

SPF 系列电子膨胀阀

SPF Series electronic expansion valve



SPF12.5/25



SPF50/100



SPF250/400

产品概述 Product Description

SPF型系列电子膨胀阀适用于商用冷柜、大型冷库和热泵等制冷系统中，精确控制系统中制冷剂流量，使系统始终在最佳状态下运行，达到快速制冷，实现精准控制和节能的目的。

SPF series electronic expansion valve is suitable for refrigeration systems such as commercial refrigerators, large refrigeration storages and heat pumps. It can accurately control the refrigerant flow in the system, so that the system can always run in the best state, achieve rapid cooling, and achieve the goal of precise control and energy saving.

特点 Features

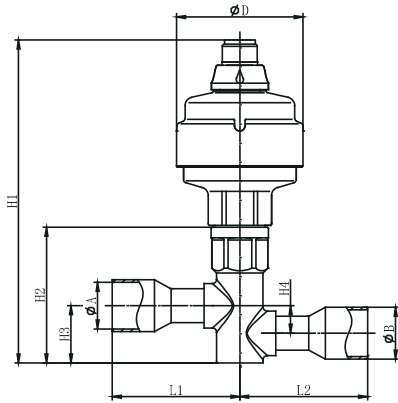
- 集电磁阀、膨胀阀、视镜功能于一体，性能稳定可靠；
- 反应和动作速度快，调节精准；
- 膨胀阀新结构设计，易拆卸清理，噪音低；
- SPF系列产品采用平衡口设计，逆向开阀压力高，具有双向截止功能；
- 适用于少油或无油系统。

- Integrated with the function of solenoid valve, expansion valve and sight glass, stable and reliable performance;
- Fast response and action, precise adjustment;
- New structure design of expansion valve, easy to dismantle and clean, low noise;
- SPF series products apply a balanced port design with high reverse valve opening pressure, and have bidirectional cut-off function;
- Suitable for systems with little oil or no oil.

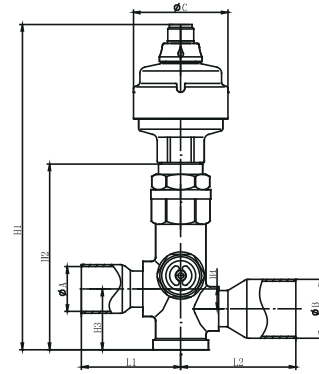
技术参数 Technical Parameters

适用制冷剂 Applicable refrigerant	HCFC或HFC
名义容量 Nominal capacity	43~1936KW
介质温度 Medium temperature	-40~+65°C
环境温度 Environment temperature	-40°C ~ +60°C
环境湿度 Environment humidity	95%RH以下
全开脉冲 Full open pulse	2620~3800 (详见选型表) see model select table for detail
额定电压 Rated voltage	12V DC (±10%)，矩形波 rectangular wave
励磁方式 Excitation mode	2-2相励磁，双极驱动 2-2 phase excitation, double pole drive
励磁速度 Excitation speed	250pps/300pps, 电压/电流 voltage/ current
结束励磁模式保持 Finishing excitation mode keeps	0.1~1.0s
驱动电流 Drive current	230mA
线圈电阻 Coil resistance	52Ω/相
线圈绝缘等级 Coil insulation grade	E级
防护等级 Protect grade	IP65

外型尺寸 Overall dimension

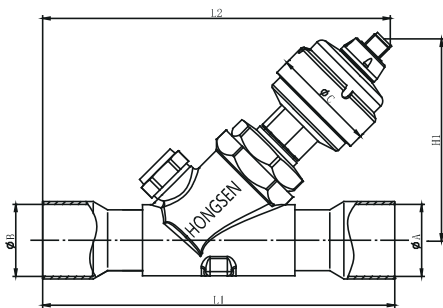


SPF12.5/25

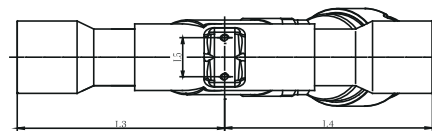


SPF50/100

Model	H1	H2	H3	H4	L1	L2	A	B	C
SPF12.5-5-5	152.5	64	27	13	60.5	60.5	16.1	16.1	60
SPF12.5-7-7	152.5	64	27	13	60.5	60.5	22.3	22.3	60
SPF25-5-5	152.5	64	27	13	60.5	60.5	16.1	16.1	60
SPF25-7-7	152.5	64	27	13	60.5	60.5	22.3	22.3	60
SPF50-7-7	206.3	118	38.5	12.5	56	56	22.3	22.3	60
SPF50-9-9	206.3	118	38.5	12.5	63	63	28.7	28.7	60
SPF50-7-9	206.3	118	38.5	12.5	56	63	22.3	28.7	60
SPF50-9-11	206.3	118	38.5	12.5	63	73	28.7	35.2	60
SPF100-9-9	206.3	118	38.5	12.5	63	63	28.7	28.7	60
SPF100-9-11	206.3	118	38.5	12.5	63	73	28.7	35.2	60



