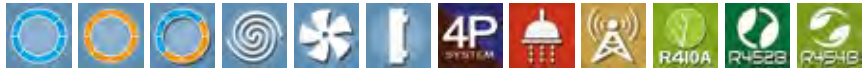


CHA/K/EP 182-P÷693-P

AIRCOOLED 4-PIPE MULTIFUNCTIONAL UNITS WITH AXIAL FANS, SCROLL COMPRESSORS AND PLATE EXCHANGERS.



ENERGYPOWER is the range of high efficiency multifunctional units for 4-Pipe systems. The units CHA/K/EP 182-P÷693-P feature R410A refrigerant and Scroll compressors activated in series based on the requested thermal load, to reach high EER/COP/TER and SEER/SCOP energy values. Thanks to the advanced control system, the units can simultaneously fulfill the heating, cooling and domestic hot water request of the building. The unit can manage the opposed thermal loads at the same time and reach the highest possible efficiency. ENERGYPOWER units make the traditional layout of the technical plants easier because the production of thermal energy for the several users are joint in one unit only; the result is an advantage in terms of installation, maintenance and management and in the meantime of the comfort needs.

Are available as option the new **EC Inverter fans with high available static pressure and efficiency for indoor ducted installation.**

Units are designed for **hot water production up to 55 °C.**

The units are compliant to the ErP Regulation.

On request, units can be supplied with **R452B (CHA/G/EP 182-P÷693-P)** or **R454B (CHA/L/EP 182-P÷693-P)** refrigerant.



VERSION

CHA/K/EP

Multifunctional unit

CHA/K/EP/SSL

Super silenced multifunctional unit

FEATURES

- Self-supporting galvanized steel frame protected with additional protection achieved via polyester powder painting.
- Scroll compressors with oil sight glass, internal overheat protection and crankcase heater.
- Axial fans directly coupled to an electric motor with external rotor.
- Copper tube and aluminum finned coil.
- Condenser AISI 316 stainless steel braze welded plates type with one circuit on the refrigerant side and one on the water side. On the units it is always installed an antifreeze heater.
- Evaporator AISI 316 stainless steel braze welded plates type with one circuit on the refrigerant side and one on the water side, complete with water differential pressure switch. On the units it is always installed an antifreeze heater.
- Electronic expansion valve.
- Electronic high and low pressure gauges.
- R410A refrigerant. On request R452B or R454B refrigerant.
- Electrical board includes: main switch with door safety interlock, fuses, thermal protection relays for compressors and thermocontacts for fans.
- Condensing Control is included: electronic proportional device that ensures efficient and continuous functioning of the unit with outside air temperature down to -20 °C in cooling mode. It also allows to reduce the sound level especially at night. It consists of a fans speed controller with continuous speed regulation, high and low pressure transducers on cooling circuit and an electrical heater on electrical board.
- Functioning in heating mode with outside air temperature down to -15 °C.
- Microprocessor control and regulation system.

ACCESSORIES

FACTORY FITTED ACCESSORIES

IM	Automatic circuit breakers	PSIH	Inverter single circulating pump heating side	ISB	BACnet MSTP protocol, RS485 serial interface
SL	Unit silencing	PDH	Double circulating pump heating side	ISBT	BACnet TCP/IP protocol, Ethernet port
RFM	Cooling circuit shut-off valve on discharge line	PDIH	Inverter double circulating pump heating side	ISL	LonWorks protocol, FTT-10 serial interface
RFL	Cooling circuit shut-off valve on liquid line	FGC	Antifreeze heater for single pump and pipes cooling side	ISS	SNMP protocol, Ethernet port
BT	Low water temperature Kit	FMC	Antifreeze heater for double pump and pipes cooling side	IAV	Remote set-point, 0-10 V signal
EC	EC Inverter fans	FGH	Antifreeze heater for single pump and pipes heating side	IAA	Remote set-point, 4-20 mA signal
ECH	EC Inverter fans with high available static pressure	FMH	Antifreeze heater for double pump and pipes heating side	IAS	Remote signal for second set-point activation
TX	Coil with pre-coated fins	SS	Soft start	IDL	Demand limit from digital input
PSC	Single circulating pump cooling side	TS	Touch screen Interface	CP	Potential free contacts
PSIC	Inverter single circulating pump cooling side	WM	Web Monitoring - Wireless remote monitoring (GPRS/EDGE/3G/TCP-IP)		
PDC	Double circulating pump cooling side	IS	Modbus RTU protocol, RS485 serial interface		
PDIC	Inverter double circulating pump cooling side	IST	Modbus TCP/IP protocol, Ethernet port		
PSH	Single circulating pump heating side				

