



## Thermostatic expansion valves type TGE

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**Introduction**

TGE is a new dedicated designed series of thermostatic expansion valves with lots of technical innovations for all normal refrigerants including R410A, and use in applications such as:

- Air conditioning systems,
- Heat pumps,
- Water chillers,
- Refrigerated containers,
- Traditional refrigeration systems.

The hermetic tight design meets the environmental demands for today and future. The capacity from 4 to 50 TR (14 kW to 175 kW) (R410A).

This leaflet contains data and code numbers for TGE valves for refrigerants R410A, R22, R407C, R134a, R404A, R507. Versions for other refrigerants can be produced to order, contact Danfoss for further information.


**Features**

- Hermetic TXV for R22, R134a, R404A, R507, R407C, R410A
- Head pressure independent
- Version with MOP (Max. Operating Pressure)
- Straightway flow
- Balance port (BP)
- Low hysteresis
- Opening superheat (OSH) max. 4°K
- Max. working pressure 46 bar/ 667 psi
- Lifetime for heat pump application
- Cylindrical bulb design with new bulb strap
- Biflow with expansion in both directions
- Adjustable superheat setting
- Laser welded, stainless steel power element / capillary tube
- Mechanical connections (solder/flare, MIO, ORFS) available

**Standard programme**

Thermostatic charge for R410A, R22, R134a, and R407C:

N -40 → +10°C without MOP  
 -40 → +50°F without MOP  
 K -25 → +10°C MOP + 15°C  
 -15 → +50°F MOP + 60°F  
 Static superheat (SS): 4K / 7.2°F

**Connection**

Type	Inlet ODF solder	Outlet ODF solder
TGE10	$\frac{3}{8}, \frac{1}{2}, \frac{5}{8}$	$\frac{5}{8}, \frac{7}{8}, 1-\frac{1}{8}$
	10, 12, 16	16, 22, 28
TGE20/40	$\frac{5}{8}, \frac{7}{8}, 1-\frac{1}{8}$	$\frac{5}{8}, \frac{7}{8}, 1-\frac{1}{8}, 1-\frac{3}{8}$
	16, 22, 28	16, 22, 28, 35

**Capillary tube length**

Type	Capillary tube length	
TGE10	1.5 m	5 ft
TGE20	1.5 m or 3 m	5 ft or 10 ft
TGE40	1.5 m or 3 m	5 ft or 10 ft

**Valve options**

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

- Refrigerants
- Evaporator range
- MOP point
- Static superheat setting (0K / 0°F → 8K / 14.4°F)
- Flare connections

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

**Technical data**
**Max. operating temperature**

- Thermostatic element

N charge: 100°C / 210°F (R410A)

K charge: 150°C / 302°F (R410A)

Valve body: 110°C / 230°F

Max. working pressure 46 / 667 psig

Max. test pressure 51 bar / 740 psig

TGE valves are designed for biflow operations.

**MOP function**

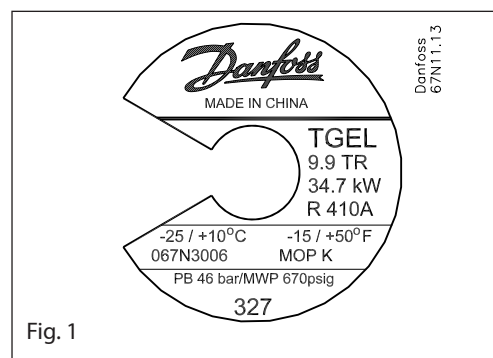
Refrigerant	Range K
	MOP point for evaporating temperature $t_e$ and evaporating pressure $p_e$ $t_e = +15^\circ\text{C} / +60^\circ\text{F}$
R22	100 psig / 8 bar
R407C	95 psig / 7.5 bar
R134a	55 psig / 5 bar
R410A	167 psig / 12.5 bar
R404A/ R507	120 psig / 8.4 bar

**Identification**

Importat valve information is provided on the diaphragm element (fig. 1)

Main valve example:

TGE = Valve type  
 9.9 TR = Rated capacity  $Q_{nom}$  in tons of refrigeration  
 34.7 kW = Rated capacity  $Q_{nom}$  in kW  
 R410A = Refrigerant  
 -25 / +10°C = Evaporating temperature range (°C)  
 -15 / + 50°F = Evaporating temperature range (°F)  
 067N3006 = Code number  
 MOP K = Max. Operating Pressure in K  
 PB 46 bar / MWP 670 psig = Max. Working Pressure in bar and psig  
 327 = Date code (week 32, 2007)



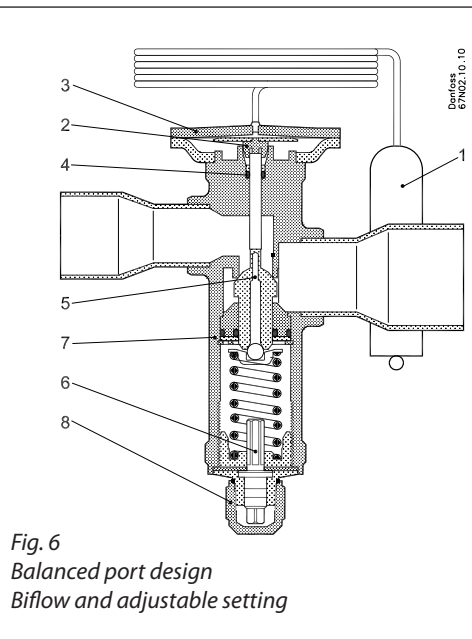
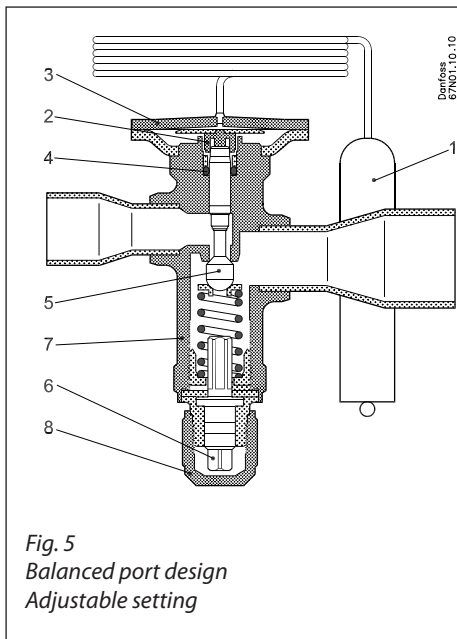
Refrigerant code: R22 = X  
 R410A = L  
 R407C = Z  
 R134a = N  
 R404A/  
 R507 = S

**Rated capacity**

Type	R22		R134a		R404A/R507		R407C		R410A	
	kW	TR	kW	TR	kW	TR	kW	TR	kW	TR
TGE 10	10.5	3.0	8.0	2.3	8.0	2.3	12.0	3.4	13.0	3.7
	14.0	4.0	11.0	3.1	10.5	3.0	16.0	4.5	17.2	4.9
	21.0	6.0	16.5	4.7	15.0	4.5	23.5	6.7	26.0	7.4
	28.0	8.0	22.0	6.3	21.0	6.0	31.0	8.9	34.7	9.9
	38.5	11.0	30.0	8.6	29.0	8.3	43.0	12.3	47.6	13.6
TGE 20	44.0	12.5	34.0	9.8	32.9	9.4	49.0	14.0	54.3	15.5
	56.0	16.0	44.0	12.5	42.4	12.1	63.0	17.9	69.3	19.8
	70.0	20.0	55.0	15.6	53.0	15.1	78.0	22.4	86.5	24.7
TGE 40	91.0	26.0	71.0	20.3	69.0	19.6	102.0	29.1	112.4	32.1
	105.0	30.0	82.0	23.5	79.0	22.6	117.0	33.5	130.0	37.1
	140.0	40.0	110.0	31.3	106.0	30.2	156.5	44.7	173.0	49.4

Design and function

- 1. Bulb with capillary tube
- 2. Thrust pad
- 3. Thermostatic element
- 4. Push pin seal
- 5. Two-way balance port
- 6. Static superheat adjustment spindle
- 7. Valve body
- 8. Protective cap



The central push pin is fitted with a robust seal (4) that ensures maximum tightness for the life of the valve.

Static superheat (SS) can be adjusted by the setting spindle (6), see fig. 5. The standard superheat setting (SS) is 4K / 7.2°F and adjustable for 0 → 8K / 0 → 14.4°F.

SS = static superheat  
OS = opening superheat  
SH = SS+OS= total superheat

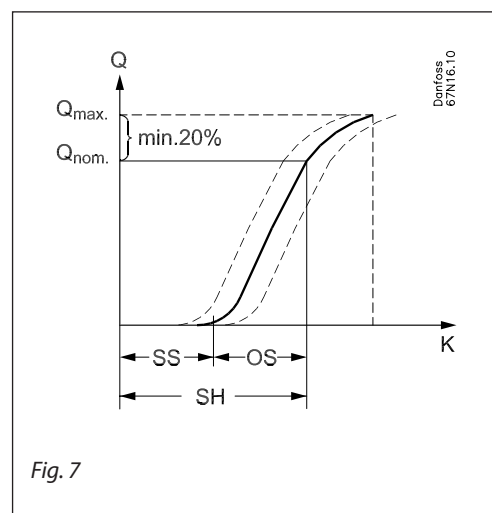
*Example:*

Static superheat SS = 4K / 7.2°F (factory setting)  
Opening superheat OS = 4K / 7.2°F  
The opening superheat is 4K, i.e. from the point the valve begins to open up to nominal capacity. Opening superheat is determined by the design and cannot be changed.  
Total superheat SH = SS+OS  
SH = 4+4 = 8K / 14.4°F  
Total superheat SH can be altered by changing SS (by using the setting spindle).

**Balanced port design and advantage**

The TGE series of thermostatic expansion valves have balanced port design. Balanced port design prevents changes in pressure drop across the valve from influencing operation and provides excellent control on applications having widely varying operating conditions. Balanced port TXV's are recommended in refrigeration and air conditioning systems with any combinations of these conditions:

- 1) Widely varying head pressures
- 2) Widely varying evaporator loads
- 3) Widely varying pressure drop across the TXV
- 4) Fluctuating or extremely low liquid temperatures
- 5) Intermittent liquid line flash gas



Application

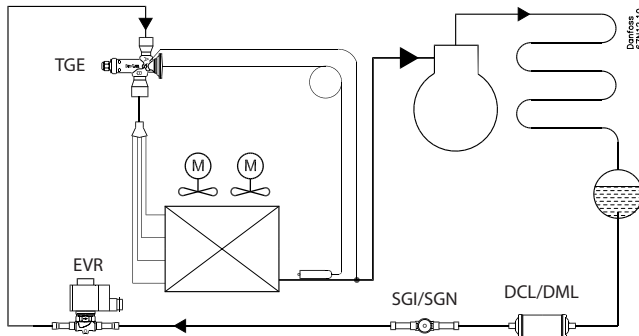


Fig. 2  
Traditional refrigeration plant

Fig. 2 is a diagram of a traditional refrigeration plant where TGE is used for flow in one direction only.

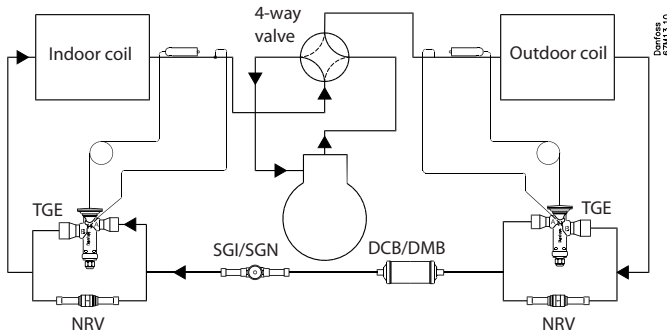


Fig. 3  
Conventional system with summer/winter operation

Fig. 3 is a conventional split heat pump system shown in cooling mode. This system has two TGE thermostatic expansion valves with fixed direction flow. An NRV check valve is placed in series with each TGE to allow liquid refrigerant to bypass when flow is opposite the TXV fixed direction.

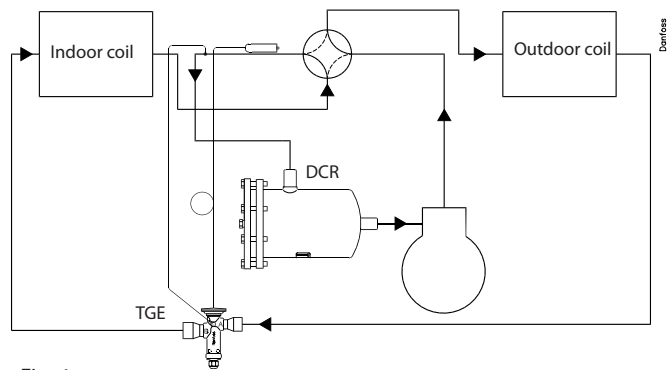


Fig. 4  
Simplified heat pump system

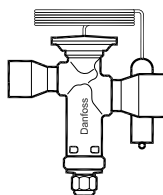
Fig. 4 is a heat pump system similar to that in fig. 3 but with a more compact design, where the distance between evaporator and condenser is very short. This system has only one bi-flow TGE valve metering liquid refrigerant effectively in both directions. Changeover is by means of a 4-way valve.

A suction filter drier is often placed in suction lines just before the compressor. The normal flow direction of TGE is determined by the primary function, i.e. cooling or heating.

Ordering

The valve and bulb straps are supplied in industrial packs or multi packs:  
 Industrial pack, TGE10 / 12 pcs  
 Industrial pack, TGE20 / 8 pcs  
 Industrial pack, TGE40 / 4 pcs

Multi pack, TGE10 / 12 pcs  
 Multi pack, TGE20 / 8 pcs  
 Multi pack, TGE40 / 6 pcs

**Ordering  
Standard range**


Range N = -40 → +10°C OS = 4 K

Type and rated capacity $Q_{nom.}^{2)}$ TR	Rated capacity $Q_{nom.}^{2)}$ kW	Inch version			mm version		
		Connection Solder ODF × ODF <sup>1)</sup> in.	Code no. Multi pack	Code no. Industrial pack	Connection Solder ODF × ODF <sup>1)</sup> mm	Code no. Multi pack	Code no. Industrial pack

**TGE 10**

TGEX 3	10.5	$\frac{3}{8} \times \frac{5}{8}$	067N2150	067N2170	10 × 16	067N2190	067N2210
TGEX 3	10.5	$\frac{1}{2} \times \frac{5}{8}$	067N2151	067N2171	12 × 16	067N2191	067N2211
TGEX 4	14	$\frac{1}{2} \times \frac{7}{8}$	067N2152	067N2172	12 × 22	067N2192	067N2212
TGEX 6	21	$\frac{1}{2} \times \frac{5}{8}$	067N2153	067N2173	12 × 16	067N2193	067N2213
TGEX 6	21	$\frac{1}{2} \times \frac{7}{8}$	067N2154	067N2174	12 × 22	067N2194	067N2214
TGEX 6	21	$\frac{5}{8} \times \frac{7}{8}$	067N2155	067N2175	16 × 22	067N2195	067N2215
TGEX 8	28	$\frac{5}{8} \times \frac{7}{8}$	067N2156	067N2176	16 × 22	067N2196	067N2216
TGEX 11	38.5	$\frac{5}{8} \times \frac{7}{8}$	067N2157	067N2177	16 × 22	067N2197	067N2217
TGEX 11	38.5	$\frac{5}{8} \times 1 \frac{1}{8}$	067N2158	067N2178	16 × 28	067N2198	067N2218

**TGE 20**

TGEX 12.5	44	$\frac{5}{8} \times \frac{7}{8}$	067N2159	067N2179	16 × 22	067N2199	067N2219
TGEX 12.5	44	$\frac{5}{8} \times 1 \frac{1}{8}$	067N2160	067N2180	16 × 28	067N2200	067N2220
TGEX 16	56	$\frac{5}{8} \times 1 \frac{1}{8}$	067N2161	067N2181	16 × 28	067N2201	067N2221
TGEX 16	56	$\frac{7}{8} \times 1 \frac{1}{8}$	067N2162	067N2182	22 × 28	067N2202	067N2222
TGEX 20	70	$\frac{7}{8} \times 1 \frac{1}{8}$	067N2163	067N2183	22 × 28	067N2203	067N2223
TGEX 20	70	$\frac{7}{8} \times 1 \frac{3}{8}$	067N2164	067N2184	22 × 35	067N2204	067N2224

**TGE 40**

TGEX 26	91	$\frac{7}{8} \times 1 \frac{3}{8}$	067N2165	067N2185	22 × 35	067N2205	067N2225
TGEX 26	91	$1 \frac{1}{8} \times 1 \frac{3}{8}$	067N2166	067N2186	28 × 35	067N2206	067N2226
TGEX 30	105	$\frac{7}{8} \times 1 \frac{3}{8}$	067N2167	067N2187	22 × 35	067N2207	067N2227
TGEX 30	105	$1 \frac{1}{8} \times 1 \frac{3}{8}$	067N2168	067N2188	28 × 35	067N2208	067N2228
TGEX 40	140	$1 \frac{1}{8} \times 1 \frac{3}{8}$	067N2169	067N2189	28 × 35	067N2209	067N2229

Range K = -25 → +10°C with MOP 100 psig/ 8 bar abs. OS = 4 K

Type and rated capacity $Q_{nom.}^{2)}$ TR	Rated capacity $Q_{nom.}^{2)}$ kW	Inch version			mm version		
		Connection Solder ODF × ODF <sup>1)</sup> in.	Code no. Multi pack	Code no. Industrial pack	Connection Solder ODF × ODF <sup>1)</sup> mm	Code no. Multi pack	Code no. Industrial pack

