***LPF** SERIES*

ELECTRONIC EXPANSION VALVE



LPF series Electronic Expansion Valves are especially designed for use in refrigeration systems. Thanks to the soft-sealing seat design, it can be as tight as a solenoid valve once it is completely shut off thus to prevent liquid refrigerant migrate to evaporator or compressor.

FEATURES

- EXTREMELY HIGH INTERNAL TIGHTNESS, WHICH IS AS GOOD AS WITH SOLENOID VALVES(<1ML/MIN)
- EQUAL PERCENTAGE FLOW DESIGN FOR BETTER FLOW REGULATION
- SNAP-ON COIL FOR EASIER INSTALLATION
- COIL WITH IP67 WORKS SAFELY IN EXTREMELY ENVIRONMENT
- APPLICABLE FOR OIL-FREE SYSTEM (NOT INCLUDE LPF45-62)
- BUILT-IN STRAINER AT INLET
- FLOW DIRECTION: UNI-FLOW
- LPF...T : 90 BAR DESIGN FOR R744 REFRIGERANT

GENERAL SPECIFICATION

- Applicable for all common HFCF, HFC and HFO refrigerants (such as: R134a, R404A, R407A/F, R407C, R410A, R448A, R449A, R450A, R452A, R513A, R507A and also for flammable refrigerants like R290,R1234ze, R454C, R455A, R1234yf and R744 (CO_2)
- 500 steps (full stroke); 32±20 (LPF 03~32); 42±30 (LPF45~62) opening steps
- Temperature:

LPF Model	Medium temperature Min/Max	Ambient temperature Min/Max
LPF03 ~ 32	-40°C / +70°C (1)	-40°C / +60°C (1)
LPF45 ~ 62	-40°C / +70°C (2)	-30°C / +60°C (2)
LPF03T ~ 32T	-40°C / +70°C (1)	-40°C / +60°C (1)

(1)duty cycle rate below 40% / (2)duty cycle rate below 50%

- Relative humidity: 0 to 95% RH
- Pressures:

LPF Model	MPW	MOPD
LPF03 ~ 32	42 bar	35 bar
LPF45 ~ 62	49 bar	35 bar
LPF03T ~ 24T	90 bar	50 bar
LPF30T ~ 32T	90 bar	35 bar

- Declaration according to LVD and PED (on going for LPF-T range)
- Suitable with the EN 60335-2-24 / 2-40 / 2-89 (on going for LPF-T range)

ELECTRONIC EXPANSION VALVE



ELECTRICAL PARAMETERS

- Rated voltage: 12V DC(± 10%), rectangular wave
- Excitation mode: 1 - 2 phase excitation, uni-polar actuation

LPF Model	Excitation rate	Full stroke time
LPF03 ~ 32	30 - 90pps	6s@ 90pps
LPF45 ~ 62	30 - 40pps	13s@40pps
LPF03T ~ 32T	30 - 90pps	6s@ 90pps

- Coil current: 260mA/phase (20°C)
- Coil resistance: 46 ± 3.7 Ω/phase (20°C)
- Insulation class of coil: E
- Protection class: IP 67
- Compatible with Sanhua controller SEC series

GENERAL CHARACTERISTICS

Condition 1: Tc/Te/Sc/SH: 45oC/-10oC/2K/6K (0 °C/-20 °C/2K/6K for R744)

