

Product specification

Technical data

Max. temperature on thermostatic element:

MAH: 150 °C / 302 °F

K: 150 °C / 302 °F

N: 100 °C / 210 °F

Max. temperature on valve body: 110 °C / 230 °F

Max. working pressure: 49 bar / 711 psig.

Max. test pressure: 54 bar / 783 psig.

Table 1: Standard evaporating temperature ranges

| Charge | Temperature range |
|--------|---|
| MAH | -30 – 15 °C / -22 – 60 °F |
| N | -40 – 10 °C / -40 – 50 °F without MOP |
| K | -25 – 10 °C, MOP 15 °C / -15 – 50 °F, MOP 60 °F |

Table 2: Max. operating pressure

| Refrigerant | Range K: -25 – 10 °C / -15 – 50 °F, MOP +15 °C / +60 °F |
|-------------|---|
| | MOP point in evaporating pressure pe |
| R410A | 11.4 bar / 165 psig |
| R22 | 6.9 bar / 100 psig |
| R134a | 3.8 bar / 55 psig |
| R407C | 6.6 bar / 95 psig |
| R404A/ R507 | 8.3 bar / 120 psig |

i NOTE:

MOP for R32, R452B, R454B, R1234ze, R407F, R407A and R290, please contact Danfoss for more info.

Table 3: Connections

| Type | Inlet solder ODF [inch] | Inlet solder ODF [mm] | Outlet solder ODF [inch] | Outlet solder ODF [mm] |
|--------|-------------------------|-----------------------|--------------------------|------------------------|
| TGE 10 | 3/8, 1/2, 5/8, 7/8 | 10, 12, 16, 22 | 5/8, 7/8, 1 1/8 | 16, 22, 28 |
| TGE 20 | 5/8, 7/8, 1 1/8 | 16, 22, 28 | 5/8, 7/8, 1 1/8, 1 3/8 | 16, 22, 28, 35 |
| TGE 40 | 7/8, 1 1/8 | 22, 28 | 7/8, 1 1/8, 1 3/8 | 22, 28, 35 |

Table 4: Capillary tube length

| Type | Capillary tube length | |
|-----------------|-----------------------|----------|
| TGE 10 / TGE 20 | 1.5 m | 59 inch |
| TGE 40 | 3 m | 118 inch |

Valve options

In addition to the standard programme, variants of following options may be available:

- Refrigerants
- Evaporating temperature range
- MOP point
- Static superheat setting (0K – 8K / 0 – 14.4 °F)
- Mechanical connections
- Bleed function (15% or 30%)

i NOTE:

Please contact your nearest Danfoss sales office to discuss valve options.

Refrigerants

Refrigerants: R410A, R32, R452B, R454B, R22, R134a, R1234ze, R407F, R407A, R404A, R507, R407C and R290.

Thermostatic expansion valves, Type TGE

For other refrigerants, please contact Danfoss.

i NOTE:

This product is approved for R290, R32, R452B, R454B by ignition source assessment in accordance to standard EN ISO80079-36 .