**TGE 10**

TGEX 3	10.5	$\frac{3}{8} \times \frac{5}{8}$	067N2000	067N2020	10 × 16	067N2040	067N2060
TGEX 3	10.5	$\frac{1}{2} \times \frac{5}{8}$	067N2001	067N2021	12 × 16	067N2041	067N2061
TGEX 4	14	$\frac{1}{2} \times \frac{7}{8}$	067N2002	067N2022	12 × 22	067N2042	067N2062
TGEX 6	21	$\frac{1}{2} \times \frac{5}{8}$	067N2003	067N2023	12 × 16	067N2043	067N2063
TGEX 6	21	$\frac{1}{2} \times \frac{7}{8}$	067N2004	067N2024	12 × 22	067N2044	067N2064
TGEX 6	21	$\frac{5}{8} \times \frac{7}{8}$	067N2005	067N2025	16 × 22	067N2045	067N2065
TGEX 8	28	$\frac{5}{8} \times \frac{7}{8}$	067N2006	067N2026	16 × 22	067N2046	067N2066
TGEX 11	38.5	$\frac{5}{8} \times \frac{7}{8}$	067N2007	067N2027	16 × 22	067N2047	067N2067
TGEX 11	38.5	$\frac{5}{8} \times 1 \frac{1}{8}$	067N2008	067N2028	16 × 28	067N2048	067N2068

**TGE 20**

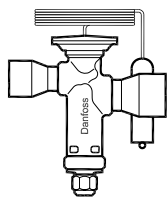
TGEX 12.5	44	$\frac{5}{8} \times \frac{7}{8}$	067N2029	067N2029	16 × 22	067N2049	067N2069
TGEX 12.5	44	$\frac{5}{8} \times 1 \frac{1}{8}$	067N2030	067N2020	16 × 28	067N2050	067N2070
TGEX 16	56	$\frac{5}{8} \times 1 \frac{1}{8}$	067N2031	067N2021	16 × 28	067N2051	067N2071
TGEX 16	56	$\frac{7}{8} \times 1 \frac{1}{8}$	067N2032	067N2022	22 × 28	067N2052	067N2072
TGEX 20	70	$\frac{7}{8} \times 1 \frac{1}{8}$	067N2033	067N2023	22 × 28	067N2053	067N2073
TGEX 20	70	$\frac{7}{8} \times 1 \frac{3}{8}$	067N2034	067N2024	22 × 35	067N2054	067N2074

**TGE 40**

TGEX 26	91	$\frac{7}{8} \times 1 \frac{3}{8}$	067N2015	067N2035	22 × 35	067N2055	067N2075
TGEX 26	91	$1 \frac{1}{8} \times 1 \frac{3}{8}$	067N2016	067N2036	28 × 35	067N2056	067N2076
TGEX 30	105	$\frac{7}{8} \times 1 \frac{3}{8}$	067N2017	067N2037	22 × 35	067N2057	067N2077
TGEX 30	105	$1 \frac{1}{8} \times 1 \frac{3}{8}$	067N2018	067N2038	28 × 35	067N2058	067N2078
TGEX 40	140	$1 \frac{1}{8} \times 1 \frac{3}{8}$	067N2019	067N2039	28 × 35	067N2059	067N2079

<sup>1)</sup> Pressure equalisation =  $\frac{1}{4}$  in (6 mm) ODF

<sup>2)</sup> The rated capacity is based on:  
 - evaporating temperature  $t_e = 5^\circ\text{C}$   
 - liquid temperature  $t_l = 28^\circ\text{C}$   
 - condensing temperature  $t_c = 32^\circ\text{C}$

**Ordering**  
**Standard range (continued)**


Range N = -40 → +10°C OS = 4 K

**R134a**

Type and rated capacity  $Q_{nom.}^{2)}$ TR	Rated capacity  $Q_{nom.}^{2)}$ kW	Inch version			mm version		
		Connection Solder ODF × ODF <sup>1)</sup>  in.	Code no. Multi pack	Code no. Industrial pack	Connection Solder ODF × ODF <sup>1)</sup>  mm	Code no. Multi pack	Code no. Industrial pack

**TGE 10**

TGEN 2.3	8	$\frac{3}{8} \times \frac{5}{8}$	<b>067N5150</b>	<b>067N5170</b>	10 × 16	<b>067N5190</b>	<b>067N5210</b>
TGEN 2.3	8	$\frac{1}{2} \times \frac{5}{8}$	<b>067N5151</b>	<b>067N5171</b>	12 × 16	<b>067N5191</b>	<b>067N5211</b>
TGEN 3.1	11	$\frac{1}{2} \times \frac{7}{8}$	<b>067N5152</b>	<b>067N5172</b>	12 × 22	<b>067N5192</b>	<b>067N5212</b>
TGEN 4.7	16.5	$\frac{1}{2} \times \frac{5}{8}$	<b>067N5153</b>	<b>067N5173</b>	12 × 16	<b>067N5193</b>	<b>067N5213</b>
TGEN 4.7	16.5	$\frac{1}{2} \times \frac{7}{8}$	<b>067N5154</b>	<b>067N5174</b>	12 × 22	<b>067N5194</b>	<b>067N5214</b>
TGEN 4.7	16.5	$\frac{5}{8} \times \frac{7}{8}$	<b>067N5155</b>	<b>067N5175</b>	16 × 22	<b>067N5195</b>	<b>067N5215</b>
TGEN 6.3	22	$\frac{5}{8} \times \frac{7}{8}$	<b>067N5156</b>	<b>067N5176</b>	16 × 22	<b>067N5196</b>	<b>067N5216</b>
TGEN 8.6	30	$\frac{5}{8} \times \frac{7}{8}$	<b>067N5157</b>	<b>067N5177</b>	16 × 22	<b>067N5197</b>	<b>067N5217</b>
TGEN 8.6	30	$\frac{5}{8} \times 1 \frac{1}{8}$	<b>067N5158</b>	<b>067N5178</b>	16 × 28	<b>067N5198</b>	<b>067N5218</b>

**TGE 20**

TGEN 9.8	34	$\frac{5}{8} \times \frac{7}{8}$	<b>067N5159</b>	<b>067N5179</b>	16 × 22	<b>067N5199</b>	<b>067N5219</b>
TGEN 9.8	34	$\frac{5}{8} \times 1 \frac{1}{8}$	<b>067N5160</b>	<b>067N5180</b>	16 × 28	<b>067N5200</b>	<b>067N5220</b>
TGEN 12.5	44	$\frac{5}{8} \times 1 \frac{1}{8}$	<b>067N5161</b>	<b>067N5181</b>	16 × 28	<b>067N5201</b>	<b>067N5221</b>
TGEN 12.5	44	$\frac{7}{8} \times 1 \frac{1}{8}$	<b>067N5162</b>	<b>067N5182</b>	22 × 28	<b>067N5202</b>	<b>067N5222</b>
TGEN 15.6	55	$\frac{7}{8} \times 1 \frac{1}{8}$	<b>067N5163</b>	<b>067N5183</b>	22 × 28	<b>067N5203</b>	<b>067N5223</b>
TGEN 15.6	55	$\frac{7}{8} \times 1 \frac{3}{8}$	<b>067N5164</b>	<b>067N5184</b>	22 × 35	<b>067N5204</b>	<b>067N5224</b>

**TGE 40**

TGEN 20.3	71	$\frac{7}{8} \times 1 \frac{3}{8}$	<b>067N5165</b>	<b>067N5185</b>	22 × 35	<b>067N5205</b>	<b>067N5225</b>
TGEN 20.3	71	$1 \frac{1}{8} \times 1 \frac{3}{8}$	<b>067N5166</b>	<b>067N5186</b>	28 × 35	<b>067N5206</b>	<b>067N5226</b>
TGEN 23.5	82	$\frac{7}{8} \times 1 \frac{3}{8}$	<b>067N5167</b>	<b>067N5187</b>	22 × 35	<b>067N5207</b>	<b>067N5227</b>
TGEN 23.5	82	$1 \frac{1}{8} \times 1 \frac{3}{8}$	<b>067N5168</b>	<b>067N5188</b>	28 × 35	<b>067N5208</b>	<b>067N5228</b>
TGEN 31.3	110	$1 \frac{1}{8} \times 1 \frac{3}{8}$	<b>067N5169</b>	<b>067N5189</b>	28 × 35	<b>067N5209</b>	<b>067N5229</b>

Range K = -25 → +10°C with MOP 55 psig/ 5 bar abs. OS = 4 K

Type and rated capacity  $Q_{nom.}^{2)}$ TR	Rated capacity  $Q_{nom.}^{2)}$ kW	Inch version			mm version		
		Connection Solder ODF × ODF <sup>1)</sup>  in.	Code no. Multi pack	Code no. Industrial pack	Connection Solder ODF × ODF <sup>1)</sup>  mm	Code no. Multi pack	Code no. Industrial pack

**TGE 10**

TGEN 2.3	8	$\frac{3}{8} \times \frac{5}{8}$	<b>067N5000</b>	<b>067N5020</b>	10 × 16	<b>067N5040</b>	<b>067N5060</b>
TGEN 2.3	8	$\frac{1}{2} \times \frac{5}{8}$	<b>067N5001</b>	<b>067N5021</b>	12 × 16	<b>067N5041</b>	<b>067N5061</b>
TGEN 3.1	11	$\frac{1}{2} \times \frac{7}{8}$	<b>067N5002</b>	<b>067N5022</b>	12 × 22	<b>067N5042</b>	<b>067N5062</b>
TGEN 4.7	16.5	$\frac{1}{2} \times \frac{5}{8}$	<b>067N5003</b>	<b>067N5023</b>	12 × 16	<b>067N5043</b>	<b>067N5063</b>
TGEN 4.7	16.5	$\frac{1}{2} \times \frac{7}{8}$	<b>067N5004</b>	<b>067N5024</b>	12 × 22	<b>067N5044</b>	<b>067N5064</b>
TGEN 4.7	16.5	$\frac{5}{8} \times \frac{7}{8}$	<b>067N5005</b>	<b>067N5025</b>	16 × 22	<b>067N5045</b>	<b>067N5065</b>
TGEN 6.3	22	$\frac{5}{8} \times \frac{7}{8}$	<b>067N5006</b>	<b>067N5026</b>	16 × 22	<b>067N5046</b>	<b>067N5066</b>
TGEN 8.6	30	$\frac{5}{8} \times \frac{7}{8}$	<b>067N5007</b>	<b>067N5027</b>	16 × 22	<b>067N5047</b>	<b>067N5067</b>
TGEN 8.6	30	$\frac{5}{8} \times 1 \frac{1}{8}$	<b>067N5008</b>	<b>067N5028</b>	16 × 28	<b>067N5048</b>	<b>067N5068</b>

**TGE 20**

TGEN 9.8	34	$\frac{5}{8} \times \frac{7}{8}$	<b>067N5009</b>	<b>067N5029</b>	16 × 22	<b>067N5049</b>	<b>067N5069</b>
TGEN 9.8	34	$\frac{5}{8} \times 1 \frac{1}{8}$	<b>067N5010</b>	<b>067N5030</b>	16 × 28	<b>067N5050</b>	<b>067N5070</b>
TGEN 12.5	44	$\frac{5}{8} \times 1 \frac{1}{8}$	<b>067N5011</b>	<b>067N5031</b>	16 × 28	<b>067N5051</b>	<b>067N5071</b>
TGEN 12.5	44	$\frac{7}{8} \times 1 \frac{1}{8}$	<b>067N5012</b>	<b>067N5032</b>	22 × 28	<b>067N5052</b>	<b>067N5072</b>
TGEN 15.6	55	$\frac{7}{8} \times 1 \frac{1}{8}$	<b>067N5013</b>	<b>067N5033</b>	22 × 28	<b>067N5053</b>	<b>067N5073</b>
TGEN 15.6	55	$\frac{7}{8} \times 1 \frac{3}{8}$	<b>067N5014</b>	<b>067N5034</b>	22 × 35	<b>067N5054</b>	<b>067N5074</b>

**TGE 40**

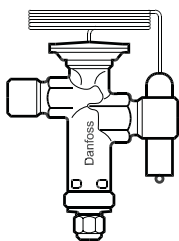
TGEN 20.3	71	$\frac{7}{8} \times 1 \frac{3}{8}$	<b>067N5015</b>	<b>067N5035</b>	22 × 35	<b>067N5055</b>	<b>067N5075</b>
TGEN 20.3	71	$1 \frac{1}{8} \times 1 \frac{3}{8}$	<b>067N5016</b>	<b>067N5036</b>	28 × 35	<b>067N5056</b>	<b>067N5076</b>
TGEN 23.5	82	$\frac{7}{8} \times 1 \frac{3}{8}$	<b>067N5017</b>	<b>067N5037</b>	22 × 35	<b>067N5057</b>	<b>067N5077</b>
TGEN 23.5	82	$1 \frac{1}{8} \times 1 \frac{3}{8}$	<b>067N5018</b>	<b>067N5038</b>	28 × 35	<b>067N5058</b>	<b>067N5078</b>
TGEN 31.3	110	$1 \frac{1}{8} \times 1 \frac{3}{8}$	<b>067N5019</b>	<b>067N5039</b>	28 × 35	<b>067N5059</b>	<b>067N5079</b>

<sup>1)</sup> Pressure equalisation =  $\frac{1}{4}$  in (6 mm) ODF

<sup>2)</sup> The rated capacity is based on:

- evaporating temperature  $t_e = 5^\circ\text{C}$
- liquid temperature  $t_l = 28^\circ\text{C}$
- condensing temperature  $t_c = 32^\circ\text{C}$



**Ordering**  
**Standard range** (continued)


Range N = -40 → +10°C OS = 4 K

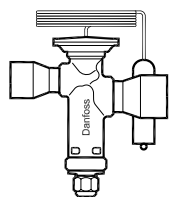
Type and rated capacity $Q_{nom.}^{1)}$ TR	Rated capacity $Q_{nom.}^{1)}$ kW	Inch version		
		Connection Screw in.	Code no. Multi pack	Code no. Industrial pack
TGEN 2.3	8	$1/2 \times 5/8 \times 1/4$ MIO	<b>067N7150</b>	
TGEN 3.1	11	$1/2 \times 5/8 \times 1/4$ Flare		<b>067N7151</b>
TGEN 3.1	11	$1/2 \times 5/8 \times 1/4$ MIO	<b>067N7152</b>	
TGEN 3.1	11	$3/8 \times 1/2 \times 1/4$ F	<b>067N7153</b>	
TGEN 3.1	11	$3/8 \times 1/2 \times 1/4$ Flare		<b>067N7155</b>
TGEN 4.7	16	$1/2 \times 5/8 \times 1/4$ Flare		<b>067N7156</b>
TGEN 4.7	16	$1/2 \times 5/8 \times 1/4$ Flare	<b>067N7157</b>	
TGEN 4.7	16	$3/8 \times 1/2 \times 1/4$ F	<b>067N7158</b>	
TGEN 4.7	16	$3/8 \times 1/2 \times 1/4$ Flare		<b>067N7159</b>
TGEN 4.7	16	$3/8 \times 1/2 \times 1/4$ Flare	<b>067N7160</b>	
TGEN 6.3	22	$1/2 \times 5/8 \times 1/4$ MIO	<b>067N7161</b>	
TGEN 6.3	22	$1/2 \times 5/8 \times 1/4$ MIO	<b>067N7161</b>	
TGEN 6.3	22	$3/8 \times 1/2 \times 1/4$ Flare		<b>067N7162</b>
TGEN 6.3	22	$3/8 \times 1/2 \times 1/4$ Flare	<b>067N7163</b>	
TGEN 6.3	22	$3/8 \times 1/2 \times 1/4$ MIO x $1/4$ F	<b>067N7164</b>	
TGEN 6.3	22	$5/8 \times 3/4 \times 1/4$ MIO	<b>067N7165</b>	
TGEN 8.6	30	$5/8 \times 3/4 \times 1/4$ MIO	<b>067N7166</b>	
TGEN 9.8	34	$5/8 \times 3/4 \times 1/4$ MIO	<b>067N7167</b>	
TGEN 12.5	44	$5/8 \times 3/4 \times 1/4$ Flare	<b>067N7168</b>	
TGEN 12.5	44	$5/8 \times 3/4 \times 1/4$ MIO	<b>067N7160</b>	
TGEN 15.6	55	$5/8 \times 3/4 \times 1/4$ MIO		<b>067N7170</b>

