

Electrical Control Valves Series EX4-8

Technical Bulletin

Electrical Control Valves Series EX are stepper motor driven valves for precise control of refrigerant mass flow in air conditioning, refrigeration, heat pumps, close control and industrial process cooling applications.

The Control Valves can be used as thermo-expansion duty, liquid injection duty, hot gas bypass, evaporator pressure regulator, crankcase pressure regulator, head pressure regulator or liquid level control.

Features

- Multifunction as expansion valves, hot gas bypass, suction gas throttling, head pressure, liquid level actuator etc.
- Fully hermetic design
- Applicable to all common refrigerants (HCFC, HFC), HFO/ HFO blends and for subcritical CO₂ applications (for R290, please see separate R290 product guide)
- Stepper motor driven
- Short opening and closing time
- Very fast full stroke time
- High resolution and excellent repeatability
- Bi-flow versions with positive shut-off in both flow directions
- Positive shut-off function to eliminate the use of an additional solenoid valve
- Linear flow capacity
- Extremely wide capacity range (10...100%)
- Continuous modulation of mass flow, no stress (liquid hammering) in the refrigeration circuit
- Direct coupling of motor and valve for high reliability (no gear mechanism)
- Ceramic slide and port for accurate flow and minimal wear
- Rating pressure (PS): 60 bar EX4/5/6/7 and 56 bar EX8
- Corrosion resistant stainless-steel body and connections



Selection table

Type	Part No.	Flow pattern	Nominal Capacity range (kW)	Inlet connection	Outlet connection	Electric connector
EX4-I21	800615	Uni-flow	10...100%	3/8" ODF	5/8" ODF	M12 plug
EX4-M21	800616			10 mm ODF	16 mm ODF	
EX5-U21	800618			5/8" (16 mm) ODF	7/8" (22 mm) ODF	
EX6-I21	800620			7/8" ODF	1-1/8" ODF	
EX6-M21	800621			22 mm ODF	28 mm ODF	
EX7-I21	800624			1-1/8" ODF	1-3/8" ODF	
EX7-M21	800625			28 mm ODF	35 mm ODF	
EX8-M21	800629			42 mm ODF	42 mm ODF	
EX8-U21	800630			1-3/8" (35 mm) ODF	1-3/8" (35 mm) ODF	
EX8-I21	800631			1-5/8" ODF	1-5/8" ODF	
EX4-U31	800617	Bi-flow (Heat pump)	10...100%	5/8" (16 mm) ODF	5/8" (16 mm) ODF	M12 plug
EX5-U31	800619			7/8" (22 mm) ODF	7/8" (22 mm) ODF	
EX6-I31	800622			1-1/8" ODF	1-1/8" ODF	
EX6-M31	800623			28 mm ODF	28 mm ODF	
EX7-U31	800626			1-3/8" (35 mm) ODF	1-3/8" (35 mm) ODF	

Note: EX4-8 are delivered without cable/connector assembly -to be ordered separately.

Cable and connector assembly

Type	Part No.	Temperature Range	Length	Connector type to valve	Connector type to driver board or controller	Illustration
EXV-M15	804663	-50...+80°C	1.5 m	M12 plug	Loose wires	
EXV-M30	804664		3.0 m			
EXV-M60	804665		6.0 m			

Note: Plug does not comply with EN60335-1.

Electrical Control Valves Series EX4-8

Nominal capacities...

...as expansion valves and liquid injection valves, (kW) (10%...100%) -(EXV)

Type	R744	R448A	R449A	R513A	R450A	R134a	R1234ze	R452A	R23	R32	R452B/ R454B	R410A	R407C	R404A/ R507	R124
EX4	27.0	6.5	16.1	11.5	11.3	12.8	10	12.5	17.8	28.6	22	19.3	17.4	11.5	9.2
EX5	82.0	50	49	35	34	39	30	38	54	87	67	58	53	35	28
EX6	197	120	117	84	82	93	73	91	130	208	161	140	126	84	67
EX7	541	329	321	230	225	255	199	250	357	573*	441*	385	347	230	186
EX8	1442	877	857	614	600	680	532	666	-	1528*	1175*	1027	925	613	495

Note 1: EX Bi-flow versions are not released for use with R124 and R23 refrigerants.

Note 2: EX Bi-flow versions have identical capacity in both flow directions.

Note 3: *) Upgrade certification according to PED, from hazard category I to hazard category II is pending. Please contact local sales offices prior to selection.

...as suction pressure regulator (evaporator or crankcase), (kW) – (SPR)

Type	Kv (m³/h)	R744	R448A	R449A	R513A	R450A	R134a	R1234ze	R452A	R410A	R407C	R404A/ R507
EX5	0.68	4.1	1.7	1.6	1.3	1.2	1.3	1.1	1.5	2.2	1.7	1.5
EX6	1.57	9.5	3.9	3.8	3.0	2.8	3.1	2.5	3.4	5	3.9	3.5
EX7	5.58	33.8	13.8	13.6	10.6	9.9	11	9.0	12	17.9	14	13
EX8	16.95	102.6	42.0	41.4	32.2	30.1	34	27.4	37	54.5	42	38

Note: EX Bi-flow versions are not released for use below -40°C

...as hot gas bypass regulator, (kW) – (HGB)

Type	Kv (m³/h)	R448A	R449A	R513A	R450A	R134a	R1234ze	R452A	R410A	R407C	R404A/ R507
EX4	0.21	4.5	4.4	2.7	2.4	2.7	2.0	3.9	5.9	4.4	3.8
EX5	0.68	14.6	14.4	8.6	7.7	8.8	6.5	12.8	19.1	14.3	12.2
EX6	1.57	33.7	33.1	19.9	17.7	20.4	15.1	30	44.0	33.0	28.3
EX7	5.58	119.8	117.8	70.7	63.0	72.5	53.6	105	156.4	117.4	100.5
EX8	16.95	364	358	215	191	220	163	320	475	357	305

Note: EX Bi-flow versions are not released for hot gas flow applications.

...for hot gas flow such as heat reclaim application, (kW) – (HRC1/2)

Type	Kv (m³/h)	R448A	R449A	R513A	R450A	R134a	R1234ze	R452A	R410A	R407C	R404A/ R507
EX5		5.1	5.0	3.8	3.7	4.0	3.3	4.4	5.9	5.1	4.3
EX6	1.57	11.7	11.6	8.8	8.5	9.3	7.6	10.1	13.7	11.8	9.9
EX7	5.58	42	41	31	30	33	27	36	49	42	35
EX8	16.95	127	125	95	91	100	82	110	148	128	107

Note: EX Bi-flow versions are not released for hot gas flow applications.

...as condensing pressure regulator and liquid duty, (kW) –(CPR)

Type	Kv (m³/h)	R448A	R449A	R513A	R450A	R134a	R1234ze	R452A	R407C	R404A
EX4		5.4	5.2	5.1	5.3	5.6	5.1	4.1	5.7	4
EX5	0.68	17.4	17.0	16.5	17.2	18	16.6	13	18	13
EX6	1.57	40.4	39.6	38.3	40.1	42	38.7	31	43	30
EX7	5.58	143	140	136	142	151	137	196	153	106
EX8	16.95	430	422	408	428	458	413	331	463	324

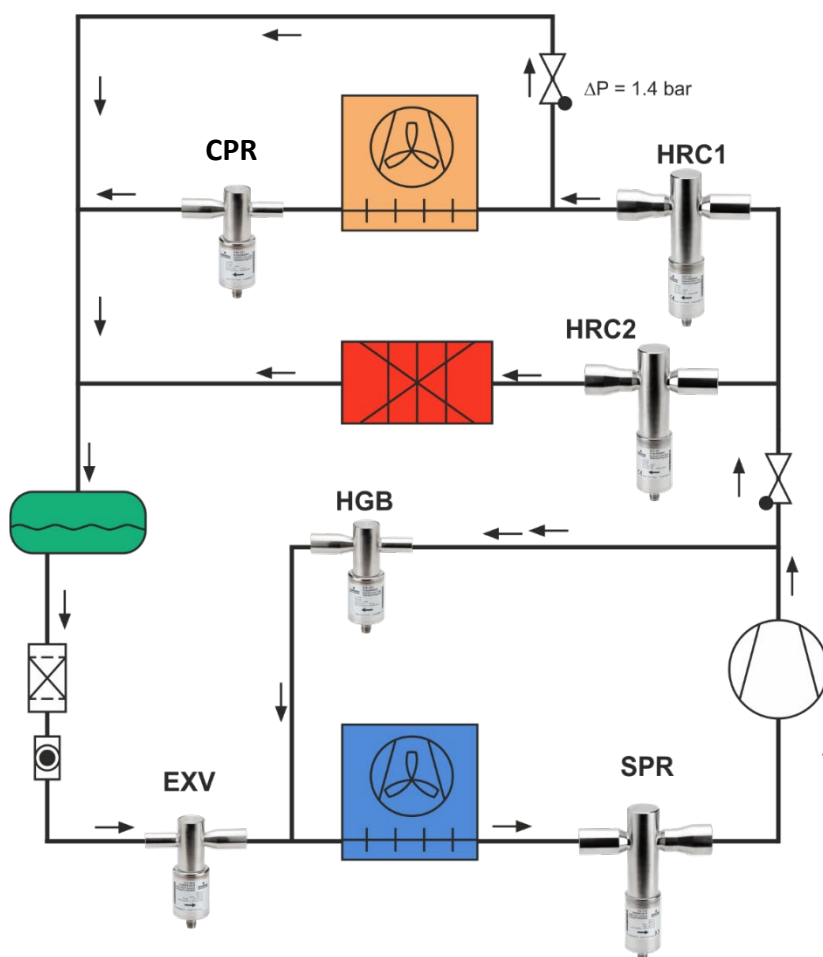
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The nominal capacity is based on the following conditions:

Refrigerant	Evaporating temperature	Condensing temperature	Pressure drop (For suction duty)	Pressure drop (For liquid duty)	Pressure drop (For hot gas flow duty)	Isentropic efficiency (For hot gas flow duty)
R134a, R404A, R410A, R513A, R1234ze	+4°C dew point	+38°C bubble & dew point	0.15 bar	0.35 bar	0.5 bar	80%
R407C	+4°C dew point	+38°C bubble/ +43°C dew point				
R124	+20°C	+80°C				
R23	-60°C	-25°C				
R744	-10°C	+10°C				
R450A	+4°C	+38°C bubble/ +38.6°C dew point				
R452A		+38°C bubble/ +41.6°C dew point				
R448A, R449A		+38°C bubble/ +42.6°C dew point				

Note: For selection of other operating condition, please use quick selection tables in the next pages or Navigator selection program 2019.

Application of EX4-8



EXV: Electronic Expansion Valve
SPR: Suction Pressure Regulator
HGB: Hot Gas Bypass Regulator
HRC1/2: Heat Reclaim Regulator
CPR: Condensing Pressure Regulator

Electrical Control Valves Series EX4-8

EX4-8 Quick selection: EXPANSION VALVE / LIQUID INJECTION – EXV

(included 1.5 bar pressure drop for liquid line components and distributor)

Condensing temperature (°C)	R744													Valve type
	Capacity (kW)													
	Evaporating temperature (°C)													
	10	5	0	-5	-10	-15	-20	-25	-30	-35	-40	-45	-50	
20	15.6	19.6	22.8	25.4	27.6	29.4	30.9	32.1	33.1	33.9	34.5	34.9	35.2	EX4
	47	59	69	77	84	89	94	97	100	103	105	106	107	EX5
	113	142	166	185	201	214	225	234	241	247	251	254	256	EX6
	312	391	455	508	552	588	618	643	663	678	690	698	703	EX7
	831	1044	1214	1355	1471	1568	1649	1715	1768	1809	1840	1862	1876	EX8
15		17	21	25	27	30	31	33	34	35	36	36	37	EX4
		52	65	75	83	90	95	100	104	106	109	110	112	EX5
		124	155	179	199	215	229	239	248	255	261	265	268	EX6
		342	426	493	547	592	628	659	683	703	718	729	736	EX7
		911	1136	1314	1458	1577	1676	1756	1822	1874	1914	1943	1964	EX8
10			18.1	22.5	25.9	28.7	30.9	32.8	34.2	35.4	36.4	37.1	37.6	EX4
			55	68	79	87	94	99	104	107	110	112	114	EX5
			132	164	189	209	225	238	249	258	265	270	273	EX6
			362	450	518	573	618	655	685	709	727	742	752	EX7
			966	1201	1383	1529	1649	1747	1826	1890	1940	1978	2006	EX8
5				19	23	27	30	32	34	35	36	37	38	EX4
				57	71	81	89	96	102	106	110	112	114	EX5
				137	170	195	215	231	244	255	263	270	274	EX6
				376	466	535	591	635	671	700	723	741	755	EX7
				1003	1243	1428	1575	1694	1790	1868	1929	1977	2012	EX8
0					19.2	23.8	27.2	30.0	32.2	34.0	35.4	36.5	37.3	EX4
					58	72	83	91	98	103	107	110	113	EX5
					139	173	198	218	234	247	257	265	271	EX6
					384	475	545	600	644	679	707	729	746	EX7
					1023	1268	1453	1600	1717	1811	1886	1945	1990	EX8
-5						19	24	27	30	32	34	35	36	EX4
						58	73	83	91	98	103	107	110	EX5
						140	174	199	219	235	247	257	265	EX6
						386	479	548	603	646	680	707	728	EX7
						1029	1277	1462	1607	1722	1813	1885	1940	EX8
-10							19.2	23.8	27.3	30.0	32.1	33.7	35.0	EX4
							58	72	83	91	97	102	106	EX5
							140	173	199	218	233	245	254	EX6
							384	477	546	599	641	674	700	EX7
							1024	1272	1456	1598	1710	1798	1866	EX8
-15								18.9	23.5	26.9	29.5	31.6	33.1	EX4
								57.2	71.3	81.6	89.5	95.6	100	EX5
								137	171	196	215	230	241	EX6
								377	471	539	591	631	663	EX7
								1007	1255	1436	1575	1683	1767	EX8
-20									18.4	23.0	26.3	28.9	30.8	EX4
									56	70	80	87	93	EX5
									133	167	191	210	224	EX6
									367	460	527	577	616	EX7
									979	1226	1404	1539	1643	EX8

Note: For other operating conditions, please use free selection tool/program Navigator revision 2019.

Electrical Control Valves Series EX4-8

EX4-8 Quick selection: EXPANSION VALVE / LIQUID INJECTION – EXV

(included 1.5 bar pressure drop for liquid line components and distributor)

Condensing temperature (°C)	R448A																Valve type
	Capacity (kW)																
	Evaporating temperature (°C)																
	10	5	0	-5	-10	-15	-20	-25	-30	-35	-40	-45	-50	-55	-60	-70	
60 bubble/ 63.4 dew point	15.2	15.2	15.2	15.1	15.0	14.8	14.5	14.2	13.9	13.5	13.1	12.7	12.3	11.8	11.4	10.4	EX4
	46	46	46	46	45	45	44	43	42	41	40	39	37	36	35	32	EX5
	110	111	111	110	109	107	106	103	101	98	96	93	89	86	83	76	EX6
	304	305	305	303	300	296	291	285	278	271	263	255	246	237	228	209	EX7
	810	813	812	807	799	788	775	759	741	722	701	679	656	632	607	557	EX8
50 bubble/ 54 dew point	15.7	15.9	16.1	16.1	16.1	16.0	15.9	15.6	15.4	15.1	14.8	14.4	14.1	13.7	13.2	12.4	EX4
	47	48	49	49	49	49	48	47	47	46	45	44	43	41	40	38	EX5
	114	116	117	117	117	116	115	114	112	110	108	105	102	99	96	90	EX6
	313	318	321	322	322	320	317	313	308	302	296	289	281	273	265	248	EX7
	835	849	857	860	859	854	846	835	821	806	788	770	750	728	707	661	EX8
40 bubble/ 44.5 dew point	15.0	15.5	15.9	16.1	16.2	16.3	16.3	16.2	16.0	15.8	15.6	15.3	15.0	14.6	14.3	13.5	EX4
	45	47	48	49	49	49	49	49	49	48	47	46	45	44	43	41	EX5
	109	113	115	117	118	118	118	118	116	115	113	111	109	106	104	98	EX6
	299	310	317	322	325	326	325	323	320	316	311	306	299	293	285	270	EX7
	798	826	846	859	866	869	867	862	854	843	830	815	798	780	761	721	EX8
30 bubble/ 34.9 dew point	13.1	14.0	14.7	15.2	15.5	15.8	15.9	15.9	15.9	15.8	15.6	15.4	15.2	14.9	14.6	14.0	EX4
	40	42	45	46	47	48	48	48	48	48	47	47	46	45	44	42	EX5
	95	102	107	111	113	115	116	116	115	115	114	112	110	108	106	102	EX6
	262	280	294	304	311	315	318	318	318	316	312	308	304	298	292	280	EX7
	699	748	784	810	829	841	847	849	847	841	833	822	810	795	780	746	EX8
20 bubble/ 25.3 dew point	9.6	11.3	12.5	13.3	14.0	14.5	14.8	15.0	15.1	15.1	15.1	14.9	14.8	14.6	14.4	13.9	EX4
	29	34	38	40	42	44	45	45	46	46	46	45	45	44	44	42	EX5
	70	82	91	97	102	105	107	109	110	110	109	109	108	106	105	101	EX6
	192	225	249	267	280	289	296	300	302	302	301	299	296	292	287	277	EX7
	513	601	665	712	746	771	788	799	804	805	803	797	789	779	767	739	EX8
10 bubble/ 15.5 dew point			8.6	10.3	11.4	12.3	12.9	13.3	13.6	13.8	13.9	13.9	13.8	13.7	13.6	13.2	EX4
			26	31	35	37	39	40	41	42	42	42	42	42	41	40	EX5
			63	75	83	89	94	97	99	100	101	101	101	100	99	96	EX6
			172	205	229	246	258	267	272	276	278	278	277	275	272	264	EX7
			460	548	610	655	688	711	726	736	740	741	738	732	724	704	EX8
0 bubble/ 5.7 dew point					7.2	8.9	10.0	10.8	11.4	11.8	12.1	12.3	12.3	12.3	12.3	12.0	EX4
					22	27	30	33	35	36	37	37	37	37	37	36	EX5
					52	65	73	79	83	86	88	89	90	90	89	88	EX6
					143	177	201	217	229	237	242	245	247	247	246	241	EX7
					382	473	535	578	609	631	645	654	657	658	655	642	EX8
-10 bubble/ -4.2 dew point							5.1	7.0	8.2	9.0	9.6	10.0	10.2	10.4	10.4	10.4	EX4
							15	21	25	27	29	30	31	31	32	31	EX5
							37	51	59	65	70	72	74	75	76	75	EX6
							101	140	164	180	191	199	204	207	208	208	EX7
							270	372	436	480	510	531	544	552	556	554	EX8
-20 bubble/ -14.1 dew point										4.2	5.7	6.6	7.2	7.6	7.9	8.1	EX4
										13	17	20	22	23	24	25	EX5
										30	41	48	52	55	57	59	EX6
										83	113	132	144	152	157	162	EX7
										222	302	352	384	406	420	432	EX8