SPF250/400

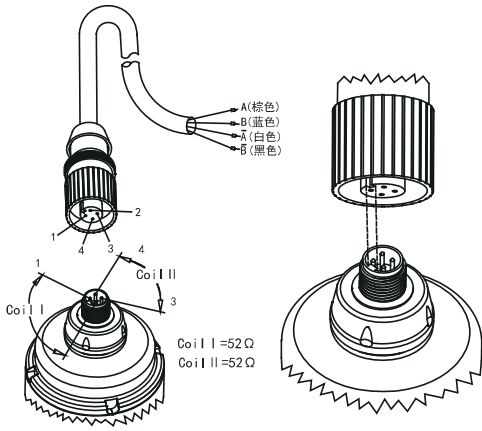


型号 Model	H1	L1	L2	L3	L4	L5	A	B	C
SPF250-9-9	206.3	168.5	184.3	84.3	84.3	24	28.7	28.7	60
SPF250-11-11	206.3	203	189.3	89.3	89.3	24	35.2	35.2	60
SPF400-13-13	206.3	203	201.5	101.5	101.5	24	41.5	41.5	60
SPF400-17-17	206.3	242	221	121	121	24	54.2	54.2	60

注：接管尺寸可以根据要求定制。

Note: dimension of connecting pipe can be customized according to requirements

驱动时序 Driving Schedule



相序	1	2	3	4
A (棕)	no	no	off	off
B (蓝)	no	off	off	no
\bar{A} (白)	off	off	no	no
\bar{B} (黑)	off	no	no	off

关阀: 1 → 2 → 3 → 4
 开阀: 1 ← 2 ← 3 ← 4

A (棕)

\bar{A} (白)

B (蓝)

\bar{B} (黑)

步进电机原理图

连接线缆总成 Connecting cable assembly

型号 Model	温度范围 Temperature range	长度 Length	接头规格 Connector specification	与控制连接方式 Connecting mode with control	示图 Schematic pic.
M124×Z1MD	-40°C~+80°C	1米	M12×1 (防水)	引出线4×0.18mm ²	

选型表 Model selection

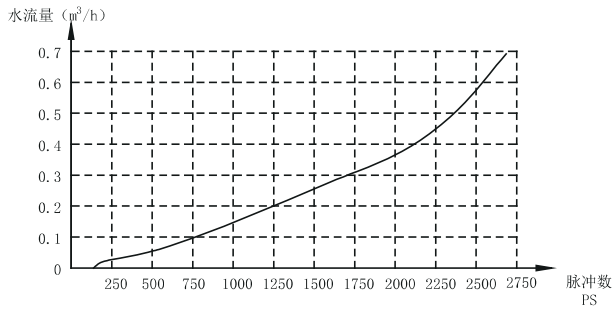
产品系列 Product series	全开步数 Full open steps	通径 Diameter [mm]	KV ²¹ [m ³ /h]	名义容量 [KW] ¹¹ Nominal capacity					最大工作压力 Max. working pressure [MPa]	最大工作压差 Max. working pressure difference [MPa]	逆向开阀压差 Reverse valve opening pressure difference [MPa]
				R22	R134a	R407C ¹⁾	R404A/R507	R410A ¹⁾			
SPF12.5	2620	4.50	0.70	57	45	63	43	70	4.5	3.5	≥3.5
SPF25	2620	8.00	1.30	112	89	124	84	139	4.5	3.5	≥3.5
SPF50	2620	11.5	2.30	226	182	265	173.5	274	4.5	3.5	≥3.5
SPF100	3500	16.0	3.90	408	325	455	308	496	4.5	3.5	≥3.5
SPF250	3800	24.0	12.2	1092	862	1203	817	/	3.5	3.0	≥3.0
SPF400	3800	30.0	17.0	1768	1397	1936	1324	/	3.5	3.0	≥3.0

名义工况:

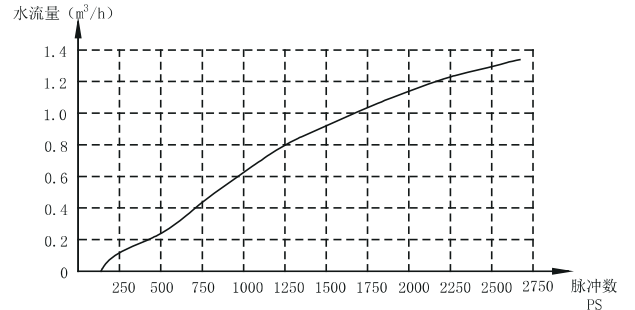
- 额定能力基于: R407C 冷凝温度Tc: +32°C; 蒸发温度Te: +5°C; 阀前液体温度Ti: +28°C;
- Kv值: 基于密度为1T/m³的水、阀门两端压差等于100KPa时的正向流动能力。

Nominal condition:

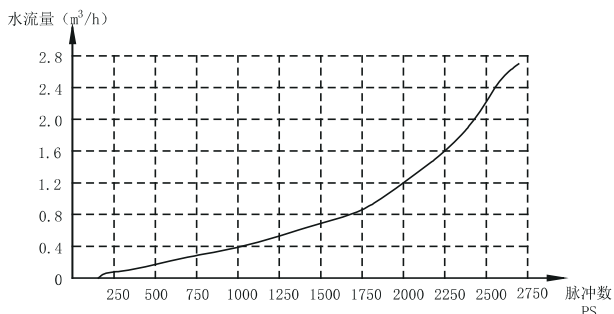
- Rated capacity is based on: R407C condensing temperature Tc: +32°C; evaporating temperature Te: +5°C; liquid temperature before valve Ti: +28°C ;
- Kv value: the pressure difference based on the two sides between water with density 1T/m³ and the valve is equal to the positive flow capacity at 100KPa.



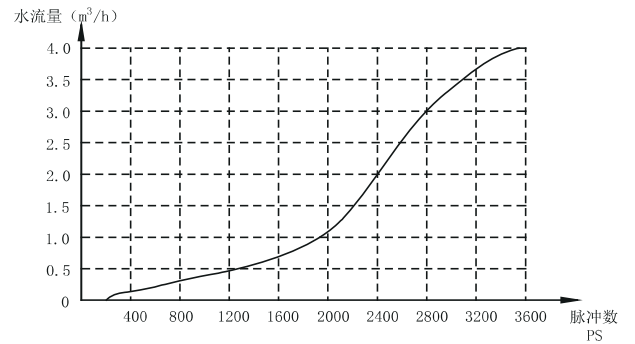
SPF12.5



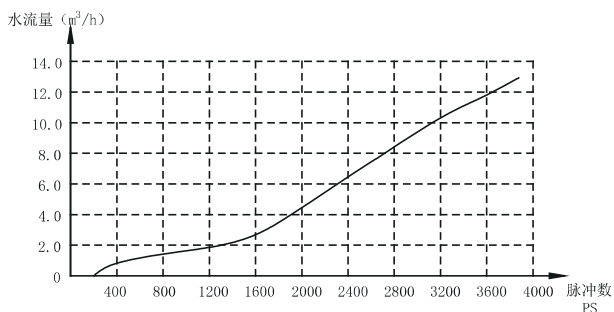
SPF25



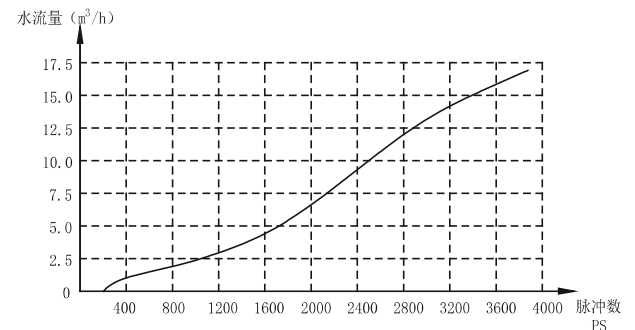
SPF50



SPF100



SPF250



SPF400

正向流额定能力[KW] Positive flow rated capacity																	
te[°C]	SPF12.5									SPF25							
	压降ΔP[bar] Pressure drop																
	2	4	6	8	10	12	14	16	2	4	6	8	10	12	14	16	
R22	-40	39.6	50.6	57.1	61.2	64.1	65.9	67.0	67.6	82.0	105.4	118.5	126.6	133.6	137.0	139.3	140.9
	-30	39.2	50.6	57.3	61.7	64.7	66.7	68.1	68.8	81.8	104.5	119.3	128.7	134.0	139.2	141.5	143.4
	-20	38.5	50.1	57.1	61.7	64.9	67.1	68.6	69.4	80.3	104.3	118.9	128.7	134.8	140.0	143.0	144.7
	-10	37.5	49.2	56.3	61.2	64.5	66.9	68.5	69.5	78.1	102.5	117.0	127.5	134.6	138.5	142.8	144.6
	-5	36.9	48.6	55.8	60.7	64.1	66.5	68.2	69.2	76.9	101.1	116.3	126.2	133.3	138.8	142.2	144.4
	10	34.7	40.3	53.3	58.3	62.0	64.4	66.2	67.4	72.3	96.2	111.3	121.7	129.2	134.4	138.2	140.6
R134a	-40	35.1	42.6	46.1	47.8	48.3	47.9	47.0	45.6	73.1	88.8	95.8	99.7	100.6	99.9	98.0	94.9
	-30	35.3	43.4	47.3	49.3	50.0	49.9	49.2	47.9	73.5	90.4	98.5	102.6	104.2	104.0	102.4	99.9
	-20	35.1	43.7	48.1	50.4	51.3	51.4	50.9	49.9	73.3	91.1	100.2	104.8	107.0	107.2	106.2	104.0
	-10	34.7	43.7	48.4	50.9	52.2	52.5	52.2	51.3	72.3	91.0	100.8	106.2	108.7	109.5	108.9	107.0
	-5	34.3	43.5	48.3	51.0	52.4	52.9	52.6	51.8	71.6	90.6	100.7	106.4	109.3	110.3	109.8	108.2