Range K = -25 → +10°C with MOP 55 psig/5 bar abs. OS = 4 K

Type and rated capacity $Q_{nom.}^{1)}$ TR	Rated capacity $Q_{nom.}^{1)}$ kW	Inch version		
		Connection Screw in.	Code no. Multi pack	Code no. Industrial pack
TGEN 3.1	11	$3/8 \times 1/2 \times 1/4$ F	<b>067N7000</b>	
TGEN 4.7	16	$3/8 \times 1/2 \times 1/4$ F	<b>067N7003</b>	
TGEN 6.3	22	$3/8 \times 1/2 \times 1/4$ F		<b>067N7007</b>
TGEN 4.7	16	$1/2 \times 5/8 \times 1/4$ F	<b>067N7004</b>	
TGEN 4.7	16	$1/2 \times 5/8 \times 1/4$ F	<b>067N7005</b>	
TGEN 6.3	22	$1/2 \times 5/8 \times 1/4$ F	<b>067N7008</b>	
TGEN 6.3	22	$5/8 \times 3/4 \times 1/4$ F	<b>067N7013</b>	
TGEN 8.6	30	$5/8 \times 3/4 \times 1/4$ F	<b>067N7016</b>	
TGEN 9.8	34	$5/8 \times 3/4 \times 1/4$ F	<b>067N7018</b>	
TGEN 12.5	44	$5/8 \times 3/4 \times 1/4$ F	<b>067N7020</b>	
TGEN 15.6	55	$5/8 \times 3/4 \times 1/4$ F	<b>067N7021</b>	
TGEN 3.1	11	$3/8 \times 1/2$ MIO $1/4$ F		<b>067N7001</b>
TGEN 3.1	11	$1/2 \times 5/8 \times 1/4$ MIO	<b>067N7002</b>	
TGEN 6.3	22	$1/2 \times 5/8 \times 1/4$ MIO	<b>067N7010</b>	
TGEN 6.3	22	$1/2 \times 5/8 \times 1/4$ MIO		<b>067N7011</b>
TGEN 4.7	16	$1/2 \times 5/8$ MIO x $1/4$ F	<b>067N7006</b>	
TGEN 6.3	22	$3/8 \times 1/2$ MIO x $1/4$ F		<b>067N7009</b>
TGEN 6.3	22	$5/8 \times 3/4 \times 1/4$ MIO	<b>067N7012</b>	
TGEN 8.6	30	$5/8 \times 3/4 \times 1/4$ MIO	<b>067N7015</b>	
TGEN 9.8	34	$5/8 \times 3/4 \times 1/4$ MIO	<b>067N7017</b>	
TGEN 9.8	34	$5/8 \times 3/4 \times 1/4$ MIO	<b>067N7019</b>	
TGEN 3.1	11	$3/8 \times 1/2$ ORFS x $1/4$ F		<b>067N7040</b>
TGEN 4.7	16	$3/8 \times 1/2$ ORFS x $1/4$ F		<b>067N7041</b>
TGEN 6.3	22	$3/8 \times 1/2$ ORFS x $1/4$ F		<b>067N7042</b>
TGEN 6.3	22	$5/8 \times 3/4$ ORFS x $1/4$ F		<b>067N7043</b>
TGEN 15.6	55	$5/8 \times 3/4$ ORFS x $1/4$ F		<b>067N7044</b>

<sup>1)</sup>The rated capacity is based on:  
 - evaporating temperature  $t_e = 5^\circ\text{C}$   
 - liquid temperature  $t_l = 28^\circ\text{C}$   
 - condensing temperature  $t_c = 32^\circ\text{C}$

F: Flare  
 MIO: Male inserts O-ring  
 ORFS: O-ring face seal

**Ordering  
Standard range (continued)**

*Range N = -40 → +10°C OS = 4 K*
**R407C**

Type and rated capacity  $Q_{nom.}^{2)}$ TR	Rated capacity  $Q_{nom.}^{2)}$ kW	Inch version			mm version		
		Connection Solder ODF × ODF <sup>1)</sup> in.	Code no. Multi pack	Code no. Industrial pack	Connection Solder ODF × ODF <sup>1)</sup> mm	Code no. Multi pack	Code no. Industrial pack

**TGE 10**

TGEZ 3.4	12	$\frac{3}{8} \times \frac{5}{8}$	<b>067N4150</b>	<b>067N4170</b>	10 × 16	<b>067N4190</b>	<b>067N4210</b>
TGEZ 3.4	12	$\frac{1}{2} \times \frac{5}{8}$	<b>067N4151</b>	<b>067N4171</b>	12 × 16	<b>067N4191</b>	<b>067N4211</b>
TGEZ 4.5	16	$\frac{1}{2} \times \frac{7}{8}$	<b>067N4152</b>	<b>067N4172</b>	12 × 22	<b>067N4192</b>	<b>067N4212</b>
TGEZ 6.7	23.5	$\frac{1}{2} \times \frac{5}{8}$	<b>067N4153</b>	<b>067N4173</b>	12 × 16	<b>067N4193</b>	<b>067N4213</b>
TGEZ 6.7	23.5	$\frac{1}{2} \times \frac{7}{8}$	<b>067N4154</b>	<b>067N4174</b>	12 × 22	<b>067N4194</b>	<b>067N4214</b>
TGEZ 6.7	23.5	$\frac{5}{8} \times \frac{7}{8}$	<b>067N4155</b>	<b>067N4175</b>	16 × 22	<b>067N4195</b>	<b>067N4215</b>
TGEZ 8.9	31	$\frac{5}{8} \times \frac{7}{8}$	<b>067N4156</b>	<b>067N4176</b>	16 × 22	<b>067N4196</b>	<b>067N4216</b>
TGEZ 12.3	43	$\frac{5}{8} \times \frac{7}{8}$	<b>067N4157</b>	<b>067N4177</b>	16 × 22	<b>067N4197</b>	<b>067N4217</b>
TGEZ 12.3	43	$\frac{5}{8} \times 1 \frac{1}{8}$	<b>067N4158</b>	<b>067N4178</b>	16 × 28	<b>067N4198</b>	<b>067N4218</b>

**TGE 20**

TGEZ 14.0	49	$\frac{5}{8} \times \frac{7}{8}$	<b>067N4159</b>	<b>067N4179</b>	16 × 22	<b>067N4199</b>	<b>067N4219</b>
TGEZ 14.0	49	$\frac{5}{8} \times 1 \frac{1}{8}$	<b>067N4160</b>	<b>067N4180</b>	16 × 28	<b>067N4200</b>	<b>067N4220</b>
TGEZ 17.9	63	$\frac{5}{8} \times 1 \frac{1}{8}$	<b>067N4161</b>	<b>067N4181</b>	16 × 28	<b>067N4201</b>	<b>067N4221</b>
TGEZ 17.9	63	$\frac{7}{8} \times 1 \frac{1}{8}$	<b>067N4162</b>	<b>067N4182</b>	22 × 28	<b>067N4202</b>	<b>067N4222</b>
TGEZ 22.4	78	$\frac{7}{8} \times 1 \frac{1}{8}$	<b>067N4163</b>	<b>067N4183</b>	22 × 28	<b>067N4203</b>	<b>067N4223</b>
TGEZ 22.4	78	$\frac{7}{8} \times 1 \frac{3}{8}$	<b>067N4164</b>	<b>067N4184</b>	22 × 35	<b>067N4204</b>	<b>067N4224</b>

**TGE 40**

TGEZ 29.1	102	$\frac{7}{8} \times 1 \frac{3}{8}$	<b>067N4165</b>	<b>067N4185</b>	22 × 35	<b>067N4205</b>	<b>067N4225</b>
TGEZ 29.1	102	$1 \frac{1}{8} \times 1 \frac{3}{8}$	<b>067N4166</b>	<b>067N4186</b>	28 × 35	<b>067N4206</b>	<b>067N4226</b>
TGEZ 33.5	117	$\frac{7}{8} \times 1 \frac{3}{8}$	<b>067N4167</b>	<b>067N4187</b>	22 × 35	<b>067N4207</b>	<b>067N4227</b>
TGEZ 33.5	117	$1 \frac{1}{8} \times 1 \frac{3}{8}$	<b>067N4168</b>	<b>067N4188</b>	28 × 35	<b>067N4208</b>	<b>067N4228</b>
TGEZ 44.7	156.5	$1 \frac{1}{8} \times 1 \frac{3}{8}$	<b>067N4169</b>	<b>067N4189</b>	28 × 35	<b>067N4209</b>	<b>067N4229</b>

*Range K = -25 → +10°C with MOP 95 psig/ 7.5 bar abs. OS = 4 K*

Type and rated capacity  $Q_{nom.}^{2)}$ TR	Rated capacity  $Q_{nom.}^{2)}$ kW	Inch version			mm version		
		Connection Solder ODF × ODF <sup>1)</sup> in.	Code no. Multi pack	Code no. Industrial pack	Connection Solder ODF × ODF <sup>1)</sup> mm	Code no. Multi pack	Code no. Industrial pack

**TGE 10**

TGEZ 3.4	12	$\frac{3}{8} \times \frac{5}{8}$	<b>067N4000</b>	<b>067N4020</b>	10 × 16	<b>067N4040</b>	<b>067N4060</b>
TGEZ 3.4	12	$\frac{1}{2} \times \frac{5}{8}$	<b>067N4001</b>	<b>067N4021</b>	12 × 16	<b>067N4041</b>	<b>067N4061</b>
TGEZ 4.5	16	$\frac{1}{2} \times \frac{7}{8}$	<b>067N4002</b>	<b>067N4022</b>	12 × 22	<b>067N4042</b>	<b>067N4062</b>
TGEZ 6.7	23.5	$\frac{1}{2} \times \frac{5}{8}$	<b>067N4003</b>	<b>067N4023</b>	12 × 16	<b>067N4043</b>	<b>067N4063</b>
TGEZ 6.7	23.5	$\frac{1}{2} \times \frac{7}{8}$	<b>067N4004</b>	<b>067N4024</b>	12 × 22	<b>067N4044</b>	<b>067N4064</b>
TGEZ 6.7	23.5	$\frac{5}{8} \times \frac{7}{8}$	<b>067N4005</b>	<b>067N4025</b>	16 × 22	<b>067N4045</b>	<b>067N4065</b>
TGEZ 8.9	31	$\frac{5}{8} \times \frac{7}{8}$	<b>067N4006</b>	<b>067N4026</b>	16 × 22	<b>067N4046</b>	<b>067N4066</b>
TGEZ 12.3	43	$\frac{5}{8} \times \frac{7}{8}$	<b>067N4007</b>	<b>067N4027</b>	16 × 22	<b>067N4047</b>	<b>067N4067</b>
TGEZ 12.3	43	$\frac{5}{8} \times 1 \frac{1}{8}$	<b>067N4008</b>	<b>067N4028</b>	16 × 28	<b>067N4048</b>	<b>067N4068</b>

**TGE 20**

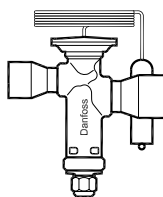
TGEZ 14.0	49	$\frac{5}{8} \times \frac{7}{8}$	<b>067N4009</b>	<b>067N4029</b>	16 × 22	<b>067N4049</b>	<b>067N4069</b>
TGEZ 14.0	49	$\frac{5}{8} \times 1 \frac{1}{8}$	<b>067N4010</b>	<b>067N4030</b>	16 × 28	<b>067N4050</b>	<b>067N4070</b>
TGEZ 17.9	63	$\frac{5}{8} \times 1 \frac{1}{8}$	<b>067N4011</b>	<b>067N4031</b>	16 × 28	<b>067N4051</b>	<b>067N4071</b>
TGEZ 17.9	63	$\frac{7}{8} \times 1 \frac{1}{8}$	<b>067N4012</b>	<b>067N4032</b>	22 × 28	<b>067N4052</b>	<b>067N4072</b>
TGEZ 22.4	78	$\frac{7}{8} \times 1 \frac{1}{8}$	<b>067N4013</b>	<b>067N4033</b>	22 × 28	<b>067N4053</b>	<b>067N4073</b>
TGEZ 22.4	78	$\frac{7}{8} \times 1 \frac{3}{8}$	<b>067N4014</b>	<b>067N4034</b>	22 × 35	<b>067N4054</b>	<b>067N4074</b>

**TGE 40**

TGEZ 29.1	102	$\frac{7}{8} \times 1 \frac{3}{8}$	<b>067N4015</b>	<b>067N4035</b>	22 × 35	<b>067N4055</b>	<b>067N4075</b>
TGEZ 29.1	102	$1 \frac{1}{8} \times 1 \frac{3}{8}$	<b>067N4016</b>	<b>067N4036</b>	28 × 35	<b>067N4056</b>	<b>067N4076</b>
TGEZ 33.5	117	$\frac{7}{8} \times 1 \frac{3}{8}$	<b>067N4017</b>	<b>067N4037</b>	22 × 35	<b>067N4057</b>	<b>067N4077</b>
TGEZ 33.5	117	$1 \frac{1}{8} \times 1 \frac{3}{8}$	<b>067N4018</b>	<b>067N4038</b>	28 × 35	<b>067N4058</b>	<b>067N4078</b>
TGEZ 44.7	156.5	$1 \frac{1}{8} \times 1 \frac{3}{8}$	<b>067N4019</b>	<b>067N4039</b>	28 × 35	<b>067N4059</b>	<b>067N4079</b>

<sup>1)</sup> Pressure equalisation =  $\frac{1}{4}$  in (6 mm) ODF

<sup>2)</sup> The rated capacity is based on:  
 - evaporating temperature  $t_e = 5^\circ\text{C}$   
 - liquid temperature  $t_l = 28^\circ\text{C}$   
 - condensing temperature  $t_c = 32^\circ\text{C}$

**Ordering**  
**Standard range** (continued)


Range N = -40 → +10°C OS = 4 K

Type and rated capacity $Q_{nom.}^{2)}$ TR	Rated capacity $Q_{nom.}^{2)}$ kW	Inch version			mm version		
		Connection Solder ODF × ODF <sup>1)</sup> in.	Code no. Multi pack	Code no. Industrial pack	Connection Solder ODF × ODF <sup>1)</sup> mm	Code no. Multi pack	Code no. Industrial pack

**TGE 10**

TGEL 3.7	13.0	$\frac{3}{8} \times \frac{5}{8}$	067N3150	067N3170	10 × 16	067N3190	067N3210
TGEL 3.7	13.0	$\frac{1}{2} \times \frac{5}{8}$	067N3151	067N3171	12 × 16	067N3191	067N3211
TGEL 4.9	17.2	$\frac{1}{2} \times \frac{7}{8}$	067N3152	067N3172	12 × 22	067N3192	067N3212
TGEL 7.4	26.0	$\frac{1}{2} \times \frac{5}{8}$	067N3153	067N3173	12 × 16	067N3193	067N3213
TGEL 7.4	26.0	$\frac{1}{2} \times \frac{7}{8}$	067N3154	067N3174	12 × 22	067N3194	067N3214
TGEL 7.4	26.0	$\frac{5}{8} \times \frac{7}{8}$	067N3155	067N3175	16 × 22	067N3195	067N3215
TGEL 9.9	34.7	$\frac{5}{8} \times \frac{7}{8}$	067N3156	067N3176	16 × 22	067N3196	067N3216
TGEL 13.6	47.6	$\frac{5}{8} \times \frac{7}{8}$	067N3157	067N3177	16 × 22	067N3197	067N3217
TGEL 13.6	47.6	$\frac{5}{8} \times 1 \frac{1}{8}$	067N3158	067N3178	16 × 28	067N3198	067N3218

**TGE 20**

TGEL 15.5	54.3	$\frac{5}{8} \times \frac{7}{8}$	067N3159	067N3179	16 × 22	067N3199	067N3219
TGEL 15.5	54.3	$\frac{5}{8} \times 1 \frac{1}{8}$	067N3160	067N3180	16 × 28	067N3200	067N3220
TGEL 19.8	69.3	$\frac{5}{8} \times 1 \frac{1}{8}$	067N3161	067N3181	16 × 28	067N3201	067N3221
TGEL 19.8	69.3	$\frac{7}{8} \times 1 \frac{1}{8}$	067N3162	067N3182	22 × 28	067N3202	067N3222
TGEL 24.7	86.5	$\frac{7}{8} \times 1 \frac{1}{8}$	067N3163	067N3183	22 × 28	067N3203	067N3223
TGEL 24.7	86.5	$\frac{7}{8} \times 1 \frac{3}{8}$	067N3164	067N3184	28 × 28	067N3204	067N3224

**TGE 40**

TGEL 32.1	112.4	$\frac{7}{8} \times 1 \frac{1}{8}$	067N3165	067N3185	22 × 35	067N3205	067N3225
TGEL 32.1	112.4	$1 \frac{1}{8} \times 1 \frac{3}{8}$	067N3166	067N3186	28 × 35	067N3206	067N3226
TGEL 37.1	130.0	$\frac{7}{8} \times 1 \frac{3}{8}$	067N3167	067N3187	22 × 35	067N3207	067N3227
TGEL 37.1	130.0	$1 \frac{1}{8} \times 1 \frac{3}{8}$	067N3168	067N3188	28 × 35	067N3208	067N3228
TGEL 49.4	173.0	$1 \frac{1}{8} \times 1 \frac{3}{8}$	067N3169	067N3189	28 × 35	067N3209	067N3229

Range K = -25 → +10°C with MOP 167 psig/12.5 bar abs. OS = 4 K

Type and rated capacity $Q_{nom.}^{2)}$ TR	Rated capacity $Q_{nom.}^{2)}$ kW	Inch version			mm version		
		Connection Solder ODF × ODF <sup>1)</sup> in.	Code no. Multi pack	Code no. Industrial pack	Connection Solder ODF × ODF <sup>1)</sup> mm	Code no. Multi pack	Code no. Industrial pack

**TGE 10**

TGEL 3.7	13.0	$\frac{3}{8} \times \frac{5}{8}$	067N3000	067N3020	10 × 16	067N3040	067N3060
TGEL 3.7	13.0	$\frac{1}{2} \times \frac{5}{8}$	067N3001	067N3021	12 × 16	067N3041	067N3061
TGEL 4.9	17.2	$\frac{1}{2} \times \frac{7}{8}$	067N3002	067N3022	12 × 22	067N3042	067N3062
TGEL 7.4	26.0	$\frac{1}{2} \times \frac{5}{8}$	067N3003	067N3023	12 × 16	067N3043	067N3063
TGEL 7.4	26.0	$\frac{1}{2} \times \frac{7}{8}$	067N3004	067N3024	12 × 22	067N3044	067N3064
TGEL 7.4	26.0	$\frac{5}{8} \times \frac{7}{8}$	067N3005	067N3025	16 × 22	067N3045	067N3065
TGEL 9.9	34.7	$\frac{5}{8} \times \frac{7}{8}$	067N3006	067N3026	16 × 22	067N3046	067N3066
TGEL 13.6	47.6	$\frac{5}{8} \times \frac{7}{8}$	067N3007	067N3027	16 × 22	067N3047	067N3067
TGEL 13.6	47.6	$\frac{5}{8} \times 1 \frac{1}{8}$	067N3008	067N3028	16 × 28	067N3048	067N3068