Valve Model	Seat Φ (mm)	Kv (m^3/h)	Maximal Cooling Capacity [kW]							
			R134a	R404A	R407F	R448A	R449A	R450A	R452A	R513A
LPF03/LPF03T	0.3	0.009	0.90	0.80	1.28	1.14	1.12	0.79	0.84	0.74
LPF05/LPF05T	0.5	0.014	1.39	1.23	1.97	1.75	1.72	1.21	1.29	1.15
LPF08/LPF08T	0.8	0.025	2.3	2.0	3.2	2.8	2.8	2.0	2.1	1.84
LPF10/LPF10T	1.0	0.04	3.6	3.2	5.1	4.6	4.5	3.2	3.4	3.0
LPF14/LPF14T	1.4	0.08	6.9	6.1	9.7	8.7	8.5	6.0	6.4	5.7
LPF18/LPF18T	1.8	0.12	9.5	8.4	13.5	12.0	11.8	8.3	8.8	7.9
LPF24/LPF24T	2.4	0.20	13.0	11.5	18.4	16.4	16.1	11.3	12.1	10.8
LPF30/LPF30T	3.0	0.27	18.4	16.2	26.0	23.3	22.7	16.0	17.1	15.2
LPF32/LPF32T	3.2	0.30	20.2	17.8	28.5	25.5	24.9	17.6	18.7	16.6
LPF45	4.5	0.5	45.3	39.9	64.0	57.1	55.9	39.5	41.9	37.3
LPF52	5.2	0.7	60.6	53.4	85.6	76.3	74.8	52.8	56.0	49.9
LPF55	5.5	0.9	70.2	61.8	99.1	88.4	86.6	61.1	64.8	57.7
LPF62	6.2	1.1	85.3	75.2	102.5	107.5	105.3	74.4	78.9	70.2

Valve Model	Seat Φ (mm)	Kv (m^3/h)	Maximal Cooling Capacity [kW]							
			R454B	R454C	R455A	R1234yf	R1234ze	R290	R410A	R744
LPF03/LPF03T	0.3	0.009	1.62	0.98	1.06	0.63	0.70	1.21	1.39	1.89
LPF05/LPF05T	0.5	0.014	2.49	1.51	1.64	0.98	1.08	1.86	2.14	2.91
LPF08/LPF08T	0.8	0.025	4.0	2.4	2.6	1.6	1.7	3.0	3.4	4.7
LPF10/LPF10T	1.0	0.04	6.5	3.9	4.3	2.6	2.8	4.9	5.6	7.6
LPF14/LPF14T	1.4	0.08	12.4	7.5	8.1	4.8	5.3	9.2	10.6	14.4
LPF18/LPF18T	1.8	0.12	17.1	10.3	11.2	6.7	7.4	12.8	14.6	19.9
LPF24/LPF24T	2.4	0.2	23.4	14.1	15.3	9.2	10.1	17.5	20.0	27.2
LPF30/LPF30T	3.0	0.27	33.0	19.9	21.7	12.9	14.2	24.7	28.3	38.5
LPF32/LPF32T	3.2	0.30	36.2	21.8	23.7	14.2	15.6	27.0	31.0	42.1
LPF45	4.5	0.5	81.1	49.0	53.3	31.7	35.0	60.6	69.5	-
LPF52	5.2	0.7	108.5	65.5	71.2	42.5	46.8	81.1	93.0	-
LPF55	5.5	0.9	125.5	75.8	82.5	49.2	54.2	93.9	107.6	-
LPF62	6.2	1.1	152.7	92.3	100.3	59.8	65.9	114.2	130.9	-

ELECTRONIC EXPANSION VALVE



Condition 2: Tc/Te/Sc/SH: 45°C/-35°C/2K/6K (-10°C/-40°C/2K/6K for R744)

Valve Model	Seat Φ (mm)	Kv (m^3/h)	Maximal Cooling Capacity [kW]							
			R134a	R404A	R407F	R448A	R449A	R450A	R452A	R513A
LPF03/LPF03T	0.3	0.009	0.85	0.73	1.23	1.08	1.06	0.72	0.76	0.68
LPF05/LPF05T	0.5	0.014	1.31	1.13	1.90	1.67	1.63	1.11	1.18	1.05
LPF08/LPF08T	0.8	0.025	2.1	1.8	3.1	2.7	2.6	1.8	1.9	1.7
LPF10/LPF10T	1.0	0.04	3.4	3.0	5.0	4.4	4.3	2.9	3.1	2.7
LPF14/LPF14T	1.4	0.08	6.5	5.6	9.4	8.3	8.1	5.5	5.8	5.2
LPF18/LPF18T	1.8	0.12	9.0	7.7	13.0	11.4	11.2	7.6	8.0	7.2
LPF24/LPF24T	2.4	0.2	12.3	10.6	17.8	15.6	15.3	10.5	11.0	9.9
LPF30/LPF30T	3.0	0.27	17.4	15.0	25.1	22.1	21.6	14.8	15.6	13.9
LPF32/LPF32T	3.2	0.30	19.0	16.4	27.5	24.2	23.7	16.2	17.0	15.3
LPF45	4.5	0.5	42.6	36.8	61.7	54.3	53.1	36.3	38.3	34.2
LPF52	5.2	0.7	57.0	49.2	82.6	72.7	71.7	48.5	51.2	45.8
LPF55	5.5	0.9	66.0	57.0	95.6	84.1	82.2	56.2	59.2	53.0
LPF62	6.2	1.1	80.3	69.3	116.3	102.3	100.0	68.3	72.1	64.5