	10	32.8	42.2	47.4	50.5	52.2	52.9	53.0	52.4	68.3	87.6	98.9	105.1	108.9	110.4	110.5	109.3
R404A	-40	31.4	39.0	42.8	44.5	45.2	45.1	44.4	43.2	65.7	81.4	89.2	93.0	94.3	94.0	92.5	90.0
	-30	31.1	38.9	43.0	45.1	46.0	46.0	45.5	44.4	64.7	81.2	89.7	94.0	95.9	96.1	94.9	92.8
	-20	30.3	38.4	42.7	45.0	46.2	46.4	46.1	45.2	63.0	80.1	89.1	94.0	96.3	96.9	96.1	94.3
	-10	29.1	37.4	41.9	44.4	45.7	46.2	46.0	45.2	60.7	78.0	87.4	92.7	95.4	96.3	95.9	94.4
	-5	28.5	36.8	41.3	44.0	45.3	45.8	45.6	44.9	59.4	76.6	86.1	91.6	94.5	95.5	95.2	93.8
	10	26.1	34.1	38.6	41.3	42.9	43.5	43.5	43.9	54.3	71.0	80.3	86.0	89.2	90.5	90.4	89.3
R407C	-40	41.5	52.0	57.7	61.1	63.0	64.0	64.1	63.7	86.0	108.0	120.2	127.0	131.4	132.8	133.2	132.5
	-30	41.3	52.2	58.3	62.1	64.2	65.3	65.7	65.4	85.5	108.5	121.0	128.9	133.3	135.8	137.1	136.1
	-20	40.6	52.0	58.4	62.5	64.8	66.2	66.8	66.8	84.2	108.0	121.4	129.7	134.8	137.7	138.9	138.8
	-10	39.6	51.2	57.9	62.2	64.9	66.5	67.3	67.4	82.0	106.4	119.9	129.2	134.9	138.7	139.8	140.6
	-5	39.0	50.7	57.5	61.9	64.6	66.3	67.2	67.4	81.3	105.2	120.0	128.4	134.9	138.4	139.7	140.6
	10	36.6	48.2	55.2	59.7	62.8	64.5	65.7	66.1	76.3	100.5	114.5	124.6	130.9	134.2	137.1	137.9
R410A	-40	45.7	59.1	67.1	72.4	76.2	78.7	80.4	81.4	94.9	122.7	139.0	150.6	157.8	163.1	166.6	168.3
	-30	44.5	58.1	66.3	71.9	75.8	78.5	80.4	81.5	91.9	120.7	137.9	149.0	157.1	162.8	165.2	169.3
	-20	43.0	56.6	64.9	70.6	74.7	77.5	79.5	80.8	89.6	117.1	135.4	146.4	154.8	161.0	165.4	167.6
	-10	41.0	54.4	62.8	68.6	72.7	75.7	77.7	79.1	85.5	113.5	131.0	143.1	151.7	157.9	162.2	165.0
	-5	39.9	53.1	61.5	67.3	71.4	74.4	76.5	77.8	83.3	109.7	127.2	139.1	147.9	154.6	158.5	162.5
	10	36.2	48.5	56.5	62.1	66.1	69.1	71.1	72.4	74.9	101.2	116.8	128.5	136.9	143.0	147.3	151.2

