



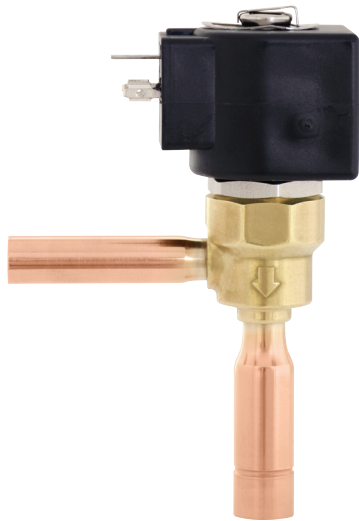
SPORLAN

Pulse Width Modulation Valves

Models SPW-0 thru -7



ENGINEERING YOUR SUCCESS.



Features and Benefits

Pulse Width Modulation Valves (SPW)

- Controls refrigerant by cycling on/off during 6 second period
- Designed for CO₂, HFC, HCFC and HFO (nonflammable & nontoxic) System Operation
- Operates from 10% to 100% of rated capacity
- Tight seating design
- Robust Design, 50 Million Cycle Life
- Low Wattage NEMA-4X Coil, IP65 Rated, Class F
- Brass, Copper & Stainless Steel Design for Premier Corrosion Resistance
- Serviceable Design with Interchangeable Port & Strainer
- Maximum Rated Pressure (MRP) 1305 psig / 90 barg
- Maximum Operating Pressure Differential (MOPD) 507 psid / 35 bar

Pulse Width Modulation Valves

For Refrigerant Flow Control in Direct Expansion CO₂, HFC, HCFC and HFO Refrigeration Systems

The Sporlan SPW line of electric expansion valves uses pulse width modulation (PWM) control to manage refrigerant flow in direct expansion CO₂, HFC, HCFC and HFO (nonflammable & nontoxic) refrigeration systems. The valve's duty cycle is varied based on measured evaporator superheat. Typical controllers monitor superheat and vary the duty cycle across a 6 second period.

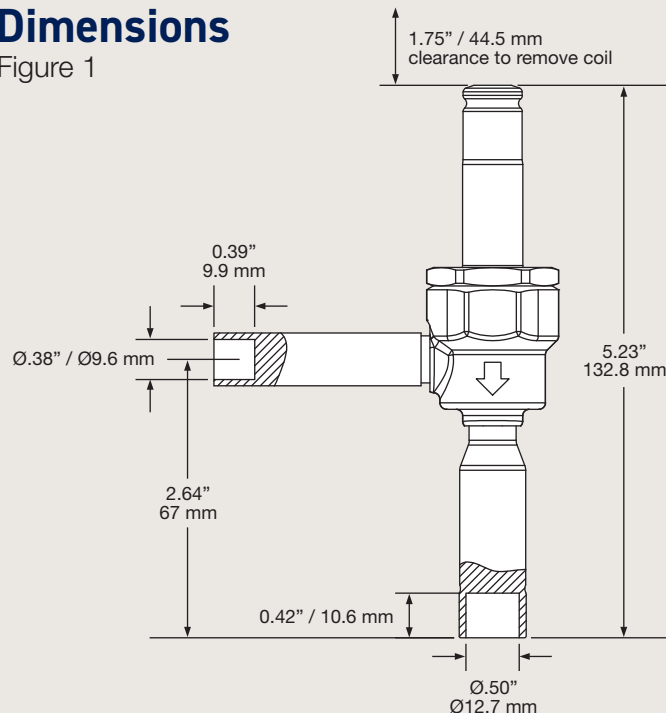
Sporlan's Pulse Width Modulation Valves are rated at 100% duty cycle, no reserve capacity. Pulse Width Modulation Valves are typically sized between 50% and 85% duty cycle. This allows additional capacity for pulldown at start-up and after defrost. Further consideration should be given to the liquid line size to avoid excessive liquid hammer. Liquid line velocity should not exceed 3 ft/second.

The SPW valve family offers 8 port sizes to cover a wide range of evaporator loads. The serviceable port and strainer design allows the contractor to service and clean the SPW valve or easily replace the port during a refrigerant retrofit.

The SPW Valve line is rated for a Maximum Rated Pressure (MRP) of 1305 psig (90 barg). The Maximum Operating Pressure Differential (MOPD) is 507 psid (35 bar). Solenoid coils are available for 24 VAC/60 Hz, 110-120 VAC / 50-60 Hz and 220-240 VAC / 50-60 Hz.

Dimensions

Figure 1



Specifications

SPW Valve Family General Specifications

Actuation Type	Pulse Width Modulation
Recommended Period	6 seconds
Control Range	10 – 100% Duty Cycle
Voltage	24 VAC/60 Hz, 110 VAC/50-60 Hz, 120 VAC/60 Hz, 220 VAC/50-60 Hz, 240 VAC/60 Hz
Power Input	11 Watts (12 Watts 24 VAC/60 Hz)
Inrush (VA)	38 VA
Holding Power (VA)	22 VA
Coil Resistance (ohms)	4.0 Ω (24 VAC) 103.1 Ω (110-120 VAC) 412.9 Ω (220-240 VAC)
Electrical Connection Style	½" NPT Conduit W/18" leads DIN 43650A
Flow Direction	Side Inlet, Bottom Outlet
Mounting Orientation	Enclosing Tube No Less than Horizontal
Serviceability	Coil, Port and Strainer
Strainer Size (micron)	100
Approved Refrigerant (Class A1)	CO ₂ , HFC, HCFC, HFO (nontoxic & nonflammable)
Approved Refrigerant Oil	POE, PAG, PVE, Mineral
Max Internal Leak (sccm Air)	5 @ 100 psid
Max External Leak (sccm Helium)	0.1 oz/year @ 300 psig
Certifications & Compliance	UL File MH4576, PED, Reach, ROHS, LVD