LOOSE ACCESSORIES

MN	High and low pressure gauges
CR	Remote control panel
RP	Coil protection metallic guards
AG	Rubber shock absorbers
AM	Spring shock absorbers

MODEL			182-P	202-P	242-P	262-P	302-P	363-P	393-P	453-P	502-P	603-P	693-P
Cooling only	Cooling capacity (1)	kW	48.6	55.9	63.2	72.2	81.8	92.7	105	118	134	159	190
	Absorbed power (1)	kW	16.8	19.3	21.9	24.4	27.9	32.5	38.0	42.3	46.5	57.4	68.5
	EER (1)		2.89	2.90	2.89	2.96	2.93	2.85	2.76	2.79	2.88	2.77	2.77
Cooling only (EN14511)	Cooling capacity (1)	kW	48.3	55.5	62.8	71.7	81.3	92.2	105	117	133	158	189
	Absorbed power (1)	kW	17.1	19.6	22.3	24.9	28.4	33.1	38.5	42.9	47.2	58.3	69.5
	EER (1)		2.82	2.83	2.82	2.88	2.86	2.79	2.73	2.73	2.82	2.71	2.72
	SEER (2)		4.17	4.18	4.17	4.2	4.19	4.16	4.14	4.14	4.17	4.13	4.13
	Energy Efficiency (2)	%	164	164	164	165	165	163	163	163	164	162	162
Heating only	Heating capacity (3)	kW	52.2	59.7	67.0	75.5	86.0	98.4	111	127	142	171	203
	Absorbed power (3)	kW	16.0	18.7	21.2	23.4	26.5	30.0	35.1	39.5	42.8	52.5	61.2
	COP (3)		3.26	3.19	3.16	3.23	3.25	3.28	3.16	3.22	3.32	3.26	3.32
Heating only (EN14511)	Heating capacity (3)	kW	52.5	60.0	67.4	75.9	86.4	98.8	112	128	143	172	204
	Absorbed power (3)	kW	16.3	19.0	21.6	23.9	27.0	30.5	35.7	40.3	43.9	53.7	62.7
	COP (3)		3.22	3.16	3.12	3.18	3.20	3.24	3.14	3.18	3.26	3.20	3.25
	SCOP (4)		3.49	3.46	3.36	3.36	3.38	3.93	3.58	3.53	3.73	3.73	3.75
	Energy Efficiency (4)	%	137	135	131	131	132	154	140	138	146	146	147
	Energy Class (5)		A+	A+	A+	A+	--	--	--	--	--	--	--
Cooling + Heating	Cooling capacity (6)	kW	49.6	56.5	62.9	71.8	83.3	94.0	110	126	140	168	203
	Heating capacity (6)	kW	64.9	73.9	82.5	94.1	109	123	143	163	181	217	261
	Absorbed power (6)	kW	15.3	17.4	19.6	22.3	25.2	29.4	32.6	37.2	40.7	49.0	58.4
	TER (6)		7.48	7.49	7.42	7.44	7.63	7.38	7.76	7.77	7.89	7.86	7.95
Cooling + Heating (EN14511)	Cooling capacity (6)	kW	49.3	56.2	62.5	71.3	82.8	93.4	109	125	139	167	202
	Heating capacity (6)	kW	65.2	74.3	82.9	94.6	110	124	144	164	182	218	262
	Absorbed power (6)	kW	15.6	17.7	20.0	22.8	25.7	30.0	33.1	37.8	41.4	49.8	59.3
	TER (6)		7.34	7.37	7.27	7.28	7.50	7.25	7.64	7.65	7.75	7.73	7.82
Compressor	Quantity	n°	2	2	2	2	2	3	3	3	2	3	3
	Refrigerant circuits	n°	1	1	1	1	1	1	1	1	1	1	1
	Capacity steps	n°	2			3			2		3		
Evaporator - cooling side	Water flow	l/s	2.32	2.67	3.02	3.45	3.91	4.43	5.02	5.64	6.40	7.60	9.08
	Pressure drops	kPa	35	41	53	50	49	51	38	46	50	52	52
	Water connections	"G	2 1/2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"	3"	3"
Condenser - heating side	Water flow	l/s	2.49	2.85	3.20	3.61	4.11	4.70	5.30	6.07	6.78	8.17	9.70
	Pressure drops	kPa	31	35	38	42	40	35	34	42	48	43	45
	Water connections	"G	2 1/2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"	3"	3"
Electrical characteristics	Power supply	V/Ph/Hz	400/3/50										
	Max. running current	A	40	46	54	59	66	77	84	95	100	128	151
	Max. starting current	A	164	166	178	191	234	201	217	263	314	304	359
Unit with pump - cooling side	Pump available static pressure	kPa	150	140	120	115	130	115	115	95	150	135	115
	Water connections	"G	2 1/2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"	3"	3"
Unit with pump - heating side	Pump available static pressure	kPa	150	140	130	120	135	125	115	160	150	135	115
	Water connections	"G	2 1/2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"	3"	3"
ECH fan available static pressure	STD version	Pa	95	100	95	95	95	100	60	50	60	50	50
	SSL version	Pa	70	85	70	70	70	90	50	50	60	50	50
Sound pressure	STD version (7)	dB(A)	63	64	64	65	65	66	68	68	69	70	70
	With SL accessory (7)	dB(A)	61	62	62	63	63	64	66	66	67	68	68
	SSL version (7)	dB(A)	58	59	59	60	60	61	63	63	64	65	65
Weights	Transport weight	Kg	750	760	815	905	925	1030	1055	1085	1295	1500	1545
	Operating weight	Kg	765	775	830	925	950	1060	1085	1115	1335	1545	1595

