OPTIONS:

Single P2 Pump		P2
Single P3 Pump		P3
Compressor(s) shut-off valves - Discharge	[1]	VSCD
Compressor(s) shut-off valves - Suction		VSCS
Evaporator anti-freeze heater		RA1
Evaporator and pump anti-freeze heaters		RA2
Electric switchboard anti-condensation heater		RS
Continuous fan(s) speed control - electronic fan(s) (min. ambient temp. -10.0°C)		CE
230V electric service socket (in the electric cabinet)		EBS
Gateway for remote communication		ENB
Control panel ventilation		EBV
Electronic controller sun/rain protection		SRP
Compressor(s) acoustic shield(s)		AI1
Condenser(s) air filter(s)		FP
Condenser anti-corrosion treatment		OEC
Flanged water connections kit (EN1092-1)		WC1
Water connections kit to be brazed		WC5
Control panel roof kit		FPR
Rubber anti-vibration mountings kit		FA1
Remote panel kit		ER
External pump relay (clean contact)		REP
External pumps relay (clean contact) run/stand by mode		2REP
Flow switch contact		FSC
Bacnet gateway kit		GBCN
Profibus gateway kit		GPFB
Profinet gateway kit		GPFN
Ethernet port	[2]	ETP
Compressor(s) softstarter(s)	[3]	SFS
Partial heat recovery (desuperheater)	[4]	HRP
Container loading		PCL
Barrier bag		PBB
Wooden base	[1]	PWB

- [1] Contact our company
- [2] Available only with the GBCN/GPFB/GPFN option
- [3] Not available on all models. Contact our company.
- [4] Thermal load equivalent to about 20% of the cooling power at the current working conditions
- Tropicalized version on demand

SOME OTHER UNITS AVAILABLE IN OUR PREMIUM LINE

QBE

2 to 25kW
Air-cooled chillers
with rotary and scroll compressors

CWE/HWE

13 to 140kW
Air-cooled scroll compressor
chillers and heat pumps

CWB FC

80 to 240kW
Air-cooled chillers
with integrated freecooling

CDC

300 to 1200 kW
Drycoolers
also adiabatic system available

Архангельск (8182)63-90-72
Астана (7172)727-132
Астрахань (8512)99-46-04
Барнаул (3852)73-04-60
Белгород (4722)40-23-64
Брянск (4832)59-03-52
Владивосток (423)249-28-31
Волгоград (844)278-03-48
Вологда (8172)26-41-59
Воронеж (473)204-51-73
Екатеринбург (343)384-55-89
Иваново (4932)77-34-06
Ижевск (3412)26-03-58
Иркутск (395)279-98-46
Казань (843)206-01-48
Калининград (4012)72-03-81
Калуга (4842)92-23-67
Кемерово (3842)65-04-62
Киров (8332)68-02-04
Краснодар (861)203-40-90
Красноярск (391)204-63-61
Курск (4712)77-13-04
Липецк (4742)52-20-81
Магнитогорск (3519)55-03-13
Москва (499)268-04-70
Мурманск (8152)59-64-93
Набережные Челны (8552)20-53-41
Нижний Новгород (831)429-08-12
Новокузнецк (3843)20-46-81
Новосибирск (383)227-86-73
Омск (3812)21-46-40
Орел (4862)44-53-42
Оренбург (3532)37-68-04
Пенза (8412)22-31-16
Пермь (342)205-81-47
Ростов-на-Дону (863)308-18-15
Рязань (4912)46-61-64
Самара (846)206-03-16
Санкт-Петербург (812)309-46-40
Саратов (845)249-38-78
Севастополь (8692)22-31-93
Симферополь (3652)67-13-56
Смоленск (4812)29-41-54
Сочи (862)225-72-31
Ставрополь (8652)20-65-13
Сургут (3462)77-98-35
Тверь (4822)63-31-35
Томск (3822)98-41-53
Тула (4872)74-02-29
Тюмень (3452)66-21-18
Ульяновск (8422)24-23-59
Уфа (347)229-48-12
Хабаровск (4212)92-98-04
Челябинск (351)202-03-61
Череповец (8202)49-02-64
Ярославль (4852)69-52-93

Киргизия (996)312-96-26-47
Россия (495)268-04-70
Казахстан (772)734-952-31

https://friulair.nt-rt.ru/ || fur@nt-rt.ru

FRIULAIR Chillers

CWV

AIR-COOLED SCREW COMPRESSOR CHILLERS

from 280 to 1200 kW

CWV

DESCRIPTION

CWV series has been engineered to ensure high efficiency and reliability specifically for outdoor installations. The range includes 19 models with cooling capacity from 280 to 1200 kW. All units provide reliable control of the chilled fluid temperature and operation over a long-time period.