Note: For other operating conditions, please use free selection tool/program Navigator revision 2019

Electrical Control Valves Series EX4-8

EX4-8 Quick selection: EXPANSION VALVE / LIQUID INJECTION – EXV

(included 1.5 bar pressure drop for liquid line components and distributor)

Condensing temperature (°C)	R449A																Valve type
	Capacity (kW)																
	Evaporating temperature (°C)																
	10	5	0	-5	-10	-15	-20	-25	-30	-35	-40	-45	-50	-55	-60	-70	
60 bubble/ 63.5 dew point	15.0	15.0	15.0	15.0	15.0	14.0	14.0	14.0	13.0	13.0	13.0	12.0	12.0	11.0	11.0	10.0	EX4
	45	45	45	44	44	43	43	42	41	40	38	37	36	34	33	30	EX5
	107	108	107	107	106	104	102	100	97	95	92	89	86	83	79	72	EX6
	295	296	295	293	290	286	281	275	268	261	253	245	236	227	218	199	EX7
	786	789	788	782	774	763	749	733	715	695	674	652	629	605	581	530	EX8
50 bubble/ 54.1 dew point	15.0	15.0	16.0	16.0	16.0	16.0	15.0	15.0	15.0	15.0	14.0	14.0	14.0	13.0	13.0	12.0	EX4
	46	47	47	47	47	47	47	46	45	44	43	42	41	40	39	36	EX5
	111	113	114	114	114	113	112	110	108	106	104	101	99	96	93	87	EX6
	305	310	312	313	313	311	308	303	298	292	286	279	271	263	255	238	EX7
	813	826	833	836	834	829	820	809	795	780	762	744	723	702	680	634	EX8
40 bubble/ 44.6 dew point	15.0	15.0	15.0	16.0	16.0	16.0	16.0	16.0	16.0	15.0	15.0	15.0	15.0	14.0	14.0	13.0	EX4
	44	46	47	48	48	48	48	48	47	47	46	45	44	43	42	40	EX5
	106	110	113	114	115	115	115	114	113	112	110	108	106	103	101	95	EX6
	292	302	310	314	317	317	317	315	311	307	302	297	290	284	276	261	EX7
	780	807	825	838	845	847	845	839	830	819	806	791	774	756	737	697	EX8
30 bubble/ 34.9 dew point	13.0	14.0	14.0	15.0	15.0	15.0	16.0	16.0	15.0	15.0	15.0	15.0	15.0	15.0	14.0	14.0	EX4
	39	42	44	45	46	47	47	47	47	47	46	46	45	44	43	41	EX5
	93	100	105	108	111	112	113	113	113	112	111	109	108	106	103	99	EX6
	257	274	288	297	304	308	310	311	310	308	305	301	296	290	284	272	EX7
	684	732	767	793	810	822	828	829	827	821	812	801	789	774	759	724	EX8
20 bubble/ 25.2 dew point	9.0	11.0	12.0	13.0	14.0	14.0	14.0	15.0	15.0	15.0	15.0	15.0	14.0	14.0	14.0	14.0	EX4
	29	33	37	40	42	43	44	44	45	45	45	44	44	43	43	41	EX5
	68	80	89	95	100	103	105	107	107	107	107	106	105	104	102	98	EX6
	188	221	244	261	274	283	289	293	295	295	294	292	289	285	281	270	EX7
	502	589	651	697	731	755	772	782	787	788	785	779	771	760	748	720	EX8
10 bubble/ 15.4 dew point			8.0	10.0	11.0	12.0	13.0	13.0	13.0	14.0	14.0	14.0	14.0	13.0	13.0	13.0	EX4
			26	30	34	36	38	40	40	41	41	41	41	41	40	39	EX5
			61	73	82	88	92	95	97	98	99	99	99	98	97	94	EX6
			169	201	224	241	253	261	267	270	272	272	271	269	266	258	EX7
			450	537	598	642	674	697	712	721	725	725	722	717	709	688	EX8
0 bubble/ 5.6 dew point					7.0	9.0	10.0	11.0	11.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	EX4
					21	26	30	32	34	35	36	36	37	37	36	36	EX5
					51	63	71	77	81	84	86	87	88	88	87	86	EX6
					140	174	197	213	224	232	237	240	242	242	240	236	EX7
					373	463	524	567	598	619	633	641	644	644	641	629	EX8
-10 bubble/ -4.3 dew point							5.0	7.0	8.0	9.0	9.0	10.0	10.0	10.0	10.0	10.0	EX4
							15	21	24	27	28	30	30	31	31	31	EX5
							36	50	58	64	68	71	73	74	74	74	EX6
							98	136	160	176	188	195	200	203	204	203	EX7
							262	364	427	470	500	521	534	542	545	542	EX8
-20 bubble/ -14.2 dew point										4.0	6.0	6.0	7.0	7.0	8.0	8.0	EX4
										12	17	20	21	23	23	24	EX5
										29	40	47	51	54	56	58	EX6
										81	111	129	141	149	154	159	EX7
										215	295	344	376	397	411	423	EX8

Note: For other operating conditions, please use free selection tool/program Navigator revision 2019

Electrical Control Valves Series EX4-8

EX4-8 Quick selection: EXPANSION VALVE / LIQUID INJECTION – EXV

(included 1.5 bar pressure drop for liquid line components and distributor)

Condensing temperature (°C)	R513A														Valve type
	Capacity (kW)														
	Evaporating temperature (°C)														
	55	50	40	30	20	10	5	0	-5	-10	-15	-20	-25	-30	
80	8.4	8.9	9.4	9.4	9.2	8.6	8.3	7.9	7.5	7.1	6.7	6.2	5.7	5.2	EX4
	25	27	28	29	28	26	25	24	23	22	20	19	17	16	EX5
	61	64	68	69	67	63	60	58	55	52	48	45	42	38	EX6
	168	177	187	189	183	173	166	159	151	142	133	124	114	104	EX7
	447	473	500	503	489	461	444	424	403	380	356	330	305	278	EX8
70	7.5	8.5	9.9	10.4	10.6	10.4	10.2	9.9	9.6	9.3	8.9	8.5	8.1	7.6	EX4
	23	26	30	32	32	31	31	30	29	28	27	26	24	23	EX5
	54	62	72	76	77	75	74	72	70	67	65	62	59	56	EX6
	149	171	197	209	211	207	203	198	192	185	178	170	162	153	EX7
	398	455	525	557	564	553	542	528	512	494	474	453	431	408	EX8
60		6.0	8.9	10.3	10.9	11.1	11.0	10.9	10.7	10.5	10.2	9.9	9.6	9.2	EX4
		18	27	31	33	34	33	33	33	32	31	30	29	28	EX5
		43	64	75	79	81	80	79	78	76	74	72	70	67	EX6
		119	177	205	218	222	221	218	215	210	205	198	192	184	EX7
		318	472	547	582	591	588	582	572	560	546	529	511	492	EX8
55			7.7	9.7	10.7	11.1	11.2	11.1	11.0	10.8	10.6	10.4	10.1	9.7	EX4
			23	29	32	34	34	34	33	33	32	31	30	30	EX5
			56	71	78	81	81	81	80	79	77	75	73	71	EX6
			153	194	214	222	223	222	220	217	212	207	201	195	EX7
			408	517	571	593	595	593	587	578	566	552	537	520	EX8
50			5.7	8.8	10.2	10.9	11.1	11.1	11.1	11.0	10.8	10.6	10.4	10.1	EX4
			17	27	31	33	34	34	34	33	33	32	31	31	EX5
			41	64	74	79	81	81	81	80	79	77	75	73	EX6
			113	175	205	218	221	222	222	220	217	212	208	202	EX7
			302	468	546	583	590	593	591	586	578	567	554	539	EX8
45				7.3	9.5	10.5	10.8	10.9	11.0	11.0	10.9	10.7	10.5	10.3	EX4
				22	29	32	33	33	33	33	33	33	32	31	EX5
				53	69	76	78	80	80	80	79	78	77	75	EX6
				147	189	210	216	219	220	219	218	215	211	206	EX7
				391	505	561	575	583	586	585	580	572	562	550	EX8
40				5.0	8.3	9.9	10.3	10.6	10.7	10.8	10.8	10.7	10.5	10.4	EX4
				15	25	30	31	32	32	33	33	32	32	31	EX5
				37	61	72	75	77	78	78	78	78	77	75	EX6
				101	167	197	206	211	214	216	215	214	211	207	EX7
				268	445	526	548	563	572	575	574	570	562	553	EX8
35					6.7	8.9	9.5	10.0	10.3	10.4	10.5	10.5	10.4	10.3	EX4
					20	27	29	30	31	32	32	32	32	31	EX5
					49	65	69	73	75	76	76	76	76	75	EX6
					134	178	191	200	205	208	210	209	208	205	EX7
					357	476	509	532	547	556	559	559	555	548	EX8
30					4.0	7.6	8.5	9.2	9.6	9.9	10.0	10.1	10.1	10.0	EX4
					12	23	26	28	29	30	30	31	31	30	EX5
					29	55	62	67	70	72	73	74	74	73	EX6
					80	152	171	183	192	198	201	202	202	201	EX7
					212	406	455	488	512	527	536	539	539	536	EX8
25						5.7	7.1	8.1	8.7	9.1	9.4	9.6	9.7	9.7	EX4
						17	22	24	26	28	29	29	29	29	EX5
						42	52	59	63	66	69	70	70	70	EX6
						115	143	161	174	183	188	192	193	193	EX7
						306	380	430	464	487	503	512	516	516	EX8

Note: For other operating conditions, please use free selection tool/program Navigator revision 2019

Electrical Control Valves Series EX4-8

EX4-8 Quick selection: EXPANSION VALVE / LIQUID INJECTION – EXV

(included 1.5 bar pressure drop for liquid line components and distributor)

Condensing temperature (°C)	R450A														Valve type
	Capacity (kW)														
	Evaporating temperature (°C)														
	55	50	40	30	20	10	5	0	-5	-10	-15	-20	-25	-30	
80	9.2	9.8	10.4	10.6	10.4	10.0	9.8	9.5	9.2	8.8	8.4	8.0	7.6	7.1	EX4
	28	30	31	32	32	30	30	29	28	27	25	24	23	22	EX5
	67	71	76	77	76	73	71	69	67	64	61	58	55	52	EX6
	184	195	208	211	209	201	196	190	183	176	168	160	151	143	EX7
	491	520	554	564	556	536	522	506	488	469	448	426	404	380	EX8
70	7.7	8.8	10.2	10.9	11.1	11.0	10.9	10.7	10.4	10.1	9.8	9.5	9.1	8.7	EX4
	23	27	31	33	34	33	33	32	32	31	30	29	28	27	EX5
	56	64	74	79	81	80	79	78	76	74	71	69	66	64	EX6
	154	177	204	218	222	220	217	213	208	203	197	190	183	175	EX7
	412	471	545	581	593	587	579	569	556	541	524	506	487	467	EX8
60		5.9	8.8	10.3	11.0	11.2	11.2	11.1	11.0	10.8	10.6	10.3	10.0	9.7	EX4
		18	27	31	33	34	34	34	33	33	32	31	30	30	EX5
		43	64	75	80	82	82	81	80	79	77	75	73	71	EX6
		119	177	205	220	224	224	223	220	216	212	207	201	195	EX7
		317	471	548	586	598	598	594	587	577	565	551	536	519	EX8
55			7.5	9.6	10.6	11.1	11.1	11.1	11.1	10.9	10.8	10.5	10.3	10.0	EX4
			23	29	32	34	34	34	34	33	33	32	31	30	EX5
			55	70	77	80	81	81	80	79	78	77	75	73	EX6
			150	191	212	221	223	223	221	219	215	211	206	200	EX7
			401	510	565	590	594	593	590	583	574	562	549	534	EX8
50			5.5	8.5	10.0	10.7	10.9	11.0	11.0	10.9	10.8	10.6	10.4	10.2	EX4
			17	26	30	32	33	33	33	33	33	32	32	31	EX5
			40	62	73	78	79	80	80	79	78	77	76	74	EX6
			109	170	200	214	218	219	219	218	216	212	208	203	EX7
			291	455	533	571	581	585	585	581	575	566	555	543	EX8
45				7.0	9.1	10.2	10.5	10.6	10.7	10.7	10.7	10.6	10.4	10.2	EX4
				21	28	31	32	32	32	32	32	32	32	31	EX5
				51	66	74	76	77	78	78	78	77	76	74	EX6
				140	183	204	209	213	214	214	213	211	208	204	EX7
				374	487	543	558	567	572	572	569	563	554	544	EX8
40				4.6	7.9	9.4	9.9	10.1	10.3	10.4	10.4	10.4	10.3	10.1	EX4
				14	24	29	30	31	31	32	32	31	31	31	EX5
				34	58	69	72	74	75	76	76	75	75	73	EX6
				93	158	188	197	203	206	208	208	207	205	202	EX7
				248	423	502	526	541	550	555	555	552	547	539	EX8
35					6.2	8.4	9.0	9.5	9.8	9.9	10.0	10.0	10.0	9.9	EX4
					19	25	27	29	30	30	30	30	30	30	EX5
					45	61	66	69	71	72	73	73	73	72	EX6
					124	168	181	189	195	199	200	201	200	198	EX7
					332	448	482	505	520	530	534	535	532	527	EX8
30					3.3	7.0	7.9	8.6	9.0	9.3	9.5	9.6	9.6	9.5	EX4
					10	21	24	26	27	28	29	29	29	29	EX5
					24	51	58	62	65	68	69	70	70	69	EX6
					67	141	159	171	180	186	190	191	192	191	EX7
					178	375	423	457	480	496	505	510	511	509	EX8
25						5.0	6.5	7.4	8.0	8.5	8.8	8.9	9.0	9.1	EX4
						15	20	22	24	26	27	27	27	27	EX5
						37	47	54	58	62	64	65	66	66	EX6
						101	129	148	161	169	175	179	181	181	EX7
						269	345	394	428	452	468	477	482	483	EX8

Note: For other operating conditions, please use free selection tool/program Navigator revision 2019.

Electrical Control Valves Series EX4-8

EX4-8 Quick selection: EXPANSION VALVE / LIQUID INJECTION – EXV

(included 1.5 bar pressure drop for liquid line components and distributor)

Condensing temperature (°C)	R134a														Valve type
	Capacity (kW)														
	Evaporating temperature (°C)														
	55	50	40	30	20	10	5	0	-5	-10	-15	-20	-25	-30	
80	10.1	10.7	11.5	11.8	11.8	11.5	11.2	10.9	10.6	10.3	9.9	9.5	9.1	8.6	EX4
	31	32	35	36	36	35	34	33	32	31	30	29	27	26	EX5
	73	78	84	86	86	83	82	80	77	75	72	69	66	63	EX6
	201	214	230	237	236	229	224	219	212	205	198	190	181	172	EX7
	537	572	614	631	628	611	598	583	566	548	527	506	483	459	EX8
70	8.5	9.8	11.4	12.3	12.6	12.6	12.5	12.3	12.1	11.8	11.5	11.2	10.8	10.5	EX4
	26	30	35	37	38	38	38	37	37	36	35	34	33	32	EX5
	62	71	83	89	92	92	91	90	88	86	84	82	79	76	EX6
	170	196	228	246	253	252	250	247	242	237	231	224	217	209	EX7
	454	522	609	655	674	673	667	657	646	631	615	598	579	558	EX8
60		6.6	9.9	11.6	12.5	12.9	12.9	12.9	12.8	12.6	12.4	12.2	11.9	11.6	EX4
		20	30	35	38	39	39	39	39	38	38	37	36	35	EX5
		48	72	84	91	94	94	94	93	92	90	88	86	84	EX6
		132	198	232	250	257	258	257	255	252	248	243	237	231	EX7
		352	529	619	667	686	688	686	681	672	661	648	633	617	EX8
55			8.5	10.8	12.1	12.7	12.8	12.9	12.8	12.7	12.6	12.4	12.1	11.9	EX4
			26	33	37	38	39	39	39	39	38	37	37	36	EX5
			61	79	88	92	93	93	93	93	91	90	88	86	EX6
			169	216	242	254	256	257	256	254	251	247	243	237	EX7
			451	577	644	676	683	686	684	678	670	660	647	633	EX8
50			6.2	9.7	11.4	12.3	12.5	12.7	12.7	12.7	12.6	12.4	12.2	12.0	EX4
			19	29	35	37	38	38	39	38	38	38	37	36	EX5
			45	70	83	89	91	92	92	92	91	90	89	87	EX6
			123	193	228	246	251	253	254	254	252	249	245	240	EX7
			328	515	608	656	668	675	678	676	671	663	653	641	EX8
45				8.0	10.4	11.7	12.1	12.3	12.4	12.5	12.4	12.3	12.2	12.0	EX4
				24	32	35	37	37	38	38	38	37	37	36	EX5
				58	76	85	88	89	90	91	90	90	89	87	EX6
				160	209	234	241	246	248	249	249	247	244	241	EX7
				426	556	623	643	655	663	665	663	659	651	641	EX8
40				5.4	9.1	10.8	11.4	11.7	12.0	12.1	12.1	12.1	12.0	11.9	EX4
				16	28	33	34	36	36	37	37	37	36	36	EX5
				39	66	79	83	85	87	88	88	88	87	87	EX6
				107	182	217	227	235	239	242	243	242	241	238	EX7
				286	485	578	606	626	638	645	648	646	642	634	EX8
35					7.2	9.7	10.4	11.0	11.3	11.6	11.7	11.7	11.7	11.6	EX4
					22	29	32	33	34	35	35	36	35	35	EX5
					52	71	76	80	82	84	85	85	85	85	EX6
					144	194	209	219	227	231	234	235	234	233	EX7
					384	518	557	585	604	616	623	626	625	620	EX8
30					4.1	8.2	9.2	10.0	10.5	10.8	11.1	11.2	11.3	11.2	EX4
					12	25	28	30	32	33	34	34	34	34	EX5
					30	60	67	72	76	79	81	81	82	82	EX6
					82	164	185	199	210	217	221	224	225	225	EX7
					219	437	492	531	559	578	591	598	600	599	EX8
25						6.0	7.6	8.7	9.4	9.9	10.3	10.5	10.6	10.7	EX4
						18	23	26	29	30	31	32	32	32	EX5
						44	55	63	68	72	75	76	77	78	EX6
						121	152	173	188	199	206	210	213	214	EX7
						322	406	462	502	529	548	561	568	570	EX8