DIMENSIONS			182-P	202-P	242-P	262-P	302-P	363-P	393-P	453-P	502-P	603-P	693-P
L	STD	mm	2350	2350	2350	2350	2350	2350	2350	2350	3550	3550	3550
	SSL	mm	2350	2350	2350	2350	2350	3550	3550	3550	3550	4700	4700
W	STD/SSL	mm	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100
H	STD/SSL	mm	1920	1920	1920	2220	2220	2220	2220	2220	2220	2220	2220

CLEARANCE AREA

CHA/K/EP 182-P÷693-P

300 | 800 | 800 | 1800

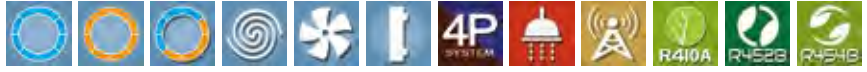


NOTES

- Chilled water from 12 to 7 °C, ambient air temperature 35 °C.
 - Seasonal energy efficiency of cooling at low temperature. According to EU Regulation n. 2016/2281.
 - Heated water from 40 to 45 °C, ambient air temperature 7 °C d.b./6 °C w.b.
 - Seasonal energy efficiency of heating at low temperature with average climatic conditions. According to EU Regulation n. 813/2013.
 - Seasonal energy efficiency class of heating at low temperature with average climatic conditions. According to EU Regulation n. 811/2013.
 - Chilled water from 12 to 7 °C, heated water from 40 to 45 °C.
 - Sound pressure level measured in free field conditions at 1 m from the unit. According to ISO 3744.
- N.B. Weights of SSL version are specified on technical brochure.

CHA/K/EP 604-P÷2406-P

AIRCOOLED 4-PIPE MULTIFUNCTIONAL UNITS WITH AXIAL FANS, SCROLL COMPRESSORS AND PLATE EXCHANGERS.



ENERGYPOWER is the range of high efficiency multifunctional units for 4-Pipe systems. The units CHA/K/EP 604-P÷2406-P feature R410A refrigerant and Scroll compressors activated in series based on the requested thermal load, to reach high EER/COP/TER and SEER/SCOP energy values. The units are characterized by double cooling circuit. Thanks to the advanced control system, ENERGYPOWER units can simultaneously fulfill the heating, cooling and domestic hot water request of the building. The unit can manage the opposed thermal loads at the same time and reach the highest possible efficiency. ENERGYPOWER units make the traditional layout of the technical plants easier because the production of thermal energy for the several users are joint in one unit only; the result is an advantage in terms of installation, maintenance and management and in the meantime of the comfort needs.

