

# Electronic Expansion Valve

T/S series electronic expansion valves are designed for use in air conditioning and refrigeration systems or in 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 e.g. for suction line pressure controls. These valves provide bidirectional operation to control the refrigerant flow rate in heating or cooling mode.



## FEATURES

- APPLICABLE FOR OIL-FREE SYSTEM (T SERIES)
- SMALLER INSTALLATION SPACE: LOW HEIGHT, SMALL VOLUME, LIGHT WEIGHT
- OPTIMIZED FLOW PATH DESIGN FOR NOISE REDUCTION
- FAST OPERATION, ENERGY SAVING
- APPLICABLE FOR REVERSIBLE SYSTEMS LIKE HEAT PUMPS: BIDIRECTIONAL FLOW

## GENERAL SPECIFICATIONS

- Applicable for all common HFC, HFO refrigerants such as: R134a, R404A, R407A/F, R407C, R410A, R448A, R449A, R450A, R452A, R513A, R507A<sup>1)</sup>
- Cooling capacity: 3,5 to 105 kW (R22 nominal capacity)
- 500 steps (full stroke); 32 ± 20 opening steps
- Medium temperature TS min./max.: -30°C / +70°C (duty cycle rate below 50%)
- Ambient temperature min./max.: -30°C / +60°C (duty cycle rate below 50%)
- Relative humidity: : 0 to 95% RH
- Installation position:
  - Coil installed in the upwards position, valve rotor central axis within ±15° versus vertical axis
  - Inlet connection preferably sidewise, outlet preferably downwards
- Certifications: UL/CSA and declaration according to LVD or PED

**Note:** 1) Flammable refrigerants like R32, R290, R1234ze(E), R1234yf on request

# DPF-T/S SERIES

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### ELECTRICAL PARAMETERS

- Rated voltage: 12V DC(± 10%), rectangular wave
- Actuating mode: 4-phase 8-step permanent magnet stepping motor of direct-acting type
- Excitation mode: 1~2 phase excitation, monopole actuation
- Excitation rate:
  - Seat Ø 1,3 to 3,2 mm: 30 to 90pps
  - Seat Ø 4,0 to 6,5 mm: 30 to 40pps
- Activation of self-holding mechanism: Maintain excitation in stop position min. 0,1~1,0 sec.
- Min. motion time from completely open to completely closed:
  - Seat Ø 1,3 to 3,2 mm: 6s @ 90pps
  - Seat Ø 4,0 to 6,5 mm: 13s @ 40pps
- Coil current:
  - Seat Ø 1,3 to 3,2 mm: 260mA/phase (20°C)
  - Seat Ø 4,0 to 6,5 mm: 375mA/phase (20°C)
- Coil resistance:
  - Seat Ø 1,3 to 3,2 mm: 46 ± 3.7 Ω/phase (20°C)
  - Seat Ø 4,0 to 6,5 mm: 32 ± 3.2 Ω/phase (20°C)
- Insulation class of coil: E
- Protection class: IP 67

### GENERAL CHARACTERISTICS

Valve Model	Part Number* 1)	Seat Ø (mm)	Kv (m <sup>3</sup> /h)	Nominal Cooling Capacity 2) [kW]					MOP Max. Oper. Press. [MPa]	MOPD Direct [MPa]	MOPD Rev. (MPa)
				R22	R134a	R407C <sup>3)</sup>	R404A R507A	R410A			
DPF(T01)1.3C-07	10130365902	1,3	0,05	5,2	4,1	5,4	3,6	6,1	4,5	3,5	≥2.1
DPF(T01)1.65C-05	10130316802	1,65	0,08	8,9	6,9	9,2	6,2	10,4			
DPF(T01)1.8C-08	10130364802	1,8	0,1	10,6	8,3	10,9	7,4	12,4			
DPF(T01)2.0C-03	10130365702	2	0,16	13,1	10,2	13,5	9,2	15,3			
DPF(T01)2.2C-01	10130320702	2,2	0,2	14,1	11,0	14,5	9,9	16,5			
DPF(T01)2.4C-01	10130361302	2,4	0,23	16,6	12,9	17,1	11,6	19,4			
DPF(TS1)3.0C-01	10130366102	3	0,39	27,8	21,7	28,6	19,4	32,5			≥1.5
DPF(TS1)3.2C-01	10130366002	3,2	0,43	30,3	23,7	31,3	21,2	35,5			
DPF(S03)4.0C-01	10130355702	4	0,5	50,4	39,3	51,9	35,3	59,0			
DPF(S03)4.5C-01	10130035502	4,5	0,7	67,9	53,0	70,0	47,6	79,5			≥0.7
DPF(S03)5.5C-01	10130355802	5,5	0,9	78,2	61,0	80,6	54,7	91,5			
DPF(S03)6.5C-02	10130355902	6,5	1,1	95,6	74,5	98,4	66,9	111,8			

