



## RFKH SERIES

# THERMOSTATIC EXPANSION VALVE

RFKH series thermostatic expansion valves are used to adjust mass flow of refrigerant into the evaporator while controlling the refrigerant's superheat at the outlet of the evaporator. They can be used for various refrigerants under all working conditions. Typical applications are refrigeration systems like freezers, ice makers, dehumidifiers as well as air conditioners and heat pumps at various evaporation temperature ranges.



## FEATURES

- STAINLESS STEEL CAPILLARY AND SENSING BULB
- EXCHANGEABLE VALVE ORIFICE, EASY TO STOCK HOLDING, CONVENIENT FOR CAPACITY MATCH AND REPAIR
- THERMAL BULB UTILIZES CROSS CHARGE TECHNOLOGY, PROVIDING CONSISTENT SUPERHEAT DEGREE OVER THE WHOLE EVAPORATION TEMPERATURE RANGE
- VALVES WITH MOP FUNCTION CAN BE PROVIDED TO ASSURE RELIABLE COMPRESSOR OPERATION
- APPLICABLE IN A WIDE EVAPORATION TEMPERATURE RANGE
- RELIABLE AND CONSISTENT PERFORMANCE OF SUPERHEAT CONTROL

## GENERAL SPECIFICATIONS

- Applicable for all common HCFC and HFC refrigerants such as: R22, R407C, R404A, R507, R134a, R404A, R410A, R407A, R407F, R448A/R449A, R452A, R450A/R513A
- Ambient temperature min./max.: -35°C / +55°C
- Medium temperature TS min./max.: -40°C / +70°C extended to -60°C / +70°C for range B models
- Max. operating pressure PS: 4.6 MPa (46 bar)
- Installation position:
  - Preferably valve head upwards
  - Flow direction from inlet A to outlet B
- Certifications: UL/CSA and PED declaration

# THERMOSTATIC EXPANSION VALVE



## TECHNICAL PARAMETERS

- RFKH series angle shape valve
- Inlet 3/8" flare connection
- Capillary tube length 1,5m
- Equalization port:
  - RFKH flare/flare type with 1/4" flare connection;
  - RFKH flare/solder type with 6mm solder connection

## MODEL DESIGNATION LEGEND

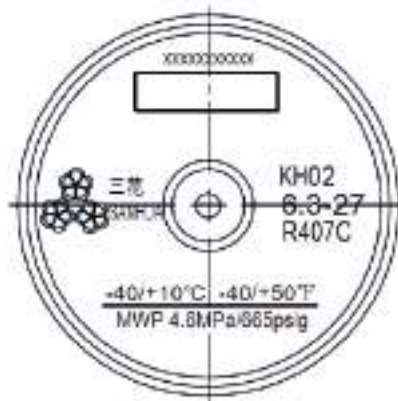
Position Number	Model Designation Legend	
1	<b>Product Code</b>	<b>Product Series</b>
	RFKH	Thermostatic expansion valve
2	<b>Refrigerant</b>	<b>Description</b>
	01	R22
	02	R407C
	03	R404A / R507A
	04	R134a
	05	R410A
	07	R407A / R407F
	08	R448A / R449A
	10	R450A
	11	R452A
	14	R513A
	3	<b>Pressure Equalization</b>
E		External pressure equalization
(Omitted)		Internal pressure equalization
4	<b>Miscellaneous</b>	<b>Description</b>
	xxxx	Digits for additional information

# THERMOSTATIC EXPANSION VALVE



## MODEL DESIGNATION EXAMPLE

Position Number				According to Model Designation Legend
1	2	3	4	
RFKA	01	E	xxxx	Thermostatic expansion valve
RFKA	<b>01</b>	E	xxxx	Refrigerant R22
RFKA	01	<b>E</b>	xxxx	Connection for external pressure equalization
RFKA	01	E	<b>xxxx</b>	Digits for additional information



## MODELS WITH MOP FUNCTION

RFKH valves can be selected with MOP (Max. Operating Pressure) function.

MOP protects the compressor motor against excessive evaporating pressure during normal operation.

