

CONDENSING UNITS R22 - R407C

CONDENSING UNITS WITH SEMI-HERMETIC COMPRESSORS

MCS...

Cooling capacities from 140 to 340 kW



MCS 1802

- Condensing units to be connected to evaporating/fan units, suitable for various environments
- Designed for external installation
- Packaged units with housing coated in zinc steel plates and painted with epoxy powders
- Operation temperatures from +15 to +42 °C in the standard version
- The following versions are available:
 - MCS... standard version - axial fans speed 920 rpm
 - MCS...S silenced version - axial fans speed 750 rpm
 - MCS...U ultrasilenced version - axial fans speed 550 rpm
 - MCS...C standard version - centrifugal fans
 - MCS...C.U ultrasilenced version - centrifugal fans
 - MCS...K version for R407C

Provided with:

- 2 high efficiency semi-hermetic compressors, motor speed 1450 rpm, with built-in thermal protection, electric oil heater, lubricating pump and rubber dampers contained in a suitable housing
- Heat exchange external coil with high efficiency aluminium fins and copper pipe designed for cooling fluids; independent circuits
- Low rpm axial fans directly coupled provided with heat protection, low sound level blades with wing profile, and safety protection grid
- Double suction centrifugal fans with onward wheel dynamically balanced; electric motor driven with driving belt, pulley with variable pitch
- Electric panel, in compliance with CE norms, supplied with a main switch with magnetothermic protection
- The cooling circuit is composed of: dehydrating filter, sight glass, safety device, high and low pressure switches, high

- and low pressure gauges, shut off valve on suction side, liquid receiver
- Unit management microprocessor for temperature values regulation, control of the operations parameters and auto-detection of failures
- Compressors hour counter

Options:

- | | |
|-------|---|
| AE | Epower supply different from the standard |
| CS | Pickup counter |
| FA | Coil protection filters |
| FI-BT | Low temperature operation to $\bar{n}5$ °C and $\bar{n}20$ °C |
| G4-G6 | 4/6 control capacity steps |
| GP | Protection grid for the external coil |
| IB-IH | RS422/485 serial interface |
| IG | Watch card |
| IM | Seawood packing |
| MF | Phase monitor |
| PA/PM | Rubber/spring-type vibration dampers |
| PQ | Remote microprocessor |
| PW | Part-winding start-up |
| QR | Electrical board on opposite side |
| RF | Rephasing system cosf |
| RL | Compressor overload relays |
| RR-RM | 2 Treatments for the condensing coil |
| RV | Personalized RAL paint |
| SU | Insulated compressor room with lead material |
| VS | Solenoid valve |