Valve Model	Seat Φ (mm)	Kv (m^3/h)	Maximal Cooling Capacity [kW]							
			R454B	R454C	R455A	R1234yf	R1234ze	R290	R410A	R744
LPF03/LPF03T	0.3	0.009	1.63	0.90	0.98	0.56	0.63	1.16	1.39	2.18
LPF05/LPF05T	0.5	0.014	2.51	1.39	1.51	0.87	0.98	1.79	2.14	3.36
LPF08/LPF08T	0.8	0.025	4.0	2.2	2.4	1.4	1.6	2.9	3.5	5.4
LPF10/LPF10T	1.0	0.04	6.6	3.6	4.0	2.3	2.6	4.7	5.6	8.8
LPF14/LPF14T	1.4	0.08	12.5	6.9	7.5	4.3	4.8	8.8	10.6	16.6
LPF18/LPF18T	1.8	0.12	17.2	9.5	10.4	6.0	6.7	12.2	14.6	23.0
LPF24/LPF24T	2.4	0.2	23.5	13.0	14.2	8.2	9.2	16.7	20.0	31.5
LPF30/LPF30T	3.0	0.27	33.3	18.4	20.0	11.6	12.9	23.6	28.3	44.5
LPF32/LPF32T	3.2	0.30	36.4	20.2	21.9	12.7	14.2	25.9	30.9	48.7
LPF45	4.5	0.5	81.7	45.2	49.1	28.3	31.8	58.1	69.4	-
LPF52	5.2	0.7	109.3	60.5	65.8	37.9	42.5	77.7	92.9	-
LPF55	5.5	0.9	126.6	70.1	76.1	43.8	49.2	89.9	107.5	-
LPF62	6.2	1.1	153.9	85.2	92.6	53.3	59.9	109.4	130.8	-

