

SIGMA Zero



SIGMA Zero

High efficiency water source
chillers and heat pumps with
natural refrigerant

20÷70 kW

WESTERNTM
AIRCONDITIONING
WARMTEPOMPEN

BlueBox 
by Swegon

Sigma Zero

WATER
SOURCE meets natural
PROPANE
refrigerant



Single circuit inverter scroll and reciprocating compressors unit with plate heat exchangers:

- **Water cooled inverter heat pump and chiller with R290**
- **Versions: Hi** (chiller) / **Hi OH** (heat pump) / **Hi HP** (reversible heat pump) / **Hi HPW** (heat pump reversible water side)
- **Hot water up to 75°C**
- **IV class (ventilated enclosure)**
- **Installation flexibility (indoor/outdoor version)**
- **Compact footprint (<1m²)**

MISSION
ZERO
EMISSION

CLIMATE CHANGE FIGHT | EUROPEAN CLIMATE STRATEGY IS GOING TO BE UPDATED AND REINFORCED

TARGET

Reduction of **55%** Greenhouse Gas emission by **2030**

Increased **renewable energy** (above **32%**) by **2030**

Net-zero Greenhouse Gas Emission by **2050**

HOW?

F-gas regulation Regulation

Renewable Energy Directive

European Performance of Buildings Directive (**EPBD**)

Ecodesign **ERP** Directive



Keep temperature increase below **1.5°C**

Become a climate neutral economy

R290

NATURAL REFRIGERANT



SUSTAINABLE CHOICE

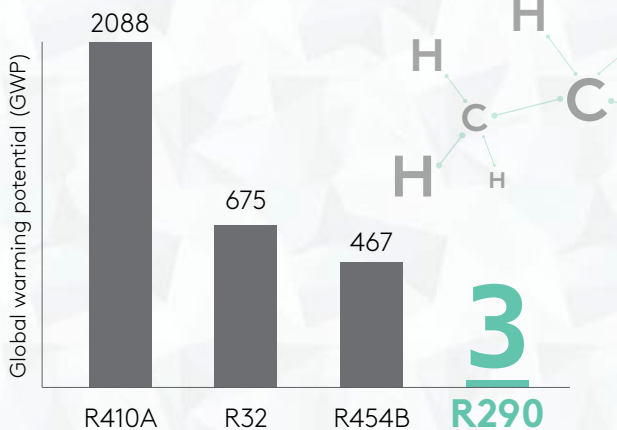
- Nearly zero Global Warming Potential (GWP=3)
- Natural fluid
- Natural non toxic refrigerant
- No Ozone Layer impact
- 40% gas charge compare to R410A

RELIABLE CHOICE

- Implementation of the highest safety standard

SMART CHOICE

- No carbon tax
- Pushed by incentivation schemes
- Future-proof natural solution. On going HFC phase-out



TEWI

TOTAL EQUIVALENT WARMING IMPACT

TEWI [tons CO₂ eq.]

Direct emissions + Indirect emissions

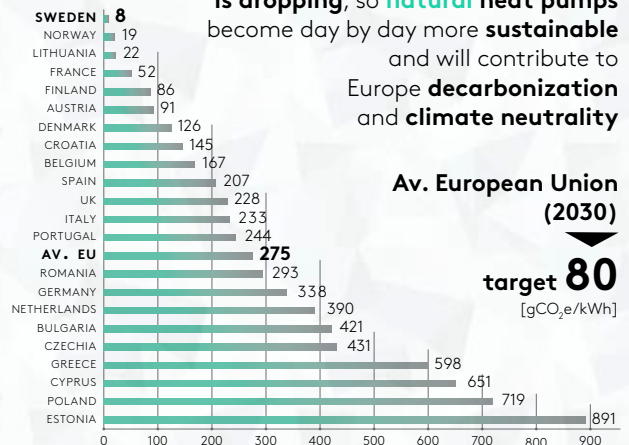
Leakage rate per year
Service life (years)

Leftover refrigerant after disposal
Global Warming Potential

Plant cooling / Heating load
Efficiency

Electricity consumption
CO₂ emission intensity

European electricity carbon intensity is dropping, so **natural** heat pumps become day by day more **sustainable** and will contribute to Europe **decarbonization** and **climate neutrality**



Av. European Union (2030)

target **80**
[gCO₂e/kWh]

Electricity emission intensity [gCO₂e/kWh], 2019 data, Source EEA

SIGMA ZERO HAS
MINIMUM CARBON FOOTPRINT
THANKS TO ITS
HIGH EFFICIENCY
AND
LOW CHARGE OF PROPANE

CAPACITY RANGE/VERSIONS

SIGMA Zero Hi OH 5 sizes > SCOP up to 6,3


SIGMA Zero Hi HP 5 sizes > SCOP up to 6,1

SIGMA Zero Hi HPW 5 sizes > SCOP up to 6,5

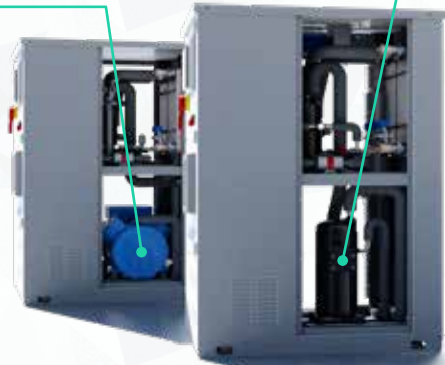
SIGMA Zero Hi 5 sizes > SEER up to 6,8

20 • • • • • 70 kW

Net cooling capacity at A35 W 12-7 / according to EN14511

 Inverter Reciprocating compressor

 Inverter Scroll compressor



OPERATING LIMITS



Space heating and domestic hot water production **up to 75°C**

Comfort cooling and process applications **cold water from -10° ÷ 20°C**



**INDOOR
INSTALLATION**

Ventilated enclosure class IV*

**INSTALLATION
FLEXIBILITY**

**OUTDOOR
INSTALLATION**

Open space class III*

BOOSTERLINK



System
Integration

- Optimal synergy between the Swegon units
- 3-way valve control of the SIGMA Zero source temperature
- A single-point of control and monitoring

