

TGR OPTIONS		
DESCRIPTION		INITIAL
Indirect Free Cooling		FC
Dual zone temperatures		2Z
P6 pump		P6
Visual & sounding alarm		VSH
Non ferrous heating resistor		RH
Regulable water bypass		BR
Alternative Gateways [1]		AG

[1] AG option consists on a gateway configuration enabling selection between Profibus, Profinet or BACnet communication. The setting is responsibility of the user.



COMPLEMENTARY EQUIPMENT

CDC

300 kW to 1200 kW drycoolers
also adiabatic system available

ADDITIONAL INFORMATION

Please contact our sales offices for more information: sales.chiller@friulair.com

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TGR

THERMO-CHILLERS

from 8 to 60 KW

TGR



ECO-FRIENDLY SPECIFIC SOLUTION FOR INJECTION MOLDING. WATER-COOLED THERMO-CHILLER WITH INTEGRATED FREECOOLING AND SINGLE OR DUAL ZONE.

DESCRIPTION

The TGR Thermo-chiller grants precise thermal control of the molds and optimizes the cooling cycle time. TGRs use the environmental friendly refrigerant gas R513A and are engineered with integrated freecooling to achieve the maximum energy saving. Single or dual zone configuration is available along with P4 (std.) or P6 (opt.) high flow pumps; the thermoregulation of each zone is performed by means of a 3-way valve and a heating resistor.

MAIN FEATURES

- 8 sizes: TGR008 ÷ TGR060 with cooling capacities from 8 to 60 kW
- Operating range with pure water: from 5°C to 90°C
- Outlet water temperature accuracy: +/- 0,2 K
- Ecological low GWP R513A refrigerant gas
- Single hermetic compressor,
- Stainless steel brazed plate evaporator
- Stainless steel brazed plate condenser
- Non-ferrous water circuit materials (stainless steel, EPDM rubber, copper, brass)
- Condensing pressure control (pressostatic valve)
- Water pressure transducers (process side)
- High and low refrigerant pressure switches
- Electronic hot gas bypass valve
- Automatic water filling system
- Insulated stainless steel pressurized water tank
- Expansion vessel
- 3-way mixing water valve with integrated actuator for an accurate control of the outlet temperature
- Automatic Free Cooling management
- Integrated microprocessor electronic controller
- Single or dual thermoregulated zone
- RS485 MODBUS RTU protocol communication
- Galvanized steel powder coated frame and panels
- 3/400V/50Hz or 3/460V/60Hz available
- IP40 rated electrical control panel
- Wheels

BENEFITS

- Efficient productivity
- Optimized performances of the production process
- Reduction of cycle times and perfect repeatability
- Improvement of the cooling precision and quality of the molded products
- Energy saving
- Environment friendly
- Easy maintenance



R513A ECO-FRIENDLY REFRIGERANT

The TGR thermo-chillers series is Friulair's new range meeting the European F-Gas* regulation on fluorinated gases. The use of environmentally friendly R513A refrigerant gas with low GWP, non toxic and non-flammable, allows indoor installations of TGR.



OZONE FRIENDLY

ODP (Ozone Depletion Potential) = 0

NON-FLAMMABLE GAS

ASHRAE category A1

VERY LOW GWP

GWP = Global Warming Potential

REFRIGERANTS	GWP
R410A	2088
R407C	1774
R134A	1430
R513A	631

[*] The European F-Gas regulation forces each refrigerant producer or exporter to comply with a gradual reduction of the annual refrigerant gas quota expressed in CO₂ tons equivalent (GWP x mass). It is consequently necessary to decrease the use of high environmentally impacting refrigerant gases (i.e. high GWP) in favour of more eco friendly ones (i.e. low GWP).

TGR MODELS 008 012 017 021 030 035 048 060

PERFORMANCES

	[1]	[kW]	008	012	017	021	030	035	048	060
Cooling power		[kW]	8.04	11.42	15.38	21.91	28.53	32.95	44.67	57.07
Compressors power input		[kW]	1.60	2.23	3.37	4.81	6.25	7.31	9.73	12.05
Total water flow	[2]	[m ³ /h]	3.46	4.91	6.61	9.42	12.27	14.17	19.21	24.54

ELECTRICAL DATA

	[3]	[kW]	008	012	017	021	030	035	048	060
Heating power		[kW]	6	6	6	12	12	12	18	18
Primary pump power		[kW]	0.61	0.61	0.82	0.82	1.43	1.43	1.99	1.99
P4 pump power - Single zone version		[kW]	1.28	1.28	2.28	2.28	3.58	3.58	4.00	4.00
P6 pump power - Single zone version		[kW]	1.50	1.50	2.20	2.20	3.00	3.00	5.50	5.50
P4 pump power (each) - Dual zone version		[kW]	0.88	0.88	1.28	1.28	2.28	2.28	3.58	3.58
P6 pump power (each) - Dual zone version		[kW]	1.10	1.10	1.50	1.50	2.20	2.20	3.00	3.00
Power supply		[V/Ph/Hz]	400/3/50							

TECHNICAL DATA

Refrigerant			R513A							
Compressor type			Scroll							
Evaporator type			Brazed plates							
Condenser type			Brazed plates							
Compressor quantity	[#]		1	1	1	1	1	1	1	1
Refrigeration circuit quantity	[#]		1	1	1	1	1	1	1	1
Water connections size	[4]	[inch]	1"	1"	1" 1/2	1" 1/2	2"	2"	2" 1/2	2" 1/2
Tank capacity		[dm ³]	15	15	15	15	22	22	22	22
Width		[mm]	500	500	500	500	600	600	600	600
Depth		[mm]	1 100	1 100	1 100	1 100	1 550	1 550	1 550	1 550
Height		[mm]	1 350	1 350	1 350	1 350	1 600	1 600	1 600	1 600

[1] Data referred to users water temperature 10 °C, delta T 2 °C, condenser water temperature 30/35 °C

[2] Data referred to the total water flow for single zone version.
In each circuit of the dual zone version, the water flow rate is approx the half of the total

[3] Data referred to the heating power for each circuit

[4] Data referred to single zone version.