Capacity table

Table 5: Rated capacity²⁾

| Valve type | Orifice no. | Range N, K, MAH | | | | | | | | | | | | | | | | | | | | | | | |
|------------|------------------|-----------------|-----|-----|----|---------------------|-----|---------------------|-----|-----|-----|-------|-----|---------|-----|-------|-----|-------|-----|--------------|-----|-------|-----|------|----|
| | | R410A | | R32 | | R452B ⁴⁾ | | R454B ⁴⁾ | | R22 | | R134a | | R1234ze | | R407F | | R407A | | R404A / R507 | | R407C | | R290 | |
| | | KW | TR | KW | TR | KW | TR | KW | TR | KW | TR | KW | TR | KW | TR | KW | TR | KW | TR | KW | TR | KW | TR | KW | TR |
| TGE 10 | 3 | 12 | 3.5 | 18 | 5 | 12 | 3.5 | 12 | 3.5 | 10 | 3 | 6 | 1.5 | 5 | 1.5 | 10 | 3 | 9 | 2.5 | 7 | 2 | 9 | 2.5 | 10 | 3 |
| | 4 | 16 | 4.5 | 24 | 7 | 16 | 4.5 | 18 | 5.0 | 14 | 4 | 8 | 2.5 | 7 | 2 | 14 | 4 | 12 | 3.5 | 9 | 2.5 | 13 | 3.5 | 14 | 4 |
| | 6 | 24 | 6.5 | 35 | 10 | 24 | 6.5 | 26 | 7.5 | 20 | 6 | 12 | 3.5 | 10 | 3 | 20 | 6 | 17 | 5 | 14 | 4 | 19 | 5 | 19 | 5 |
| | 8 | 32 | 9 | 47 | 13 | 32 | 9 | 35 | 10 | 27 | 7.5 | 17 | 4.5 | 14 | 4 | 27 | 7.5 | 23 | 6.5 | 18 | 5 | 25 | 7 | 25 | 7 |
| | 9 | 37 | 11 | 54 | 15 | 38 | 11 | 42 | 12 | 32 | 9 | 20 | 5.5 | 16 | 4.5 | 32 | 9 | 28 | 8 | 21 | 6 | 30 | 8.5 | 32 | 9 |
| | 11 | 45 | 13 | 68 | 19 | 46 | 13 | 49 | 14 | 38 | 11 | 24 | 7 | 20 | 5.5 | 40 | 11 | 34 | 10 | 26 | 7.5 | 36 | 10 | 36 | 10 |
| | 12.5 | 50 | 14 | 74 | 21 | 50 | 14 | 56 | 16 | 43 | 12 | 29 | 8 | 22 | 6 | 43 | 12 | 39 | 11 | 31 | 9 | 39 | 11 | 44 | 12 |
| | 16 | 60 | 17 | 87 | 25 | 60 | 17 | 67 | 19 | 50 | 14 | 35 | 9.5 | 27 | 7.5 | 50 | 14 | 46 | 13 | 35 | 10 | 49 | 14 | 50 | 14 |
| TGE 20 | 12.5 | 54 | 15 | 81 | 23 | 55 | 15 | 56 | 16 | 43 | 12 | 29 | 8 | 22 | 6 | 46 | 13 | 39 | 11 | 31 | 9 | 42 | 12 | 44 | 12 |
| | 16 | 68 | 19 | 102 | 29 | 68 | 19 | 74 | 21 | 54 | 15 | 37 | 10 | 27 | 7.5 | 57 | 16 | 50 | 14 | 39 | 11 | 53 | 15 | 54 | 15 |
| | 20 | 79 | 23 | 120 | 34 | 81 | 23 | 88 | 25 | 63 | 18 | 44 | 12 | 31 | 8.5 | 67 | 19 | 59 | 17 | 45 | 13 | 62 | 18 | 63 | 18 |
| | 21 ³⁾ | 91 | 26 | 135 | 38 | 98 | 28 | 102 | 29 | 75 | 21 | 51 | 15 | 39 | 11 | 82 | 23 | 72 | 21 | 53 | 15 | 77 | 22 | 75 | 21 |
| TGE 40 | 26 | 110 | 31 | 165 | 47 | 117 | 33 | 120 | 34 | 92 | 26 | 61 | 17 | 49 | 14 | 95 | 27 | 80 | 23 | 64 | 18 | 84 | 24 | 92 | 26 |
| | 30 | 125 | 35 | 187 | 53 | 134 | 38 | 137 | 39 | 104 | 30 | 70 | 20 | 57 | 16 | 108 | 31 | 91 | 26 | 72 | 21 | 95 | 27 | 106 | 30 |
| | 40 | 161 | 46 | 236 | 67 | 172 | 49 | 179 | 51 | 134 | 38 | 87 | 25 | 72 | 20 | 138 | 39 | 116 | 33 | 92 | 26 | 121 | 34 | 133 | 38 |
| | 42 | 182 | 52 | 273 | 78 | 208 | 59 | 208 | 59 | 148 | 42 | 102 | 29 | 81 | 23 | 165 | 47 | 140 | 40 | 105 | 30 | 148 | 42 | 152 | 43 |

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²⁾ The rated capacity is based on:

Evaporating temperature t_e : 4.4 °C / 40 °F

Condensing temperature t_c : 38 °C / 100 °F

Refrigerant temperature ahead of valve t_1 : 37 °C / 98 °F

³⁾ Contact Danfoss for more information

⁴⁾ New sales code numbers are on request.

