



NEW AGE
OF HVAC SYSTEMS

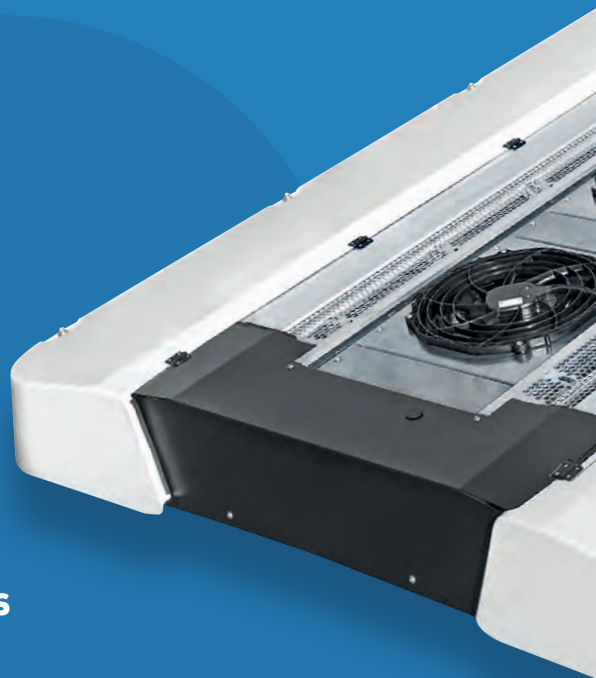
New **HVAC** Systems



Hispacold is a company with over 45 years of experience leading in the passenger transport HVAC sector.

- > HVAC SYSTEMS OPERATING IN MORE THAN 100 COUNTRIES ACROSS THE 5 CONTINENTS.
- > ON BOARDED OWN TECHNOLOGY.
- > JOINT INNOVATION WITH TOP-LEVEL UNIVERSITIES AND TECHNOLOGY CENTERS.
- > SEVERAL PATENTS REGISTERED.
- > CERTIFIED MANAGEMENT SYSTEMS FOR QUALITY, ENVIRONMENT AND OCCUPATIONAL HEALTH AND SAFETY: EN 15085-2, ISO/TS 22163:2017 (IRIS), ISO 9001:2015 ENAC, ISO 14001:2015 ENAC AND OHSAS 18001:2007 ENAC.

Design, manufacturing and sales of HVAC systems and components for fuel, hybrid and electric buses and coaches and for rail vehicles, for any type of climate conditions.





NEW AGE OF HVAC SYSTEMS

NEW PRODUCT RANGE

- > HIGHLY EFFICIENT
- > SUSTAINABLE
- > POWER RANGE
- > MINIMUM WEIGHT AND REDUCED FOOT PRINT
- > EASY INSTALLATION
- > FREE COOLING 0-100%
- > ADAPTABLE TO ANY TYPE OF VEHICLES
- > MINIMUM REFRIGERANT CHARGE
- > GWP <150 GASES

The new range of HVAC systems
covers:

Electromobility, City and Intercity buses.



FUEL



ELECTRIC



TROLLEY



HYBRID



HYDROGEN

All climate and/or environmental zones.



NEW HVAC SYSTEMS

BREEZE RANGE



FUEL



ELECTRIC



TROLLEY



HYBRID



HYDROGEN

A new wave of **HVAC**



hispacold.es

Breeze range

HVAC SYSTEMS

DESIGN · POWER · SUSTAINABILITY

- > INNOVATIVE MATERIALS
- > NEW DESIGN
- > 60% LESS REFRIGERANT CHARGE
- > MINIMUM WEIGHT AND FOOT PRINT
- > EASY INSTALLATION
- > AIR EXTRACTION
- > SUITABLE FOR ANY TYPE OF VEHICLES
- > MECHANICAL FIXATION
- > FREE COOLING 0-100%
- > WATER OR PTC BACK UP HEAT
- > REVERSIBLE HEAT PUMP FOR EBREEZE