APPLICATION LIMITATIONS	MAXIMUM	MINIMUM
Ambient temperature*	130°F (54°C)	-40°F (-40°C)
Fluid temperature	180°F (82°C)	-40°F (-40°C)
Installation Temperature	250°F, 15 minutes maximum	
Relative Ambient Humidity	95% Non-condensing (IP65 Rated)	
Maximum Rated Pressure (MRP)**	1305 psig (90 barg)	
Pressure Differential (MOPD)	507 psid (35 bar)	

NOTE: Liquid line velocity should not exceed 3 ft./second.

* Approved only for liquid expansion applications.

** Maximum Rated Pressure for stand still conditions. Liquid must be present at valve inlet for operation.

Capacity - Tons

R-448A and R-449A Capacities in Tons (at Evaporator Temperature °F)

Valve Type	40°F																20°F																0°F																-20°F																-40°F															
	Pressure Drop Across Valve (psid)																Pressure Drop Across Valve (psid)																Pressure Drop Across Valve (psid)																Pressure Drop Across Valve (psid)																Pressure Drop Across Valve (psid)															
	75	100	125	150	175	200	225	250	75	100	125	150	175	200	225	250	75	100	125	150	175	200	225	250	75	100	125	150	175	200	225	250	75	100	125	150	175	200	225	250	75	100	125	150	175	200	225	250																																
SPW-0	0.08	0.09	0.10	0.11	0.12	0.13	0.14	0.14	0.08	0.09	0.10	0.11	0.12	0.12	0.13	0.13	0.14	0.07	0.08	0.09	0.10	0.11	0.12	0.13	0.13	0.07	0.08	0.09	0.10	0.11	0.11	0.12	0.13	0.07	0.08	0.09	0.09	0.10	0.11	0.12	0.12																																							
SPW-1	0.19	0.22	0.25	0.27	0.29	0.31	0.33	0.35	0.19	0.21	0.24	0.26	0.28	0.30	0.32	0.34	0.18	0.21	0.23	0.25	0.27	0.29	0.31	0.33	0.17	0.20	0.22	0.24	0.26	0.28	0.30	0.31	0.16	0.19	0.21	0.23	0.25	0.26	0.28	0.30																																								
SPW-2	0.35	0.40	0.45	0.49	0.53	0.57	0.60	0.63	0.33	0.39	0.43	0.47	0.51	0.55	0.58	0.61	0.32	0.37	0.41	0.45	0.49	0.52	0.56	0.59	0.31	0.35	0.40	0.43	0.47	0.50	0.53	0.56	0.29	0.34	0.38	0.41	0.44	0.48	0.50	0.53																																								
SPW-3	0.53	0.62	0.69	0.76	0.82	0.87	0.93	0.98	0.52	0.60	0.67	0.73	0.79	0.84	0.89	0.94	0.50	0.57	0.64	0.70	0.76	0.81	0.86	0.90	0.47	0.55	0.61	0.67	0.72	0.77	0.82	0.86	0.45	0.52	0.58	0.64	0.69	0.73	0.78	0.82																																								
SPW-4	0.92	1.07	1.19	1.31	1.41	1.51	1.60	1.69	0.89	1.03	1.15	1.26	1.36	1.46	1.55	1.63	0.86	0.99	1.11	1.21	1.31	1.40	1.49	1.57	0.82	0.94	1.06	1.16	1.25	1.34	1.42	1.49	0.78	0.90	1.00	1.10	1.19	1.27	1.35	1.42																																								
SPW-5	1.45	1.68	1.88	2.06	2.22	2.37	2.52	2.66	1.40	1.62	1.81	1.98	2.14	2.29	2.43	2.56	1.35	1.56	1.74	1.91	2.06	2.20	2.34	2.46	1.29	1.49	1.66	1.82	1.97	2.10	2.23	2.35	1.22	1.41	1.58	1.73	1.87	2.00	2.12	2.23																																								
SPW-6	2.44	2.82	3.15	3.46	3.73	3.99	4.23	4.46	2.36	2.72	3.04	3.34	3.60	3.85	4.09	4.31	2.27	2.62	2.93	3.20	3.46	3.70	3.93	4.14	2.16	2.50	2.79	3.06	3.30	3.53	3.75	3.95	2.06	2.37	2.65	2.91	3.14	3.36	3.56	3.75																																								
SPW-7	4.30	4.96	5.55	6.08	6.56	7.02	7.44	7.85	4.15	4.79	5.35	5.87	6.34	6.77	7.18	7.57	3.99	4.60	5.15	5.64	6.09	6.51	6.90	7.28	3.80	4.39	4.91	5.38	5.81	6.21	6.59	6.94	3.62	4.18	4.67	5.11	5.52	5.90	6.26	6.60																																								

R-404A and R-507A Capacities in Tons (at Evaporator Temperature °F)

