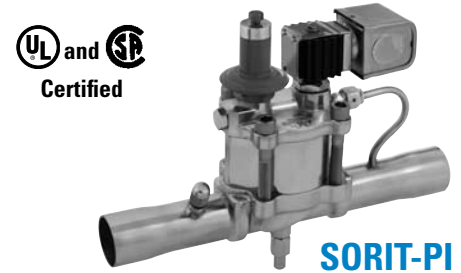


EVAPORATOR PRESSURE REGULATING VALVES

(S)ORIT-PI-2, -3, -4 and -5 Features

- Piloted internally (No high side connection required)
- Superior corrosion resistance
- Optional solenoid “stop” feature to close valve during defrost
- Optional electric open feature for “two temperature operation”
- Manual lift stem (standard) to allow system evacuation



These EPRs are Piloted Internally using the natural pressure drop across the valve to operate and do not require a “high side” pilot connection. Like the (S)ORIT valves, the pilot operated design does not require the “allowable evaporator pressure change” necessary with the direct acting models, and can be simply sized based on design evaporator temperature and available pressure drop across the valve at full load conditions.

Specifications

VALVE TYPE	PORT SIZE mm	ADJUSTMENT RANGE bar	STANDARD COIL RATINGS *MKC-1		CONNECTIONS ODF SOLDER Inches
			VOLTS/CYCLES	WATTS	
(S)ORIT-PI-2	12.7	0/6.90 or 5.17/10.3	24/50-60 120/50-60 208-240/50-60 120-208-240/50-60	10	5/8, 7/8, 1-1/8, 1-3/8
(S)ORIT-PI-3	19.1				7/8, 1-1/8, 1-3/8, 1-5/8
(S)ORIT-PI-4	25.4				1-1/8, 1-3/8, 1-5/8, 2-1/8
(S)ORIT-PI-5	31.8				1-3/8, 1-5/8, 2-1/8

*Available with junction box or conduit boss at no extra charge. For voltage other than listed consult Bulletin 30-10.

Capacities – kW

Capacities based on 15°C liquid temperature, 0°K superheat at the evaporator and 14°K superheat at the valve.

VALVE TYPE	EVAPORATOR TEMPERATURE °C	REFRIGERANT															
		22				134a				404A				507			
		PRESSURE DROP ACROSS VALVE – bar															
		0.03	0.1	0.4	0.7	0.03	0.1	0.4	0.7	0.03	0.1	0.4	0.7	0.03	0.1	0.4	0.7
(S)ORIT-PI-2	5	2.78	8.66	20.3	27.6	2.22	6.92	16.6	20.9	2.70	8.40	19.6	27.0	2.61	8.13	18.9	26.2
	-5	2.33	7.26	17.7	22.6	1.81	5.63	13.1	16.1	2.22	6.93	16.3	21.8	2.15	6.71	15.7	21.2
	-15	1.93	6.01	14.4	17.9	1.45	4.51	9.99	11.7	1.81	5.63	13.6	17.1	1.76	5.47	13.2	16.7
	-25	1.57	4.90	11.3	13.6	—	—	—	—	1.44	4.50	10.5	12.9	1.41	4.38	10.3	12.7
(S)ORIT-PI-3	5	3.55	20.3	40.1	53.6	2.84	16.3	32.3	40.9	3.45	19.7	38.7	52.3	3.33	19.0	37.4	50.7
	-5	2.98	17.1	34.3	44.0	2.31	13.3	25.6	31.8	2.84	16.3	32.0	42.3	2.75	15.8	31.0	41.2
	-15	2.47	14.2	27.9	35.2	1.85	10.7	19.7	23.5	2.31	13.3	26.3	33.4	2.24	12.9	25.6	32.6
	-25	2.01	11.6	22.0	27.1	—	—	—	—	1.85	10.7	20.5	25.5	1.80	10.4	20.1	25.0
(S)ORIT-PI-4	5	7.72	27.3	54.6	72.1	6.17	21.8	43.5	55.5	7.49	26.5	53.0	70.3	7.24	25.6	51.2	68.1
	-5	6.48	22.9	46.1	59.4	5.02	17.7	34.6	43.4	6.18	21.8	43.7	57.1	5.99	21.1	42.3	55.5
	-15	5.36	18.9	37.6	47.8	4.02	14.2	26.8	32.6	5.02	17.7	35.4	45.3	4.88	17.2	34.5	44.2
	-25	4.36	15.4	29.8	37.2	—	—	—	—	4.01	14.2	27.7	34.9	3.91	13.8	27.1	34.2
(S)ORIT-PI-5	5	22.0	42.2	83.1	108	17.6	33.6	65.2	83.6	21.3	41.0	80.9	105	20.6	39.6	78.3	102
	-5	18.4	35.4	69.1	89.3	14.3	27.2	52.1	65.8	17.6	33.7	66.1	85.7	17.0	32.7	64.2	83.3
	-15	15.3	29.2	56.4	72.1	11.4	21.6	40.5	49.8	14.3	27.3	53.1	68.2	13.9	26.6	51.7	66.6
	-25	12.4	23.6	44.9	56.4	—	—	—	—	11.4	21.8	41.7	52.8	11.1	21.2	40.8	51.7

Refrigerant Liquid Temperature – Correction Factors

REFRIGERANT	LIQUID TEMPERATURE ENTERING VALVE °C										
	-15°	-10°	-5°	0°	5°	10°	15°	20°	30°	35°	40°
	CORRECTION FACTOR, CF LIQUID TEMPERATURE										
R-22	1.21	1.17	1.14	1.11	1.07	1.04	1.00	0.96	0.91	0.87	0.84
R-134a	1.25	1.21	1.17	1.14	1.09	1.05	1.00	0.95	0.89	0.84	0.81
R-404A	1.31	1.27	1.22	1.16	1.12	1.06	1.00	0.94	0.86	0.79	0.74
R-507	1.32	1.28	1.22	1.16	1.12	1.06	1.00	0.94	0.86	0.80	0.75

*ARI standard capacities are based on 38°C saturated liquid temperature. Use the correction factor for 40°C liquid temperature and the capacities at 5°C evaporator temperature to determine approximate ARI standard capacity ratings.

Example: The capacity of a (S)ORIT-PI-3 using R-22, evaporator temperature of -15°C, 0.1 bar pressure drop across the valve and a liquid temperature of 10°C, is equal to 14.2 x 1.04 = 14.8 kW.

Installation

When installing these valves with solder connections, the internal parts should be protected from overheating by wrapping the valve with a wet cloth.

(S)ORIT-PI Series – Valve Nomenclature/Ordering Instructions

S	ORI	T	PI	2	7	S	E	0/100	120/50-60
Solenoid Stop Feature (optional)	Valve Type: Open on Rise of Inlet Pressure	Pressure Tap on Inlet Connection	Piloted Internally	Port Size in 1/4 of an Inch	Fitting Size in 1/8 of an Inch	Solenoid Stop Feature (optional)	Electric Open Feature (optional)	Adjustment range psig*	Electrical specifications for Solenoid Stop Feature (optional)

* Other pressure ranges are available.

For complete information consult your nearest Sporlan Wholesaler or email europecold@parker.com and request Bulletin 90-20-2 and 90-20-2A.