正向流额定能力[KW] Positive flow rated capacity																	
te[°C]	SPF50									SPF100							
	压降ΔP[bar] Pressure drop																
	2	4	6	8	10	12	14	16	2	4	6	8	10	12	14	16	
R22	-40	151.8	194.3	218.1	234.1	245.6	252.1	256.8	258.9	282.1	360.6	406.6	436.7	456.6	469.7	478.0	482.4
	-30	150.0	193.1	218.0	236.0	247.8	255.7	260.2	263.6	279.1	359.8	407.6	439.4	461.2	475.5	485.2	490.4
	-20	147.1	191.7	218.0	236.0	248.6	256.8	262.6	266.3	274.0	356.5	406.4	439.5	462.5	478.4	488.7	494.7
	-10	143.1	187.9	215.1	233.9	246.9	255.9	262.4	265.8	266.8	349.7	401.0	435.3	459.4	477.2	487.9	495.1
	-5	140.9	185.8	213.6	232.0	245.1	254.2	260.9	264.8	262.9	345.9	397.2	432.2	456.4	473.7	485.8	493.4
	10	132.7	176.6	204.0	223.0	236.9	246.8	253.6	257.8	246.6	328.3	379.7	415.5	441.3	458.9	472.0	480.3
R134a	-40	133.1	162.4	175.7	181.8	183.2	182.1	178.8	173.7	247.9	301.7	326.8	338.6	342.0	339.5	332.7	322.9
	-30	135.0	164.9	179.9	187.6	190.0	189.8	187.9	183.6	249.5	306.7	334.7	348.7	353.7	352.9	347.9	339.4
	-20	134.2	167.1	183.8	191.6	195.0	196.2	194.2	190.3	248.5	309.4	340.4	356.5	363.4	364.2	360.7	353.3
	-10	131.9	166.0	184.9	194.8	198.7	199.8	198.7	195.6	245.5	309.2	342.7	360.9	369.2	371.6	369.3	363.3
	-5	130.7	166.1	184.8	194.5	199.6	201.5	201.0	197.6	242.6	307.4	341.9	361.1	370.8	374.1	372.4	367.0
	10	124.8	160.7	181.1	192.5	198.7	201.6	202.2	199.7	231.8	298.5	335.5	357.2	369.3	374.6	374.8	371.1
R404A	-40	119.9	149.3	163.4	169.9	173.2	172.5	169.6	164.9	223.4	276.7	303.3	316.2	320.9	320.4	315.4	306.8
	-30	118.0	148.1	163.9	172.4	175.1	176.3	173.8	169.9	219.7	276.0	304.7	319.7	326.2	326.9	323.2	316.1
	-20	115.5	146.1	162.8	171.9	176.0	177.1	175.9	173.3	214.3	272.4	302.8	319.7	327.6	329.7	328.0	322.0
	-10	110.9	142.2	159.8	169.2	174.7	176.1	175.2	173.4	206.4	265.4	297.5	315.4	324.6	328.2	326.6	322.6
	-5	108.7	139.9	157.1	167.7	173.3	174.8	174.1	172.4	201.8	260.3	292.7	311.4	321.4	325.1	324.2	319.7
	10	99.7	129.9	147.1	157.8	163.2	165.9	165.9	164.9	185.4	241.6	273.9	294.4	304.4	309.1	308.6	305.3
R407C	-40	158.8	199.7	222.5	236.4	243.9	248.6	249.9	249.6	295.6	371.7	413.3	438.7	454.2	462.1	464.9	464.0
	-30	157.8	200.7	224.2	239.2	249.3	253.9	257.1	256.6	293.5	373.4	417.8	445.9	462.7	472.5	477.1	477.5
	-20	155.2	199.8	225.0	241.5	251.1	257.7	260.8	261.2	289.4	371.7	419.0	448.8	468.1	479.5	485.5	486.9
	-10	151.9	196.9	223.2	240.2	251.8	258.8	263.3	264.0	282.6	366.6	416.4	447.8	468.4	481.8	488.8	491.8
	-5	149.2	194.9	222.4	239.1	250.9	258.1	262.7	264.6	278.5	363.0	413.1	445.4	466.9	480.9	488.6	492.4
	10	140.4	186.4	214.1	231.8	244.5	253.2	257.7	255.5	261.9	345.8	397.3	431.3	454.6	469.8	479.2	484.5
R410A	-40	174.4	224.8	254.6	275.8	288.8	299.6	306.4	310.3	324.1	418.7	475.4	513.3	539.1	557.2	569.5	576.8
	-30	169.2	221.9	252.7	273.8	288.2	298.8	305.9	310.6	315.4	411.8	469.8	509.2	536.9	556.1	569.5	577.6
	-20	163.2	215.0	247.9	268.8	284.1	295.5	302.8	308.2	304.4	400.8	459.4	500.8	529.3	549.2	565.8	572.8
	-10	156.0	206.9	239.4	265.8	276.8	289.0	295.9	301.5	290.8	385.4	444.6	485.7	515.7	536.1	555.7	561.0
	-5	151.9	202.0	234.4	259.0	271.8	283.5	291.5	296.7	282.9	373.4	435.6	461.8	505.8	527.0	542.2	552.2
	10	137.3	184.8	214.0	236.1	252.3	262.9	271.8	276.0	256.1	343.5	399.9	439.9	464.3	489.7	503.8	513.9

