

NRF(E)、RT(E) 系列热力膨胀阀 (Thermo-expansion valves) For R410A

上海恒温控制器厂有限公司

概述

NRF(E)、RT(E) 专用于 R410A 系列热力膨胀阀是一体式膨胀阀，适用于空调、商业制冷、运输空调及冷冻等领域。

特点

- 适用制冷剂： R410A
- 最高工作压力： 45bar
- 蒸发温度范围： -40℃~+15℃
- 静过热度调节范围： 1K~8K
- 最大开启过热度： 8K
- 可提供MOP（马达过载保护）功能，最大保护压力170psi。
- 压力平衡形式： 型号后带“E”字母为外平衡形式，型号后不带“E”字母为内平衡形式。

过热度调节

出厂设定静过热度为4K，可调节范围1K—8K。调节方法：旋下底部密封螺帽，顺时针旋转调节杆一圈（关小），静过热度增加1.5K，逆时针旋转调节杆一圈（开大）静过热度减小1.5K。

General

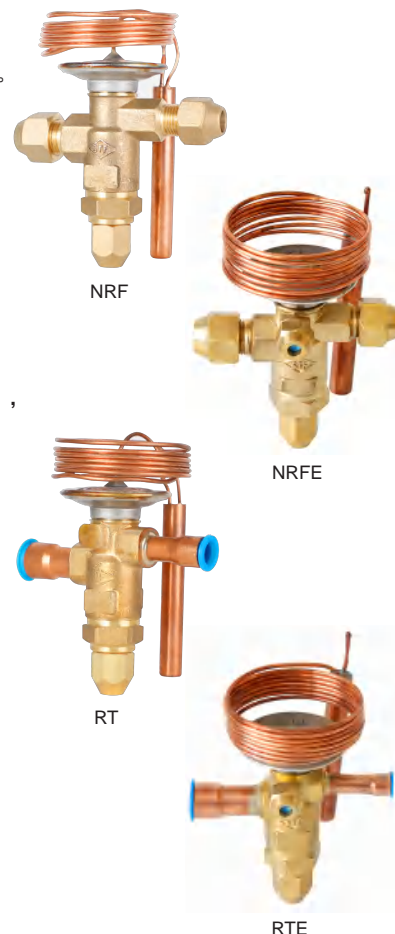
NRF(E) and RT(E) for R410A are integrated thermo-expansion valves for freezing, air conditioning, refrigeration.

Characteristics

- Refrigerant: R410A
- MWP: 45bar
- Evaporating temperature: -40℃~+15℃
- Static Superheat adjusting range: 1K~8K
- Maximum opening superheat: 8K
- Can be supplied with MOP (MAX. operating pressure 170psi).
- Note: if there is "E" after model, it indicates external equalization

Superheat adjusting

Factory setting: superheat 4K, static superheat adjusting range is between 1~8K.
Take off cap and turn adjusting stem.
Turn adjusting stem anticlockwise one round, reduces superheat 1.5K.



外形尺寸见第31页 Nominal capacity and Dimensions (Dimensions for Page 31)

型号 Model	名义制冷量 Nominal capacity KW	接管尺寸 Connection size		A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	外平衡接口尺寸 External equalizer connection size	毛细管长度 Capillary length
		进口 Inlet	出口 Outlet										
NRF(E) 1Z RT(E)	3.52	Φ10 3/8 SAE Φ10 3/8 ODF	Φ12 1/2 SAE Φ12 1/2 ODF	102/ 107	61	115/ 100	71	Φ55	26	Φ13	89	Φ6×1 喇叭口 1/4SAE 1/4ODF	1.5m
NRF(E) 1-1/2Z RT(E)	5.28												
NRF(E) 2Z RT(E)	7.04												
NRF(E) 2-1/2Z RT(E)	8.80												
NRF(E) 3Z RT(E)	10.56												
NRF(E) 4Z RT(E)	14.08												
NRF(E) 5Z RT(E)	17.60												
NRF(E) 6-1/2Z RT(E)	22.88												
NRF(E) 7-1/2Z RT(E)	26.40												
NRF(E) 9Z RT(E)	31.68	Φ10 3/8 SAE Φ10 3/8 ODF	Φ16 5/8 SAE Φ16 5/8 ODF	102/ 107	61	115/ 110/ 100	71	Φ55	26	Φ13	89	Φ6×1 喇叭口 1/4SAE 1/4ODF	1.5m
NRF(E) 10Z RT(E)	35.20												
NRF(E) 12Z RT(E)	42.24												
NRF(E) 14Z RT(E)	49.28												
NRF(E) 16Z RT(E)	56.32												
NRF(E) 18Z RT(E)	63.36												
NRF(E) 20Z RT(E)	69.70												