**TGE 20**

TGEL 15.5	54.3	$\frac{5}{8} \times \frac{7}{8}$	067N3009	067N3029	16 × 22	067N3049	067N3069
TGEL 15.5	54.3	$\frac{5}{8} \times 1 \frac{1}{8}$	067N3010	067N3030	16 × 28	067N3050	067N3070
TGEL 19.8	69.3	$\frac{5}{8} \times 1 \frac{1}{8}$	067N3011	067N3031	16 × 28	067N3051	067N3071
TGEL 19.8	69.3	$\frac{7}{8} \times 1 \frac{1}{8}$	067N3012	067N3032	22 × 28	067N3052	067N3072
TGEL 24.7	86.5	$\frac{7}{8} \times 1 \frac{1}{8}$	067N3013	067N3033	22 × 28	067N3053	067N3073
TGEL 24.7	86.5	$\frac{7}{8} \times 1 \frac{3}{8}$	067N3014	067N3034	28 × 28	067N3054	067N3074

**TGE 40**

TGEL 32.1	112.4	$\frac{7}{8} \times 1 \frac{1}{8}$	067N3015	067N3035	22 × 35	067N3055	067N3075
TGEL 32.1	112.4	$1 \frac{1}{8} \times 1 \frac{3}{8}$	067N3016	067N3036	28 × 35	067N3056	067N3076
TGEL 37.1	130.0	$\frac{7}{8} \times 1 \frac{3}{8}$	067N3017	067N3037	22 × 35	067N3057	067N3077
TGEL 37.1	130.0	$1 \frac{1}{8} \times 1 \frac{3}{8}$	067N3018	067N3038	28 × 35	067N3058	067N3078
TGEL 49.4	173.0	$1 \frac{1}{8} \times 1 \frac{3}{8}$	067N3019	067N3039	28 × 35	067N3059	067N3079

<sup>1)</sup> Pressure equalisation =  $\frac{1}{4}$  in (6 mm) ODF

<sup>2)</sup> The rated capacity is based on:  
 - evaporating temperature  $t_e = 5^\circ\text{C}$   
 - liquid temperature  $t_l = 28^\circ\text{C}$   
 - condensing temperature  $t_c = 32^\circ\text{C}$

**Capacity**
**R22**
*Capacity in kW for range N and K, opening superheat OS = 4 K*

Type and rated capacity	Rated capacity [kW]	Pressure drop across the valve $\Delta p$ bar								Pressure drop across the valve $\Delta p$ bar							
		2	4	6	8	10	12	14	16	2	4	6	8	10	12	14	16
<b>Evaporating temperature +15°C</b>										<b>Evaporating temperature +10°C</b>							
TGEX 3	10.5	7.1	9.4	10.8	11.7	12.2	12.5	12.7	12.8	6.8	9.0	10.4	11.1	11.6	11.9	12.0	12.1
TGEX 4	14.0	9.7	12.8	14.7	15.8	16.5	16.9	17.1	17.1	9.3	12.3	14.1	15.1	15.7	16.0	16.2	16.2
TGEX 6	21.0	14.2	18.7	21.4	23.9	23.9	24.3	24.5	24.5	13.8	18.1	20.6	22.0	22.7	23.2	23.3	23.2
TGEX 8	28.0	18.7	24.5	27.9	30.0	31.1	31.6	31.8	31.7	18.2	23.8	27.1	28.8	29.8	30.3	30.4	30.2
TGEX 11	38.5	24.2	32.2	37.3	40.6	42.6	43.9	44.7	45.1	23.9	31.7	36.6	39.5	41.3	42.6	43.3	43.6
TGEX 12.5	44.0	32.5	42.1	47.3	50.2	51.4	51.7	51.4	50.7	31.2	40.2	45.1	47.4	48.4	48.6	48.3	47.5
TGEX 16	56.0	41.8	53.9	60.3	63.7	64.9	65.0	64.4	63.3	40.1	51.5	57.4	60.1	61.1	61.1	60.4	59.3
TGEX 20	70.0	47.1	61.4	69.6	74.1	76.0	76.4	75.9	74.5	45.7	59.3	66.7	70.2	71.6	71.6	70.7	69.3
TGEX 26	41.0	80.6	102.3	113.1	118.0	118.7	117.6	115.3	112.2	77.6	98.0	107.9	111.4	111.8	110.5	108.1	105.0
TGEX 30	105.0	92.0	116.7	128.9	134.2	134.9	133.5	130.7	127.1	88.7	111.9	123.0	126.8	127.1	125.4	122.6	118.9
TGEX 40	140.0	111.5	145.7	165.2	176.3	181.2	182.8	182.0	179.4	107.8	140.0	157.9	166.7	170.4	171.2	169.6	166.5
<b>Evaporating temperature +5°C</b>										<b>Evaporating temperature 0°C</b>							
TGEX 3	10.5	6.6	8.6	9.8	10.5	10.9	11.2	11.3	11.4	6.2	8.2	9.2	9.8	10.2	10.5	10.6	10.6
TGEX 4	14.0	9.0	11.8	13.4	14.2	14.8	15.1	15.2	15.2	8.5	11.2	12.6	13.4	13.8	14.1	14.2	14.2
TGEX 6	21.0	13.3	17.3	19.6	20.8	21.5	21.9	22.0	21.9	12.7	16.5	18.5	19.6	20.2	20.5	20.5	20.4
TGEX 8	28.0	17.7	23.0	25.9	27.5	28.3	28.7	28.8	28.6	17.0	22.0	24.6	26.0	26.7	27.0	27.0	26.8
TGEX 11	38.5	23.5	31.0	35.5	38.1	39.8	40.9	41.6	41.9	22.9	30.1	34.1	36.5	38.1	39.0	39.6	39.8
TGEX 12.5	44.0	29.7	38.1	42.5	44.4	45.2	45.3	44.9	44.2	28.1	35.8	39.5	41.2	41.9	41.9	41.5	40.8
TGEX 16	56.0	38.2	48.8	54.1	56.2	57.0	56.9	56.2	55.1	36.1	45.8	50.3	52.1	52.7	52.5	51.8	50.7
TGEX 20	70.0	44.0	56.6	63.1	65.8	66.6	66.7	66.0	64.9	42.0	53.5	58.8	61.2	62.1	62.1	61.4	60.3
TGEX 26	41.0	74.2	93.2	101.7	104.3	104.4	102.9	100.5	97.4	70.4	87.8	94.8	96.9	96.6	95.0	92.6	89.6
TGEX 30	105.0	84.9	106.5	116.1	118.8	118.7	116.9	113.9	110.3	80.6	100.4	108.2	110.4	109.9	107.9	105.0	101.5
TGEX 40	140.0	103.3	133.3	149.0	155.9	158.6	158.4	156.1	152.2	98.3	125.8	138.7	144.2	145.7	144.6	141.5	137.0
<b>Evaporating temperature -5°C</b>										<b>Evaporating temperature -10°C</b>							
TGEX 3	10.5	5.9	7.7	8.6	9.2	9.5	9.7	9.8	9.8	5.5	7.1	7.9	8.4	8.7	8.9	9.0	9.0
TGEX 4	14.0	8.1	10.5	11.7	12.4	12.8	13.1	13.2	13.1	7.6	9.8	10.8	11.5	11.8	12.0	12.1	12.0
TGEX 6	21.0	12.1	15.6	17.3	18.3	18.8	19.0	19.0	18.9	11.4	14.5	16.0	16.9	17.3	17.5	17.5	17.4
TGEX 8	28.0	16.2	20.9	23.1	24.3	24.9	25.2	25.1	24.9	15.4	19.6	21.5	22.6	23.1	23.2	23.2	22.9
TGEX 11	38.5	22.1	28.9	32.4	34.6	36.0	36.9	37.3	37.4	21.2	27.4	30.6	32.5	33.7	34.4	34.7	34.8
TGEX 12.5	44.0	26.3	33.4	36.4	37.9	38.4	38.4	38.0	37.3	24.4	30.6	33.3	34.5	34.9	34.9	34.5	33.8
TGEX 16	56.0	33.8	42.7	46.3	47.9	48.3	48.1	47.4	46.3	31.3	39.1	42.3	43.6	43.9	43.6	42.9	41.9
TGEX 20	70.0	39.6	50.2	54.7	56.8	57.5	57.3	56.6	55.4	37.1	46.5	50.4	52.1	52.6	52.4	51.6	50.5
TGEX 26	41.0	66.2	82.1	87.6	89.2	88.7	87.0	84.6	81.7	61.7	75.6	80.2	81.3	80.7	79.0	76.6	73.9
TGEX 30	105.0	75.9	94.0	100.0	101.6	100.9	98.8	95.9	92.6	70.9	86.6	91.6	92.7	91.8	89.7	86.9	83.7
TGEX 40	140.0	92.6	117.5	127.7	131.7	132.1	130.0	126.2	121.0	86.4	107.9	116.1	118.7	117.9	114.9	110.2	104.4
<b>Evaporating temperature -15°C</b>										<b>Evaporating temperature -20°C</b>							
TGEX 3	10.5	5.1	6.6	7.3	7.7	8.0	8.1	8.2	8.2	4.7	6.0	6.6	7.0	7.2	7.3	7.4	7.4
TGEX 4	14.0	7.1	9.0	9.9	10.5	10.8	11.0	11.0	10.9	6.5	8.2	9.0	9.5	9.8	9.9	9.9	9.9
TGEX 6	21.0	10.6	13.4	14.7	15.5	15.8	16.0	15.9	15.8	9.8	1.2	13.4	14.0	14.3	14.4	14.4	14.2
TGEX 8	28.0	14.4	18.1	19.8	20.7	21.2	21.3	21.1	20.9	13.4	16.6	18.1	18.9	19.2	19.3	19.1	18.8
TGEX 11	38.5	20.1	25.6	28.5	30.2	31.2	31.8	32.0	31.9	18.9	23.7	26.2	27.7	28.5	28.9	29.0	28.8
TGEX 12.5	44.0	22.4	27.8	30.1	31.2	31.5	31.4	31.0	30.4	20.4	25.0	27.0	27.9	28.1	28.0	27.7	27.1
TGEX 16	56.0	28.8	35.5	38.2	39.3	39.6	39.2	38.6	37.6	26.2	31.9	34.2	35.2	35.3	35.0	34.4	33.5
TGEX 20	70.0	34.5	42.6	45.9	47.4	47.7	47.4	46.6	45.5	31.6	38.6	41.4	42.6	42.9	42.5	41.7	40.7
TGEX 26	41.0	57.0	68.8	72.7	73.5	72.7	71.0	68.8	66.3	52.2	62.1	65.3	65.8	64.9	63.3	61.3	58.9
TGEX 30	105.0	65.5	78.9	83.1	83.8	82.7	80.7	78.0	75.0	60.0	71.2	74.6	75.0	73.9	71.9	69.4	66.6
TGEX 40	140.0	79.8	97.8	104.1	105.3	103.4	99.5	94.8	91.3	72.9	87.4	91.9	91.8	89.5	87.3	84.4	81.1

**Correction for subcooling  $\Delta t_{sub}$** 

The evaporator capacity used must be corrected if the subcooling deviates from 4 K. The corrected capacity can be obtained by dividing the required evaporator capacity by the correction factor given across, and then selecting from the tables.

Correction factor	$\Delta t_{sub}$	4 K	10 K	15 K	20 K	25 K	30 K	35 K	40 K	45 K	50 K
		TGE 10	1.00	1.06	1.11	1.15	1.20	1.24	1.29	1.33	1.37
	TGE 20										
	TGE 40										

Note: Flash gas can form if subcooling is too low.

Capacity (continued)

R22

Capacity in kW for range N and K, opening superheat OS = 4 K

Type and rated capacity	Rated capacity [kW]	Pressure drop across the valve $\Delta p$ bar								Pressure drop across the valve $\Delta p$ bar							
		2	4	6	8	10	12	14	16	2	4	6	8	10	12	14	16
<b>Evaporating temperature -25°C</b>										<b>Evaporating temperature -30°C</b>							
TGEX 3	10.5	4.3	5.4	5.9	6.3	6.5	6.6	6.6	6.6	3.9	4.8	5.3	5.6	5.7	5.8	5.9	5.8
TGEX 4	14.0	6.0	7.4	8.1	8.5	8.7	8.8	8.9	8.8	5.3	6.6	7.2	7.6	7.8	7.8	7.8	7.8
TGEX 6	21.0	9.0	11.0	12.1	12.6	12.9	12.9	12.8	12.7	8.1	9.9	10.8	11.2	11.4	11.4	11.4	11.2
TGEX 8	28.0	12.3	15.1	16.4	17.0	17.3	17.3	17.1	16.8	11.1	13.5	14.6	15.2	15.3	15.3	15.1	14.8
TGEX 11	38.5	17.5	21.7	23.9	25.1	25.7	26.0	25.9	25.6	16.0	19.6	21.4	22.4	22.9	22.9	22.7	22.3
TGEX 12.5	44.0	18.4	22.2	23.9	24.7	24.9	24.8	24.5	24.0	16.2	19.5	21.0	21.7	21.9	21.8	21.5	21.0
TGEX 16	56.0	23.6	28.3	30.3	31.1	31.3	30.9	30.4	29.6	20.9	24.9	26.7	27.3	27.4	27.1	26.6	26.0
TGEX 20	70.0	28.7	34.5	37.0	38.0	38.1	37.7	37.0	36.1	25.6	30.6	32.7	33.5	33.6	33.2	32.6	31.7
TGEX 26	41.0	47.3	55.4	58.0	58.3	57.5	56.0	54.1	51.9	42.0	48.9	51.1	51.3	50.4	49.0	47.3	45.4
TGEX 30	105.0	54.4	63.5	66.4	66.5	65.4	63.5	61.2	58.7	48.4	56.1	58.4	58.5	57.3	55.6	53.5	51.3
TGEX 40	140.0	65.8	77.1	80.1	80.5	79.3	77.1	74.4	71.4	58.2	67.7	70.6	70.8	69.6	67.5	65.1	62.3
<b>Evaporating temperature -35°C</b>										<b>Evaporating temperature -40°C</b>							
TGEX 3	10.5	3.4	4.2	4.7	4.9	5.1	5.1	5.1	5.1	3.0	3.7	4.1	4.3	4.4	4.4	4.5	4.4
TGEX 4	14.0	4.7	5.8	6.4	6.7	6.8	6.9	6.9	6.8	4.2	5.1	5.5	5.8	5.9	6.0	5.9	5.9
TGEX 6	21.0	7.2	8.7	9.5	9.9	10.0	10.0	9.9	9.8	6.3	7.6	8.3	8.6	8.7	8.7	8.6	8.4
TGEX 8	28.0	9.9	12.0	12.9	13.4	13.5	13.4	13.2	12.9	8.8	10.5	11.3	11.7	11.7	11.7	11.5	11.2
TGEX 11	38.5	14.3	17.4	19.0	19.7	19.9	19.9	19.5	19.0	12.7	15.3	16.5	17.0	17.1	16.8	16.5	16.1
TGEX 12.5	44.0	14.2	17.0	18.3	18.9	19.1	19.0	18.7	18.7	12.3	14.7	15.8	16.4	16.5	16.5	16.2	15.9
TGEX 16	56.0	18.3	21.7	23.2	23.8	23.9	23.6	23.2	22.6	15.8	18.8	20.1	20.6	20.7	20.5	20.1	19.6
TGEX 20	70.0	22.5	26.8	28.6	29.3	29.3	29.0	28.4	27.7	19.6	23.3	24.8	25.4	25.4	25.1	24.6	24.0
TGEX 26	41.0	36.9	42.8	44.5	44.6	43.8	42.6	41.1	39.4	32.1	37.0	38.5	38.5	37.8	36.7	35.4	34.0
TGEX 30	105.0	42.6	49.1	51.0	50.9	49.8	48.3	46.4	44.4	37.0	42.5	44.1	43.9	43.0	41.6	40.0	38.2
TGEX 40	140.0	51.3	59.3	61.7	61.7	60.5	58.6	56.4	54.0	44.7	51.5	53.4	53.3	52.2	50.5	48.5	46.4

Correction for subcooling  $\Delta t_{sub}$

The evaporator capacity used must be corrected if the subcooling deviates from 4 K. The corrected capacity can be obtained by dividing the required evaporator capacity by the correction factor given across, and then selecting from the tables.

Correction factor	$\Delta t_{sub}$	4 K	10 K	15 K	20 K	25 K	30 K	35 K	40 K	45 K	50 K
	TGE 10										
TGE 20		1.00	1.06	1.11	1.15	1.20	1.24	1.29	1.33	1.37	1.42
TGE 40											

Note: Flash gas can form if subcooling is too low.