Refrigerant	Range N (from -40°C to +10°C)	Range NM (from -40°C to -5°C)	Range NL (from -40°C to -15°C)	Range B (-60°C to -25°C)
	MOP = +15°C	MOP = 0°C	MOP = -10°C	MOP = -20°C
R22	6,9 bar (abs.) - STD	4,1 bar (abs.) - O.R.	2,4 bar (abs.) - STD	N.A.
R407C	6,6 bar (abs.) - STD	N.A.	N.A.	N.A.
R404A / R507	8,6 bar (abs.) - STD	5,2 bar (abs.) - O.R.	3,4 bar (abs.) - STD	3,0 bar (abs.) - STD
R134a	3,8 bar (abs.) - STD	2,1 bar (abs.) - O.R.	1,0 bar (abs.) - O.R.	N.A.
R410A	11,4 bar (abs.) - STD	8,0 bar (abs.) - O.R.	4,8 bar (abs.) - STD	N.A.
R407A / R407F	6,9 bar (abs.) - STD	N.A.	N.A.	N.A.
R448A / R449A	7,5 bar (abs.) - O.R.	4,3 bar (abs.) - O.R.	2,7 bar (abs.) - O.R.	2,47 bar (abs.) - O.R.
R450A	3,5 bar (abs.) - O.R.	1,7 bar (abs.) - O.R.	0,8 bar (abs.) - O.R.	N.A.
R452A	8,1 bar (abs.) - O.R.	4,8 bar (abs.) - O.R.	3,1 bar (abs.) - O.R.	2,76 bar (abs.) - O.R.
R513A	4,3 bar (abs.) - O.R.	2,3 bar (abs.) - O.R.	0,9 bar (abs.) - O.R.	N.A.

**Note:** STD : Standard product  
 O.R. : On Request  
 N.A. : Not Available

**THERMOSTATIC EXPANSION VALVE**

**TECHNICAL PARAMETERS**

Tab. A : Models with Range N : Temperature Range from -40°C to +10°C [ without MOP ]

Ref.	Model Valve Body	Part Number <sup>1 &amp; 4)</sup>	Connection type	Inlet ØA	Outlet ØB			Ext. ØC		
			In / Out / Ext. Pressure Equal.	Flare	Flare	Solder		Flare	Solder	Solder
				[inch]	[inch]	[mm]	[inch]	[inch]	[inch]	[mm]
R22	RFKH 01-6.0-22	10201002502	flare / flare	3/8	1/2	-	-	-	-	-
	RFKH01E-6.0-13	10201002402	flare / flare / flare		1/2	-	-	1/4	-	-
	RFKH01-6.0-26	10201002602	flare / solder		-	12	-	-	-	-
	RFKH01E-6.0-06	10201002102	flare / solder / solder		-	12	-	-	-	6
	RFKH01-6.0-07	10201002202	flare / solder		-	-	1/2	-	-	-
	RFKH01E-6.0-08	10201002302	flare / solder / solder		-	-	1/2	-	1/4	-
R407C	RFKH02-6.3-24	10201002902	flare / flare	3/8	1/2	-	-	-	-	-
	RFKH02E-6.3-20	10201002802	flare / flare / flare		1/2	-	-	1/4	-	-
	RFKH02-6.3-27	10201003002	flare / solder		-	12	-	-	-	-
	RFKH02E-6.3-28	10201003102	flare / solder / solder		-	12	-	-	-	6
	RFKH02-6.3-32	10201003202	flare / solder		-	-	1/2	-	-	-
	RFKH02E-6.3-18	10201002702	flare / solder / solder		-	-	1/2	-	1/4	-
R404A / R507A	RFKH03-4.8-21	10201003702	flare / flare	3/8	1/2	-	-	-	-	-
	RFKH03E-4.8-15	10201003802	flare / flare / flare		1/2	-	-	1/4	-	-
	RFKH03-4.8-03	10201003402	flare / solder		-	12	-	-	-	-
	RFKH03E-4.8-02	10201003302	flare / solder / solder		-	12	-	-	-	6
	RFKH03-4.8-09	10201003502	flare / solder		-	-	1/2	-	-	-
	RFKH03E-4.8-10	10201003602	flare / solder / solder		-	-	1/2	-	1/4	-
R134a	RFKH04-2.9-23	10201004102	flare / flare	3/8	1/2	-	-	-	-	-
	RFKH04E-2.9-19	10201004002	flare / flare / flare		1/2	-	-	1/4	-	-
	RFKH04-2.9-29	10201004202	flare / solder		-	12	-	-	-	-
	RFKH04E-2.9-17	10201003902	flare / solder / solder		-	12	-	-	-	6
	RFKH04-2.9-30	10201004302	flare / solder		-	-	1/2	-	-	-
	RFKH04E-2.9-31	10201004402	flare / solder / solder		-	-	1/2	-	-	1/4
R410A	RFKH05-7.6-66	10201005702	flare / flare	3/8	1/2	-	-	-	-	-
	RFKH05E-7.6-33	10201005202	flare / flare / flare		1/2	-	-	1/4	-	-
	RFKH05-7.6-37	10201005602	flare / solder		-	12	-	-	-	-
	RFKH05E-7.6-36	10201005502	flare / solder / solder		-	12	-	-	-	6
	RFKH05-7.6-35	10201005402	flare / solder		-	-	1/2	-	-	-
	RFKH05E-7.6-34	10201005302	flare / solder / solder		-	-	1/2	-	-	1/4
R407A / R407F	RFKH07-6.0-43	10201004802	flare / flare	3/8	1/2	-	-	-	-	-
	RFKH07E-6.0-42	10201004702	flare / flare / flare		1/2	-	-	1/4	-	-
	RFKH07-6.0-44	10201004902	flare / solder		-	12	-	-	-	-
	RFKH07E-6.0-41	10201004602	flare / solder / solder		-	12	-	-	-	6
	RFKH07-6.0-45	10201005002	flare / solder		-	-	1/2	-	-	-
	RFKH07E-6.0-46	10201005102	flare / solder / solder		-	-	1/2	-	-	1/4