Valve Type	40°F																20°F																0°F																-20°F																-40°F															
	Pressure Drop Across Valve (psid)																Pressure Drop Across Valve (psid)																Pressure Drop Across Valve (psid)																Pressure Drop Across Valve (psid)																Pressure Drop Across Valve (psid)															
	75	100	125	150	175	200	225	250	75	100	125	150	175	200	225	250	75	100	125	150	175	200	225	250	75	100	125	150	175	200	225	250	75	100	125	150	175	200	225	250	75	100	125	150	175	200	225	250																																
SPW-0	0.06	0.06	0.07	0.08	0.08	0.09	0.10	0.10	0.05	0.06	0.07	0.07	0.08	0.09	0.09	0.10	0.05	0.06	0.06	0.07	0.08	0.08	0.09	0.09	0.05	0.05	0.06	0.07	0.07	0.08	0.08	0.08	0.04	0.05	0.06	0.06	0.07	0.07	0.08																																									
SPW-1	0.13	0.16	0.17	0.19	0.21	0.22	0.23	0.25	0.13	0.15	0.16	0.18	0.20	0.21	0.22	0.23	0.12	0.14	0.16	0.17	0.18	0.20	0.21	0.22	0.11	0.13	0.15	0.16	0.17	0.18	0.19	0.21	0.10	0.12	0.13	0.15	0.16	0.17	0.18	0.19																																								
SPW-2	0.24	0.28	0.31	0.34	0.37	0.40	0.42	0.44	0.23	0.26	0.30	0.32	0.35	0.37	0.40	0.42	0.25	0.28	0.31	0.33	0.35	0.37	0.39	0.20	0.23	0.26	0.29	0.31	0.33	0.35	0.37	0.19	0.22	0.24	0.27	0.29	0.31	0.32	0.34																																									
SPW-3	0.37	0.43	0.48	0.53	0.57	0.61	0.65	0.68	0.35	0.41	0.46	0.50	0.54	0.58	0.61	0.65	0.33	0.39	0.43	0.47	0.51	0.54	0.58	0.61	0.31	0.36	0.40	0.44	0.48	0.51	0.54	0.57	0.29	0.33	0.37	0.41	0.44	0.47	0.50	0.53																																								
SPW-4	0.65	0.75	0.84	0.91	0.99	1.06	1.12	1.18	0.61	0.71	0.79	0.87	0.94	1.00	1.06	1.12	0.58	0.67	0.75	0.82	0.88	0.94	1.00	1.05	0.54	0.62	0.70	0.76	0.82	0.88	0.93	0.98	0.50	0.58	0.65	0.71	0.77	0.82	0.87	0.91																																								
SPW-5	1.02	1.17	1.31	1.44	1.55	1.66	1.76	1.86	0.96	1.11	1.24	1.36	1.47	1.57	1.67	1.76	0.91	1.05	1.17	1.28	1.39	1.48	1.57	1.66	0.85	0.98	1.09	1.20	1.29	1.38	1.47	1.55	0.79	0.91	1.02	1.11	1.20	1.29	1.36	1.44																																								
SPW-6	1.71	1.97	2.21	2.42	2.61	2.79	2.96	3.12	1.62	1.87	2.09	2.29	2.47	2.64	2.80	2.96	1.53	1.76	1.97	2.16	2.33	2.49	2.64	2.79	1.42	1.64	1.84	2.01	2.17	2.32	2.47	2.60	1.32	1.53	1.71	1.87	2.02	2.16	2.29	2.42																																								
SPW-7	3.01	3.47	3.88	4.25	4.59	4.91	5.21	5.49	2.85	3.29	3.68	4.03	4.35	4.65	4.93	5.20	2.68	3.10	3.46	3.80	4.10	4.38	4.65	4.90	2.50	2.89	3.23	3.54	3.82	4.09	4.34	4.57	2.33	2.69	3.01	3.29	3.56	3.80	4.03	4.25																																								

Capacity tables are in tons. Assumes 100°F Liquid Temperature for R-134a, R-22, R-407A, R-407C, R-407F, R-448, R-449A, R-404A & R-507A. Assumes 40°F Liquid Temperature for R-744.

°F Liquid Correction Factors by Refrigerant

°F	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140
R-744	1.32	1.24	1.17	1.09	1.00	0.91	0.82	0.72	0.60	--	--	--	--	--	--
R-134a	1.69	1.63	1.56	1.49	1.42	1.35	1.28	1.21	1.14	1.07	1.00	0.93	0.86	0.78	0.71
R-22	1.57	1.51	1.46	1.40	1.34	1.29	1.23	1.18	1.12	1.06	1.00	0.94	0.88	0.82	0.76
R-407A	1.78	1.70	1.63	1.55	1.48	1.40	1.32	1.24	1.16	1.08	1.00	0.92	0.83	0.75	0.66
R-407C	1.72	1.65	1.58	1.51	1.44	1.37	1.30	1.22	1.15	1.08	1.00	0.92	0.85	0.77	0.69
R-407F	1.72	1.65	1.58	1.51	1.44	1.37	1.30	1.23	1.15	1.08	1.00	0.92	0.84	0.76	0.68
R-404A	2.01	1.92	1.82	1.72	1.62	1.52	1.42	1.32	1.22	1.11	1.00	0.89	0.78	0.66	0.54
R-507A	2.05	1.95	1.85	1.75	1.64	1.54	1.44	1.33	1.22	1.11	1.00	0.89	0.77	0.65	0.52
R-448A	1.78	1.70	1.63	1.55	1.48	1.40	1.32	1.24	1.16	1.08	1.00	0.92	0.83	0.75	0.66
R-449A	1.78	1.71	1.63	1.56	1.48	1.40	1.32	1.25	1.17	1.08	1.00	0.92	0.83	0.75	0.66
R-410A	1.77	1.70	1.62	1.55	1.48	1.40	1.32	1.25	1.17	1.09	1.00	0.92	0.83	0.73	0.63

Capacity - kW

R-744 Capacities in kW (at Evaporator Temperature °C)