Capacity (continued)

R134a

Capacity in kW for range N and K, opening superheat OS = 4 K

Type and rated capacity	Rated capacity [kW]	Pressure drop across the valve $\Delta p$ bar								Pressure drop across the valve $\Delta p$ bar							
		2	4	6	8	10	12	14	16	2	4	6	8	10	12	14	16
<b>Evaporating temperature +15°C</b>										<b>Evaporating temperature +10°C</b>							
TGEN 2.3	8.0	5.2	6.6	7.3	7.6	7.8	7.7	7.5		4.9	6.2	6.8	7.1	7.2	7.2	7.1	7.0
TGEN 3.1	11.0	7.1	9.0	10.0	10.4	10.5	10.5	10.3	10.1	6.7	8.5	9.3	9.7	9.8	9.7	9.6	9.3
TGEN 4.7	16.5	10.6	13.4	14.7	15.3	15.4	15.3	15.0	14.6	10.1	12.7	13.8	14.3	14.4	14.2	13.9	13.5
TGEN 6.3	22.0	14.2	18.0	19.7	20.4	20.5	20.3	19.8	19.2	13.6	17.1	18.5	19.1	19.1	18.9	18.4	17.8
TGEN 8.6	30.0	19.3	24.8	27.5	28.8	29.4	29.5	29.2	28.6	18.7	23.9	26.2	27.3	27.8	27.4	26.8	
TGEN 9.8	34.0	26.8	33.4	36.0	36.6	36.4	35.5	34.3	32.9	25.3	31.4	33.4	33.9	33.6	32.7	31.6	30.2
TGEN 12.5	44.0	34.5	42.7	45.7	46.3	45.8	44.5	42.8	40.8	32.6	40.1	42.4	42.8	42.2	41.0	39.3	37.4
TGEN 15.6	55.0	39.7	49.7	53.5	54.2	53.5	52.2	50.4	48.2	37.9	46.9	49.7	50.4	49.8	48.5	46.6	44.5
TGEN 20.3	71.0	64.1	78.2	82.5	82.5	80.4	77.3	73.5	69.4	60.8	73.6	76.7	76.3	74.2	71.1	67.4	63.5
TGEN 23.5	82.0	73.5	89.5	94.2	94.0	91.5	87.8	83.4	78.6	69.7	84.2	87.6	87.0	84.4	80.7	76.4	71.9
TGEN 31.3	110.0	89.7	112.5	121.4	123.6	122.4	118.8	113.7	107.5	85.2	105.8	112.5	113.7	111.7	107.6	102.1	95.6
<b>Evaporating temperature +5°C</b>										<b>Evaporating temperature 0°C</b>							
TGEN 2.3	8.0	4.6	5.8	6.3	6.6	6.7	6.6	6.5	6.4	4.3	5.4	5.8	6.0	6.1	6.1	6.0	5.8
TGEN 3.1	11.0	6.3	7.9	8.6	8.9	9.0	9.0	8.8	8.6	5.9	7.3	7.9	8.2	8.3	8.2	8.0	7.8
TGEN 4.7	16.5	9.5	11.9	12.8	13.2	13.3	13.1	12.8	12.4	8.9	11.0	11.8	12.1	12.2	12.0	11.7	11.3
TGEN 6.3	22.0	12.9	16.1	17.3	17.7	17.7	17.5	17.0	16.4	12.2	14.9	16.0	16.3	16.3	16.0	15.6	15.0
TGEN 8.6	30.0	17.9	22.6	24.6	25.6	26.0	25.9	25.5	24.9	17.1	21.2	23.0	23.8	24.1	23.9	23.4	22.8
TGEN 9.8	34.0	23.7	29.0	30.8	31.1	30.7	29.9	28.8	27.5	22.1	26.6	28.1	28.3	27.9	27.1	26.0	24.8
TGEN 12.5	44.0	30.5	37.1	39.0	39.3	38.6	37.3	35.8	34.0	28.4	34.0	35.6	35.7	35.0	33.8	32.3	30.6
TGEN 15.6	55.0	35.8	43.7	46.1	46.6	45.9	44.5	42.8	40.7	33.6	40.4	42.5	42.7	41.9	40.6	38.8	36.9
TGEN 20.3	71.0	57.2	68.2	70.7	70.0	67.8	64.8	61.3	57.6	53.4	62.7	64.6	63.7	61.5	58.6	55.3	51.9
TGEN 23.5	82.0	65.6	78.1	80.7	79.8	77.2	73.6	69.5	65.2	61.3	71.8	73.8	72.7	70.0	66.5	62.7	58.7
TGEN 31.3	110.0	80.2	97.9	103.1	103.3	100.5	95.9	90.0	83.3	74.9	89.6	93.4	92.6	89.1	84.0	77.7	71.4
<b>Evaporating temperature -5°C</b>										<b>Evaporating temperature -10°C</b>							
TGEN 2.3	8.0	4.0	4.9	5.3	5.5	5.5	5.5	5.4	5.3	3.7	4.5	4.8	5.0	5.0	4.9	4.7	
TGEN 3.1	11.0	5.5	6.7	7.3	7.5	7.5	7.4	7.3	7.0	5.1	6.1	6.6	6.8	6.8	6.7	6.5	6.3
TGEN 4.7	16.5	8.3	10.1	10.8	11.1	11.1	10.9	10.6	10.2	7.7	9.2	9.8	10.0	10.0	9.8	9.5	9.1
TGEN 6.3	22.0	11.4	13.8	14.7	14.9	14.9	14.6	14.1	13.5	10.6	12.6	13.4	13.6	13.5	13.1	12.7	12.1
TGEN 8.6	30.0	16.1	19.7	21.3	21.9	22.0	21.8	21.3	20.6	15.1	18.1	19.5	20.0	20.0	19.7	19.1	18.4
TGEN 9.8	34.0	20.3	24.2	25.4	25.6	25.1	24.3	23.3	22.2	18.6	21.8	22.8	22.9	22.5	21.7	20.8	19.8
TGEN 12.5	44.0	26.1	30.8	32.2	32.2	31.5	30.3	28.9	27.4	23.9	27.8	28.9	28.8	28.1	27.0	25.7	24.3
TGEN 15.6	55.0	31.2	37.0	38.7	38.8	37.9	36.6	35.0	33.1	28.8	33.5	34.9	34.9	34.1	32.8	31.2	29.5
TGEN 20.3	71.0	49.4	57.1	58.5	57.6	55.4	52.6	49.6	46.4	45.4	51.6	52.7	51.6	49.5	46.9	44.1	41.1
TGEN 23.5	82.0	56.8	65.5	66.9	65.6	63.0	59.7	56.1	52.4	52.2	59.2	60.2	58.8	56.3	53.2	49.9	46.5
TGEN 31.3	110.0	69.3	81.2	83.6	81.8	77.7	72.5	68.3	63.8	63.5	72.7	73.8	71.2	68.2	64.6	60.7	56.6
<b>Evaporating temperature -15°C</b>										<b>Evaporating temperature -20°C</b>							
TGEN 2.3	8.0	3.4	4.0	4.3	4.5	4.5	4.4	4.3	4.2	3.0	3.6	3.9	4.0	4.0	4.0	3.9	3.7
TGEN 3.1	11.0	4.6	5.5	5.9	6.1	6.1	6.0	5.8	5.6	4.2	5.0	5.3	5.4	5.4	5.3	5.2	5.0
TGEN 4.7	16.5	7.0	8.3	8.9	9.0	9.0	8.8	8.5	8.1	6.4	7.5	7.9	8.1	8.0	7.8	7.5	7.2
TGEN 6.3	22.0	9.7	11.4	12.1	12.2	12.1	11.8	11.3	10.8	8.8	10.3	10.9	11.0	10.8	10.5	10.1	9.6
TGEN 8.6	30.0	13.9	16.5	17.7	18.0	17.9	17.6	17.0	16.2	12.7	15.0	15.9	16.1	15.9	15.5	14.9	14.1
TGEN 9.8	34.0	16.7	19.4	20.3	20.3	19.9	19.3	18.4	17.5	14.9	17.3	18.0	18.0	17.6	17.0	16.2	15.4
TGEN 12.5	44.0	21.5	24.8	25.7	25.6	24.9	23.9	22.8	21.5	19.1	22.0	22.7	22.6	22.0	21.1	20.0	18.9
TGEN 15.6	55.0	26.1	30.2	31.3	31.1	30.3	29.1	27.7	26.1	23.4	26.9	27.8	27.6	26.8	25.7	24.4	23.0
TGEN 20.3	71.0	41.0	46.3	47.0	45.9	43.9	41.5	38.9	36.3	36.8	41.3	41.8	40.6	38.8	36.6	34.2	31.8
TGEN 23.5	82.0	47.3	53.1	53.8	52.3	49.9	47.1	44.0	40.9	42.4	47.4	47.7	46.3	44.1	41.5	38.7	35.9
TGEN 31.3	110.0	57.2	64.3	65.0	63.4	60.6	57.2	53.6	49.8	50.9	57.1	57.7	56.1	53.5	50.3	47.0	43.6

Correction for subcooling  $\Delta t_{sub}$

The evaporator capacity used must be corrected if the subcooling deviates from 4 K. The corrected capacity can be obtained by dividing the required evaporator capacity by the correction factor given across, and then selecting from the tables.

Correction factor	$\Delta t_{sub}$	4 K	10 K	15 K	20 K	25 K	30 K	35 K	40 K	45 K	50 K
	TGE 10										
TGE 20		1.00	1.08	1.13	1.18	1.23	1.29	1.34	1.39	1.44	1.49
TGE 40											

Note: Flash gas can form if subcooling is too low.

**Capacity (continued)**

# R134a

Capacity in kW for range N and K, opening superheat OS = 4 K

Type and rated capacity	Rated capacity [kW]	Pressure drop across the valve $\Delta p$ bar								Pressure drop across the valve $\Delta p$ bar							
		2	4	6	8	10	12	14	16	2	4	6	8	10	12	14	16
<b>Evaporating temperature -25°C</b>										<b>Evaporating temperature -30°C</b>							
TGEN 2.3	8.0	2.7	3.2	3.5	3.6	3.6	3.5	3.4	3.3	2.4	2.9	3.1	3.2	3.1	3.1	3.0	2.9
TGEN 3.1	11.0	3.8	4.5	4.7	4.8	4.8	4.7	4.6	4.4	3.4	4.0	4.2	4.3	4.3	4.2	4.0	3.9
TGEN 4.7	16.5	5.7	6.7	7.1	7.2	7.1	6.9	6.6	6.3	5.1	6.0	6.3	6.4	6.3	6.1	5.8	5.6
TGEN 6.3	22.0	7.9	9.2	9.7	9.8	9.6	9.3	8.9	8.4	7.1	8.3	8.6	8.7	8.5	8.2	7.8	7.4
TGEN 8.6	30.0	11.5	13.4	14.2	14.3	14.0	13.5	12.8	12.1	13.3	12.0	12.5	12.5	12.2	11.8	11.3	10.6
TGEN 9.8	34.0	13.2	15.2	15.8	15.8	15.5	14.9	14.2	13.5	11.6	13.4	13.9	13.9	13.5	13.0	12.4	11.8
TGEN 12.5	44.0	16.9	19.4	20.0	19.8	19.3	18.5	17.5	16.5	14.9	17.0	17.5	17.4	16.9	16.1	15.3	14.4
TGEN 15.6	55.0	20.8	23.8	24.6	24.3	23.6	22.6	21.4	20.1	18.4	21.0	21.6	21.4	20.7	19.8	18.7	17.5
TGEN 20.3	71.0	32.8	36.6	36.9	35.8	34.1	32.1	30.0	27.8	29.1	32.3	32.5	31.4	29.9	28.1	26.2	24.3
TGEN 23.5	82.0	37.8	42.0	42.2	40.8	38.7	36.3	33.8	31.3	33.6	37.1	35.8	35.8	33.9	31.8	29.5	27.3
TGEN 31.3	110.0	45.5	50.7	51.0	49.4	47.0	44.1	41.1	38.0	40.4	44.8	44.9	43.4	41.1	38.5	35.8	33.0
<b>Evaporating temperature -35°C</b>										<b>Evaporating temperature -40°C</b>							
TGEN 2.3	8.0	2.2	2.6	2.7	2.8	2.8	2.7	2.6	2.5	2.0	2.3	2.4	2.5	2.5	2.4	2.3	2.2
TGEN 3.1	11.0	3.0	3.5	3.7	3.8	3.8	3.7	3.5	3.4	2.7	3.2	3.3	3.4	3.3	3.2	3.1	3.0
TGEN 4.7	16.5	4.6	5.3	5.6	5.6	5.5	5.4	5.1	4.9	4.1	4.8	5.0	5.0	4.9	4.7	4.5	4.3
TGEN 6.3	22.0	6.4	7.4	7.7	7.7	7.5	7.2	6.9	6.5	5.7	6.6	6.8	6.8	6.6	6.4	6.0	5.7
TGEN 8.6	30.0	9.3	10.7	11.1	11.1	10.8	10.4	9.9	9.3	8.3	9.6	9.9	9.9	9.6	9.2	8.7	8.2
TGEN 9.8	34.0	10.2	11.7	12.2	12.1	11.9	11.4	10.9	10.3	8.9	10.3	10.7	10.6	10.4	10.0	9.5	9.0
TGEN 12.5	44.0	13.1	14.9	15.4	15.2	14.7	14.1	13.4	12.6	11.5	13.1	13.5	13.3	12.9	12.3	11.7	11.0
TGEN 15.6	55.0	16.3	18.5	19.0	18.7	18.1	17.3	16.3	15.3	14.3	16.2	16.7	16.4	15.9	15.1	14.3	13.4
TGEN 20.3	71.0	25.7	28.4	28.5	27.6	26.2	24.6	22.9	21.1	22.7	25.1	25.1	24.2	22.9	21.5	20.0	18.5
TGEN 23.5	82.0	29.7	32.7	32.6	31.4	29.7	27.7	25.7	23.7	26.2	28.8	28.7	27.5	26.0	24.3	22.5	20.7
TGEN 31.3	110.0	35.8	39.5	39.5	38.0	35.9	33.6	31.1	28.7	31.7	34.8	34.7	33.4	31.5	29.3	27.1	24.9

**Correction for subcooling  $\Delta t_{sub}$** 

The evaporator capacity used must be corrected if the subcooling deviates from 4 K. The corrected capacity can be obtained by dividing the required evaporator capacity by the correction factor given across, and then selecting from the tables.

Correction factor	$\Delta t_{sub}$	4 K	10 K	15 K	20 K	25 K	30 K	35 K	40 K	45 K	50 K
	TGE 10										
TGE 20		1.00	1.08	1.13	1.18	1.23	1.29	1.34	1.39	1.44	1.49
TGE 40											

Note: Flash gas can form if subcooling is too low.