**THERMOSTATIC EXPANSION VALVE**

**TECHNICAL PARAMETERS**

Tab. A : Models with Range N : Temperature Range from -40°C to +10°C [ without MOP ]

Ref.	Model Valve Body	Part Number <sup>1 &amp; 4)</sup>	Connection type	Inlet ØA	Outlet ØB			Ext. ØC		
			In / Out / Ext. Pressure Equal.	Flare	Flare	Solder		Flare	Solder	Solder
				[inch]	[inch]	[mm]	[inch]	[inch]	[inch]	[mm]
R448A / R449A	RFKH08-6.1-49	10201012802	flare / flare	3/8	1/2	-	-	-	-	-
	RFKH08E-6.1-48	10201012402	flare / flare / flare		1/2	-	-	1/4	-	-
	RFKH08-6.1-50	10201013302	flare / solder		-	12	-	-	-	-
	RFKH08E-6.1-47	10201012302	flare / solder / solder		-	12	-	-	-	6
	RFKH08-6.1-51	10201012502	flare / solder		-	-	1/2	-	-	-
	RFKH08E-6.1-52	10201012602	flare / solder / solder		-	-	1/2	-	1/4	-
R450A	RFKH10-2.8-61	10201016102	flare / flare	3/8	1/2	-	-	-	-	-
	RFKH10E-2.8-60	10201016002	flare / flare / flare		1/2	-	-	1/4	-	-
	RFKH10-2.8-72	10201016202	flare / solder		-	12	-	-	-	-
	RFKH10E-2.8-59	10201015902	flare / solder / solder		-	12	-	-	-	6
	RFKH10-2.8-63	10201016302	flare / solder		-	-	1/2	-	-	-
	RFKH10E-2.8-64	10201016402	flare / solder / solder		-	-	1/2	-	1/4	-
R452A	RFKH11-4.5-55	10201013602	flare / flare	3/8	1/2	-	-	-	-	-
	RFKH11E-4.5-54	10201013502	flare / flare / flare		1/2	-	-	1/4	-	-
	RFKH11-4.5-56	10201013702	flare / solder		-	12	-	-	-	-
	RFKH11E-4.5-53	10201013402	flare / solder / solder		-	12	-	-	-	6
	RFKH11-4.5-57	10201013802	flare / solder		-	-	1/2	-	-	-
	RFKH11E-4.5-58	10201013902	flare / solder / solder		-	-	1/2	-	1/4	-
R513A	RFKH14-2.7-68	10201016802	flare / flare	3/8	1/2	-	-	-	-	-
	RFKH14E-2.7-67	10201016702	flare / flare / flare		1/2	-	-	1/4	-	-
	RFKH14-2.7-70	10201016902	flare / solder		-	12	-	-	-	-
	RFKH14E-2.7-65	10201016502	flare / solder / solder		-	12	-	-	-	6
	RFKH14-2.7-71	10201017002	flare / solder		-	-	1/2	-	-	-
	RFKH14E-2.7-76	10201017102	flare / solder / solder		-	-	1/2	-	1/4	-