CONDENSING UNITS R22 - R407C

CONDENSING UNITS WITH SEMI-HERMETIC COMPRESSORS

MCS... Technical data

MCS...		1202	1402	1602	1802	2002	2202	2402	2602	2802	3002
Cooling capacity with R22	kW	150	168	194	212	238	252	271	297	307	337
Absorbed capacity with R22	kW	36	45	51	56	60	67	70	77	85	97
Cooling capacity with R407C	kW	143	160	185	202	227	240	258	283	292	321
Absorbed capacity with R407C	kW	38	48	54	59	64	71	74	82	90	103
[Fans]											
Number of fans	n	4	4	4	4	6	6	6	6	6	6
Air flow rate	l/s	14400	14400	14400	14400	21600	21600	21000	21000	21000	21000
Rotation speed	rpm	920	920	920	920	920	920	920	920	920	920
Motor capacity	kW	3.2	3.2	3.2	3.2	4.8	4.8	4.8	4.8	4.8	4.8
Nominal absorbed current	A	6.2	6.2	6.2	6.2	9.3	9.3	9.3	9.3	9.3	9.3
Sound pressure level	dB(A)	70	70	71	71	72	72	72	72	73	74
[Semi-hermetic compressors]											
Number of compressors	n	2	2	2	2	2	2	2	2	2	2
Circuits	n	2	2	2	2	2	2	2	2	2	2
Capacity steps - standard	n	2	2	2	2	2	2	2	2	2	2
Capacity steps - optional	n	4	4	4	4-6	4-6	4-6	4-6	4-6	4-6	4-6
Nominal input current	A	62	79	87	97	107	121	129	140	158	175
Max input current	A	89	110	122	133	153	170	181	192	214	236
Inrush current (direct)	A	217	248	339	351	380	397	520	531	634	656
Inrush current (part-winding)	A	156	179	239	250	269	286	366	377	443	466
Compressors' max absorbed capacity	kW	50.5	60.9	67.7	74.5	84.3	92.1	98.4	104.8	116.2	127.5
Total absorbed capacity with R22	kW	39.2	48.5	53.7	58.8	64.8	71.8	74.84	82.14	89.34	101.64
Total absorbed capacity with R407C	kW	41.36	51.218	56.73	62.136	68.4	75.82	79.04	86.778	94.41	107.448
[Dimensions]											
Length	mm	3460	3460	3460	3460	5150	5150	5150	5150	5150	5150
Width	mm	1245	1245	1245	1245	1245	1245	1245	1245	1245	1245
Height	mm	2085	2085	2085	2085	2085	2085	2085	2085	2085	2085
Weight	kg	1580	1601	1694	1704	2090	2120	2340	2360	2437	2509
Power supply		400V / 3 Ph / 50Hz + T + N									

Notes:

- Sound pressure level at 1 m in free field (ISO 3746). For versions with centrifugal fans the sound pressure level is at 1 m in free field with ducted air discharge
- Values valid with suction temperature of +7.5 °C and external air temperature of 32 °C

CONDENSING UNITS R22 - R407C

CONDENSING UNITS WITH SEMI-HERMETIC COMPRESSORS

MCS...S Technical data

MCS...S		1202	1402	1602	1802	2002	2202	2402	2602	2802	3002
Cooling capacity with R22	kW	142	159	186	202	233	240	260	282	313	343
Absorbed capacity with R22	kW	36	42	51	57	64	70	73	80	83	96
Cooling capacity with R407C	kW	135	151	177	192	222	229	248	269	298	327
Absorbed capacity with R407C	kW	38	45	54	60	68	74	77	85	88	101
[Fans]											
Number of fans	n	4	4	4	4	6	6	6	6	8	8
Air flow rate	l/s	10500	10500	10000	10000	16200	16200	15500	15500	21000	21000
Rotation speed	rpm	750	750	740	740	750	750	710	710	750	750
Motor capacity	kW	2.52	2.52	2.56	2.56	3.76	3.76	3.82	3.82	5.05	5.05
Nominal absorbed current	A	4.12	4.12	4.16	4.16	6.12	6.12	6.12	6.12	8.20	8.20
Sound pressure level	dB(A)	65	66	66	67	67	67	68	68	70	70
[Semi-hermetic compressors]											
Number of compressors	n	2	2	2	2	2	2	2	2	2	2
Circuits	n	2	2	2	2	2	2	2	2	2	2
Capacity steps - standard	n	2	2	2	2	2	2	2	2	2	2
Capacity steps - optional	n	4	4	4	4-6	4-6	4-6	4-6	4-6	4-6	4-6
Nominal input current	A	64	80	89	99	110	123	131	143	160	178
Max input current	A	89	110	122	133	153	170	181	192	214	236
Inrush current (direct)	A	217	248	339	351	380	397	520	531	634	656
Inrush current (part-winding)	A	156	179	239	250	269	286	366	377	443	466
Compressors' max absorbed capacity	kW	49.4	59.8	66.6	73.4	82.6	90.4	96.7	103.1	115.9	127.3
Total absorbed capacity with R22	kW	38.5	44.7	53.1	59.2	67.6	73.8	76.9	84.2	88.5	100.7
Total absorbed capacity with R407C	kW	40.7	47.3	56.1	62.6	71.4	78.0	81.3	89.0	93.5	106.4
[Dimensions]											
Length	mm	3460	3460	3460	3460	5150	5150	5150	5150	6840	6840
Width	mm	1245	1245	1245	1245	1245	1245	1245	1245	1245	1245
Height	mm	2085	2085	2085	2085	2085	2085	2085	2085	2085	2085
Weight	kg	1598	1619	1710	1720	2118	2148	2368	2388	2913	2985
Power supply		400V / 3 Ph / 50Hz + T + N									