**Capacity (continued)**

# R404A/ R507

Capacity in kW for range N and K, opening superheat OS = 4 K

Type and rated capacity	Rated capacity [kW]	Pressure drop across the valve $\Delta p$ bar								Pressure drop across the valve $\Delta p$ bar							
		2	4	6	8	10	12	14	16	2	4	6	8	10	12	14	16
<b>Evaporating temperature +15°C</b>										<b>Evaporating temperature +10°C</b>							
TGES 2.3	8.0	5.1	6.6	7.4	7.9	8.1	8.0	7.8		4.9	6.4	7.2	7.6	7.8	7.8	7.7	7.5
TGES 3.0	10.0	5.9	9.0	10.1	10.7	11.0	10.9	10.8	10.5	6.8	8.7	9.8	10.4	10.5	10.3	10.0	
TGES 4.5	15.8	10.2	13.2	14.8	15.6	15.9	15.9	15.6	15.1	10.0	12.9	14.4	15.2	15.4	15.3	14.5	
TGES 6.0	21.0	13.4	17.3	19.4	20.5	20.9	20.7	20.3	19.6	13.3	17.0	19.0	20.0	20.2	20.1	19.6	19.0
TGES 8.3	29.0	17.5	22.9	25.9	27.7	28.5	28.6	28.3	27.6	17.5	22.8	25.7	27.4	28.0	28.1	27.7	27.1
TGES 9.4	33.0	24.8	31.6	35.0	36.5	36.8	36.1	35.0	33.5	24.2	30.7	33.8	35.2	35.2	34.6	33.5	32.0
TGES 12.1	42.4	31.9	40.5	44.7	46.5	46.6	45.6	44.1	42.1	31.1	39.3	43.2	44.7	44.6	43.6	42.1	40.2
TGES 15.1	53.0	35.7	45.8	51.1	53.6	54.2	53.4	51.8	49.6	35.2	45.0	49.8	52.0	52.1	51.1	49.4	47.1
TGES 14.6	69.0	58.4	73.3	80.0	82.4	81.8	79.5	76.1	82.1	57.0	71.2	77.3	79.3	78.2	75.8	72.5	68.7
TGES 22.6	79.0	66.8	83.8	91.2	93.9	93.2	90.4	86.5	81.8	65.2	81.3	88.3	90.4	89.1	86.2	82.4	77.9
TGES 30.2	106.0	80.6	103.5	115.3	121.2	122.5	120.9	117.4	112.7	78.8	100.7	111.7	116.7	117.0	115.1	111.5	106.6
<b>Evaporating temperature +5°C</b>										<b>Evaporating temperature 0°C</b>							
TGES 2.3	8.0	4.8	6.2	6.9	7.3	7.4	7.4	7.3	7.1	4.6	5.9	6.6	6.9	7.0	7.0	6.9	6.7
TGES 3.0	10.0	6.6	8.4	9.4	9.9	10.1	10.0	9.8	9.6	6.3	8.1	9.0	9.4	9.5	9.4	9.3	9.0
TGES 4.5	15.8	9.7	12.5	13.9	14.6	14.7	14.6	14.3	13.8	9.4	12.0	13.3	13.8	13.9	13.8	13.5	13.1
TGES 6.0	21.0	13.0	16.6	18.5	19.3	19.4	19.3	18.8	17.2	12.6	16.1	17.8	18.4	18.5	18.3	17.8	17.2
TGES 8.3	29.0	17.3	23.1	25.3	26.7	27.2	27.2	26.9	26.3	17.0	21.9	24.6	26.7	26.2	26.2	25.8	25.2
TGES 9.4	33.0	23.4	29.5	32.4	33.4	33.4	32.7	31.6	30.3	22.4	28.1	30.8	31.5	31.3	30.6	29.6	28.3
TGES 12.1	42.4	30.0	37.8	41.4	42.5	42.2	41.2	39.7	37.9	28.8	36.0	39.2	39.9	39.6	38.6	37.1	35.4
TGES 15.1	53.0	34.4	43.6	48.1	49.6	49.4	48.2	46.4	44.3	33.3	41.9	45.8	46.7	46.3	45.3	43.7	41.7
TGES 14.6	69.0	55.1	68.4	74.1	75.2	74.0	71.6	68.4	64.6	52.8	65.3	70.2	70.7	69.3	66.9	63.8	60.2
TGES 22.6	79.0	63.1	78.3	84.6	85.8	84.3	81.4	77.7	73.4	60.6	74.7	80.2	80.7	79.0	76.1	72.5	68.4
TGES 30.2	106.0	76.4	97.1	107.1	110.6	110.5	108.2	104.3	99.5	73.4	92.6	101.4	103.7	103.0	100.3	96.3	91.3
<b>Evaporating temperature -5°C</b>										<b>Evaporating temperature -10°C</b>							
TGES 2.3	8.0	4.4	5.6	6.2	6.5	6.5	6.5	6.4	6.2	4.2	5.3	5.8	6.0	6.1	6.0	5.9	5.8
TGES 3.0	10.0	6.0	7.7	8.5	8.8	8.9	8.8	8.6	8.4	5.7	7.2	7.9	8.2	8.2	8.2	8.0	7.7
TGES 4.5	15.8	9.0	11.5	12.6	13.0	13.1	12.9	12.6	12.2	8.6	10.8	11.7	12.1	12.2	12.0	11.7	11.3
TGES 6.0	21.0	12.2	15.4	16.8	17.4	17.4	17.2	16.7	16.1	11.6	14.6	15.8	16.3	16.3	16.0	15.6	15.0
TGES 8.3	29.0	16.6	21.3	23.6	24.6	25.0	24.9	24.5	23.9	16.0	20.4	22.4	23.2	23.5	23.4	23.0	22.3
TGES 9.4	33.0	21.2	26.6	28.7	29.3	29.1	28.4	27.4	26.2	20.0	24.9	26.6	27.0	26.8	26.1	25.2	24.0
TGES 12.1	42.4	27.3	34.0	36.6	37.2	36.8	35.8	34.4	32.7	25.7	31.8	33.9	34.3	33.8	32.8	31.5	29.9
TGES 15.1	53.0	31.9	39.8	43.0	43.8	43.4	42.3	40.8	38.9	30.3	37.6	40.1	40.7	40.3	39.2	37.6	35.8
TGES 14.6	69.0	50.2	61.7	65.6	65.8	64.3	61.9	58.9	55.6	47.4	57.8	60.7	60.7	59.2	56.8	54.0	50.8
TGES 22.6	79.0	57.7	70.7	75.0	75.1	73.4	70.5	67.0	63.1	54.4	66.3	69.5	69.3	67.5	64.7	61.4	57.7
TGES 30.2	106.0	69.9	87.5	94.5	96.0	94.8	91.8	87.5	82.5	66.0	81.9	87.1	87.8	86.1	82.7	78.3	73.1
<b>Evaporating temperature -15°C</b>										<b>Evaporating temperature -20°C</b>							
TGES 2.3	8.0	3.9	4.9	5.3	5.5	5.6	5.5	5.4	5.3	3.6	4.5	4.9	5.1	5.1	5.1	4.9	4.8
TGES 3.0	10.0	5.4	6.7	7.3	7.5	7.6	7.5	7.3	7.1	5.0	6.2	6.7	6.9	6.9	6.8	6.7	6.4
TGES 4.5	15.8	8.1	10.1	10.9	11.2	11.2	11.0	10.7	10.3	7.6	9.3	10.0	10.3	10.2	10.1	9.8	9.4
TGES 6.0	21.0	11.0	13.7	14.7	15.1	15.1	14.8	14.3	13.8	10.3	12.7	13.6	13.9	13.8	13.5	13.1	12.5
TGES 8.3	29.0	15.3	19.3	21.0	21.8	22.0	21.8	21.3	20.7	14.5	18.1	19.5	20.2	20.3	20.0	19.5	18.9
TGES 9.4	33.0	18.6	22.9	24.4	24.7	24.4	23.8	22.9	21.8	17.2	20.9	22.1	22.4	22.1	21.4	20.6	19.6
TGES 12.1	42.4	24.0	29.4	31.0	31.3	30.8	29.8	28.6	27.1	22.2	26.8	28.2	28.3	27.8	26.9	25.7	24.4
TGES 15.1	53.0	28.5	35.0	37.1	37.5	37.0	35.9	34.4	32.7	26.6	32.2	33.9	34.2	33.6	32.5	31.1	29.5
TGES 14.6	69.0	44.3	53.4	55.7	55.4	53.9	51.6	49.0	46.0	41.1	48.8	50.6	50.2	48.7	46.5	44.0	41.3
TGES 22.6	79.0	50.9	61.3	63.7	63.4	61.5	58.8	55.6	52.2	47.3	56.0	58.0	57.4	55.6	53.0	50.0	46.8
TGES 30.2	106.0	61.8	75.4	79.3	79.3	77.0	73.4	68.8	63.6	57.2	68.5	71.3	70.6	67.9	64.2	60.7	56.9

**Correction for subcooling  $\Delta t_{sub}$** 

The evaporator capacity used must be corrected if the subcooling deviates from 4 K. The corrected capacity can be obtained by dividing the required evaporator capacity by the correction factor given across, and then selecting from the tables.

Correction factor	$\Delta t_{sub}$	4 K	10 K	15 K	20 K	25 K	30 K	35 K	40 K	45 K	50 K
	TGE 10										
TGE 20		1.00	1.09	1.16	1.23	1.30	1.37	1.44	1.51	1.58	1.65
TGE 40											

Note: Flash gas can form if subcooling is too low.



**Capacity (continued)**

# R404A/ R507

Capacity in kW for range N and K, opening superheat OS = 4 K

Type and rated capacity	Rated capacity [kW]	Pressure drop across the valve $\Delta p$ bar								Pressure drop across the valve $\Delta p$ bar							
		2	4	6	8	10	12	14	16	2	4	6	8	10	12	14	16
<b>Evaporating temperature -25°C</b>										<b>Evaporating temperature -30°C</b>							
TGES 2.3	8.0	3.4	4.1	4.5	4.6	4.6	4.6	4.5	4.3	3.1	3.7	4.0	4.1	4.1	4.1	4.0	3.9
TGES 3.0	10.0	4.6	5.7	6.1	6.3	6.3	6.2	6.0	5.8	4.3	5.1	5.5	5.6	5.6	5.5	5.4	5.2
TGES 4.5	15.8	7.0	8.5	9.1	9.3	9.3	9.1	8.8	8.4	6.5	7.7	8.2	8.4	8.3	8.2	7.9	7.5
TGES 6.0	21.0	9.6	11.7	12.4	12.6	12.5	12.2	11.8	11.3	8.9	10.6	11.3	11.4	11.3	11.0	10.6	10.1
TGES 8.3	29.0	13.7	16.7	18.0	18.5	18.5	18.2	17.7	17.0	12.7	15.3	16.4	16.7	16.7	16.3	15.8	15.1
TGES 9.4	33.0	15.8	18.9	19.9	20.1	19.8	19.2	18.4	17.5	14.3	16.9	17.8	17.9	17.6	17.0	16.3	15.5
TGES 12.1	42.4	20.3	24.2	25.3	25.4	24.9	24.0	23.0	21.7	18.4	21.6	22.6	22.6	22.1	21.3	20.3	19.2
TGES 15.1	53.0	24.6	29.3	30.7	30.9	30.3	29.2	27.9	26.4	22.5	26.4	27.6	27.6	27.0	26.0	24.8	23.4
TGES 14.6	69.0	37.7	44.1	45.6	45.1	43.6	41.6	39.2	36.7	34.4	39.6	40.7	40.2	38.8	36.9	34.7	32.4
TGES 22.6	79.0	43.5	50.7	52.2	51.6	49.8	47.3	44.6	41.7	39.6	45.5	46.7	45.9	44.2	42.0	39.5	36.8
TGES 30.2	106.0	52.5	61.5	63.3	62.2	60.2	57.4	54.1	50.6	47.7	54.7	56.3	55.5	53.5	50.9	47.9	44.7
<b>Evaporating temperature -35°C</b>										<b>Evaporating temperature -40°C</b>							
TGES 2.3	8.0	2.8	3.4	3.6	3.7	3.7	3.6	3.5	3.4	2.5	3.0	3.2	3.3	3.3	3.2	3.1	3.0
TGES 3.0	10.0	3.9	4.6	4.9	5.0	5.0	4.9	4.8	4.6	3.5	4.1	4.4	4.5	4.5	4.4	4.2	4.0
TGES 4.5	15.8	5.9	7.0	7.4	7.5	7.4	7.3	7.0	6.7	5.3	6.2	6.6	6.7	6.6	6.4	6.2	5.9
TGES 6.0	21.0	8.1	9.6	10.1	10.2	10.1	9.8	9.4	8.9	7.3	8.6	9.0	9.1	9.0	8.7	8.3	7.9
TGES 8.3	29.0	11.7	13.9	14.8	15.0	14.9	14.5	13.9	13.3	10.6	12.5	13.2	13.3	13.1	12.7	12.1	11.5
TGES 9.4	33.0	12.8	15.0	15.7	15.8	15.5	15.0	14.4	13.6	11.3	13.2	13.8	13.9	13.6	13.2	12.6	11.9
TGES 12.1	42.4	16.5	19.2	20.0	20.0	19.5	18.8	17.9	16.9	14.6	16.9	17.6	17.5	17.1	16.4	15.6	14.7
TGES 15.1	53.0	20.2	23.5	24.5	24.5	23.9	23.0	21.9	20.6	18.0	20.8	21.7	21.6	21.0	20.2	19.2	18.1
TGES 14.6	69.0	30.9	35.2	36.1	35.5	36.1	35.5	30.5	28.5	27.4	31.1	31.8	31.2	30.0	28.4	26.7	24.8
TGES 22.6	79.0	35.6	40.5	41.4	40.6	39.0	37.0	34.7	32.3	31.7	35.8	36.5	35.7	34.2	32.3	30.3	28.1
TGES 30.2	106.0	42.8	48.8	50.0	49.2	47.3	44.8	42.1	39.2	38.1	43.2	44.1	43.2	41.5	39.2	36.7	34.1

**Correction for subcooling  $\Delta t_{sub}$** 

The evaporator capacity used must be corrected if the subcooling deviates from 4 K. The corrected capacity can be obtained by dividing the required evaporator capacity by the correction factor given across, and then selecting from the tables.

Correction factor	$\Delta t_{sub}$	4 K	10 K	15 K	20 K	25 K	30 K	35 K	40 K	45 K	50 K
	TGE 10										
TGE 20		1.00	1.09	1.16	1.23	1.30	1.37	1.44	1.51	1.58	1.65
TGE 40											

Note: Flash gas can form if subcooling is too low.

**Capacity (continued)**

# R407C

Capacity in kW for range N and K, opening superheat OS = 4 K

Type and rated capacity	Rated capacity [kW]	Pressure drop across the valve Δp bar								Pressure drop across the valve Δp bar							
		2	4	6	8	10	12	14	16	2	4	6	8	10	12	14	16
<b>Evaporating temperature +15°C</b>										<b>Evaporating temperature +10°C</b>							
TGEZ 3.4	12.0	5.7	7.5	8.6	9.2	9.5	9.7	9.7	9.7	5.5	7.2	8.2	8.7	9.0	9.1	9.2	9.1
TGEZ 4.5	16.0	7.9	10.3	11.7	12.5	12.9	13.1	13.1	13.0	7.6	9.9	11.2	11.9	12.2	12.4	12.4	12.3
TGEZ 6.7	23.5	11.8	15.3	17.4	18.5	19.1	19.3	19.2	19.0	11.4	14.8	16.7	17.6	18.1	18.2	18.2	18.0
TGEZ 8.9	31.0	15.8	20.6	23.3	24.8	25.4	25.6	25.6	25.2	15.4	19.9	22.4	23.6	24.2	24.4	24.3	23.9
TGEZ 12.3	43.0	21.4	28.2	32.2	34.6	35.8	36.5	36.7	36.6	21.0	27.5	31.3	33.3	34.4	35.0	35.2	35.0
TGEZ 14.0	49.0	33.5	42.9	47.8	50.1	50.7	50.5	49.6	48.4	32.2	41.0	45.5	47.2	47.7	47.3	46.5	45.3
TGEZ 17.9	63.0	43.1	54.9	60.9	63.5	64.1	63.5	62.3	60.5	41.4	52.5	57.9	59.8	60.2	59.5	58.2	56.5
TGEZ 22.4	78.0	48.7	62.8	70.3	73.9	75.0	74.6	73.2	71.1	47.2	60.5	67.4	69.9	70.5	69.7	68.0	66.2
TGEZ 29.1	102.0	76.4	96.3	105.7	109.1	109.0	107.1	104.1	100.4	73.4	91.9	100.4	102.6	102.2	100.2	97.2	93.6
TGEZ 33.5	117.0	87.5	110.1	120.7	124.4	124.1	121.8	118.3	113.9	84.1	105.2	114.7	117.1	116.4	114.0	110.4	106.2
TGEZ 44.7	156.5	106.0	136.9	153.4	161.5	164.0	163.5	160.8	156.5	102.0	130.8	145.8	151.6	153.2	152.0	148.7	144.0
<b>Evaporating temperature +5°C</b>										<b>Evaporating temperature 0°C</b>							
TGEZ 3.4	12.0	5.3	6.9	7.7	8.2	8.4	8.6	8.6	8.5	5.0	6.5	7.3	7.7	7.9	8.0	8.0	7.9
TGEZ 4.5	16.0	7.3	9.4	10.6	11.2	11.5	11.6	11.6	11.5	6.9	8.9	9.9	10.5	10.7	10.9	10.8	10.7
TGEZ 6.7	23.5	10.9	14.1	15.8	16.6	17.0	17.2	17.1	16.9	10.4	13.4	14.8	15.6	15.9	16.0	16.0	15.7
TGEZ 8.9	31.0	14.8	19.1	21.3	22.4	22.9	23.0	22.8	22.5	14.2	18.2	20.1	21.1	21.5	21.6	21.4	21.0
TGEZ 12.3	43.0	20.4	26.6	30.0	31.8	32.8	33.3	33.4	33.2	19.7	25.6	28.5	30.2	31.1	31.4	31.5	31.2
TGEZ 14.0	49.0	30.6	38.8	42.6	44.1	44.4	44.0	43.2	42.0	28.9	36.5	39.6	40.8	41.0	40.6	39.8	38.6
TGEZ 17.9	63.0	39.4	49.7	54.3	55.8	56.0	55.3	54.0	52.3	37.2	46.6	50.4	51.7	51.7	50.9	49.7	48.1
TGEZ 22.4	78.0	45.5	57.8	63.4	65.3	65.5	64.9	63.6	61.8	43.3	54.6	59.1	60.8	61.0	60.3	59.0	57.2
TGEZ 29.1	102.0	69.9	87.1	94.0	95.7	95.0	93.0	90.0	86.5	66.1	81.8	87.3	88.5	87.7	85.5	82.7	79.3
TGEZ 33.5	117.0	80.2	99.7	107.5	109.2	108.3	105.8	102.2	98.1	75.9	93.7	99.9	101.1	99.9	97.3	93.9	90.0
TGEZ 44.7	156.5	97.4	124.0	136.4	140.9	141.5	139.5	135.7	130.6	92.2	116.4	126.2	129.4	129.1	126.5	122.1	116.6
<b>Evaporating temperature -5°C</b>										<b>Evaporating temperature -10°C</b>							
TGEZ 3.4	12.0	4.8	6.1	6.8	7.1	7.3	7.4	7.4	7.4	4.5	5.7	6.3	6.6	6.8	6.9	6.8	6.8
TGEZ 4.5	16.0	6.6	8.4	9.3	9.7	10.0	10.1	10.1	9.9	6.2	7.8	8.6	9.0	9.2	9.3	9.3	9.2
TGEZ 6.7	23.5	9.9	12.6	13.9	14.5	14.8	14.9	14.8	14.6	9.4	11.8	12.9	13.5	13.7	13.8	13.7	13.4
TGEZ 8.9	31.0	13.5	17.2	18.9	19.7	20.0	20.1	19.9	19.5	12.8	16.1	17.6	18.3	18.6	18.6	18.4	18.1
TGEZ 12.3	43.0	19.0	24.4	27.0	28.4	29.2	29.5	29.4	29.1	18.1	23.0	25.3	26.6	27.2	27.4	27.3	27.0
TGEZ 14.0	49.0	27.1	33.9	36.5	37.5	37.6	37.2	36.3	35.2	25.2	31.1	33.3	34.2	34.2	33.7	32.9	31.9
TGEZ 17.9	63.0	34.8	43.3	46.4	47.4	47.3	46.6	45.3	43.8	32.4	39.7	42.3	43.2	43.0	42.2	41.0	39.6
TGEZ 22.4	78.0	40.9	51.1	54.9	56.3	56.4	55.6	54.2	52.4	38.4	47.3	50.6	51.7	51.6	50.7	49.4	47.7
TGEZ 29.1	102.0	62.0	76.0	80.4	81.3	80.2	78.1	75.3	72.1	57.7	69.8	73.5	74.0	72.9	70.8	68.2	65.2
TGEZ 33.5	117.0	71.3	87.2	92.0	92.8	91.5	88.9	85.6	81.8	66.4	80.1	84.1	84.6	83.1	80.6	77.4	73.9
TGEZ 44.7	156.5	86.6	107.9	115.5	117.6	116.4	113.0	108.2	102.3	80.6	98.7	104.6	105.5	103.5	99.5	94.2	89.8
<b>Evaporating temperature -15°C</b>										<b>Evaporating temperature -20°C</b>							
TGEZ 3.4	12.0	4.2	4.9	5.4	5.6	5.7	5.8	5.8	5.7	4.0	4.9	5.4	5.6	5.7	5.8	5.8	5.7
TGEZ 4.5	16.0	5.8	7.3	8.0	8.3	8.5	8.6	8.5	8.4	5.5	6.7	7.3	7.7	7.8	7.9	7.8	7.7
TGEZ 6.7	23.5	8.8	11.0	12.0	12.5	12.7	12.7	12.6	12.4	8.3	10.2	11.0	11.5	11.7	11.7	11.5	11.3
TGEZ 8.9	31.0	12.1	15.0	16.3	17.0	17.2	17.2	17.0	16.6	11.4	14.0	15.1	15.7	15.9	15.8	15.6	15.2
TGEZ 12.3	43.0	17.2	21.5	23.6	24.7	25.2	25.4	25.2	24.8	16.3	20.1	21.9	22.9	23.3	23.3	23.1	22.7
TGEZ 14.0	49.0	23.2	28.2	30.2	30.9	30.8	30.4	29.6	28.7	21.1	25.4	27.1	27.7	27.6	27.2	27.6	25.6
TGEZ 17.9	63.0	29.8	36.0	38.3	39.0	38.7	38.0	36.9	35.2	27.2	32.5	34.4	34.9	34.7	33.9	32.9	31.7
TGEZ 22.4	78.0	35.7	43.3	46.1	47.0	46.8	45.9	44.6	43.0	32.9	39.3	41.7	42.4	42.1	41.2	40.0	38.5
TGEZ 29.1	102.0	49.0	63.6	66.7	66.9	65.8	63.8	61.3	58.5	49.0	57.5	60.0	60.1	59.0	57.0	54.7	52.2
TGEZ 33.5	117.0	61.5	73.0	76.3	76.5	75.0	72.5	69.6	66.3	56.5	66.0	68.8	68.7	67.2	64.9	62.1	59.1
TGEZ 44.7	156.5	74.4	89.3	93.7	93.5	90.7	87.9	84.5	80.6	68.1	80.0	83.0	83.0	81.4	78.7	75.4	71.9