Note: For other operating conditions, please use free selection tool/program Navigator revision 2019

Electrical Control Valves Series EX4-8

EX4-8 Quick selection: EXPANSION VALVE / LIQUID INJECTION – EXV

(included 1.5 bar pressure drop for liquid line components and distributor)

Condensing temperature (°C)	R1234ze														Valve type
	Capacity (kW)														
	Evaporating temperature (°C)														
	55	50	40	30	20	10	5	0	-5	-10	-15	-20	-25	-30	
80	8	9	10	10	9	9	9	8	8	8	7	7	7	6	EX4
	26	27	29	29	29	27	27	26	25	24	22	21	20	19	EX5
	62	65	69	70	69	66	64	62	59	57	54	51	48	45	EX6
	170	180	191	193	189	181	176	170	163	156	148	140	132	123	EX7
	452	479	509	515	505	483	469	452	434	415	395	374	352	329	EX8
70	7	8	9	10	10	10	10	9	9	9	9	8	8	8	EX4
	21	24	28	30	30	30	29	29	28	27	26	25	24	23	EX5
	50	58	67	71	73	71	70	69	67	65	63	60	58	55	EX6
	137	158	184	196	200	197	193	189	184	179	173	166	159	152	EX7
	365	422	491	523	532	524	516	505	492	477	460	442	424	404	EX8
60		5	8	9	10	10	10	10	10	9	9	9	9	8	EX4
		15	23	28	30	30	30	30	29	29	28	27	26	26	EX5
		35	56	66	71	72	72	71	70	69	67	66	63	61	EX6
		97	155	182	195	199	198	196	193	190	185	180	175	169	EX7
		258	413	485	519	529	528	523	516	506	494	481	466	450	EX8
55			6	8	9	10	10	10	10	10	9	9	9	9	EX4
			19	25	28	29	30	30	29	29	28	28	27	26	EX5
			46	61	68	71	71	71	70	70	68	67	65	63	EX6
			128	167	187	195	196	195	194	191	188	183	179	173	EX7
			341	446	498	519	522	521	517	510	500	489	476	462	EX8
50			4	7	9	9	10	10	10	9	9	9	9	9	EX4
			13	22	26	28	29	29	29	29	28	28	27	27	EX5
			30	53	63	68	69	70	70	69	68	67	66	64	EX6
			83	146	174	187	190	192	191	190	187	184	180	176	EX7
			222	390	465	500	508	511	510	506	500	491	480	468	EX8
45				6	8	9	9	9	9	9	9	9	9	9	EX4
				17	24	27	28	28	28	28	28	28	27	27	EX5
				42	57	64	66	67	68	68	67	66	65	64	EX6
				115	157	176	182	185	186	186	185	182	179	176	EX7
				307	418	470	485	493	496	496	493	487	478	468	EX8
40				3	7	8	8	9	9	9	9	9	9	9	EX4
				9	20	24	26	26	27	27	27	27	27	26	EX5
				22	48	59	62	64	65	65	65	65	64	63	EX6
				62	132	161	169	175	178	179	179	178	176	173	EX7
				164	353	430	452	466	475	479	479	475	470	462	EX8
35					5	7	8	8	8	9	9	9	9	8	EX4
					15	21	23	24	25	26	26	26	26	26	EX5
					35	51	56	59	61	62	62	62	62	61	EX6
					97	141	153	161	167	170	172	172	171	169	EX7
					257	376	408	430	445	453	457	458	455	450	EX8
30					0	6	7	7	8	8	8	8	8	8	EX4
					1	17	20	22	23	24	24	25	25	25	EX5
					3	41	48	52	55	57	58	59	59	59	EX6
					9	113	131	143	152	157	161	162	163	162	EX7
					23	301	349	382	405	420	429	433	434	432	EX8

Note: For other operating conditions, please use free selection tool/program Navigator revision 2019

Electrical Control Valves Series EX4-8

EX4-8 Quick selection: EXPANSION VALVE / LIQUID INJECTION – EXV

(included 1.5 bar pressure drop for liquid line components and distributor)

Condensing temperature (°C)	R452A																Valve type
	Capacity (kW)																
	Evaporating temperature (°C)																
	10	5	0	-5	-10	-15	-20	-25	-30	-35	-40	-45	-50	-55	-60	-70	
60 bubble/ 62.4 dew point	10.3	10.3	10.1	10.0	9.7	9.4	9.1	8.8	8.4	8.0	7.6	7.1	6.7	6.2	5.7	4.8	EX4
	31	31	31	30	29	29	28	27	25	24	23	22	20	19	17	15	EX5
	75	75	74	72	71	69	66	64	61	58	55	52	49	45	42	35	EX6
	207	206	203	199	194	189	182	175	168	160	151	143	134	124	115	96	EX7
	552	548	541	531	518	503	486	468	447	426	404	380	356	331	306	255	EX8
50 bubble/ 53.1 dew point	11.5	11.6	11.6	11.5	11.4	11.2	11.0	10.7	10.4	10.1	9.7	9.4	9.0	8.6	8.1	7.2	EX4
	35	35	35	35	35	34	33	33	32	31	30	28	27	26	25	22	EX5
	83	84	84	84	83	82	80	78	76	74	71	68	65	62	59	53	EX6
	229	231	232	231	228	225	220	215	209	202	195	187	179	171	162	145	EX7
	611	617	618	615	609	599	587	573	557	539	520	499	478	456	433	387	EX8
40 bubble/ 43.6 dew point	11.4	11.7	11.9	12.0	12.1	12.0	11.9	11.7	11.5	11.3	11.0	10.7	10.3	10.0	9.6	8.8	EX4
	34	35	36	36	37	36	36	36	35	34	33	32	31	30	29	27	EX5
	83	85	87	88	88	87	87	85	84	82	80	78	75	73	70	64	EX6
	227	234	239	241	241	240	238	235	231	226	220	214	207	200	192	177	EX7
	606	624	636	642	644	641	635	626	615	602	586	569	551	532	513	471	EX8
30 bubble/ 33.9 dew point	10.1	10.8	11.3	11.7	11.9	12.0	12.1	12.0	11.9	11.7	11.5	11.3	11.0	10.7	10.4	9.8	EX4
	31	33	34	35	36	36	37	36	36	36	35	34	33	33	32	30	EX5
	74	79	82	85	87	87	88	87	87	85	84	82	80	78	76	71	EX6
	202	217	227	234	238	240	241	240	238	235	231	226	221	215	209	195	EX7
	540	578	605	623	635	641	643	640	635	626	616	603	589	573	557	521	EX8
20 bubble/ 24 dew point	7.3	8.7	9.7	10.4	10.9	11.3	11.5	11.6	11.6	11.6	11.5	11.3	11.2	10.9	10.7	10.2	EX4
	22	26	29	32	33	34	35	35	35	35	35	34	34	33	32	31	EX5
	53	64	71	76	79	82	84	84	85	84	84	83	81	80	78	74	EX6
	147	175	194	209	219	225	230	232	233	232	230	227	223	219	214	203	EX7
	391	466	519	556	583	601	613	619	620	618	613	605	595	584	571	541	EX8
10 bubble/ 14.1 dew point			6.5	8.0	9.0	9.7	10.2	10.5	10.7	10.8	10.9	10.8	10.7	10.6	10.4	10.0	EX4
			20	24	27	29	31	32	33	33	33	33	33	32	32	30	EX5
			48	58	65	70	74	76	78	79	79	79	78	77	76	73	EX6
			131	160	180	194	204	210	215	217	217	217	215	212	209	200	EX7
			349	427	480	517	543	561	572	578	580	578	573	566	557	535	EX8
0 bubble/ 4.1 dew point					5.4	6.9	7.9	8.6	9.1	9.4	9.6	9.8	9.8	9.8	9.7	9.4	EX4
					16	21	24	26	28	29	29	30	30	30	29	29	EX5
					39	50	58	63	66	69	70	71	71	71	70	68	EX6
					107	138	159	173	182	189	193	195	196	195	194	188	EX7
					286	369	423	460	486	504	514	520	522	520	516	502	EX8
-10 bubble/ -5.9 dew point							3.5	5.4	6.5	7.2	7.7	8.0	8.2	8.4	8.4	8.3	EX4
							11	16	20	22	23	24	25	25	25	25	EX5
							26	39	47	52	56	58	60	61	61	60	EX6
							70	108	130	144	154	161	165	167	168	166	EX7
							187	287	346	385	411	429	440	446	448	443	EX8
-20 bubble/ -16 dew point										3.0	4.5	5.3	5.9	6.2	6.5	6.6	EX4
										9	14	16	18	19	20	20	EX5
										22	32	39	43	45	47	48	EX6
										60	89	106	117	125	129	133	EX7
										160	238	284	313	332	344	354	EX8

Note: For other operating conditions, please use free selection tool/program Navigator revision 2019

Electrical Control Valves Series EX4-8

EX4-8 Quick selection: EXPANSION VALVE / LIQUID INJECTION – EXV

(included 1.5 bar pressure drop for liquid line components and distributor)

Condensing temperature (°C)	R23												Valve type
	Capacity (kW)												
	Evaporating temperature (°C)												
	-20	-30	-35	-40	-45	-50	-55	-60	-65	-70	-75	-80	
10	16	17	18	18	18.6	18.8	18.9	18.9	18.9	18.8	18.6	18.4	EX4
	48	53	54	56	56	57	57	57	57	57	56	56	EX5
	115	127	131	133	136	137	138	138	137	137	136	134	EX6
	318	348	359	367	373	377	379	379	378	376	373	369	EX7
0	14	17	18	18	18.7	19.1	19.3	19.5	19.6	19.6	19.5	19.3	EX4
	43	50	53	55	57	58	59	59	59	59	59	59	EX5
	103	121	127	132	136	139	141	142	142	142	142	141	EX6
	283	333	350	364	374	381	387	390	391	391	390	387	EX7
-10	10	14	16	17	17.4	18.1	18.5	18.9	19.1	19.2	19.3	19.2	EX4
	29	43	47	50	53	55	56	57	58	58	58	58	EX5
	71	103	113	121	127	131	135	137	139	140	140	140	EX6
	195	283	311	332	349	362	371	378	382	384	385	384	EX7
-15		12	14	15	16.4	17.2	17.8	18.2	18.5	18.7	18.8	18.9	EX4
		37	42	46	50	52	54	55	56	57	57	57	EX5
		88	101	111	119	125	129	133	135	136	137	137	EX6
		242	279	306	328	344	356	365	371	375	377	377	EX7
-20		9	12	14	15.0	16.0	16.8	17.4	17.8	18.1	18.2	18.3	EX4
		28	36	41	45	48	51	53	54	55	55	56	EX5
		66	86	99	109	116	122	126	129	131	133	133	EX6
		183	235	272	299	320	336	347	356	361	365	366	EX7
-25			9	11	13	14	15.5	16.2	16.8	17.2	17.4	17.6	EX4
			26	34	40	44	47	49	51	52	53	53	EX5
			63	82	96	105	113	118	122	125	127	128	EX6
			173	226	263	290	310	325	336	344	349	352	EX7
-30				8	11	13	14	15	15.6	16.1	16.5	16.7	EX4
				24	33	38	42	45	47	49	50	51	EX5
				59	78	91	101	108	113	117	120	121	EX6
				161	215	252	278	297	312	322	329	334	EX7
-35					7	10	12	13	14	15	15.3	15.6	EX4
					22	30	36	40	43	45	46	47	EX5
					53	73	86	96	102	107	111	113	EX6
					146	201	237	263	282	295	305	312	EX7
-40						6	9	11	12	13	14	14	EX4
						19	28	33	37	40	42	43	EX5
						46	67	80	89	96	101	104	EX6
						127	184	220	246	264	277	286	EX7

Note: For other operating conditions, please use free selection tool/program Navigator revision 2019.

Electrical Control Valves Series EX4-8

EX4-8 Quick selection: EXPANSION VALVE / LIQUID INJECTION – EXV

(included 1.5 bar pressure drop for liquid line components and distributor)

Condensing temperature (°C)	R32										Valve type
	Capacity (kW)										
	Evaporating temperature (°C)										
	20	15	10	5	0	-5	-10	-15	-20	-25	
65	26.2	27.1	27.8	28.4	28.9	29.3	29.5	29.7	29.7	29.7	EX4
	79	82	84	86	88	89	89	90	90	90	EX5
	190	197	202	207	210	213	215	216	216	216	EX6
	523	542	557	569	578	585	590	593	595	594	EX7*
	1396	1445	1485	1517	1542	1561	1575	1583	1586	1585	EX8*
60	26.6	27.7	28.7	29.4	30.0	30.5	30.8	31.0	31.2	31.2	EX4
	81	84	87	89	91	92	93	94	94	95	EX5
	194	202	208	214	218	222	224	226	227	227	EX6
	533	555	573	588	600	609	616	621	623	624	EX7*
	1421	1480	1529	1568	1600	1624	1643	1655	1662	1665	EX8*
50	25.4	27.0	28.3	29.4	30.3	31.0	31.5	31.9	32.2	32.4	EX4
	77	82	86	89	92	94	96	97	98	98	EX5
	185	196	206	214	220	225	229	232	234	236	EX6
	509	540	566	588	605	619	630	639	645	648	EX7*
	1356	1441	1510	1568	1614	1652	1681	1703	1719	1728	EX8*
40	21.7	24.0	25.9	27.4	28.7	29.7	30.5	31.2	31.6	32.0	EX4
	66	73	78	83	87	90	92	94	96	97	EX5
	158	175	188	199	209	216	222	227	230	233	EX6
	433	480	518	549	574	594	610	623	633	640	EX7*
	1156	1280	1381	1463	1530	1584	1627	1661	1687	1706	EX8*
30	14.4	18.4	21.3	23.6	25.4	26.9	28.1	29.0	29.8	30.3	EX4
	43	56	65	72	77	82	85	88	90	92	EX5
	104	134	155	172	185	196	204	211	216	221	EX6
	287	367	427	472	509	538	562	581	595	607	EX7*
	765	980	1137	1260	1357	1435	1498	1548	1587	1617	EX8*
20			13.3	17.4	20.3	22.5	24.3	25.6	26.7	27.6	EX4
			40	53	62	68	74	78	81	84	EX5
			97	127	148	164	177	187	194	201	EX6
			266	348	406	451	485	513	535	552	EX7*
			710	928	1083	1202	1294	1368	1426	1471	EX8*
10					11.7	15.8	18.7	20.8	22.5	23.7	EX4
					35	48	57	63	68	72	EX5
					85	115	136	152	163	173	EX6
					234	317	374	417	450	475	EX7*
					623	845	997	1111	1199	1266	EX8*

Note1: *) Upgrade certification according to PED, from hazard category I to hazard category II is pending.

Note2: For other operating conditions, please use free selection tool/program Navigator revision 2019.

Electrical Control Valves Series EX4-8

EX4-8 Quick selection: EXPANSION VALVE / LIQUID INJECTION – EXV

(included 1.5 bar pressure drop for liquid line components and distributor)

Condensing temperature (°C)	R452B/R454B Capacity (kW)										Valve type
	Evaporating temperature (°C)										
	20	15	10	5	0	-5	-10	-15	-20	-25	
65 bubble point	19.0	19.5	19.9	20.2	20.4	20.5	20.5	20.4	20.3	20.2	EX4
	57	59	60	61	62	62	62	62	62	61	EX5
	138	142	145	147	148	149	149	149	148	147	EX6
	379	390	398	403	407	409	410	409	407	403	EX7*
	1011	1039	1060	1076	1086	1092	1093	1091	1085	1076	EX8*
60 bubble point	19.7	20.4	21.0	21.4	21.7	21.8	21.9	22.0	21.9	21.8	EX4
	60	62	63	65	66	66	67	67	66	66	EX5
	144	149	152	155	157	159	160	160	159	159	EX6
	395	408	419	427	433	437	439	439	438	436	EX7*
	1053	1089	1117	1139	1155	1165	1170	1172	1169	1163	EX8*
50 bubble point	19.4	20.5	21.3	22.0	22.5	22.9	23.2	23.3	23.4	23.4	EX4
	59	62	65	67	68	69	70	71	71	71	EX5
	141	149	155	160	164	167	169	170	170	170	EX6
	388	409	426	440	450	458	464	467	469	469	EX7*
	1036	1092	1137	1173	1201	1221	1236	1245	1250	1250	EX8*
40 bubble point	17.0	18.6	19.9	21.0	21.8	22.4	22.9	23.3	23.5	23.7	EX4
	52	57	60	64	66	68	69	71	71	72	EX5
	124	136	145	153	159	163	167	169	171	172	EX6
	340	373	399	420	436	449	459	466	471	473	EX7*
	908	994	1064	1119	1163	1197	1223	1242	1255	1262	EX8*
30 bubble point	11.9	14.8	16.9	18.5	19.7	20.7	21.5	22.1	22.6	22.9	EX4
	36	45	51	56	60	63	65	67	68	69	EX5
	87	107	123	134	144	151	157	161	164	166	EX6
	239	295	337	369	395	415	430	442	451	458	EX7*
	637	787	899	985	1053	1106	1148	1180	1204	1220	EX8*
20 bubble point			11.2	14.1	16.1	17.7	19.0	19.9	20.6	21.2	EX4
			34	43	49	54	57	60	63	64	EX5
			81	102	117	129	138	145	150	154	EX6
			223	281	323	355	379	398	413	424	EX7*
			595	750	861	946	1011	1062	1101	1130	EX8*
10 bubble point					9.9	12.9	14.9	16.5	17.7	18.5	EX4
					30	39	45	50	54	56	EX5
					72	94	109	120	128	135	EX6
					198	257	299	330	353	371	EX7*
					527	687	797	879	942	989	EX8*

Note1: *) Upgrade certification according to PED, from hazard category I to hazard category II is pending.

Note2: For other operating conditions, please use free selection tool/program Navigator revision 2019.