- 名义制冷量基于以下工况参数：冷凝温度：Tc=38℃；蒸发温度：Te=4℃；进入阀门液态制冷剂：TL=37℃；过冷度：Tsub=1k；出厂静过热度设定：ss=4K；
- Nominal capacity is based on: Condensing temperature: Tc=38℃; Evaporating temperature: Te=4℃; Refrigerant temperature ahead of valve: TL=37℃; Subcooling: Tsub=1k; Factory set superheat: ss=4K;

NRF(E)、RT(E) 系列热力膨胀阀 (Thermo-expansion valves) For R410A

Shanghai Thermostat Factory Co.,Ltd.

RT(E)、NRF(E) R410A 扩展容量表 (Kw)
RT(E)、NRF(E) For R410A extended capacity tables

R410A 型号规格		蒸发温度 Evaporating temperature																	
		15℃						10℃						5℃					
		通过阀的压降 Pressure drop across valve(bar)																	
		2.45	5.40	8.50	12.50	18.00	20.00	4.20	7.00	10.0	14.50	19.00	21.50	5.50	8.50	12.00	16.00	20.00	23.00
NRF(E) RT(E)	1Z	2.30	3.30	3.80	4.20	4.70	4.60	2.70	3.30	3.70	4.10	4.40	4.20	2.40	3.00	3.60	3.80	4.00	3.80
NRF(E) RT(E)	1-1/2Z	3.50	4.90	5.70	6.40	7.10	6.80	4.10	5.00	5.60	6.20	6.50	6.30	3.70	4.50	5.40	5.70	5.90	5.80
NRF(E) RT(E)	2Z	4.60	6.50	7.70	8.50	9.40	9.10	5.40	6.70	7.40	8.20	8.70	8.40	4.90	6.00	7.20	7.60	7.90	7.70
NRF(E) RT(E)	2-1/2Z	5.80	8.20	9.60	10.60	11.80	11.40	6.80	8.30	9.30	10.30	10.90	10.50	6.10	7.60	9.00	9.50	9.80	9.60
NRF(E) RT(E)	3Z	7.00	9.80	11.50	12.70	14.10	13.70	8.20	10.00	11.20	12.40	13.10	12.60	7.30	9.10	10.80	11.40	11.90	11.50
NRF(E) RT(E)	4Z	9.30	13.10	15.30	16.90	18.80	18.20	10.90	13.30	14.90	16.50	17.50	16.80	9.70	12.10	14.40	15.20	15.80	15.40
NRF(E) RT(E)	5Z	11.60	16.30	19.20	21.20	23.50	22.80	13.60	16.60	18.60	20.60	21.80	21.00	12.20	15.10	18.00	19.00	19.70	19.20
NRF(E) RT(E)	6-1/2Z	15.10	21.20	24.90	27.50	30.60	29.60	17.70	21.60	24.20	26.80	28.40	27.40	15.80	19.70	23.40	24.70	25.70	25.00
NRF(E) RT(E)	7-1/2Z	17.40	24.50	28.70	31.80	35.30	34.10	20.40	25.00	27.88	30.90	32.70	31.60	18.30	22.70	27.00	28.50	29.60	28.80
NRF(E) RT(E)	9Z	20.90	29.40	34.50	38.10	42.30	41.00	24.70	30.00	33.50	37.10	39.30	37.90	21.90	27.30	32.40	34.20	35.60	34.50
NRF(E) RT(E)	10Z	23.20	32.60	38.30	42.40	47.00	45.50	27.20	33.30	37.20	41.20	43.60	42.10	24.40	30.30	36.00	38.00	40.00	38.40
NRF(E) RT(E)	12Z	27.80	39.20	46.00	50.80	56.40	54.60	32.60	40.00	44.60	49.50	52.40	50.50	29.20	36.40	43.20	45.60	47.40	46.10
NRF(E) RT(E)	14Z	32.50	45.70	53.70	59.30	65.80	63.70	38.10	46.60	52.00	57.70	61.10	58.90	34.10	42.40	50.40	53.20	55.30	53.70
NRF(E) RT(E)	16Z	37.10	52.20	61.30	67.80	75.20	72.80	43.50	52.70	59.50	66.00	69.80	67.40	39.00	48.50	57.60	60.80	63.20	61.40
