

OPTIONS

Single P2 Pump	P2
Single P3 Pump	P3
Double P2 Pump	D2
Double P3 Pump	D3
Pressurized water wank	TP
Condenser anti-corrosion treatment Electrofin® type	OEC
Shut-off compressors valves on suction and discharge	VSC
Evaporator anti-freeze heater	RA1
Evaporator and pump anti-freeze heaters	RA2
Evaporator, pump and tank anti-freeze heaters	RA3
Electrical switchboard anti-condensation heater	RS
Double set point (from MODBUS and/or keyboard)	WE
Partial heat recovery (desuperheater)	HRP [1]
Full heat recovery	HRF [2]
230V electric service plug (in the electric cabinet)	EBS
Compressors softstarters	SFS [3]
Compressors acoustic shields	AI1
Condensers air filters	FP
Wind baffles kit	FWB
Flanged water connections kit (EN1092-1)	WC1
Threaded water connections kit (GAS)	WC2
Control panel roof kit	FPR
Rubber anti-vibration mountings for no tank units	FA1
Rubber anti-vibration mountings for units with tank	FA2
Automatic water filling kit	WF
Gateway for remote communication	ENB
Remote panel kit	ER
Barrier bag	PBB
Wooden base	PWB
Wooden crate (only for CFT 100+200)	PWC

- [1] Heating power recovered equal to approximately 20% of the cooling power produced.
- [2] Heating power recovered equal to approximately 100% of the cooling power produced.
- [3] Not available on all models. Contact our company.

OTHER RANGES AVAILABLE IN OUR CATALOGUE



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

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Chillers

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MADE IN ITALY

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CFT

AIR-COOLED SCROLL COMPRESSOR CHILLERS

from 100 to 300 kW

Friulair markets its units in many configurations further than the ones listed in this document. Please contact our sales offices for more information: sales.chiller@friulair.com



DESCRIPTION

The CFT range consists on air cooled water chillers with axial fans suitable for outdoor installations. The family comprises 8 models with cooling capacities ranging from 100 to 300 kW.

STRUCTURE

Frame and cabinet are made up of galvanized powder coated steel. This makes CFT suitable for outdoor installations and harsh environments.

The compressor cabinet is separate from the fan's section and is accessible on three sides to make control and maintenance easy.

The hydraulic section is also easily accessible.

COMPRESSORS

The compressors are scroll type filled with lubricant oil. They are equipped with a crankcase heater and a check valve and are mounted on rubber anti-vibration blocks. They are protected by an electronic phase sequence control device detecting any contrary rotation. Finally, an amperometric thermal protector is installed.

CONDENSERS

The microchannel condensers employed are more efficient and require a lower refrigerant charge (up to 35% less) compared to the traditional tube and fins type, while the aluminium structure avoids any galvanic current risk.

An e-coating treatment protecting the unit from UV and corrosion is also available as optional.

REFRIGERATION CIRCUIT

The refrigeration circuit is made up of high quality materials conforming to directive 2014/68/EU. It includes a dehydrator filter, a solenoid valve on liquid line, a liquid flow sight glass, an electronic thermostatic expansion valve with manual reset, a high pressure safety switch, a high and a low pressure transducer, HP and LP refrigerant gauges and pressure plugs.

FANS

Axial fans with 6 poles, curved blades and a protection grid reduce the noise and improve the rotation speed.

They are equipped with internal thermal protection.

When ambient temperature is very low or when the unit operates at reduced loads, rotation speed is regulated according to the condensing pressure thanks to a pressure transducer.

ELECTRONIC EXPANSION VALVE

CFT units are fitted with electronic expansion valves.

Such valves grant high chiller performances, high flexibility against different working conditions and a safe control of the gas superheating. This is significantly important for the compressor protection and for the unit reliability.

HYDRAULIC CIRCUIT

The hydraulic circuit is highly customizable according to customer's requirements.

CFT are supplied for standard with water strainer and inlet/outlet galvanized steel pipes.

EVAPORATOR

The evaporator is a brazed stainless steel plates type. This heat-exchanger is equipped with a water differential pressure switch to protect it against low water flow and icing.

Units from CFT230 to CFT300 boast a double refrigeration circuit with one hydraulic circuit.

This configuration is very efficient with partial loads compared to independent evaporator versions.

MICROPROCESSOR CONTROLLER

The entire range is equipped with a single electronic controller in order to reduce spare parts. It is one of the best in the market and different options allow a customized software. It displays the unit operation at any time in order to control the water temperature and the current temperature, necessary especially in case of partial or total water flow blockages and it also indicates which safety switch has triggered. It is possible to read and set data from customers pc through the IP address of the unit. The RS485 port with Modbus RTU communication protocol is installed as standard while the LAN/Ethernet connection is optional.