Valve selection based on capacity calculation

As for extended capacity calculations and valve selection based on capacities and refrigerants, please refer to Coolselector[®]2. Rated and extended capacities are calculated with the Coolselector[®]2 calculation engine to ARI standards with the ASEREP equations based on laboratory measurements of selected valves.

Dimensions and weights

Figure 6: Type TGE 10, TGE 20 and TGE 40

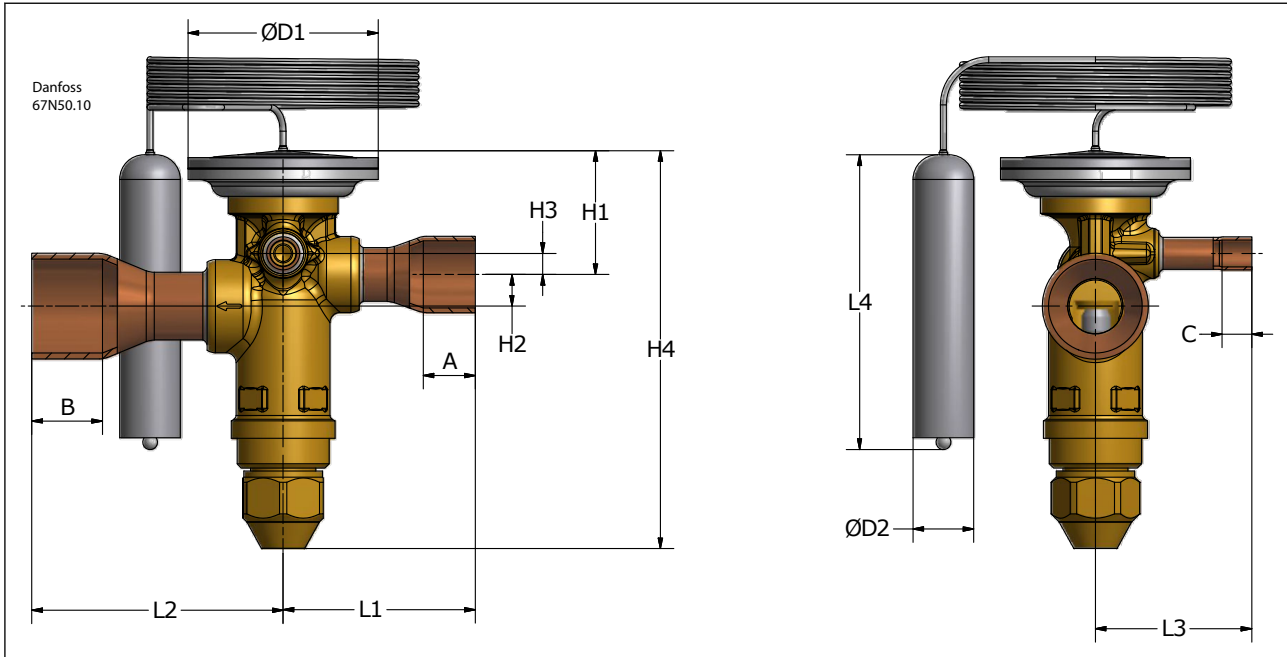


Table 6: Dimensions and weight in SI units

| Type | Connections. ODF solder inlet x outlet x equalization | | Capillary tube length [mm] | H1 [mm] | H2 [mm] | H3 [mm] | H4 [mm] | L1 [mm] | L2 [mm] | L3 [mm] | L4 [mm] | ØD1 [mm] | ØD2 [mm] | A [mm] | B [mm] | C [mm] | Weight [kg] |
|--------|---|-------------|----------------------------|---------|---------|---------|---------|---------|---------|---------|---------|----------|----------|--------|--------|--------|-------------|
| | [in.] | [mm] | | | | | | | | | | | | | | | |
| TGE 10 | 3/8 x 5/8 x 1/4 | 10 x 16 x 6 | 1.5 | 28.5 | 7.5 | 5.0 | 95.0 | 41.5 | 45.5 | 37.0 | 70 | 45 | 14.35 | 9.0 | 12 | 7 | 0.37 |
| | 1/2 x 5/8 x 1/4 | 12 x 16 x 6 | 1.5 | 28.5 | 7.5 | 5.0 | 95.0 | 41.5 | 45.5 | 37.0 | 70 | 45 | 14.35 | 10 | 12 | 7 | 0.37 |
| | 1/2 x 7/8 x 1/4 | 12 x 22 x 6 | 1.5 | 28.5 | 7.5 | 5.0 | 95.0 | 41.5 | 59.5 | 37.0 | 70 | 45 | 14.35 | 10 | 17 | 7 | 0.37 |
| | 5/8 x 5/8 x 1/4 | 16 x 16 x 6 | 1.5 | 28.5 | 7.5 | 5.0 | 95.0 | 45.5 | 45.5 | 37.0 | 70 | 45 | 14.35 | 12 | 12 | 7 | 0.37 |
| | 5/8 x 7/8 x 1/4 | 16 x 22 x 6 | 1.5 | 28.5 | 7.5 | 5.0 | 95.0 | 45.5 | 59.5 | 37.0 | 70 | 45 | 14.35 | 12 | 17 | 7 | 0.37 |
| | 5/8 x 1 1/8 x 1/4 | 16 x 28 x 6 | 1.5 | 28.5 | 7.5 | 5.0 | 95.0 | 45.5 | 59.5 | 37.0 | 70 | 45 | 14.35 | 12 | 20 | 7 | 0.37 |
| | 7/8 x 7/8 x 1/4 | 22 x 22 x 6 | 1.5 | 28.5 | 7.5 | 5.0 | 95.0 | 45.5 | 59.5 | 37.0 | 70 | 45 | 14.35 | 12 | 17 | 7 | 0.37 |