Valve Type	-10°C										-20°C										-30°C										-40°C																																																				
	Pressure Drop Across Valve (bar)										Pressure Drop Across Valve (bar)										Pressure Drop Across Valve (bar)										Pressure Drop Across Valve (bar)																																																				
	6	8	10	12	16	20	24	28	32	36	6	8	10	12	16	20	24	28	32	36	6	8	10	12	16	20	24	28	32	36	6	8	10	12	16	20	24	28	32	36																																											
R-744	SPW-0	0.41	0.47	0.52	0.57	0.66	0.74	0.81	0.88	0.94	1.00	1.05	1.11	1.17	1.23	1.29	1.34	1.40	1.46	0.41	0.47	0.53	0.58	0.67	0.75	0.82	0.88	0.94	1.00	1.05	1.11	1.17	1.23	1.29	1.34	1.40	1.46	0.41	0.47	0.53	0.58	0.67	0.75	0.82	0.88	0.94	1.00	1.05	1.11	1.17	1.23	1.29	1.34	1.40	1.46	1.51	0.47	0.52	0.57	0.66	0.74	0.81	0.88	0.94	1.00	1.05	1.11	1.17	1.23	1.29	1.34	1.40	1.46	1.51	1.57	1.62							
	SPW-1	0.99	1.14	1.28	1.40	1.62	1.81	1.98	2.14	2.30	2.45	2.59	2.73	2.87	3.01	3.15	3.29	3.43	3.57	0.99	1.15	1.29	1.41	1.63	1.82	1.99	2.15	2.31	2.47	2.63	2.79	2.95	3.11	3.27	3.43	3.59	3.75	0.99	1.15	1.29	1.41	1.63	1.82	1.99	2.15	2.31	2.47	2.63	2.79	2.95	3.11	3.27	3.43	3.59	3.75	3.91	4.07	1.14	1.28	1.40	1.52	1.74	1.93	2.11	2.29	2.47	2.65	2.83	3.01	3.19	3.37	3.55	3.73	3.91	4.09	4.27	4.45	4.63					
	SPW-2	1.78	2.05	2.29	2.51	2.90	3.24	3.55	3.84	4.13	4.41	4.69	4.97	5.25	5.53	5.81	6.09	6.37	6.65	1.78	2.07	2.31	2.53	2.92	3.27	3.58	3.87	4.16	4.45	4.74	5.03	5.32	5.61	5.90	6.19	6.48	6.77	1.78	2.07	2.31	2.53	2.92	3.27	3.58	3.87	4.16	4.45	4.74	5.03	5.32	5.61	5.90	6.19	6.48	6.77	7.06	7.35	7.64	2.05	2.30	2.51	2.72	3.11	3.49	3.87	4.25	4.63	5.01	5.39	5.77	6.15	6.53	6.91	7.29	7.67	8.05	8.43	8.81	9.19				
	SPW-3	2.74	3.17	3.54	3.88	4.48	5.01	5.49	5.92	6.35	6.78	7.21	7.64	8.07	8.50	8.93	9.36	9.79	10.22	2.74	3.19	3.57	3.91	4.51	5.05	5.53	5.97	6.45	6.93	7.41	7.89	8.37	8.85	9.33	9.81	10.29	10.77	2.74	3.19	3.57	3.91	4.51	5.05	5.53	5.97	6.45	6.93	7.41	7.89	8.37	8.85	9.33	9.81	10.29	10.77	11.25	11.73	12.21	3.17	3.54	3.88	4.17	4.77	5.25	5.73	6.21	6.69	7.17	7.65	8.13	8.61	9.09	9.57	10.05	10.53	11.01	11.49	11.97	12.45				
	SPW-4	4.75	5.48	6.13	6.71	7.75	8.67	9.49	10.3	11.1	11.9	12.7	13.5	14.3	15.1	15.9	16.7	17.5	18.3	4.75	5.62	6.17	6.76	7.81	8.73	9.57	10.41	11.25	12.09	12.93	13.77	14.61	15.45	16.29	17.13	17.97	18.81	19.65	4.75	5.62	6.17	6.76	7.81	8.73	9.57	10.41	11.25	12.09	12.93	13.77	14.61	15.45	16.29	17.13	17.97	18.81	19.65	20.49	21.33	5.48	6.13	6.71	7.29	8.34	9.26	10.18	11.10	12.02	12.94	13.86	14.78	15.70	16.62	17.54	18.46	19.38	20.30	21.22	22.14	23.06			
	SPW-5	7.47	8.62	9.64	10.6	12.2	13.6	14.9	16.1	17.5	18.9	20.3	21.7	23.1	24.5	25.9	27.3	28.7	30.1	7.47	8.69	9.71	10.6	12.3	13.7	15.0	16.3	17.6	18.9	20.2	21.5	22.8	24.1	25.4	26.7	28.0	29.3	30.6	31.9	7.47	8.69	9.71	10.6	12.3	13.7	15.0	16.3	17.6	18.9	20.2	21.5	22.8	24.1	25.4	26.7	28.0	29.3	30.6	31.9	33.2	34.5	8.62	9.64	10.6	11.6	13.2	14.6	16.0	17.4	18.8	20.2	21.6	23.0	24.4	25.8	27.2	28.6	30.0	31.4	32.8	34.2	35.6	37.0
	SPW-6	12.5	14.5	16.2	17.7	20.5	22.9	25.1	27.1	29.1	31.1	33.1	35.1	37.1	39.1	41.1	43.1	45.1	47.1	12.5	14.6	16.3	17.9	20.6	23.1	25.3	27.3	29.3	31.3	33.3	35.3	37.3	39.3	41.3	43.3	45.3	47.3	49.3	51.3	12.5	14.6	16.3	17.9	20.6	23.1	25.3	27.3	29.3	31.3	33.3	35.3	37.3	39.3	41.3	43.3	45.3	47.3	49.3	51.3	53.3	55.3	14.5	16.2	17.7	19.2	21.7	23.9	26.1	28.3	30.5	32.7	34.9	37.1	39.3	41.5	43.7	45.9	48.1	50.3	52.5	54.7	56.9	59.1
	SPW-7	22.1	25.5	28.5	31.2	36.0	40.3	44.1	47.7	51.3	54.9	58.5	62.1	65.7	69.3	72.9	76.5	80.1	83.7	22.1	25.7	28.7	31.4	36.3	40.6	44.5	48.0	51.9	55.8	59.7	63.6	67.5	71.4	75.3	79.2	83.1	87.0	90.9	94.8	22.1	25.7	28.7	31.4	36.3	40.6	44.5	48.0	51.9	55.8	59.7	63.6	67.5	71.4	75.3	79.2	83.1	87.0	90.9	94.8	98.7	102.6	28.5	31.2	36.0	40.3	44.1	47.7	51.3	54.9	58.5	62.1	65.7	69.3	72.9	76.5	80.1	83.7	87.3	90.9	94.5	98.1	101.7	105.3