Are available as option the new EC Inverter fans with high available static pressure and efficiency. Units are designed for **hot water production up to 55 °C**.

The models 604-P÷1506-P are compliant to the ErP Regulation. The models 1806-P÷2406-P are compliant to the ErP 2021 Regulation for comfort cooling application if provided with EC or ECH accessory (EC Inverter fans).

On request, units can be supplied with **R452B (CHA/G/EP 604-P÷2406-P)** or **R454B (CHA/L/EP 604-P÷2406-P)** refrigerant.

VERSION

CHA/K/EP

Multifunctional unit

CHA/K/EP/SSL

Super silenced multifunctional unit

FEATURES

- Self-supporting galvanized steel frame protected with additional protection achieved via polyester powder painting.
- Scroll compressors with oil sight glass, internal overheat protection and crankcase heater.
- Axial fans directly coupled to an electric motor with external rotor.
- Copper tube and aluminum finned coils.
- Condenser AISI 316 stainless steel braze welded plates type with two independent circuits on the refrigerant side and one on the water side. On the units it is always installed an antifreeze heater.
- Evaporator AISI 316 stainless steel braze welded plates type with two independent circuits on the refrigerant side and one on the water side, complete with water differential pressure switch. On the units it is always installed an antifreeze heater.
- Electronic expansion valve.
- Electronic high and low pressure gauges.
- R410A refrigerant. On request R452B or R454B refrigerant.
- Electrical board includes: main switch with door safety interlock, fuses, thermal protection relays for compressors and thermocontacts for fans.
- Condensing Control is included: electronic proportional device that ensures efficient and continuous functioning of the unit with outside air temperature down to -20 °C in cooling mode. It also allows to reduce the sound level especially at night. It consists of a fans speed controller with continuous speed regulation, high and low pressure transducers on cooling circuit and an electrical heater on electrical board.
- Functioning in heating mode with outside air temperature down to -15 °C.
- Microprocessor control and regulation system.

ACCESSORIES

FACTORY FITTED ACCESSORIES

IM	Automatic circuit breakers
SL	Unit silencing
RFM	Cooling circuit shut-off valve on discharge line
RFL	Cooling circuit shut-off valve on liquid line
BT	Low water temperature Kit
EC	EC Inverter fans
ECH	EC Inverter fans with high available static pressure
TX	Coil with pre-coated fins
PSC	Single circulating pump cooling side
PSIC	Inverter single circulating pump cooling side
PDC	Double circulating pump cooling side
PDIC	Inverter double circulating pump cooling side
PSH	Single circulating pump heating side

PSIH	Inverter single circulating pump heating side
PDH	Double circulating pump heating side
PDIH	Inverter double circulating pump heating side
FGC	Antifreeze heater for single pump and pipes cooling side
FMC	Antifreeze heater for double pump and pipes cooling side
FGH	Antifreeze heater for single pump and pipes heating side
FMH	Antifreeze heater for double pump and pipes heating side
SS	Soft start
TS	Touch screen Interface
WM	Web Monitoring - Wireless remote monitoring (GPRS/EDGE/3G/TCP-IP)
IS	Modbus RTU protocol, RS485 serial interface
IST	Modbus TCP/IP protocol, Ethernet port

ISB	BACnet MSTP protocol, RS485 serial interface
ISBT	BACnet TCP/IP protocol, Ethernet port
ISL	LonWorks protocol, FTT-10 serial interface
ISS	SNMP protocol, Ethernet port
IAV	Remote set-point, 0-10 V signal
IAA	Remote set-point, 4-20 mA signal
IAS	Remote signal for second set-point activation
IDL	Demand limit from digital input
CP	Potential free contacts

LOOSE ACCESSORIES

MN	High and low pressure gauges
CR	Remote control panel
RP	Coil protection metallic guards
AG	Rubber shock absorbers
AM	Spring shock absorbers

