction of the system the thermal head or capillary become colder than the bulb (subcooling) we recommend the installation of valves without MOP which are supplied with a charge insensible to ambient temperature.

| Evaporating temperature range Gas charges | | Refrigerants |
|--|-------------------|----------------------------------|
| Normal range | + 10 °C to -40 °C | R 134 a, R 12, R 401A, |
| Normal range | + 15 °C to -30 °C | R 407 C |
| Normal range | ± 10 °C to -50 °C | R 22, R 404 A, R 507, R 407 A |
| Deep freezing | -40 °C to -110 °C | R 23 |
| Deep freezing | -40 °C to -80 °C | ISCEON 89 |

| Refrigerants | MOP in °C | | |
|--------------|-----------|--------|--------|
| R 12 | + 10 °C | ± 0 °C | |
| R 134 a | + 10 °C | ± 0 °C | |
| R 401 A | + 10 °C | ± 0 °C | |
| R 22 | + 10 °C | ± 0 °C | -18 °C |
| R 23 | -40 °C | -55 °C | |
| ISCEON 89 | -40 °C | | |
| R 404 A | + 10 °C | ± 0 °C | -18 °C |
| R 507 | + 10 °C | ± 0 °C | -18 °C |
| R 407 C | + 15 °C | ± 0 °C | |

Special-MOP graded in steps of 5 K on request

2. Liquid charge

Designation on the type label: F

Static superheat: 5 K

| Evaporating temperature range Liquid charges | Refrigerants |
|---|--------------|
| +50 °C to -10 °C | R 124 |
| +40 °C to -10 °C | R 227 |

Capacities

| Type | Size | Nominal capacities in kW* | | | | Solder connections | | Flare connection for 7/8" UNF | | Weight (kg) |
|------|------|---------------------------|---------|------|---------|--------------------|--------|-------------------------------|--------|--------------|
| | | R 12 | R 134 a | R 22 | R 404 A | inlet | outlet | inlet | outlet | |
| | | | | | | for tube-Ø | | for tube-Ø | | |
| TMXB | 4.5 | 9.3 | 11.1 | 16.3 | 12.3 | | | 12 mm | | TMXB 1,35 |
| | 4.75 | 11.9 | 15.0 | 21.5 | 16.2 | 12 mm | 16 mm | 15 mm | 15 mm | |
| | 5 | 15.1 | 18.8 | 27.9 | 21.0 | 16 mm | 22 mm | 16 mm | 16 mm | |
| and | 6 | 20.9 | 26.0 | 40.7 | 30.6 | or | or | or | or | TMXL 1,0 |
| TMXL | 7 | 26.7 | 33.3 | 52.3 | 39.3 | 1/2" | 5/8" | 1/2" | 5/8" | |
| | 8 | 32.6 | 40.8 | 61.6 | 46.3 | 5/8" | 7/8" | 5/8" | | |
| | 10 | 38.4 | 48.0 | 72.1 | 54.2 | | | | | |

Connection for external equalizer line for tube diameter 7/16" UNF.

*Capacities are based on to = -10 °C, tc = +25 °C and 1 K subcooled liquid refrigerant entering the valve.

For other operating conditions see capacity tables in the Honeywell catalogue, or consult the Honeywell software.

Solder / Flare bases

| Type | A | B | C | D | E | F | G | H | J | K | L | M |
|-------|-----------------------|------------------|-----------------------|------------------|------------------|------------------|-----------------------|------------------|---|---|-------------|-------------|
| XLS D | 5/8" or 15 mm (16) | 1/2" or 12 mm | 5/8" or 15 mm (16) | 7/8" or 22 mm | | | | | | | | |
| XLS W | | | | | 5/8" or 15 mm | 1/2" or 12 mm | 5/8" or 15 mm (16) | 7/8" or 22 mm | | | | |
| XBS D | | | | | | | | | | | 7/8" UNF | 7/8" UNF |

Valve nomenclature / Order instructions

Power head externally equalized
(separately):

TMX - R134a - MOP +10 °C

valve series ————
refrigerant ————
pressure limitation **MOP** ————

Cartridge (separately):