NRF(E) RT(E)	18Z	42.40	58.80	69.00	76.30	84.60	81.90	48.90	59.90	66.90	74.20	78.50	75.80	43.70	54.50	64.80	68.40	71.10	69.10
NRF(E) RT(E)	20Z	46.60	64.70	76.00	83.90	93.00	90.00	53.80	65.90	73.60	81.60	86.40	83.40	48.40	60.00	71.30	75.20	78.20	76.00
R410A 型号规格		蒸发温度 Evaporating temperature																	
		0℃						-5℃						-10℃					
		通过阀的压降 Pressure drop across valve(bar)																	
		7.00	10.00	13.00	17.00	21.50	24.50	8.20	11.00	14.50	18.50	23.00	24.50	6.80	9.00	12.00	15.50	20.00	24.50
NRF(E) RT(E)	1Z	2.70	3.10	3.40	3.50	3.60	3.50	2.60	2.90	3.10	3.20	3.30	3.10	2.20	2.40	2.60	2.80	2.90	3.00
NRF(E) RT(E)	1-1/2Z	4.10	4.70	5.10	5.20	5.40	5.30	3.90	4.30	4.60	4.80	4.90	4.60	3.30	3.60	3.90	4.20	4.30	4.40
NRF(E) RT(E)	2Z	5.48	6.20	6.80	6.90	7.20	7.10	5.20	5.70	6.20	6.40	6.60	6.10	4.40	4.80	5.20	5.60	5.80	5.90
NRF(E) RT(E)	2-1/2Z	6.90	7.80	8.50	8.70	9.00	8.80	6.50	7.20	7.70	8.00	8.20	7.70	5.50	6.00	6.50	7.00	7.20	7.40
NRF(E) RT(E)	3Z	8.20	9.30	10.20	10.40	10.80	10.60	7.80	8.60	9.20	9.60	9.90	9.20	6.70	7.20	7.80	8.40	8.70	8.90
NRF(E) RT(E)	4Z	10.90	12.40	13.60	13.90	14.40	14.10	10.50	11.50	12.30	12.80	13.10	12.30	8.90	9.60	10.50	11.20	11.60	11.80
NRF(E) RT(E)	5Z	13.70	15.50	17.00	17.40	18.00	17.60	13.10	14.40	15.40	16.00	16.40	15.30	11.10	12.00	13.10	14.00	14.50	14.70
NRF(E) RT(E)	6-1/2Z	17.80	20.20	22.10	22.50	23.40	22.90	17.00	18.70	20.00	20.80	21.30	19.90	14.40	15.60	17.00	18.20	18.80	19.20
NRF(E) RT(E)	7-1/2Z	20.60	23.30	25.50	26.00	27.00	26.40	19.70	21.60	23.10	24.00	24.60	23.00	16.60	18.00	19.70	21.00	21.70	22.10
NRF(E) RT(E)	9Z	24.70	27.90	30.60	31.20	32.40	31.70	23.60	25.90	27.70	28.70	29.60	27.60	20.00	21.60	23.60	25.20	26.10	26.60
NRF(E) RT(E)	10Z	27.40	31.00	34.00	34.70	36.00	35.30	26.20	28.70	30.80	32.00	32.80	30.60	22.20	24.00	26.20	28.10	29.00	29.50
NRF(E) RT(E)	12Z	32.90	37.20	40.80	41.60	43.20	42.30	36.50	34.50	40.00	38.30	39.40	36.80	26.60	28.80	31.40	33.70	34.70	35.40
NRF(E) RT(E)	14Z	38.40	43.30	47.60	48.60	50.40	49.40	36.70	40.10	43.10	44.70	46.00	42.90	31.10	33.60	36.70	39.00	40.50	41.30
NRF(E) RT(E)	16Z	43.80	49.60	54.40	55.50	57.60	56.40	42.00	45.80	49.30	51.10	52.60	49.00	35.50	38.40	41.90	44.90	46.30	47.20
NRF(E) RT(E)	18Z	49.30	55.80	61.20	62.50	64.80	63.50	47.20	51.70	55.40	57.50	59.10	55.10	40.00	43.20	47.20	50.50	52.10	53.10
NRF(E) RT(E)	20Z	54.20	61.40	67.30	68.80	71.30	69.90	51.90	56.90	60.90	63.30	65.00	60.60	44.00	47.30	51.90	55.60	57.30	58.40