R-134a Capacities in kW (at Evaporator Temperature °C)

Valve Type	5°C										-10°C										-20°C																																																																
	Pressure Drop Across Valve (bar)										Pressure Drop Across Valve (bar)										Pressure Drop Across Valve (bar)																																																																
	2.5	4	5.5	7	8.5	10	11.5	13	14.5	16	2.5	4	5.5	7	8.5	10	11.5	13	14.5	16	2.5	4	5.5	7	8.5	10	11.5	13	14.5	16																																																							
R-134a	SPW-0	0.19	0.25	0.29	0.33	0.36	0.39	0.42	0.44	0.46	0.48	0.50	0.52	0.54	0.56	0.58	0.60	0.62	0.64	0.19	0.23	0.27	0.30	0.34	0.38	0.42	0.46	0.50	0.54	0.58	0.62	0.66	0.70	0.74	0.78	0.82	0.86	0.90	0.19	0.23	0.27	0.30	0.34	0.38	0.42	0.46	0.50	0.54	0.58	0.62	0.66	0.70	0.74	0.78	0.82	0.86	0.90	0.94	0.98	0.25	0.29	0.33	0.36	0.39	0.42	0.44	0.46	0.48	0.50	0.52	0.54	0.56	0.58	0.60	0.62	0.64	0.66	0.68	0.70	0.72	0.74				
	SPW-1	0.47	0.60	0.70	0.79	0.87	0.95	1.02	1.08	1.14	1.20	1.26	1.32	1.38	1.44	1.50	1.56	1.62	1.68	0.44	0.56	0.66	0.74	0.82	0.89	0.95	1.01	1.07	1.13	1.19	1.25	1.31	1.37	1.43	1.49	1.55	1.61	1.67	0.44	0.56	0.66	0.74	0.82	0.89	0.95	1.01	1.07	1.13	1.19	1.25	1.31	1.37	1.43	1.49	1.55	1.61	1.67	1.73	1.79	0.60	0.70	0.79	0.87	0.95	1.02	1.08	1.14	1.20	1.26	1.32	1.38	1.44	1.50	1.56	1.62	1.68	1.74	1.80	1.86	1.92					
	SPW-2	0.95	1.08	1.26	1.43	1.57	1.70	1.83	1.94	2.06	2.18	2.30	2.42	2.54	2.66	2.78	2.90	3.02	3.14	0.80	1.01	1.18	1.34	1.47	1.60	1.71	1.82	1.93	2.04	2.15	2.26	2.37	2.48	2.59	2.70	2.81	2.92	3.03	0.80	1.01	1.18	1.34	1.47	1.60	1.71	1.82	1.93	2.04	2.15	2.26	2.37	2.48	2.59	2.70	2.81	2.92	3.03	3.14	3.25	1.08	1.26	1.43	1.57	1.70	1.83	1.94	2.06	2.18	2.30	2.42	2.54	2.66	2.78	2.90	3.02	3.14	3.26	3.38	3.50	3.62					
	SPW-3	1.31	1.66	1.95	2.20	2.42	2.63	2.82	3.00	3.18	3.36	3.54	3.72	3.90	4.08	4.26	4.44	4.62	4.80	1.23	1.56	1.83	2.06	2.27	2.46	2.64	2.81	2.99	3.17	3.35	3.53	3.71	3.89	4.07	4.25	4.43	4.61	4.79	1.23	1.56	1.83	2.06	2.27	2.46	2.64	2.81	2.99	3.17	3.35	3.53	3.71	3.89	4.07	4.25	4.43	4.61	4.79	4.97	5.15	1.66	1.95	2.20	2.42	2.63	2.82	3.00	3.18	3.36	3.54	3.72	3.90	4.08	4.26	4.44	4.62	4.80	4.98	5.16	5.34	5.52					
	SPW-4	2.28	2.88	3.37	3.81	4.19	4.55	4.88	5.19	5.50	5.81	6.12	6.43	6.74	7.05	7.36	7.67	7.98	8.29	2.13	2.70	3.16	3.57	3.93	4.26	4.57	4.86	5.15	5.44	5.73	6.02	6.31	6.60	6.89	7.18	7.47	7.76	8.05	2.13	2.70	3.16	3.57	3.93	4.26	4.57	4.86	5.15	5.44	5.73	6.02	6.31	6.60	6.89	7.18	7.47	7.76	8.05	8.34	8.63	2.88	3.37	3.81	4.19	4.55	4.88	5.19	5.50	5.81	6.12	6.43	6.74	7.05	7.36	7.67	7.98	8.29	8.60	8.91	9.22	9.53					
	SPW-5	3.58	4.53	5.31	5.99	6.60	7.16	7.67	8.16	8.65	9.14	9.63	10.12	10.61	11.10	11.59	12.08	12.57	13.06	3.35	4.24	4.97	5.61	6.17	6.71	7.19	7.65	8.10	8.55	9.00	9.45	9.90	10.35	10.80	11.25	11.70	12.15	12.60	13.05	3.35	4.24	4.97	5.61	6.17	6.71	7.19	7.65	8.10	8.55	9.00	9.45	9.90	10.35	10.80	11.25	11.70	12.15	12.60	13.05	13.50	4.53	5.31	5.99	6.60	7.16	7.67	8.16	8.65	9.14	9.63	10.12	10.61	11.10	11.59	12.08	12.57	13.06	13.55	14.04	14.53	15.02				
	SPW-6	6.01	7.61	8.92	10.1	11.1	12.0	12.9	13.7	14.6	15.5	16.4	17.3	18.2	19.1	20.0	20.9	21.8	22.7	5.64	7.13	8.36	9.43	10.4	11.3	12.1	12.9	13.7	14.5	15.3	16.1	16.9	17.7	18.5	19.3	20.1	20.9	21.7	22.5	23.3	24.1	5.64	7.13	8.36	9.43	10.4	11.3	12.1	12.9	13.7	14.5	15.3	16.1	16.9	17.7	18.5	19.3	20.1	20.9	21.7	22.5	23.3	24.1	8.92	10.1	11.1	12.0	12.9	13.7	14.6	15.5	16.4	17.3	18.2	19.1	20.0	20.9	21.8	22.7	23.6	24.5	25.4	26.3	27.2	28.1
	SPW-7	10.6	13.4	15.7	17.7	19.5	21.1	2																																																																													

