



Válvulas de expansión termostáticas Tipo TRE10, TRE20, TRE40 y TRE80

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Introducción

Las válvulas de expansión termostáticas tipo TRE han sido diseñadas para ser soldadas en sistemas de aire acondicionado y de refrigeración. Su diseño completamente hermético cumple todos los requisitos medioambientales presentes y futuros. Se pueden utilizar en sistemas con capacidades entre los 28 y los 245 kW (8 a 70 TR (R22)).

El diseño de la TRE incorpora un cuerpo en latón termoprensado con el elemento termostático, incluyendo el tubo capilar y el bulbo en acero inoxidable. Las conexiones para soldar bimetalicas son de acero inoxidable y cobre. La válvula incorpora un puerto de equilibrio en los dos sentidos de flujo para hacer ideales las operaciones bi-flow.

El ajuste externo del recalentamiento es una característica común en todos los modelos de las TRE. Además existe un accesorio para ajustes in situ. También esta disponible un filtro como accesorio para montar a la entrada.



Las válvulas TRE se pueden utilizar con todos los refrigerantes fluorados R22, R410A, R134a, y R407C. Modelos para otros refrigerantes se pueden fabricar bajo pedido.

Contactar con Danfoss para mas información.

Características

- *Conexiones bimetalicas*
 - soldadura sin paño húmedo
 - tiempos de instalación pequeños
 - la más alta productividad
- *Diseñadas para R 410A*
 - R 22, R 407C, R 134a, R 404A, R 507 y otros refrigerantes fluorados
- *Elemento termostático soldado por láser:*
 - larga vida del diafragma
 - alta tolerancia a las presiones y presión de trabajo
- *Elemento termostático, tubo capilar y bulbo en acero inoxidable*
 - alta resistencia a la corrosión
 - alta resistencia a las vibraciones
 - instalación rápida: el bulbo se sujeta con una abrazadera.
 - buen contacto y transmisión térmica
- *Doble puerto equilibrado/ función bi-flow*
 - el recalentamiento no esta afectado por la presión de condensación independientemente del sentido de flujo
 - una válvula para una bomba de calor
- *Bulbo de acero inoxidable de doble contacto*
 - instalación fácil y rápida
 - buen contacto y transmisión térmica
- *Versión ajustable y no ajustable*
 - el ajuste del vástago se puede modificar a la versión no ajustable

Programa estándar

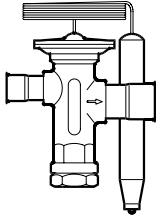
Carga termostática para R410A, R22, R134A, y R407C:

N	-40 → +10°C sin MOP -40 → +50°F sin MOP
K	-25 → +10°C MOP + 15°C -15 → +50°F MOP + 60°F

Recalentamiento estático (SS):

Válvulas sin MOP: 5K / 9°F
Válvulas con MOP: 4K / 7.2°F

<i>Longitud de tubo capilar:</i>	TRE10	1.5 m / 5 ft.
	TRE20	1.5 m / 5 ft.
	TRE40	3.0 m / 10 ft.

Opciones


Además del programa estándar, las válvulas TRE están disponibles con las siguientes opciones:

Refrigerantes - Rango - MOP:
Contactar con Danfoss para más información sobre diferentes refrigerantes y rangos de evaporación.

Recalentamiento estático, ajustable:
2K → 6K / 3.6°F → 10.8°F

Recalentamiento estático, fijo:
2K → 6K / 3.6°F → 10.8°F

Longitud de tubo capilar:

Tipo	Longitud de tubo capilar	
TRE10	0.9 or 1.5 m	3 or 5 ft.
TRE20	0.9; 1.5 or 3.0 m	3; 5 or 10 ft.
TRE40	1.5 or 3.0 m	5 or 10 ft.
TRE80	1.5 or 3.0 m	5 or 10 ft.

Conexiones:

Tipo	Ebtrada ODF soldar	Salida ODF soldar
TRE10	1/2 - 5/8 - 7/8 in.	1/2 - 5/8 - 7/8 - 1 1/8 in.
	12 - 16 - 22 mm	12 - 16 - 22 - 28 mm
TRE20	5/8 - 7/8 - 1 1/8 in.	5/8 - 7/8 - 1 1/8 - 1 3/8 in.
	16 - 22 - 28 mm	16 - 22 - 28 - 35 mm
TRE40	7/8 - 1 1/8 in.	7/8 - 1 1/8 - 1 3/8 in.
	22 - 28 mm	22 - 28 - 35 mm
TRE80	1 1/8 - 1 3/8 in.	1 1/8 - 1 3/8 - 1 5/8 in.
	28 - 35 mm	28 - 35 - 42 mm

Conexión de igualación de 1/4 in. ó 6 mm ODF en todos los modelos. Los tamaños de los tornillos son estándar.

Datos técnicos

Máxima temperatura de trabajo
- Elemento termostático:

N carga 100°C / 210 °F
(R 410A max. 70°C / 155°F)
K carga 150°C / 302 °F

- Cuerpo: 110°C / 230°F

Presión de trabajo admisible
PS = 42 bar / 610 psig

Presión máxima de prueba
p' = 46.5 bar / 670 psig

Operación bi-flow

Las válvulas TRE están diseñadas para trabajar en dos sentidos. Durante flujo en sentido inverso, la capacidad media se reduce en un 10%.

Función MOP

Para evitar la migración de carga cuando tenemos válvulas con MOP, la temperatura del bulbo debe ser menor que la temperatura en el elemento termostático.

Puntos MOP

Refrigerante	Rango K -25 → +10°C / -15 → +50°F
	Punto MOP temperatura evaporación t _e y presión evaporación p _e ¹⁾ t _e = +15°C/+60°F
R 22	p _e = 100 psig/6.9 bar
R 410A	p _e = 165 psig/11.5 bar
R 407C	p _e = 95 psig/6.6 bar
R 134a	p _e = 55 psig/3.9 bar
R 404A/R507	p _e = 120 psig/8.4 bar

¹⁾ p_e en bar en el manómetro

Identificación

En el diafragma se muestra información sobre la válvula (fig. 1).

Ejemplo:
 TRE10 = Tipo de válvula
 8 TR = Capacidad nominal $Q_{nom.}$ en Tons de Refrigeración
 28 kW = Capacidad nominal $Q_{nom.}$ en kW
 R22 = Refrigerante
 -25/+10°C = Rango de temperatura de evaporación (°C)
 -15/+50°F = Rango de temperatura de evaporación (°F)
067L1018 = Código
 MOP 100 = Max. presión de prueba
 PS 42 bar/MWP 610 psig = Max. presión de trabajo en bar y psig

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

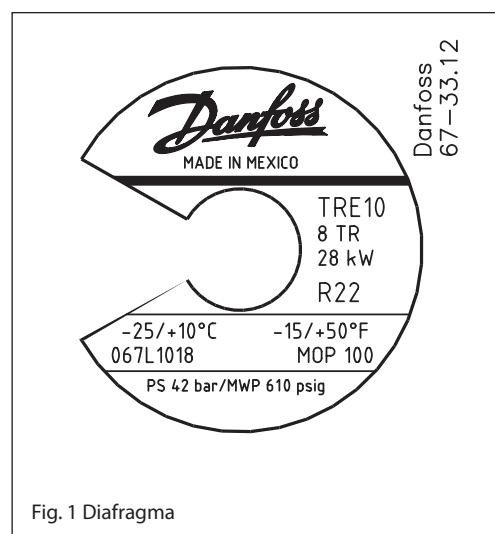


Fig. 1 Diafragma

Tipo de descripción: TRE10 - 8X100

TRE = Familia de producto
 10 = Max. capacidad
 8 = 8TR, capacidad media
 X = Código refrigerante, R22
 100 = MOP en psig

**Diseño/
Funcionamiento**

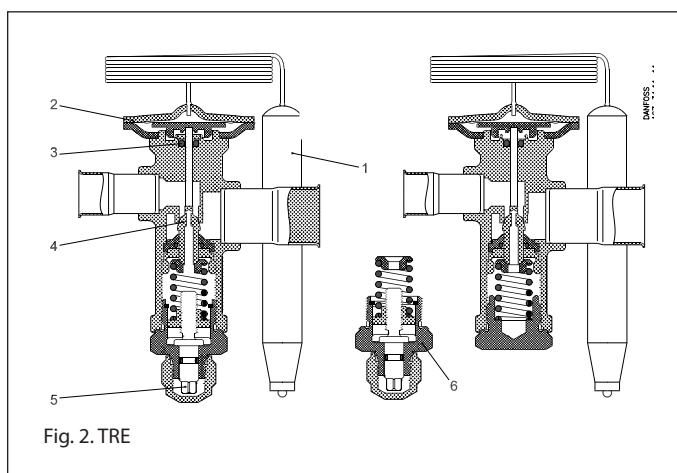


Fig. 2. TRE

1. Bulbo con tubo capilar
2. Elemento termostático
3. Zócalo de presión
4. Doble puerto equilibrado
5. Vástago de ajuste para recalentamiento estático SS
6. Conjunto de vástago de ajuste (accesorio)

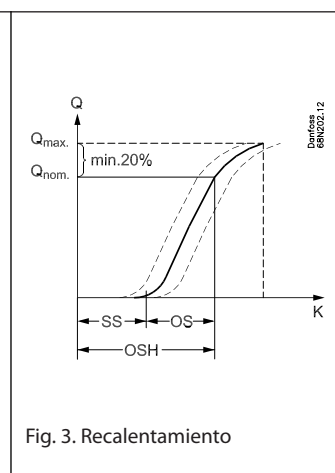


Fig. 3. Recalentamiento

El recalentamiento estático se puede ajustar con el vástago de ajuste (5), ver fig. 2. El recalentamiento (SS) es 4K / 7.2°F para válvulas con MOP y 5K / 9.0°F para válvulas sin MOP. Las válvulas se pueden suministrar con ajuste fijo. Para válvulas no ajustables, esta disponible un conjunto opcional para ajuste (6).

El doble puerto equilibrado (4) asegura cambios mínimos en el recalentamiento cuando varía la diferencia de presión. Esta característica hace que la válvula sea ideal para sistemas bi-flow. El zócalo de presión se fija con un sellado fuerte (3) para asegura máxima estanqueidad para alargar la vida de la válvula.

Terminología (fig.3)

SS = Recalentamiento estático
 OS = Recalentamiento de apertura
 SH = SS + OS = Recalentamiento total

Ejemplo

Recalentamiento estático SS = 4 K (7.2°F)
 (ajuste de fábrica)
 Recalentamiento apertura OS = 4K (7.2°F)

El recalentamiento de apertura es de 4K, desde que la válvula comienza a abrir hasta la capacidad nominal. El recalentamiento de apertura esta determinado por el diseño y no se puede cambiar.

Recal. total SH = SS + OS
 SH = 4 + 4 = 8K (14.4°F)
 Recal. total SH se puede cambiar cambiando SS (utilizando el vástago de ajuste).

Dimensionamiento

Corrección subenfriamiento Δt_{sub}
Se debe corregir la capacidad del evaporador cuando el subenfriamiento es mayor de 4 K (7.2°F). La capacidad corregida se obtiene dividiendo la capacidad del evaporador por el factor que se obtiene mas abajo.

Nota:

Subenfriamientos pequeños pueden provocar evaporaciones instantáneas (flash gas).

Factor corrección	Δt_{sub}									
	4 K 7.2°F	10 K 18°F	15 K 27°F	20 K 36°F	25 K 45°F	30 K 54°F	35 K 63°F	40 K 72°F	45 K 81°F	50 K 90°F
R 22	1.00	1.06	1.11	1.15	1.20	1.25	1.30	1.35	1.39	1.44
R 410A	1.00	1.08	1.15	1.21	1.27	1.33	1.39	1.45	1.50	1.56
R 407C	1.00	1.08	1.14	1.21	1.27	1.33	1.39	1.45	1.51	1.57
R 134a	1.00	1.08	1.13	1.19	1.25	1.31	1.37	1.42	1.48	1.54
R 404A / R 507	1.00	1.10	1.20	1.29	1.37	1.46	1.54	1.63	1.70	1.78

Ejemplo

Refrigerante = R 22

Temp evaporación

$$t_e = -10^\circ\text{C} / 14^\circ\text{F}$$

$$p_e = 3.5 \text{ bar} / 51 \text{ psi}$$

Temp condensación

$$t_c = 40^\circ\text{C} / 104^\circ\text{F}$$

$$p_c = 15.5 \text{ bar} / 225 \text{ psi}$$

Caída de presión en la válvula

$$\Delta p = 15.5 - 3.5 - 2 = 10 \text{ bar} / 145 \text{ psi}^1)$$

Subenfriamiento $\Delta t_{sub} = 15 \text{ K} / 27^\circ\text{F}$

Capacidad evaporador = 40 kW / 11.4 TR

Factor corrección = 1.11

La capacidad corregida del evaporador será 40 : 1.11 = 36 kW / 10.3 TR)

Por lo tanto la capacidad de la válvula de expansión tiene que ser igual o ligeramente superior a la capacidad corregida de 36 kW / 10.3 TR, la selección será una TRE20-12.5X con una capacidad en tablas de 37.7 kW / 10.8 TR.

¹⁾ La caída de presión ($p_c - p_e$) se calcula con la caída de presión en tuberías, distribuidor y codos. Se puede aproximar a 2 bar / 29 psi. Por lo tanto, la caída de presión es $\Delta p = p_c - p_e - 2 \text{ bar}$.

Pedidos

La válvula y la abrazadera se suministran en pack industriales o individualmente en multipack. Las cantidades son las siguientes:

Tipo	Industrial pack	Multipack
TRE10	12 pcs	12 pcs
TRE20	8 pcs	8 pcs
TRE40	4 pcs	6 pcs
TRE80	4 pcs	4 pcs

Resumen de rango de productos

Capacidad		Refrigerante		Rango	MOP
TR	kW	Tipo	Kode		
8 - 70	28 - 246	R 22	X	K	15°C / 60°F
8 - 70	28 - 246	R 22	X	N	
8 - 85	28 - 298	R 410A	L	K	15°C / 60°F
8 - 85	28 - 298	R 410A	L	N	
8 - 70	28 - 246	R 407C	Z	K	15°C / 60°F
8 - 70	28 - 246	R 407C	Z	N	
5 - 56	18 - 196	R 134a	N	K	15°C / 60°F
5 - 56	18 - 196	R 134a	N	N	

K: -25 → +10°C / -15 → +50°F

N: -40 → +10°C / -40 → +50°F

Para evitar la migración de carga cuando se trata de válvulas con MOP, la temperatura del bulbo debe ser inferior a la temperatura en el elemento termostático.

