# **CHILLERS** ECS2-W HFO

0351 - 1414 339,6-1364 kW



Indoor unit for the production of chilled water featuring centrifugal compressors oil-free, with refrigerant HFO (1234-ze), electronic regulation valve, shell and tube condenser and shell and tube flooded evaporator. Base and supporting structure and panels are of galvanized epoxy powder coated steel with increased thickness.

Flexible and reliable unit; it easily adapts itself to different thermal load conditions thanks to the precise thermoregulation together with the use of inverter technology. The compressor is radically innovative: magnetic bearings and digital rotor speed control allow partial load efficiency levels to be reached that were hither to impossible.

#### Control



# **W3000TE**

W3000TE features a large keyboard and wide LCD display for an easy and safe access to the machine setup and a complete view of unit's status. The assessment and intervention on the unit is managed through a multi-level menu, with selectable user's language. An optional extra is the touch screen interface: 7.0" WVGA colour display with adjustable LED backlight and front USB port. The touch screen technology allows intuitive navigation between the various screens, safe access to the data with a three-level password protection as well as the graphic display of the performance of some monitored measurements. Complete alarm management system is available, with the "black-box" and the alarm history display functions. For the systems made of several units, the adjustment of the resources is performed by optional proprietary devices. Consumption metering and performance measurement are possible and supervision can be developed via proprietary devices or the integration in third party systems by means of the most common protocols ModBus, Bacnet, Bacnet-over-IP, LonWorks.

Compatibility with remote keyboard (up to 8 units). The programmable timer allows the creation of an operating profile up to 4 typical days and 10 time bands. Continuous modulation of the unit capacity, based on PID algorithms and referring to the water delivery temperature.

#### Refrigerant



#### Versions

High Condensing

#### Configurations

Basic function

H Function with heat pump, reversible on hydraulic side

#### **Features**

#### HEO REFRIGERANT

4th generation refrigerant HFO 1234ze, with negligible greenhouse effect in comparison with traditional HFC refrigerants (Global Warming Potential GWP of HFO 1234ze < 1, GWP of R134a = 1300 as per IPCC rev. 5th) and zero impact on the ozone layer.

#### **VERY HIGH EFFICIENCY**

Very high efficiency at full and partial load, to top market levels, thanks to adopted technological solutions: large capacity modulation and expanded exchanger, offering minimum running costs of the unit in real working conditions.

#### **EXTREMELY SILENT OPERATION**

Extremely silent operation in line with the best on the market, and highly reduced vibrations

#### LOW INRUSH CURRENTS

Reduced breakaway starting currents thanks to the revolutionary centrifugal compressor.

#### AHRI CERTIFICATION

Certified in accordance with the AHRI Water-Cooled Water-Chilling and Heat Pump Water-Heating Packages Certification Program, which is based on AHRI Standard 550/590 (I-P). Certified units may be found in the AHRI Directory at www.ahridirectorv.org

### **Accessories**

- Integral acoustical enclosure (type base or plus)
- VPF (Variable Primary Flow) system
- Several devices for condensation's control
- Leak detector
- Set-up for remote connectivity with ModBus/Echelon protocol cards











TECS2-W HFO / HC			0351	0712	1053	1414
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE		'				
COOLING ONLY (GROSS VALUE)						
Cooling capacity	(1)	kW	339.6	676.1	1015	1364
Total power input	(1)	kW	62,97	126,6	189.8	251.1
EER	(1)	kW/kW	5,390	5,340	5,348	5,432
ESEER	(1)	kW/kW	9,010	9,400	9,320	9,510
COOLING ONLY (EN14511 VALUE)						
Cooling capacity	(1)(2)	kW	338.6	674.5	1013	1361
EER	(1)(2)	kW/kW	5,180	5,170	5,190	5,290
ESEER	(1)(2)	kW/kW	7,830	8,120	8,220	8,500
Cooling energy class			Α	Α	Α	Α
ENERGY EFFICIENCY						
SEASONAL EFFICIENCY IN COOLING	G (Reg. EU 20	16/2281)				
Ambient refrigeration	, . <b></b>	- ,				
Prated,c	(7)	kW	339	674	1013	1361
SEER	(7)(8)		8,20	8,22	8,36	8,76
Performance ns	(7)(9)	%	320	321	326	342
EXCHANGERS						
HEAT EXCHANGER USER SIDE IN R	EFRIGERATIO	N				
Water flow	(1)	l/s	16.24	32.33	48.54	65.22
Pressure drop	(1)	kPa	32,9	29,0	31,1	33,1
HEAT EXCHANGER SOURCE SIDE IN	N REFRIGERA	TION	,	,	,	,
Water flow	(1)	l/s	19,19	38,25	57,42	76,97
Pressure drop	(1)	kPa	40,8	39,6	32,0	23,0
REFRIGERANT CIRCUIT						
Compressors nr.		N°	1	2	3	4
No. Circuits		N°	1	1	1	1
Refrigerant charge		kg	100	200	420	410
NOISE LEVEL						
Sound Pressure	(3)	dB(A)	74	76	77	78
Sound power level in cooling	(4)(5)	dB(A)	92	94	96	97
SIZE AND WEIGHT						
A	(6)	mm	2990	3490	4990	5450
В	(6)	mm	950	1300	1300	1300
Н	(6)	mm	1900	1800	1800	1990
Operating weight	(6)	kg	1570	3010	4380	5240

## Notes

- Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger water
- (in/out) 30°C/35°C.

  Values in compliance with EN14511

  Average sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.

  Sound power on the basis of measurements made in compliance with ISO 9614.

- Sound power level in cooling, indoors.
  Unit in standard configuration/execution, without optional accessories.
  Parameter calculated according to [REGULATION (EU) N. 2016/2281]
  Seasonal energy efficiency ratio
  Seasonal space cooling energy efficiency

The units highlighted in this publication contain HFC HFO-1234ze [GWP $_{100}$  7] fluorinated greenhouse gases. Certified data in EUROVENT

# Dimensional drawing