Notes:

- Sound pressure level at 1 m in free field (ISO 3746). For versions with centrifugal fans the sound pressure level is at 1 m in free field with ducted air discharge
- Values valid with suction temperature of +7.5 °C and external air temperature of 32 °C

CONDENSING UNITS R22 - R407C

CONDENSING UNITS WITH SEMI-HERMETIC COMPRESSORS

MCS...U Technical data

MCS...U		1202	1402	1602	1802	2002	2202	2402	2602	2802	3002
Cooling capacity with R22	kW	147	166	190	210	223	235	270	290	314	337
Absorbed capacity with R22	kW	34	43	47	54	61	68	70	75	88	99
Cooling capacity with R407C	kW	140	158	181	200	212	224	257	276	299	321
Absorbed capacity with R407C	kW	36	46	50	57	64	72	74	80	93	105
[Fans]											
Number of fans	n	6	6	6	6	6	6	8	8	8	8
Air flow rate	L/s	13500	13500	13000	13000	13000	13000	17550	17550	17550	17550
Rotation speed	rpm	555	555	545	545	545	545	550	550	550	550
Motor capacity	kW	1.35	1.35	1.38	1.38	1.38	1.38	1.84	1.84	1.84	1.84
Nominal absorbed current	A	3.30	3.30	3.36	3.36	3.36	3.36	4.44	4.44	4.44	4.44
Sound pressure level	dB(A)	61	61	62	63	63	63	63	63	65	66
[Semi-hermetic compressors]											
Number of compressors	n	2	2	2	2	2	2	2	2	2	2
Circuits	n	2	2	2	2	2	2	2	2	2	2
Capacity steps - standard	n	2	2	2	2	2	2	2	2	2	2
Capacity steps - optional	n	4	4	4	4-6	4-6	4-6	4-6	4-6	4-6	4-6
Nominal input current	A	61	78	86	96	111	125	129	140	159	176
Max input current	A	89	110	122	133	153	170	181	192	214	236
Inrush current (direct)	A	217	248	339	351	380	397	520	531	634	656
Inrush current (part-winding)	A	156	179	239	250	269	286	366	377	443	466
Compressors' max absorbed capacity	kW	48.2	58.6	65.4	72.1	79.9	87.7	94.6	101	112.4	123.7
Total absorbed capacity with R22	kW	35.4	44.6	48.8	55.0	62.2	69.4	71.8	77.0	89.4	100.7
Total absorbed capacity with R407C	kW	37.4	47.1	51.6	58.2	65.8	73.5	76.0	81.6	94.7	106.7
[Dimensions]											
Length	mm	5150	5150	5150	5150	5150	5150	6840	6840	6840	6840
Width	mm	1245	1245	1245	1245	1245	1245	1245	1245	1245	1245
Height	mm	2085	2085	2085	2085	2085	2085	2085	2085	2085	2085
Weight	kg	2067	2088	2206	2216	2271	2301	2932	2952	3029	3101
Power supply		400V / 3 Ph / 50Hz + T + N									

Notes:

- Sound pressure level at 1 m in free field (ISO 3746). For versions with centrifugal fans the sound pressure level is at 1 m in free field with ducted air discharge
- Values valid with suction temperature of +7.5 °C and external air temperature of 32 °C