Breeze

FOR ELECTRIC VEHICLES eBreeze

	100	200	300	100e / 100e HP	200e / 200e HP
Vehicle type	Fuel			Electric / Electric with Heat Pump / Hydrogen	
Listed cooling capacity (kW) ¹	28 / 32 / 34	38 / 41 / 44	46	22	29
Rated cooling capacity (kW) ²	18 / 21 / 23	25 / 27 / 30	34	16	21
Heating capacity (kW) ³	35	49	36	27	30
Evaporator air capacity (m ³ /h) ⁴	5160	7740	10320	5160	7740
Fresh air intake range (%)	0-100	0-100	0-100	0-100	0-100
Dimensions W ⁵ x L x H (mm)	2000x1950x215	2000x2550x215	2000x2550x215	2000x2450x380	2000x3050x380
Average filling volume R134a (kg) ⁶	1,9	2,2	2,4	2,6	3,5
Weight (kg) (without and with heating and fresh air intake)	91-97	128-135	134-142	162-164 / 167-169	210 / 215
Weight with Inverter				221	276

1 Conditions 40°C/40°C/95%

2 Conditions 35°C/27°C/19°C

3 Conditions -20°C/+80°C 16,7 l/min

4 Free blow with brushless motors

5 Width varie according to the radii of vehicles roof between 2000-2020 mm

6 All systems available with R513A and other refrigerants with GWP<150.

Back up heat with PTC or Hot water

Estimate system capacity with heat pump.

NEW HVAC SYSTEMS

ZEPHYR RANGE



The new air for the new mobility



hispacold.es

Zephyr range

HVAC SYSTEMS

LIGHTWEIGHT · EFFICIENT · RESISTANT · RELIABLE



- > **REDUCED WEIGHT**
- > **MINIMUM REFRIGERANT CHARGE**
- > **CENTRAL AIR INTAKE**
- > **AIR EXTRACTION**
- > **ALTERNATIVE REFRIGERANTS WITH LOWER GWP INDEX**
- > **ENERGY EFFICIENCY AND LCC**
- > **FREE COOLING 0-100% ADJUSTABLE**
- > **ALUMINUM BATTERIES**
- > **AVAILABLE TROPICALIZED WITH 4 CONDENSER MOTORS**
- > **OPTIONAL HEATING SYSTEM**



200

Cooling capacity (kW)*	35.5
Heating capacity (kW)*	32
Dimensions (mm)	3530 x 1849 x 219
Weight (kg)	170
Power consumption (A)	87

*Unit performance will vary depending on weather conditions and compressor speed.

NEW HVAC SYSTEMS

EN RANGE



Naturally efficient



hispacold.es

EN range

ELECTRICAL HVAC SYSTEMS

ECOLOGICAL · EFFICIENT · SILENT

- > **HIGH PERFORMANCE**
- > **EQUIPPED WITH DRIVER HVAC**
- > **OPTIMAL EFFICIENCY AT PARTIAL CHARGE**
- > **HIGHLY RELIABLE**
- > **FREE COOLING 0-100%**
- > **PTC OR WATER BACK UP HEAT**
- > **WIDELY TESTED IN THE MARKET**
- > **NOISELESS**
- > **ZERO EMISSIONS**
- > **DEHUMIDIFICATION FUNCTION**
- > **REVERSIBLE HEAT PUMP**



9EN 1C

12EN 1C

Cooling capacity (kW)	28	36
Heating capacity (kW)	30	44
Dimensions (mm)	2097 x 1962 x 432	2695 x 1962 x 432
Weight (kg)	240	300
Heat pump capacity (kW)	14	18



COOLER

Cooling of engines and other electrical components in the power train.



- > **SELF-CLEANING**
- > **BRUSHLESS MOTORS**
- > **CUSTOMIZABLE**
- > **J1939 CAN COMMUNICATION**
- > **INDEPENDENT CONTROL**



BTMS

Thermal conditioning of electric batteries
for opportunity charge and night charge.