| | 7/8 x 1 1/8 x 1/4 | 22 x 28 x 6 | 1.5 | 28.5 | 7.5 | 5.0 | 95.0 | 45.5 | 59.5 | 37.0 | 70 | 45 | 14.35 | 12 | 20 | 7 | 0.37 |
| TGE 20 | 5/8 x 5/8 x 1/4 | 16 x 16 x 6 | 1.5 | 32.0 | 9.0 | 8.0 | 121 | 48.0 | 62.0 | 40.5 | 78 | 53 | 19.20 | 12 | 12 | 7 | 0.57 |
| | 5/8 x 7/8 x 1/4 | 16 x 22 x 6 | 1.5 | 32.0 | 9.0 | 8.0 | 121 | 48.0 | 62.0 | 40.5 | 78 | 53 | 19.20 | 12 | 17 | 7 | 0.57 |
| | 5/8 x 1 1/8 x 1/4 | 16 x 28 x 6 | 1.5 | 32.0 | 9.0 | 8.0 | 121 | 48.0 | 66.0 | 40.5 | 78 | 53 | 19.20 | 12 | 20 | 7 | 0.57 |
| | 7/8 x 7/8 x 1/4 | 22 x 22 x 6 | 1.5 | 32.0 | 9.0 | 8.0 | 121 | 62.0 | 62.0 | 40.5 | 78 | 53 | 19.20 | 17 | 17 | 7 | 0.57 |
| | 7/8 x 1 1/8 x 1/4 | 22 x 28 x 6 | 1.5 | 32.0 | 9.0 | 8.0 | 121 | 62.0 | 66.0 | 40.5 | 78 | 53 | 19.20 | 17 | 20 | 7 | 0.57 |
| | 7/8 x 1 3/8 x 1/4 | 22 x 35 x 6 | 1.5 | 32.0 | 9.0 | 8.0 | 121 | 62.0 | 66.0 | 40.5 | 78 | 53 | 19.20 | 17 | 24 | 7 | 0.57 |
| | 1 1/8 x 1 1/8 x 1/4 | 28 x 28 x 6 | 1.5 | 32.0 | 9.0 | 8.0 | 121 | 62.0 | 66.0 | 40.5 | 78 | 53 | 19.20 | 20 | 20 | 7 | 0.57 |
| | 1 1/8 x 1 3/8 x 1/4 | 28 x 35 x 6 | 1.5 | 32.0 | 9.0 | 8.0 | 121 | 62.0 | 66.0 | 40.5 | 78 | 53 | 19.20 | 20 | 24 | 7 | 0.57 |
| TGE 40 | 7/8 x 7/8 x 1/4 | 22 x 22 x 6 | 3 | 39.0 | 15 | 11 | 148 | 65.5 | 69.5 | 43.5 | 78 | 60 | 19.20 | 17 | 20 | 7 | 0.93 |
| | 7/8 x 1 1/8 x 1/4 | 22 x 28 x 6 | 3 | 39.0 | 15 | 11 | 148 | 65.5 | 69.5 | 43.5 | 78 | 60 | 19.20 | 17 | 20 | 7 | 0.93 |
| | 7/8 x 1 3/8 x 1/4 | 22 x 35 x 6 | 3 | 39.0 | 15 | 11 | 148 | 65.5 | 74.5 | 43.5 | 78 | 60 | 19.20 | 17 | 25 | 7 | 0.93 |
| | 1 1/8 x 1 1/8 x 1/4 | 28 x 28 x 6 | 3 | 39.0 | 15 | 11 | 148 | 69.5 | 69.5 | 43.5 | 78 | 60 | 19.20 | 20 | 20 | 7 | 0.93 |
| | 1 1/8 x 1 3/8 x 1/4 | 28 x 35 x 6 | 3 | 39.0 | 15 | 11 | 148 | 69.5 | 74.5 | 43.5 | 78 | 60 | 19.20 | 20 | 25 | 7 | 0.93 |

