

Aquaflair TRAC-TRAF-TRAH

110 – 400 kW

Air-cooled chillers, free-cooling chillers and heat pumps for mission critical applications



Air-cooled chillers, free-cooling chillers and heat pumps with scroll compressors and R410A refrigerant.

- All-in-one units, completely configurable for easy design and installation, continuous and quiet operations in multiple applications and environmental conditions.
- Aquaflair chillers are designed for Tier III and IV data center installations

Main components of TRAC-F-H

Electrical panel

- IP54 rated
- maximum internal temperature control
- auxiliary transformer
- general auxiliary cut-off switch
- magneto-thermal protection switches with trip alarm signal on compressors
- fuses for fan speed control protection
- safemotor for pumps protection and remote control cutoff switches.

Microchannel condensing coils

- TRAC/F models up to 260 kW
- less refrigerant content
- CAPEX reduction

Finned-tubes condensing coils

- TRAC/F models from 300 kW and all TRAH models
- flexibility for movement and maintenance

Free-cooling coils

- only TRAF models
- aluminum fins and mechanically-expanded copper tubes



Microprocessor controller

- local user interface with 7-inch touch screen display
- exclusive PID algorithm for chilled water supply temperature regulation
- production of chilled water down to -10 °C
- advanced freeze protection on evaporator
- standard or VSD embedded pump rotation and management
- integrated features:
 - LAN card to connect units
 - SNMP, Modbus TCP/IP
 - USB connection for data download
 - Clock card
- external motorized isolating valve management

Hermetic Scroll compressors

- oil by-pass valve and line
- integrated soft start
- power factor correction condenser
- integrated thermal protection
- crankcase heaters and inverter with oil heating function
- anti-vibration supports

Main components of TRAC-F-H

Refrigerant circuits

Single (**21 models) or double (**42) refrigerant circuit conforming to EC standards (PED 97/23/ CE) with:

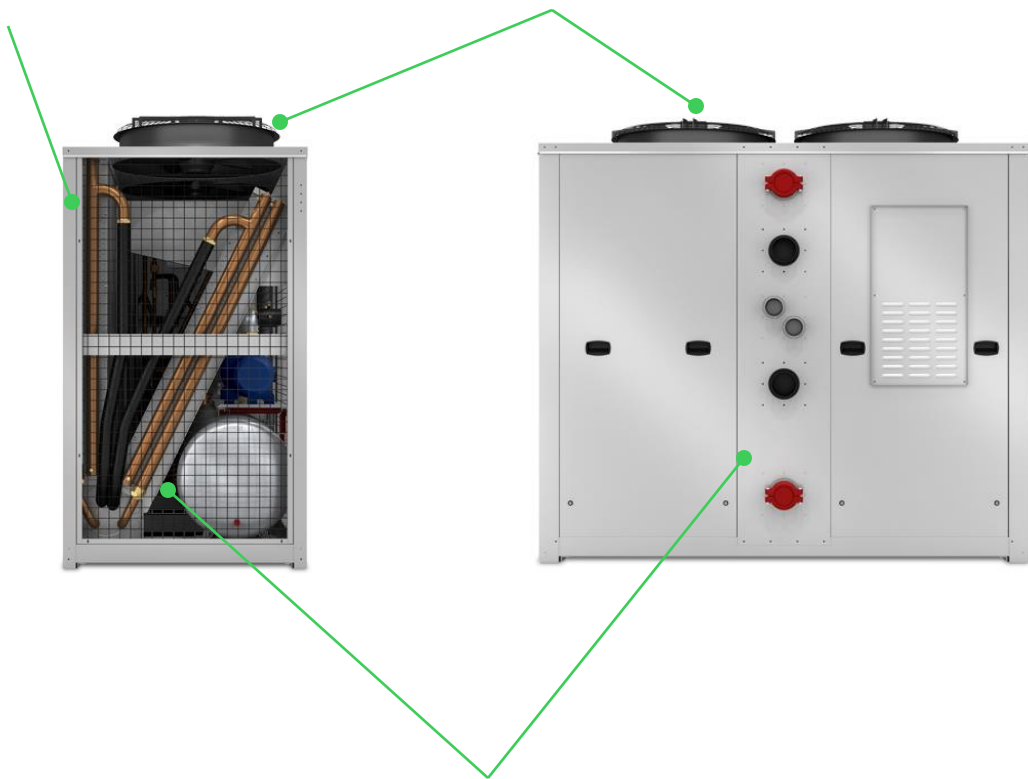
- filter dryer
- liquid sight glass
- expansion valve
- discharge and suction taps on the compressor
- pressure switches
- high and low pressure transducers

Acousti-Composite fans

- sickle-blade axial fans
- statically and dynamically balanced
- composite materials for high efficiency
- low acoustic impact
- protective safety grilles