**THERMOSTATIC EXPANSION VALVE**

*Tab. B : Models with Range N : Temperature Range from -40°C to +10°C [ with MOP = +15°C ]*

Ref.	Model Valve Body	Part Number <sup>1 &amp; 4)</sup>	Connection type	Inlet ØA	Outlet ØB			Ext. ØC		
			In / Out / Ext. Pressure Equal.	Flare	Flare	Solder		Flare	Solder	Solder
				[inch]	[inch]	[mm]	[inch]	[inch]	[inch]	[mm]
R22	RFKH 01-6.0-205	10201006702	flare / flare	3/8	1/2	-	-	-	-	-
	RFKH01E-6.0-204	10201006602	flare / flare / flare		1/2	-	-	1/4	-	-
	RFKH01-6.0-206	10201008102	flare / solder		-	12	-	-	-	-
	RFKH01E-6.0-201	10201006302	flare / solder / solder		-	12	-	-	-	6
	RFKH01-6.0-202	10201006402	flare / solder		-	-	1/2	-	-	-
	RFKH01E-6.0-203	10201006502	flare / solder / solder		-	-	1/2	-	1/4	-
R407C	RFKH02-6.3-209	10201007602	flare / flare	3/8	1/2	-	-	-	-	-
	RFKH02E-6.3-208	10201007502	flare / flare / flare		1/2	-	-	1/4	-	-
	RFKH02-6.3-210	10201007702	flare / solder		-	12	-	-	-	-
	RFKH02E-6.3-211	10201007802	flare / solder / solder		-	12	-	-	-	6
	RFKH02-6.3-212	10201007902	flare / solder		-	-	1/2	-	-	-
	RFKH02E-6.3-207	10201007402	flare / solder / solder		-	-	1/2	-	1/4	-
R404A / R507A	RFKH03-4.8-218	10201008702	flare / flare	3/8	1/2	-	-	-	-	-
	RFKH03E-4.8-217	10201008502	flare / flare / flare		1/2	-	-	1/4	-	-
	RFKH03-4.8-214	10201008302	flare / solder		-	12	-	-	-	-
	RFKH03E-4.8-213	10201008202	flare / solder / solder		-	12	-	-	-	6
	RFKH03-4.8-215	10201008402	flare / solder		-	-	1/2	-	-	-
	RFKH03E-4.8-216	10201008602	flare / solder / solder		-	-	1/2	-	1/4	-
R134a	RFKH04-2.9-221	10201009502	flare / flare	3/8	1/2	-	-	-	-	-
	RFKH04E-2.9-220	10201009402	flare / flare / flare		1/2	-	-	1/4	-	-
	RFKH04-2.9-223	10201009702	flare / solder		-	12	-	-	-	-
	RFKH04E-2.9-219	10201009302	flare / solder / solder		-	12	-	-	-	6
	RFKH04-2.9-222	10201009602	flare / solder		-	-	1/2	-	-	-
	RFKH04E-2.9-224	10201009802	flare / solder / solder		-	-	1/2	-	-	1/4
R410A	RFKH05-7.6-230	10201010402	flare / flare	3/8	1/2	-	-	-	-	-
	RFKH05E-7.6-225	10201009902	flare / flare / flare		1/2	-	-	1/4	-	-
	RFKH05-7.6-229	10201010302	flare / solder		-	12	-	-	-	-
	RFKH05E-7.6-228	10201010202	flare / solder / solder		-	12	-	-	-	6
	RFKH05-7.6-227	10201010102	flare / solder		-	-	1/2	-	-	-
	RFKH05E-7.6-226	10201010002	flare / solder / solder		-	-	1/2	-	-	1/4
R407A / R407F	RFKH07-6.0-233	10201011302	flare / flare	3/8	1/2	-	-	-	-	-
	RFKH07E-6.0-232	10201011202	flare / flare / flare		1/2	-	-	1/4	-	-
	RFKH07-6.0-234	10201011402	flare / solder		-	12	-	-	-	-
	RFKH07E-6.0-231	10201011102	flare / solder / solder		-	12	-	-	-	6
	RFKH07-6.0-235	10201011502	flare / solder		-	-	1/2	-	-	-
	RFKH07E-6.0-236	10201011602	flare / solder / solder		-	-	1/2	-	-	1/4