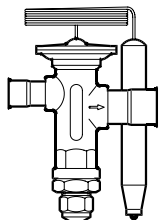
Puntos MOP

Refrigerante	Rango K -25 → +10°C / -15 → +50°F
	Punto MOP temperatura evaporación t_e y presión evaporación p_e ¹⁾ $t_e = +15^\circ\text{C} / +60^\circ\text{F}$
R 22	$p_e = 100 \text{ psig} / 6.9 \text{ bar}$
R 410A	$p_e = 165 \text{ psig} / 11.5 \text{ bar}$
R 407C	$p_e = 95 \text{ psig} / 6.6 \text{ bar}$
R 134a	$p_e = 55 \text{ psig} / 3.9 \text{ bar}$
R 404A/R507	$p_e = 120 \text{ psig} / 8.4 \text{ bar}$

¹⁾ p_e en bar en el manómetro

Pedidos
Programa estándar

R22, R410A



Refrigerante	Tipo Capacidad nominal Q _{nom} ¹⁾ TR	Capacidad nominal Q _{nom} ¹⁾ kW	Conexiones		Rango K -25°/+10°C MOP 15°C -15°/+50°F MOP 60°F		Rango N -40°/+10°C -40°/+50°F	
			ODF soldar		Código Multi-pack ²⁾	Código Industrial pack ²⁾	Código Multi-pack ²⁾	Código Industrial pack ²⁾
			Entrada	Salida				
			in.	in.				
R22	TRE10- 8X	28	5/8	7/8	067L1021	067L2021	067L1121	067L2121
	TRE10-10X	35	5/8	7/8	067L1024	067L2024	067L1124	067L2124
	TRE20-10X	35	5/8	7/8	067L1075	067L2075	067L1175	067L2175
	TRE20-12,5X	44	5/8	7/8	067L1079	067L2079	067L1179	067L2179
	TRE20-15X	53	7/8	1 1/8	067L1084	067L2084	067L1184	067L2184
	TRE20-20X	70	7/8	1 1/8	067L1087	067L2087	067L1187	067L2187
	TRE20-20X	70	7/8	1 3/8	067L1088	067L2088	067L1188	067L2188
	TRE40-20X	70	7/8	1 1/8	067L3001	067L4001	067L3101	067L4101
	TRE40-20X	70	7/8	1 3/8	067L3002	067L4002	067L3102	067L4102
	TRE40-25X	88	7/8	1 3/8	067L3005	067L4005	067L3105	067L4105
	TRE40-25X	88	1 1/8	1 3/8	067L3006	067L4006	067L3106	067L4106
	TRE40-30X	105	1 1/8	1 3/8	067L3009	067L4009	067L3109	067L4109
	TRE40-40X	140	1 1/8	1 3/8	067L3012	067L4012	067L3112	067L4112
	TRE80-40X	140	1 1/8	1 3/8	067L3060	067L4060	067L3160	067L4160
TRE80-55X	193	1 1/8	1 3/8	067L3063	067L4063	067L3163	067L4163	
TRE80-70X	245	1 1/8	1 5/8	067L3066	067L4066	067L3166	067L4166	
R410A	TRE10- 8L	28	5/8	5/8	067L1028	067L2028	067L1128	067L2128
	TRE10- 8L	28	5/8	7/8	067L1029	067L2029	067L1129	067L2129
	TRE10- 10L	35	5/8	5/8	067L1030	067L2030	067L1130	067L2130
	TRE10- 10L	35	5/8	7/8	067L1031	067L2031	067L1131	067L2131
	TRE10-12,5L	44	5/8	5/8	067L1034	067L2034	067L1134	067L2134
	TRE10-12,5L	44	5/8	7/8	067L1035	067L2035	067L1135	067L2135
	TRE10- 15L	53	7/8	7/8	067L1038	067L2038	067L1138	067L2138
	TRE10- 15L	53	7/8	1 1/8	067L1039	067L2039	067L1139	067L2139
	TRE20-15L	53	7/8	7/8	067L1091	067L2091	067L1191	067L2191
	TRE20-15L	53	7/8	1 1/8	067L1092	067L2092	067L1192	067L2192
	TRE20-20L	70	7/8	7/8	067L1093	067L2093	067L1193	067L2193
	TRE20-20L	70	7/8	1 1/8	067L1094	067L2094	067L1194	067L2194
	TRE20-25L	88	7/8	1 1/8	067L1097	067L2097	067L1197	067L2197
	TRE20-25L	88	1 1/8	1 1/8	067L1099	067L2099	067L1199	067L2199
	TRE40-25L	88	7/8	1 1/8	067L3015	067L4015	067L3115	067L4115
	TRE40-25L	88	1 1/8	1 3/8	067L3016	067L4016	067L3116	067L4116
	TRE40-35L	123	1 1/8	1 1/8	067L3019	067L4019	067L3119	067L4119
	TRE40-35L	123	1 1/8	1 3/8	067L3020	067L4020	067L3120	067L4120
	TRE40-40L	140	1 1/8	1 1/8	067L3023	067L4023	067L3123	067L4123
	TRE40-40L	140	1 1/8	1 3/8	067L3024	067L4024	067L3124	067L4124
	TRE40-55L	193	1 1/8	1 1/8	067L3027	067L4027	067L3127	067L4127
	TRE40-55L	193	1 1/8	1 3/8	067L3028	067L4028	067L3128	067L4128
	TRE80-55L	193	1 1/8	1 1/8	067L3069	067L4069	067L3169	067L4169
	TRE80-55L	193	1 1/8	1 3/8	067L3070	067L4070	067L3170	067L4170
TRE80-80L	280	1 1/8	1 3/8	067L3073	067L4073	067L3173	067L4173	
TRE80-80L	280	1 1/8	1 5/8	067L3074	067L4074	067L3174	067L4174	
TRE80-80L	280	3/8	1 3/8	067L3075	067L4075	067L3175	067L4175	
TRE80-100L	350	1 1/8	1 5/8	067L3078	067L4078	067L3178	067L4178	
TRE80-100L	350	1 3/8	1 5/8	067L3079	067L4079	067L3179	067L4179	

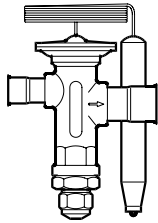
Longitud tubo capilar = 1.5m.
Igualación de presión = 1/4 in. ODF

- 1) La capacidad nominal se basa en:
Temp. evaporación, t_e = 5°C
Temp. líquido, t_l = 28°C
Temp. condensación, t_c = 32°C
Recalentamiento apertura, OS = 4K
- 2) Cantidades en industrial y multipacks: (ver página anterior).

Para conexiones, refrigerantes, longitudes de tubo capilar, etc. fuera del programa estándar, ver *Opciones*.

Pedidos
Programa estándar
R407C, R134a

Refrigerante	Tipo Capacidad nominal	Capacidad nominal	Conexiones		Rango K -25°/+10°C MOP 15°C -15°/+50°F MOP 60°F		Rango N -40°/+10°C -40°/+50°F	
	Q _{nom} ¹⁾ TR	Q _{nom} ¹⁾ kW	ODF soldar		Código Multi-pack ²⁾	Código Industrial pack ²⁾	Código Multi-pack ²⁾	Código Industrial pack ²⁾
			Entrada	Salida				



R407C	TRE10- 8Z	28	5/8	7/8	067L1012	067L2012	067L1112	067L2112
	TRE10-10Z	35	5/8	7/8	067L1015	067L2015	067L1115	067L2115
	TRE20-10Z	35	5/8	7/8	067L1058	067L2058	067L1158	067L2158
	TRE20-12,5Z	44	5/8	7/8	067L1062	067L2062	067L1162	067L2162
	TRE20-15Z	53	7/8	1 1/8	067L1067	067L2067	067L1167	067L2167
	TRE20-20Z	70	7/8	1 1/8	067L1070	067L2070	067L1170	067L2170
	TRE20-20Z	70	7/8	1 3/8	067L1071	067L2071	067L1171	067L2171
	TRE40-20Z	70	7/8	1 1/8	067L3030	067L4030	067L3130	067L4130
	TRE40-20Z	70	7/8	1 3/8	067L3031	067L4031	067L3131	067L4131
	TRE40-25Z	88	7/8	1 3/8	067L3034	067L4034	067L3134	067L4134
	TRE40-25Z	88	1 1/8	1 3/8	067L3035	067L4035	067L3135	067L4135
	TRE40-30Z	105	1 1/8	1 3/8	067L3038	067L4038	067L3138	067L4138
	TRE40-40Z	140	1 1/8	1 3/8	067L3040	067L4040	067L3140	067L4140
TRE80-40Z	140	1 1/8	1 3/8	067L3082	067L4082	067L3182	067L4182	
TRE80-55Z	193	1 1/8	1 3/8	067L3085	067L4085	067L3185	067L4185	
TRE80-70Z	245	1 1/8	1 5/8	067L3088	067L4088	067L3188	067L4188	

R134a	TRE10- 5N	18	5/8	7/8	067L1003	067L2003	067L1103	067L2103
	TRE10- 7N	25	5/8	7/8	067L1006	067L2006	067L1106	067L2106
	TRE20- 7N	25	5/8	7/8	067L1041	067L2041	067L1141	067L2141
	TRE20- 9N	32	5/8	7/8	067L1045	067L2045	067L1145	067L2145
	TRE20-11N	39	7/8	1 1/8	067L1050	067L2050	067L1150	067L2150
	TRE20-14N	49	7/8	1 1/8	067L1053	067L2053	067L1153	067L2153
	TRE20-14N	49	7/8	1 3/8	067L1054	067L2054	067L1154	067L2154
	TRE40-14N	49	7/8	1 1/8	067L3043	067L4043	067L3143	067L4143
	TRE40-14N	49	7/8	1 3/8	067L3044	067L4044	067L3144	067L4144
	TRE40-16N	56	7/8	1 3/8	067L3047	067L4047	067L3147	067L4147
	TRE40-16N	56	1 1/8	1 3/8	067L3048	067L4048	067L3148	067L4148
	TRE40-20N	70	1 1/8	1 3/8	067L3051	067L4051	067L3151	067L4151
	TRE40-25N	88	1 1/8	1 3/8	067L3054	067L4054	067L3154	067L4154
	TRE80-25N	88	1 1/8	1 1/8	067L3091	067L4091	067L3191	067L4191
	TRE80-35N	123	1 1/8	1 3/8	067L3094	067L4094	067L3194	067L4194
TRE80-45N	158	1 1/8	1 5/8	067L3097	067L4097	067L3197	067L4197	

 Longitud tubo capilar = 1.5m.
 Igualación de presión = 1/4 in. ODF

- ¹⁾ La capacidad media se basa en:
 Temp. evaporación, t_e = 5°C
 Temp. líquido, t_l = 28°C
 Temp. condensación, t_c = 32°C
 Recalentamiento apertura, OS = 4K
- ²⁾ Cantidades de válvulas en industrial y multipacks: (ve página anterior)

 Para conexiones, refrigerantes, longitudes de tubo capilar, etc, fuera del programa estándar, ver *Opciones*.

Accesorios

 Conjunto de vástago de ajuste:
 Para instalaciones con válvulas con ajuste fijo.
Nota: Muelle no incluido.

Tipo	Par de apriete	Código
TRE10	30 Nm (22 ft lbf)	067L1295
TRE20	46 Nm (34 ft lbf)	067L1296
TRE40	66 Nm (49 ft lbf)	067L1297
TRE80	90 Nm (66 ft lbf)	067L1298



