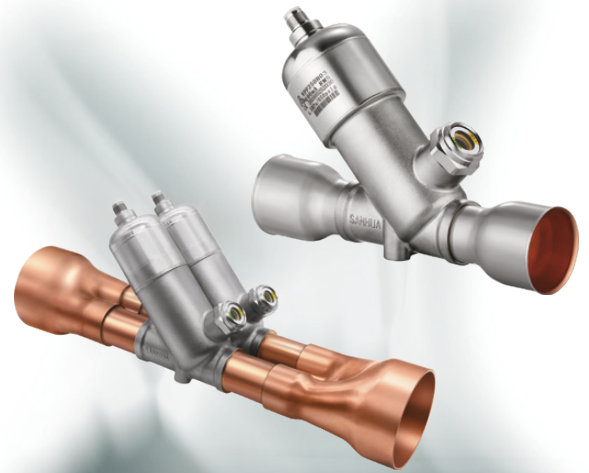


Electronic Expansion Valve

VPF series electronic expansion valves are designed for commercial and industrial applications. Typical VPF applications are air conditioning and refrigeration systems or heat pumps. The valve controls the automatic adjustment of refrigerant flow rate and makes the system work under optimized conditions for the purpose of fast cooling or heating, precise temperature control and energy saving. These valves provide bidirectional operation to control the refrigerant flow rate in heating or cooling mode.

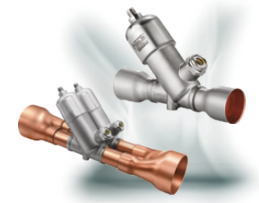


FEATURES

- ENERGY SAVING THANKS TO VERY PRECISE CAPACITY CONTROL: UP TO 3800 STEPS
- INTERNAL TIGHTNESS LIKE A SOLENOID VALVE
- OPTIMIZED FLOW PATH DESIGN FOR NOISE REDUCTION
- APPLICABLE FOR REVERSIBLE SYSTEMS LIKE HEAT PUMPS: BIDIRECTIONAL FLOW
- CORROSION RESISTANT DESIGN, LONG LIFETIME, HIGH RELIABILITY
- COMPACT DESIGN
- MODELS WITH INTEGRATED SIGHT GLASS ARE AVAILABLE
- VPF800: CAN BE OPENED AND CLOSED SYNCHRONOUSLY, ALSO CAN BE CUSTOMIZED ACCORDING TO CUSTOMERS' PROCEDURES

GENERAL SPECIFICATION

- Applicable for all common HCFC, HFC, HFO and flammable refrigerants such as: R22, R134A, R404A, R407C, R410A, R507, R1234ze
- Cooling capacity: from 54 to 2245 kW (R134a nominal capacity)
- Full stroke :
 - 2600 steps VPF12.5, VPF25, VPF50
 - 2700 steps VPF175
 - 3500 steps VPF100
 - 3800 steps VPF150, VPF250, VPF400, VPF800
- Valve opening stroke:
 - 110 steps VPF12.5, VPF25
 - 190 steps VPF175
 - 165 steps VPF50...800
- Medium temperature TS min./max.: -40°C / +90°C (duty cycle rate below 50%)
- Ambient temperature min./max.: -40°C / +60°C (duty cycle rate below 50%)
- Max. operating pressure: VPF12.5/25/50/100/150: 5.0MPa
VPF175/250/400: 4.5MPa, VPF800: 2.5MPa
- Max. OPD: VPF12.5/25/50/100/150: 3.9MPa (Forward and Reverse) , VPF175/250/400: 3.5MPa (Unidirectional), VPF800: 2.5MPa(Unidirectional)
- Relative humidity: 0 to 100% RH
- Storage humidity: 0 to 65% RH (VPF12.5~VPF400); 0 to 85% RH (VPF800)
- Installation position: - Major flow direction from connection A to B
- Installation in horizontal and vertical pipes possible
- Installation position in horizontal lines with stepper motor preferably upwards
- Certifications: UL&CUL and declaration according to PED or EAC