XD - 10

for valve series TMX ————
size/orifice 4,5 to 10 ————

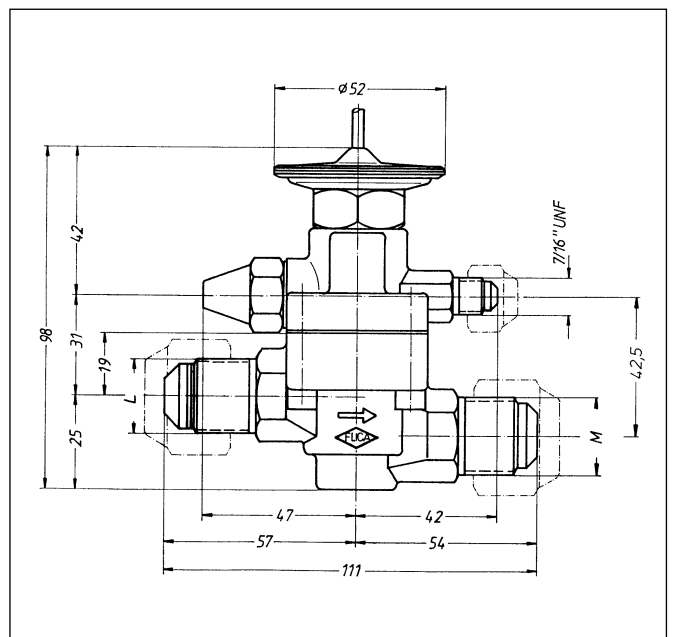
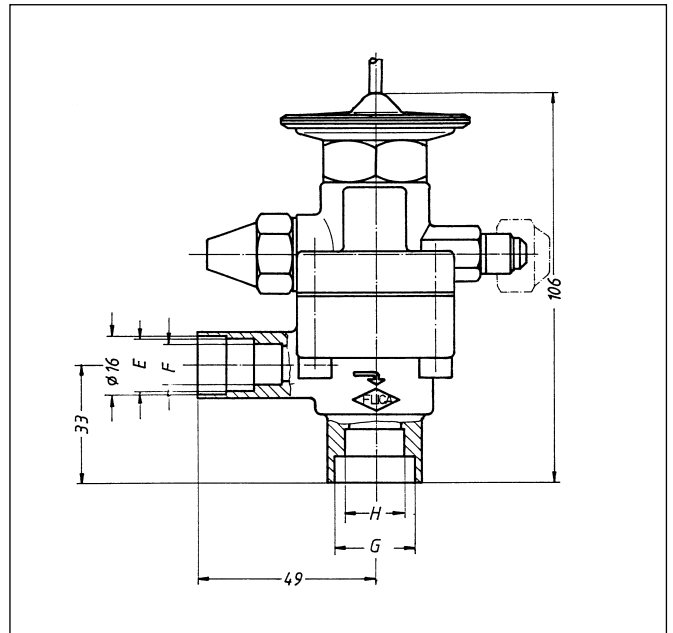
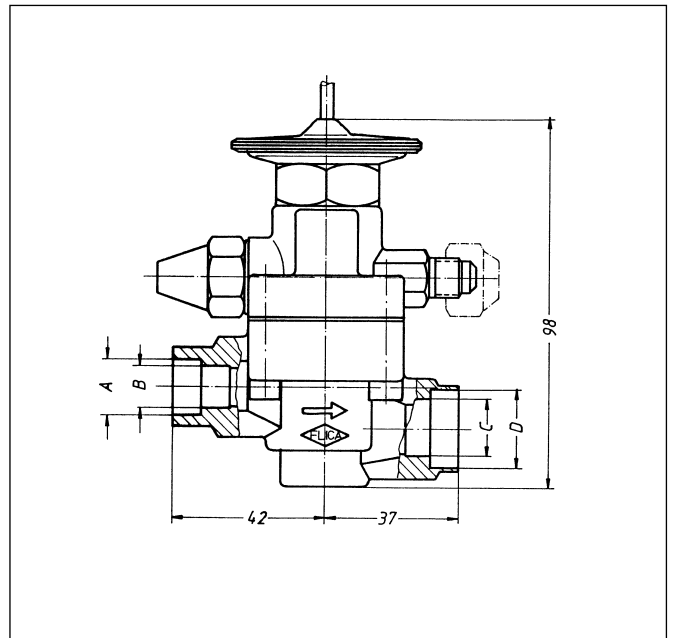
Solder/Flare base (separately):

XLS - 16 mm x 22 mm - D

for valve series TMX ————
(Solder: L, Flare: B)

tube connection ODF
(outside diameter of tube) ————
flare connection 7/8" x 7/8" UNF

passage ————
(W = angle, D = direct)



Interchangeable cartridges

Should the capacity of the valve be incorrect, interchangeable cartridges allow the valve's capacity to be adapted very quickly on site without removing the valve itself from the circuits.

The cartridge can easily be cleaned or replaced in the service case.

Installation

- 1 The valves may be installed in any position in the liquid line.
- 1 The external pressure equalizer line should be 6 mm or 1/4" in diameter and is to be connected downstream of the remote bulb. An overbowl is recommended in order to prevent the ingress of oil into the equalizer line.
- 1 The bulb should preferably be positioned on the upper half of a horizontal suction line but never after a liquid trap. As a general rule, bulbs of expansion valves should be insulated to prevent them being affected by the ambient temperature.
- 1 Never quench the base with water after soldering; this may cause cracks and distort the mating surfaces.

Superheat adjustment

In general the valves should be installed with the factory setting unaltered. The factory setting is calibrated for lowest superheating and optimum evaporator utilization. However, should it be necessary to adjust the superheat, turn the adjusting spindle as follows:

Turning clockwise

= reduced refrigerant flow, increase of superheat

Turning counterclockwise

= increased refrigerant flow, decrease of superheat

1 turn of the adjusting spindle alters superheat setting by approx. 0.3 bar.

Any increase of superheat setting results in a lower MOP-value and vice versa.

Tighten seal cap to a torque of 20 Nm.

All data provided in this literature is subject to change without notice.

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Honeywell

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