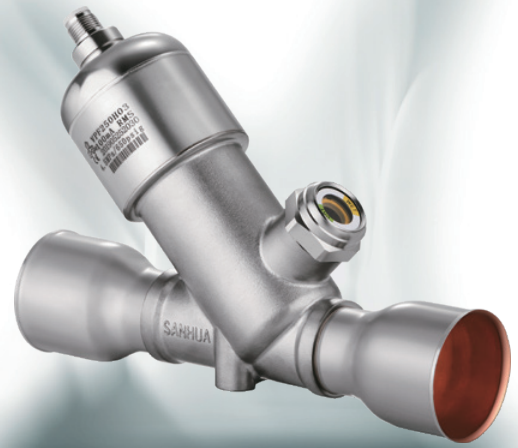


VPF SERIES

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. The valve can also be used for Suction Line pressure controls. 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

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 1397 kW (R134a nominal capacity)
- Full stroke :
 - 2600 steps VPF12.5, VPF25, VPF50
 - 3500 steps VPF100
 - 3800 steps VPF150, VPF250, VPF400
- Valve opening stroke:
 - 110 steps VPF12.5, VPF25
 - 165 steps VPF50...400
- 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: 3.9Mpa
VPF250/400: 4.5Mpa
- Max. OPD: VPF12.5/25/50/100/150: 3.9Mpa (Forward and Reverse)
VPF 250/400: 3.5Mpa (Unidirection)
- Relative humidity: 0 to 100% RH
- Storage humidity: 0 to 65% RH
- 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

VPF SERIES

Electronic Expansion Valve



ELECTRICAL PARAMETERS

- Actuating mode: 2-phase 4-step permanent magnet stepping motor
- Excitation mode: 2 phase excitation, bi-pole actuation
- Coil resistance: $52 \pm 5,2\Omega/\text{coil}$ (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 VPF100: 11,7s VPF150...VPF400: 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

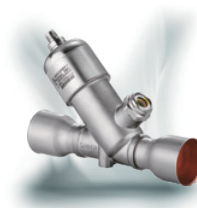
| Product Series (Suitable for oil system) | Connections | | Valve shape | Sight Glass | Kv ²⁾ | Model ¹⁾ |
|---|--------------------|---------|-------------|------------------|---------------------|---------------------|
| | Ød ODF | | | | | |
| | Inlet A x Outlet B | | | | [m ³ /h] | |
| | [inch] | [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 | straight | - | | VPF50H06 |
| | - | 28 x 28 | | | | VPF50H07 |
| | - | 28 x 35 | | | | VPF50H08 |
| | 7/8 x 7/8 | 22 x 22 | | | | VPF50H51 |
| | 7/8 x 1-1/8 | - | | | | VPF50H52 |
| | 1-1/8 x 1-1/8 | - | | | | VPF50H53 |
| | 1-1/8 x 1-3/8 | - | | | | VPF50H54 |
| | - | 22 x 28 | | | | VPF50H56 |
| | - | 28 x 28 | | | | VPF50H57 |
| | - | 28 x 35 | | | | VPF50H58 |
| 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 | straight | - | | VPF100H06 |
| | 1-1/8 x 1-1/8 | - | | | | VPF100H51 |
| | 1-1/8 x 1-3/8 | - | | | | VPF100H52 |
| | 1-3/8 x 1-3/8 | 35 x 35 | | | | VPF100H53 |
| | - | 28 x 28 | | | | VPF100H54 |
| | - | 28 x 35 | | | | VPF100H55 |
| 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 | VPF250H01 |
| | 1-3/8 x 1-3/8 | 35 x 35 | | | | VPF250H02 |
| | 1-5/8 x 1-5/8 | - | | | | VPF250H03 |
| | - | 28 x 28 | | | | VPF250H04 |
| | | 42 x 42 | VPF250H05 | | | |
| 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 | 54 x 54 | | | | VPF400H03 |

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

VPF SERIES

Electronic Expansion Valve



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 |
| 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 |

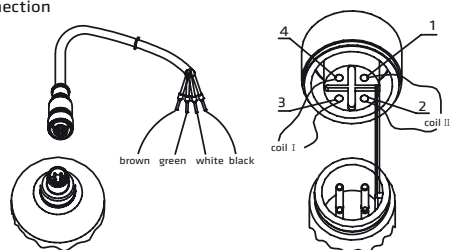
ACCESSORIES: Connection Cable

| 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

Connection



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 | + | - | + | - | |