RT(E)、NRF(E) R410A 扩展容量表 (Kw)
RT(E)、NRF(E) For R410A extended capacity tables

R410A 型号规格		蒸发温度 Evaporating temperature																	
		-15°C						-20°C						-25°C					
		通过阀的压降 Pressure drop across valve(bar)																	
		7.70	10.00	13.00	16.00	20.00	24.50	8.50	11.00	14.00	17.00	21.00	24.50	9.80	12.50	15.00	18.50	22.50	24.50
NRF(E) RT(E)	1Z	2.10	2.20	2.40	2.50	2.50	2.60	1.90	2.00	2.10	2.20	2.20	2.20	1.80	1.90	1.90	2.00	2.00	2.00
NRF(E) RT(E)	1-1/2Z	3.10	3.30	3.60	3.80	3.80	3.90	2.80	3.00	3.20	3.30	3.40	3.30	2.60	2.80	2.90	3.00	3.10	2.90
NRF(E) RT(E)	2Z	4.10	4.40	4.70	5.10	5.10	5.20	3.70	4.00	4.20	4.30	4.50	4.40	3.50	3.70	3.90	4.00	4.10	3.90
NRF(E) RT(E)	2-1/2Z	5.20	5.60	5.90	6.30	6.30	6.50	4.60	5.00	5.30	5.40	5.60	5.50	4.40	4.70	4.80	5.00	5.10	4.90
NRF(E) RT(E)	3Z	6.20	6.70	7.10	7.60	7.60	7.70	5.60	6.00	6.40	6.50	6.70	6.70	5.30	5.60	5.80	6.00	6.10	5.90
NRF(E) RT(E)	4Z	8.30	8.90	9.50	10.10	10.10	10.30	7.50	8.00	8.50	8.70	8.90	8.90	7.10	7.50	7.70	8.00	8.10	7.80
NRF(E) RT(E)	5Z	10.40	11.10	11.80	12.60	12.70	12.90	9.30	9.00	10.60	10.90	11.20	11.10	8.80	9.30	9.70	10.00	10.20	9.80
NRF(E) RT(E)	6-1/2Z	13.50	14.40	15.40	16.40	16.50	16.80	12.10	13.00	13.80	14.10	14.50	14.40	11.50	12.20	12.60	13.00	13.20	12.70
NRF(E) RT(E)	7-1/2Z	15.60	16.70	17.80	18.90	19.00	19.4	14.00	15.00	15.90	16.30	16.80	16.70	13.20	14.00	14.50	15.00	15.30	14.60
NRF(E) RT(E)	9Z	18.70	20.00	21.30	22.70	22.80	23.20	16.80	18.00	19.10	19.60	20.10	20.00	15.80	16.80	17.40	18.00	18.30	17.60
NRF(E) RT(E)	10Z	20.70	22.20	23.60	25.30	25.40	25.80	18.60	20.00	21.20	21.70	22.40	22.20	17.60	18.70	19.30	20.00	20.30	19.50
NRF(E) RT(E)	12Z	24.90	26.70	28.40	30.30	30.40	31.00	21.90	23.90	25.40	26.10	26.8	26.70	21.30	22.40	23.20	23.90	24.40	23.40
NRF(E) RT(E)	14Z	29.00	31.10	33.20	35.40	35.50	36.20	26.10	27.90	29.70	30.40	31.30	31.30	24.70	26.20	27.20	27.90	28.50	27.30
NRF(E) RT(E)	16Z	33.20	35.50	37.90	40.40	40.60	41.30	29.40	31.90	33.90	34.80	35.80	35.60	28.20	30.00	30.90	31.90	32.60	31.20
NRF(E) RT(E)	18Z	37.30	40.00	42.30	45.50	45.60	46.50	33.60	35.80	38.20	39.10	40.30	40.00	31.80	33.70	34.80	35.90	36.60	35.10
NRF(E) RT(E)	20Z	40.00	44.00	46.50	50.00	50.10	51.10	37.00	39.40	42.00	43.00	44.30	44.00	35.00	37.10	38.30	39.50	40.30	38.60