MAIN FUNCTIONS

- Ambient and water inlet and outlet temperature display
- Identification and display of blocks display using alphanumeric code and full description
- Management of the pump(s) installed
- Water differential pressure alarm delay at the start-up
- Operating counter for compressors
- Compressors and pumps automatic alternation
- No simulation activation of the compressors
- Anti-freeze protection
- Alarm reset
- Remote alarm and on/off remote alarm available via clean contact in terminal block

ELECTRICAL PANEL

Manufactured according to EN 60204 EC, with door lock disconnecter (It prevents access to the control panel when powered) and waterproof door to access the electronic control. It includes circuit breakers and contactors for compressors, fans and pumps as optional, an auto-transformer and rotation control device. The wires inside the cabinet are identified.



		CFT	100	115	130	160	180	200	230	260	280	300
PERFORMANCES [1] [2]												
Cooling capacity	[kW]	102.18	118.93	130.23	166.41	179.47	196.15	240.44	257.05	286.66	308.74	
Compressors power input	[kW]	30.17	43.91	49.60	55.46	61.56	72.75	80.76	90.08	110.75	132.19	
Total power input	[kW]	33.97	47.71	53.20	60.86	66.96	78.45	87.96	97.68	117.95	139.39	
Total absorbed current	[A]	57.36	77.52	87.43	101.17	115.46	130.66	144.73	158.42	192.04	227.23	
Energy efficiency	EER	3.03	2.49	2.45	2.73	2.68	2.50	2.73	2.63	2.42	2.21	
Seasonal energy efficiency rating	[*] SEPR HT	5.00	5.13	5.21	5.11	5.32	5.31	5.54	5.53	5.47	5.32	
Water flow	[l/h]	17 574	20 455	22 399	28 622	30 869	33 739	41 356	44 213	49 306	53 104	
Evaporator pressure drop	[kPa]	60	79	47	73	45	52	43	48	39	44	
ELECTRICAL DATA [2] [3]												
Maximum power input (total)	[kW]	47.96	62.46	66.55	81.31	87.83	98.10	116.34	125.32	141.68	158.43	
Maximum absorbed current (total)	[A]	78.41	100.19	108.46	132.65	146.28	162.55	188.36	200.37	228.94	257.51	
Starting current	[A]	254.10	263.99	345.13	359.18	345.99	385.13	355.17	364.18	462.60	484.03	
Fan power	[kW]	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	
Fan current	[A]	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	
Fans quantity	[#]	2	2	2	3	3	3	4	4	4	4	
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	
IP protection degree	---	IP54	IP54	IP54	IP54	IP54	IP54	IP54	IP54	IP54	IP54	
TECHNICAL DATA												
Compressors quantity	[#]	2	2	2	2	2	2	4	4	4	4	
Refrigeration circuits quantity	[#]	1	1	1	1	1	1	2	2	2	2	
Air flow	[m³/h]	44 000	44 000	44 000	66 000	66 000	66 000	88 000	88 000	88 000	88 000	
Sound pressure level	[4] [dB(A)]	58	56.5	58	58.5	57.5	59	61	59.5	60.5	61	
Water connections size (grooved)	[inch]	2 1/2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"	3"	3"	3"	3"	
Width	[mm]	1 104	1 104	1 104	1 104	1 104	1 104	2 204	2 204	2 204	2 204	
Depth	[mm]	3 004	3 004	3 004	4 004	4 004	4 004	3 004	3 004	3 004	3 004	
Height	[mm]	1 990	1 990	1 990	1 990	1 990	1 990	1 990	1 990	1 990	1 990	
Net weight - standard version	[kg]	897	1 167	1 186	1 296	1 346	1 356	2 088	2 104	2 163	2 169	
OPTION												
Tank capacity TP	[dm³]	450	450	450	450	450	450	600	600	600	600	
Expansion vessel capacity	[dm³]	18	18	18	18	18	18	18	18	18	18	
Pump power input P2	[kW]	2.55	3.44	3.44	3.44	4.52	6.09	6.09	6.09	6.09	6.09	
Pump absorbed current P2	[A]	4.70	6.40	6.40	6.40	8.70	10.60	10.60	10.60	10.60	10.60	
Pump power input P3	[kW]	3.44	4.52	4.52	6.09	6.09	8.26	8.26	8.26	8.26	8.26	
Pump absorbed current P3	[A]	6.40	8.70	8.70	10.60	10.60	13.60	13.60	13.60	13.60	13.60	

- [*] Data in accordance with European Regulation (EU) 2016/2281 for 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 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

Refer to the operating limits in the last release of the CFT technical manual. >> Contact the company.