**THERMOSTATIC EXPANSION VALVE**


Tab. C : Models with Range NL : Temperature Range from -40°C to -15°C [ with MOP = -10°C ]

Ref.	Model Valve Body	Part Number <sup>1 &amp; 4)</sup>	Connection type	Inlet ØA	Outlet ØB			Ext. ØC		
			In / Out / Ext. Pressure Equal.	Flare	Flare	Solder		Flare	Solder	Solder
				[inch]	[inch]	[mm]	[inch]	[inch]	[inch]	[mm]
R22	RFKH 01-6.0-305	10201007202	flare / flare	3/8	1/2	-	-	-	-	-
	RFKH01E-6.0-304	10201007102	flare / flare / flare		1/2	-	-	1/4	-	-
	RFKH01-6.0-306	10201007302	flare / solder		-	12	-	-	-	-
	RFKH01E-6.0-301	10201006802	flare / solder / solder		-	12	-	-	-	6
	RFKH01-6.0-302	10201006902	flare / solder		-	-	1/2	-	-	-
	RFKH01E-6.0-303	10201008002	flare / solder / solder		-	-	1/2	-	1/4	-
R404A / R507A	RFKH03-4.8-312	10201009202	flare / flare	3/8	1/2	-	-	-	-	-
	RFKH03E-4.8-311	10201009102	flare / flare / flare		1/2	-	-	1/4	-	-
	RFKH03-4.8-308	10201008902	flare / solder		-	12	-	-	-	-
	RFKH03E-4.8-307	10201008802	flare / solder / solder		-	12	-	-	-	6
	RFKH03-4.8-309	10201009002	flare / solder		-	-	1/2	-	-	-
	RFKH03E-4.8-310	10201005802	flare / solder / solder		-	-	1/2	-	1/4	-
R410A	RFKH05-7.6-318	10201011002	flare / flare	3/8	1/2	-	-	-	-	-
	RFKH05E-7.6-313	10201010502	flare / flare / flare		1/2	-	-	1/4	-	-
	RFKH05-7.6-317	10201010902	flare / solder		-	12	-	-	-	-
	RFKH05E-7.6-316	10201010802	flare / solder / solder		-	12	-	-	-	6
	RFKH05-7.6-315	10201010702	flare / solder		-	-	1/2	-	-	-
	RFKH05E-7.6-314	10201010602	flare / solder / solder		-	-	1/2	-	-	1/4

- Note:**
- 1) Extent of delivery: valve body and bulb strap
  - 2) Different evaporation temperature range on request
  - 3) MOP function on request
  - 4) Part Number is referred to Multi Pack

**THERMOSTATIC EXPANSION VALVE**

*Tab. D : Models with Range B : Temperature Range from -60°C to -25°C [ without MOP ]*