Note: The Max capacity is given for full opened position

LPF... is standard series, LPF...T is designed for CO_2 application

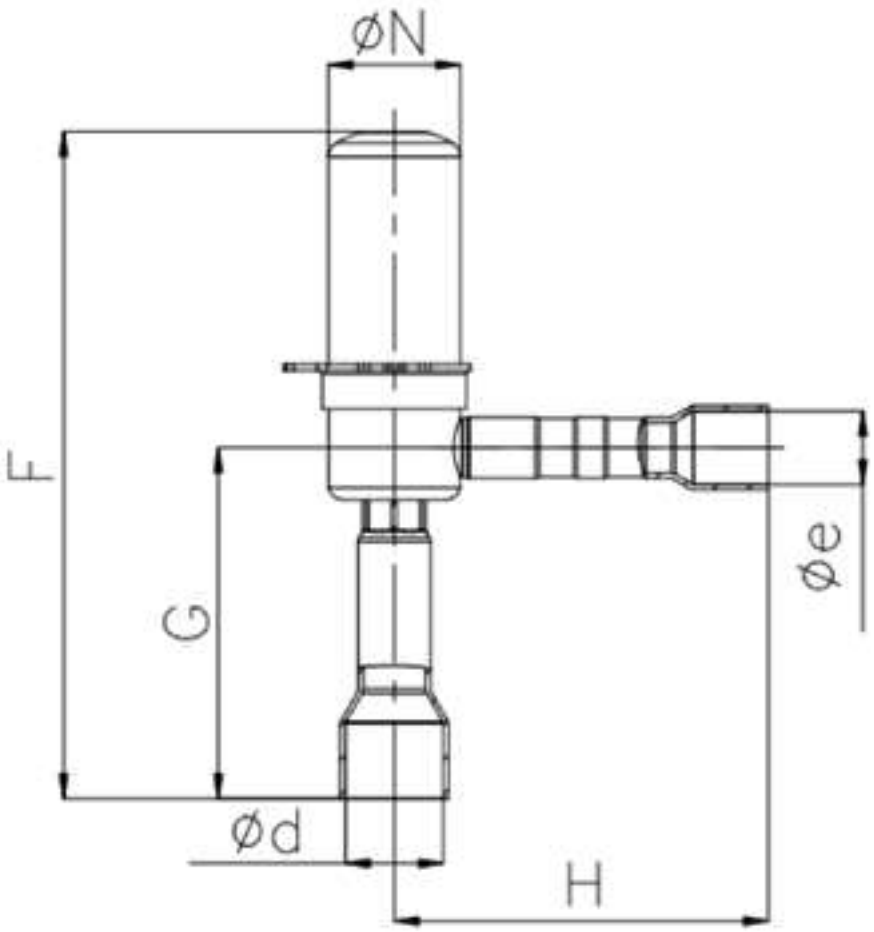
ELECTRONIC EXPANSION VALVE



DIMENSIONS

(Unit is mm)

ØN = 17.35 mm



ELECTRONIC EXPANSION VALVE



Valve Model	U11 Code Multi-Pack	Dimensions					Weight (g)
		F	G	H	Øe Inlet	Ød Outlet	
LPF03-001	10136007902	87	45.8	49	3/8	1/2	51.8
LPF03-002	10136010802				1/4	1/4	44.2
LPF05-001	10136008102				3/8	1/2	51.8
LPF05-002	10136010902				1/4	1/4	44.2
LPF08-001	10136003202				3/8	1/2	51.8
LPF08-002	10136003302				1/4	1/4	44.2
LPF08-003	10136004302				10mm	12mm	51
LPF10-002	10136000502				3/8	1/2	51.8
LPF10-003	10136000602				1/4	3/8	47.7
LPF10-004	10136000702				10mm	12mm	51
LPF10-005	10136000802				6mm	10mm	49.4
LPF14-002	10136000902				3/8	1/2	51.8
LPF14-003	10136001002				1/4	3/8	47.7
LPF14-004	10136001102				10mm	12mm	50.9
LPF14-005	10136001202				6mm	10mm	49.3
LPF18-002	10136001302				3/8	1/2	51.8
LPF18-003	10136001402				10mm	12mm	50.9
LPF24-002	10136001502				3/8	1/2	51.7
LPF24-003	10136001602				10mm	12mm	50.8
LPF30-001	10136003902				3/8	1/2	52.6
LPF30-002	10136004602				10mm	12mm	51.7
LPF32-001	10136003402				3/8	1/2	52.6
LPF32-002	10136004002				1/4	3/8	48.4
LPF32-003	10136004502				10mm	12mm	51.7
LPF45-001	10136007302	116	62.5	57.2	5/8	5/8	104.6
LPF52-001	10136007402						104.3
LPF55-001	10136007502						104.0
LPF62-001	10136007602						103.6