ELECTRICAL PARAMETERS

- Actuating mode: 2-phase 4-step permanent magnet stepping motor
- Excitation mode: 2 phase excitation, bi-pole actuation
- Coil resistance: 52 ± 5,2Ω/coil (20°C)
- Insulation class of coil: E
- Protection class: IP 67

Current drive	
Excitation rate	300 pps Max
Motion time from completely open to completely closed	VPF12.5...VPF50: 8,7s VPF175: 9s VPF100: 11,7s VPF150...VPF800: 12,7s
Nominal motor current*	100mA RMS per phase in control operation
Peak motor current*	140mA RMS per phase in control operation

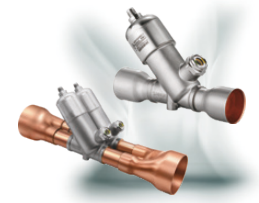
*Specified motor currents are based on max. excitation rates

TECHNICAL PARAMETER

Product Series (Suitable for oil system)	Connections		Valve shape	Sight Glass	Kv ²⁾ [m ³ /h]	Model ¹⁾
	Ød ODF					
	Inlet A x Outlet B					
	[inch]	[mm]				
VPF 12.5	5/8 x 5/8	16 x 16	straight	-	0.8	VPF12.5H52
	7/8 x 7/8	22 x 22				VPF12.5H53
	5/8 x 5/8	16 x 16	L-shape	-		VPF12.5H58
	7/8 x 7/8	22 x 22				VPF12.5H59
VPF 25	5/8 x 5/8	16 x 16	straight	-	1.3	VPF25H52
	7/8 x 7/8	22 x 22				VPF25H53
	5/8 x 5/8	16 x 16	L-shape	-		VPF25H58
	7/8 x 7/8	22 x 22				VPF25H59
VPF 50	7/8 x 7/8	22 x 22	straight	with sight glass	2.4	VPF50H01
	7/8 x 1-1/8	-				VPF50H02
	1-1/8 x 1-1/8	-				VPF50H03
	1-1/8 x 1-3/8	-				VPF50H04
	-	22 x 28				VPF50H06
	-	28 x 28	VPF50H07			
	-	28 x 35	VPF50H08			
	7/8 x 7/8	22 x 22	straight	-		VPF50H51
	1-1/8 x 1-1/8	-				VPF50H53
1-1/8 x 1-3/8	-	VPF50H54				
VPF 100	1-1/8 x 1-1/8	-	straight	with sight glass	4.0	VPF100H01
	1-1/8 x 1-3/8	-				VPF100H02
	1-3/8 x 1-3/8	35 x 35				VPF100H03
	-	28 x 35				VPF100H05
	-	28 x 28	VPF100H06			
	1-1/8 x 1-1/8	-	straight	-		VPF100H51
	1-3/8 x 1-3/8	35 x 35				VPF100H53
VPF 150	1-1/8 x 1-3/8	-	L-shape	with sight glass	7.7	VPF150H01
	1-5/8 x 1-5/8	-				VPF150H02
VPF 250	1-1/8 x 1-1/8	-	straight	with sight glass	12.0	VPF250H41
	1-3/8 x 1-3/8	35 x 35				VPF250H42
	1-5/8 x 1-5/8	-				VPF250H43
	-	28 x 28				VPF250H44
	-	42 x 42				VPF250H45
VPF 400	1-5/8 x 1-5/8	-	straight	with sight glass	17.0	VPF400H01
	-	42 x 42				VPF400H02
	2-1/8 x 2-1/8	54x 54				VPF400H03
VPF 800	3-1/8x3-1/8	-	straight	with sight glass	34.0	VPF800H01

Note:

- 1) Product Model: Only the valve body is included, please purchase the cables separately
- 2) Kv values valid for the flow direction inlet A to outlet B