Electrical Control Valves Series EX4-8

EX4-8 Quick selection: EXPANSION VALVE / LIQUID INJECTION – EXV

(included 1.5 bar pressure drop for liquid line components and distributor)

Condensing temperature (°C)	R410A									Valve type
	Capacity (kW)									
	Evaporating temperature (°C)									
	40	30	20	10	0	-10	-20	-30	-40	
68	11.4	13.0	13.9	14.5	14.6	14.5	14.2	13.7	13.0	EX4
	35	39	42	44	44	44	43	41	39	EX5
	83	94	101	105	106	106	103	100	95	EX6
	228	259	279	289	293	291	284	274	260	EX7
	609	691	743	771	781	775	758	730	694	EX8
60	12.4	14.8	16.4	17.4	17.9	18.0	17.9	17.5	16.9	EX4
	37	45	50	53	54	55	54	53	51	EX5
	90	108	119	126	130	131	130	127	123	EX6
	247	296	328	348	358	361	358	350	338	EX7
	659	790	875	927	955	962	954	933	902	EX8
50	9.7	14.0	16.6	18.3	19.3	19.8	19.9	19.7	19.3	EX4
	29	42	50	55	58	60	60	60	59	EX5
	71	102	121	133	140	144	145	143	140	EX6
	194	280	333	366	386	396	398	395	386	EX7
	518	747	887	975	1029	1056	1062	1052	1030	EX8
40		10.1	14.7	17.4	19.0	20.0	20.5	20.5	20.3	EX4
		31	45	53	58	61	62	62	62	EX5
		74	107	126	138	145	149	149	148	EX6
		203	294	348	381	400	409	411	406	EX7
		541	784	927	1015	1067	1091	1095	1084	EX8
30			10.0	14.7	17.4	19.0	19.9	20.3	20.3	EX4
			30	45	53	58	60	62	62	EX5
			73	107	127	138	145	148	148	EX6
			200	295	348	380	398	406	407	EX7
			534	786	928	1013	1061	1083	1084	EX8
20				9.4	14.2	16.8	18.4	19.2	19.5	EX4
				28	43	51	56	58	59	EX5
				68	103	122	133	139	142	EX6
				188	284	337	367	383	390	EX7
				501	758	898	979	1023	1040	EX8
10					8.3	13.2	15.8	17.2	17.9	EX4
					25	40	48	52	54	EX5
					60	96	115	125	130	EX6
					166	265	315	344	358	EX7
					443	706	841	917	956	EX8

Note1: *) Upgrade certification according to PED, from hazard category I to hazard category II is pending.

Note2: For other operating conditions, please use free selection tool/program Navigator revision 2019.

Electrical Control Valves Series EX4-8

EX4-8 Quick selection: EXPANSION VALVE / LIQUID INJECTION – EXV

(included 1.5 bar pressure drop for liquid line components and distributor)

Condensing temperature (°C)	R407C									Valve type
	Capacity (kW)									
	Evaporating temperature (°C)									
	10	5	0	-5	-10	-15	-20	-25	-30	
60 bubble/ 63.9 dew point	16.6	16.7	16.7	16.6	16.5	16.3	16.0	15.7	15.4	EX4
	50	51	51	50	50	49	49	48	47	EX5
	121	121	121	121	120	118	117	114	112	EX6
	332	334	334	332	329	325	321	315	308	EX7
	885	890	890	886	878	868	855	839	822	EX8
55 bubble/ 59.2 dew point	16.8	17.0	17.1	17.1	17.0	16.8	16.6	16.4	16.1	EX4
	51	51	52	52	51	51	50	50	49	EX5
	122	123	124	124	123	122	121	119	117	EX6
	336	340	341	341	340	337	333	328	322	EX7
	896	905	910	910	905	898	887	874	859	EX8
50 bubble/ 54.4 dew point	16.7	17.0	17.2	17.3	17.2	17.2	17.0	16.8	16.6	EX4
	51	52	52	52	52	52	52	51	50	EX5
	122	124	125	125	125	125	124	122	121	EX6
	335	340	344	345	345	343	340	336	332	EX7
	892	907	916	920	920	915	908	897	884	EX8
45 bubble/ 49.6 dew point	16.4	16.8	17.1	17.2	17.3	17.3	17.2	17.0	16.8	EX4
	50	51	52	52	52	52	52	52	51	EX5
	119	122	124	125	126	126	125	124	123	EX6
	328	336	341	345	346	346	344	341	337	EX7
	874	896	910	919	922	922	917	909	899	EX8
40 bubble/ 44.9 dew point	16	16	16.7	17.0	17.1	17.2	17.2	17.1	16.9	EX4
	48	49	51	51	52	52	52	52	51	EX5
	115	119	122	124	125	125	125	124	123	EX6
	316	327	334	340	343	344	343	342	339	EX7
	842	871	892	906	914	917	916	911	903	EX8
35 bubble/ 40.1 dew point	15	16	16	17	16.8	16.9	17.0	16.9	16.8	EX4
	45	47	49	50	51	51	51	51	51	EX5
	108	114	117	120	122	123	123	123	123	EX6
	298	312	323	331	336	338	339	339	337	EX7
	794	833	861	881	895	902	905	903	898	EX8
30 bubble/ 35.2 dew point	14	15	15	16	16	16	16.6	16.6	16.6	EX4
	41	44	46	48	49	50	50	50	50	EX5
	99	106	112	115	118	120	121	121	121	EX6
	274	293	307	317	324	329	332	332	332	EX7
	730	780	818	845	865	877	884	887	885	EX8

Note: For other operating conditions, please use free selection tool/program Navigator revision 2019.

Electrical Control Valves Series EX4-8

EX4-8 Quick selection: EXPANSION VALVE / LIQUID INJECTION – EXV

(included 1.5 bar pressure drop for liquid line components and distributor)

Condensing temperature (°C)	R404A																Valve type
	Capacity (kW)																
	Evaporating temperature (°C)																
	10	5	0	-5	-10	-15	-20	-25	-30	-35	-40	-45	-50	-55	-60	-70	
60	9.3	9.3	9.2	9.1	8.9	8.6	8.3	8.0	7.6	7.3	6.9	6.5	6.0	5.6	5.1	4.2	EX4
	28	28	28	27	27	26	25	24	23	22	21	20	18	17	16	13	EX5
	68	68	67	66	64	63	60	58	56	53	50	47	44	41	37	31	EX6
	187	186	184	181	177	172	166	160	153	145	137	129	121	112	103	84	EX7
	498	497	491	483	472	459	443	426	408	388	366	344	321	298	274	225	EX8
50	10.4	10.6	10.7	10.6	10.6	10.4	10.2	10.0	9.7	9.4	9.1	8.7	8.4	8.0	7.6	6.7	EX4
	32	32	32	32	32	32	31	30	29	29	28	26	25	24	23	20	EX5
	76	77	77	77	77	76	74	73	71	68	66	63	61	58	55	49	EX6
	209	212	213	213	211	208	205	200	194	188	182	175	167	159	151	134	EX7
	556	565	568	568	563	556	546	533	519	502	485	465	445	424	403	358	EX8
40	10.3	10.7	11.0	11.2	11.2	11.2	11.2	11.0	10.9	10.6	10.4	10.1	9.8	9.5	9.1	8.4	EX4
	31	32	33	34	34	34	34	33	33	32	31	31	30	29	28	25	EX5
	75	78	80	81	82	82	81	80	79	77	76	73	71	69	66	61	EX6
	205	214	220	223	225	225	223	221	217	213	208	202	196	189	182	167	EX7
	548	571	586	595	600	599	596	589	580	568	554	539	522	504	485	446	EX8
30	8.9	9.7	10.3	10.8	11.1	11.2	11.3	11.3	11.3	11.1	11.0	10.8	10.5	10.3	10.0	9.3	EX4
	27	29	31	33	33	34	34	34	34	34	33	33	32	31	30	28	EX5
	64	71	75	78	80	82	82	82	82	81	80	78	77	75	73	68	EX6
	177	194	206	215	221	225	226	226	225	223	220	215	211	205	199	187	EX7
	473	518	551	574	590	599	604	604	601	594	585	574	562	547	532	498	EX8
20	5.4	7.3	8.5	9.4	10.0	10.4	10.7	10.9	11.0	11.0	10.9	10.8	10.7	10.5	10.3	9.8	EX4
	16	22	26	28	30	32	32	33	33	33	33	33	32	32	31	30	EX5
	39	53	62	68	73	76	78	79	80	80	80	79	78	76	75	71	EX6
	109	146	170	187	200	209	214	218	220	220	219	217	213	210	205	195	EX7
	289	389	454	500	533	556	572	581	586	586	583	578	569	559	547	520	EX8
10			4.5	6.6	7.8	8.7	9.3	9.8	10.0	10.2	10.3	10.3	10.3	10.2	10.0	9.6	EX4
			14	20	24	26	28	30	30	31	31	31	31	31	30	29	EX5
			33	48	57	63	68	71	73	74	75	75	75	74	73	70	EX6
			91	131	157	174	187	195	201	204	206	206	205	203	200	193	EX7
			242	350	418	464	497	520	536	545	549	550	547	542	534	514	EX8
0					3.1	5.5	6.8	7.7	8.3	8.8	9.0	9.2	9.3	9.3	9.3	9.0	EX4
					9	17	21	23	25	27	27	28	28	28	28	27	EX5
					22	40	50	56	61	64	66	67	68	68	67	66	EX6
					61	109	136	154	167	175	181	184	186	186	185	181	EX7
					163	292	364	411	444	467	482	491	496	496	494	483	EX8
-10								3.8	5.4	6.4	7.0	7.4	7.7	7.9	8.0	8.0	EX4
								12	16	19	21	22	23	24	24	24	EX5
								28	39	46	51	54	56	57	58	58	EX6
								76	108	127	140	148	154	158	159	159	EX7
								204	288	339	373	396	411	420	425	424	EX8
-20											3.2	4.4	5.2	5.7	6.0	6.3	EX4
											10	13	16	17	18	19	EX5
											23	32	38	41	43	46	EX6
											64	89	104	113	119	125	EX7
											170	236	276	302	318	334	EX8

Note: For other operating conditions, please use free selection tool/program Navigator revision 2019.

Electrical Control Valves Series EX4-8

EX4-8 Quick selection: EXPANSION VALVE / LIQUID INJECTION – EXV

(included 1.5 bar pressure drop for liquid line components and distributor)

Condensing temperature (°C)	R124									Valve type
	Capacity (kW)									
	Evaporating temperature (°C)									
	40	35	30	25	20	15	10	5	0	
100	7.7	7.5	7.3	7.1	6.8	6.5	6.1	5.8	5.4	EX4
	23	23	22	21	21	20	19	17	16	EX5
	56	55	53	51	49	47	44	42	39	EX6
	154	151	146	141	135	129	122	115	107	EX7
	411	402	390	377	361	344	326	307	286	EX8
90	8.5	8.5	8.4	8.2	8.0	7.8	7.5	7.2	6.9	EX4
	26	26	25	25	24	24	23	22	21	EX5
	62	62	61	60	59	57	55	53	50	EX6
	171	170	168	165	161	156	151	145	139	EX7
	456	453	448	440	429	417	402	387	370	EX8
80	8.7	8.8	8.8	8.8	8.7	8.6	8.4	8.2	7.9	EX4
	26	27	27	27	26	26	25	25	24	EX5
	63	64	64	64	63	62	61	60	58	EX6
	173	176	176	176	174	172	168	164	159	EX7
	462	468	471	469	465	457	448	436	423	EX8
75	8.4	8.7	8.8	8.9	8.8	8.8	8.6	8.5	8.3	EX4
	26	26	27	27	27	27	26	26	25	EX5
	61	63	64	64	64	64	63	62	60	EX6
	169	173	176	177	177	175	173	169	165	EX7
	451	463	470	472	471	467	460	451	440	EX8
70	8.0	8.4	8.6	8.8	8.8	8.8	8.7	8.6	8.4	EX4
	24	25	26	27	27	27	26	26	26	EX5
	58	61	63	64	64	64	63	63	61	EX6
	161	168	172	175	176	176	175	172	169	EX7
	428	447	460	467	470	469	465	459	451	EX8
65	7	8	8.3	8.5	8.6	8.7	8.7	8.6	8.5	EX4
	22	24	25	26	26	26	26	26	26	EX5
	54	57	60	62	63	63	63	63	62	EX6
	148	158	165	170	173	174	174	173	171	EX7
	394	422	441	454	461	464	464	461	455	EX8
60	6	7	8	8	8.3	8.5	8.5	8.5	8.5	EX4
	20	22	23	25	25	26	26	26	26	EX5
	47	52	56	59	61	62	62	62	62	EX6
	129	144	154	162	167	170	171	171	170	EX7
	343	384	412	432	445	452	456	456	453	EX8
55	5	6	7	7	8	8	8.3	8.3	8.3	EX4
	15	19	21	23	24	25	25	25	25	EX5
	37	45	51	54	57	59	60	61	61	EX6
	101	124	139	150	157	162	165	167	167	EX7
	269	330	371	399	419	432	440	444	444	EX8
50	3	5	6	7	7	8	8	8	8	EX4
	8	14	18	20	22	23	24	24	24	EX5
	19	34	43	48	52	55	57	58	59	EX6
	52	94	117	133	144	151	157	160	161	EX7
	138	250	313	354	384	404	417	426	430	EX8

Note: For other operating conditions, please use free selection tool/program Navigator revision 2019.

Electrical Control Valves Series EX4-8

EX5-8: Quick selection: SUCTION PRESURE REGULATOR -SPR

(evaporator or crankcase)

Condensing temperature (°C)	Pressure drop (bar)	Valve type	R744 subcritical												Valve type
			Capacity (kW)												
			Evaporating temperature (°C)												
5	0	-5	-10	-20	-30										
20	0.1	EX5	3.5	3.3	3.1	2.9	2.5	2.1							EX5
		EX6	8.2	7.7	7.2	6.7	5.7	4.8							EX6
		EX7	29.1	27.3	25.5	23.8	20.4	17.2							EX7
		EX8	88.4	83	77.6	72.2	61.9	52.2							EX8
	0.15	EX5	4.3	4	3.8	3.5	3	2.5							EX5
		EX6	10	9.4	8.8	8.2	7	5.9							EX6
		EX7	35.7	33.5	31.3	29.1	24.9	21							EX7
		EX8	108.3	101.6	95	88.4	75.8	63.9							EX8
	0.3	EX5	6.1	5.7	5.3	5	4.3	3.6							EX5
		EX6	14.2	13.3	12.4	11.6	9.9	8.4							EX6
		EX7	50.4	47.3	44.2	41.2	35.3	29.7							EX7
		EX8	153.2	143.7	134.3	125.1	107.1	90.3							EX8
10	0.1	EX5		3.8	3.6	3.3	2.9	2.4							EX5
		EX6		8.9	8.3	7.8	6.6	5.6							EX6
		EX7		31.7	29.6	27.6	23.6	19.9							EX7
		EX8		96.4	90	83.8	71.8	60.5							EX8
	0.15	EX5		4.7	4.4	4.1	3.5	3							EX5
		EX6		10.9	10.2	9.5	8.1	6.9							EX6
		EX7		38.9	36.3	33.8	28.9	24.4							EX7
		EX8		118.1	110.3	102.6	87.9	74.1							EX8
	0.3	EX5		6.7	6.2	5.8	5	4.2							EX5
		EX6		15.5	14.4	13.4	11.5	9.7							EX6
		EX7		55	51.3	47.8	40.9	34.5							EX7
		EX8		167	156	145.1	124.3	104.8							EX8
5	0.1	EX5			3.8	3.5	3	2.6							EX5
		EX6			8.8	8.2	7	5.9							EX6
		EX7			31.4	29.2	25	21.1							EX7
		EX8			95.5	88.8	76.1	64.2							EX8
	0.15	EX5			4.7	4.3	3.7	3.1							EX5
		EX6			10.8	10.1	8.6	7.3							EX6
		EX7			38.5	35.8	30.7	25.9							EX7
		EX8			117	108.8	93.2	78.6							EX8
	0.3	EX5			6.6	6.1	5.2	4.4							EX5
		EX6			15.3	14.2	12.2	10.3							EX6
		EX7			54.5	50.6	43.4	36.6							EX7
		EX8			165.4	153.8	131.7	111.2							EX8
0	0.1	EX5				3.7	3.2	2.7							EX5
		EX6				8.7	7.4	6.3							EX6
		EX7				30.8	26.4	22.3							EX7
		EX8				93.6	80.2	67.6							EX8
	0.15	EX5				4.6	3.9	3.3							EX5
		EX6				10.6	9.1	7.7							EX6
		EX7				37.8	32.3	27.3							EX7
		EX8				114.7	98.2	82.8							EX8
	0.3	EX5				6.5	5.5	4.7							EX5
		EX6				15	12.9	10.9							EX6
		EX7				53.4	45.7	38.6							EX7
		EX8				162.2	138.9	117.2							EX8

Note: For other operating conditions, please use free selection tool/program Navigator revision 2019.