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Ordering

Table 8: R410A/R32, Range N -40 – 10 °C / -40 –50 °F, OS = 4 K / 7.2 °F

| Valve type | Orifice no. | Rated capacity R410A | | Rated capacity R32 | | Connections solder ODF | | Code no. Multi pack |
|------------|-------------|----------------------|------|--------------------|------|------------------------|------------------------------|---------------------|
| | | [KW] | [TR] | [KW] | [TR] | Inlet x Outlet [inch] | Pressure equalization [inch] | |
| TGE 10 | 3 | 12 | 3.5 | 18 | 5 | 3/8 x 5/8 | 1/4 | 067N3150 |
| TGE 10 | 3 | 12 | 3.5 | 18 | 5 | 1/2 x 5/8 | 1/4 | 067N3151 |
| TGE 10 | 4 | 16 | 4.5 | 24 | 7 | 1/2 x 7/8 | 1/4 | 067N3152 |
| TGE 10 | 6 | 24 | 6.5 | 35 | 10 | 1/2 x 5/8 | 1/4 | 067N3153 |
| TGE 10 | 6 | 24 | 6.5 | 35 | 10 | 1/2 x 7/8 | 1/4 | 067N3154 |
| TGE 10 | 6 | 24 | 6.5 | 35 | 10 | 5/8 x 7/8 | 1/4 | 067N3155 |
| TGE 10 | 8 | 32 | 9 | 47 | 13 | 1/2 x 5/8 | 1/4 | 067N3293 |
| TGE 10 | 8 | 32 | 9 | 47 | 13 | 5/8 x 7/8 | 1/4 | 067N3156 |
| TGE 10 | 9 | 37 | 11 | 54 | 15 | 5/8 x 7/8 | 1/4 | 067N3296 |
| TGE 10 | 11 | 45 | 13 | 68 | 19 | 5/8 x 7/8 | 1/4 | 067N3157 |
| TGE 10 | 12.5 | 50 | 14 | 74 | 21 | 5/8 x 7/8 | 1/4 | 067N3410 |
| TGE 20 | 12.5 | 54 | 15 | 81 | 23 | 5/8 x 7/8 | 1/4 | 067N3159 |
| TGE 40 | 26 | 110 | 31 | 165 | 47 | 1 1/8 x 1 1/8 | 1/4 | 067N3234 |