Capacidad

R22

Capacidad en kW rango N y K y recalentamiento de apertura OS = 4 K

Tipo y capacidad nominal Q _{nom} TR	Pérdida de carga a través de la válvula Δp bar								Pérdida de carga a través de la válvula Δp bar							
	2	4	6	8	10	12	14	16	2	4	6	8	10	12	14	16
	Temperatura de evaporación +10°C								Temperatura de evaporación +5°C							
TRE10 - 8X	19.6	25.3	28.6	30.5	31.6	32.1	32.3	32.3	18.9	24.5	27.4	29.2	30.1	30.7	30.8	30.6
TRE10 - 10X	24.6	31.7	35.5	38.0	39.3	40.1	40.3	40.2	23.9	30.6	34.2	36.4	37.6	38.3	38.5	38.5
TRE20 - 10X	25.9	33.6	37.9	40.5	41.6	42.7	43.0	42.8	24.7	32.0	36.0	38.3	40.0	40.3	40.5	40.3
TRE20 - 12.5X	30.9	40.1	45.0	48.0	49.9	50.7	51.2	50.8	29.6	38.3	42.9	45.7	47.2	47.9	48.1	47.9
TRE20 - 15X	37.8	49.1	55.2	58.9	61.0	63.2	62.4	62.2	36.3	46.8	52.6	55.9	57.9	58.8	59.0	58.8
TRE20 - 20X	49.5	63.6	71.4	76.3	79.1	80.5	80.9	79.9	47.8	61.1	68.5	72.7	75.1	76.5	76.8	76.6
TRE40 - 20X	49.2	63.8	72.1	77.0	80.0	81.5	82.0	81.7	46.9	60.6	68.3	72.3	75.4	76.7	77.1	76.8
TRE40 - 25X	61.8	80.0	90.1	96.3	99.8	101.8	102.4	102.0	59.2	76.2	85.7	91.6	94.5	96.0	96.5	95.9
TRE40 - 30X	74.1	96.0	108.1	115.3	119.6	121.9	122.6	122.4	71.1	91.7	102.9	107.8	113.5	115.3	115.5	115.3
TRE40 - 40X	99.4	128.6	143.6	154.0	159.7	162.7	163.8	163.6	95.8	123.5	138.3	147.1	152.1	154.8	155.5	155.1
TRE80 - 40X	100.4	128.9	144.9	154.4	159.9	162.6	163.4	162.8	95.2	121.0	136.8	145.5	150.3	152.7	153.3	152.7
TRE80 - 55X	138.3	177.5	198.3	211.2	218.5	222.2	223.7	223.1	132.3	168.9	188.5	200.2	206.9	210.2	219.6	219.1
TRE80 - 70X	177.1	224.3	251.2	267.0	276.8	282.6	283.4	284.3	171.3	215.0	240.4	257.2	263.7	268.3	270.1	269.4
	Temperatura de evaporación 0°C								Temperatura de evaporación -5°C							
TRE10 - 8X	18.1	23.3	26.0	27.6	28.5	28.4	29.0	28.8	17.2	22.0	24.5	25.9	26.7	27.0	27.1	26.9
TRE10 - 10X	22.9	29.3	32.7	34.6	35.7	36.2	36.3	36.1	21.8	27.7	30.8	32.5	33.6	34.0	34.0	33.8
TRE20 - 10X	23.5	30.2	33.8	35.9	37.1	37.6	37.7	37.5	22.1	28.2	31.6	33.4	34.4	34.8	34.8	34.6
TRE20 - 12.5X	28.0	36.0	40.3	42.8	44.2	44.8	44.9	44.7	26.4	33.7	37.6	39.8	41.0	41.5	41.6	41.2
TRE20 - 15X	34.5	44.4	49.7	52.7	54.4	55.2	55.3	54.9	32.7	41.5	46.5	49.0	50.5	51.2	51.2	50.8
TRE20 - 20X	45.5	58.2	64.9	68.8	71.0	72.0	72.2	71.8	43.0	54.0	60.9	64.4	66.2	67.0	67.2	66.7
TRE40 - 20X	44.3	57.2	64.2	68.2	70.5	71.6	71.8	71.4	41.7	53.3	59.5	63.2	64.5	66.1	66.2	65.7
TRE40 - 25X	56.1	71.9	80.5	85.6	88.4	89.7	90.0	89.6	52.5	67.1	75.1	79.5	81.9	83.0	83.1	82.6
TRE40 - 30X	67.5	86.4	96.8	103.0	106.3	108.0	108.3	107.6	63.4	81.0	90.4	95.7	98.7	100.0	100.1	99.5
TRE40 - 40X	91.3	117.0	130.9	137.7	143.6	145.7	146.3	145.6	87.5	110.3	122.8	129.8	135.1	135.7	136.0	135.3
TRE80 - 40X	90.0	114.7	128.2	135.9	140.1	142.1	142.6	141.7	84.0	106.6	118.8	125.7	129.3	130.9	131.2	130.3
TRE80 - 55X	125.5	159.5	178.2	188.0	193.5	196.8	197.6	196.5	118.2	148.1	165.4	174.8	179.9	182.4	182.8	181.7
TRE80 - 70X	162.3	204.9	227.8	241.3	249.0	253.0	254.2	253.0	153.3	193.3	213.9	226.0	232.9	236.2	237.0	235.8
	Temperatura de evaporación -10°C								Temperatura de evaporación -15°C							
TRE10 - 8X	16.3	20.6	22.8	24.1	24.8	25.1	25.0	24.8	15.2	19.1	21.1	22.2	22.7	22.9	22.9	22.7
TRE10 - 10X	20.6	26.4	28.8	30.4	31.2	31.5	31.6	31.3	19.3	24.2	26.7	28.0	28.7	29.0	29.0	28.7
TRE20 - 10X	20.5	26.1	29.1	30.7	31.5	31.9	31.9	31.6	18.8	23.8	26.5	27.9	28.6	28.9	28.8	28.5
TRE20 - 12.5X	24.5	31.2	35.0	36.6	37.7	38.1	38.0	37.7	22.5	28.6	31.6	33.4	34.2	34.5	34.5	34.1
TRE20 - 15X	30.4	38.6	42.9	45.3	46.5	47.0	47.0	46.6	28.1	35.4	39.2	41.3	42.3	42.7	42.6	42.2
TRE20 - 20X	40.4	51.0	56.5	59.6	61.2	62.2	61.9	61.4	37.4	46.9	51.8	54.7	56.0	56.5	56.3	55.9
TRE40 - 20X	38.6	49.1	54.8	57.9	59.6	60.4	60.4	59.9	35.4	44.9	50.0	52.6	54.0	54.6	54.6	54.1
TRE40 - 25X	48.8	62.4	69.0	73.0	75.1	76.0	76.0	75.4	44.8	56.7	63.0	66.4	68.2	68.8	68.8	68.2
TRE40 - 30X	58.9	75.0	83.5	88.1	90.6	91.8	91.8	91.1	54.7	68.8	76.2	80.3	82.5	83.4	83.3	82.5
TRE40 - 40X	81.2	102.7	113.8	120.2	123.6	125.1	125.3	124.4	75.3	94.5	104.5	110.2	113.0	114.3	114.3	113.4
TRE80 - 40X	77.5	98.3	109.1	115.1	118.3	119.6	119.6	118.7	71.1	89.5	99.0	104.4	107.1	108.2	108.0	107.1
TRE80 - 55X	109.7	138.1	152.7	161.0	165.3	167.5	167.7	166.5	101.1	126.4	139.5	146.8	150.7	152.2	152.3	151.0
TRE80 - 70X	143.8	179.9	198.7	209.4	215.5	218.3	218.8	217.5	133.4	165.8	182.7	192.3	197.5	199.8	200.0	198.5
	Temperatura de evaporación -20°C								Temperatura de evaporación -25°C							
TRE10 - 8X	16.3	20.6	22.8	24.1	24.8	25.1	25.0	24.8	15.2	19.1	21.1	22.2	22.7	22.9	22.9	22.7
TRE10 - 10X	20.6	26.4	28.8	30.4	31.2	31.5	31.6	31.3	19.3	24.2	26.7	28.0	28.7	29.0	29.0	28.7
TRE20 - 10X	17.1	21.6	23.9	25.1	25.7	25.9	25.8	25.5	15.4	19.4	21.4	22.4	22.8	23.0	22.9	22.6
TRE20 - 12.5X	20.5	25.9	28.6	30.4	30.8	31.0	30.9	30.6	18.5	23.2	25.6	26.8	27.1	27.6	27.4	27.1
TRE20 - 15X	25.6	32.2	35.5	37.3	38.2	38.5	38.3	37.9	23.1	28.9	31.8	33.3	34.1	34.3	34.1	33.7
TRE20 - 20X	34.2	42.9	47.1	49.5	50.7	51.0	50.9	50.4	31.0	38.5	42.4	44.4	45.3	45.6	45.5	44.9
TRE40 - 20X	32.1	40.5	44.9	47.3	48.5	48.9	48.8	48.3	28.9	36.3	40.1	42.0	43.1	43.4	43.3	42.8
TRE40 - 25X	40.8	51.3	56.8	59.7	61.3	61.8	61.7	61.0	36.7	46.0	51.2	53.3	54.5	54.9	54.7	54.1
TRE40 - 30X	49.7	62.4	68.9	72.5	74.3	74.9	74.8	74.0	44.8	55.9	61.6	64.7	66.2	66.7	66.5	65.7
TRE40 - 40X	68.9	86.1	94.9	99.8	102.2	103.2	103.1	102.2	62.4	77.6	85.3	89.5	91.6	92.3	92.1	91.2
TRE80 - 40X	64.5	80.8	89.2	93.7	96.0	96.9	96.7	95.7	58.2	72.3	79.4	83.3	85.3	85.9	85.6	84.7
TRE80 - 55X	93.1	114.6	126.1	132.5	135.8	137.0	136.9	135.7	83.0	102.8	112.9	118.5	121.2	122.2	121.9	120.7
TRE80 - 70X	121.3	151.2	166.2	174.6	179.1	181.0	180.9	179.4	110.5	136.4	149.6	157.0	160.8	162.3	162.0	160.5

Capacidad
R22
Capacidad en kW rango NyK y recalentamiento de apertura OS = 4 K

Tipo y capacidad nominal Q_{nom} TR	Pérdida de carga a través de la válvula Δp bar								Pérdida de carga a través de la válvula Δp bar							
	2	4	6	8	10	12	14	16	2	4	6	8	10	12	14	16
	Temperatura de evaporación -30°C								Temperatura de evaporación -35°C							
TRE10 - 8X	11.4	14.2	15.5	16.2	16.5	16.6	16.5	16.3	10.2	12.6	13.7	14.3	14.6	14.6	14.5	14.3
TRE10 - 10X	14.7	18.1	19.8	20.7	21.1	21.2	21.6	20.8	13.1	16.1	17.5	18.3	18.6	18.7	18.5	18.2
TRE20 - 10X	13.8	17.2	18.9	19.7	20.1	20.2	20.2	19.8	12.1	15.1	16.5	17.2	17.6	17.6	17.5	17.2
TRE20 - 12.5X	16.6	20.6	22.6	23.7	24.2	24.3	24.1	23.8	14.6	18.1	19.8	20.7	21.1	21.2	21.0	20.7
TRE20 - 15X	20.7	25.7	28.2	29.5	30.1	30.2	30.0	29.6	18.3	22.6	24.7	25.8	26.3	26.4	26.2	25.8
TRE20 - 20X	27.8	34.4	37.5	39.4	40.2	40.4	40.2	39.6	24.6	30.3	33.1	34.6	35.2	35.4	35.1	34.6
TRE40 - 20X	25.7	32.0	35.3	37.1	37.9	38.1	37.9	37.5	22.6	28.2	30.9	32.3	33.0	33.2	33.0	32.5
TRE40 - 25X	32.6	40.8	44.9	47.0	48.0	48.3	48.2	47.5	28.8	35.8	39.3	41.0	41.9	42.1	41.8	41.3
TRE40 - 30X	40.0	49.7	54.6	57.1	58.4	58.8	58.5	57.8	35.2	43.6	47.9	50.0	51.1	51.3	51.0	50.3
TRE40 - 40X	55.9	69.1	75.8	79.4	81.2	81.7	81.4	80.5	49.4	60.9	66.7	69.7	71.2	71.6	71.2	70.3
TRE80 - 40X	51.4	63.9	70.1	73.4	75.1	75.5	75.2	74.3	45.2	55.9	61.2	64.0	65.4	65.7	65.3	64.5
TRE80 - 55X	74.0	91.3	100.0	104.8	107.1	107.8	107.5	106.3	65.2	80.2	87.8	91.8	93.7	94.2	93.8	92.7
TRE80 - 70X	98.9	121.7	133.3	139.7	142.8	143.9	143.6	142.1	87.7	107.4	117.3	122.9	125.6	126.4	125.9	124.5
	Temperatura de evaporación -40°C															
TRE10 - 8X	9.0	11.0	12.0	12.5	12.7	12.7	12.6	12.4								
TRE10 - 10X	11.5	14.1	15.4	16.0	16.3	16.3	16.1	15.9								
TRE20 - 10X	10.6	13.1	14.3	14.9	15.2	15.2	15.1	14.8								
TRE20 - 12.5X	12.7	15.7	17.2	17.9	18.2	18.3	18.1	17.8								
TRE20 - 15X	16.0	19.7	21.5	22.4	22.8	22.8	22.6	22.3								
TRE20 - 20X	21.5	26.4	28.8	30.0	30.6	30.7	30.4	30.0								
TRE40 - 20X	19.7	24.4	26.7	27.9	28.5	28.6	28.4	27.9								
TRE40 - 25X	25.1	31.1	34.0	35.5	36.2	36.3	36.0	35.5								
TRE40 - 30X	30.8	37.9	41.5	43.3	44.1	44.3	44.0	43.4								
TRE40 - 40X	43.3	53.2	58.1	60.6	61.8	62.1	61.7	60.8								
TRE80 - 40X	39.4	48.5	52.8	55.3	56.4	56.6	56.3	55.5								
TRE80 - 55X	56.9	69.7	76.2	79.6	81.2	81.6	81.1	80.0								
TRE80 - 70X	76.8	93.8	102.4	106.9	109.3	109.9	109.3	107.9								