Capacity - kW

R-448A and R-449A Capacities in kW (at Evaporator Temperature °C)

Valve Type	5°C																-10°C																-20°C																-30°C																-40°C															
	Pressure Drop Across Valve (bar)																Pressure Drop Across Valve (bar)																Pressure Drop Across Valve (bar)																Pressure Drop Across Valve (bar)																Pressure Drop Across Valve (bar)															
	4	6	8	10	12	14	16	18	4	6	8	10	12	14	16	18	4	6	8	10	12	14	16	18	4	6	8	10	12	14	16	18	4	6	8	10	12	14	16	18	4	6	8	10	12	14	16	18																																
SPW-0	0.24	0.30	0.35	0.39	0.42	0.46	0.49	0.52	0.23	0.28	0.33	0.37	0.40	0.43	0.46	0.49	0.22	0.27	0.32	0.35	0.39	0.42	0.45	0.47	0.21	0.26	0.30	0.34	0.37	0.40	0.43	0.46	0.20	0.25	0.29	0.32	0.36	0.38	0.41	0.43																																								
SPW-1	0.60	0.73	0.84	0.94	1.03	1.12	1.19	1.26	0.57	0.69	0.80	0.90	0.98	1.06	1.13	1.20	0.55	0.67	0.77	0.86	0.95	1.02	1.09	1.16	0.52	0.64	0.74	0.83	0.91	0.98	1.05	1.11	0.50	0.61	0.71	0.79	0.87	0.94	1.00	1.06																																								
SPW-2	1.07	1.31	1.51	1.69	1.85	2.00	2.14	2.27	1.02	1.25	1.44	1.61	1.76	1.91	2.04	2.16	0.98	1.20	1.39	1.55	1.70	1.83	1.96	2.08	0.94	1.15	1.33	1.49	1.63	1.76	1.88	2.00	0.90	1.10	1.27	1.42	1.56	1.68	1.80	1.91																																								
SPW-3	1.65	2.02	2.34	2.61	2.86	3.09	3.30	3.50	1.57	1.93	2.22	2.49	2.72	2.94	3.14	3.33	1.51	1.85	2.14	2.39	2.62	2.83	3.03	3.21	1.45	1.78	2.05	2.30	2.52	2.72	2.91	3.08	1.39	1.70	1.96	2.19	2.40	2.59	2.77	2.94																																								
SPW-4	2.86	3.50	4.04	4.52	4.95	5.35	5.72	6.07	2.72	3.33	3.85	4.30	4.71	5.09	5.44	5.77	2.62	3.21	3.70	4.14	4.53	4.90	5.24	5.55	2.51	3.08	3.56	3.98	4.36	4.70	5.03	5.33	2.40	2.94	3.39	3.79	4.16	4.49	4.80	5.09																																								
SPW-5	4.50	5.51	6.36	7.11	7.79	8.41	8.99	9.54	4.28	5.24	6.05	6.76	7.41	8.00	8.56	9.08	4.12	5.04	5.82	6.51	7.13	7.70	8.24	8.74	3.95	4.84	5.59	6.25	6.85	7.40	7.91	8.39	3.71	4.62	5.34	5.97	6.54	7.06	7.55	8.01																																								
SPW-6	7.56	9.26	10.69	11.95	13.09	14.14	15.11	16.03	7.19	8.81	10.17	11.37	12.45	13.45	14.38	15.25	6.92	8.48	9.79	10.94	11.99	12.95	13.84	14.68	6.65	8.14	9.40	10.51	11.51	12.43	13.29	14.10	6.34	7.77	8.97	10.03	10.99	11.87	12.69	13.45																																								
SPW-7	13.29	16.28	18.79	21.01	23.02	24.86	26.58	28.19	12.64	15.48	17.88	19.93	21.90	23.65	25.29	26.82	12.17	14.90	17.21	19.24	21.08	22.77	24.34	25.82	11.69	14.31	16.53	18.48	20.24	21.87	23.38	24.78	11.15	13.66	15.77	17.64	19.32	20.87	22.31	23.66																																								