Electrical Control Valves Series EX4-8

EX5-8: Quick selection: SUCTION PRESURE REGULATOR -SPR

(evaporator or crankcase)

Condensing temperature (°C)	Pressure drop (bar)	Valve type	R448A/R449A						R452A						Valve type
			Capacity (kW)						Capacity (kW)						
			Evaporating temperature (°C)						Evaporating temperature (°C)						
5	0	-5	-10	-20	-30	5	0	-5	-10	-20	-30				
60 bubble point	0.1	EX5	1.0	0.9	0.8	0.7	0.6	0.4	0.8	0.7	0.6	0.6	0.4	7.9	EX5
		EX6	2.4	2.2	1.9	1.7	1.3	1.0	1.9	1.7	1.5	1.3	1.0	2.6	EX6
		EX7	8.6	7.7	6.9	6.1	4.7	3.5	6.8	6.1	5.4	4.7	3.6	0.7	EX7
		EX8	26.0	23.3	20.9	18.5	14.3	10.6	20.7	18.4	16.3	14.3	10.8	0.3	EX8
	0.15	EX5	1.3	1.1	1.0	0.9	0.7	0.5	1.0	0.9	0.8	0.7	0.5	9.7	EX5
		EX6	2.9	2.6	2.4	2.1	1.6	1.2	2.4	2.1	1.8	1.6	1.2	3.2	EX6
		EX7	10.5	9.4	8.4	7.5	5.7	4.3	8.4	7.4	6.6	5.8	4.4	0.9	EX7
		EX8	31.8	28.6	25.5	22.6	17.5	12.9	25.4	22.6	20.0	17.5	13.3	0.4	EX8
	0.3	EX5	1.8	1.6	1.4	1.3	1.0	0.7	1.4	1.3	1.1	1.0	0.7	13.6	EX5
		EX6	4.2	3.7	3.3	3.0	2.3	1.7	3.3	3.0	2.6	2.3	1.7	4.5	EX6
		EX7	14.8	13.3	11.9	10.5	8.1	6.0	11.8	10.5	9.3	8.2	6.2	1.3	EX7
		EX8	45.0	40.4	36.1	32.0	24.7	18.3	35.9	31.9	28.2	24.8	18.8	0.5	EX8
50 bubble point	0.1	EX5	1.2	1.1	1.0	0.9	0.7	0.5	1.0	0.9	0.8	0.7	0.6	10.3	EX5
		EX6	2.8	2.5	2.3	2.0	1.6	1.2	2.4	2.1	1.9	1.7	1.3	3.4	EX6
		EX7	10.0	9.0	8.0	7.2	5.6	4.2	8.4	7.5	6.7	5.9	4.6	1.0	EX7
		EX8	30.3	27.3	24.4	21.8	16.9	12.6	25.6	22.9	20.4	18.1	13.9	0.4	EX8
	0.15	EX5	1.5	1.3	1.2	1.1	0.8	0.6	1.2	1.1	1.0	0.9	0.7	12.7	EX5
		EX6	3.4	3.1	2.8	2.5	1.9	1.4	2.9	2.6	2.3	2.0	1.6	4.2	EX6
		EX7	12.2	11.0	9.9	8.8	6.8	5.1	10.3	9.2	8.2	7.3	5.6	1.2	EX7
		EX8	37.1	33.4	29.9	26.7	20.7	15.5	31.4	28.0	25.0	22.1	17.0	0.5	EX8
	0.3	EX5	2.1	1.9	1.7	1.5	1.2	0.9	1.8	1.6	1.4	1.2	1.0	17.9	EX5
		EX6	4.9	4.4	3.9	3.5	2.7	2.0	4.1	3.7	3.3	2.9	2.2	5.9	EX6
		EX7	17.3	15.6	13.9	12.4	9.6	7.2	14.6	13.1	11.6	10.3	7.9	1.7	EX7
		EX8	52.5	47.3	42.3	37.7	29.2	21.9	44.4	39.6	35.4	31.3	24.0	0.7	EX8
40 bubble point	0.1	EX5	1.4	1.2	1.1	1.0	0.8	0.6	1.2	1.1	1.0	0.8	0.7	12.5	EX5
		EX6	3.2	2.9	2.6	2.3	1.8	1.4	2.8	2.5	2.2	2.0	1.5	4.1	EX6
		EX7	11.3	10.2	9.1	8.1	6.4	4.8	9.8	8.8	7.9	7.0	5.5	1.2	EX7
		EX8	34.2	30.9	27.7	24.7	19.3	14.6	29.9	26.9	24.0	21.3	16.6	0.5	EX8
	0.15	EX5	1.7	1.5	1.4	1.2	0.9	0.7	1.5	1.3	1.2	1.0	0.8	15.3	EX5
		EX6	3.9	3.5	3.1	2.8	2.2	1.7	3.4	3.0	2.7	2.4	1.9	5.0	EX6
		EX7	13.8	12.4	11.2	10.0	7.8	5.9	12.0	10.8	9.7	8.6	6.7	1.4	EX7
		EX8	41.9	37.8	33.9	30.3	23.7	17.9	36.6	32.9	29.4	26.1	20.4	0.6	EX8
	0.3	EX5	2.4	2.1	1.9	1.7	1.3	1.0	2.1	1.9	1.7	1.5	1.1	21.6	EX5
		EX6	5.5	5.0	4.4	4.0	3.1	2.3	4.8	4.3	3.9	3.4	2.7	7.1	EX6
		EX7	19.5	17.6	15.8	14.1	11.0	8.3	17.0	15.3	13.7	12.2	9.5	2.0	EX7
		EX8	59.2	53.5	48.0	42.8	33.5	25.3	51.7	46.5	41.6	36.9	28.8	0.9	EX8
30 bubble point	0.1	EX5	1.5	1.4	1.2	1.1	0.9	0.7	1.3	1.2	1.1	1.0	0.8	14.5	EX5
		EX6	3.5	3.2	2.8	2.6	2.0	1.5	3.1	2.8	2.5	2.3	1.8	4.8	EX6
		EX7	12.5	11.3	10.1	9.1	7.1	5.4	11.2	10.0	9.0	8.0	6.3	1.3	EX7
		EX8	37.9	34.3	30.8	27.6	21.6	16.3	33.9	30.5	27.4	24.4	19.1	0.6	EX8
	0.15	EX5	1.8	1.7	1.5	1.3	1.1	0.8	1.7	1.5	1.3	1.2	0.9	17.7	EX5
		EX6	4.3	3.9	3.5	3.1	2.5	1.9	3.8	3.5	3.1	2.8	2.2	5.8	EX6
		EX7	15.3	13.8	12.4	11.1	8.7	6.6	13.7	12.3	11.0	9.9	7.7	1.6	EX7
		EX8	46.4	41.9	37.7	33.7	26.5	20.0	41.5	37.4	33.5	29.9	23.4	0.7	EX8
	0.3	EX5	2.6	2.4	2.1	1.9	1.5	1.1	2.3	2.1	1.9	1.7	1.3	25.1	EX5
		EX6	6.1	5.5	4.9	4.4	3.5	2.6	5.4	4.9	4.4	3.9	3.1	8.3	EX6
		EX7	21.6	19.5	17.5	15.7	12.3	9.3	19.3	17.4	15.6	13.9	10.9	2.3	EX7
		EX8	65.6	59.3	53.3	47.7	37.4	28.3	58.7	52.8	47.4	42.3	33.1	1.0	EX8

Note: For other operating conditions, please use free selection tool/program Navigator revision 2019.

Electrical Control Valves Series EX4-8

EX5-8: Quick selection: SUCTION PRESURE REGULATOR -SPR

(evaporator or crankcase)

Condensing temperature (°C)	Pressure drop (bar)	Valve type	R513A/R450A					R134a					Valve type
			Capacity (kW)					Capacity (kW)					
			Evaporating temperature (°C)					Evaporating temperature (°C)					
10	5	0	-10	-20	10	5	0	-10	-20				
60 bubble point	0.1	EX5	0.9	0.8	0.7	0.5	0.4	1.0	0.9	0.8	0.6	0.4	EX5
		EX6	2.1	1.8	1.6	1.2	0.9	2.3	2.0	1.8	1.4	1.0	EX6
		EX7	7.4	6.6	5.8	4.4	3.2	8.0	7.2	6.4	4.9	3.6	EX7
		EX8	22.4	19.9	17.6	13.5	9.9	24.4	21.8	19.3	14.8	11.0	EX8
	0.15	EX5	1.1	1.0	0.9	0.7	0.5	1.2	1.1	0.9	0.7	0.5	EX5
		EX6	2.5	2.3	2.0	1.5	1.1	2.8	2.5	2.2	1.7	1.2	EX6
		EX7	9.0	8.0	7.1	5.4	4.0	9.9	8.8	7.8	6.0	4.4	EX7
		EX8	27.4	24.4	21.5	16.5	12.1	29.9	26.7	23.7	18.2	13.5	EX8
	0.3	EX5	1.5	1.4	1.2	0.9	0.7	1.7	1.5	1.3	1.0	0.8	EX5
		EX6	3.6	3.2	2.8	2.2	1.6	3.9	3.5	3.1	2.4	1.8	EX6
		EX7	12.8	11.4	10.0	7.7	5.6	13.9	12.4	11.0	8.5	6.3	EX7
		EX8	38.8	34.5	30.5	23.3	17.1	42.3	37.8	33.5	25.7	19.0	EX8
50 bubble point	0.1	EX5	1.0	0.9	0.8	0.6	0.5	1.1	1.0	0.9	0.7	0.5	EX5
		EX6	2.4	2.1	1.9	1.5	1.1	2.6	2.3	2.0	1.6	1.2	EX6
		EX7	8.6	7.6	6.8	5.2	3.9	9.1	8.1	7.2	5.6	4.2	EX7
		EX8	26.0	23.2	20.6	15.9	11.8	27.7	24.7	22.0	17.0	12.6	EX8
	0.15	EX5	1.3	1.1	1.0	0.8	0.6	1.3	1.2	1.1	0.8	0.6	EX5
		EX6	2.9	2.6	2.3	1.8	1.3	3.1	2.8	2.5	1.9	1.4	EX6
		EX7	10.5	9.4	8.3	6.4	4.8	11.2	10.0	8.9	6.9	5.1	EX7
		EX8	31.8	28.4	25.2	19.5	14.5	33.9	30.3	26.9	20.8	15.5	EX8
	0.3	EX5	1.8	1.6	1.4	1.1	0.8	1.9	1.7	1.5	1.2	0.9	EX5
		EX6	4.2	3.7	3.3	2.6	1.9	4.4	4.0	3.5	2.7	2.0	EX6
		EX7	14.8	13.2	11.7	9.1	6.8	15.8	14.1	12.5	9.7	7.2	EX7
		EX8	45.0	40.2	35.7	27.6	20.5	47.9	42.8	38.1	29.4	21.9	EX8
40 bubble point	0.1	EX5	1.2	1.0	0.9	0.7	0.5	1.2	1.1	1.0	0.8	0.6	EX5
		EX6	2.7	2.4	2.2	1.7	1.3	2.8	2.5	2.3	1.8	1.3	EX6
		EX7	9.7	8.7	7.7	6.0	4.5	10.1	9.1	8.1	6.3	4.7	EX7
		EX8	29.4	26.3	23.4	18.2	13.7	30.7	27.5	24.5	19.1	14.3	EX8
	0.15	EX5	1.4	1.3	1.1	0.9	0.7	1.5	1.3	1.2	0.9	0.7	EX5
		EX6	3.3	3.0	2.7	2.1	1.6	3.5	3.1	2.8	2.2	1.6	EX6
		EX7	11.8	10.6	9.4	7.3	5.5	12.4	11.1	9.9	7.7	5.7	EX7
		EX8	36.0	32.2	28.7	22.3	16.8	37.6	33.7	30.0	23.4	17.5	EX8
	0.3	EX5	2.0	1.8	1.6	1.3	0.9	2.1	1.9	1.7	1.3	1.0	EX5
		EX6	4.7	4.2	3.8	2.9	2.2	4.9	4.4	3.9	3.1	2.3	EX6
		EX7	16.7	15.0	13.4	10.4	7.8	17.5	15.7	14.0	10.9	8.1	EX7
		EX8	50.9	45.6	40.6	31.6	23.8	53.2	47.6	42.4	33.1	24.7	EX8
30 bubble point	0.1	EX5	1.3	1.2	1.0	0.8	0.6	1.3	1.2	1.1	0.8	0.6	EX5
		EX6	3.0	2.7	2.4	1.9	1.4	3.1	2.8	2.5	2.0	1.5	EX6
		EX7	10.7	9.6	8.6	6.7	5.1	11.1	10.0	8.9	6.9	5.2	EX7
		EX8	32.6	29.3	26.1	20.4	15.4	33.7	30.2	27.0	21.1	15.9	EX8
	0.15	EX5	1.6	1.4	1.3	1.0	0.8	1.6	1.5	1.3	1.0	0.8	EX5
		EX6	3.7	3.3	3.0	2.3	1.8	3.8	3.4	3.1	2.4	1.8	EX6
		EX7	13.1	11.8	10.5	8.2	6.2	13.6	12.2	10.9	8.5	6.4	EX7
		EX8	39.9	35.8	32.0	25.0	18.9	41.2	37.0	33.0	25.8	19.4	EX8
	0.3	EX5	2.2	2.0	1.8	1.4	1.1	2.3	2.1	1.9	1.5	1.1	EX5
		EX6	5.2	4.7	4.2	3.3	2.5	5.4	4.8	4.3	3.4	2.5	EX6
		EX7	18.6	16.7	14.9	11.6	8.8	19.2	17.2	15.4	12.0	9.0	EX7
		EX8	56.4	50.7	45.2	35.4	26.7	58.3	52.4	46.7	36.5	27.5	EX8

Note: For other operating conditions, please use free selection tool/program Navigator revision 2019.

Electrical Control Valves Series EX4-8

EX5-8: Quick selection: SUCTION PRESURE REGULATOR -SPR

(evaporator or crankcase)

Condensing temperature (°C)	Pressure drop (bar)	Valve type	R1234ze					R407C					Valve type
			Capacity (kW)					Capacity (kW)					
			Evaporating temperature (°C)					Evaporating temperature (°C)					
10	5	0	-10	-20	10	5	0	-10	-20				
60 bubble point	0.1	EX5	0.8	0.7	0.6	0.5	0.3	1.2	1.1	0.9	0.7	0.6	EX5
		EX6	1.9	1.6	1.4	1.1	0.8	2.7	2.5	2.2	1.7	1.3	EX6
		EX7	6.6	5.8	5.1	3.8	2.7	9.7	8.8	7.9	6.2	4.7	EX7
		EX8	20.0	17.7	15.5	11.6	8.3	29.5	26.6	23.9	18.8	14.4	EX8
	0.15	EX5	1.0	0.9	0.8	0.6	0.4	1.4	1.3	1.2	0.9	0.7	EX5
		EX6	2.3	2.0	1.8	1.3	0.9	3.4	3.0	2.7	2.1	1.6	EX6
		EX7	8.1	7.1	6.3	4.7	3.3	11.9	10.7	9.6	7.6	5.8	EX7
		EX8	24.6	21.7	19.0	14.2	10.1	36.2	32.6	29.2	23.0	17.7	EX8
	0.3	EX5	1.4	1.2	1.1	0.8	0.6	2.0	1.8	1.6	1.3	1.0	EX5
		EX6	3.2	2.8	2.5	1.9	1.3	4.7	4.3	3.8	3.0	2.3	EX6
		EX7	11.4	10.1	8.9	6.6	4.7	16.8	15.2	13.6	10.7	8.2	EX7
		EX8	34.7	30.6	26.9	20.1	14.3	51.2	46.0	41.3	32.6	25.0	EX8
50 bubble point	0.1	EX5	0.9	0.8	0.7	0.5	0.4	1.3	1.2	1.1	0.9	0.7	EX5
		EX6	2.1	1.9	1.6	1.2	0.9	3.1	2.8	2.5	2.0	1.6	EX6
		EX7	7.5	6.6	5.8	4.4	3.2	11.1	10.0	9.0	7.2	5.5	EX7
		EX8	22.7	20.1	17.7	13.4	9.6	33.8	30.5	27.4	21.8	16.8	EX8
	0.15	EX5	1.1	1.0	0.9	0.7	0.5	1.6	1.5	1.3	1.1	0.8	EX5
		EX6	2.6	2.3	2.0	1.5	1.1	3.8	3.5	3.1	2.5	1.9	EX6
		EX7	9.1	8.1	7.2	5.4	3.9	13.6	12.3	11.0	8.8	6.8	EX7
		EX8	27.8	24.6	21.7	16.4	11.8	41.4	37.4	33.5	26.7	20.5	EX8
	0.3	EX5	1.6	1.4	1.2	0.9	0.7	2.3	2.1	1.9	1.5	1.2	EX5
		EX6	3.6	3.2	2.8	2.1	1.5	5.4	4.9	4.4	3.5	2.7	EX6
		EX7	12.9	11.5	10.1	7.6	5.5	19.3	17.4	15.6	12.4	9.6	EX7
		EX8	39.3	34.8	30.7	23.2	16.6	58.5	52.8	47.4	37.7	29.1	EX8
40 bubble point	0.1	EX5	1.0	0.9	0.8	0.6	0.4	1.5	1.4	1.2	1.0	0.8	EX5
		EX6	2.3	2.1	1.8	1.4	1.0	3.5	3.2	2.8	2.3	1.8	EX6
		EX7	8.3	7.4	6.5	5.0	3.6	12.4	11.2	10.1	8.1	6.3	EX7
		EX8	25.2	22.5	19.8	15.1	10.9	37.7	34.1	30.7	24.5	19.0	EX8
	0.15	EX5	1.2	1.1	1.0	0.7	0.5	1.8	1.7	1.5	1.2	0.9	EX5
		EX6	2.9	2.5	2.2	1.7	1.2	4.3	3.9	3.5	2.8	2.2	EX6
		EX7	10.2	9.1	8.0	6.1	4.4	15.2	13.7	12.4	9.9	7.7	EX7
		EX8	30.9	27.5	24.3	18.5	13.4	46.1	41.8	37.6	30.0	23.3	EX8
	0.3	EX5	1.7	1.5	1.4	1.0	0.8	2.6	2.4	2.1	1.7	1.3	EX5
		EX6	4.1	3.6	3.2	2.4	1.8	6.0	5.5	4.9	3.9	3.1	EX6
		EX7	14.4	12.8	11.3	8.6	6.2	21.5	19.4	17.5	14.0	10.8	EX7
		EX8	43.7	38.9	34.4	26.2	18.9	65.3	59.0	53.2	42.4	33.0	EX8
30 bubble point	0.1	EX5	1.1	1.0	0.9	0.7	0.5	1.6	1.5	1.3	1.1	0.8	EX5
		EX6	2.6	2.3	2.0	1.6	1.1	3.8	3.5	3.1	2.5	2.0	EX6
		EX7	9.1	8.2	7.2	5.5	4.0	13.6	12.4	11.1	8.9	7.0	EX7
		EX8	27.8	24.8	21.9	16.8	12.2	41.4	37.5	33.8	27.1	21.1	EX8
	0.15	EX5	1.4	1.2	1.1	0.8	0.6	2.0	1.8	1.6	1.3	1.0	EX5
		EX6	3.1	2.8	2.5	1.9	1.4	4.7	4.3	3.8	3.1	2.4	EX6
		EX7	11.2	10.0	8.8	6.8	4.9	16.7	15.1	13.6	10.9	8.5	EX7
		EX8	34.0	30.3	26.8	20.5	14.9	50.7	46.0	41.4	33.2	25.9	EX8
	0.3	EX5	1.9	1.7	1.5	1.2	0.8	2.9	2.6	2.3	1.9	1.5	EX5
		EX6	4.5	4.0	3.5	2.7	2.0	6.6	6.0	5.4	4.3	3.4	EX6
		EX7	15.8	14.1	12.5	9.6	6.9	23.6	21.4	19.3	15.4	12.0	EX7
		EX8	48.1	42.9	38.0	29.1	21.1	71.8	65.0	58.6	46.9	36.6	EX8

Note: For other operating conditions, please use free selection tool/program Navigator revision 2019.