**Correction for subcooling  $\Delta t_{sub}$** 

The evaporator capacity used must be corrected if the subcooling deviates from 4 K. The corrected capacity can be obtained by dividing the required evaporator capacity by the correction factor given across, and then selecting from the tables.

Correction factor	$\Delta t_{sub}$	4 K	10 K	15 K	20 K	25 K	30 K	35 K	40 K	45 K	50 K
		TGE 10									
	TGE 20	1.00	1.08	1.13	1.18	1.24	1.29	1.34	1.39	1.45	1.50
	TGE 40										

Note: Flash gas can form if subcooling is too low.

**Capacity (continued)**
**R407C**

Capacity in kW for range N and K, opening superheat OS = 4 K

Type and rated capacity	Rated capacity [kW]	Pressure drop across the valve $\Delta p$ bar								Pressure drop across the valve $\Delta p$ bar							
		2	4	6	8	10	12	14	16	2	4	6	8	10	12	14	16
<b>Evaporating temperature -25°C</b>										<b>Evaporating temperature -30°C</b>							
TGEZ 3.4	12.0	3.7	4.5	4.9	5.2	5.2	5.3	5.3	5.2	3.4	4.2	4.5	4.7	4.8	4.9	4.8	4.8
TGEZ 4.5	16.0	5.1	6.2	6.8	7.1	7.2	7.2	7.1	7.0	4.7	5.7	6.2	6.5	6.6	6.6	6.5	6.4
TGEZ 6.7	23.5	7.7	9.4	10.2	10.6	10.7	10.7	10.5	10.3	7.2	8.7	9.4	9.7	9.8	9.8	9.7	9.4
TGEZ 8.9	31.0	10.7	12.9	14.0	14.4	14.6	14.5	14.3	13.9	9.9	11.9	12.9	13.3	13.4	13.3	13.1	12.7
TGEZ 12.3	43.0	15.3	18.7	20.3	21.1	21.4	21.4	21.1	20.6	14.3	17.3	18.7	19.4	19.6	19.5	19.2	18.7
TGEZ 14.0	49.0	19.1	22.7	24.2	24.7	24.6	24.2	23.5	22.7	17.0	20.2	21.4	21.8	21.8	21.4	20.8	20.1
TGEZ 17.9	63.0	24.6	29.0	30.7	31.1	30.8	30.1	29.2	28.1	21.9	25.8	27.2	27.5	27.3	26.6	25.8	24.8
TGEZ 22.4	78.0	29.9	35.4	37.4	37.9	37.6	36.8	35.6	34.2	26.9	31.6	33.3	33.7	33.4	32.6	31.5	30.3
TGEZ 29.1	102.0	44.5	51.6	53.8	53.7	52.6	50.8	48.6	46.3	39.9	46.1	47.9	47.8	46.7	45.0	43.1	40.9
TGEZ 33.5	117.0	51.3	59.3	61.6	61.4	59.9	57.7	55.2	52.4	46.1	53.0	54.9	54.6	53.2	51.2	48.8	46.3
TGEZ 44.7	156.5	61.6	71.4	74.3	74.2	72.6	70.0	67.0	63.7	55.3	63.9	66.3	66.1	64.4	62.1	59.3	56.3
<b>Evaporating temperature -35°C</b>										<b>Evaporating temperature -40°C</b>							
TGEZ 3.4	12.0	3.1	3.8	4.2	4.4	4.4	4.5	4.4	4.4	2.9	3.5	3.9	4.0	4.1	4.1	4.1	4.0
TGEZ 4.5	16.0	4.3	5.3	5.7	6.0	6.0	6.0	6.0	5.9	4.0	4.9	5.3	5.5	5.6	5.6	5.5	5.4
TGEZ 6.7	23.5	6.6	8.0	8.6	8.9	9.0	9.0	8.8	8.6	6.1	7.4	8.0	8.2	8.3	8.3	8.1	7.9
TGEZ 8.9	31.0	9.2	11.0	11.9	12.2	12.3	12.2	12.0	11.7	8.6	10.2	11.0	11.3	11.4	11.2	11.0	10.7
TGEZ 12.3	43.0	13.3	16.0	17.3	17.8	18.0	17.8	17.4	17.9	12.4	14.8	16.0	16.4	16.5	16.3	15.9	15.4
TGEZ 14.0	49.0	15.1	17.8	18.9	19.3	19.2	18.8	18.3	17.7	13.3	15.7	16.7	17.0	16.9	16.6	16.1	15.6
TGEZ 17.9	63.0	19.4	22.8	24.0	24.3	24.0	23.5	22.7	21.8	17.2	20.1	21.1	21.4	21.1	20.6	20.0	19.2
TGEZ 22.4	78.0	23.9	28.1	29.6	29.9	29.5	28.8	27.8	26.7	21.2	24.8	26.1	26.3	26.0	25.3	24.5	23.5
TGEZ 29.1	102.0	35.7	41.1	42.5	42.4	41.3	39.8	38.0	36.1	31.8	36.5	37.7	37.5	36.5	35.2	33.6	31.9
TGEZ 33.5	117.0	41.2	47.2	48.8	48.4	47.1	45.2	43.1	40.8	36.7	42.0	43.3	42.9	41.6	40.0	38.0	36.0
TGEZ 44.7	156.5	49.6	57.0	59.0	58.6	57.1	54.9	52.3	49.6	44.3	50.7	52.4	51.9	50.5	48.5	46.1	43.7

**Correction for subcooling  $\Delta t_{sub}$** 

The evaporator capacity used must be corrected if the subcooling deviates from 4 K. The corrected capacity can be obtained by dividing the required evaporator capacity by the correction factor given across, and then selecting from the tables.

Correction factor	$\Delta t_{sub}$	4 K	10 K	15 K	20 K	25 K	30 K	35 K	40 K	45 K	50 K
		TGE 10									
	TGE 20	1.00	1.08	1.13	1.18	1.24	1.29	1.34	1.39	1.45	1.50
	TGE 40										

Note: Flash gas can form if subcooling is too low.

**Capacity (continued)**

# R410A

Capacity in kW for range N and K, opening superheat OS = 4 K

Type and rated capacity	Rated capacity [kW]	Pressure drop across the valve $\Delta p$ bar								Pressure drop across the valve $\Delta p$ bar							
		3	6	9	12	15	18	21	24	3	6	9	12	15	18	21	24
<b>Evaporating temperature +15°C</b>										<b>Evaporating temperature +10°C</b>							
TGEL 3.7	13.0	8.7	11.3	12.7	13.5	13.8	13.9	13.7	13.3	8.5	11.0	12.4	13.1	13.3	13.4	13.2	12.9
TGEL 4.9	17.2	11.8	15.3	17.2	18.3	18.6	18.6	18.3	17.8	11.6	14.9	16.8	17.7	18.0	18.0	17.7	17.2
TGEL 7.4	26.0	17.4	22.4	25.1	26.5	26.9	26.8	26.3	25.4	17.0	21.9	24.5	25.7	26.1	26.0	25.4	24.6
TGEL 9.9	34.7	22.7	29.3	32.8	34.6	35.1	34.8	34.1	32.9	22.5	28.9	32.2	33.7	34.1	33.9	33.1	32.0
TGEL 13.6	47.6	29.6	38.7	43.9	47.0	48.2	48.6	48.2	47.1	29.6	38.6	43.7	46.4	47.6	47.9	47.6	46.6
TGEL 15.5	54.3	42.7	54.2	59.7	62.1	62.0	60.7	58.7	56.0	41.7	52.7	57.9	59.7	59.6	58.4	56.4	53.9
TGEL 19.8	69.3	54.9	69.3	75.9	78.6	78.1	76.3	73.4	69.7	53.6	67.4	73.6	75.6	75.0	73.2	70.4	67.0
TGEL 24.7	86.5	60.9	78.2	87.0	91.1	91.4	89.9	86.8	82.7	60.3	76.9	85.1	88.1	88.1	86.2	82.9	78.7
TGEL 32.1	112.5	99.1	123.5	133.8	136.9	134.7	130.2	124.2	117.0	96.7	119.9	129.5	131.3	129.0	124.6	118.8	112.0
TGEL 37.1	130.0	113.2	140.8	152.3	155.7	153.0	147.7	140.7	132.5	110.6	136.9	147.5	149.4	146.6	141.4	134.6	126.9
TGEL 49.4	173.0	137.3	176.1	196.0	205.4	206.5	203.3	196.9	188.0	134.4	171.6	190.0	197.2	197.5	193.8	187.2	178.3
<b>Evaporating temperature +5°C</b>										<b>Evaporating temperature 0°C</b>							
TGEL 3.7	13.0	8.2	10.6	11.9	12.5	12.8	12.8	12.6	12.3	7.9	10.1	11.3	11.8	12.1	12.1	11.9	11.7
TGEL 4.9	17.2	11.2	14.4	16.2	16.9	17.2	17.2	16.9	16.5	10.8	13.9	15.4	16.0	16.3	16.3	16.0	15.6
TGEL 7.4	26.0	16.6	21.3	23.7	24.7	25.0	24.9	24.4	23.6	16.0	20.5	22.6	23.5	23.7	23.6	23.1	22.4
TGEL 9.9	34.7	22.0	28.2	31.3	32.6	32.9	32.6	31.9	30.8	21.4	27.3	30.0	31.1	31.4	31.1	30.4	29.3
TGEL 13.6	47.6	29.4	38.1	43.0	45.4	46.5	46.8	46.4	45.5	28.9	37.4	41.8	43.9	44.9	45.2	44.8	43.9
TGEL 15.5	54.3	40.4	50.8	55.6	56.9	56.6	55.4	53.6	51.2	38.7	48.5	52.5	53.6	53.3	52.1	50.3	48.1
TGEL 19.8	69.3	51.9	64.9	70.6	71.9	71.3	69.4	66.8	63.6	49.7	61.9	66.7	67.7	67.0	65.2	62.7	59.7
TGEL 24.7	86.5	59.0	74.8	82.1	84.1	83.6	81.3	77.9	74.4	57.2	71.9	77.9	79.2	78.2	76.4	73.8	70.4
TGEL 32.1	112.5	93.6	115.4	124.0	124.7	122.2	117.9	112.3	106.0	89.7	110.0	116.9	117.3	114.7	110.4	105.2	99.2
TGEL 37.1	130.0	107.1	131.8	141.4	142.0	139.0	133.8	127.4	120.0	102.8	125.8	133.4	133.6	130.4	125.4	119.2	112.3
TGEL 49.4	173.0	130.4	165.4	182.1	186.9	186.3	182.0	175.1	166.2	125.4	157.8	171.5	175.0	173.4	168.4	161.1	152.0
<b>Evaporating temperature -5°C</b>										<b>Evaporating temperature -10°C</b>							
TGEL 3.7	13.0	7.5	9.6	10.6	11.1	11.3	11.3	11.2	10.9	7.1	9.0	9.9	10.3	10.5	10.5	10.4	10.2
TGEL 4.9	17.2	10.3	13.2	14.5	15.1	15.3	15.2	15.0	14.6	9.7	12.4	13.5	14.0	14.2	14.2	13.9	13.6
TGEL 7.4	26.0	15.4	19.5	21.3	22.1	22.3	22.1	21.7	21.0	14.6	18.4	20.0	20.6	20.8	20.6	20.2	19.5
TGEL 9.9	34.7	20.6	26.2	28.5	29.4	29.6	29.3	28.6	27.6	19.7	24.8	26.8	27.6	27.7	27.3	26.6	25.7
TGEL 13.6	47.6	28.2	36.2	40.1	42.1	43.0	43.1	42.7	41.8	27.2	34.7	38.1	39.8	40.6	40.6	40.1	39.2
TGEL 15.5	54.3	36.8	45.8	49.1	50.0	49.6	48.5	46.8	44.7	34.6	42.7	45.4	46.2	45.7	44.6	43.0	41.1
TGEL 19.8	69.3	47.2	58.4	62.3	63.1	62.3	60.5	58.2	55.4	44.4	54.4	57.6	58.2	57.3	55.7	53.4	50.9
TGEL 24.7	86.5	54.8	68.2	72.9	74.1	73.5	71.6	69.0	65.9	52.0	64.1	68.1	69.0	68.2	66.4	63.9	60.9
TGEL 32.1	112.5	85.3	103.9	109.2	109.2	106.5	102.4	97.4	91.9	80.3	96.9	101.0	100.7	98.0	94.1	89.4	84.3
TGEL 37.1	130.0	97.8	118.9	124.7	124.4	121.2	116.3	110.5	104.0	92.1	110.9	115.4	114.7	111.5	106.8	101.3	95.4
TGEL 49.4	173.0	119.3	148.9	159.5	161.6	159.0	153.4	145.6	136.2	112.4	138.5	146.5	147.2	143.6	137.2	128.9	119.3
<b>Evaporating temperature -15°C</b>										<b>Evaporating temperature -20°C</b>							
TGEL 3.7	13.0	6.7	8.4	9.1	9.5	9.7	9.7	9.6	9.3	6.2	7.7	8.4	8.7	8.8	8.8	8.7	8.5
TGEL 4.9	17.2	9.1	11.5	12.5	12.9	13.1	13.0	12.8	12.5	8.5	10.5	11.4	11.8	11.9	11.9	11.7	11.3
TGEL 7.4	26.0	13.7	17.1	18.5	19.1	19.2	19.0	18.5	17.9	12.8	15.7	16.9	17.4	17.5	17.3	16.9	16.3
TGEL 9.9	34.7	18.6	23.1	24.9	25.6	25.6	25.2	24.6	23.7	17.5	21.4	22.9	23.5	23.5	23.1	22.4	21.6
TGEL 13.6	47.6	26.0	32.7	35.8	37.3	37.9	37.8	37.3	36.4	24.6	30.5	33.2	34.5	34.9	34.7	34.1	33.2
TGEL 15.5	54.3	32.2	39.2	41.6	42.2	41.7	40.7	39.2	37.4	29.6	35.6	37.7	38.1	37.7	36.7	35.3	33.8
TGEL 19.8	69.3	41.3	50.0	52.7	53.1	52.2	50.7	48.6	46.2	38.0	45.4	47.7	47.9	47.1	45.7	43.8	41.6
TGEL 24.7	86.5	48.9	59.4	62.8	63.5	62.6	60.9	58.5	55.7	45.4	54.5	57.4	57.8	56.9	55.2	53.0	50.4
TGEL 32.1	112.5	74.9	89.1	92.5	91.9	89.3	85.6	81.2	76.5	69.1	81.1	83.9	83.1	80.6	77.2	73.2	68.9
TGEL 37.1	130.0	86.0	102.1	105.7	104.8	101.6	97.2	92.1	86.6	79.5	93.0	95.9	94.8	91.7	87.6	82.9	77.9
TGEL 49.4	173.0	104.8	126.7	132.7	131.9	127.3	120.2	111.9	105.4	96.6	114.4	118.4	116.3	111.1	106.3	100.8	94.8

**Correction for subcooling  $\Delta t_{sub}$** 

The evaporator capacity used must be corrected if the subcooling deviates from 4 K. The corrected capacity can be obtained by dividing the required evaporator capacity by the correction factor given across, and then selecting from the tables.