Factores de corrección subenfriamiento Δt_u

Δt_u	4 K	10 K	15 K	20 K	25 K	30 K	35 K	40 K	45 K	50 K
R 22	1.00	1.06	1.11	1.15	1.20	1.25	1.30	1.35	1.39	1.44

Capacidad

R410A

Capacidad en kW rango N y K y recalentamiento de apertura OS = 4 K

Tipo y capacidad nominal Q _{nom} TR	Pérdida de carga a través de la válvula Δp bar								Pérdida de carga a través de la válvula Δp bar							
	3	6	9	12	15	18	21	24	3	6	9	12	15	18	21	24
Temperatura de evaporación +10°C																
TRE10 - 8L	22.0	28.0	31.0	32.4	32.9	32.6	31.8	30.5	21.6	27.5	30.4	31.7	32.1	31.8	31.0	29.8
TRE10 - 10L	25.4	32.4	36.0	37.6	38.0	37.7	36.8	35.3	25.1	31.9	35.2	36.7	37.1	36.2	35.9	34.5
TRE10 - 12.5L	30.3	38.2	42.6	44.6	45.1	44.7	43.7	42.0	30.0	37.6	41.8	43.7	44.2	43.8	42.7	41.1
TRE10 - 15L	35.9	45.8	50.9	52.9	53.6	53.1	51.9	49.9	35.5	45.2	49.8	52.0	52.7	52.1	50.9	49.0
TRE20 - 15L	37.7	48.4	53.4	56.3	57.3	56.9	55.6	53.6	36.9	47.1	52.5	54.7	55.5	55.1	54.0	52.0
TRE20 - 20L	53.9	69.0	76.5	80.3	81.5	81.0	79.2	76.3	52.9	67.4	74.7	78.2	79.4	78.9	77.1	74.4
TRE20 - 25L	69.7	89.2	98.8	104	105	105	102	98.7	68.7	87.4	96.9	101	103	102	100	96.6
TRE40 - 25L	70.1	89.9	99.5	104.3	105.7	105.1	102.6	98.6	68.1	86.7	95.6	100.5	102.0	101.2	98.9	95.3
TRE40 - 35L	87.6	112.2	124.4	130.4	132.1	131.1	130.2	123.1	85.2	108.7	120.3	125.9	127.5	126.7	123.7	119.1
TRE40 - 40L	105.3	135.0	148.5	155.5	157.7	156.5	152.8	147.0	102.4	130.4	144.2	150.4	152.5	151.5	148.0	142.6
TRE40 - 55L	138.6	175.7	195.2	203.7	207.1	205.9	201.3	193.7	136.2	173.2	190.8	199.0	201.8	200.4	195.9	188.9
TRE80 - 55L	145.5	185.0	204.6	214.9	216.1	213.8	208.9	200.3	140.9	179.3	197.2	205.7	207.8	205.9	200.7	192.9
TRE80 - 80L	196.5	252.7	274.7	286.2	289.6	287.1	280.4	269.3	191.8	241.9	266.3	276.9	280.7	278.1	271.4	261.5
TRE80 - 100L	248.2	309.8	343.0	356.9	363.1	360.3	351.5	337.9	240.7	306.2	334.8	349.7	354.0	351.7	344.0	332.0
Temperatura de evaporación 0°C																
TRE10 - 8L	21.1	26.6	29.3	30.5	30.8	30.5	29.7	28.6	20.2	25.5	28.0	29.0	29.3	29.1	28.2	27.2
TRE10 - 10L	24.4	31.0	34.0	35.4	35.8	35.4	33.9	33.2	23.5	29.6	32.5	33.8	34.1	33.7	32.8	31.6
TRE10 - 12.5L	29.2	37.2	40.5	42.3	42.7	42.2	41.2	39.7	28.1	35.4	38.8	40.3	40.7	40.3	39.2	37.8
TRE10 - 15L	34.8	44.0	48.4	50.4	50.9	50.5	49.3	47.5	33.6	42.3	46.5	48.3	48.8	48.2	47.1	45.4
TRE20 - 15L	35.6	45.3	50.1	52.4	53.2	52.8	51.6	49.8	34.0	43.0	47.6	49.7	50.3	49.9	48.8	47.1
TRE20 - 20L	51.3	65.2	72.0	75.2	76.3	75.7	74.1	71.5	49.3	62.1	68.7	71.6	72.0	71.8	70.3	67.8
TRE20 - 25L	66.9	85.2	93.7	98.0	99.4	98.7	96.7	93.4	65.2	81.6	89.8	93.7	94.8	94.1	92.1	89.0
TRE40 - 25L	65.3	83.0	92.4	95.9	97.2	96.6	94.1	90.7	62.0	78.6	86.6	90.4	91.3	90.6	88.5	85.3
TRE40 - 35L	82.0	104.2	115.5	120.3	121.7	120.7	117.9	113.7	78.5	99.0	108.9	113.5	114.8	113.8	111.1	107.1
TRE40 - 40L	99.1	125.2	136.4	144.3	146.0	145.0	141.5	136.5	94.5	119.1	131.1	136.5	138.1	136.9	133.7	129.0
TRE40 - 55L	132.3	166.9	183.9	191.8	194.1	192.7	188.5	182.0	127.1	159.8	176.6	182.5	184.6	183.1	179.1	172.7
TRE80 - 55L	136.3	171.0	188.0	196.0	197.7	195.7	190.9	183.9	128.7	161.8	177.4	184.3	185.8	184.4	179.4	172.8
TRE80 - 80L	185.2	232.8	255.4	265.7	268.4	266.1	259.2	250.6	177.9	222.3	242.5	251.9	263.8	251.8	245.9	237.2
TRE80 - 100L	234.2	295.9	324.1	337.1	341.8	339.3	331.9	320.5	225.3	284.2	310.4	322.8	326.2	323.7	316.6	305.9
Temperatura de evaporación -10°C																
TRE10 - 8L	19.2	23.9	26.3	27.3	27.5	27.2	26.4	25.6	18.0	22.5	24.5	25.4	25.5	25.1	24.5	23.5
TRE10 - 10L	22.3	28.0	30.7	31.8	31.9	31.6	30.8	29.6	21.1	26.2	28.6	29.6	29.7	29.3	28.6	27.4
TRE10 - 12.5L	26.9	33.6	36.8	38.1	38.4	37.9	37.0	35.5	25.3	31.6	34.4	35.5	35.7	35.3	34.4	33.0
TRE10 - 15L	32.6	40.4	44.1	45.8	46.1	45.6	44.4	42.8	30.6	38.0	41.4	42.8	43.1	42.5	41.4	39.9
TRE20 - 15L	32.1	40.6	44.6	46.5	47.0	46.7	45.5	43.9	29.9	37.7	41.4	43.0	43.4	43.0	42.0	40.5
TRE20 - 20L	46.6	58.8	64.6	67.2	68.0	67.4	65.8	63.5	43.6	54.9	60.1	62.5	63.0	62.4	60.9	58.8
TRE20 - 25L	61.8	77.5	85	88.4	89.4	88.6	86.7	83.7	58.3	72.7	79.4	82.5	83.4	82.6	80.7	77.9
TRE40 - 25L	58.2	73.6	80.8	84.9	85.0	84.1	82.2	79.3	54.1	68.1	74.7	77.5	78.2	77.4	75.5	72.8
TRE40 - 35L	73.9	92.7	101.9	105.9	106.9	105.9	103.5	99.7	68.6	86.0	94.0	97.8	98.6	97.6	95.2	91.8
TRE40 - 40L	89.3	112.1	122.9	127.8	129.0	127.8	124.8	120.4	83.3	104.5	113.9	118.4	119.2	118.0	115.1	110.9
TRE40 - 55L	119.9	151.0	165.5	171.9	173.6	172.1	168.0	162.3	114.4	141.2	154.2	160.1	161.4	159.8	156.0	150.6
TRE80 - 55L	121.0	151.3	165.4	171.5	173.0	171.1	166.8	160.9	112.6	139.9	152.7	158.1	159.2	157.3	153.4	147.7
TRE80 - 80L	167.6	208.6	227.8	236.1	238.1	235.5	230.0	221.9	156.9	194.5	211.3	217.9	220.4	218.1	212.8	205.0
TRE80 - 100L	220.7	269.5	293.9	305.0	307.9	305.3	298.5	288.4	205.0	253.1	275.2	285.0	287.3	284.7	278.1	269.1
Temperatura de evaporación -20°C																
TRE10 - 8L	16.7	20.7	22.5	23.3	23.4	23.0	22.3	21.5	15.3	18.9	20.3	21.1	21.2	20.8	20.2	19.4
TRE10 - 10L	19.5	24.2	26.4	27.1	27.3	26.9	26.1	25.1	17.9	22.2	24.0	24.7	24.8	24.4	23.7	22.7
TRE10 - 12.5L	23.6	29.2	31.8	32.8	32.9	32.4	31.5	30.3	21.7	26.8	28.9	29.9	29.9	29.4	28.6	27.5
TRE10 - 15L	28.6	35.4	38.4	39.6	39.8	39.2	38.2	36.7	26.4	32.5	35.2	36.2	36.3	35.7	34.7	33.4
TRE20 - 15L	27.7	34.6	37.9	39.3	39.7	39.2	38.3	36.9	25.3	31.5	34.4	35.6	35.8	35.4	34.5	33.2
TRE20 - 20L	40.8	50.6	55.6	57.4	57.8	57.2	55.8	53.8	37.2	46.2	50.3	52.1	52.4	51.8	50.4	48.6
TRE20 - 25L	54.3	67.4	73.4	76.1	76.8	76.0	74.2	71.6	50.1	61.7	67.1	69.4	69.9	69.1	67.4	65.0
TRE40 - 25L	50.0	62.3	68.1	70.7	71.2	71.1	68.5	66.1	45.3	56.4	61.5	63.7	64.1	63.2	61.6	59.3
TRE40 - 35L	63.3	78.3	86.2	89.3	90.0	88.9	86.6	83.5	57.6	71.6	78.0	80.7	81.1	80.1	78.0	75.1
TRE40 - 40L	76.6	95.8	104.6	108.0	109.0	107.7	105.0	101.2	70.6	87.1	94.7	97.9	98.5	97.2	94.7	91.2
TRE40 - 55L	105.3	130.6	142.1	147.2	148.3	146.7	143.1	138.1	96.6	119.3	129.6	133.9	134.8	133.1	129.8	125.1
TRE80 - 55L	103.4	127.9	142.0	144.0	145.0	143.1	139.4	134.2	94.1	115.9	125.9	130.1	130.6	128.9	125.3	120.6
TRE80 - 80L	145.1	179.0	194.4	200.8	202.0	199.7	194.6	187.7	132.8	162.9	176.6	182.2	183.1	180.8	176.0	169.5
TRE80 - 100L	191.2	234.5	254.8	263.4	265.3	262.6	256.3	247.4	176.2	215.3	233.2	240.8	242.1	239.4	233.5	225.2

Capacidad

R410A

Capacidad en kW rango N y K y recalentamiento de apertura OS = 4 K

Tipo y capacidad nominal Q _{nom} TR	Pérdida de carga a través de la válvula Δp bar								Pérdida de carga a través de la válvula Δp bar							
	3	6	9	12	15	18	21	24	3	6	9	12	15	18	21	24
Temperatura de evaporación -30°C																
TRE10 - 8L	13.9	17.1	18.4	18.9	18.9	18.6	18.0	17.3	12.4	15.2	16.4	16.8	16.6	16.5	15.9	15.2
TRE10 - 10L	16.3	20.0	21.6	22.2	22.3	21.8	21.2	20.3	14.6	17.9	19.2	19.7	19.7	19.3	18.7	17.9
TRE10 - 12.5L	19.8	24.2	26.2	26.9	26.9	26.4	25.6	24.6	17.9	21.7	23.4	24.0	23.9	23.5	22.7	21.8
TRE10 - 15L	24.1	29.5	31.8	32.7	32.7	32.2	31.2	30.0	21.7	26.5	28.5	29.2	29.2	28.7	27.8	26.6
TRE20 - 15L	22.8	28.3	30.8	31.8	32.0	31.5	30.7	29.5	20.4	25.1	27.3	28.1	28.2	27.8	27.0	26.0
TRE20 - 20L	33.7	41.7	45.3	46.7	46.9	46.3	45.1	43.4	30.2	37.1	40.2	41.5	41.6	41.0	39.9	38.3
TRE20 - 25L	45.4	55.9	60.6	62.6	62.9	62.1	60.5	58.3	40.7	50.0	54.0	55.7	56.0	55.2	53.7	51.7
TRE40 - 25L	40.7	50.6	55.0	56.8	57.0	56.2	54.7	52.6	36.3	44.8	48.6	50.1	50.2	49.5	48.0	46.2
TRE40 - 35L	51.9	64.2	69.8	72.1	72.4	71.3	69.4	66.5	46.3	57.0	61.7	63.6	63.8	62.8	61.1	58.7
TRE40 - 40L	63.4	78.3	85.0	87.7	88.0	86.8	84.5	81.3	56.6	69.5	75.3	77.6	77.8	76.6	74.5	71.6
TRE40 - 55L	87.7	107.7	116.8	120.5	121.0	119.5	116.3	112.0	78.6	96.2	104.0	107.1	107.5	106.0	103.0	99.2
TRE80 - 55L	84.6	104.4	112.6	116.0	116.3	114.6	111.5	107.2	74.6	92.2	99.5	102.4	102.6	101.0	98.1	94.2
TRE80 - 80L	118.3	146.7	158.6	163.6	164.0	161.8	157.4	151.5	107.1	130.7	141.0	145.0	145.4	143.2	139.2	133.8
TRE80 - 100L	160.3	194.9	210.9	217.5	218.5	215.7	210.2	202.4	143.8	174.8	188.6	194.2	194.9	192.2	187.0	180.0
Temperatura de evaporación -40°C																
TRE10 - 8L	11.0	13.4	14.4	14.7	14.7	14.4	13.9	13.3								
TRE10 - 10L	12.9	15.8	16.9	17.3	17.3	16.9	16.4	15.6								
TRE10 - 12.5L	15.8	19.2	20.6	21.1	21.0	20.6	19.9	19.1								
TRE10 - 15L	19.3	23.4	25.2	25.8	25.7	25.2	24.4	23.4								
TRE20 - 15L	17.9	22.1	23.9	24.6	24.7	24.3	23.6	22.6								
TRE20 - 20L	26.7	32.7	35.3	36.4	36.4	35.9	34.8	33.5								
TRE20 - 25L	36.2	44.2	47.7	49.1	49.2	48.5	47.1	45.3								
TRE40 - 25L	31.9	39.2	42.4	43.7	43.7	43.0	41.8	40.1								
TRE40 - 35L	40.9	50.0	54.0	55.6	55.7	54.8	53.1	51.0								
TRE40 - 40L	49.9	61.1	66.0	67.9	68.0	66.9	64.9	62.4								
TRE40 - 55L	69.6	84.8	91.4	94.2	94.4	92.9	90.3	86.7								
TRE80 - 55L	66.1	80.9	87.1	89.4	89.5	88.0	85.3	81.9								
TRE80 - 80L	94.6	115.0	123.9	127.3	127.4	125.3	121.7	116.9								
TRE80 - 100L	127.8	154.7	166.7	171.5	171.8	169.2	164.4	158.1								

 Factores de corrección subenfriamiento Δt_u

Δt _u	4 K	10 K	15 K	20 K	25 K	30 K	35 K	40 K	45 K	50 K
R 410A	1.00	1.08	1.15	1.21	1.27	1.33	1.39	1.45	1.50	1.56

Capacidad
R407C
Capacidad en kW rango N y K y recalentamiento de apertura OS = 4 K