**Note:** \* Available also as industrial package. Contact Sanhua for more details.

1) Extent of delivery without coil

2) Nominal working conditions: Condensing Temperature 38°C; Evaporating Temperature 5°C; Sub-cooling OK; Superheat OK

3) Nominal capacity is got at 480 fully open pulses of linear flow curve.

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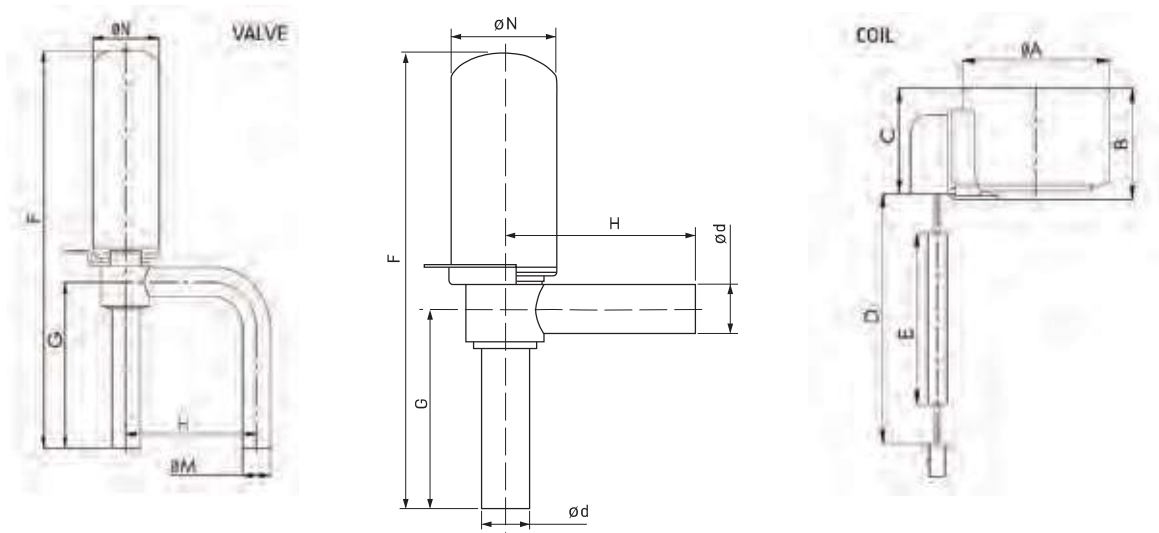
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### FLOW CHARACTERISTIC



### DIMENSIONS



Valve Model	Coil Series	Valve Dimensions [mm]				
		F	G	H	Ød	ØN
DPF(T01)1.3C-07 to DPF(T01)2.4C-01	PQ-M10	78	36	30	6,35	17,35
DPF(TS1)3.0C-01 to DPF(TS1)3.2C-01		82	40	30	7,94	17,35
DPF(S03)4.0C-01 to DPF(S03)6.5C-02	PQ-M03	148	64,7	63,4	15,88	35,3

Valve Model	Coil Model	Part Number	Coil Dimensions [mm]					Part Number
			ØA	B	C	D	E	
DPF(T01)1.3C-07 to DPF(TS1)3.2C-01	PQ-M10 012-000277	10810069001	38,5	26,4	25,6	700	600	10810069002
DPF(S03)4.0C-01 to DPF(S03)6.5C-02	PQ-M03 012-000001	10810011601	67,5	42,4	33	700	600	10810011602