正向流额定能力[KW] Positive flow rated capacity																	
te[°C]	SPF250									SPF400							
	压降ΔP[bar] Pressure drop																
	2	4	6	8	10	12	14	16	2	4	6	8	10	12	14	16	
R22	-40	778.5	995.0	1121.0	1205.0	1259.5	1297.0	1318.5	1328.5	1249.2	1595.0	1799.0	1931.6	2021.1	2079.4	2115.6	2133.6
	-30	771.0	992.5	1126.0	1213.5	1273.0	1262.5	1339.0	1351.5	1236.2	1593.0	1805.0	1945.7	2041.2	2105.5	2146.7	2169.8
	-20	755.5	984.0	1120.5	1213.0	1276.0	1320.0	1348.5	1364.5	1213.1	1576.9	1798.0	1944.7	2046.2	2116.5	2161.8	2148.9
	-10	737.0	966.0	1107.0	1201.5	1269.0	1315.0	1347.0	1366.0	1180.9	1548.7	1774.8	1927.6	2034.2	2108.5	2158.8	2189.9
	-5	723.0	954.0	1095.0	1193.0	1260.5	1308.0	1341.0	1360.0	1161.8	1529.6	1756.8	1912.5	2021.1	2097.5	2149.7	2181.9
	10	680.5	905.0	1049.0	1146.0	1218.0	1267.0	1303.0	1323.0	1091.4	1453.2	1681.4	1839.2	1951.7	2032.1	2088.4	2124.6
R134a	-40	683.5	832.0	901.5	934.0	942.5	936.0	918.5	890.5	1097.5	1334.7	1446.2	1497.5	1512.6	1501.5	1472.4	1429.1
	-30	687.0	846.0	924.0	963.0	976.0	974.5	960.0	935.0	1103.5	1357.8	1481.4	1542.7	1565.8	1562.8	1539.7	1501.5
	-20	683.5	853.5	938.0	983.0	1002.0	1004.0	994.5	973.5	1099.5	1368.8	1505.5	1576.9	1608.0	1611.0	1595.0	1562.8
	-10	676.0	853.0	944.0	995.0	1020.0	1025.5	1020.0	1002.0	1135.4	1366.8	1514.6	1595.0	1635.2	1645.2	1635.2	1608.0
	-5	669.5	849.0	942.5	997.0	1023.0	1033.0	1029.0	1012.5	1074.4	1360.8	1513.5	1599.0	1642.2	1656.3	1649.2	1625.1
	10	640.0	823.5	927.0	987.0	1020.0	1033.5	1033.0	1022.5	1026.1	1321.6	1485.4	1581.9	1635.2	1658.3	1659.3	1643.2
R404A	-40	615.0	763.0	836.0	871.0	884.0	881.0	867.0	844.0	985.9	1223.1	1339.7	1397.0	1417.1	1413.0	1389.9	1352.7
	-30	606.0	761.0	840.0	881.0	899.0	900.0	890.0	870.0	971.9	1220.1	1346.7	1413.0	1441.2	1443.2	1426.1	1394.0
	-20	591.0	750.0	835.0	881.0	903.0	908.0	901.0	884.0	946.7	1203.0	1338.7	1412.1	1447.2	1455.3	1444.2	1417.1
	-10	569.0	731.0	819.0	869.0	894.0	903.0	899.0	884.0	912.6	1171.8	1312.5	1392.9	1433.1	1447.2	1440.2	1418.1
	-5	556.0	718.0	807.0	858.0	885.0	895.0	892.0	879.0	891.5	1150.8	1293.5	1375.9	1419.1	1435.2	1430.1	1409.0
	10	510.0	665.0	754.0	806.0	836.5	849.0	849.0	836.5	818.1	1067.3	1210.1	1294.5	1341.7	1361.8	1360.8	1342.7
R407C	-40	810.5	1016.0	1128.0	1194.0	1232.0	1248.5	1251.0	1242.5	1300.5	1630.1	1810.0	1914.6	1973.4	2002.0	2007.0	1994.0
	-30	805.5	1021.0	1140.0	1211.5	1255.0	1276.0	1284.0	1278.0	1292.4	1637.2	1829.1	1943.7	2012.0	2047.2	2059.3	2051.2
	-20	792.5	1016.0	1142.5	1220.0	1268.0	1294.0	1306.0	1303.0	1272.3	1629.1	1832.1	1956.8	2033.1	2075.4	2093.4	2092.4
	-10	772.5	1002.0	1133.0	1216.0	1268.0	1298.0	1315.0	1315.5	1241.2	1606.0	1817.1	1949.7	2034.2	2083.4	2107.5	2111.5
	-5	761.5	990.0	1123.0	1207.5	1264.0	1296.0	1314.0	1317.0	1221.1	1587.9	1802.0	1938.7	2026.1	2078.4	2105.5	2112.5
	10	715.0	940.5	1076.5	1167.0	1226.0	1262.5	1284.5	1291.5	1146.7	1509.5	1727.6	1871.3	1965.8	2026.1	2059.3	2072.3
R410A	-40	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	-30	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	-20	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	-10	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	-5	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	10	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/

SPF系列电子膨胀阀控制器

Controller for SPF Series electric expansion valve



HS-1702

产品概述 Product Description

适用于SPF系列电子膨胀阀的过热度控制，以2相4拍双极励磁方式控制，提高系统的制冷能力。

It is suitable for super heat control of SPF series electronic expansion valves. It is controlled by 2 phase 4 beat bipolar excitation mode to improve the refrigerating capacity of the system.