UNIT CONSTRUCTION AND MAINTENANCE

- Frame and structure cover made in galvanized steel powder coated
- Easy access for maintenance and repair ensuring safety for operator
- Compressors are easily accessible

FULL LOAD TEST ON ALL CWV UNITS

- Pressurization and helium leak detection of refrigerant circuit
- Pressurization and correct assembly of hydraulic circuit
- Electrical tests in compliance with EN60204
- Check for protection and safety devices and electronic controller correct operation

REFRIGERATION CIRCUIT

- Manufactured conforming to PED directive 2014/68/EU
- Electronic thermostatic valve to ensure operation down to -10°C evaporator outlet water temperature
- Solenoid valve on liquid line
- Sight glass flow indicator
- High pressure switch with manual rearm
- High and low refrigerant pressure transducers
- Refrigerant gauges

MODELS	CWV	281	282	331	332	381	382	451	452	521	522	601	602	652	702	762	832	902	1052	1202
PERFORMANCES [1]																				
Cooling capacity	[kW]	263.57	251.47	314.87	303.57	371.97	370.02	434.65	425.01	501.51	483.88	574.36	557.79	626.33	702.86	755.87	821.53	876.23	988.44	1151.58
Compressors power input	[kW]	102.12	98.67	115.42	110.52	125.94	135.16	147.70	147.84	167.65	171.01	205.62	201.02	230.19	243.87	253.80	276.05	296.52	332.88	411.75
Total power input	[kW]	109.72	105.87	124.92	119.52	137.34	145.96	161.00	160.44	182.85	185.41	222.72	217.22	249.19	264.77	276.60	300.75	323.12	363.28	445.95
Total absorbed current	[A]	186.08	181.96	208.26	203.03	226.41	251.70	271.34	273.88	306.29	320.39	375.39	368.57	415.56	438.51	455.75	501.41	544.39	608.89	751.52
Energy efficiency (pump excluded)	EER	2.40	2.38	2.52	2.54	2.71	2.54	2.70	2.65	2.74	2.61	2.58	2.57	2.51	2.65	2.73	2.73	2.71	2.72	2.58
Seasonal energy efficiency (pump excluded) [*]	SEPR HT	5.17	5.03	5.35	5.20	5.49	5.08	5.52	5.54	5.53	5.52	5.56	5.50	5.54	5.6	5.6	5.52	5.51	5.52	5.5
Water flow	[l/h]	45334	43 252	54158	52 214	63979	63 644	74761	73 101	86259	83 228	98790	95 940.19	107729	120892	130010	141303	150712	170011	198072
Evaporator pressure drop	[kPa]	42	39	46	33	46	28	36	30	39	37	46	33	40	37	42	34	38	43	57
ELECTRICAL DATA [2] [3]																				
Maximum power input (total)	[kW]	135.15	132.20	153.49	152.32	172.65	185.35	200.98	205.48	227.36	238.51	275.60	272.25	306.99	326.14	345.29	373.63	401.97	454.73	551.20
Maximum absorbed current (total)	[A]	224.26	219.41	252.57	251.09	280.69	309.63	332.42	341.30	375.48	399.85	456.23	452.49	505.14	533.27	561.39	613.12	664.84	750.96	912.46
Starting current	[A]	356.60	280.51	455.50	364.29	488.40	480.51	613.30	498.30	681.20	529.52	952.10	679.80	708.07	753.08	769.09	917.91	945.72	1056.68	1408.33
Fan power	[kW]	1,90	1.80	1,90	1.80	1,90	1.80	1,90	1.80	1,90	1.80	1,90	1.80	1,90	1,90	1,90	1,90	1,90	1,90	1,90
Fan current	[A]	3,90	3.90	3,90	3.90	3,90	3.90	3,90	3.90	3,90	3.90	3,90	3.90	3,90	3,90	3,90	3,90	3,90	3,90	3,90
Number of fans	[#]	4	4	5	5	6	6	7	7	8	8	9	9	10	11	12	13	14	16	18
Power supply	[V/Ph/Hz]	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
IP protection degree	---	IP54	IP54	IP54	IP54	IP54	IP54	IP54	IP54	IP54	IP54	IP54	IP54	IP54	IP54	IP54	IP54	IP54	IP54	IP54
TECHNICAL DATA																				
N° of compressors	[#]	1	2	1	2	1	2	1	2	1	2	1	2	2	2	2	2	2	2	2
N° of refrigerant circuits	[#]	1	2	1	2	1	2	1	2	1	2	1	2	2	2	2	2	2	2	2
Air flow	[m³/h]	72.000	72 000	90.000	90 000	108.000	108 000	126.000	126 000	144.000	144 000	162.000	162 000	180.000	198.000	216.000	234.000	252.000	288.000	324.000
Sound pressure level at 10 m in free field [4]	[dbA]	59,5	59,5	60,5	60,5	61,0	61	62,0	62	62,5	62,5	63,5	63,5	63,5	64,0	64,0	64,5	65,0	65,5	66,5
Water connections size (grooved)	[inch]	5"	5"	5"	5"	5"	5"	5"	5"	5"	5"	5"	5"	6"	6"	6"	6"	6"	6"	8"
Width	[mm]	2.250	2 250	2.250	2 250	2.250	2 250	2.250	2 250	2.250	2 250	2.250	2 250	2.250	2.250	2.250	2.250	2.250	2.250	2.250
Depth	[mm]	3.600	3 600	3.600	3 600	3.600	3 600	4.600	4 600	4.600	4 600	5.600	5 600	6.600	6.600	6.600	7.600	8.600	8.600	10.600
Height	[mm]	2.300	2 300	2.300	2 300	2.300	2 300	2.300	2 300	2.300	2 300	2.300	2 300	2.300	2.300	2.300	2.300	2.300	2.300	2.300
Weight (empty)	[kg]	2.717	2 800	3.180	3 300	3.247	3 420	3.592	3 830	3.758	3 950	4.200	4 450	6.057	6.135	6.191	6.564	6.925	7.089	8.172
OPTIONS																				
Pump power input P2	[kW]	7,50	7,50	7,50	7,50	7,50	7,50	7,50	7,50	7,50	7,50	15,00	15,00	15,00	15,00	15,00	15,00	15,00	18,50	18,50
Pump absorbed current P2	[A]	14,10	14,10	14,10	14,10	14,10	14,10	14,10	14,10	14,10	14,10	27,70	27,70	27,70	27,70	27,70	27,70	27,70	33,50	33,50
Pump power input P3	[kW]	9,20	9,20	9,20	9,20	11,00	11,00	11,00	11,00	11,00	11,00	18,50	18,50	18,50	18,50	18,50	18,50	18,50	30,00	30,00
Pump absorbed current P3	[A]	16,60	16,60	16,60	16,60	20,00	20,00	20,00	20,00	20,00	20,00	33,50	33,50	33,50	33,50	33,50	33,50	33,50	54,50	54,50