MODEL			604-P	724-P	804-P	904-P	1004-P	1104-P	1206-P	1506-P	1806-P	2006-P	2206-P	2406-P
Cooling only	Cooling capacity (1)	kW	167	190	216	241	264	301	339	395	459	522	583	643
	Absorbed power (1)	kW	57	69	75	85	93	104	114	140	169	193	210	225
	EER (1)		2.93	2.75	2.88	2.84	2.84	2.89	2.97	2.82	2.72	2.70	2.78	2.86
Cooling only (EN14511)	Cooling capacity (1)	kW	166	189	215	240	263	300	338	394	457	520	581	641
	Absorbed power (1)	kW	58	70	76	85	94	105	115	141	171	195	212	227
	EER (1)		2.86	2.70	2.83	2.82	2.80	2.86	2.94	2.79	2.67	2.67	2.74	2.82
	SEER (2)		4.14	4.22	4.18	4.17	4.22	4.19	4.20	4.26	4.31	4.34	4.39	4.30
	Energy Efficiency (2)	%	163	166	164	164	166	165	165	167	169	171	173	169
	SEER with EC or ECH accessory (2)		4.44	4.38	4.43	4.42	4.42	4.44	4.47	4.49	4.56	4.56	4.55	4.55
	Energy Efficiency with EC or ECH accessory (2)	%	175	172	174	174	174	175	176	177	179	179	179	179
Heating only	Heating capacity (3)	kW	180	204	231	257	281	318	361	427	515	570	632	693
	Absorbed power (3)	kW	55	64	72	79	86	97	109	128	159	168	195	208
	COP (3)		3.25	3.20	3.22	3.25	3.28	3.28	3.31	3.34	3.24	3.39	3.24	3.33
Heating only (EN14511)	Heating capacity (3)	kW	181	205	232	258	282	319	362	429	517	572	634	696
	Absorbed power (3)	kW	56	65	73	80	87	98	111	131	162	172	200	214
	COP (3)		3.23	3.15	3.18	3.23	3.24	3.26	3.26	3.27	3.19	3.33	3.17	3.25
	SCOP (4)		3.52	3.36	3.65	3.58	3.43	3.63	3.68	3.51	3.51	3.80	3.56	3.53
	Energy Efficiency (4)	%	138	131	143	140	134	142	144	137	137	149	139	138
Cooling + Heating	Cooling capacity (5)	kW	170	195	214	243	270	303	334	405	465	543	594	652
	Heating capacity (5)	kW	220	255	281	318	351	396	436	527	613	712	777	849
	Absorbed power (5)	kW	50	60	67	75	81	93	102	122	148	169	183	197
	TER (5)		7.80	7.50	7.39	7.48	7.67	7.52	7.55	7.64	7.28	7.43	7.49	7.62
	Cooling capacity (5)	kW	169	194	213	242	269	302	333	404	463	541	592	650
Cooling + Heating (EN14511)	Heating capacity (5)	kW	221	256	282	319	352	397	438	529	615	715	780	852
	Absorbed power (5)	kW	51	61	68	76	82	94	103	123	150	171	185	199
	TER (5)		7.65	7.38	7.28	7.38	7.57	7.44	7.49	7.59	7.19	7.35	7.42	7.55
Compressor	Quantity	n°	4	4	4	4	4	4	6	6	6	6	6	6
	Refrigerant circuits	n°	2	2	2	2	2	2	2	2	2	2	2	2
	Capacity steps	n°	4				6				6			
Evaporator - cooling side	Water flow	l/s	7.98	9.08	10.32	11.51	12.61	14.38	16.20	18.87	21.93	24.94	27.85	30.72
	Pressure drops	kPa	34	33	36	35	42	36	45	44	53	43	34	40
	Water connections	DN	100	100	100	100	100	100	100	100	125	150	150	150
Condenser - heating side	Water flow (5)	l/s	8.60	9.75	11.04	12.28	13.43	15.19	17.25	20.40	24.61	27.23	30.20	33.11
	Pressure drops (5)	kPa	35	36	39	30	37	33	43	43	42	49	48	54
	Water connections (5)	DN	100	100	100	100	100	100	100	100	125	150	150	150
Electrical characteristics	Power supply	V/Ph/Hz	400/3/50											
	Max. running current	A	133	151	171	186	201	227	255	301	386	416	453	483
	Max. starting current	A	301	328	347	400	415	488	432	515	647	755	792	822
Unit with pump - cooling side	Pump available static pressure	kPa	175	170	160	150	130	145	125	160	125	165	165	145
	Water connections	DN	100	100	100	100	100	100	100	100	125	150	150	150
Unit with pump - heating side	Pump available static pressure	kPa	170	165	150	145	125	140	120	150	110	150	140	120
	Water connections	DN	100	100	100	100	100	100	100	100	125	150	150	150
Sound pressure	STD version (6)	dB(A)	70	70	71	71	71	72	74	74	76	77	78	79
	With SL accessory (6)	dB(A)	67	67	68	68	68	69	71	71	73	74	75	76
	SSL version (6)	dB(A)	64	64	65	65	65	66	67	67	70	70	71	72
Weights	Transport weight	Kg	2200	2230	2350	2390	2420	3180	3420	3530	4530	4600	5320	5350
	Operating weight	Kg	2300	2330	2450	2500	2530	3310	3560	3680	4730	4840	5630	5670