特点 Features

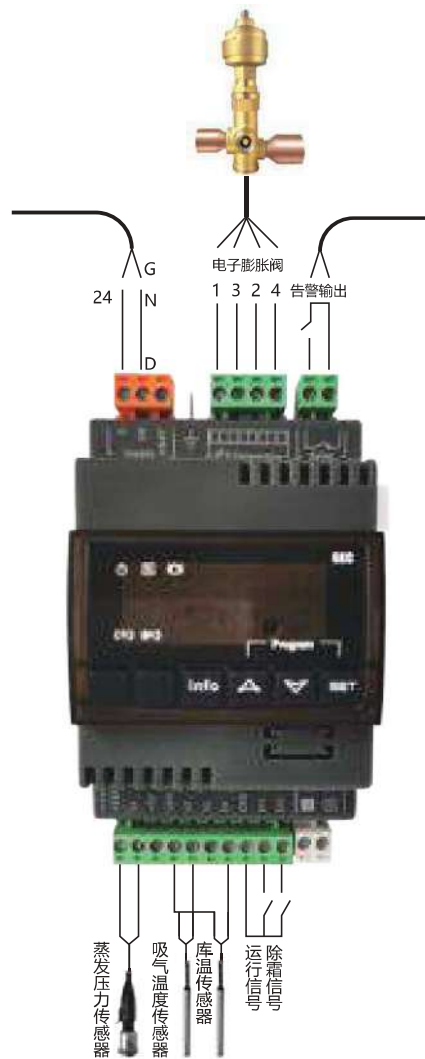
- 多种制冷剂可选：R22、R134a、R404a、R410a、R507c；
- 多种类电子膨胀阀：采用PID算法适用多种双极电子膨胀阀，也可以自定义膨胀阀参数；
- MOP保护：蒸发压力超压保护；
- LOP保护：蒸发压力低压保护；
- 告警输出：一路无源继电器触点输出；
- 集中监控：可通过RS485通信方式进行开、关机，参数设置，数据查看。

- More refrigerants available: R22, R134a, R404a, R410a, R507c;
- more kinds of electronic expansion valve: the PID algorithm is applicable to various bipolar electronic expansion valve, and the parameters of the expansion valve can also be customized;
- MOP protection: evaporative pressure overpressure protection;
- LOP protection: evaporative pressure low-pressure protection;
- Alarm output: one way passive relay contact output;
- Centralized monitoring: ON-OFF, parameter setting, data check can be performed through RS485 communication.

技术参数 Technical Parameters

控制电源 control power	DC24V/650mA
使用环境 using environment	海拔低于2000米; 温度-10°C ~ 60°C, 湿度: 20% ~ 85%, 无凝露。(禁止在含酸、含碱等有腐蚀性的场合和易燃易爆的场合使用!) altitude below 2000meters; temperature -10°C ~ 60°C, humidity: 20% ~ 85%, no condensation . (No use in corrosive places with acid, alkali or inflammable and explosive places!)
配置 dispose	控制器 (HS-1702) 1件, 常温温度传感器 (NTC-NT05) 2件, 压力传感器(77CP055) 1件, 变压器 (KBE4825) 1件, 备用电源 (GFB300) 1件 Accessories: Controller (GEC1702) *1, Normal temp. sensor (NTC-NT05) *2, Pressure sensor (77CP055)*1, transformer (KBE4825) *1, backup power (GFB300) *1

接线图 Wiring Lagout



配置一：常温温度传感器

Accessory I :Normal temperature sensor



NTC-NT05

技术参数 Technical Parameters	
测量温度Test range	-50~60°C
NTC热敏电阻(thermistor)	B25/85=3435K±1%, R25=10Ω±1%
线长(cable length)	5m
不锈钢管(sensor size)	φ6 X 50
防护等级(Protection level)	IP68

配置二：压力传感器

Accessory II:pressure sensor



77CP055

技术参数 Technical Parameters	
量程范围 test range	-1~12bar
精度 Accuracy	0.5% FS(-20~85°C)
工作温度 working temp.	-40~125°C
螺纹接口 Connection thread	7/16-20UNF (内螺纹 Female)、带1/4喇叭口针阀顶开装置with depressor
接线方式input power	4~20Ma (红/黑, 两线制, 电流型 red/black, current mode)
连接线wire	AWG20, L=3m

配置三：变压器 Accessory III:Transformer



KBE4825

技术参数 Technical Parameters	
输入 input	230VAC, 50/60HZ
输出 output	24V, MAX 10W
耐压 withstand voltage	3.5KW

配置四：备用电源 Accessory IV:Backup power



GFB300

产品概述 Product Description	
备用电源为超级电容模块，串联在供电电路中，可确保电源故障时保证控制器临时供电，立刻关闭链接的电子膨胀阀	The backup power supply is a super capacitor module, which is connected in series in the power supply circuit, which can ensure the temporary power supply of the controller in case of power failure, and immediately close the linked electronic expansion valve

技术参数 Technical Parameters	
输入 input	24V/400mA
输出 output	12V/400mA
容量 capacity	50mA.h

压力传感器 Pressure/temperature sensor



电流型 (P22)
Current type (P22)



电压型 (P321)
Voltage type (P321)