Electrical Control Valves Series EX4-8

EX5-8: Quick selection: SUCTION PRESURE REGULATOR -SPR

(evaporator or crankcase)

Condensing temperature (°C)	Pressure drop (bar)	Valve type	R404A/R507 Capacity (kW)						R410A Capacity (kW)						Valve type
			Evaporating temperature (°C)						Evaporating temperature (°C)						
			5	0	-5	-10	-20	-30	5	0	-5	-10	-20	-30	
60 bubble point	0.1	EX5	0.8	0.7	0.7	0.6	0.4	0.3	1.3	1.2	1.1	1.0	0.8	0.6	EX5
		EX6	1.9	1.7	1.5	1.3	1.0	0.7	3.1	2.8	2.5	2.3	1.8	1.4	EX6
		EX7	6.9	6.1	5.4	4.8	3.6	2.6	10.9	9.9	9.0	8.1	6.5	5.0	EX7
		EX8	20.9	18.6	16.5	14.5	11.0	8.0	33.1	30.1	27.2	24.5	19.6	15.3	EX8
	0.15	EX5	1.0	0.9	0.8	0.7	0.5	0.4	1.6	1.5	1.3	1.2	1.0	0.7	EX5
		EX6	2.4	2.1	1.9	1.6	1.2	0.9	3.8	3.4	3.1	2.8	2.2	1.7	EX6
		EX7	8.4	7.5	6.6	5.9	4.4	3.2	13.3	12.1	11.0	9.9	7.9	6.2	EX7
		EX8	25.6	22.8	20.2	17.8	13.5	9.8	40.5	36.8	33.3	30.1	24.0	18.7	EX8
	0.3	EX5	1.4	1.3	1.1	1.0	0.8	0.6	2.3	2.1	1.9	1.7	1.4	1.1	EX5
		EX6	3.4	3.0	2.6	2.3	1.8	1.3	5.3	4.8	4.4	3.9	3.1	2.5	EX6
		EX7	11.9	10.6	9.4	8.3	6.3	4.6	18.9	17.1	15.5	14.0	11.2	8.7	EX7
		EX8	36.2	32.2	28.5	25.2	19.0	13.9	57.3	52.1	47.2	42.5	34.0	26.5	EX8
50 bubble point	0.1	EX5	1.0	0.9	0.8	0.7	0.6	0.4	1.6	1.4	1.3	1.2	0.9	0.7	EX5
		EX6	2.4	2.2	1.9	1.7	1.3	1.0	3.6	3.3	3.0	2.7	2.2	1.7	EX6
		EX7	8.6	7.7	6.9	6.1	4.7	3.5	12.9	11.7	10.6	9.6	7.7	6.1	EX7
		EX8	26.2	23.5	21.0	18.6	14.4	10.8	39.1	35.6	32.3	29.2	23.5	18.4	EX8
	0.15	EX5	1.3	1.1	1.0	0.9	0.7	0.5	1.9	1.7	1.6	1.4	1.1	0.9	EX5
		EX6	3.0	2.7	2.4	2.1	1.6	1.2	4.4	4.0	3.7	3.3	2.7	2.1	EX6
		EX7	10.5	9.5	8.4	7.5	5.8	4.3	15.8	14.3	13.0	11.8	9.5	7.4	EX7
		EX8	32.0	28.8	25.7	22.8	17.6	13.2	47.9	43.6	39.6	35.8	28.8	22.6	EX8
	0.3	EX5	1.8	1.6	1.4	1.3	1.0	0.7	2.7	2.5	2.2	2.0	1.6	1.3	EX5
		EX6	4.2	3.8	3.4	3.0	2.3	1.7	6.3	5.7	5.2	4.7	3.8	3.0	EX6
		EX7	14.9	13.4	12.0	10.6	8.2	6.1	22.3	20.3	18.4	16.7	13.4	10.5	EX7
		EX8	45.3	40.7	36.3	32.2	24.9	18.7	67.7	61.6	56.0	50.6	40.7	31.9	EX8
40 bubble point	0.1	EX5	1.2	1.1	1.0	0.9	0.7	0.5	1.8	1.6	1.5	1.3	1.1	0.8	EX5
		EX6	2.9	2.6	2.3	2.1	1.6	1.2	4.1	3.7	3.4	3.1	2.5	2.0	EX6
		EX7	10.1	9.1	8.2	7.3	5.7	4.3	14.6	13.3	12.1	11.0	8.8	7.0	EX7
		EX8	30.8	27.8	24.9	22.2	17.4	13.2	44.3	40.4	36.7	33.3	26.9	21.2	EX8
	0.15	EX5	1.5	1.4	1.2	1.1	0.8	0.6	2.2	2.0	1.8	1.6	1.3	1.0	EX5
		EX6	3.5	3.1	2.8	2.5	2.0	1.5	5.0	4.6	4.2	3.8	3.0	2.4	EX6
		EX7	12.4	11.2	10.0	8.9	7.0	5.3	17.9	16.3	14.8	13.4	10.8	8.5	EX7
		EX8	37.7	34.0	30.5	27.2	21.3	16.1	54.2	49.5	45.0	40.8	32.9	25.9	EX8
	0.3	EX5	2.1	1.9	1.7	1.5	1.2	0.9	3.1	2.8	2.5	2.3	1.9	1.5	EX5
		EX6	4.9	4.5	4.0	3.6	2.8	2.1	7.1	6.5	5.9	5.3	4.3	3.4	EX6
		EX7	17.6	15.8	14.2	12.7	9.9	7.5	25.2	23.0	20.9	19.0	15.3	12.1	EX7
		EX8	53.4	48.1	43.2	38.4	30.1	22.8	76.7	70.0	63.6	57.7	46.5	36.7	EX8
30 bubble point	0.1	EX5	1.4	1.3	1.1	1.0	0.8	0.6	2.0	1.8	1.6	1.5	1.2	0.9	EX5
		EX6	3.3	2.9	2.6	2.4	1.9	1.4	4.5	4.2	3.8	3.4	2.8	2.2	EX6
		EX7	11.6	10.5	9.4	8.4	6.6	5.1	16.2	14.8	13.4	12.2	9.9	7.8	EX7
		EX8	35.2	31.8	28.6	25.6	20.2	15.4	49.1	44.8	40.8	37.0	30.0	23.7	EX8
	0.15	EX5	1.7	1.6	1.4	1.2	1.0	0.8	2.4	2.2	2.0	1.8	1.5	1.2	EX5
		EX6	4.0	3.6	3.2	2.9	2.3	1.8	5.6	5.1	4.6	4.2	3.4	2.7	EX6
		EX7	14.2	12.8	11.5	10.3	8.1	6.2	19.8	18.1	16.4	14.9	12.1	9.6	EX7
		EX8	43.1	38.9	35.0	31.3	24.7	18.9	60.1	54.9	50.0	45.3	36.7	29.0	EX8
	0.3	EX5	2.4	2.2	2.0	1.8	1.4	1.1	3.4	3.1	2.8	2.6	2.1	1.6	EX5
		EX6	5.6	5.1	4.6	4.1	3.2	2.5	7.9	7.2	6.5	5.9	4.8	3.8	EX6
		EX7	20.0	18.1	16.3	14.6	11.5	8.8	28.0	25.6	23.3	21.1	17.1	13.5	EX7
		EX8	60.9	55.1	49.5	44.3	34.9	26.7	85.0	77.6	70.7	64.1	51.9	41.0	EX8

Note: For other operating conditions, please use free selection tool/program Navigator revision 2019.

Electrical Control Valves Series EX4-8

EX4-8: Quick selection: HOT GAS BYPASS - HGB

Condensing temperature (°C)	Capacity (kW)									Valve type
	R407C	R134a	R513A	R450A	R1234ZE	R410A	R448A/ R449A	R404A/ R507	R452A	
60 bubble point	5.5	3.6	3.3	3.1	2.7	7.0	5.4	4.1	4.3	EX4
	17.7	11.7	10.8	10.1	8.7	22.5	17.5	13.3	14.1	EX5
	41	27	25	23	20	52	40	31	33	EX6
	146	96	88	83	71	185	144	109	116	EX7
	442	292	269	252	217	562	437	331	351	EX8
50 bubble point	5.1	3.2	3.1	2.8	2.4	6.6	5.1	4.1	4.3	EX4
	16.4	10.5	10.0	9.1	7.8	21.5	16.5	13.3	14.0	EX5
	38	24	23	21	18	50	38	31	32	EX6
	135	86	82	75	64	176	136	109	115	EX7
	409	262	248	227	194	536	412	331	349	EX8
40 bubble point	4.5	2.8	2.7	2.4	2.1	6.0	4.6	3.8	4.0	EX4
	14.7	9.1	8.9	7.9	6.7	19.5	14.9	12.5	13.1	EX5
	34	21	20	18	16	45	35	29	30	EX6
	120	75	73	65	55	160	123	102	107	EX7
	366	227	221	197	168	486	373	311	326	EX8
30 bubble point	3.9	2.4	2.3	2.1	1.8	5.3	4.0	3.5	3.6	EX4
	12.7	7.7	7.6	6.7	5.7	17.1	13.1	11.2	11.7	EX5
	29	18	18	15	13	40	30	26	27	EX6
	105	63	62	55	47	141	108	92	96	EX7
	318	192	190	167	142	427	327	280	292	EX8

Note: For other operating conditions, please use free selection tool/program Navigator revision 2019.

Electrical Control Valves Series EX4-8

EX5-8: Quick selection: HEAT RECLAIM / HOT GAS FLOW - (HRC1/2)

Condensing temperature (°C)	Pressure drop bar	Valve type	R448A/R449A Capacity (kW)						R452A Capacity (kW)						Valve type
			Evaporating temperature (°C)						Evaporating temperature (°C)						
			5	0	-10	-20	-30	-40	5	0	-10	-20	-30	-40	
60 bubble point	0.1	EX5	2.2	2.1	2.0	1.8	1.7	1.6	1.7	1.7	1.5	1.4	1.2	1.1	EX5
		EX6	5.0	4.9	4.6	4.2	3.9	3.6	4.0	3.8	3.5	3.2	2.8	2.5	EX6
		EX7	17.9	17.4	16.3	15.1	13.9	12.7	14.2	13.6	12.5	11.2	10.0	8.8	EX7
		EX8	54.5	52.8	49.4	45.9	42.3	38.6	43.2	41.4	37.9	34.2	30.4	26.6	EX8
	0.5	EX5	4.8	4.7	4.4	4.1	3.8	3.4	3.8	3.7	3.4	3.0	2.7	2.4	EX5
		EX6	11.2	10.8	10.1	9.4	8.7	7.9	8.8	8.5	7.8	7.0	6.2	5.5	EX6
		EX7	39.7	38.5	36.0	33.5	30.8	28.2	31.4	30.2	27.6	24.9	22.1	19.4	EX7
		EX8	120.6	116.9	109.4	101.6	93.7	85.6	95.4	91.6	83.7	75.6	67.2	58.8	EX8
	1.0	EX5	6.8	6.6	6.1	5.7	5.3	4.8	5.3	5.1	4.7	4.2	3.8	3.3	EX5
		EX6	15.6	15.1	14.2	13.2	12.1	11.1	12.3	11.8	10.8	9.8	8.7	7.6	EX6
		EX7	55.4	53.8	50.3	46.8	43.1	39.4	43.8	42.0	38.4	34.7	30.9	27.1	EX7
		EX8	168.3	163.3	152.8	142.0	131.0	119.8	133.0	127.7	116.7	105.4	93.9	82.2	EX8
50 bubble point	0.1	EX5	2.3	2.2	2.1	2.0	1.8	1.7	1.9	1.9	1.7	1.6	1.5	1.3	EX5
		EX6	5.3	5.2	4.9	4.6	4.3	3.9	4.5	4.3	4.0	3.7	3.4	3.0	EX6
		EX7	18.9	18.4	17.3	16.2	15.1	14.0	15.8	15.3	14.2	13.1	12.0	10.8	EX7
		EX8	57.3	55.8	52.6	49.3	45.9	42.5	48.1	46.6	43.3	39.9	36.4	32.9	EX8
	0.5	EX5	5.4	5.3	5.1	4.8	4.6	4.3	4.5	4.4	4.2	3.9	3.6	3.3	EX5
		EX6	12.6	12.3	11.8	11.2	10.6	10.0	10.5	10.2	9.6	9.0	8.3	7.6	EX6
		EX7	44.7	43.7	41.8	39.7	37.6	35.4	37.3	36.3	34.2	31.9	29.5	27.0	EX7
		EX8	135.6	132.9	127.0	120.7	114.3	107.6	113.4	110.3	103.8	97.0	89.7	81.9	EX8
	1.0	EX5	7.1	6.9	6.5	6.1	5.7	5.3	5.9	5.7	5.3	4.9	4.5	4.1	EX5
		EX6	16.3	15.9	15.0	14.1	13.1	12.2	13.7	13.2	12.3	11.4	10.4	9.4	EX6
		EX7	58.0	56.5	53.3	50.0	46.6	43.2	48.6	47.0	43.8	40.4	36.9	33.4	EX7
		EX8	176.2	171.6	161.9	151.9	141.6	131.2	147.6	142.8	132.9	122.6	112.1	101.3	EX8
40 bubble point	0.1	EX5	2.3	2.3	2.2	2.0	1.9	1.8	2.0	2.0	1.8	1.7	1.6	1.5	EX5
		EX6	5.4	5.2	5.0	4.7	4.4	4.1	4.6	4.5	4.2	4.0	3.7	3.4	EX6
		EX7	19.1	18.6	17.7	16.7	15.6	14.6	16.5	16.0	15.1	14.1	13.0	12.0	EX7
		EX8	58.0	56.6	53.6	50.6	47.5	44.4	50.1	48.7	45.7	42.7	39.5	36.3	EX8
	0.5	EX5	5.1	5.0	4.7	4.5	4.2	3.9	4.4	4.3	4.0	3.8	3.5	3.2	EX5
		EX6	11.8	11.5	11.0	10.3	9.7	9.1	10.2	9.9	9.3	8.7	8.1	7.4	EX6
		EX7	42.0	41.0	38.9	36.7	34.5	32.2	36.3	35.3	33.2	31.0	28.7	26.4	EX7
		EX8	127.7	124.6	118.2	111.6	104.8	97.9	110.3	107.2	100.7	94.0	87.1	80.1	EX8
	1.0	EX5	7.1	6.9	6.6	6.2	5.8	5.5	6.1	6.0	5.6	5.2	4.9	4.5	EX5
		EX6	16.4	16.0	15.2	14.4	13.5	12.6	14.2	13.8	12.9	12.1	11.2	10.3	EX6
		EX7	58.4	57.0	54.1	51.1	48.0	44.8	50.3	48.9	46.0	43.0	39.8	36.6	EX7
		EX8	177.3	173.0	164.2	155.1	145.7	136.2	152.8	148.6	139.7	130.5	121.0	111.3	EX8
30 bubble point	0.1	EX5	2.3	2.2	2.1	2.0	1.9	1.8	2.0	2.0	1.9	1.8	1.6	1.5	EX5
		EX6	5.3	5.2	4.9	4.7	4.4	4.1	4.7	4.5	4.3	4.0	3.8	3.5	EX6
		EX7	18.8	18.4	17.5	16.6	15.7	14.7	16.5	16.1	15.3	14.4	13.4	12.5	EX7
		EX8	57.1	55.9	53.2	50.5	47.6	44.7	50.3	49.0	46.4	43.7	40.8	37.9	EX8
	0.5	EX5	5.0	4.9	4.7	4.4	4.2	3.9	4.4	4.3	4.1	3.8	3.6	3.3	EX5
		EX6	11.6	11.4	10.8	10.3	9.7	9.1	10.2	10.0	9.4	8.9	8.3	7.7	EX6
		EX7	41.3	40.4	38.5	36.5	34.5	32.4	36.3	35.4	33.5	31.6	29.5	27.5	EX7
		EX8	125.5	122.7	116.9	110.9	104.7	98.4	110.3	107.5	101.8	95.9	89.7	83.4	EX8
	1.0	EX5	7.0	6.8	6.5	6.2	5.8	5.5	6.1	6.0	5.6	5.3	5.0	4.6	EX5
		EX6	16.1	15.7	15.0	14.2	13.4	12.6	14.1	13.8	13.0	12.3	11.5	10.7	EX6
		EX7	57.1	55.8	53.2	50.5	47.7	44.8	50.1	48.9	46.3	43.6	40.8	38.0	EX7
		EX8	173.3	169.5	161.6	153.4	144.9	136.2	152.3	148.5	140.7	132.5	124.0	115.4	EX8

Note: For other operating conditions, please use free selection tool/program Navigator revision 2019.