CONDENSING UNITS R22 - R407C

CONDENSING UNITS WITH SEMI-HERMETIC COMPRESSORS

MCS...C Technical data

MCS...C		1202	1402	1602	1802	2002	2202	2402	2602	2802	3002
Cooling capacity with R22	kW	145	159	191	210	225	239	266	292	302	327
Absorbed capacity with R22	kW	36	44	52	58	61	67	71	79	87	98
Cooling capacity with R407C	kW	138	151	182	200	214	228	253	278	288	311
Absorbed capacity with R407C	kW	38	47	55	61	64	71	75	84	92	104
[Fans]											
Number of fans	n	4	4	4	4	6	6	6	6	6	6
Air flow rate	L/s	10000	10000	13110	13110	18050	18050	18050	18050	20000	20000
[Version: standard]											
Available pressure	Pa	80	80	110	110	75	75	75	75	85	85
Rotation speed	rpm	850	850	985	985	890	890	890	890	960	960
Motor capacity	kW	9	9	16	16	18	18	18	18	24	24
Nominal absorbed current	A	17	17	20	20	30	30	30	30	54	54
Sound pressure level	dB(A)	69	69	69	69	71	71	71	71	71	71
[Version: 1M]											
Available pressure	Pa	250	250	280	280	255	255	255	255	275	275
Rotation speed	rpm	1015	1015	1120	1120	1050	1050	1050	1050	1115	1115
Motor capacity	kW	12	12	20	20	24	24	24	24	30	30
Nominal absorbed current	A	20	20	45	45	54	54	54	54	68	68
Sound pressure level	dB(A)	72	72	72	72	74	74	74	74	74	74
[Version: 2M]											
Available pressure	Pa	440	440	nd	nd	425	425	425	425	nd	nd
Rotation speed	rpm	1190	1190	nd	nd	1190	1190	1190	1190	nd	nd
Motor capacity	kW	16	16	nd	nd	30	30	30	30	nd	nd
Nominal absorbed current	A	36	36	nd	nd	68	68	68	68	nd	nd
Sound pressure level	dB(A)	74	74	nd	nd	76	76	76	76	nd	nd
[Semi-hermetic compressors]											
Number of compressors	n	2	2	2	2	2	2	2	2	2	2
Circuits	n	2	2	2	2	2	2	2	2	2	2
Capacity steps - standard	n	2	2	2	2	2	2	2	2	2	2
Capacity steps - optional	n	4	4	4	4-6	4-6	4-6	4-6	4-6	4-6	4-6
Nominal input current	A	63	80	89	99	110	123	131	143	160	178
Max input current	A	89	110	122	133	153	170	181	192	214	236
Inrush current (direct)	A	217	248	339	351	380	397	520	531	634	656
Inrush current (part-winding)	A	156	179	239	250	269	286	366	377	443	466
Compressors' max absorbed capacity	kW	55.4	65.8	72.6	79.4	87.4	95.2	105.7	112.1	123.5	134.9
Total absorbed capacity with R22	kW	44.8	53	67.5	73.7	78.8	85	89.1	97.3	110.5	121.8
Total absorbed capacity with R407C	kW	47.0	55.7	70.6	77.2	82.4	89.0	93.4	102.1	115.7	127.7
[Dimensions]											
Length	mm	3460	3460	3460	3460	5150	5150	5150	5150	5150	5150
Width	mm	1245	1245	1245	1245	1245	1245	1245	1245	1245	1245
Height	mm	1995	1995	1995	1995	1995	1995	1995	1995	1995	1995
Weight	kg	1896	1917	1969	1979	2606	2636	2790	2810	2887	2959
Power supply		400V / 3 Ph / 50Hz + T + N									

Notes:

- Sound pressure level at 1 m in free field (ISO 3746). For versions with centrifugal fans the sound pressure level is at 1 m in free field with ducted air discharge
- Values valid with suction temperature of +7.5 °C and external air temperature of 32 °C