ELECTRONIC EXPANSION VALVE

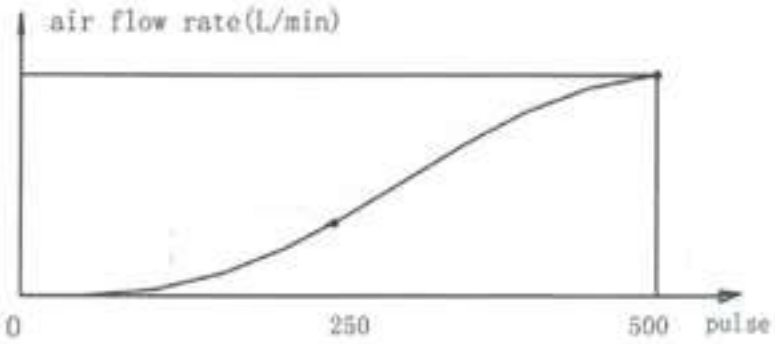


Valve Model	U11 Code Multi-Pack	Dimensions					Weight (g)
		F	G	H	Øe Inlet	Ød Outlet	
LPF03T-001	10136007702				3/8	1/2	60
LPF03T-002	10136010302				6mm	10mm	49.2
LPF05T-001	10136007802	88.5	45.8	49	3/8	1/2	60
LPF05T-002	10136010502				6mm	10mm	49.2
LPF08T-001	10136005402				3/8	1/2	60
LPF08T-002	10136006402	84.5	41.8	45	1/4	1/4	45.5
LPF08T-003	10136008202			49	10mm	12mm	59.8
LPF08T-004	10136010402			49	6mm	10mm	49.2
LPF10T-002	10136005502			49	3/8	1/2	60
LPF10T-003	10136005602			45	1/4	3/8	49.2
LPF10T-004	10136006502			49	10mm	12mm	59.9
LPF10T-005	10136006602			45	6mm	10mm	49.2
LPF14T-002	10136005702			49	3/8	1/2	60
LPF14T-003	10136005802			45	1/4	3/8	49.2
LPF14T-004	10136006702			49	10mm	12mm	59.9
LPF14T-005	10136006802	88.5	45.8	45	6mm	10mm	49.2
LPF18T-002	10136005902			49	3/8	1/2	59.9
LPF18T-003	10136006902			49	10mm	12mm	59.8
LPF24T-002	10136006002			49	3/8	1/2	59.9
LPF24T-003	10136007002			49	10mm	12mm	59.8
LPF30T-001	10136006102			49	3/8	1/2	59.8
LPF30T-002	10136007102			49	10mm	12mm	59.7
LPF32T-001	10136006202			49	3/8	1/2	59.8
LPF32T-002	10136006302			45	1/4	3/8	49
LPF32T-003	10136007202			49	10mm	12mm	59.7

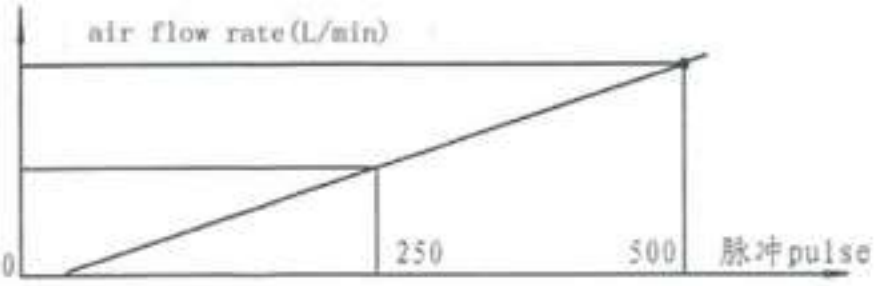
ELECTRONIC EXPANSION VALVE



FLOW CHARACTERISTIC (EQUAL PERCENTAGE)



LPF and LPF-T (03-32)

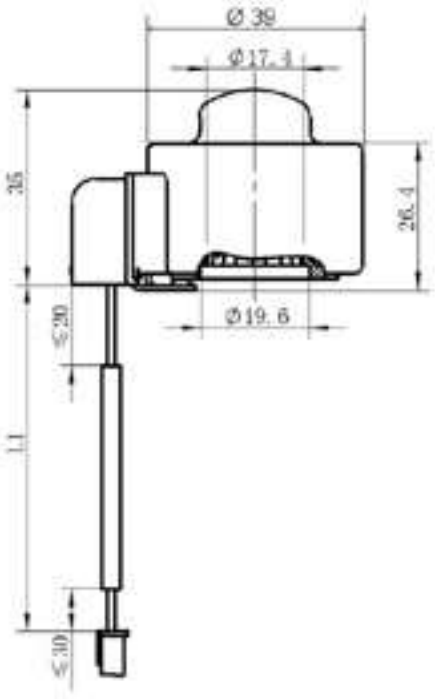


LPF 45-62

ELECTRONIC EXPANSION VALVE



The coil is separated
(Unit is mm)



Coil Model	Coil Code number	Coil Dimensions [mm]	Weight (g)
		L1	
PQ-M24012-000007	10810127602	1500	140,2
PQ-M24012-000008	10810129502	3000	
PQ-M24012-000009	10810129602	6000	
PQ-M24012-000010	10810129702	9000	