R-404A and R-507A Capacities in kW (at Evaporator Temperature °C)

Valve Type	5°C																-10°C																-20°C																-30°C																-40°C															
	Pressure Drop Across Valve (bar)																Pressure Drop Across Valve (bar)																Pressure Drop Across Valve (bar)																Pressure Drop Across Valve (bar)																Pressure Drop Across Valve (bar)															
	4	6	8	10	12	14	16	18	4	6	8	10	12	14	16	18	4	6	8	10	12	14	16	18	4	6	8	10	12	14	16	18	4	6	8	10	12	14	16	18	4	6	8	10	12	14	16	18																																
SPW-0	0.17	0.21	0.24	0.27	0.30	0.32	0.34	0.36	0.16	0.19	0.22	0.25	0.27	0.30	0.32	0.34	0.15	0.18	0.21	0.24	0.26	0.28	0.30	0.32	0.14	0.17	0.20	0.22	0.24	0.26	0.28	0.30	0.13	0.16	0.19	0.21	0.23	0.25	0.26	0.28																																								
SPW-1	0.42	0.51	0.59	0.66	0.72	0.78	0.83	0.88	0.39	0.47	0.55	0.61	0.67	0.72	0.77	0.82	0.37	0.45	0.52	0.58	0.63	0.68	0.73	0.78	0.34	0.42	0.49	0.54	0.59	0.64	0.69	0.73	0.32	0.39	0.45	0.51	0.56	0.60	0.64	0.68																																								
SPW-2	0.75	0.91	1.06	1.18	1.29	1.40	1.49	1.58	0.69	0.85	0.98	1.09	1.20	1.30	1.38	1.47	0.66	0.80	0.93	1.04	1.14	1.23	1.31	1.39	0.62	0.76	0.87	0.97	1.07	1.15	1.23	1.31	0.58	0.71	0.81	0.91	1.00	1.08	1.15	1.22																																								
SPW-3	1.15	1.41	1.63	1.82	2.00	2.16	2.31	2.45	1.07	1.31	1.51	1.69	1.85	2.00	2.14	2.27	1.01	1.24	1.43	1.60	1.75	1.89	2.02	2.15	0.95	1.17	1.35	1.51	1.65	1.78	1.90	2.02	0.89	1.09	1.26	1.41	1.54	1.66	1.78	1.89																																								
SPW-4	2.00	2.44	2.82	3.16	3.46	3.73	3.99	4.23	1.85	2.27	2.62	2.92	3.20	3.46	3.70	3.92	1.75	2.15	2.48	2.77	3.03	3.28	3.50	3.72	1.65	2.02	2.33	2.60	2.85	3.08	3.29	3.49	1.54	1.88	2.18	2.43	2.67	2.88	3.08	3.26																																								
SPW-5	3.14	3.84	4.44	4.96	5.44	5.87	6.28	6.66	2.91	3.56	4.11	4.60	5.04	5.44	5.82	6.17	2.76	3.37	3.90	4.36	4.77	5.16	5.51	5.85	2.59	3.17	3.66	4.10	4.49	4.85	5.18	5.50	2.42	2.96	3.42	3.83	4.19	4.53	4.84	5.13																																								
SPW-6	5.27	6.46	7.46	8.34	9.14	9.87	10.55	11.19	4.89	5.99	6.91	7.73	8.47	9.15	9.78	10.37	4.63	5.67	6.55	7.32	8.02	8.66	9.26	9.82	4.35	5.33	6.16	6.88	7.54	8.14	8.71	9.24	4.07	4.98	5.75	6.43	7.05	7.61	8.14	8.63																																								
SPW-7	9.28	11.38	13.12	14.67	16.07	17.35	18.55	19.68	8.60	10.53	12.16	13.59	14.89	16.08	17.21	18.24	8.14	9.97	11.52	12.88	14.11	15.24	16.29	17.28	7.66	9.38	10.83	12.11	13.26	14.32	15.31	16.24	7.15	8.76	10.12	11.31	12.39	13.38	14.31	15.17																																								

Capacity tables are in kW. Assumes 38°C Liquid Temperature for R-134a, R-22, R-407A, R-407C, R-407F, R-448, R-449A, R-404A & R-507A. Assumes 4°C Liquid Temperature for R-744.