Electrical Control Valves Series EX4-8

EX5-8: Quick selection: HEAT RECLAIM / HOT GAS FLOW - (HRC1/2)

Condensing temperature (°C)	Pressure drop (bar)	Valve type	R513A/R450A Capacity (kW)						R134a Capacity (kW)						Valve type
			Evaporating temperature (°C)						Evaporating temperature (°C)						
			10	5	0	-10	-20	-30	10	5	0	-10	-20	-30	
60 bubble point	0.1	EX5	1.8	1.7	1.6	1.5	1.4	1.3	2.0	1.9	1.8	1.7	1.6	1.5	EX5
		EX6	4.1	4.0	3.8	3.5	3.2	2.9	4.5	4.4	4.2	4.0	3.7	3.4	EX6
		EX7	14.6	14.0	13.5	12.5	11.4	10.3	16.0	15.5	15.1	14.1	13.1	12.0	EX7
		EX8	44.2	42.7	41.1	37.9	34.6	31.2	48.7	47.2	45.8	42.7	39.7	36.5	EX8
	0.5	EX5	3.9	3.8	3.6	3.3	3.1	2.8	4.3	4.2	4.0	3.8	3.5	3.2	EX5
		EX6	9.0	8.7	8.4	7.7	7.0	6.4	9.9	9.6	9.3	8.7	8.1	7.5	EX6
		EX7	32.0	30.9	29.7	27.4	25.0	22.6	35.2	34.2	33.1	31.0	28.7	26.5	EX7
		EX8	97.2	93.8	90.3	83.3	76.0	68.7	107.0	103.8	100.6	94.0	87.3	80.4	EX8
	1.0	EX5	5.4	5.2	5.0	4.6	4.2	3.8	5.9	5.8	5.6	5.2	4.9	4.5	EX5
		EX6	12.5	12.0	11.6	10.7	9.8	8.8	13.7	13.3	12.9	12.1	11.2	10.3	EX6
		EX7	44.3	42.7	41.2	38.0	34.7	31.3	48.7	47.3	45.9	42.9	39.8	36.7	EX7
		EX8	134.6	129.8	125.0	115.4	105.3	95.2	148.1	143.7	139.3	130.2	120.9	111.5	EX8
50 bubble point	0.1	EX5	1.8	1.8	1.7	1.6	1.5	1.4	2.0	1.9	1.9	1.7	1.6	1.5	EX5
		EX6	4.2	4.1	3.9	3.7	3.4	3.1	4.5	4.4	4.3	4.0	3.8	3.5	EX6
		EX7	14.9	14.5	14.0	13.1	12.1	11.2	16.0	15.6	15.2	14.3	13.4	12.5	EX7
		EX8	45.4	44.0	42.6	39.8	36.9	33.9	48.7	47.4	46.1	43.4	40.7	37.9	EX8
	0.5	EX5	4.0	3.9	3.8	3.6	3.3	3.1	4.3	4.3	4.2	4.0	3.8	3.5	EX5
		EX6	9.2	9.1	8.8	8.3	7.7	7.1	9.9	9.9	9.7	9.2	8.7	8.1	EX6
		EX7	32.7	32.4	31.4	29.3	27.2	25.1	35.1	35.3	34.4	32.6	30.8	28.9	EX7
		EX8	99.4	98.3	95.4	89.1	82.7	76.4	106.7	107.3	104.6	99.1	93.6	87.9	EX8
	1.0	EX5	5.5	5.3	5.2	4.8	4.5	4.1	5.9	5.7	5.6	5.3	4.9	4.6	EX5
		EX6	12.7	12.3	11.9	11.1	10.3	9.5	13.6	13.3	12.9	12.2	11.4	10.6	EX6
		EX7	45.1	43.8	42.4	39.6	36.7	33.8	48.4	47.1	45.9	43.2	40.5	37.7	EX7
		EX8	137.1	132.9	128.7	120.3	111.6	102.6	147.0	143.2	139.3	131.3	123.0	114.6	EX8
40 bubble point	0.1	EX5	1.8	1.8	1.7	1.6	1.5	1.4	1.9	1.9	1.8	1.7	1.6	1.5	EX5
		EX6	4.2	4.1	4.0	3.7	3.5	3.2	4.4	4.3	4.2	4.0	3.8	3.5	EX6
		EX7	14.9	14.5	14.1	13.2	12.4	11.5	15.7	15.3	14.9	14.1	13.3	12.5	EX7
		EX8	45.1	43.9	42.7	40.2	37.7	35.0	47.7	46.5	45.4	43.0	40.5	38.0	EX8
	0.5	EX5	4.0	3.8	3.7	3.5	3.3	3.1	4.2	4.1	4.0	3.8	3.5	3.3	EX5
		EX6	9.1	8.9	8.6	8.1	7.6	7.1	9.6	9.4	9.2	8.7	8.2	7.7	EX6
		EX7	32.4	31.6	30.7	28.9	27.1	25.2	34.2	33.4	32.6	30.8	29.1	27.3	EX7
		EX8	98.5	95.8	93.2	87.8	82.2	76.4	103.9	101.4	98.9	93.7	88.4	82.9	EX8
	1.0	EX5	5.4	5.3	5.1	4.8	4.5	4.2	5.7	5.6	5.4	5.1	4.9	4.6	EX5
		EX6	12.5	12.2	11.8	11.1	10.4	9.7	13.2	12.9	12.5	11.9	11.2	10.5	EX6
		EX7	44.4	43.3	42.1	39.6	37.1	34.5	46.8	45.7	44.6	42.2	39.9	37.4	EX7
		EX8	135.0	131.4	127.7	120.3	112.8	104.9	142.1	138.8	135.4	128.3	121.1	113.7	EX8
30 bubble point	0.1	EX5	1.8	1.7	1.7	1.6	1.5	1.4	1.8	1.8	1.8	1.7	1.6	1.5	EX5
		EX6	4.1	4.0	3.9	3.7	3.4	3.2	4.2	4.1	4.0	3.8	3.6	3.4	EX6
		EX7	14.4	14.1	13.7	13.0	12.3	11.5	15.0	14.7	14.4	13.7	13.0	12.2	EX7
		EX8	43.8	42.8	41.7	39.5	37.2	34.9	45.7	44.7	43.7	41.6	39.4	37.2	EX8
	0.5	EX5	3.8	3.7	3.6	3.4	3.2	3.0	4.0	3.9	3.8	3.6	3.4	3.2	EX5
		EX6	8.8	8.6	8.4	7.9	7.5	7.0	9.2	9.0	8.8	8.3	7.9	7.5	EX6
		EX7	31.3	30.5	29.8	28.2	26.6	24.9	32.6	31.8	31.1	29.6	28.1	26.5	EX7
		EX8	95.1	92.8	90.4	85.7	80.8	75.8	98.9	96.7	94.5	90.0	85.3	80.5	EX8
	1.0	EX5	5.2	5.1	4.9	4.7	4.4	4.1	5.4	5.3	5.1	4.9	4.6	4.4	EX5
		EX6	12.0	11.7	11.4	10.8	10.2	9.5	12.4	12.1	11.9	11.3	10.7	10.1	EX6
		EX7	42.5	41.5	40.5	38.4	36.2	33.9	44.1	43.2	42.2	40.2	38.1	36.0	EX7
		EX8	129.2	126.1	122.9	116.5	109.9	103.0	134.0	131.1	128.1	122.1	115.8	109.3	EX8

Note: For other operating conditions, please use free selection tool/program Navigator revision 2019.

Electrical Control Valves Series EX4-8

EX5-8: Quick selection: HEAT RECLAIM / HOT GAS FLOW - (HRC1/2)

Condensing temperature (°C)	Pressure drop (bar)	Valve type	R1234ze						R407C						Valve type
			Capacity (kW)						Capacity (kW)						
			Evaporating temperature (°C)						Evaporating temperature (°C)						
10	5	0	-10	-20	-30	10	5	0	-10	-20	-30				
60 bubble point	0.1	EX5	1.6	1.6	1.5	1.4	1.3	1.2	2.3	2.3	2.2	2.1	1.9	1.8	EX5
		EX6	3.7	3.6	3.5	3.2	3.0	2.7	5.4	5.3	5.1	4.8	4.5	4.1	EX6
		EX7	13.3	12.9	12.4	11.5	10.6	9.7	19.2	18.7	18.1	17.0	15.9	14.7	EX7
		EX8	40.5	39.1	37.7	35.0	32.2	29.5	58.4	56.7	55.1	51.7	48.2	44.6	EX8
	0.5	EX5	3.6	3.4	3.3	3.1	2.8	2.6	5.2	5.0	4.9	4.6	4.3	4.0	EX5
		EX6	8.2	7.9	7.6	7.1	6.5	6.0	12.0	11.6	11.3	10.6	9.9	9.2	EX6
		EX7	29.1	28.2	27.2	25.2	23.2	21.3	42.5	41.3	40.1	37.7	35.1	32.5	EX7
		EX8	88.5	85.6	82.6	76.6	70.6	64.6	129.1	125.5	121.9	114.4	106.7	98.9	EX8
	1.0	EX5	4.9	4.7	4.6	4.2	3.9	3.6	7.2	7.0	6.8	6.4	6.0	5.5	EX5
		EX6	11.3	10.9	10.5	9.8	9.0	8.2	16.7	16.2	15.8	14.8	13.8	12.8	EX6
		EX7	40.1	38.7	37.4	34.7	32.0	29.3	59.3	57.7	56.0	52.6	49.1	45.5	EX7
		EX8	121.7	117.7	113.6	105.3	97.1	88.9	180.1	175.2	170.2	159.8	149.1	138.2	EX8
50 bubble point	0.1	EX5	1.6	1.6	1.5	1.4	1.3	1.2	2.4	2.3	2.3	2.2	2.0	1.9	EX5
		EX6	3.8	3.6	3.5	3.3	3.1	2.9	5.6	5.4	5.3	5.0	4.7	4.4	EX6
		EX7	13.3	13.0	12.6	11.8	11.0	10.2	19.8	19.3	18.8	17.7	16.7	15.6	EX7
		EX8	40.5	39.3	38.1	35.7	33.3	30.8	60.0	58.5	57.0	53.9	50.6	47.3	EX8
	0.5	EX5	3.5	3.5	3.4	3.2	3.0	2.7	5.3	5.5	5.4	5.2	4.9	4.7	EX5
		EX6	8.2	8.1	7.8	7.3	6.8	6.3	12.3	12.7	12.4	11.9	11.4	10.8	EX6
		EX7	29.1	28.7	27.9	26.1	24.3	22.5	43.6	45.1	44.2	42.4	40.4	38.4	EX7
		EX8	88.3	87.3	84.6	79.2	73.8	68.4	132.5	136.9	134.3	128.7	122.8	116.7	EX8
	1.0	EX5	4.8	4.7	4.6	4.3	4.0	3.7	7.4	7.2	7.0	6.6	6.3	5.8	EX5
		EX6	11.2	10.8	10.5	9.8	9.2	8.5	17.1	16.7	16.2	15.4	14.4	13.5	EX6
		EX7	39.7	38.5	37.4	35.0	32.6	30.3	60.7	59.2	57.7	54.6	51.3	48.0	EX7
		EX8	120.7	117.1	113.5	106.3	99.1	91.9	184.4	179.9	175.3	165.8	155.9	145.8	EX8
40 bubble point	0.1	EX5	1.6	1.6	1.5	1.4	1.3	1.2	2.4	2.4	2.3	2.2	2.1	1.9	EX5
		EX6	3.7	3.6	3.5	3.3	3.1	2.9	5.6	5.4	5.3	5.0	4.8	4.5	EX6
		EX7	13.1	12.7	12.4	11.7	11.0	10.2	19.7	19.3	18.8	17.9	16.9	15.9	EX7
		EX8	39.7	38.6	37.6	35.4	33.3	31.1	60.0	58.6	57.2	54.3	51.3	48.3	EX8
	0.5	EX5	3.4	3.4	3.3	3.1	2.9	2.7	5.3	5.2	5.1	4.8	4.5	4.3	EX5
		EX6	8.0	7.7	7.5	7.1	6.7	6.2	12.2	11.9	11.7	11.1	10.5	9.9	EX6
		EX7	28.3	27.5	26.8	25.2	23.7	22.2	43.5	42.5	41.5	39.4	37.2	35.0	EX7
		EX8	85.9	83.6	81.3	76.7	72.1	67.3	132.0	129.0	126.0	119.6	113.1	106.4	EX8
	1.0	EX5	4.7	4.5	4.4	4.2	3.9	3.7	7.3	7.2	7.0	6.7	6.3	5.9	EX5
		EX6	10.8	10.5	10.2	9.6	9.0	8.5	17.0	16.6	16.2	15.4	14.5	13.7	EX6
		EX7	38.3	37.3	36.3	34.2	32.1	30.1	60.3	58.9	57.5	54.7	51.7	48.7	EX7
		EX8	116.3	113.2	110.1	103.9	97.7	91.3	183.0	178.9	174.7	166.1	157.1	147.9	EX8
30 bubble point	0.1	EX5	1.5	1.5	1.5	1.4	1.3	1.2	2.3	2.3	2.2	2.1	2.0	1.9	EX5
		EX6	3.5	3.4	3.4	3.2	3.0	2.8	5.4	5.3	5.2	4.9	4.7	4.4	EX6
		EX7	12.6	12.2	11.9	11.3	10.7	10.0	19.3	18.9	18.5	17.6	16.7	15.8	EX7
		EX8	38.1	37.2	36.3	34.4	32.5	30.5	58.6	57.3	56.1	53.4	50.7	47.9	EX8
	0.5	EX5	3.3	3.2	3.1	3.0	2.8	2.6	5.2	5.0	4.9	4.7	4.5	4.2	EX5
		EX6	7.6	7.4	7.2	6.8	6.5	6.1	11.9	11.6	11.4	10.9	10.3	9.8	EX6
		EX7	26.9	26.2	25.6	24.3	22.9	21.6	42.3	41.4	40.5	38.6	36.7	34.7	EX7
		EX8	81.7	79.7	77.7	73.7	69.7	65.5	128.5	125.8	123.0	117.3	111.4	105.3	EX8
	1.0	EX5	4.4	4.3	4.2	4.0	3.7	3.5	7.1	7.0	6.8	6.5	6.2	5.8	EX5
		EX6	10.1	9.9	9.6	9.1	8.6	8.1	16.4	16.1	15.7	15.0	14.3	13.5	EX6
		EX7	35.9	35.1	34.2	32.4	30.7	28.8	58.3	57.1	55.9	53.3	50.7	47.9	EX7
		EX8	109.1	106.5	103.8	98.5	93.2	87.5	177.2	173.6	169.8	162.0	153.9	145.6	EX8

Note: For other operating conditions, please use free selection tool/program Navigator revision 2019.

Electrical Control Valves Series EX4-8

EX5-8: Quick selection: HEAT RECLAIM / HOT GAS FLOW - (HRC1/2)

Condensing temperature (°C)	Pressure drop (bar)	Valve type	R404A/R507 Capacity (kW)						R410A Capacity (kW)						Valve type
			Evaporating temperature (°C)						Evaporating temperature (°C)						
			5	0	-10	-20	-30	-40	5	0	-10	-20	-30	-40	
60 bubble point	0.1	EX5	1.7	1.6	1.5	1.3	1.2	1.0	2.5	2.4	2.3	2.1	2.0	1.9	EX5
		EX6	3.8	3.7	3.4	3.0	2.7	2.3	5.7	5.6	5.3	4.9	4.6	4.3	EX6
		EX7	13.7	13.1	12.0	10.8	9.5	8.3	20.3	19.7	18.7	17.6	16.4	15.2	EX7
		EX8	41.5	39.8	36.3	32.7	29.0	25.2	61.5	60.0	56.7	53.3	49.8	46.2	EX8
	0.5	EX5	3.7	3.5	3.2	2.9	2.6	2.2	5.5	5.3	5.1	4.8	4.4	4.1	EX5
		EX6	8.5	8.1	7.4	6.7	5.9	5.2	12.6	12.3	11.7	11.0	10.2	9.5	EX6
		EX7	30.2	28.9	26.4	23.8	21.1	18.3	45.0	43.8	41.5	39.0	36.4	33.8	EX7
		EX8	91.6	87.9	80.2	72.2	64.0	55.7	136.6	133.1	126.0	118.4	110.6	102.6	EX8
	1.0	EX5	5.1	4.9	4.5	4.0	3.6	3.1	7.7	7.5	7.1	6.7	6.2	5.8	EX5
		EX6	11.8	11.3	10.3	9.3	8.3	7.2	17.7	17.3	16.3	15.4	14.4	13.3	EX6
		EX7	42.0	40.3	36.8	33.1	29.4	25.6	63.0	61.4	58.1	54.7	51.1	47.4	EX7
		EX8	127.5	122.4	111.7	100.6	89.3	77.7	191.2	186.5	176.5	166.0	155.1	143.9	EX8
50 bubble point	0.1	EX5	1.9	1.8	1.7	1.6	1.4	1.3	2.7	2.6	2.5	2.3	2.2	2.1	EX5
		EX6	4.3	4.2	3.9	3.6	3.3	2.9	6.1	6.0	5.7	5.4	5.1	4.7	EX6
		EX7	15.4	14.9	13.8	12.7	11.6	10.5	21.8	21.3	20.2	19.1	18.0	16.8	EX7
		EX8	46.7	45.2	42.0	38.7	35.3	31.8	66.1	64.6	61.4	58.1	54.7	51.2	EX8
	0.5	EX5	4.4	4.3	4.0	3.8	3.5	3.2	6.4	6.4	6.2	6.0	5.8	5.5	EX5
		EX6	10.1	9.9	9.3	8.7	8.0	7.4	14.8	14.7	14.3	13.8	13.3	12.7	EX6
		EX7	36.0	35.0	33.0	30.8	28.5	26.2	52.8	52.2	50.7	49.1	47.2	45.2	EX7
		EX8	109.4	106.4	100.2	93.6	86.7	79.5	160.3	158.4	154.1	149.1	143.5	137.4	EX8
	1.0	EX5	5.7	5.5	5.2	4.8	4.3	3.9	8.2	8.0	7.6	7.2	6.8	6.4	EX5
		EX6	13.2	12.8	11.9	11.0	10.0	9.1	18.9	18.5	17.6	16.7	15.7	14.7	EX6
		EX7	47.1	45.5	42.4	39.1	35.7	32.2	67.3	65.8	62.6	59.3	55.9	52.3	EX7
		EX8	142.9	138.3	128.7	118.7	108.3	97.8	204.5	199.9	190.3	180.2	169.7	158.9	EX8
40 bubble point	0.1	EX5	2.0	1.9	1.8	1.7	1.6	1.4	2.7	2.6	2.5	2.4	2.3	2.1	EX5
		EX6	4.5	4.4	4.1	3.9	3.6	3.3	6.2	6.1	5.8	5.5	5.2	4.9	EX6
		EX7	16.1	15.7	14.7	13.8	12.7	11.7	22.2	21.7	20.7	19.7	18.6	17.6	EX7
		EX8	49.0	47.6	44.8	41.8	38.7	35.5	67.5	66.0	63.0	59.9	56.6	53.3	EX8
	0.5	EX5	4.3	4.2	4.0	3.7	3.4	3.1	6.0	5.9	5.6	5.3	5.0	4.7	EX5
		EX6	10.0	9.7	9.1	8.5	7.9	7.3	13.8	13.5	12.9	12.3	11.6	10.9	EX6
		EX7	35.5	34.5	32.4	30.3	28.0	25.8	49.1	48.0	45.9	43.6	41.3	38.9	EX7
		EX8	107.7	104.7	98.5	91.9	85.2	78.3	149.1	145.9	139.4	132.5	125.4	118.0	EX8
	1.0	EX5	6.0	5.8	5.5	5.1	4.7	4.4	8.3	8.2	7.8	7.4	7.0	6.6	EX5
		EX6	13.8	13.4	12.6	11.8	10.9	10.1	19.2	18.8	18.0	17.1	16.2	15.3	EX6
		EX7	49.1	47.7	44.9	41.9	38.9	35.8	68.4	67.0	64.0	60.9	57.6	54.3	EX7
		EX8	149.1	145.0	136.4	127.4	118.1	108.6	207.8	203.4	194.4	184.9	175.0	164.8	EX8
30 bubble point	0.1	EX5	2.0	1.9	1.8	1.7	1.6	1.5	2.7	2.6	2.5	2.4	2.3	2.2	EX5
		EX6	4.6	4.5	4.2	4.0	3.7	3.5	6.2	6.1	5.8	5.5	5.3	5.0	EX6
		EX7	16.3	15.9	15.0	14.1	13.2	12.3	22.0	21.6	20.6	19.7	18.7	17.7	EX7
		EX8	49.4	48.2	45.6	43.0	40.2	37.4	66.9	65.5	62.7	59.8	56.8	53.6	EX8
	0.5	EX5	4.3	4.2	4.0	3.8	3.5	3.3	5.9	5.8	5.5	5.3	5.0	4.8	EX5
		EX6	10.0	9.8	9.3	8.7	8.2	7.6	13.7	13.4	12.8	12.2	11.6	11.0	EX6
		EX7	35.6	34.8	32.9	31.0	29.0	27.0	48.5	47.6	45.5	43.4	41.2	39.0	EX7
		EX8	108.2	105.6	100.0	94.2	88.2	82.0	147.4	144.5	138.3	131.9	125.3	118.5	EX8
	1.0	EX5	6.0	5.8	5.5	5.2	4.9	4.5	8.2	8.0	7.7	7.4	7.0	6.6	EX5
		EX6	13.8	13.5	12.8	12.0	11.3	10.5	19.0	18.6	17.8	17.0	16.1	15.3	EX6
		EX7	49.1	47.9	45.4	42.8	40.1	37.3	67.4	66.0	63.3	60.4	57.4	54.3	EX7
		EX8	149.2	145.5	138.0	130.0	121.8	113.3	204.6	200.6	192.3	183.4	174.3	164.9	EX8

Note: For other operating conditions, please use free selection tool/program Navigator revision 2019.