产品概述 Product Description

用于检测制冷系统工况的压力值

Used to check the pressure value of refrigerating system condition

特点 Features

- EMC/EMI适应变频环境应用;
- 瞬间保护电压: DC16V;
- 多种冷媒兼容, 应用范围广;
- 电源反接保护;
- 电流型压力传感器防结露设计;

- EMC/EMI adapts frequency conversion environment application;
- Instantaneous protective voltage: DC16V;
- Compatible with multiple refrigerants, wide application range;
- Power supply reverse connection protection;
- Anti-condensation design for current type pressure sensor

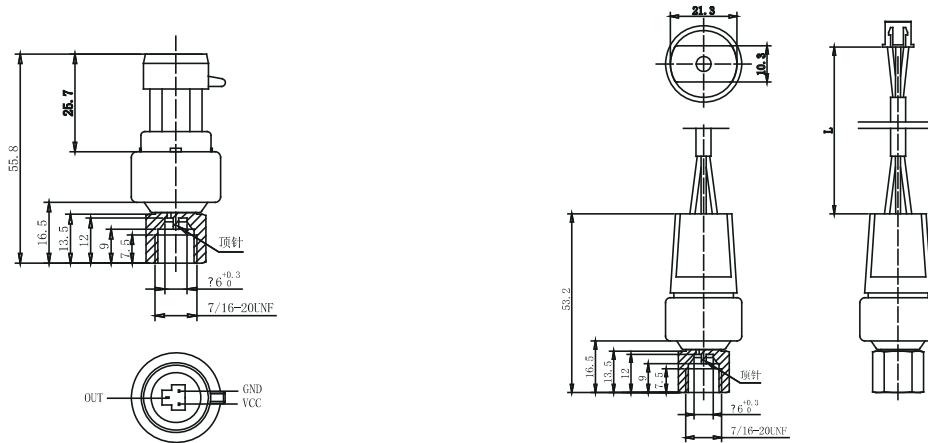
技术参数 Technical Parameters

工作电压 Working voltage	5±0.25VDC
介质温度 Medium temperature	-40°C~120°C
使用寿命 Service life	大于1000万次 more than 10000000 times
适用量程 Applicable range	-1~50bar
输出信号 Output signal	电压/电流 voltage/current

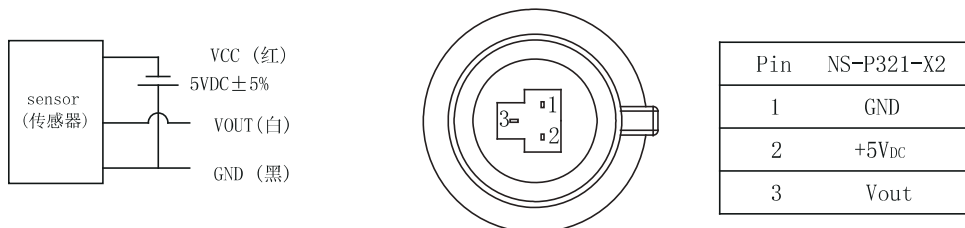
选型表 Model selection

型号 Model	压力范围 Pressure range	安全过载 Safety overload	破坏压力 Breaking pressure	工作电源 Working voltage	输出信号 Output signal	综合精度 Comprehensive Precision
HS-P321-30-10barG	0-10bar	30bar	160bar	5VDC	0.5~4.5VDC	±2.5%F.S
HS-P321-30-20barG	0-20bar	60bar	160bar	5VDC	0.5~4.5VDC	±2.5%F.S
HS-P321-30-30barG	0-30bar	90bar	250bar	5VDC	0.5~4.5VDC	±2.5%F.S
HS-P321-30-45barG	0-45bar	90bar	250bar	5VDC	0.5~4.5VDC	±2.5%F.S
HS-P321-30-(-1~12)barG	-1~12bar	36bar	160bar	5VDC	0.5~4.5VDC	±2.5%F.S
HS-P224A-30-11barG	-1-11bar	60bar	160bar	24VDC(12~23VDC)	4~20mA	±1%F.S
HS-P224A-30-18barG	0-18bar	60bar	160bar	24VDC(12~23VDC)	4~20mA	±1%F.S
HS-P224A-30-30barG	0-30bar	90bar	250bar	24VDC(12~23VDC)	4~20mA	±1%F.S
HS-P224A-30-50barG	0-50bar	90bar	250bar	24VDC(12~23VDC)	4~20mA	±1%F.S

外形尺寸 Overall dimension



接线图 Wiring drawing



温度传感器 Temperature sensor



5K3470

产品概述 Product Description

用于检测制冷系统工况的温度值

Used to check the temperature value of refrigerating system condition

特点 Features

- 体积小，重量轻，防护性能好；
- 温度偏差小，精度高
- 测量范围 test range: -50~150°C

- Small size, light weight, good protective performance
- Small temperature deviation, high precision

型号 Model

NTC, R25II = 5K, B25/50II = 3470K