°C Liquid Correction Factors by Refrigerant

°C	-18	-12	-7	-1	4	10	16	21	27	32	38	43	49	54	60
R-744	1.32	1.24	1.17	1.09	1.00	0.91	0.82	0.72	0.60	--	--	--	--	--	--
R-134a	1.69	1.63	1.56	1.49	1.42	1.35	1.28	1.21	1.14	1.07	1.00	0.93	0.86	0.78	0.71
R-22	1.57	1.51	1.46	1.40	1.34	1.29	1.23	1.18	1.12	1.06	1.00	0.94	0.88	0.82	0.76
R-407A	1.78	1.70	1.63	1.55	1.48	1.40	1.32	1.24	1.16	1.08	1.00	0.92	0.83	0.75	0.66
R-407C	1.72	1.65	1.58	1.51	1.44	1.37	1.30	1.22	1.15	1.08	1.00	0.92	0.85	0.77	0.69
R-407F	1.72	1.65	1.58	1.51	1.44	1.37	1.30	1.23	1.15	1.08	1.00	0.92	0.84	0.76	0.68
R-404A	2.01	1.92	1.82	1.72	1.62	1.52	1.42	1.32	1.22	1.11	1.00	0.89	0.78	0.66	0.54
R-507A	2.05	1.95	1.85	1.75	1.64	1.54	1.44	1.33	1.22	1.11	1.00	0.89	0.77	0.65	0.52
R-448A	1.78	1.70	1.63	1.55	1.48	1.40	1.32	1.24	1.16	1.08	1.00	0.92	0.83	0.75	0.66
R-449A	1.78	1.71	1.63	1.56	1.48	1.40	1.32	1.25	1.17	1.08	1.00	0.92	0.83	0.75	0.66
R-410A	1.77	1.70	1.62	1.55	1.48	1.40	1.32	1.25	1.17	1.09	1.00	0.92	0.83	0.73	0.63

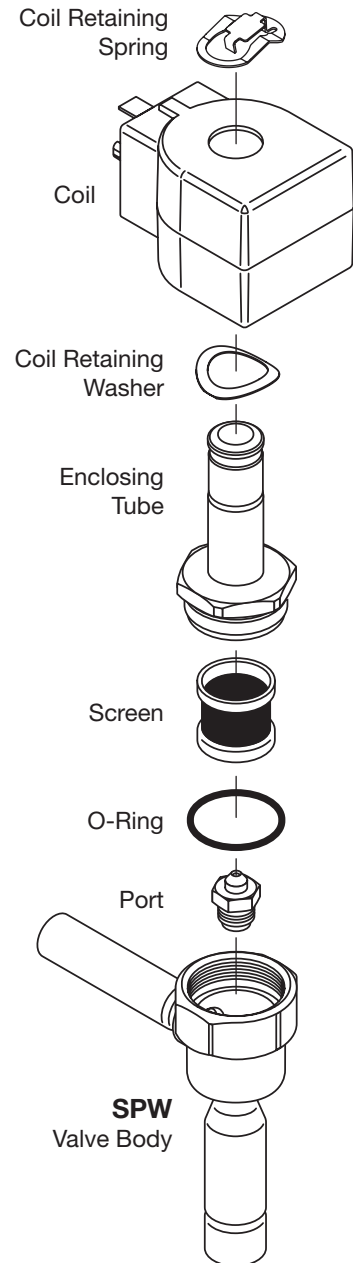
Ordering Instructions

Nomenclature

VALVE				COIL						
SPW	1	3 X 4	ODF	PWC	1	E	110-120/50-60	C	A	18
Valve Model	Port Size	Connection Size (Inlet x Outlet)	Connection Style	Coil Model	Coil Size	E - DIN or Blank	Coil Voltage 110-120 VAC/50-60 Hz 220-240 VAC/50-60 Hz 24 VAC/60 Hz	Coil Type C - Conduit or Blank	Wire Gauge A - 3/16" Insulation or Blank	Lead Length (Inches) or Blank

Product Offering

Item Description	Item Number	
Valve Description		
SPW-0 3X4 ODF LESS COIL	953430	
SPW-1 3X4 ODF LESS COIL	953431	
SPW-2 3X4 ODF LESS COIL	953432	
SPW-3 3X4 ODF LESS COIL	953433	
SPW-4 3X4 ODF LESS COIL	953434	
SPW-5 3X4 ODF LESS COIL	953435	
SPW-6 3X4 ODF LESS COIL	953436	
SPW-7 3x4 ODF LESS COIL	953437	
Coil Description		
PWC-1 24/60 CA18	335002	
PWC-1 110-120/50-60 CA18	335003	
PWC-1 220-240/50-60 CA18	335004	
PWC-1E 24/60	335005	
PWC-1E 110-120/50-60	335006	
PWC-1E 220-240/50-60	335007	
DIN Connector (DIN 43650 Form A)	382616	
Service Parts		
SERVICE KIT - SPW VALVE	O-ring and screen (1 each)	953423
PORT KIT - SPW VALVE	SPW ports sizes 0 through 7, o-ring, and screen (1 each)	953424
KIT - SPW RTNR & WASHR (25PCS)	Coil retaining rings and coil spring washers (25 each)	020404-52
KIT - SPW-0 PORT 5PCS	SPW-0 ports and o-rings (5 each)	21223-000-KIT
KIT - SPW-1 PORT 5PCS	SPW-1 ports and o-rings (5 each)	21223-001-KIT
KIT - SPW-2 PORT 5PCS	SPW-2 ports and o-rings (5 each)	21223-002-KIT
KIT - SPW-3 PORT 5PCS	SPW-3 ports and o-rings (5 each)	21223-003-KIT
KIT - SPW-4 PORT 5PCS	SPW-4 ports and o-rings (5 each)	21223-004-KIT
KIT - SPW-5 PORT 5PCS	SPW-5 ports and o-rings (5 each)	21223-005-KIT
KIT - SPW-6 PORT 5PCS	SPW-6 ports and o-rings (5 each)	21223-006-KIT
KIT - SPW-7 PORT 5PCS	SPW-7 ports and o-rings (5 each)	21223-007-KIT



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