Ref.	Model Valve Body	Part Number <sup>1 &amp; 4)</sup>	Connection type	Inlet ØA	Outlet ØB			Ext. ØC		
			In / Out / Ext. Pressure Equal.	Flare	Flare	Solder		Flare	Solder	Solder
				[inch]	[inch]	[mm]	[inch]	[inch]	[inch]	[mm]
R404A / R507A	RFKH03-4.8-106	10201017902	flare / flare	3/8	1/2	-	-	-	-	-
	RFKH03E-4.8-105	10201017802	flare / flare / flare		1/2	-	-	1/4	-	-
	RFKH03-4.8-102	10201017502	flare / solder		-	12	-	-	-	-
	RFKH03E-4.8-101	10201017402	flare / solder / solder		-	12	-	-	-	6
	RFKH03-4.8-103	10201017602	flare / solder		-	-	1/2	-	-	-
	RFKH03E-4.8-104	10201017702	flare / solder / solder		-	-	1/2	-	1/4	-

*Tab. E : Models with Range B : Temperature Range from -60°C to -25°C [ with MOP -20°C ]*

Ref.	Model Valve Body	Part Number <sup>1 &amp; 4)</sup>	Connection type	Inlet ØA	Outlet ØB			Ext. ØC		
			In / Out / Ext. Pressure Equal.	Flare	Flare	Solder		Flare	Solder	Solder
				[inch]	[inch]	[mm]	[inch]	[inch]	[inch]	[mm]
R404A / R507A	RFKH03-4.8-406	10201015602	flare / flare	3/8	1/2	-	-	-	-	-
	RFKH03E-4.8-405	10201014402	flare / flare / flare		1/2	-	-	1/4	-	-
	RFKH03-4.8-402	10201015802	flare / solder		-	12	-	-	-	-
	RFKH03E-4.8-401	10201015302	flare / solder / solder		-	12	-	-	-	6
	RFKH03-4.8-403	10201015402	flare / solder		-	-	1/2	-	-	-
	RFKH03E-4.8-404	10201015502	flare / solder / solder		-	-	1/2	-	1/4	-

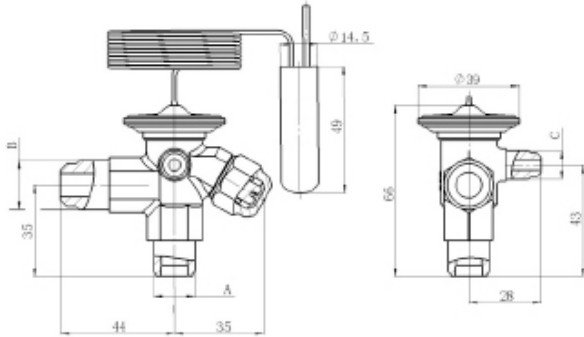
- Note:**
- 1) Extent of delivery: valve body and bulb strap
  - 2) Different evaporation temperature range on request
  - 3) MOP function on request
  - 4) Part Number is referred to Multi Pack