TECHNICAL DETAILS

SCREW COMPRESSORS EQUIPPED WITH

- Low noise and efficient operation
- Continuous control stepless type (step control version is available)
- Oil level sensor
- Compressor crankcase heater
- Motor windings thermo-amperometric protection
- Standard refrigerant gas R134a (GWP 1430)

ALTERNATE REFRIGERANT GAS

- Low GWP* R513A (GWP 631)

*(Global Warming Potential)

EVAPORATOR

- Dry expansion shell & tube heat-exchanger
- Antifreeze protection managed by the electronic controller
- Equipped with water differential pressure switch

FANS

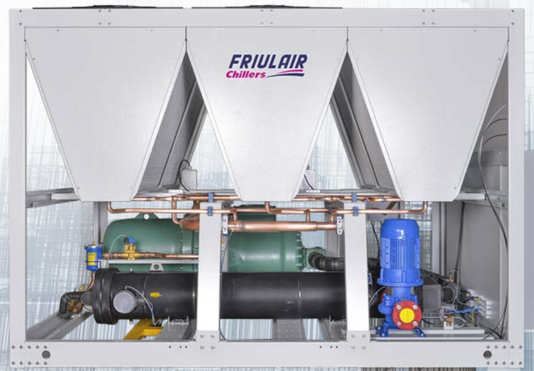
- Axial fans equipped with protection grid and class F insulation
- Fans speed regulation cut-phase type as standard

CONDENSERS

- Microchannel aluminium coils
- Low refrigerant charge
- Free from risk of galvanic corrosion

HYDRAULIC CIRCUIT

- Standard models are equipped with a shell and tube evaporator without pump (the image on the right shows the pump mounted on board for demonstration purposes only)
- Optional pumps installed directly in the unit (P2 and P3)
- Grooved water connections – more versions available
- Temperature probe for setpoint control
- Ethylene glycol mixtures up to 40% allowed



ELECTRONIC CIRCUIT AND CONTROLLER

- Identified conductors, cables and probes/transducers for standard
- Fuses and thermal overload relay to protect compressors
- Easily accessible and intuitive user interface for menus and submenus navigation installed in front of the electronic panel
- Alarm history of up to ten events recorded on the Master Board or unlimited records if the gateway for remote communication (ENB option) is installed
- RS485 connection with standard MODBUS RTU communication protocol.

Il controllore elettronico è in grado di gestire fino a quattro unità in installazione modulare: una unità "Master" e tre unità "Slaves" tramite connessione seriale RS485.

NOTES

[*] Data in accordance with with European Regulation (EU) 2016/2281for eco-design requirements
[1] Data referred to: water temp. in/out: 12/7°C ambient air temp. 35°C
[2] Data referred to the unit without pump
[3] Data related to most the heaviest condition allowed, without the intervention of the safety devices
[4] Data referred to 10m and at an height of 1,5 m in open field

OPERATING LIMITS

- Ambient temperature (with standard cut-phase condensation control) 0°C / +43°C (min/max)
- Ambient temperature (with electronic fans condensation control option) : -10°C / +43°C (min/max)
- Inlet water temperature: max. 30°C
- Water outlet temperature: -10°C (with 40% ethylene glycol) / +25°C (min/max)