R410A 型号规格		蒸发温度 Evaporating temperature																	
		-30°C						-35°C						-40°C					
		通过阀的压降 Pressure drop across valve(bar)																	
		9.80	12.51	15.00	18.50	22.50	24.50	10.30	113.00	15.00	19.00	23.00	24.50	10.80	13.50	16.00	19.50	23.50	24.50
NRF(E) RT(E)	1Z	1.49	1.60	1.60	1.70	1.70	1.60	1.30	1.40	1.40	1.40	1.48	1.40	1.10	1.20	1.20	1.20	1.20	1.20
NRF(E) RT(E)	1-1/2Z	2.20	2.40	2.50	2.50	2.60	2.50	1.90	2.00	2.00	2.10	2.20	2.10	1.60	1.70	1.80	1.80	1.80	1.70
NRF(E) RT(E)	2Z	3.00	3.20	3.30	3.40	3.40	3.30	2.50	2.70	2.70	2.90	3.00	2.70	2.20	2.30	2.40	2.50	2.40	2.30
NRF(E) RT(E)	2-1/2Z	3.70	4.00	4.10	4.20	4.30	4.10	3.20	3.40	3.40	3.60	3.70	3.40	2.80	2.90	3.00	3.10	3.10	2.90
NRF(E) RT(E)	3Z	4.50	4.70	4.90	5.10	5.20	4.90	3.80	4.10	4.10	4.30	4.40	4.10	3.40	3.50	3.60	3.70	3.70	3.50
NRF(E) RT(E)	4Z	6.00	6.30	6.50	6.70	6.90	6.60	5.10	5.40	5.50	5.70	5.90	5.50	4.70	4.70	4.80	4.90	4.90	4.60
NRF(E) RT(E)	5Z	7.50	7.90	8.20	8.40	8.60	8.20	6.40	6.80	6.80	7.10	7.40	6.80	5.60	5.80	6.00	6.10	6.10	5.80
NRF(E) RT(E)	6-1/2Z	9.70	10.30	10.60	11.00	11.20	10.70	8.30	8.80	8.90	9.30	9.60	8.90	7.30	7.50	7.80	8.00	8.00	7.50
NRF(E) RT(E)	7-1/2Z	11.20	11.90	12.30	12.60	12.90	12.30	9.60	10.10	10.20	10.70	11.10	10.30	8.40	8.70	9.00	9.20	9.10	8.70
NRF(E) RT(E)	9Z	13.40	14.20	14.70	15.20	15.50	14.80	11.60	12.20	12.30	12.80	13.30	12.30	10.10	10.40	10.80	11.00	11.00	10.40
NRF(E) RT(E)	10Z	14.90	15.80	16.30	16.90	17.20	16.50	12.80	13.50	13.70	14.30	14.80	13.70	11.20	11.60	12.00	12.30	12.20	11.60
NRF(E) RT(E)	12Z	17.90	18.60	19.20	20.20	20.60	19.70	15.40	16.20	16.40	17.10	17.80	16.40	13.40	13.60	14.40	14.40	14.40	13.60
NRF(E) RT(E)	14Z	20.90	22.10	22.90	23.60	24.10	23.00	18.00	18.90	19.10	20.00	20.80	19.10	15.60	16.20	16.80	17.20	17.10	16.20
NRF(E) RT(E)	16Z	23.90	25.30	26.10	27.00	27.50	26.30	20.50	21.60	21.90	22.80	23.70	21.90	17.90	18.50	19.20	19.60	19.60	18.50
NRF(E) RT(E)	18Z	26.90	28.50	29.40	30.30	30.90	29.60	23.10	24.30	24.60	25.70	26.70	24.60	20.10	20.80	21.50	22.00	22.00	20.80
NRF(E) RT(E)	20Z	29.60	31.40	32.30	33.30	34.00	32.60	25.40	26.70	27.10	28.30	29.40	27.10	22.10	22.90	23.70	24.20	24.20	22.90