Tipo y capacidad nominal Q _{nom} TR	Pérdida de carga a través de la válvula Δp bar								Pérdida de carga a través de la válvula Δp bar								
	2	4	6	8	10	12	14	16	2	4	6	8	10	12	14	16	
Temperatura de evaporación +10°C									Temperatura de evaporación +5°C								
TRE10 - 8Z	18.4	23.7	26.4	27.9	28.6	29.3	28.6	28.1	17.7	22.7	25.2	26.5	27.1	27.3	27.0	26.6	
TRE10 - 10Z	23.5	30.0	33.5	35.3	36.2	36.4	36.2	35.6	22.7	28.5	32.0	33.7	34.4	34.5	34.3	33.7	
TRE20 - 10Z	24.1	30.9	34.5	36.6	37.6	38.1	37.6	36.9	23.0	29.4	32.8	34.5	35.4	35.5	35.3	34.6	
TRE20 - 12.5Z	28.7	36.9	41.2	43.6	44.7	45.0	44.7	43.9	27.4	35.1	38.8	41.1	42.2	42.3	42.1	41.3	
TRE20 - 15Z	35.3	45.1	50.6	53.2	54.6	54.9	54.5	53.6	33.8	43.1	47.8	50.4	51.6	51.8	51.4	50.5	
TRE20 - 20Z	46.4	58.8	66.1	69.7	71.4	71.9	71.4	70.2	44.6	57.4	62.8	66.2	67.7	68.0	67.6	66.3	
TRE40 - 20Z	46.4	59.7	66.8	71.1	72.5	72.9	72.6	71.3	44.1	56.6	63.1	66.5	68.2	68.6	68.0	66.8	
TRE40 - 25Z	58.9	75.2	84.2	89.1	91.4	92.0	91.4	89.9	56.2	71.3	79.7	84.1	86.1	86.7	85.9	84.4	
TRE40 - 30Z	70.6	90.3	100.8	106.6	109.3	110.1	109.0	107.5	67.4	86.4	95.9	100.8	103.2	103.6	102.8	101.1	
TRE40 - 40Z	96.2	121.7	135.8	143.2	146.6	147.6	146.7	144.4	92.5	116.9	129.1	137.1	139.2	139.7	138.4	136.4	
TRE80 - 40Z	96.1	123.5	135.8	143.3	146.7	147.5	146.4	143.9	91.0	115.6	128.0	134.8	138.2	138.1	136.8	134.4	
TRE80 - 55Z	132.5	168.2	186.3	196.0	200.5	209.2	200.0	196.8	126.6	159.6	176.3	185.0	189.1	189.7	188.0	185.0	
TRE80 - 70Z	171.7	215.3	237.5	252.0	256.0	257.2	256.0	252.0	163.5	205.5	226.6	237.6	242.7	244.0	244.9	238.3	
Temperatura de evaporación 0°C									Temperatura de evaporación -5°C								
TRE10 - 8Z	17.0	21.5	23.8	25.0	25.5	25.6	25.3	24.9	16.1	20.1	22.3	23.3	23.8	23.8	23.5	23.0	
TRE10 - 10Z	21.7	27.8	30.3	31.8	32.5	32.6	32.3	31.7	20.6	25.8	28.5	29.7	30.3	30.3	30.0	29.4	
TRE20 - 10Z	21.7	27.6	30.6	32.2	32.9	33.0	32.4	32.1	20.2	25.6	28.3	29.8	30.4	30.4	30.1	29.1	
TRE20 - 12.5Z	25.9	33.0	36.9	38.5	39.3	39.4	39.0	38.3	24.2	30.6	33.9	35.6	36.2	36.3	35.9	35.2	
TRE20 - 15Z	32.0	40.5	44.9	47.1	48.2	48.3	47.8	46.9	29.9	37.7	41.7	43.7	44.4	44.6	44.1	43.2	
TRE20 - 20Z	42.5	53.6	59.3	62.2	63.5	63.6	63.0	61.9	39.8	50.1	55.2	57.8	58.8	58.9	58.3	57.2	
TRE40 - 20Z	41.7	53.0	59.0	62.1	62.8	63.7	63.2	61.9	38.9	49.2	54.5	57.2	58.4	58.5	57.9	56.8	
TRE40 - 25Z	53.0	66.9	74.8	78.5	80.6	80.5	79.9	78.3	49.5	63.0	69.2	72.6	73.9	74.1	73.4	71.9	
TRE40 - 30Z	63.7	81.0	89.8	94.3	96.3	96.7	95.7	94.0	60.1	75.5	83.4	87.3	89.0	89.1	88.2	86.4	
TRE40 - 40Z	88.0	110.4	121.8	127.8	130.5	130.9	129.8	127.5	82.3	103.0	113.6	118.8	121.0	121.2	118.7	117.8	
TRE80 - 40Z	85.5	107.9	119.3	125.0	127.6	128.1	126.1	124.4	79.4	99.9	112.1	115.2	117.4	117.5	116.1	113.9	
TRE80 - 55Z	119.5	150.9	165.1	173.0	176.1	176.9	175.2	172.0	111.7	139.5	153.1	160.1	162.9	163.1	161.4	158.3	
TRE80 - 70Z	155.9	194.4	213.5	223.5	228.1	229.0	227.1	223.0	146.4	181.8	198.9	208.1	212.0	212.4	210.3	206.5	
Temperatura de evaporación -10°C									Temperatura de evaporación -15°C								
TRE10 - 8Z	15.0	18.8	20.6	21.5	21.9	21.9	21.6	21.1	13.8	17.2	18.9	19.7	19.9	19.9	19.6	19.1	
TRE10 - 10Z	19.3	24.0	26.4	27.5	28.0	28.0	27.6	27.0	17.9	22.2	24.2	25.2	25.6	25.5	25.2	24.6	
TRE20 - 10Z	18.7	23.5	26.0	27.2	27.7	27.7	27.3	26.7	17.1	21.3	23.5	24.6	24.9	24.9	24.6	24.0	
TRE20 - 12.5Z	22.4	28.3	31.1	32.5	33.1	33.1	32.7	31.9	20.6	25.7	28.2	29.4	29.9	29.8	29.4	28.7	
TRE20 - 15Z	27.7	34.8	38.3	40.0	40.6	40.6	40.2	39.3	25.4	31.7	34.8	36.2	36.8	36.7	36.2	35.4	
TRE20 - 20Z	37.0	46.3	50.8	53.1	54.0	53.0	53.3	52.2	34.1	42.4	46.4	48.3	49.0	48.9	48.2	47.1	
TRE40 - 20Z	35.9	45.2	49.8	52.3	53.2	52.6	52.6	51.5	32.7	41.1	45.2	47.2	48.0	47.9	47.2	46.2	
TRE40 - 25Z	45.8	57.6	63.4	66.3	67.5	67.5	66.7	65.3	41.9	52.4	57.5	60.0	60.9	60.9	60.0	58.7	
TRE40 - 30Z	55.7	69.5	76.5	79.9	81.3	81.3	80.3	78.7	50.8	63.2	69.8	72.4	73.5	73.4	72.4	70.8	
TRE40 - 40Z	76.5	95.3	104.1	109.3	111.1	111.2	109.9	107.7	70.2	87.3	95.4	99.4	100.9	100.8	99.5	97.4	
TRE80 - 40Z	73.3	91.7	100.5	105.1	106.7	106.8	105.7	103.2	66.8	83.1	90.9	94.7	96.2	96.0	94.7	92.6	
TRE80 - 55Z	102.3	128.3	140.4	146.4	148.8	148.9	147.1	144.2	95.7	116.8	127.3	132.7	134.7	134.7	132.8	129.9	
TRE80 - 70Z	136.4	168.1	183.7	191.6	194.9	195.1	193.0	189.3	124.6	154.0	160.5	174.6	177.4	177.3	175.2	171.6	
Temperatura de evaporación -20°C									Evaporating temperature -25°C								
TRE10 - 8Z	12.6	15.7	17.1	17.8	18.0	17.9	17.6	17.2	11.4	14.1	15.3	15.9	16.0	15.9	15.7	15.3	
TRE10 - 10Z	16.3	20.2	22.0	22.8	23.1	23.0	22.7	22.1	14.8	18.2	19.8	20.5	20.7	20.6	20.2	19.7	
TRE20 - 10Z	15.4	19.4	21.1	22.0	22.3	22.2	21.9	21.3	13.8	17.2	18.7	19.4	19.7	19.6	19.2	18.8	
TRE20 - 12.5Z	18.6	23.1	25.3	26.4	26.7	26.6	26.2	25.5	16.7	20.6	22.5	23.3	23.6	23.5	23.1	22.5	
TRE20 - 15Z	23.0	28.3	31.3	32.5	32.9	32.8	32.3	31.5	20.6	25.5	27.8	28.8	29.2	29.0	28.5	27.8	
TRE20 - 20Z	31.0	38.3	41.8	43.4	44.0	43.8	43.2	42.2	27.9	34.3	37.3	38.7	39.1	38.9	38.3	37.3	
TRE40 - 20Z	29.6	36.9	40.5	42.2	42.8	42.6	42.0	41.0	26.5	32.8	35.9	37.3	37.7	37.6	37.0	36.0	
TRE40 - 25Z	37.9	47.2	51.6	53.7	54.3	54.2	53.5	52.2	33.8	42.0	45.8	47.5	48.1	47.9	47.1	46.0	
TRE40 - 30Z	46.0	57.1	62.4	64.8	65.8	65.6	64.6	63.1	41.2	50.9	55.4	57.6	58.2	58.0	57.1	55.7	
TRE40 - 40Z	64.1	77.4	86.0	89.5	90.7	90.5	89.2	86.6	57.5	70.6	76.8	79.7	80.7	80.4	79.1	77.3	
TRE80 - 40Z	59.8	74.5	81.3	84.6	85.8	85.5	84.2	82.3	53.7	66.2	72.1	74.8	75.7	75.4	74.2	72.3	
TRE80 - 55Z	85.6	105.2	114.6	119.1	120.7	120.4	118.7	116.0	76.8	93.7	101.9	105.7	107.0	106.6	104.9	102.4	
TRE80 - 70Z	113.8	139.3	151.5	157.5	159.8	159.5	157.4	153.9	102.5	124.8	135.4	140.6	142.4	141.9	139.9	136.7	

Capacidad
R407C

Capacidad en kW rango NyK y recalentamiento de apertura OS = 4 K

Tipo y capacidad nominal Q_{nom} TR	Pérdida de carga a través de la válvula Δp bar								Pérdida de carga a través de la válvula Δp bar							
	2	4	6	8	10	12	14	16	2	4	6	8	10	12	14	16
Temperatura de evaporación -30°C																
TRE10 - 8Z	10.2	12.5	13.6	14.0	14.2	14.0	13.8	13.4	9.0	11.0	11.9	12.3	12.4	12.2	12.0	11.6
TRE10 - 10Z	13.3	16.2	17.5	18.1	18.3	18.2	17.8	17.4	11.7	14.3	15.4	15.9	16.0	15.9	15.6	15.1
TRE20 - 10Z	12.3	15.1	16.5	17.0	17.2	17.1	16.8	16.3	10.7	13.2	14.3	14.8	14.9	14.8	14.5	14.1
TRE20 - 12.5Z	14.8	18.2	19.8	20.5	20.7	20.5	20.2	19.6	12.9	15.9	17.3	17.8	17.9	17.8	17.4	16.9
TRE20 - 15Z	18.3	22.5	24.5	25.3	25.7	25.4	24.9	24.3	16.1	19.7	21.3	22.0	22.2	22.0	21.6	21.0
TRE20 - 20Z	24.8	30.3	32.9	34.0	34.4	34.1	33.5	32.7	21.6	26.5	28.7	29.7	29.9	29.7	29.1	28.3
TRE40 - 20Z	23.4	28.9	31.5	32.6	33.0	32.8	32.2	31.4	20.5	25.4	27.4	28.3	28.5	28.3	27.8	27.0
TRE40 - 25Z	29.9	37.0	40.2	41.7	42.1	41.9	41.1	40.0	26.5	32.3	35.0	36.2	36.5	36.2	35.5	34.5
TRE40 - 30Z	36.6	44.9	48.8	50.5	51.1	50.8	49.9	48.6	32.1	39.2	42.5	44.0	44.3	44.0	43.2	42.0
TRE40 - 40Z	51.2	62.6	67.8	70.2	71.0	70.6	69.4	67.7	45.0	54.8	59.3	61.3	61.8	61.4	60.3	58.7
TRE80 - 40Z	47.5	58.3	63.3	65.5	66.2	65.8	64.7	63.0	41.5	50.7	55.0	56.9	57.7	56.9	55.8	54.3
TRE80 - 55Z	68.0	82.8	89.7	92.9	94.0	93.4	91.9	89.6	59.5	72.3	78.2	80.9	81.7	81.1	79.7	77.5
TRE80 - 70Z	91.2	110.7	119.9	124.2	125.6	125.1	123.1	120.0	80.2	97.0	104.9	108.6	109.7	109.0	107.2	104.4
Temperatura de evaporación -40°C																
TRE10 - 8Z	7.9	9.6	10.3	10.6	10.7	10.6	10.3	10.0								
TRE10 - 10Z	10.3	12.4	13.4	13.8	13.9	13.7	13.4	13.0								
TRE20 - 10Z	9.3	11.4	12.3	12.7	12.8	12.7	12.4	12.0								
TRE20 - 12.5Z	11.2	13.7	14.8	15.3	15.4	15.2	14.9	14.4								
TRE20 - 15Z	14.0	17.0	18.4	19.0	19.1	18.9	18.5	17.9								
TRE20 - 20Z	18.9	23.0	24.8	25.6	25.8	25.5	25.0	24.3								
TRE40 - 20Z	17.8	21.7	23.5	24.3	24.5	24.2	23.7	23.0								
TRE40 - 25Z	22.8	27.9	30.1	31.1	31.3	31.0	30.4	29.5								
TRE40 - 30Z	27.9	33.9	36.6	37.8	38.1	37.7	37.0	35.9								
TRE40 - 40Z	39.1	47.5	51.3	52.9	53.3	52.9	51.8	50.3								
TRE80 - 40Z	36.1	43.9	47.5	49.1	49.5	49.1	48.1	46.8								
TRE80 - 55Z	51.8	62.8	67.9	70.2	70.7	70.2	68.9	67.0								
TRE80 - 70Z	70.2	84.7	91.5	94.6	95.4	94.8	93.1	90.6								