TECHNICAL PARAMETER

Product Series ¹⁾ (Suitable for oil free system)	Connections		Valve shape	Sight Glass	Kv ²⁾
	Ød ODF				[m ³ /h]
	Inlet A x Outlet B				
	[inch]				
VPF12.5H82	5/8x5/8		straight	-	0.8
VPF25H81	5/8x7/8		straight	-	1.3
VPF50H81	7/8x7/8		straight	Yes	2.4
VPF50H83	1-1/8x1-1/8		straight	Yes	2.4
VPF100H81	1-1/8x1-1/8		straight	Yes	4.0
VPF100H83	1-3/8x1-3/8		straight	Yes	4.0
VPF150H82	1-5/8x1-5/8		straight	Yes	7.7
VPF175H82	1-3/8x2-1/8		straight	Yes	8.9
VPF175H83	1-5/8x2-1/8		straight	Yes	8.9
VPF250H82	1-3/8x1-3/8		straight	Yes	14.0
VPF250H83	1-5/8x1-5/8		straight	Yes	14.0
VPF400H81	1-5/8x1-5/8		straight	Yes	17.0
VPF400H83	2-1/8x2-1/8		straight	Yes	17.0

Note:

- 1) Product Model: Only the valve body is included, please purchase the cables separately
- 2) Kv values valid for the flow direction inlet A to outlet B

COOLING CAPACITY

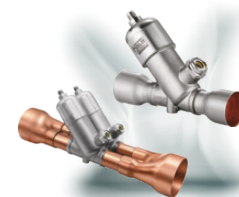
Product Series	Nominal cooling capacity ¹⁾ [kW]						
	R22	R134a	R407A ²⁾	R407C ²⁾	R407F ²⁾	R404A/R507	R410A
VPF12.5	69	54	69	74	78	50	82
VPF25	143	112	144	153	163	105	171
VPF50	287	226	289	307	328	210	343
VPF100	406	319	409	435	463	298	485
VPF150	730	574	736	782	833	535	872
VPF175	819	644	830	883	927	599	980
VPF250	1133	892	1143	1215	1294	832	1354
VPF400	1901	1495	1916	2037	2170	1394	2271
VPF800	3136	2425	3140	3334	3557	2288	3753

Note:

- 1) Nominal conditions : Condensing temperature = 38°C/ Evaporating temperature = +5°C; Liquid temperature = 36°C; Superheat = 6K, supercooling = 2K
- 2) Performances are given in dew point
- 3) Product selection under other working conditions refer to Sanhua QF selection software

VPF SERIES

Electronic Expansion Valve



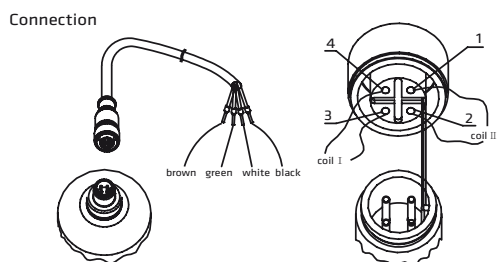
Product Series	Nominal cooling capacity ¹⁾ [RT]						
	R22	R134a	R407A ²⁾	R407C ²⁾	R407F ²⁾	R404A/R507	R410A
VPF12.5	20	15	20	21	22	14	23
VPF25	41	32	41	44	46	30	49
VPF50	82	64	82	87	93	60	97
VPF100	115	91	116	124	132	85	138
VPF150	207	163	209	222	237	152	248
VPF175	233	183	236	251	264	170	279
VPF250	322	254	325	345	368	236	385
VPF400	540	425	545	579	617	396	646
VPF800	892	690	893	948	1012	651	1067

Note:
 1) Nominal conditions : Condensing temperature = 38°C/ Evaporating temperature = +5°C; Liquid temperature = 36°C; Superheat = 6K, supercooling = 2K
 2) Performances are given in dew point
 3) Product selection under other working conditions refer to Sanhua QF selection software

ACCESSORIES: Connection Cable

Model	Cable Length [m]
Y02A	2
Y08A	8

Note:
 1) The cable is used to connect the valve body stepper motor interface and the controller
 2) Cable-VPF valve connection in IP67



Excitation way and valve-on and valve-off connection graph

	Step sequence	First winding		Second winding		
		red	green	white	black	
↑ close valve	1	+	-	+	-	↓ open valve
	2	+	-	-	+	
	3	-	+	-	+	
	4	-	+	+	-	
	1	+	-	+	-	