DIMENSIONS			604-P	724-P	804-P	904-P	1004-P	1104-P	1206-P	1506-P	1806-P	2006-P	2206-P	2406-P
L	STD	mm	3350	3350	3350	3350	3350	5000	5000	5000	6200	6200	7200	7200
	SSL	mm	3350	3350	3350	5000	5000	5000	6200	6200	7200	7200	7200	7200
W	STD/SSL	mm	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200
H	STD/SSL	mm	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100

CLEARANCE AREA

CHA/K/EP 604-P÷2406-P

500 | 1800 | 1000 | 1800



NOTES

- Chilled water from 12 to 7 °C, ambient air temperature 35 °C.
 - Seasonal energy efficiency of cooling at low temperature. According to EU Regulation n. 2016/2281.
 - Heated water from 40 to 45 °C, ambient air temperature 7 °C d.b./6 °C w.b.
 - Seasonal energy efficiency of heating at low temperature with average climatic conditions. According to EU Regulation n. 813/2013.
 - Chilled water from 12 to 7 °C, heated water from 40 to 45 °C.
 - Sound pressure level measured in free field conditions at 1 m from the unit. According to ISO 3744.
- N.B. Weights of SSL version are specified on technical brochure.

CHA/Y/EP 1352÷4402

AIRCOOLED 4-PIPE MULTIFUNCTIONAL UNITS WITH AXIAL FANS, (INVERTER) SCREW COMPRESSORS AND SHELL AND TUBE EXCHANGERS.



ENERGYPOWER is the range of high efficiency multifunctional units for 4-Pipe systems. The units CHA/Y/EP 1352÷4402 ENERGYPOWER, with R134a refrigerant, are provided with latest generation Screw compressors, to reach high EER/COP/TER and SEER/SCOP energy values. Thanks to the advanced control system, the units can simultaneously fulfill the heating, cooling and domestic hot water request of the building. The unit can manage the opposed thermal loads at the same time and reach the highest possible efficiency. ENERGYPOWER units make the traditional layout of the technical plants easier because the production of thermal energy for the several users are joint in one unit only; the result is an advantage in terms of installation, maintenance and management and in the meantime of the comfort needs. Furthermore, accessories as the Inverter control on one or both Screw compressors, fans and on circulating pumps (EC Inverter) are also available for getting the highest efficiency at part load. Are available as option the new EC Inverter fans with high available static pressure and efficiency.

The models 1352÷1802 are compliant to the ErP Regulation. The models 1952÷4402 are compliant to the ErP 2021 Regulation for comfort cooling application if provided with EC or ECH accessory (EC Inverter fans) and ID accessory (Inverter on all compressors).

On request, units can be supplied with **R513A** refrigerant (**CHA/J/EP 1352÷4402**).