$\Delta t_{sub}$	4 °K	10 °K	15 °K	20 °K	25 °K	30 °K	35 °K	40 °K	45 °K	50 °K
Correction factor	1.00	1.08	1.14	1.20	1.26	1.31	1.37	1.43	1.48	1.54

Note: Flash gas can form if subcooling is too low.

**Capacity (continued)**

# R410A

Capacity in kW for range N and K, opening superheat OS = 4 K

Type and rated capacity	Rated capacity [kW]	Pressure drop across the valve $\Delta p$ bar								Pressure drop across the valve $\Delta p$ bar							
		3	6	9	12	15	18	21	24	3	6	9	12	15	18	21	24
<b>Evaporating temperature -25°C</b>										<b>Evaporating temperature -30°C</b>							
TGEL 3.7	13.0	5.7	7.0	7.6	7.9	8.0	8.0	7.9	7.7	5.2	6.3	6.8	7.1	7.2	7.1	7.0	6.9
TGEL 4.9	17.2	7.8	9.6	10.3	10.7	10.8	10.7	10.5	10.2	7.1	8.6	9.3	9.6	9.7	9.6	9.4	9.1
TGEL 7.4	26.0	11.8	14.3	15.4	15.8	15.9	15.6	15.2	14.7	10.8	12.9	13.9	14.2	14.2	14.0	13.6	13.1
TGEL 9.9	34.7	16.2	19.5	20.9	21.3	20.9	20.3	19.5	19.5	14.8	17.7	18.9	19.2	19.1	18.7	18.2	17.4
TGEL 13.6	47.6	23.0	28.2	30.5	31.5	31.8	31.5	30.8	29.8	21.2	25.6	27.6	28.4	28.5	28.1	27.3	26.3
TGEL 15.5	54.3	26.9	32.0	33.7	34.1	33.7	32.8	31.6	30.1	24.1	28.4	29.9	30.2	29.8	29.0	27.9	26.7
TGEL 19.8	69.3	34.6	40.7	42.7	42.9	42.1	40.7	39.0	37.1	31.0	36.2	37.8	37.9	37.2	36.0	34.5	32.8
TGEL 24.7	86.5	41.7	49.3	51.7	52.0	51.1	49.5	47.4	45.1	37.7	44.1	46.1	46.3	45.4	43.9	42.1	40.0
TGEL 32.1	112.5	63.2	73.1	75.3	74.5	72.1	68.9	65.3	61.4	57.0	65.2	67.0	66.1	63.9	61.0	57.8	54.3
TGEL 37.1	130.0	72.7	83.9	86.1	84.9	82.0	78.2	73.9	69.4	65.6	74.8	76.6	75.4	72.7	69.2	65.4	61.3
TGEL 49.4	173.0	88.0	101.9	103.9	102.8	99.5	95.0	89.9	84.5	78.9	90.1	92.6	91.3	88.2	84.1	79.1	74.6
<b>Evaporating temperature -35°C</b>										<b>Evaporating temperature -40°C</b>							
TGEL 3.7	13.0	4.6	5.6	6.1	6.3	6.4	6.3	6.2	6.1	4.1	5.0	5.4	5.6	5.6	5.6	5.5	5.3
TGEL 4.9	17.2	6.4	7.7	8.3	8.5	8.6	8.5	8.3	8.1	5.7	6.8	7.3	7.5	7.6	7.5	7.3	7.1
TGEL 7.4	26.0	9.7	11.6	12.4	12.6	12.6	12.4	12.1	11.6	8.6	10.3	10.9	11.2	11.1	10.9	10.6	10.2
TGEL 9.9	34.7	13.4	15.9	16.9	17.1	17.0	16.7	16.1	15.4	12.0	14.1	14.9	15.2	15.0	14.7	14.2	13.5
TGEL 13.6	47.6	19.3	23.1	24.7	25.3	25.2	24.6	23.8	22.7	17.3	20.5	21.8	22.1	21.9	21.3	20.4	19.5
TGEL 15.5	54.3	21.2	24.9	26.2	26.5	26.1	25.4	24.5	23.4	18.5	21.6	22.8	23.0	22.7	22.1	21.3	20.4
TGEL 19.8	69.3	27.3	31.7	33.2	33.2	32.6	31.5	30.2	28.7	23.8	27.6	28.8	28.8	28.3	27.4	26.2	25.0
TGEL 24.7	86.5	33.5	38.9	40.7	40.7	39.9	38.6	36.9	35.1	29.3	34.0	35.5	35.5	34.8	33.6	32.2	30.5
TGEL 32.1	112.5	50.6	57.6	59.0	58.2	56.2	53.6	50.7	47.6	44.4	50.4	51.6	50.8	49.0	46.7	44.2	41.5
TGEL 37.1	130.0	58.3	66.2	67.6	66.3	63.9	60.8	57.3	53.8	51.3	57.9	59.0	57.9	55.7	53.0	49.9	46.8
TGEL 49.4	173.0	70.1	79.8	81.7	80.4	77.5	73.8	69.7	65.4	61.8	70.0	71.5	70.2	67.6	64.3	60.7	56.8

**Correction for subcooling  $\Delta t_{sub}$** 

The evaporator capacity used must be corrected if the subcooling deviates from 4 K. The corrected capacity can be obtained by dividing the required evaporator capacity by the correction factor given across, and then selecting from the tables.

$\Delta t_{sub}$	4 °K	10 °K	15 °K	20 °K	25 °K	30 °K	35 °K	40 °K	45 °K	50 °K
Correction factor	1.00	1.08	1.14	1.20	1.26	1.31	1.37	1.43	1.48	1.54

Note: Flash gas can form if subcooling is too low.





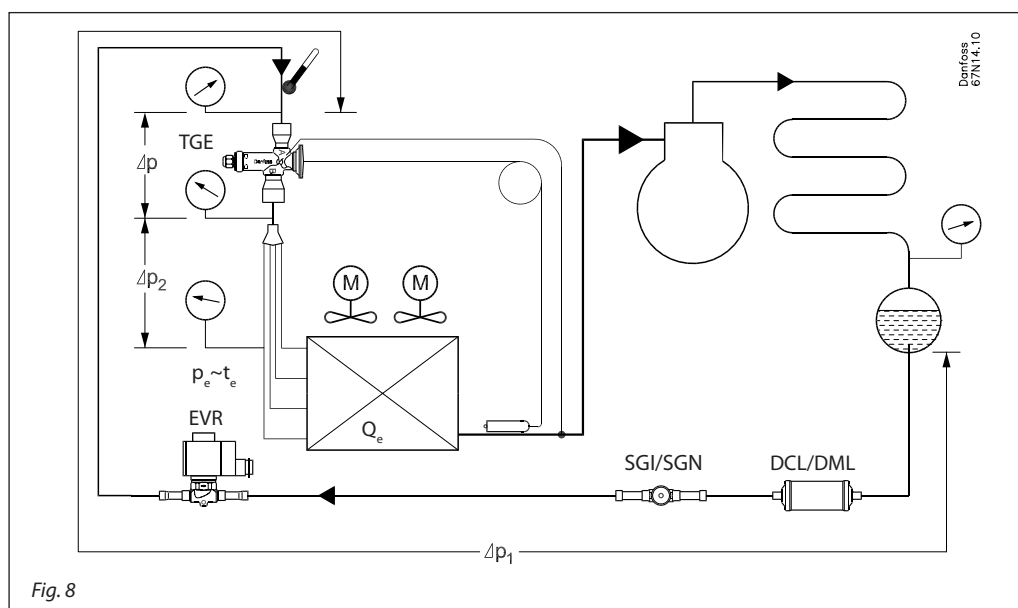








Sizing



Sizing examples (SI and US)

Refrigerant R410A  
 Evaporator capacity  $Q_e = 25 \text{ kW} / 7 \text{ TR}$   
 Evaporator with several circuits, i.e. a valve with distributor is required  
 Evaporating temperature  $t_e = 0^\circ\text{C} / 32^\circ\text{F}$   
 $p_e = 8 \text{ bar} / 116 \text{ psi}$   
 Condensing temperature  $t_c = +36^\circ\text{C} / 96.8^\circ\text{F}$   
 $p_c = 22 \text{ bar} / 319 \text{ psi}$   
 Refrigerant liquid temperature  $t_l = +26^\circ\text{C} / 78.8^\circ\text{F}$   
 Subcooling  $\Delta t_{\text{sub}} = 36 - 26 = 10 \text{ K} / 96.8^\circ\text{F} - 78.8^\circ\text{F} = 18^\circ\text{F}$

From the diagram it can be seen that evaporating pressure  $p_e$  is equal to  $p_c - \Delta p - \Delta p_1 - \Delta p_2$ . Thus, pressure drop  $\Delta p$  across TGE equals  $p_c - p_e - \Delta p_1 - \Delta p_2 = 13 - 4 - 0.5 - 0.5 = 13 \text{ bar} / p_c - p_e - \Delta p_1 - \Delta p_2 = 319 - 116 - 7.25 - 7.25 = 188.5 \text{ psi}$ .

Pressure drop in risers, etc. is not taken into account.

The correction factor at  $\Delta t_{\text{sub}} = 10 \text{ K} / 18^\circ\text{F}$  is 1.08. The corrected evaporator capacity thus becomes  $25 \text{ kW} / 7 \text{ TR}$  divided by 1.08 =  $23.1 \text{ kW} / 6.5 \text{ TR}$ .

From the data supplied determine pressure drop  $\Delta p$  across TGE.

Pressure drop  $\Delta p_1$  in liquid lines, pipe bends, filter, sight glass, solenoid valve, etc. can be assumed to be  $0.5 \text{ bar} / 7.25 \text{ psi}$   
 Pressure drop  $\Delta p_2$  in the liquid distributor can also be assumed as  $0.5 \text{ bar} / 7.25 \text{ psi}$ .

Since the capacity of the expansion valve must be equal to or slightly higher than the corrected evaporator capacity of  $23.1 \text{ kW} / 6.5 \text{ TR}$ , a TGEL 7.4 giving  $23.5 \text{ kW} / 6.5 \text{ TR}$  at  $\Delta p = 12 \text{ bar} / 190 \text{ psi}$  would be a suitable choice (See tables below).

## R410A

Capacity in kW

Type and rated capacity	Rated capacity [kW]	Pressure drop across the valve $\Delta p$ bar								Pressure drop across the valve $\Delta p$ bar							
		3	6	9	12	15	18	21	24	3	6	9	12	15	18	21	24
<b>Evaporating temperature +5°C</b>																	
TGEL 3.7	13.0	8.2	10.6	11.9	12.5	12.8	12.8	12.6	12.3	7.9	10.1	11.3	11.8	12.1	12.1	11.9	11.7
TGEL 4.9	17.2	11.2	14.4	16.2	16.9	17.2	17.2	16.9	16.5	10.8	13.9	15.4	16.0	16.3	16.3	16.0	15.6
TGEL 7.4	26.0	16.6	21.3	23.7	24.7	25.0	24.9	24.4	23.6	16.0	20.5	22.6	23.5	23.7	23.6	23.1	22.4
TGEL 9.9	34.7	22.0	28.2	31.3	32.6	32.9	32.6	31.9	30.8	21.4	27.3	30.0	31.1	31.4	31.1	30.4	29.3
TGEL 13.6	47.6	29.4	38.1	43.0	45.4	46.5	46.8	46.4	45.5	28.9	37.4	41.8	43.9	44.9	45.2	44.8	43.9
<b>Evaporating temperature 0°C</b>																	

## R410A

Capacity in Tons

Type	Rated capacity [tons]	Pressure drop across the valve $\Delta p$ psig									Pressure drop across the valve $\Delta p$ psig								
		40	70	100	130	160	190	220	250	40	70	100	130	160	190	220	250		
<b>Evaporating temperature +30°F</b>																			
TGEL 3.7	3.7	2.3	3.0	3.3	3.4	3.4	3.4	3.3	3.1	2.2	2.8	3.0	3.1	3.2	3.1	3.0	2.9		
TGEL 4.9	4.9	3.2	4.1	4.4	4.6	4.6	4.5	4.4	4.2	3.0	3.8	4.1	4.2	4.2	4.2	4.1	3.9		
TGEL 7.4	7.4	4.8	6.0	6.5	6.7	6.6	6.5	6.3	6.0	4.5	5.6	6.1	6.2	6.2	6.0	5.8	5.6		
TGEL 9.9	9.9	6.4	8.0	8.6	8.8	8.8	8.6	8.2	7.8	6.1	7.6	8.1	8.2	8.2	8.0	7.7	7.3		
TGEL 13.6	13.6	8.6	11.0	12.1	12.6	12.7	12.6	12.3	11.9	8.4	10.6	11.5	11.9	12.0	11.9	11.6	11.2		
<b>Evaporating temperature +20°F</b>																			

Dimensions and weights

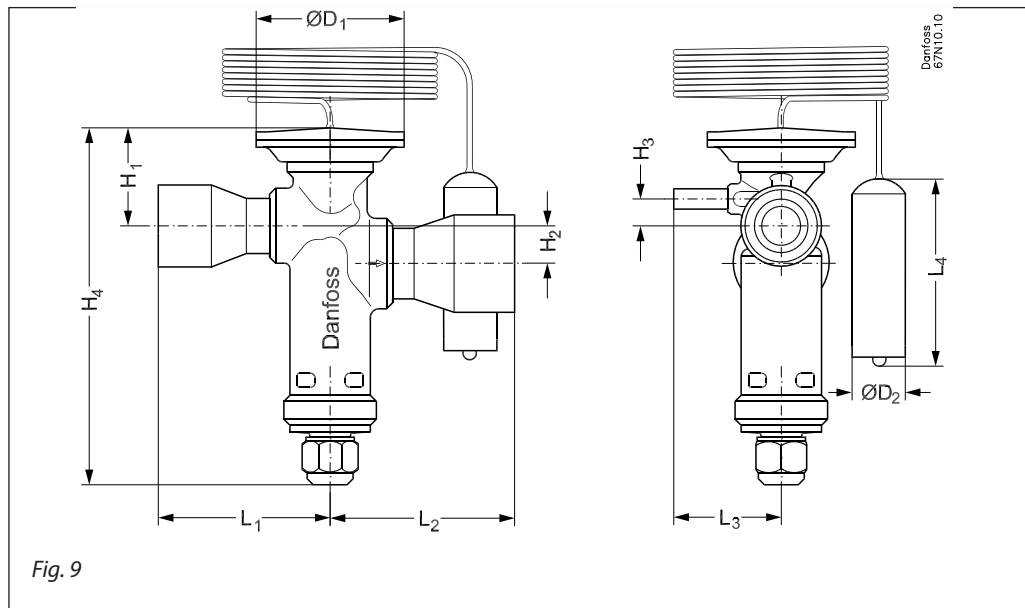


Fig. 9

Type	Connection inlet × outlet ODF solder		Capillary tube length m	H <sub>1</sub> mm	H <sub>2</sub> mm	H <sub>3</sub> mm	H <sub>4</sub> mm	L <sub>1</sub> mm	L <sub>2</sub> mm	L <sub>3</sub> mm	L <sub>4</sub> mm	ØD <sub>1</sub> mm	ØD <sub>2</sub> mm	Weight kg
	in.	mm												
TGE 10	3/8 × 1/2		1.5	28.5	7.5	5	93	41.5	45.5	37.5	70	45	14.5	0.37
	3/8 × 5/8	10 × 16							59.5					
	1/2 × 5/8	12 × 16							45.5					
	1/2 × 7/8	12 × 22							59.5					
	5/8 × 5/8													
	5/8 × 7/8	16 × 22												
TGE 20	5/8 × 7/8	16 × 22	1.5	32	9	8	117	48	62	40	78	53	19.2	0.57
	7/8 × 7/8							62						
	5/8 × 1 1/8	16 × 28						48	66					
	7/8 × 1 1/8	22 × 28						62						
	7/8 × 1 3/8													
TGE 40	7/8 × 1 3/8	22 × 35	3	39	15	11	144		74.5	43.5	78	60	19.2	0.93
	1 1/8 × 1 1/8							69.5						
	1 1/8 × 1 3/8	28 × 35						74.5						

Type	Connection inlet × outlet ODF solder		Capillary tube length ft	H <sub>1</sub> in	H <sub>2</sub> in	H <sub>3</sub> in	H <sub>4</sub> in	L <sub>1</sub> in	L <sub>2</sub> in	L <sub>3</sub> in	L <sub>4</sub> in	ØD <sub>1</sub> in	ØD <sub>2</sub> in	Weight lbs
	in.	mm												
TGE 10	3/8 × 1/2		4.92	1.12	0.30	0.20	3.66	1.63	1.79	1.48	2.76	1.77	0.57	0.81
	3/8 × 5/8	10 × 16							2.34					
	1/2 × 5/8	12 × 16							1.79					
	1/2 × 7/8	12 × 22							2.34					
	5/8 × 5/8													
	5/8 × 7/8	16 × 22												
TGE 20	5/8 × 7/8	16 × 22	4.92	1.26	0.35	0.31	4.61	1.89	2.44	1.57	3.07	2.09	0.76	1.27
	7/8 × 7/8							2.44						
	5/8 × 1 1/8	16 × 28						1.89	2.60					
	7/8 × 1 1/8	22 × 28						2.44						
	7/8 × 1 3/8													
TGE 40	7/8 × 1 3/8	22 × 35	9.84	1.54	0.59	9.43	5.67	2.58	2.93	1.71	3.07	2.36	0.76	2.05
	1 1/8 × 1 1/8							2.74	2.93					
	1 1/8 × 1 3/8	28 × 35						2.74	2.93					

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