 Factores de corrección subenfriamiento Δt_u

Δt_u	4 K	10 K	15 K	20 K	25 K	30 K	35 K	40 K	45 K	50 K
R 407C	1.00	1.08	1.14	1.21	1.27	1.33	1.39	1.45	1.51	1.57

Capacidad

R134a

Capacidad en kW rango N y K y recalentamiento de apertura OS = 4 K

Tipo y capacidad nominal Q _{nom} TR	Pérdida de carga a través de la válvula Δp bar								Pérdida de carga a través de la válvula Δp bar							
	2	4	6	8	10	12	14	16	2	4	6	8	10	12	14	16
	Temperatura de evaporación +10°C								Temperatura de evaporación +5°C							
TRE10 - 5N	15.8	19.6	21.6	22.0	22.0	21.7	21.2	20.5	15.0	18.5	20.0	20.5	20.6	20.3	19.7	19.0
TRE10 - 7N	19.9	24.5	26.6	27.4	27.6	27.2	26.5	25.7	20.0	23.2	25.1	25.8	25.8	25.4	24.7	23.9
TRE20 - 7N	22.2	27.6	30.0	31.0	31.0	30.5	29.6	28.6	21.1	26.0	28.1	28.8	28.8	28.3	27.4	26.4
TRE20 - 9N	26.6	32.9	35.8	36.7	36.7	36.2	35.2	33.9	25.2	31.0	33.4	34.2	34.2	33.6	32.6	31.4
TRE20 - 11N	32.6	40.2	43.6	45.0	45.0	44.3	43.1	41.6	31.0	37.9	41.0	42.0	42.0	41.2	40.1	38.6
TRE20 - 14N	42.2	52.4	56.6	58.3	58.4	57.6	56.0	54.1	40.2	49.6	53.4	54.8	54.7	53.8	52.3	50.2
TRE40 - 14N	39.4	49.1	53.5	55.3	55.6	54.9	53.5	51.6	36.9	45.7	49.5	51.0	51.1	50.3	49.0	47.2
TRE40 - 16N	49.9	61.8	67.1	69.3	69.6	68.8	67.1	64.8	46.5	57.5	62.2	64.0	64.2	63.2	61.5	59.3
TRE40 - 20N	60.1	74.5	80.8	83.4	83.8	82.7	80.7	77.9	56.4	69.4	75.1	77.2	77.2	76.2	74.2	71.6
TRE40 - 25N	81.3	100.2	108.5	111.9	112.5	111.1	108.5	105.0	76.9	94.0	101.3	104.0	104.4	103.6	100.3	96.9
TRE80 - 25N	79.9	98.3	106.6	109.8	110.2	108.7	106.0	102.3	74.3	91.1	98.2	100.9	101.0	99.5	96.8	93.3
TRE80 - 35N	111.5	135.9	146.9	151.2	151.8	149.9	146.3	141.4	103.8	127.0	136.0	139.7	139.9	137.9	134.3	129.7
TRE80 - 45N	140.4	174.1	187.8	193.5	194.4	192.3	188.0	182.0	137.6	163.1	173.5	180.3	180.5	178.2	173.8	168.1
	Temperatura de evaporación 0°C								Temperatura de evaporación -5°C							
TRE10 - 5N	14.2	17.3	18.6	19.0	19.0	18.7	18.1	17.4	13.2	16.0	17.1	17.5	17.4	17.0	16.5	15.8
TRE10 - 7N	17.9	21.8	23.4	24.0	23.9	23.5	22.8	22.0	16.8	20.2	21.6	22.0	22.0	21.5	20.8	20.0
TRE20 - 7N	19.8	24.2	26.1	26.7	26.6	26.6	26.0	25.2	18.4	22.4	23.9	24.4	24.2	23.7	22.8	21.8
TRE20 - 9N	23.7	28.9	31.0	31.7	31.6	30.9	30.0	28.6	22.0	26.7	28.6	29.1	28.9	28.2	27.2	26.0
TRE20 - 11N	29.3	35.6	37.4	39.0	38.8	38.0	36.8	35.4	27.3	32.9	35.2	35.8	35.5	34.8	33.6	32.1
TRE20 - 14N	38.9	46.6	49.7	51.0	50.8	49.8	48.3	46.4	36.0	43.3	46.1	47.0	46.7	45.7	43.6	42.3
TRE40 - 14N	34.1	41.9	45.3	46.5	46.5	45.7	44.3	42.6	31.1	38.1	41.0	41.9	41.8	41.0	39.7	38.1
TRE40 - 16N	43.1	52.8	56.7	58.5	58.3	57.5	55.8	53.7	39.5	48.1	51.7	52.8	52.7	51.7	50.1	48.1
TRE40 - 20N	52.4	64.1	68.9	70.7	70.6	69.4	67.5	64.9	48.1	58.4	62.6	64.0	63.8	62.5	60.7	58.3
TRE40 - 25N	71.7	87.1	93.5	95.9	95.8	94.3	91.7	88.5	65.2	79.7	85.3	87.3	87.0	85.5	82.9	79.8
TRE80 - 25N	68.2	83.4	89.5	91.7	91.6	90.0	87.4	84.1	62.3	75.5	80.8	82.5	82.3	80.7	78.2	75.1
TRE80 - 35N	96.1	116.4	124.7	127.7	127.7	125.6	122.1	117.6	88.4	105.9	113.2	115.6	115.3	113.2	109.8	105.6
TRE80 - 45N	125.6	151.1	161.8	165.8	165.7	163.4	159.4	153.5	115.6	138.5	147.7	151.1	150.7	148.2	144.0	138.7
	Temperatura de evaporación -10°C								Temperatura de evaporación -15°C							
TRE10 - 5N	12.2	14.6	15.6	15.9	15.7	15.4	14.8	14.2	11.1	13.2	14.0	14.2	14.1	13.7	13.2	12.6
TRE10 - 7N	15.4	18.5	19.7	20.0	19.9	19.5	18.8	18.0	14.1	16.8	17.8	18.0	17.9	17.4	16.8	16.0
TRE20 - 7N	16.9	20.4	21.8	22.1	21.9	21.2	20.5	19.5	15.4	18.5	19.6	19.8	19.5	18.9	18.2	17.3
TRE20 - 9N	20.3	24.4	26.0	26.4	26.1	25.4	24.5	23.3	18.5	22.1	23.4	23.6	23.3	22.6	21.7	20.7
TRE20 - 11N	25.1	30.2	32.0	32.5	32.2	31.4	30.2	28.9	22.9	27.3	28.9	29.2	28.8	28.0	26.9	25.6
TRE20 - 14N	33.3	39.8	42.2	42.8	42.4	41.5	40.0	38.2	30.5	36.1	38.2	38.6	38.2	37.1	35.7	34.0
TRE40 - 14N	28.3	34.2	36.7	37.4	37.3	36.4	35.2	33.7	25.2	30.5	32.4	32.6	32.7	32.0	30.8	29.5
TRE40 - 16N	35.7	43.3	46.3	47.2	47.0	45.9	44.4	42.6	32.1	38.5	41.1	41.8	41.4	40.4	39.0	37.3
TRE40 - 20N	43.7	52.6	56.2	57.3	57.0	55.8	54.0	51.7	39.1	46.9	49.9	50.8	50.4	49.2	47.5	45.4
TRE40 - 25N	60.2	72.2	77.1	78.5	78.2	76.6	74.2	71.1	54.2	64.7	68.8	69.9	69.4	68.1	65.5	62.8
TRE80 - 25N	56.1	67.6	72.2	73.5	73.1	71.6	69.2	66.4	50.2	60.1	63.8	64.8	64.3	62.8	60.6	58.0
TRE80 - 35N	79.8	94.4	101.6	103.5	103.0	100.9	97.7	93.8	71.4	84.9	90.2	91.6	91.1	89.1	86.1	82.4
TRE80 - 45N	105.7	125.3	133.6	136.1	135.6	133.2	129.0	123.9	94.7	112.2	119.2	121.3	120.8	118.0	114.2	109.5
	Temperatura de evaporación -20°C								Temperatura de evaporación -25°C							
TRE10 - 5N	9.9	11.7	12.5	12.6	12.5	12.1	11.6	11.1	8.8	10.4	11.0	11.1	10.9	10.6	10.1	9.6
TRE10 - 7N	12.7	15.0	15.9	16.1	15.9	15.4	14.8	14.1	11.3	13.3	14.0	14.1	13.9	13.5	13.0	12.3
TRE20 - 7N	13.9	16.5	17.6	17.5	17.2	16.7	16.0	15.1	12.3	14.5	15.3	15.3	15.0	14.5	13.9	13.1
TRE20 - 9N	16.6	19.7	20.8	20.9	20.6	20.0	19.1	18.1	14.7	17.4	18.3	18.4	18.0	17.4	16.6	15.7
TRE20 - 11N	20.6	24.4	25.7	25.9	25.5	24.8	23.7	22.5	18.4	21.6	22.7	22.8	22.4	21.6	20.7	19.6
TRE20 - 14N	27.5	32.4	34.2	34.5	33.9	32.9	31.6	30.0	24.6	28.8	30.3	30.4	29.8	28.9	27.6	26.2
TRE40 - 14N	22.3	26.7	28.4	28.8	28.5	27.8	26.7	25.5	19.5	23.3	24.6	24.9	24.6	23.9	22.9	21.8
TRE40 - 16N	28.4	34.0	36.0	36.5	36.1	35.1	33.9	32.3	24.9	29.2	31.3	31.6	31.2	30.3	29.2	27.7
TRE40 - 20N	34.4	41.3	43.9	44.5	43.9	42.9	41.3	39.4	30.4	36.1	38.1	38.6	38.1	37.0	35.6	33.8
TRE40 - 25N	48.4	57.3	60.7	61.6	61.0	59.5	57.3	54.7	42.5	50.1	53.0	53.6	53.0	51.5	49.5	47.2
TRE80 - 25N	44.2	52.6	55.8	56.6	56.0	54.6	52.6	50.2	38.6	45.7	48.3	48.9	48.3	46.9	45.1	43.0
TRE80 - 35N	63.2	74.9	79.3	80.5	79.7	77.8	75.0	71.6	55.4	65.3	69.0	69.8	69.0	67.2	64.6	61.6
TRE80 - 45N	84.2	99.5	105.4	107.0	106.1	103.6	100.0	95.7	74.1	87.1	92.1	93.3	92.3	90.0	86.7	82.6

Capacidad
R134a

Capacidad en kW rango NyK y recalentamiento de apertura OS = 4 K

Tipo y capacidad nominal Q_{nom} TR	Pérdida de carga a través de la válvula Δp bar								Pérdida de carga a través de la válvula Δp bar							
	2	4	6	8	10	12	14	16	2	4	6	8	10	12	14	16
	Temperatura de evaporación -30°C								Temperatura de evaporación -35°C							
TRE10 - 5N	7.7	9.1	9.6	9.6	9.4	9.1	8.7	8.2	6.7	7.9	8.2	8.2	8.0	7.8	7.4	7.0
TRE10 - 7N	10.0	11.6	12.2	12.3	12.1	11.7	11.1	10.6	8.6	10.1	10.5	10.5	10.3	10.0	9.5	9.0
TRE20 - 7N	10.8	12.7	13.3	13.3	13.0	12.5	11.9	11.2	9.4	10.9	11.4	11.4	11.1	10.6	10.1	9.5
TRE20 - 9N	13.0	15.2	15.9	15.9	15.6	15.0	14.3	13.5	11.3	13.1	13.7	13.6	13.3	12.8	12.1	11.4
TRE20 - 11N	16.2	18.9	19.8	19.8	19.4	18.7	17.8	16.8	14.0	16.3	17.0	17.0	16.6	15.9	15.1	14.2
TRE20 - 14N	21.7	25.2	26.4	26.5	25.9	25.0	23.8	22.5	18.8	21.7	22.8	22.8	22.2	21.4	20.3	19.1
TRE40 - 14N	16.9	20.0	21.1	21.3	21.0	20.3	19.5	18.5	14.5	17.0	17.9	18.0	17.7	17.1	16.3	15.5
TRE40 - 16N	21.5	25.5	26.8	27.1	26.7	25.8	24.7	23.5	18.5	21.7	22.8	22.9	22.5	21.8	20.8	19.7
TRE40 - 20N	26.4	31.1	32.8	33.1	32.6	31.6	30.3	28.7	22.7	26.6	27.9	28.1	27.6	26.7	25.5	24.1
TRE40 - 25N	36.9	43.4	45.7	46.1	45.5	44.1	42.3	40.2	31.7	37.2	39.0	39.3	38.7	37.4	35.8	33.9
TRE80 - 25N	33.3	39.3	41.4	41.8	41.2	40.0	38.3	36.4	28.5	33.4	35.1	35.4	34.8	33.7	32.2	30.5
TRE80 - 35N	48.0	56.3	59.4	60.0	59.2	57.4	55.1	52.4	41.1	48.1	50.6	50.9	50.0	48.6	46.5	44.1
TRE80 - 45N	64.4	75.5	79.6	80.5	79.5	77.2	74.2	70.6	55.4	64.7	68.1	68.7	67.6	65.6	62.8	59.6
	Temperatura de evaporación -40°C															
TRE10 - 5N	5.8	6.7	7.0	7.0	6.8	6.5	6.2	5.8								
TRE10 - 7N	7.4	8.6	9.0	9.0	8.7	8.4	8.0	7.5								
TRE20 - 7N	8.0	9.3	9.7	9.6	9.3	8.9	8.5	7.9								
TRE20 - 9N	9.6	11.2	11.4	11.6	11.2	10.7	10.2	9.5								
TRE20 - 11N	11.9	13.9	14.5	14.4	14.0	13.4	12.7	11.9								
TRE20 - 14N	16.2	18.7	19.5	19.4	18.9	18.1	17.1	16.1								
TRE40 - 14N	12.2	14.4	15.0	15.1	14.8	14.3	13.6	12.8								
TRE40 - 16N	15.6	18.3	19.2	19.2	18.8	18.2	17.3	16.3								
TRE40 - 20N	19.2	22.4	23.5	23.6	23.1	22.3	21.3	20.1								
TRE40 - 25N	27.0	31.5	33.0	33.1	32.5	31.4	29.9	28.3								
TRE80 - 25N	24.1	28.2	29.5	29.6	29.1	28.1	26.8	25.3								
TRE80 - 35N	34.8	40.6	42.6	42.8	42.1	40.6	38.8	36.7								
TRE80 - 45N	47.1	54.9	57.7	58.0	57.0	55.1	52.6	49.8								

 Factores de corrección subenfriamiento Δt_u

Δt_u	4 K	10 K	15 K	20 K	25 K	30 K	35 K	40 K	45 K	50 K
R 134a	1.00	1.08	1.13	1.19	1.25	1.31	1.37	1.42	1.48	1.54