- > **OPPORTUNITY CHARGE AND NIGHT CHARGE**
- > **PLUG AND PLAY**
- > **HEATING OPTIONAL**
- > **RELIABILITY**
- > **INDEPENDENT FROM THE HVAC UNIT**
- > **J1939 CAN COMMUNICATION**
- > **INDEPENDENT CONTROL**
- > **ADAPTABLE SOLUTIONS**

ACCESSORIES FOR ELECTRIC VEHICLES

BTMS range Thermion

BATTERY THERMAL MANAGEMENT SYSTEM FOR ELECTRIC VEHICLES



	BTMS EG2	BTMS PW2
Maximum cooling capacity	6 kW	9-12 kW
Outside temperature	45 °C	45 °C
Coolant outlet temperature	15 °C	15 - 35 °C
Coolant flow rate (*)	3600 l/h	1800-3600 l/h
Maximum heating capacity	6 kW	6 kW
Weight (max.) without loading coolant	148 kg	190 kg
Voltage (compressor/fan/heater)	400 V AC / 24 V DC / 600 V DC	400 V AC / 24 V DC / 600 V DC
Dimensions (L x W x H)	1060 x 675 x 463 mm	1060 x 755 x 463 mm

(*) According to the pressure drop of the hydraulic circuit.

The BTMS (Battery Thermal Management System) maintains the battery temperature within the optimal operating range, ensuring its efficiency and increasing its lifetime.

Hispacold has a wide range of plug and play BTMS equipment adapted to work in the most adverse conditions, that respond to the different battery requirements in different applications. In addition, Hispacold has an intelligent regulation system specially adapted to the specific control strategies of each type of BMS (Battery Management System).



	BTMS Gen 3	BTMS Gen 3.1
Maximum cooling capacity	7,5-10 kW	8-11 kW
Outside temperature	45 °C	45 °C
Coolant outlet temperature	15 - 35 °C	15 - 35 °C
Coolant flow rate (*)	1800-3600 l/h	1800-3000 l/h
Maximum heating capacity	8 kW	8 kW
Weight (max.) without loading coolant	75 kg	79 kg
Voltage (compressor/fan/heater)	400-800 V DC / 24 V DC / 400-800 V DC	400-800 V DC / 24 V DC / 400-800 V DC
Dimensions (L x W x H)	1110 x 755 x 394 mm	1120 x 1020 x 340 mm

(*) According to the pressure drop of the hydraulic circuit.



Ecomaster range

High range of automatic controls.

Regulate passengers and drivers comfort inside the vehicle.



- > FOR DIESEL, GAS AND HYBRID VEHICLES
- > DUAL ZONE CLIMATE CONTROL
- > ECO MODE FUNCTION TO SAVE FUEL AND ENERGY
- > AUTOMATIC OR MANUAL CONTROL AVAILABLE
- > 2 X CAN COMMUNICATION
- > SELF-DIAGNOSIS
- > USB INPUT FOR EASY SOFTWARE UPDATE AND DATA LOGGER FUNCTION

Temperature regulation needs

Ecomaster range

Air conditioning
for passengers



BASIC



BASIC DOUBLE DECKER

Heating
for the driver



BASIC DS



BASIC DHA

HVAC
for passengers



CLIMATE

HVAC
for driver



CLIMATE

Driver and
passengers comfort



COMFORT

Any other
climate settings



FUEL



ELECTRIC



TROLLEY



HYBRID



HYDROGEN

netiOs range

New range control panels.

Total HVAC control.