Optional fans with Electronically Commutated (EC) motors

- higher energy efficiency
- low noise at partial load
- higher ambient temperature operation



Water-side heat exchanger

- brazed plate heat exchanger in stainless steel
- insulated with closed cell expanded polyurethane

Main Configurable Options of TRAC-F-H

Double and/or separate power supply

- Double power supply with automatic transfer switch (ATS) for complete redundancy without single point of failure as per TIER III and IV recommendations
- Separate power supply from UPS for Unit and compressor/s control for 2 minutes quick start and emergency operation
- Automatic double and separate power supply from UPS for redundancy & Quick Restart

Acoustic options

Aquaflair air-cooled mid chillers with scroll compressors can be featured by different options in order to reduce the noise level:

- Basic version (standard): enclosures for compressors
- UltraQuiet version (option): soundproof enclosures for compressors and modulating condensation control algorithm for fans based on noise reduction

Additional options

Aquaflair chillers can be equipped with special devices to operate at particular ambient conditions

- For aggressive ambient conditions: metal safety grilles and filters and coil treatments (electrolytic pre-painting treatment)
- Low ambient temperature option (standard for TRAF/H models): electrical heaters in the electrical board

Onboard pumps

Onboard pumps allow a direct contact with the primary circuit only. The available options are:

- Integrated hydronic system with one or two circulation pumps (1 + 1 standby)
- Integrated hydronic system with one or two (1+1 standby) inverter-driven circulation pumps and pressure transducers for increased efficiency, flexibility and modularity

Heat recovery

- Partial heat recovery: the unit is equipped with a system to recover the superheating of compressors
- Total heat recovery (TRAC only): the unit is equipped with a system to recover the condensing capacity

Free-cooling options

- Intelligent free-cooling for increased efficiency leveraging on standby units
- Glycol-free free-cooling: integrated system to separate the main water system (pure water) from the free-cooling circuit (water + glycol)

Adiabatic kit

- Available for TRAC/F models from 300kW
- Based on the natural process of water evaporation
- More energy efficiency
- Maximization of free-cooling operation for TRAF models

Performance data

TECHNICAL DATA

TRA* models		1221A1	1421A1	1742A1	2042A1	2342A1	2642A1	2842A1	3642A1	4042A1	4142A1
Power supply	V/ph/Hz	400 / 3ph / 50 Hz									
Circuits/Compressors	Nr/Nr	1/2	1/2	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/4
Evaporator type	Nr x mod	1 x brazed plate									
Fans	nr.	2	2	3	3	4	4	4	5	6	6
TRAC air-cooled chillers with EC fans											
Cooling capacity ^{1,2}	kW	119,7	130,4	165,5	186,8	216,9	239,6	261,7	311,3	354,6	387,0
EER ^{1,2}	kW	3,03	2,83	3,26	3,11	3,25	3,06	2,87	3,06	3,07	2,99
TRAF free-cooling chillers with EC fans											
Cooling capacity ^{1,3}	kW	127,7	138,9	176,2	198,3	229,8	253,2	275,3	329,2	373,6	406,4
EER ^{1,3}	kW	3,09	2,88	3,34	3,16	3,28	3,07	2,85	3,07	3,05	2,96
TRAH heat pumps with EC fans											
Heating capacity ^{1,4}	kW	120,1	137,3	170,7	191,4	223,1	248,4	281,0	330,3	371,9	-
COP ^{1,4}	kW	3,12	3,14	3,39	3,32	3,34	3,22	3,25	3,31	3,31	-
<p>¹: Data for units with EC fans and basic version for noise. Data may change for units with AC fans and different noise versions</p> <p>²: Data refer to nominal conditions: water inlet / outlet temperatures 12 / 7 °C, outdoor temperature 35°C, 0% glycol, fouling factor 0,0 m² °C/W</p> <p>³: Data refer to nominal conditions: water inlet / outlet temperatures 15 / 10 °C, outdoor temperature 35°C, 20% glycol, fouling factor 0,0 m² °C/W</p> <p>⁴: Data refer to nominal conditions: water inlet / outlet temperatures 40 / 45 °C, outdoor temperature 7°C dry bulb and 6°C wet bulb, 0% glycol, fouling factor 0,0 m² °C/W</p>											

DIMENSIONAL DATA

TRA* models		1221A1	1421A1	1742A1	2042A1	2342A1	2642A1	2842A1	3642A1	4042A1	4142A1
Height (EC fans)	mm	2236	2236	2235	2235	2236	2236	2236	2156	2156	2156
Width	mm	3162	3162	4612	4612	5562	5562	5562	5730	5730	5730
Depth	mm	1151	1151	1151	1151	1151	1151	1151	2204	2204	2204