Electrical Control Valves Series EX4-8

EX4-8: Quick selection: CONDENSING PRESURE / LIQUID DUTY (0.35 bar pressure drop) – (CPR)

Condensing temperature (°C)	R448A/R449A												Valve type
	Capacity (kW)												
	Evaporating temperature (°C)												
	10	5	0	-5	-10	-15	-20	-25	-30	-35	-40	-45	
30 bubble/ 34.9 dew point	6.0	5.9	5.8	5.7	5.6	5.5	5.4	5.3	5.2	5.1	5.0	4.9	EX4
	19.3	19.0	18.8	18.5	18.2	17.9	17.5	17.2	16.9	16.5	16.2	15.8	EX5
	44.9	44.3	43.7	43.0	42.3	41.6	40.8	40.0	39.3	38.5	37.7	36.8	EX6
	159.7	157.5	155.2	152.8	150.3	147.7	145.0	142.3	139.5	136.7	133.8	130.9	EX7
	485.0	478.3	471.3	464.0	456.4	448.6	440.5	432.3	423.8	415.2	406.5	397.6	EX8
20 bubble/ 25.3 dew point	6.7	6.6	6.5	6.4	6.3	6.2	6.1	6.0	5.9	5.8	5.7	5.6	EX4
	21.6	21.3	21.0	20.7	20.4	20.1	19.8	19.4	19.1	18.8	18.4	18.0	EX5
	50.2	49.6	48.9	48.2	47.5	46.8	46.0	45.2	44.4	43.6	42.8	42.0	EX6
	178.5	176.2	173.9	171.4	168.9	166.2	163.5	160.8	157.9	155.0	152.1	149.1	EX7
	542.1	535.3	528.2	520.7	513.0	505.0	496.8	488.4	479.7	471.0	462.0	453.0	EX8
10 bubble/ 15.5 dew point			7.2	7.1	7.0	6.9	6.8	6.7	6.6	6.5	6.3	6.2	EX4
			23.3	23.0	22.6	22.3	22.0	21.6	21.3	20.9	20.6	20.2	EX5
			54.1	53.4	52.7	51.9	51.1	50.3	49.5	48.7	47.9	47.0	EX6
			192.3	189.8	187.2	184.5	181.7	178.9	176.0	173.1	170.1	167.1	EX7
			584.1	576.5	568.6	560.4	552.1	543.5	534.7	525.8	516.7	507.5	EX8
0 bubble/ 5.7 dew point					7.7	7.5	7.4	7.3	7.2	7.1	7.0	6.9	EX4
					24.8	24.5	24.2	23.8	23.5	23.1	22.7	22.4	EX5
					57.7	57.0	56.2	55.4	54.6	53.7	52.9	52.0	EX6
					205.2	202.5	199.7	196.8	193.9	190.9	187.9	184.8	EX7
					623.4	615.2	606.6	597.9	589.0	579.9	570.7	561.3	EX8
-10 bubble/ -4.2 dew point							8.1	8.0	7.9	7.8	7.7	7.5	EX4
							26.3	26.0	25.6	25.2	24.9	24.5	EX5
							61.2	60.4	59.5	58.7	57.8	56.9	EX6
							217.5	214.6	211.6	208.6	205.5	202.3	EX7
							660.7	651.8	642.8	633.6	624.2	614.7	EX8
-20 bubble/ -14.1 dew point									8.5	8.4	8.3	8.2	EX4
									27.7	27.4	27.0	26.6	EX5
									64.5	63.6	62.7	61.8	EX6
									229.2	226.1	223.0	219.8	EX7
									696.2	686.8	677.3	667.7	EX8

Note: For other operating conditions, please use free selection tool/program Navigator revision 2019.

Electrical Control Valves Series EX4-8

EX4-8: Quick selection: CONDENSING PRESURE / LIQUID DUTY (0.35 bar pressure drop) – (CPR)

Condensing temperature (°C)	R452A												Valve type
	Capacity (kW)												
	Evaporating temperature (°C)												
	10	5	0	-5	-10	-15	-20	-25	-30	-35	-40	-45	
30 bubble/ 33.9 dew point	4.7	4.6	4.5	4.4	4.3	4.2	4.1	4.0	3.9	3.8	3.7	3.6	EX4
	15.3	15.0	14.7	14.4	14.1	13.7	13.4	13.0	12.7	12.3	12.0	11.6	EX5
	35.6	34.9	34.2	33.5	32.7	31.9	31.2	30.4	29.5	28.7	27.9	27.0	EX6
	126.5	124.1	121.6	119.0	116.3	113.5	110.7	107.9	105.0	102.0	99.1	96.0	EX7
	384.3	376.9	369.3	361.4	353.3	344.9	336.4	327.7	318.9	309.9	300.9	291.7	EX8
20 bubble/ 24 dew point	5.4	5.3	5.2	5.1	5.0	4.9	4.8	4.7	4.6	4.4	4.3	4.2	EX4
	17.5	17.2	16.9	16.5	16.2	15.9	15.5	15.2	14.8	14.4	14.1	13.7	EX5
	40.6	39.9	39.2	38.5	37.7	36.9	36.1	35.3	34.4	33.6	32.7	31.9	EX6
	144.4	141.9	139.3	136.7	133.9	131.1	128.3	125.3	122.4	119.4	116.3	113.2	EX7
	438.6	431.1	423.3	415.2	406.9	398.3	389.6	380.7	371.7	362.6	353.3	344.0	EX8
10 bubble/ 14.1 dew point			5.8	5.7	5.6	5.5	5.4	5.3	5.2	5.1	5.0	4.9	EX4
			19.0	18.7	18.3	18.0	17.6	17.3	16.9	16.5	16.1	15.8	EX5
			44.1	43.4	42.6	41.8	41.0	40.1	39.3	38.4	37.5	36.7	EX6
			156.9	154.2	151.4	148.5	145.6	142.6	139.6	136.5	133.4	130.3	EX7
			476.6	468.3	459.8	451.1	442.3	433.2	424.0	414.7	405.2	395.7	EX8
0 bubble/ 4.1 dew point					6.3	6.2	6.1	6.0	5.8	5.7	5.6	5.5	EX4
					20.4	20.0	19.7	19.3	18.9	18.6	18.2	17.8	EX5
					47.5	46.6	45.8	44.9	44.1	43.2	42.3	41.4	EX6
					168.7	165.7	162.8	159.7	156.7	153.5	150.4	147.2	EX7
					512.3	503.5	494.4	485.2	475.9	466.4	456.8	447.1	EX8
-10 bubble/ -5.9 dew point							6.7	6.6	6.5	6.4	6.2	6.1	EX4
							21.8	21.4	21.0	20.6	20.2	19.8	EX5
							50.6	49.7	48.8	47.9	47.0	46.1	EX6
							179.8	176.7	173.6	170.4	167.2	164.0	EX7
							546.2	536.8	527.3	517.7	507.9	498.1	EX8
-20 bubble/ -16 dew point									7.1	7.0	6.9	6.7	EX4
									23.0	22.6	22.2	21.9	EX5
									53.6	52.7	51.7	50.8	EX6
									190.4	187.2	183.9	180.6	EX7
									578.4	568.6	558.7	548.7	EX8

Note: For other operating conditions, please use free selection tool/program Navigator revision 2019.

Electrical Control Valves Series EX4-8

EX4-8: Quick selection: CONDENSING PRESURE / LIQUID DUTY (0.35 bar pressure drop) – (CPR)

Condensing temperature (°C)	R404A/R507												Valve type
	Capacity (kW)												
	Evaporating temperature (°C)												
	10	5	0	-5	-10	-15	-20	-25	-30	-35	-40	-45	
30 bubble	4.6	4.5	4.5	4.4	4.3	4.2	4.1	4.0	3.9	3.8	3.6	3.5	EX4
	15.0	14.8	14.5	14.2	13.9	13.5	13.2	12.9	12.5	12.2	11.8	11.5	EX5
	35.0	34.3	33.7	33.0	32.2	31.5	30.7	29.9	29.1	28.3	27.5	26.7	EX6
	124.4	122.1	119.7	117.2	114.6	111.9	109.2	106.4	103.5	100.7	97.7	94.8	EX7
	377.7	370.8	363.5	355.9	348.0	339.9	331.6	323.2	314.5	305.8	296.9	287.9	EX8
20 bubble	5.3	5.2	5.1	5.0	4.9	4.8	4.7	4.6	4.5	4.4	4.3	4.2	EX4
	17.3	17.0	16.7	16.4	16.0	15.7	15.4	15.0	14.7	14.3	14.0	13.6	EX5
	40.1	39.5	38.8	38.1	37.3	36.5	35.8	35.0	34.1	33.3	32.5	31.6	EX6
	142.6	140.3	137.8	135.2	132.6	129.9	127.1	124.2	121.3	118.4	115.4	112.3	EX7
	433.2	426.1	418.6	410.8	402.8	394.5	386.0	377.4	368.5	359.6	350.5	341.2	EX8
10 bubble			5.8	5.7	5.6	5.5	5.4	5.3	5.2	5.1	4.9	4.8	EX4
			18.8	18.5	18.2	17.8	17.5	17.1	16.8	16.4	16.1	15.7	EX5
			43.8	43.0	42.3	41.5	40.7	39.9	39.0	38.2	37.3	36.5	EX6
			155.6	153.0	150.3	147.5	144.6	141.7	138.8	135.8	132.7	129.6	EX7
			472.6	464.6	456.4	448.0	439.4	430.5	421.5	412.4	403.1	393.7	EX8
0 bubble					6.2	6.1	6.0	5.9	5.8	5.7	5.6	5.5	EX4
					20.3	19.9	19.6	19.2	18.9	18.5	18.1	17.7	EX5
					47.2	46.4	45.6	44.7	43.9	43.0	42.1	41.3	EX6
					167.7	164.8	161.9	159.0	156.0	152.9	149.8	146.6	EX7
					509.3	500.7	491.9	482.9	473.8	464.5	455.0	445.4	EX8
0 bubble							6.7	6.6	6.4	6.3	6.2	6.1	EX4
							21.7	21.3	20.9	20.5	20.2	19.8	EX5
							50.4	49.5	48.7	47.8	46.9	46.0	EX6
							179.0	176.0	173.0	169.8	166.7	163.5	EX7
							543.8	534.7	525.4	515.9	506.3	496.6	EX8
0 bubble									7.1	7.0	6.8	6.7	EX4
									23.0	22.6	22.2	21.8	EX5
									53.4	52.5	51.6	50.7	EX6
									189.8	186.6	183.4	180.2	EX7
									576.5	566.9	557.2	547.4	EX8

Note: For other operating conditions, please use free selection tool/program Navigator revision 2019.

Electrical Control Valves Series EX4-8

Technical data

Compatibility	A1: R134a, R404A, R507, R407C, R450A, R513A, R452A, R448A, R449A, R410A, R744 (subcritical), R23, R124 A2L: R32, R452B, R454B, R454A, R454C, R1234ze, R123yf Mineral and POE lubricants
Note: UL only for use with A1 refrigerants.	
MOPD (maximum operating pressure differential)	EX4/EX5/EX6: 40 bar EX7: 35 bar EX8: 30 bar
Max. working pressure PS	EX4 (uni-flow): 90 bar EX4/5/6/7 (bi-flow): 60 bar EX8: 45 bar UL Approval: EX4/5/6/7: 60 bar UL Approval: EX8: 45 bar
Factory test pressure PT	EX4 (uni-flow): 99 bar EX4/5/6: 66 bar EX7: 86 bar EX8: 65 bar
Ambient temperature	-40...+55°C
Storage temperature	-40...+70°C
Medium inlet temperature	
Bi-flow version:	TS: -50...+80°C
Uni-flow version:	TS: -50...+100°C (UL-Approval based on $\geq -40^{\circ}\text{C}$)

Evaporating temperature	-100...+55°C
Salt spray test	non-corrosion stainless steel body
Connections	ODF stainless steel fittings
Humidity	5 to 95% r.H.
Protection accordance to IEC 529, DIN 40050	IP67 with EMERSON supplied cable connector assembly
Vibration for non-connected and fastened valve	4g (0...1000 Hz, 1 octave /min.)
Shock	20g at 11 ms 80g at 1 ms
Net weight (kg)	0.5 kg (EX4), 0.52 kg (EX5), 0.60 kg (EX6), 1.1 kg (EX7), 1.5 kg (EX8)
External leakage	≤ 3 gram / year
Seat leakage	Positive shut-off better than solenoid valves
Marking	EX4/5/6: None (Out of PED scope) EX7/8:  1017 (Module D1) EX4/5/6/7/8: 

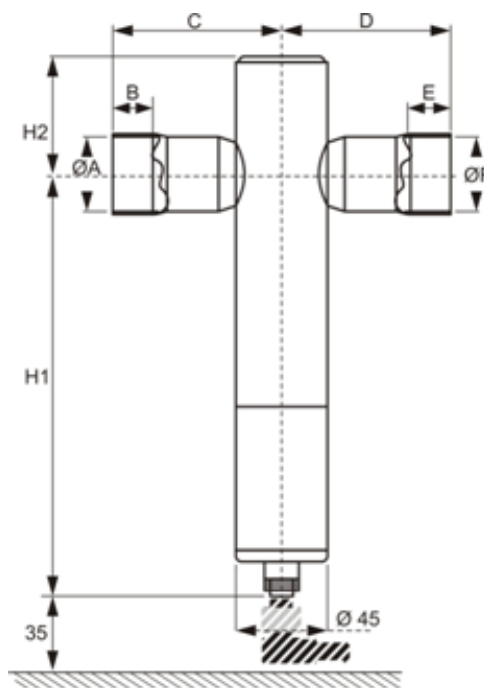
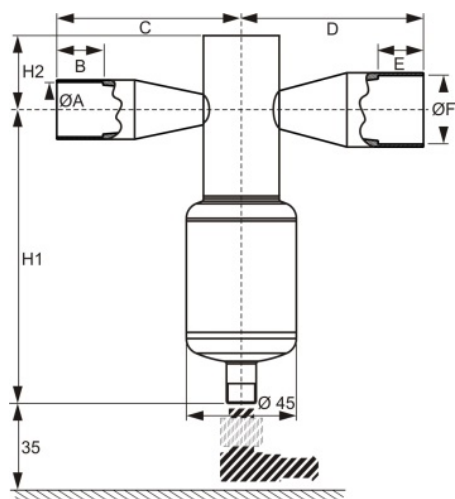
Electrical data

Stepper motor type	Bi-polar, phase current by chopper control (constant current)
Electrical connection	4 pin terminal via plug
Recom. driver supply	24 VDC (nominal)
Driver supply voltage range	18...36 VDC
Phase current, operating	EX4/EX5/EX6: 500 max, -10% EX7: 750 mA $\pm 10\%$ EX8: 800 mA $\pm 10\%$
Holding current	EX4/EX5/EX6: 100 mA EX7: 250 mA EX8: 500 mA
Nominal input power per phase	EX4/EX5/EX6: 3.5 W EX7/EX8: 5 W
Stepping rate	500 Hz

Phase inductance	EX4/EX5/EX6: 30 mH $\pm 25\%$ EX7: 20 mH $\pm 25\%$ EX8: 22 mH $\pm 25\%$
Step mode	2 phase full step
Step angle	1.8° per step $\pm 8\%$
Reference position	Mechanical stop at fully close position
Total number of steps	EX4/EX5/EX6: 750 full steps EX7: 1600 full steps EX8: 2600 full steps
Winding resistance per phase	EX4/EX5/EX6: 14 Ohm $\pm 10\%$ EX7: 10 Ohm $\pm 10\%$ EX8: 7.5 Ohm $\pm 10\%$
Full travel time	EX4/EX5/EX6: 1.5 seconds EX7: 3.2 seconds EX8: 5.2 seconds

Electrical Control Valves Series EX4-8

Dimensions (mm)



Type	Flow pattern	Part No.	Ø A x Ø F(ODF)	B	C	D	E	H1	H2
EX4-I21	Uni-flow	800615	3/8" x 5/8"	8	45	55	11	113	25
EX4-M21		800616	10 x 16 mm	8	45	55	11	113	25
EX5-U21		800618	5/8" x 7/8" (16 x 22 mm)	11	55	65	16	113	25
EX6-I21		800620	7/8" x 1-1/8"	16	65	75	19	113	25
EX6-M21		800621	22 x 28 mm	16	65	75	19	113	25
EX7-I21		800624	1-1/8" x 1-3/8"	20	78	83	20	158	42
EX7-M21		800625	28 x 35 mm	20	78	83	20	158	42
EX8-M21		800629	42 x 42 mm	20	80	80	20	200	56
EX8-U21		800630	1-3/8" (35 mm) x 1-3/8" (35 mm)	20	80	80	20	200	56
EX8-I21		800631	1-5/8" x 1-5/8"	20	80	80	20	200	56
EX4-U31	Bi-flow	800617	5/8" x 5/8" (16 x 16 mm)	11	55	55	11	113	25
EX5-U31		800619	7/8" x 7/8" (22 x 22 mm)	16	65	65	16	113	25
EX6-I31		800622	1-1/8" x 1-1/8"	19	75	75	19	113	25
EX6-M31		800623	28 x 28 mm	19	75	75	19	113	25
EX7-U31		800626	1-1/8" (35 mm) x 1-1/8" (35 mm)	23	83	83	23	158	42