- > **FOR ALL VEHICLES**
SINGLE-DECKER, DOUBLE-DECKER, ARTICULATED, TROLLEY, DIESEL, GAS, HYBRID, ELECTRIC
- > **CUSTOMIZABLE INTERFACE ACCORDING TO CUSTOMER'S NEEDS AND BRAND IMAGE**
- > **HIGH FLEXIBILITY TO OFFER A SOLUTION FOR ANY CLIMATE CONTROL CONFIGURATION**
DUAL ZONE, SINGLE ZONE, ONLY HEATING OR COOLING, COMPLETE CLIMATE
- > **ECO MODE FUNCTION TO SAVE FUEL AND ENERGY**
- > **AUTOMATIC OR MANUAL CONTROL AVAILABLE**
- > **COMPATIBLE WITH MULTIPLEXED SYSTEMS**
- > **2 X CAN AND 1 X LIN COMMUNICATION**
- > **SELF-DIAGNOSIS AND UDS COMPATIBLE**
- > **USB INPUT FOR EASY SOFTWARE UPDATE AND DATA LOGGER FUNCTION**

Temperature regulation needs

netiOs range

Air conditioning for passengers



Heating for the driver



HVAC for passengers



HVAC for driver



Driver and passengers comfort



Any other climate settings



netiOs

Total HVAC control



COMPRESSORS

550 CC and 660 CC compressors

Increased power and performance in minimum space.



- > **HIGHLY RELIABLE AND EFFICIENT**
- > **ELECTROMAGNETIC CLUTCH
FOR HIGH-REQUIREMENT APPLICATIONS**
- > **DEVELOPED BY HISPACOLD**
- > **LOW NOISE AND VIBRATION LEVELS**
- > **LESS LUBRICANT**
- > **HIGHLY COMPACT**

COMPONENTS



eCo₃ air purifier

- > Eliminates bad odors.
- > Neutralizes bacteria, viruses, fungus, allergens and germs in general.
- > Increases the oxygen concentration to prevent the air from becoming contaminated.
- > Reduces feelings of tiredness for the driver.
- > Reduces feelings of motion sickness and nausea for passengers.
- > Acts on suspended particles.
- > Eliminates some chemical pollutants.
- > Compatible with vehicles that are already operating.



Heating station

- > Regulates the flows of heating water through the different circuits in the vehicle.
- > Easy assembly and maintenance.
- > Versatility: adaptable to any heating configuration with simple modifications.
- > Its geometry minimizes losses and optimizes heating flows.



Driver HVAC unit

- > High capacity with a reduced size.
- > Defogs the front windshield in a very short time.
- > Can reach the desired temperature in the driver's compartment.
- > Fresh air intake and filters to get excellent air quality
- > Windscreen-feet flaps to optimize air distribution.
- > Available with options for heating, heating + air conditioning, and manual or motorized water valve.

INTEGRATED SYSTEMS



Compressor, evaporator and condenser integrated in vehicle

- > Reduced weight.
- > Optimized cost.
- > No visual impact.
- > Takes no space on the roof.
- > Safe maintenance without live line

The legacy **of tomorrow**

*Strategic contribution to the
Sustainable Development Goals (SDGs)*

NEW HISPACOLD
FACILITIES

*Free Trade Zone port
SEVILLA SPAIN*

36,000 m²



Hispacold has developed technology of its own, becoming a reference worldwide actor in the passenger transportation air conditioning sector. Hispacold fully aligned with the United Nations 2030 Agenda and strategically contributes to the Sustainable Development Goals (SDGs).