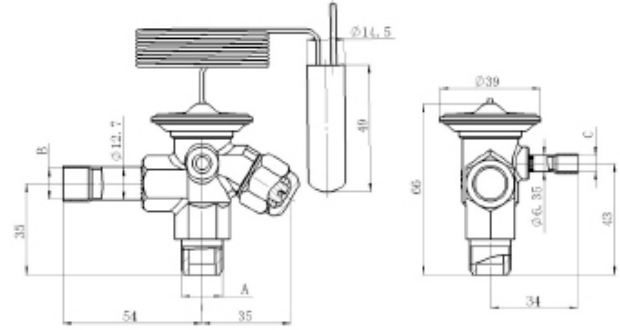
THERMOSTATIC EXPANSION VALVE



DIMENSIONS

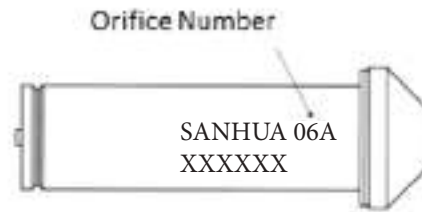


Valve Body - Connection Type: flare/flare/flare



Valve Body - Connection Type: flare/solder/solder

ACCESSORIES

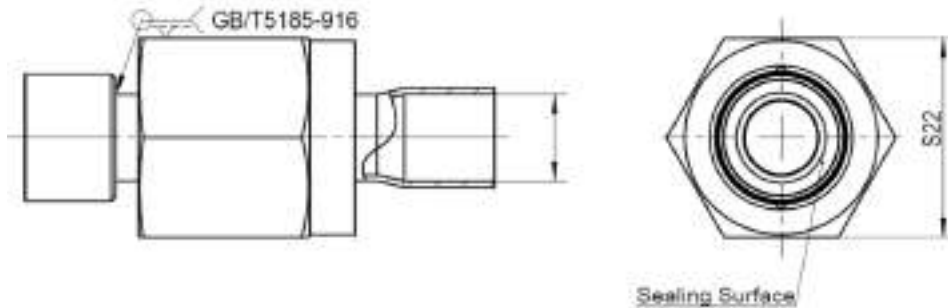


ORIFICE

Valve Orifice Model	Part Number	Orifice Number	Nominal Capacity <sup>1)</sup> [ kW ]										
			R22	R407C	R404A R507A	R134a	R410A	R407A R407F	R448A	R449A	R450A	R452A	R513A
RFKH-023-0X	10202001702	0X	1.0	1.0	0.7	0.69	1.1	1.0	1,1	1,0	0,6	0,8	0,6
RFKH-023-00	10202001002	0	1.9	2.1	1.4	1.2	2.2	1.8	2,1	2,0	1,1	1,5	1,0
RFKH-023-01	10202001102	1	3.8	4.0	2.8	2.1	4.5	3.7	4,0	4,0	1,9	3,0	1,8
RFKH-023-02	10202001202	2	5.1	5.4	4.0	2.7	5.6	5.1	5,0	4,9	2,3	3,7	2,2
RFKH-023-03	10202001302	3	8.6	9.2	6.8	4.4	10.0	8.6	8,9	8,8	4,2	6,7	4,0
RFKH-023-04	10202001402	4	13.2	13.9	10.8	6.5	15.2	13.4	13,6	13,4	6,3	10,1	6,1
RFKH-023-05	10202001502	5	18.1	18.5	14.1	8.6	19.1	17.6	17,0	16,8	7,9	12,7	7,6
RFKH-023-06	10202001602	6	21.3	22.1	16.8	10.3	24.0	21.2	21,4	21,1	9,9	16,0	9,6

- Note:**
- 1) Nominal working conditions: Condensing temperature 38°C; evaporating temperature +4,4°C; liquid temperature 37°C
  - 2) R407C data based on dew point conditions
  - 3) Nominal capacity based on
    - Static Superheat (SS) 5K (for models without MOP) and 4K (for models with MOP)
    - Opening Superheat(OS) 6K

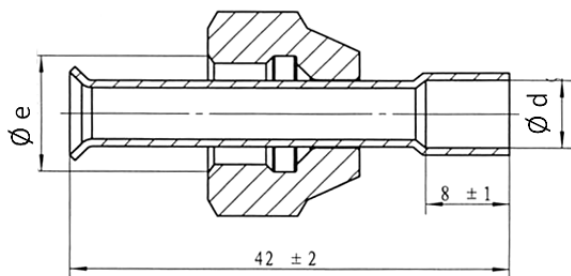
**THERMOSTATIC EXPANSION VALVE**



**SOLDER ADAPTERS FOR RFKH INLET A**

Model	Part Number <sup>1)</sup>	SAE Flare Ø e	Solder Connection Ø d
RFK-A04-038010	20200001602	3/8"	3/8"
RFK-A04-038011	20201002502		10mm
RFK-A04-038012	20201002602		1/4"
RFK-A04-038013	20201002702		6mm

**Note:** 1) Copper pipe and flare nut are in the extent of delivery



**SOLDER ADAPTERS FOR RFKH EXTERNAL PRESSURE EQUALIZATION C**

Model	Part Number <sup>1)</sup>	SAE Flare Ø e	Solder Connection Ø d
RFKA-038-03	20201000502	1/4"	6mm
RFKA-038-04	20201000602		1/4"

**Note:** 1) Copper pipe and flare nut are in the extent of delivery

For complete product family information please visit us at [www.sanhuaeurope.com](http://www.sanhuaeurope.com) and download the full range of datasheet at TECHNICAL INFORMATION LINK.