VERSION

CHA/Y/EP

CHA/Y/EP/SSL

Multifunctional unit

Super silenced multifunctional unit

FEATURES

- Self-supporting galvanized steel frame protected with additional protection achieved via polyester powder painting.
- Screw compressors with built-in oil separator, suction filter, crankcase heater, oil sight glass, thermal protection and stepless capacity steps.
- Axial fans directly coupled to an electric motor with external rotor.
- Copper tube and aluminum finned coils.
- Shell and tube type condenser, with two independent circuits on the refrigerant side and one on the water side.
- Shell and tube type evaporator, with two independent circuits on the refrigerant side and one on the water side, complete with water differential pressure switch.
- Cooling circuit shut-off valves on discharge and liquid line.
- Electronic expansion valve.
- Electronic high and low pressure gauges.
- R134a refrigerant. On request R513A refrigerant.
- Electrical board includes: main switch with door safety interlock, fuses, thermal protection relays for compressors and thermocontacts for fans.
- Condensing Control is included: electronic proportional device that ensures efficient and continuous functioning of the unit with outside air temperature down to 0 °C in cooling mode. It also allows to reduce the sound level especially at night. It consists of a fans speed controller with continuous speed regulation and high and low pressure transducers on cooling circuit.
- Microprocessor control and regulation system.

ACCESSORIES

FACTORY FITTED ACCESSORIES

IM	Automatic circuit breakers	FNC	Antifreeze heater for pipes cooling side	ISBT	BACnet TCP/IP protocol, Ethernet port
SL	Unit silencing	FNH	Antifreeze heater for pipes heating side	ISL	LonWorks protocol, FTT-10 serial interface
CC	Condensing control down to -20 °C	FGC	Antifreeze heater for single pump and pipes cooling side	ISS	SNMP protocol, Ethernet port
BT	Low water temperature Kit	FMC	Antifreeze heater for double pump and pipes cooling side	IAV	Remote set-point, 0-10 V signal
EC	EC Inverter fans	II	Inverter on one compressor and soft start	IAA	Remote set-point, 4-20 mA signal
ECH	EC Inverter fans with high available static pressure	ID	Inverter on all compressors	IAS	Remote signal for second set-point activation
TX	Coil with pre-coated fins	SS	Soft start	IDL	Demand limit from digital input
PUC	Single circulating pump cooling side	TS	Touch screen Interface	CP	Potential free contacts
PUIC	Inverter single circulating pump cooling side	WM	Web Monitoring - Wireless remote monitoring (GPRS/EDGE/3G/TCP-IP)		
PDC	Double circulating pump cooling side	IS	Modbus RTU protocol, RS485 serial interface		
PDIC	Inverter double circulating pump cooling side	IST	Modbus TCP/IP protocol, Ethernet port		
FI	Antifreeze heater for evaporator and condenser	ISB	BACnet MSTP protocol, RS485 serial interface		

LOOSE ACCESSORIES

MN	High and low pressure gauges
CR	Remote control panel
RP	Coil protection metallic guards
AG	Rubber shock absorbers
AM	Spring shock absorbers
FL	Flow switch