Capacidad

R404A

Capacidad en kW rango N y K y recalentamiento de apertura OS = 4 K

Tipo y capacidad nominal Q _{nom} TR	Pérdida de carga a través de la válvula Δp bar								Pérdida de carga a través de la válvula Δp bar																						
	2	4	6	8	10	12	14	16	2	4	6	8	10	12	14	16															
Temperatura de evaporación +10°C																Temperatura de evaporación +5°C															
TRE10 - 6.5S	15.4	19.5	21.4	22.2	22.3	21.9	21.3	20.3	15.1	19.1	20.9	21.6	21.6	21.3	20.6	19.7															
TRE10 - 8S	19.3	24.2	26.6	27.5	27.6	27.2	26.4	25.2	19.0	23.8	26.0	26.9	27.1	26.4	25.6	24.5															
TRE20 - 8S	20.6	26.1	28.7	29.8	30.0	29.5	28.6	27.3	20.1	25.3	27.8	28.6	28.9	28.4	27.5	26.3															
TRE20 - 10S	24.6	30.9	34.0	35.3	35.4	35.0	33.9	32.4	24.0	30.0	33.1	34.2	34.4	33.7	32.6	31.1															
TRE20 - 12S	30.0	37.9	41.6	43.8	43.4	42.6	41.2	39.5	29.4	36.9	40.4	41.8	41.9	41.2	39.9	38.1															
TRE20 - 16S	39.0	49.0	53.7	55.6	55.8	54.9	53.2	50.9	38.4	47.9	52.3	54.0	54.1	53.2	51.5	49.2															
TRE40 - 16S	39.1	49.6	54.2	56.5	57.0	56.1	54.4	51.9	38.0	47.9	52.9	54.6	54.7	53.8	52.1	49.8															
TRE40 - 20S	48.9	62.0	67.9	70.7	71.1	69.9	67.8	63.7	47.9	60.1	66.1	68.2	68.4	67.4	65.2	62.3															
TRE40 - 25S	59.1	74.4	80.8	84.6	85.1	83.5	81.2	77.8	57.6	72.4	78.2	82.1	82.3	80.8	78.3	74.8															
TRE40 - 30S	78.4	99.2	108.4	112.1	112.6	110.8	107.3	102.9	77.0	96.6	105.4	108.9	109.3	107.6	104.1	99.7															
TRE80 - 30S	80.0	100.3	109.9	113.6	113.9	112.0	108.5	103.6	77.6	96.9	105.2	109.1	109.2	107.1	102.6	99.0															
TRE80 - 40S	109.3	136.4	145.4	154.2	154.1	151.6	147.6	140.5	106.6	132.2	144.0	148.3	148.3	146.0	141.5	135.0															
TRE80 - 55S	138.7	171.9	187.0	193.0	194.6	190.8	185.0	177.2	136.5	167.9	182.2	187.7	188.0	184.8	179.1	171.6															
Temperatura de evaporación 0°C																Temperatura de evaporación -5°C															
TRE10 - 6.5S	14.7	18.5	20.1	20.4	20.8	20.4	19.7	18.8	14.2	17.6	19.2	19.7	19.7	19.3	18.6	17.8															
TRE10 - 8S	18.6	23.1	25.1	25.9	25.9	25.4	24.6	23.5	17.9	22.2	24.0	24.7	24.6	24.1	23.3	22.2															
TRE20 - 8S	19.4	24.4	26.5	27.7	27.5	27.0	26.1	24.9	18.4	23.1	25.1	25.8	25.8	25.2	24.4	23.2															
TRE20 - 10S	23.1	28.8	31.6	32.6	32.7	32.0	30.9	29.5	22.1	27.6	29.9	30.7	30.7	30.2	29.0	27.7															
TRE20 - 12S	28.4	35.7	38.8	40.0	40.0	39.2	37.9	36.2	27.1	33.8	36.7	37.8	37.7	36.9	35.6	34.0															
TRE20 - 16S	37.3	46.2	50.4	51.8	51.9	50.9	49.2	47.1	35.7	44.2	47.9	49.0	49.0	48.0	46.9	44.3															
TRE40 - 16S	36.5	45.8	50.5	51.8	52.0	50.9	49.3	47.1	34.7	43.3	47.3	48.7	48.7	47.7	46.1	44.0															
TRE40 - 20S	46.1	57.7	62.9	65.1	65.1	63.9	61.9	59.1	43.9	54.6	59.4	61.2	61.1	59.8	57.9	55.2															
TRE40 - 25S	55.6	69.7	76.9	78.3	78.4	76.9	74.4	71.1	53.0	66.0	71.7	73.8	73.7	72.2	69.8	66.6															
TRE40 - 30S	74.7	93.5	101.5	104.6	104.6	102.8	99.5	95.1	71.5	89.1	95.7	99.1	99.0	97.0	93.8	89.7															
TRE80 - 30S	74.3	92.3	100.3	103.4	103.5	101.2	97.7	93.4	70.0	85.8	94.2	96.3	96.4	94.5	91.0	87.0															
TRE80 - 40S	102.8	127.3	137.5	136.7	141.6	138.8	134.2	128.3	97.7	120.3	129.9	133.3	133.0	130.3	125.8	120.1															
TRE80 - 55S	132.9	162.1	176.5	180.2	180.2	176.8	171.3	164.0	126.3	154.1	166.8	170.8	170.3	167.3	161.8	154.4															
Temperatura de evaporación -10°C																Temperatura de evaporación -15°C															
TRE10 - 6.5S	13.5	16.8	18.1	18.5	18.5	18.0	17.4	16.6	12.7	15.7	16.9	17.2	17.5	16.7	16.1	15.3															
TRE10 - 8S	17.1	21.1	22.6	23.3	23.2	22.7	21.8	20.8	16.2	19.8	21.2	21.7	21.5	21.0	20.2	19.2															
TRE20 - 8S	17.4	21.6	23.4	24.0	23.9	23.4	22.5	21.4	16.2	20.0	21.6	22.0	22.2	21.4	20.6	19.5															
TRE20 - 10S	20.8	25.8	27.9	28.6	28.5	27.9	26.8	25.6	19.4	23.9	25.7	26.3	26.2	25.5	24.5	23.3															
TRE20 - 12S	25.8	31.8	34.4	35.2	35.1	34.3	33.0	31.5	24.1	29.5	31.8	32.5	32.3	31.4	30.3	28.8															
TRE20 - 16S	33.8	41.7	44.9	46.0	45.8	44.8	43.2	41.2	31.7	38.8	41.7	42.6	42.3	41.3	39.8	37.9															
TRE40 - 16S	32.5	40.6	43.9	45.2	45.1	44.1	42.5	40.4	30.3	37.4	40.5	41.4	41.2	40.2	38.7	36.9															
TRE40 - 20S	41.2	51.2	55.4	56.6	56.7	55.4	53.5	51.0	38.4	47.3	51.0	52.2	51.9	50.7	48.8	46.4															
TRE40 - 25S	50.0	61.9	67.0	68.7	68.5	67.0	64.6	61.6	46.5	57.7	61.7	63.2	62.9	61.5	59.1	56.3															
TRE40 - 30S	68.9	84.0	90.6	92.8	92.5	90.5	87.3	83.3	64.0	78.5	84.1	85.9	85.4	83.4	80.4	76.5															
TRE80 - 30S	65.8	81.0	87.4	89.5	88.7	87.2	84.0	79.9	60.8	74.7	80.3	82.0	81.3	79.5	76.5	72.8															
TRE80 - 40S	92.3	112.7	120.8	124.1	123.6	120.9	116.5	111.2	85.8	103.6	112.0	114.2	113.5	110.8	106.7	101.5															
TRE80 - 55S	119.7	145.7	156.6	160.0	159.5	156.2	150.9	144.1	112.7	136.2	145.4	148.5	147.5	144.2	139.0	132.6															
Temperatura de evaporación -20°C																Temperatura de evaporación -25°C															
TRE10 - 6.5S	12.0	14.5	15.6	15.8	15.7	15.3	15.0	13.9	11.0	13.3	14.2	14.4	14.2	13.8	13.2	12.5															
TRE10 - 8S	15.1	18.4	19.7	20.0	19.8	19.3	18.5	17.6	14.0	16.5	17.9	18.2	17.9	17.4	16.7	15.8															
TRE20 - 8S	14.9	18.3	19.6	20.0	19.8	19.3	18.5	17.6	13.5	16.5	17.7	18.0	17.8	17.2	16.5	15.8															
TRE20 - 10S	17.8	21.9	23.5	23.9	23.7	23.1	22.1	21.0	16.2	19.8	20.9	21.5	21.2	20.6	19.8	18.7															
TRE20 - 12S	22.2	27.0	29.2	29.6	29.3	28.5	27.4	26.0	20.2	24.6	26.2	26.6	26.3	25.5	24.5	23.2															
TRE20 - 16S	29.5	36.4	38.3	39.0	38.6	37.6	36.1	34.3	27.0	32.6	34.7	35.2	34.8	33.8	32.4	30.7															
TRE40 - 16S	27.9	34.2	36.8	37.5	37.3	36.3	34.9	33.1	25.2	30.8	33.0	33.7	33.3	32.4	31.0	29.4															
TRE40 - 20S	35.3	42.9	46.6	47.4	47.0	45.8	44.0	41.8	32.1	39.1	41.8	42.6	42.1	40.9	39.2	37.2															
TRE40 - 25S	42.8	52.6	56.4	57.5	57.1	55.6	53.4	50.8	39.5	47.7	50.9	51.6	51.2	49.8	47.7	45.2															
TRE40 - 30S	59.2	72.1	77.1	78.5	77.9	75.9	73.0	69.4	54.3	65.7	69.8	70.9	70.2	68.3	65.5	62.2															
TRE80 - 30S	55.9	68.0	72.8	74.2	73.6	71.6	68.9	65.4	50.6	61.3	65.4	66.4	65.7	63.9	61.2	58.1															
TRE80 - 40S	79.1	95.6	102.1	104.0	103.1	100.4	96.6	91.8	73.4	87.2	92.8	94.4	93.4	90.9	87.3	83.0															
TRE80 - 55S	104.1	125.3	133.6	136.0	134.1	132.4	126.7	120.5	95.3	114.0	121.3	123.0	122.2	118.6	114.0	108.2															

Capacidad
R404A

Capacidad en kW rango NyK y recalentamiento de apertura OS = 4 K

Tipo y capacidad nominal Q_{nom} TR	Pérdida de carga a través de la válvula Δp bar								Pérdida de carga a través de la válvula Δp bar							
	2	4	6	8	10	12	14	16	2	4	6	8	10	12	14	16
Temperatura de evaporación -30°C																
TRE10 - 6.5S	10.0	12.0	12.7	12.9	12.7	12.3	11.7	11.1	9.0	10.7	11.3	11.4	11.2	10.8	10.3	9.7
TRE10 - 8S	12.7	15.3	16.2	16.4	16.1	15.6	14.9	14.1	11.5	13.7	14.4	14.6	14.3	13.8	13.2	12.4
TRE20 - 8S	12.2	14.8	15.7	15.9	15.7	15.2	14.5	13.7	10.8	13.1	13.8	14.0	13.8	13.3	12.7	11.9
TRE20 - 10S	14.6	17.7	18.9	19.1	18.8	18.2	17.4	16.5	13.0	15.7	16.6	16.8	16.5	15.9	15.2	14.3
TRE20 - 12S	18.2	22.0	23.4	23.7	23.4	22.6	21.6	20.4	16.2	19.5	20.7	20.9	20.5	19.8	18.9	17.8
TRE20 - 16S	24.4	29.3	31.0	31.4	30.9	30.0	28.7	27.2	21.8	25.9	27.5	27.8	27.3	26.4	25.2	23.7
TRE40 - 16S	22.7	27.5	29.3	29.8	29.4	28.5	27.3	25.8	20.1	24.3	25.8	26.1	25.7	24.9	23.7	22.4
TRE40 - 20S	28.9	34.9	37.3	37.8	37.3	36.1	34.6	32.8	25.7	30.9	32.8	33.1	32.6	31.5	30.1	28.4
TRE40 - 25S	35.3	42.6	45.4	46.0	45.4	44.0	42.1	39.9	31.5	37.6	40.0	40.4	39.8	38.5	36.8	34.7
TRE40 - 30S	49.0	58.8	62.5	63.4	62.6	60.7	58.2	55.1	43.8	51.1	55.5	55.9	55.1	53.3	51.0	48.1
TRE80 - 30S	45.0	54.3	58.2	58.8	58.1	56.3	53.9	51.0	39.8	48.1	50.9	51.6	50.8	49.1	46.9	44.3
TRE80 - 40S	64.7	77.4	82.2	83.3	82.2	79.8	76.4	72.3	57.6	68.6	72.5	73.3	72.2	69.9	66.8	63.1
TRE80 - 55S	86.8	102.5	108.6	110.1	108.8	105.7	101.3	96.1	76.8	91.2	96.4	97.5	96.1	93.1	89.0	84.2
Temperatura de evaporación -40°C																
TRE10 - 6.5S	8.0	9.5	10.0	10.0	9.8	9.4	9.0	8.4								
TRE10 - 8S	10.2	12.1	12.7	12.8	12.5	12.1	11.5	10.8								
TRE20 - 8S	9.5	11.4	12.0	12.1	11.9	11.6	10.9	10.2								
TRE20 - 10S	11.5	13.7	14.5	14.6	14.3	13.8	13.1	12.3								
TRE20 - 12S	14.3	17.1	18.0	18.1	17.8	17.2	16.3	15.3								
TRE20 - 16S	19.2	22.8	24.0	24.2	23.8	22.9	21.8	20.5								
TRE40 - 16S	17.7	21.2	22.4	22.6	22.3	21.5	20.4	19.2								
TRE40 - 20S	22.5	27.0	28.5	28.8	28.2	27.3	25.9	24.4								
TRE40 - 25S	27.7	33.0	34.9	35.1	34.5	33.3	31.7	29.9								
TRE40 - 30S	38.6	45.9	48.4	48.8	48.0	46.4	44.2	41.6								
TRE80 - 30S	35.2	42.0	44.3	44.7	43.9	42.4	40.4	38.0								
TRE80 - 40S	50.6	59.9	63.3	63.8	63.1	60.6	57.7	54.4								
TRE80 - 55S	67.6	79.8	84.5	85.3	83.9	81.1	77.4	73.0								

 Factores de corrección subenfriamiento Δt_u

Δt_u	4 K	10 K	15 K	20 K	25 K	30 K	35 K	40 K	45 K	50 K
R 404A	1.00	1.10	1.20	1.29	1.37	1.46	1.54	1.63	1.70	1.78

Capacidad
R507
Capacidad en kW rango N y K y recalentamiento de apertura OS = 4 K

