

Platform **TRF Evolution**

DATA CENTER

TRF CS

CHILLED WATER PERIMETER MOUNTED AIR CONDITIONING UNITS FOR DATA CENTER WITH UNDERFLOOR FANS - SLIM EDITION

58-242 kW



MULTI-PROTOCOL
COMMUNICATION
INTERFACE



EC RADIAL FANS



MODBUS
CONTROLLED
FANS



PRESSURE
INDEPENDENT VALVE
(PICV)



FAST RESTART



ON-BOARD HUMIDIFIER



VARIABLE GEOMETRY
COIL (FLEXY)



DOUBLE CIRCUIT

TRF CS is the range of chilled-water air conditioners **for high power density computer rooms**. The fans of the TRF CS units are positioned in separate housing (so-called FREE FAN solution), **to increase the overall cooling capacity of the unit**, but not to the detriment of the depth, which remains 890 mm. Great care has gone into every detail, in order **to minimize air flow pressure drops and energy consumption of the fans**, the only electrical load present in the machine.

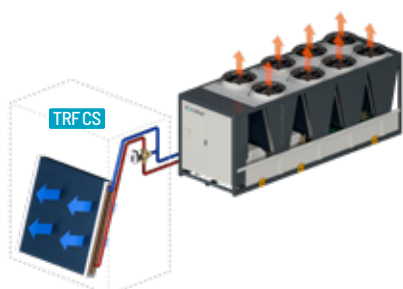


FREE FAN solution

The FREE FAN solution with the fans mounted in separate housing **freed up space inside the unit and thus increases the surface area of the coil**. This results in both an **increase in air flow and cooling capacity and a reduction in air pressure drops**. The FREE FAN solution increases the refrigerating power of the entire range.

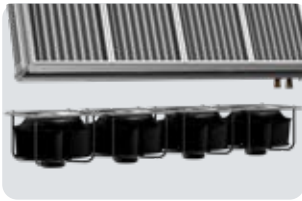
- Temperature control through heating and post-heating systems with electric heating elements (optional)
- Humidity control through dehumidification and humidification (optional)
- Fan speed modulation based on thermal load (constant ΔT)
- Hydraulic connections from the bottom of the unit
- Broad choice of accessories, including plenums for ducting, plenums for direct Free-Cooling
- Air filter class G3 as standard. Air Filters G4, M5, F7 (optional)
- Double power supply with automatic switch (optional)
- Double panelling only on the front doors or on the whole machine (optional)
- Instant reading of water flow rate, water inlet and outlet temperatures, or supplied cooling capacity (optional)

CHILLED WATER



AIRFLOW CONFIGURATIONS





Ventilation EC 2.0

EC PLUG fans, standard throughout the range, are adjustable using different logics: flow rate, overpressure, constant ΔP and ΔT . Their accurate adjustment allows **an efficient use of power for ventilation and a consequent reduction of the system's PUE**. Extended range speed adjustment is carried out via Modbus protocol. The "emergency speed" function allows for fan operation **even in the event of microprocessor malfunctions**.



Accurate regulation with multiple types of valves

All units in the TRF CS range have as standard regulating valves fitted with 0-10V servo motor, selectable in 2-way execution, with variable or 3-way flow system or with servo motor with spring return. Pressure-independent valves can also be fitted on request. All these types of valves **ensure the utmost adjustment accuracy while maintaining the system's hydronic balance**.



Ventilation adjustment

Depending on the air distribution logic in the server room, it is possible to adjust the machine on-board ventilation system to ensure **a constant air flow rate** (airflow control) **or a constant available overpressure** (ΔP control). The latter is particularly useful if a floating floor is used.



Finned pack coil with hydrophilic coating

All models in the TRF CS range feature heat exchange coils with hydrophilic coating. This special coating - together with adequate adjustment of air through-flow speeds - **helps condensate collection and outflow during the dehumidification process, preventing any dripping on the inside and outside of the unit**.

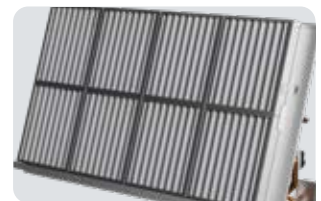
Double circuit

Chilled water units are also available with a double circuit. In this version the supply is **via two different hydraulic circuits** that can offer the **utmost operational continuity if one of the two circuits malfunctions**. Each circuit is equipped with a regulating valve



Easier scheduled maintenance

The unit has been painstakingly designed to ensure frontal access to components. This makes **routine maintenance easier in full compliance with safety standards**.



Extended filter section

Air filters, located on the entire surface of the coil, **maximize the filtering section and minimize the unit's air pressure drops**.

TRF CS	045	055	065	075	150	180	200	210
Version A	Air temperature 24°C - 50% / Water temperature In 7°C Out 12°C							
Cooling capacity kW	68.9	81.8	104.7	131.2	165.3	200.5	-	-
EER	26.92	29.21	31.38	35.17	35.68	38.28	-	-
SHR	0.82	0.8	0.82	0.78	0.8	0.78	-	-
Version A	Air temperature 30°C - 35% / Water temperature In 10°C Out 15°C							
Cooling capacity kW	72.6	84.8	110.2	131.2	172.3	200.6	-	-
EER	28.35	30.26	33.05	35.19	37.19	38.29	-	-
SHR	1	1	1	0.99	1	0.99	-	-
Version B	Air temperature 30°C - Relative humidity 35% / Water temperature In 10°C Out 18°C							
Cooling capacity kW	66	79.9	102.8	121.4	157.2	189.4	205.2	242.4
EER	25.81	28.53	30.82	32.56	33.93	36.15	29.64	31.42
SHR	1	1	1	1	1	1	1	1
Version C	Air temperature 30°C - Relative humidity 35% / Water temperature In 10°C Out 22°C							
Cooling capacity kW	58.2	70.6	88.4	109.7	135.1	167.7	176.4	218.9
EER	22.73	25.2	26.5	29.41	29.17	32	25.48	28.38
SHR	1	1	1	1	1	1	1	1
Version A	Air temperature 35°C - 30% / Water temperature In 15°C Out 20°C							
Cooling capacity kW	72.9	84.9	110.8	130.2	173	199	-	-
EER	28.49	30.3	33.21	34.91	37.35	37.98	-	-
SHR	1	1	1	1	1	1	-	-
Version B	Air temperature 35°C - Relative humidity 30% / Water temperature In 15°C Out 23°C							
Cooling capacity kW	67.8	79.7	103	121.2	157.4	188.9	205.5	241.8
EER	26.48	28.47	30.87	32.49	33.98	36.05	29.69	31.35
SHR	1	1	1	1	1	1	1	1
Version C	Air temperature 35°C - Relative humidity 30% / Water temperature In 15°C Out 27°C							
Cooling capacity kW	58.8	71	89.3	110.2	136.5	168.5	178.2	220
EER	22.97	25.33	26.77	29.55	29.47	32.16	25.75	28.52
SHR	1	1	1	1	1	1	1	1
Rated air flow m ³ /h	15500		23550		36000		47000	
Total fan absorbed power kW	2.6	2.8	3.3	3.7	4.6	5.2	6.9	7.7
Power supply V/ph/Hz	400/3+N/50							
Lp @ nominal rpm; dist.=2m Q=2 db(A)	69	69	66	67	68	68	69	70
Dimensions [LxHxD] mm	1270x2000x890		1760x2000x890		2510x2000x890		3160x2000x890	

Also available with 60 Hz power supply. | Minimum height with fanmodule 2550 mm.