SIGMA Zero Hi OH

BOOSTERLINK



Swegon Heat Pump
@ medium temperature



BLUEYE CONNECT

REMOTE ACCESS TO UNIT

SAVE MONEY
FAST SERVICE

BLUEYE CLOUD

CLOUD RECORDING DATAPOINTS

PREDICTIVE MAINTENANCE
CUSTOMER REPORTING
ANALYSIS



SYSTEM SCALABILITY

SIMULTANEOUS
MANAGEMENT



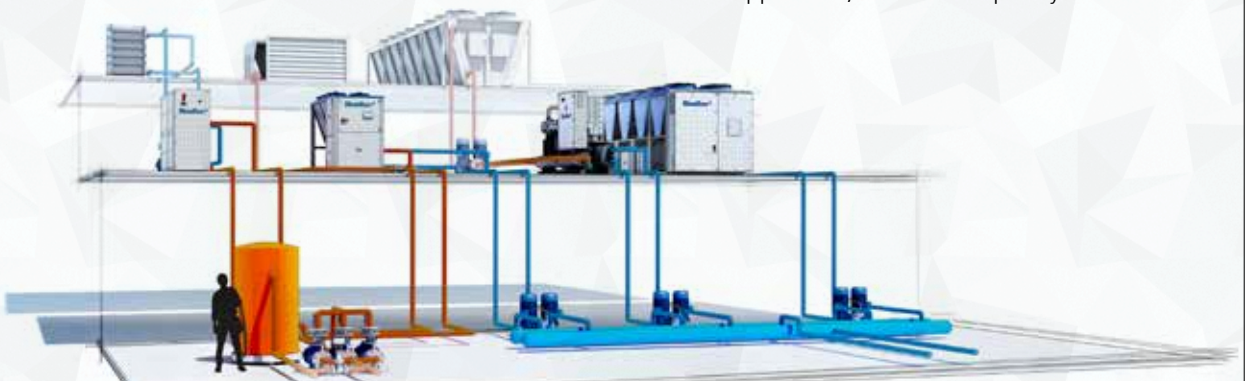
PLANT
management



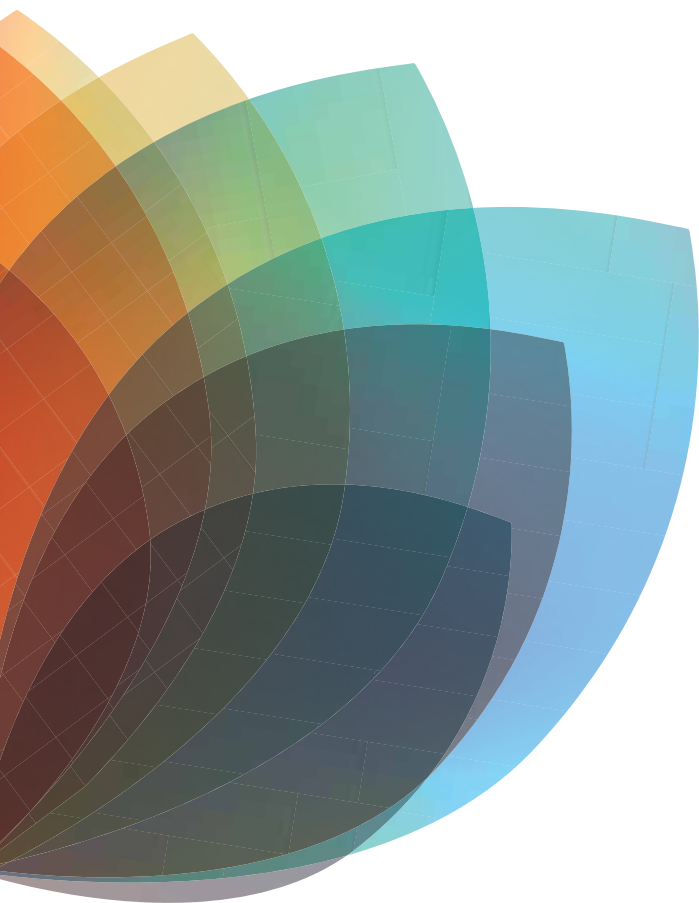
HYZER HYDRONIC OPTIMIZER

**BLUETHINK solution to manage several units,
components and devices and build an
optimized System.**

- **Advanced algorithms** to maximize system total efficiency
- **Less Opex** thanks to lower energy consumption
- **Flexible management** of multi units, variable water flow and external devices (drycoolers, cooling towers, boilers,..)
- **Real time** energy consumption to obtain advanced structured data analysis
- **Modular design** to perfectly suit any project requirements in terms of application, size and complexity



Feel good **inside**



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