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The rated capacity is based on:

 Evaporating temperature t_e : 4.4 °C / 40 °F

 Condensing temperature t_c : 38 °C / 100 °F

 Refrigerant temperature ahead of valve t_1 : 37 °C / 98 °F

Table 9: R410A, Range N -40 – 10 °C / -40 –50 °F, OS = 4 K / 7.2 °F

| Valve type | Orifice no. | Rated capacity | | Connections solder ODF | | Code no. Multi pack |
|------------|-------------|----------------|------|------------------------|------------------------------|---------------------|
| | | [KW] | [TR] | Inlet x Outlet [inch] | Pressure equalization [inch] | |
| TGE 10 | 11 | 45 | 13 | 5/8 x 1 1/8 | 1/4 | 067N3158 |
| TGE 10 | 16 | 60 | 17 | 7/8 x 1 1/8 | 1/4 | 067N3411 |
| TGE 20 | 12.5 | 54 | 15 | 5/8 x 1 1/8 | 1/4 | 067N3160 |
| TGE 20 | 12.5 | 54 | 15 | 7/8 x 7/8 | 1/4 | 067N3231 |
| TGE 20 | 12.5 | 54 | 15 | 7/8 x 1 1/8 | 1/4 | 067N3232 |
| TGE 20 | 16 | 68 | 19 | 5/8 x 1 1/8 | 1/4 | 067N3161 |
| TGE 20 | 16 | 68 | 19 | 7/8 x 1 1/8 | 1/4 | 067N3162 |
| TGE 20 | 20 | 79 | 23 | 7/8 x 1 1/8 | 1/4 | 067N3163 |
| TGE 20 | 20 | 79 | 23 | 7/8 x 1 3/8 | 1/4 | 067N3164 |
| TGE 20 | 21 | 91 | 26 | 7/8 x 1 1/8 | 1/4 | 067N3272 |
| TGE 40 | 26 | 110 | 31 | 7/8 x 1 3/8 | 1/4 | 067N3165 |
| TGE 40 | 26 | 110 | 31 | 1 1/8 x 1 3/8 | 1/4 | 067N3166 |
| TGE 40 | 30 | 125 | 35 | 1 1/8 x 1 3/8 | 1/4 | 067N3168 |
| TGE 40 | 40 | 161 | 46 | 1 1/8 x 1 3/8 | 1/4 | 067N3169 |
| TGE 40 | 42 | 182 | 52 | 1 1/8 x 1 3/8 | 1/4 | 067N3400 |

The rated capacity is based on:

 Evaporating temperature t_e : 4.4 °C / 40 °F

 Condensing temperature t_c : 38 °C / 100 °F

 Refrigerant temperature ahead of valve t_1 : 37 °C / 98 °F

Table 10: R410A, Range K -25 – 10 °C / -15 – 50 °F with MOP 15 °C / 60 °F, OS = 4 K / 7.2 °F

| Valve type | Orifice no. | Rated capacity | | Connections solder ODF | | Code no. Multi pack |
|------------|-------------|----------------|------|------------------------|------------------------------|---------------------|
| | | [KW] | [TR] | Inlet x Outlet [inch] | Pressure equalization [inch] | |
| TGE 10 | 3 | 12 | 3.5 | 3/8 x 5/8 | 1/4 | 067N3000 |
| TGE 10 | 3 | 12 | 3.5 | 1/2 x 5/8 | 1/4 | 067N3001 |
| TGE 10 | 4 | 16 | 4.5 | 1/2 x 7/8 | 1/4 | 067N3002 |
| TGE 10 | 6 | 24 | 6.5 | 1/2 x 5/8 | 1/4 | 067N3003 |
| TGE 10 | 6 | 24 | 6.5 | 5/8 x 7/8 | 1/4 | 067N3005 |