Series R Electronic Expansion Valve

1、 Nomenclature

DPF （R） □ □-□□

- Arabic numbers to show design sequence. E.g.01，02，03…
- Code of refrigerant: A=R22，can be omitted；
  B=R407C； C=410A
- Arabic numbers to show Port size
- Code of series， R=Series R
- Base code of valve

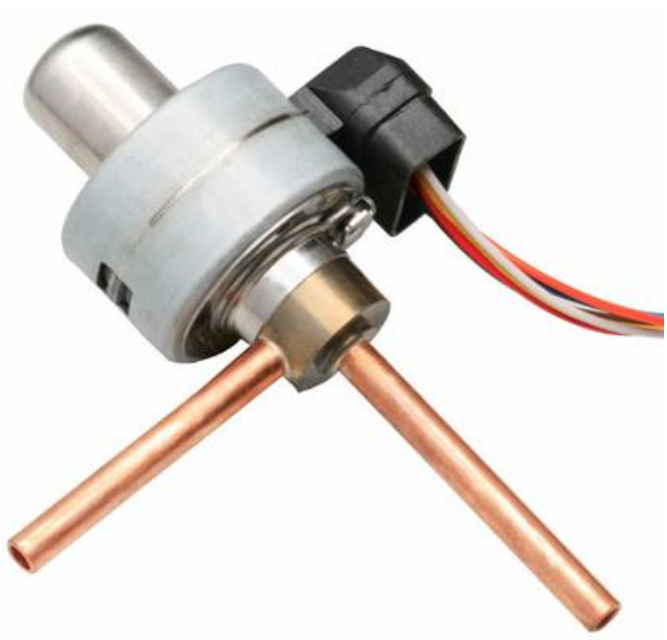
2、Introduction of Series R EXV

Series R EXV is mainly used in HP water heater with CO2 to adjust flow of refrigerant automatically. Thus the water heater can always stay at the optimized working conditions with quick heating, precise temperature control, low energy consumption, etc. This valve can only be used in one direction to automatically control the flow under heating condition.

Series R Electronic Expansion Valve (EXV) is mainly composed of valve body and coil. The pulses applied to the coil drive the current to control the step motor inside the valve which can synchronize the turning of valve pin to open or close the valve. The flow will change automatically.

Characteristics of Series O EXV: small size, high pressure proof, reliable operation

Pictures of Series R EXV



3、Specs of Series R EXV

1）Specs：

Product Number	Port(mm)	Nominal Capacity (kW)	Full Open Pulses	Open Valve Pulse
DPF(R)1.5D	Φ1.5	4.5	500	32±20

2）Related Parameters：

No	Item	Parameters
1.	Fluid：	CO_2+refrigerant oil
2.	Working Pressure：	0～14MPa
3.	Burst Pressure：	42MPa or above
4.	Pressure：	21MPa or above
5.	Max. operation pressure difference	10MPa or above (rated voltage 90%)
6.	Pressure Endurance：	△P=10MPa，0←→500 as one cycle，life 50times
7.	Flow direction：	Positive direction
8.	Internal Leak：	≤600mL/min(1.0MPa)
9.	Life Cycle：	0←→14MPa，200k cycles
10.	Rated Voltage：	DC12V
11.	Insulation：	E
12.	Operation：	Phase 4 permanent motor direct drive
13.	Excitation：	Phase 1-2，Single Pole drive
14.	Excitation Speed：	40PPS

4、Operation Conditions

1.Voltage: 90%～110% of rated voltage;

2.Fluid temperature: -30℃～+100℃(Conductivity 40% or less);

3.Ambient Temperature: -30℃～+60℃(Conductivity 40% or less);

4.Relative humidity: less than 95%。

5、Notes for Applciation

1. Status out of factory: Valve keeps open @ 300 pulses and it may change for the vibration of transportation;
2. Adjust the starting point: Close the valve and adjust the starting point to Phase A excitation;
3. Stop drive: Add excitation for 0.5sec more after the valve stops;
4. Start drive: add 0.5+sec excitation to the last stopped excitation and operate the valve.
5. Drive reversibly: Add 0.5+sec excitation to the excitation phase of last movement to reverse the valve.
6. Two among six wires are common wires which shall be connected to positive pole of power source.
7. The EXV with PM step motor can keep the openness of valve without power.
8. The coil and valve body shall be packaged separately and coil cannot be mounted until the valve is brazed.
9. The valve shall be installed upright with coil on the top. The deviation can be ±15° vertically.
10. The excitation speed shall be same to the specified when the valve is in use.
11. When the valve is brazed, the valve body shall be kept below 120℃ by using a wet cloth or showering the valve body.
12. The flame cannot blow toward the valve body directly and nitrogen gas shall go through the valve to avoid oxidation. Water shall not get into the valve during brazing.
13. Mount the coil: The clipper of coil shall be fixed onto the valve tightly.
14. The inside of valve shall keep dry and clean during warehousing or transportation or the magnet can get rust and affect the operation.
15. The inlet and outlet of the valve shall be installed with 100+ mesh screen.
16. Direction of flow: heat pump: A→B (heating)、B→A (Cooling) ; Cooling only: B→A。
17. There might be abnormal noise when the valve is installed in the refrigeration system. And system test is required in advance.
18. The output voltage of controller shall match the rated voltage of EXV coil or the coil may be burnt and the valve cannot work properly.