Tipo y capacidad nominal Q _{nom} TR	Pérdida de carga a través de la válvula Δp bar								Pérdida de carga a través de la válvula Δp bar								
	2	4	6	8	10	12	14	16	2	4	6	8	10	12	14	16	
Temperatura de evaporación +10°C									Temperatura de evaporación +5°C								
TRE10-6.5S	16.3	20.8	23.3	24.2	24.6	24.6	24.2	23.4	16.0	20.4	22.7	23.5	23.8	23.8	23.3	22.6	
TRE10-8S	20.2	25.7	28.5	30.1	30.5	30.4	29.9	29.0	20.0	25.3	27.8	29.1	29.6	29.5	28.9	28.1	
TRE20-8S	22.1	28.3	31.1	32.9	33.4	33.3	32.8	31.7	21.5	27.4	30.4	31.7	32.2	32.1	31.4	30.4	
TRE20-10S	26.2	33.4	37.1	39.0	39.6	39.5	38.7	37.5	25.6	32.5	35.9	37.6	38.1	37.9	37.2	36.1	
TRE20-12S	31.9	40.7	45.1	47.3	48.1	48.0	47.1	45.7	31.3	39.6	43.7	45.8	46.4	46.1	45.4	43.9	
TRE20-16S	41.2	52.4	58.2	61.0	62.0	61.9	60.8	59.0	40.5	51.3	56.6	59.2	60.0	59.9	58.7	57.0	
TRE40-16S	41.5	53.2	59.0	61.9	63.1	63.0	61.9	60.0	40.4	51.5	56.8	59.5	60.5	60.3	59.2	57.4	
TRE40-20S	51.6	66.1	73.4	76.9	78.5	78.2	76.9	74.5	50.3	64.0	70.8	74.2	75.3	75.0	73.6	71.5	
TRE40-25S	62.1	79.6	87.6	92.0	93.6	93.4	91.7	89.1	60.6	76.7	84.7	88.7	90.1	89.7	88.1	85.6	
TRE40-30S	81.7	104.5	115.3	120.5	123.0	123.0	120.8	117.4	80.2	102.0	111.9	117.1	119.0	118.6	116.6	113.5	
TRE80-30S	84.4	107.7	118.8	124.5	126.5	126.0	123.7	119.6	82.3	103.5	114.1	119.1	120.7	120.1	117.8	114.2	
TRE80-40S	114.9	144.9	159.9	167.4	170.0	169.4	166.4	161.5	111.6	140.5	154.2	161.2	163.2	162.5	159.5	154.8	
TRE80-55S	144.2	180.7	199.5	208.6	212.2	211.7	208.5	202.2	142.0	176.3	193.7	202.2	205.0	204.5	202.1	196.4	
Temperatura de evaporación 0°C									Temperatura de evaporación -5°C								
TRE10-6.5S	15.7	19.7	21.7	22.6	22.9	22.7	22.3	21.6	15.1	18.9	20.7	21.5	21.7	21.5	21.0	20.4	
TRE10-8S	19.6	24.6	26.9	28.0	28.4	28.2	27.7	26.9	19.1	23.6	25.8	26.7	27.0	26.8	26.3	25.4	
TRE20-8S	20.8	26.2	29.1	30.1	30.5	30.3	29.7	28.8	19.8	24.9	27.3	28.4	28.6	28.4	27.8	26.8	
TRE20-10S	24.8	31.2	34.3	35.8	36.2	36.0	35.2	34.1	23.7	29.6	32.4	33.7	34.0	33.7	32.9	31.9	
TRE20-12S	30.3	38.2	42.0	43.0	44.2	44.0	43.1	41.7	29.1	36.3	39.7	41.3	41.7	41.3	40.4	39.1	
TRE20-16S	39.8	49.5	54.5	57.2	57.5	57.1	56.0	54.3	38.4	47.5	51.8	53.9	54.3	53.9	52.7	51.1	
TRE40-16S	38.8	49.0	54.1	56.5	57.4	57.0	55.9	54.2	36.9	46.4	50.6	53.0	53.6	53.2	52.1	50.5	
TRE40-20S	48.4	61.3	67.5	70.4	71.4	70.9	69.7	67.5	46.5	58.0	63.9	66.2	66.8	66.5	65.2	63.0	
TRE40-25S	58.5	73.7	81.0	84.4	85.5	85.2	83.5	81.0	56.0	69.9	76.6	79.6	80.4	79.9	78.2	75.8	
TRE40-30S	78.2	98.0	107.6	112.2	113.7	113.2	111.2	107.8	75.3	93.7	102.2	106.2	107.4	106.7	104.6	101.5	
TRE80-30S	78.9	98.5	108.1	112.4	114.0	113.1	110.9	107.4	74.6	93.0	101.5	105.3	106.1	105.4	103.2	100.0	
TRE80-40S	108.1	134.7	147.2	153.0	154.9	154.1	151.1	146.5	103.2	127.2	139.0	149.2	145.5	144.6	141.3	137.1	
TRE80-55S	138.5	170.1	186.2	193.3	196.1	195.3	191.9	186.4	133.6	162.8	175.6	183.6	185.5	184.4	181.0	175.7	
Temperatura de evaporación -10°C									Temperatura de evaporación -15°C								
TRE10-6.5S	14.5	18.0	19.5	20.2	20.3	20.1	19.7	19.0	13.7	16.9	18.3	18.8	18.9	18.6	18.1	17.5	
TRE10-8S	18.2	22.5	24.4	25.3	25.4	24.9	24.6	23.8	17.3	21.2	22.9	23.6	23.7	23.4	22.8	22.0	
TRE20-8S	18.7	23.3	25.5	26.4	26.6	26.3	25.6	24.8	17.5	21.7	23.5	24.0	24.4	24.0	23.4	22.6	
TRE20-10S	22.3	27.8	30.3	31.4	31.6	31.2	30.5	29.5	21.0	25.7	28.0	28.9	29.0	28.6	27.9	26.9	
TRE20-12S	27.6	34.1	37.3	38.6	38.8	38.4	37.5	36.2	25.8	32.0	34.5	35.6	35.7	35.2	34.3	33.1	
TRE20-16S	36.4	44.9	48.9	50.5	50.8	50.8	49.2	47.5	34.3	42.0	45.5	46.8	47.0	46.4	45.3	43.7	
TRE40-16S	34.7	43.4	47.8	49.2	49.6	49.2	48.0	46.4	32.3	40.2	43.6	45.1	45.4	44.8	43.8	42.2	
TRE40-20S	43.8	54.5	59.4	61.5	62.1	61.5	60.1	58.1	40.8	50.5	54.8	56.6	56.9	56.2	54.8	53.0	
TRE40-25S	52.9	65.7	71.6	74.1	74.7	74.0	72.4	70.1	49.5	61.0	66.2	68.3	68.7	67.8	66.2	64.0	
TRE40-30S	71.6	88.6	96.2	99.5	100.3	99.5	97.2	94.5	66.7	82.6	89.4	92.2	92.6	91.7	89.6	86.7	
TRE80-30S	69.9	86.7	94.3	97.5	98.2	97.1	94.9	91.8	65.2	81.2	86.6	89.2	89.6	88.5	86.4	83.4	
TRE80-40S	97.4	119.6	129.8	134.1	135.1	133.9	131.0	126.8	90.9	111.3	120.0	123.6	124.5	122.8	119.9	116.0	
TRE80-55S	125.6	153.7	166.3	173.8	173.6	172.3	168.8	163.6	118.5	143.7	154.9	159.7	160.6	159.1	155.6	150.7	
Temperatura de evaporación -20°C									Temperatura de evaporación -25°C								
TRE10-6.5S	12.9	15.7	16.9	17.3	17.3	17.1	16.6	16.0	11.9	14.4	15.4	15.8	15.7	15.4	15.0	14.4	
TRE10-8S	16.3	19.8	21.3	21.8	21.8	21.5	20.9	20.2	15.1	18.2	19.5	19.9	19.9	19.5	18.9	18.2	
TRE20-8S	16.2	19.9	21.5	22.1	22.1	21.7	21.1	20.3	14.9	18.1	19.4	19.9	19.8	19.4	18.9	18.1	
TRE20-10S	19.4	24.0	25.7	26.3	26.4	25.9	25.2	24.3	17.8	21.6	23.2	23.7	23.7	23.2	22.6	21.6	
TRE20-12S	23.9	29.4	31.6	32.5	32.5	32.0	31.1	30.0	22.2	26.7	28.7	29.3	29.2	28.7	27.9	26.8	
TRE20-16S	32.0	39.0	41.8	42.9	43.0	42.2	41.3	39.7	29.5	35.6	38.1	38.9	38.8	38.2	37.1	35.7	
TRE40-16S	29.8	36.7	39.8	40.9	41.0	40.5	39.4	38.0	27.3	33.3	35.8	36.7	36.7	36.1	35.1	33.7	
TRE40-20S	37.7	46.2	50.0	51.4	51.5	50.8	49.5	47.7	34.5	42.0	45.1	46.2	46.2	45.5	44.2	42.5	
TRE40-25S	45.8	56.1	60.5	62.2	62.4	61.5	59.9	57.8	41.9	50.7	54.7	56.0	56.0	55.1	53.6	51.6	
TRE40-30S	63.4	76.3	82.1	84.4	84.6	83.5	81.5	78.7	57.7	69.6	74.6	76.4	76.4	75.3	73.3	70.6	
TRE80-30S	59.8	73.0	78.7	80.9	81.0	79.9	77.8	75.0	54.4	66.0	70.8	72.5	72.4	71.3	69.3	66.7	
TRE80-40S	84.4	102.0	109.6	112.6	112.9	111.4	108.5	104.8	77.0	92.6	99.1	101.5	101.5	99.9	97.2	93.7	
TRE80-55S	110.2	132.8	142.6	146.5	147.1	145.3	141.9	136.3	101.4	121.5	129.7	132.9	133.1	131.2	127.9	123.4	

Capacidad
R507

Capacidad en kW rango NyK y recalentamiento de apertura OS = 4 K

Tipo y capacidad nominal Q_{nom} TR	Pérdida de carga a través de la válvula Δp bar								Pérdida de carga a través de la válvula Δp bar								
	2	4	6	8	10	12	14	16	2	4	6	8	10	12	14	16	
Temperatura de evaporación -30°C									Temperatura de evaporación -35°C								
TRE10 - 6.5S	10.9	13.1	14.0	14.2	14.1	13.8	13.4	12.8	9.9	11.8	12.5	12.6	12.5	12.2	11.8	11.3	
TRE10 - 8S	13.9	16.6	17.7	18.0	17.9	17.5	17.0	16.3	12.6	15.0	15.8	16.1	15.9	15.6	15.0	14.4	
TRE20 - 8S	13.4	16.2	17.3	17.7	17.6	17.2	16.6	15.9	12.0	14.4	15.3	15.5	15.4	15.0	14.5	13.9	
TRE20 - 10S	16.1	19.4	20.7	21.1	21.0	20.6	19.9	19.1	14.4	17.2	18.3	18.6	18.4	18.0	17.4	16.6	
TRE20 - 12S	20.0	24.1	25.7	26.2	26.0	25.5	24.7	23.7	17.9	21.4	22.7	23.1	22.9	22.4	21.6	20.7	
TRE20 - 16S	26.8	32.1	34.2	34.8	34.7	34.0	33.0	31.6	24.1	29.3	30.4	30.9	30.6	30.0	28.9	27.7	
TRE40 - 16S	24.6	29.8	31.9	32.6	32.1	31.9	30.9	29.7	21.9	26.4	28.1	28.6	28.5	27.9	26.9	25.8	
TRE40 - 20S	31.1	37.6	40.3	41.1	41.0	40.2	39.0	37.4	27.8	33.0	35.5	36.1	35.9	35.2	34.0	32.6	
TRE40 - 25S	37.7	45.7	48.9	49.9	49.7	48.8	47.4	45.5	34.0	40.6	43.2	44.0	43.7	42.8	41.4	39.7	
TRE40 - 30S	52.3	62.8	67.0	68.4	68.2	67.1	65.1	62.6	47.1	56.1	59.5	60.5	60.2	59.0	57.2	54.9	
TRE80 - 30S	49.1	59.0	63.0	64.3	64.1	62.9	61.0	58.7	43.7	52.2	55.5	56.5	56.1	55.0	53.2	51.0	
TRE80 - 40S	69.6	83.1	88.6	90.6	90.2	88.7	86.1	82.9	62.2	73.8	78.4	79.8	79.4	77.8	75.5	72.4	
TRE80 - 55S	92.0	109.6	116.7	119.3	119.1	117.2	113.9	109.8	82.9	97.8	103.8	105.8	105.4	103.4	100.4	96.4	
Temperatura de evaporación -40°C																	
TRE10 - 6.5S	8.8	10.4	11.0	11.1	11.0	10.7	10.3	9.8									
TRE10 - 8S	11.3	13.3	14.0	14.2	14.0	13.6	13.1	12.6									
TRE20 - 8S	10.6	12.6	13.4	13.5	13.4	13.0	12.5	12.0									
TRE20 - 10S	12.7	15.4	16.0	16.2	16.0	15.6	15.0	14.4									
TRE20 - 12S	15.9	18.8	19.9	20.1	19.9	19.4	18.7	17.9									
TRE20 - 16S	21.4	25.3	26.7	27.0	26.8	26.1	25.2	24.1									
TRE40 - 16S	19.4	23.1	24.5	24.9	24.7	24.1	23.2	22.2									
TRE40 - 20S	24.6	29.2	30.9	31.4	31.2	30.4	29.4	28.1									
TRE40 - 25S	30.1	35.7	37.8	38.3	38.0	37.1	35.9	34.3									
TRE40 - 30S	41.8	49.3	52.2	53.0	52.6	51.4	49.7	47.6									
TRE80 - 30S	38.5	45.7	48.3	49.1	48.6	47.5	45.9	43.9									
TRE80 - 40S	55.0	64.8	68.6	69.7	69.1	67.6	65.4	62.6									
TRE80 - 55S	73.5	86.3	91.3	92.8	92.2	90.3	87.4	83.8									

Factores de corrección subenfriamiento Δt_u

Δt_u	4 K	10 K	15 K	20 K	25 K	30 K	35 K	40 K	45 K	50 K
R 507	1.00	1.10	1.20	1.29	1.37	1.46	1.54	1.63	1.70	1.78

Dimensiones y pesos

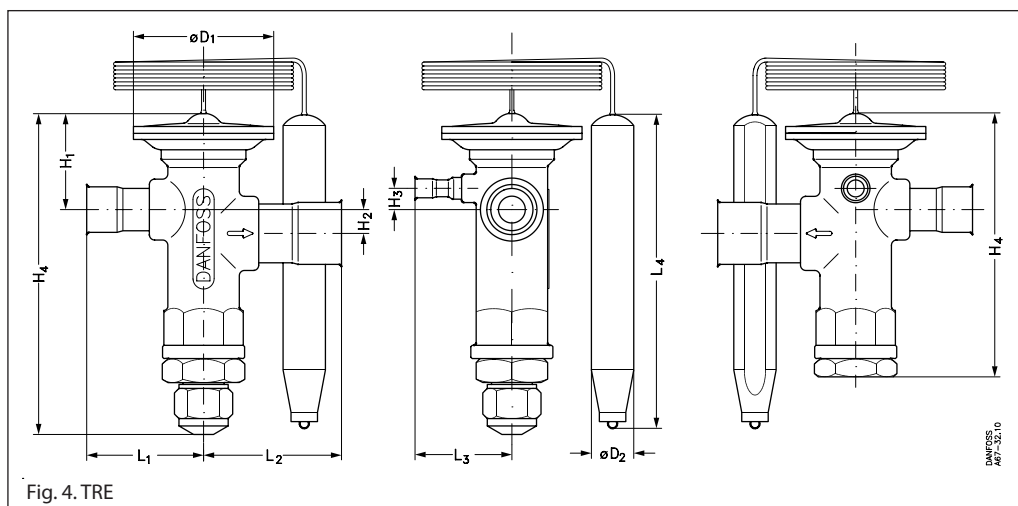


Fig. 4. TRE

Tipo	Conexión, soldar ODF		Longitud tubo capilar m	H ₁ mm	H ₂ mm	H ₃ mm	H ₄ mm	L ₁ mm	L ₂ mm	L ₃ mm	L ₄ mm	øD ₁ mm	øD ₂ mm	Peso kg
	Entrada × Salida in.	Entrada × Salida mm												
TRE 10	1/2 × 1/2	12 × 12	1.5	32	7.5	5	104 82 ¹⁾	40.5	40.5	34.5	70	45	15	0.39 0.35 ¹⁾
	1/2 × 5/8	12 × 16							45.5					
	5/8 × 1/2	16 × 12							40.5					
	5/8 × 5/8	16 × 16							45.5					
	5/8 × 7/8	16 × 22							51.5					
	7/8 × 7/8	22 × 22							51.5					
TRE 20	5/8 × 5/8	16 × 16	1.5	37	9	8	122 100 ¹⁾	48	48	38	119	53	16.5	0.60 0.56 ¹⁾
	5/8 × 7/8	16 × 22							54					
	7/8 × 7/8	22 × 22							54					
	7/8 × 1 1/8	22 × 28							61					
	7/8 × 1 3/8	22 × 35							71					
	1 1/8 × 7/8	28 × 22							54					
	1 1/8 × 1 1/8	28 × 28							61					
	1 1/8 × 1 3/8	28 × 35							71					
TRE 40	7/8 × 7/8	22 × 22	3	42	13	11	145 (128)	57.5	57.5	41	111	60	20.3	0.79 0.93 ¹⁾
	7/8 × 1 1/8	22 × 28							64.5					
	7/8 × 1 3/8	22 × 35							74.5					
	1 1/8 × 1 1/8	28 × 28							64.5					
	1 1/8 × 1 3/8	28 × 35							74.5					
	1 1/8 × 1 5/8	28 × 42							82.5					
TRE 80	1 1/8 × 1 1/8	28 × 28	3	47	17	13	165 (148)	67	67	44	148	72	20.3	1.34 1.30 ¹⁾
	1 1/8 × 1 3/8	28 × 35							77					
	1 1/8 × 1 5/8	28 × 42							85					
	1 3/8 × 1 3/8	35 × 35							77					
	1 3/8 × 1 5/8	35 × 42							85					

¹⁾ Ajuste fijo