**Integration of
key processes
in a single facility**



**New factory with
self-sufficient energy**



**Carbon-neutral
foot print**



**Use of natural
refrigerants (R290)**



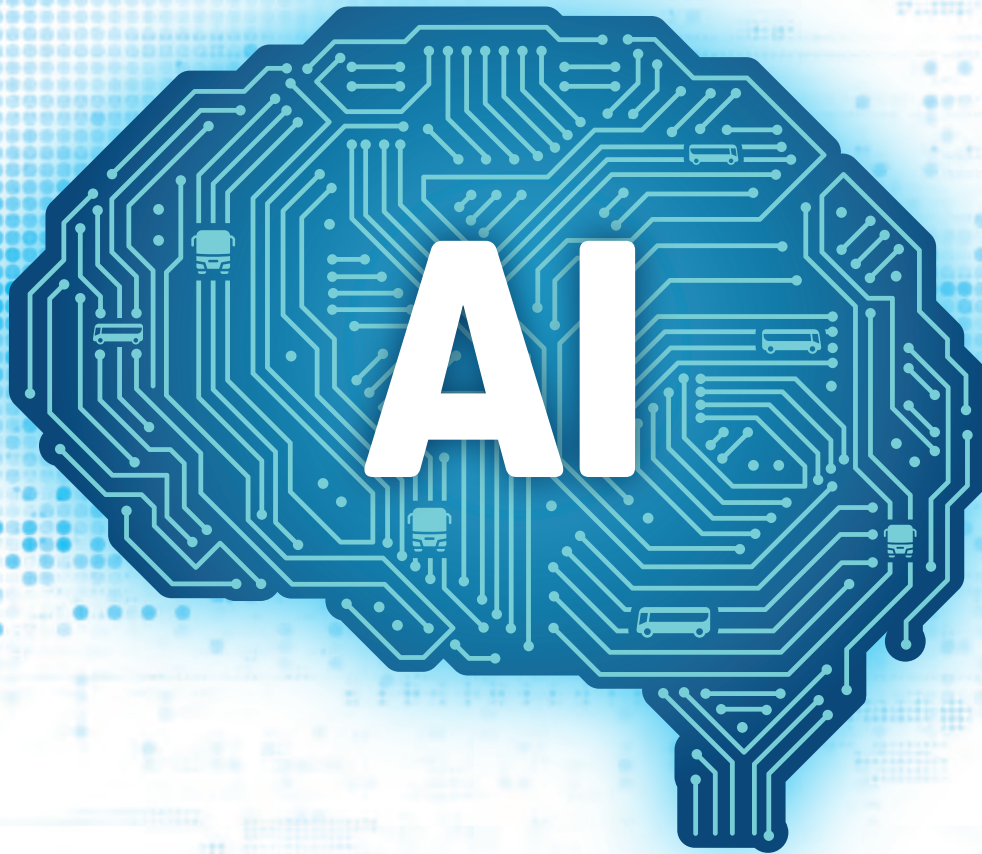
**Recyclable
materials**



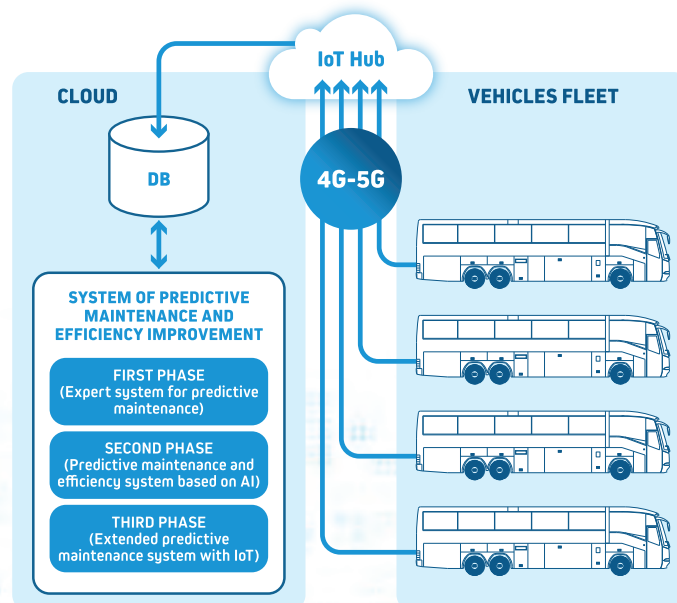
**Ultralight and
efficient systems**

Signum

the brain of maintenance



Hispacold has created a predictive maintenance and energy efficiency system based on **Artificial Intelligence**.





more info



hispacold.es