CONDENSING UNITS R22 - R407C

CONDENSING UNITS WITH SEMI-HERMETIC COMPRESSORS

MCS...C.U Technical data

MCS...C.U		1202	1402	1602	1802	2002	2202	2402	2602	2802	3002
Cooling capacity with R22	kW	143	162	188	207	230	241	268	286	303	320
Absorbed capacity with R22	kW	35	43	48	55	63	70	71	76	87	96
Cooling capacity with R407C	kW	136	154	179	197	219	230	255	272	289	305
Absorbed capacity with R407C	kW	37	48	53	60	69	77	78	84	95	105
[Fans]											
Number of fans	n	6	6	6	6	6	6	6	6	8	8
Air flow rate	L/s	7000	9170	9170	9170	12000	12000	15280	15280	21000	21000
[Version: standard]											
Available pressure	Pa	65	90	90	90	75	75	60	60	55	55
Rotation speed	rpm	760	800	810	810	810	810	840	840	825	825
Motor capacity	kW	4.5	6.6	6.6	6.6	9.0	9.0	13.2	13.2	17.6	17.6
Nominal absorbed current	A	9.6	13.2	13.2	13.2	18.0	18.0	25.2	25.2	33.6	33.6
Sound pressure level	dB(A)	63	63	63	63	64	64	65	65	65	65
[Version: 1M]											
Available pressure	Pa	180	200	200	200	225	225	220	220	215	215
Rotation speed	rpm	925	935	945	945	980	980	1000	1000	980	980
Motor capacity	kW	7	9	9	9	13	13	18	18	24	24
Nominal absorbed current	A	13	18	18	18	25	25	30	30	40	40
Sound pressure level	dB(A)	66	66	66	66	67	67	68	68	68	68
[Version: 2M]											
Available pressure	Pa	300	390	380	380	400	400	410	410	400	400
Rotation speed	rpm	1065	1140	1140	1140	1145	1145	1180	1180	1150	1150
Motor capacity	kW	9	13	13	13	18	18	24	24	32	32
Nominal absorbed current	A	18	25	25	25	30	30	36	36	72	72
Sound pressure level	dB(A)	68	68	68	68	69	69	70	70	70	70
[Semi-hermetic compressors]											
Number of compressors	n	2	2	2	2	2	2	2	2	2	2
Circuits	n	2	2	2	2	2	2	2	2	2	2
Capacity steps - standard	n	2	2	2	2	2	2	2	2	2	2
Capacity steps - optional	n	4	4	4	4-6	4-6	4-6	4-6	4-6	4-6	4-6
Nominal input current	A	63	79	87	97	111	125	130	142	160	178
Max input current	A	89	110	122	133	153	170	181	192	214	236
Inrush current (direct)	A	217	248	339	351	380	397	520	531	634	656
Inrush current (part-winding)	A	156	179	239	250	269	286	366	377	443	466
Compressors' max absorbed capacity	kW	51.1	61.5	68.3	75.1	85	92.8	101.3	107.7	119.1	130.5
Total absorbed capacity with R22	kW	39.5	49.8	55	61.2	71.8	79	84.2	89.2	104.1	113.2
Total absorbed capacity with R407C	kW	41.6	54.1	59.8	66.7	78.1	86.0	91.3	96.8	112.8	122.8
[Dimensions]											
Length	mm	5150	5150	5150	5150	5150	5150	5150	5150	6840	6840
Width	mm	1245	1245	1245	1245	1245	1245	1245	1245	1245	1245
Height	mm	1995	1995	1995	1995	1995	1995	1995	1995	1995	1995
Weight	kg	2582	2603	2655	2665	2720	2750	2880	2930	3480	3552
Power supply		400V / 3 Ph / 50Hz + T + N									

Notes:

- Sound pressure level at 1 m in free field (ISO 3746). For versions with centrifugal fans the sound pressure level is at 1 m in free field with ducted air discharge
- Values valid with suction temperature of +7.5 °C and external air temperature of 32 °C