MODEL			1352	1402	1602	1802	1952	2302	2702	3302	3902	4402
Cooling only	Cooling capacity (1)	kW	278	312	366	423	484	564	676	822	978	1133
	Absorbed power (1)	kW	89	100	116	133	153	177	210	258	315	365
	EER (1)		3.12	3.12	3.16	3.18	3.16	3.19	3.22	3.19	3.10	3.10
Cooling only (EN14511)	Cooling capacity (1)	kW	277	311	364	421	482	562	674	819	974	1128
	Absorbed power (1)	kW	90	101	118	135	155	179	212	261	319	370
	EER (1)		3.08	3.08	3.08	3.12	3.11	3.14	3.18	3.14	3.05	3.05
	SEER (2)		3.93	3.93	3.89	3.92	3.91	3.92	3.92	3.90	3.88	3.88
	Energy Efficiency (2)	%	154	154	153	154	153	154	154	153	152	152
	SEER with EC or ECH and ID accessory (2)		4.73	4.73	4.73	4.75	4.74	4.75	4.78	4.75	4.72	4.72
	Energy Efficiency with EC or ECH and ID accessory (2)	%	186	186	186	187	187	187	188	187	186	186
Heating only	Heating capacity (3)	kW	283	320	375	431	490	572	672	838	990	1156
	Absorbed power (3)	kW	86	91	107	122	139	159	190	231	271	313
	COP (3)		3.29	3.52	3.50	3.53	3.53	3.60	3.54	3.63	3.65	3.69
Heating only (EN14511)	Heating capacity (3)	kW	284	321	376	432	491	574	674	840	992	1159
	Absorbed power (3)	kW	88	93	109	124	141	162	193	235	276	319
	COP (3)		3.23	3.45	3.45	3.48	3.48	3.54	3.49	3.57	3.59	3.63
	SCOP (4)		3.20	3.42	3.41	3.40	3.39	3.69	3.63	3.71	3.90	4.00
	Energy Efficiency (4)	%	125	134	133	133	133	145	142	145	153	157
Cooling + Heating	Cooling capacity (5)	kW	276	318	370	429	492	575	686	834	996	1181
	Heating capacity (5)	kW	359	404	469	544	621	726	865	1054	1261	1495
	Absorbed power (5)	kW	83	87	99	115	130	152	179	220	265	314
	TER (5)		7.65	8.30	8.47	8.46	8.56	8.56	8.66	8.58	8.52	8.52
	Cooling capacity (5)	kW	275	317	368	427	490	573	684	831	992	1176
Cooling + Heating (EN14511)	Heating capacity (5)	kW	360	405	470	545	622	728	867	1057	1264	1499
	Absorbed power (5)	kW	84	88	101	117	132	154	181	223	269	319
	TER (5)		7.56	8.20	8.30	8.31	8.42	8.45	8.57	8.47	8.39	8.39
	Quantity	n°	2	2	2	2	2	2	2	2	2	2
Compressor	Refrigerant circuits	n°	2	2	2	2	2	2	2	2	2	2
	Capacity steps	n°	Stepless									
Evaporator - cooling side	Water flow	l/s	13.28	14.91	17.49	20.21	23.12	26.95	32.30	39.27	46.73	54.13
	Pressure drops	kPa	33	43	51	48	48	46	48	47	52	64
	Water connections	DN	100	100	125	125	150	150	150	150	150	200
Condenser - heating side	Water flow (5)	l/s	13.52	15.29	17.92	20.59	23.41	27.33	32.11	40.04	47.30	55.23
	Pressure drops (5)	kPa	21	23	20	18	17	20	18	20	20	20
	Water connections (5)	DN	100	100	125	125	150	150	150	150	150	200
Electrical characteristics	Power supply	V/Ph/Hz	400/3/50									
	Max. running current	A	237	237	269	301	309	393	445	580	664	720
	Max. starting current	A	281	281	345	361	369	504	534	785	827	855
Unit with pump	Pump available static pressure	kPa	185	155	155	140	155	140	115	135	100	145
	Water connections	DN	100	100	125	125	150	150	150	150	150	200
Sound pressure	STD version (6)	dB(A)	77	77	77	78	78	78	79	80	80	81
	With SL accessory (6)	dB(A)	73	73	74	75	74	75	76	76	76	77
	SSL version (6)	dB(A)	67	67	68	69	69	70	70	72	72	72
Weights	Transport weight	Kg	4090	4110	4820	5460	5970	6950	8100	9340	9760	10430
	Operating weight	Kg	4330	4460	5280	5980	6480	7570	8880	10200	10740	11800

DIMENSIONS			1352	1402	1602	1802	1952	2302	2702	3302	3902	4402
L	STD	mm	5550	5550	6700	7750	8900	8900	10050	11100	11100	11100
	SSL	mm	6700	6700	7750	7750	8900	10050	11100	12250	12250	12250
W	STD/SSL	mm	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200
H	STD	mm	2100	2100	2100	2100	2100	2500	2500	2500	2500	2500
	SSL	mm	2100	2100	2100	2100	2500	2500	2500	2500	2500	2500

CLEARANCE AREA

CHA/Y/EP 1352÷4402

500 | 1800 | 1000 | 1800



NOTES

- Chilled water from 12 to 7 °C, ambient air temperature 35 °C.
 - Seasonal energy efficiency of cooling at low temperature. According to EU Regulation n. 2016/2281.
 - Heated water from 40 to 45 °C, ambient air temperature 7 °C d.b./6 °C w.b.
 - Seasonal energy efficiency of heating at low temperature with average climatic conditions. According to EU Regulation n. 813/2013.
 - Chilled water from 12 to 7 °C, heated water from 40 to 45 °C.
 - Sound pressure level measured in free field conditions at 1 m from the unit. According to ISO 3744.
- N.B. Weights of SSL version are specified on technical brochure.