AERMEC

# HSI

**Reversible inverter Air/Water split heat pump for Heating, cooling and the production of domestic hot water**
**Heating Capacity from 5kW to 10kW**
**Cooling Capacity from 8kW to 14kW**

HFC Refrigerant R410A

EUROVENT CERTIFIED PERFORMANCE www.eurovent-certification.com

AERMEC participates in the EUROVENT program: LCP
The products concerned appear on the site www.eurovent-certification.com

Variable Multi Flow® VMF

INVERTER TECHNOLOGY

HSI_C

HSI_E

HBI_WT / WTS / WTT / WTST (Accessories)

## • PRODUCTION OF HOT WATER UP TO 60°C
## • PRODUCTION OF DOMESTIC HOT WATER WITH OUTSIDE TEMPERATURES FROM –20°C TO 45°C

## Features

**HSI is the new split inverter heat pump system**, **more efficient than normal boiler systems** as it guarantees heating, cooling and distribution of domestic hot water if combined with domestic hot water storage tanks (accessory), **efficiently and sustainably year-round.**
HSI has been designed to meet the needs of the new constructions market as well as the renovation market, **replacing or accompanying conventional boilers.**
The system can be installed in systems with any hydronic terminal, **and is already supplied with the main hydraulic components, thus facilitating final installation.**

**Operating limits**
Working at full load up to -20°C outside air temperature in winter, and up to 48°C in summer. Technical hot water production up to 60°C (for more information see the technical documentation)

**Versions**
**HSI_C with HSI_E Single phase split heat pump**
**HSI_CT with HSI_ET Three phase split heat pump**

**Special features of the system:**
**HSI_C outdoor unit:**
- Rotary Dual Stage Inverter Compressor, with vapour injection inside the compressor, which makes it possible to reach high temperatures of produced water and increase performance at partial loads, with minor electrical consumption.
- Axial Fan Inverters designed for aerodynamic optimisation, allowing a reduction of noise level and an increase in the air flow rate efficiency at the same time.
- Base electric resistor kit to prevent the formation of ice while the heat pump is in operation
- Electronic thermostatic valve.
- Length of cooling lines up to 30m, maximum difference in level between outdoor and indoor units 15m

**HSI_E Hydronic Module Indoor Unit:**
- High and low pressure transducers
- Integrated hydronic unit, which contains the main hydraulic components.
  - Inverter pump
  - Plate heat exchanger
  - Expansion tank
  - Safety valve
  - Flow switch
  - Pressure gauge
  - Water filter
  - Electric resistors
  - Room temperature probe provided
- **Adjustment**, The Remote-enabled Control Panel is integrated within the indoor unit and allows for the following:
  - Management of a 3-way valve (not provided)
  - Weekly programming with 5 time frames per day
  - Auto-Restart
  - Emergency function (in the event of a heating or domestic hot water mode malfunction, the electric resistors are activated)
  - Rapid domestic hot water heating function (Quick Hot Water)
  - Weather Dependent Mode function (Climatic Adjustment)
  - Quiet function for silent functionality, programmable with a timer
  - Condensation Control
  - **In order to save electricity, the electric resistor contained inside the indoor unit is not enabled, but can be activated from the control panel.**
  - When the anti-legionella function is set, the HSI unit heats the entire tank automatically once a week, up to a maximum temperature of 70°C, which kills the bacteria instantly.

## Accessories

- **HBI_WT (230V~50Hz)**
- **HBI_WTT (400V 3N~50Hz)**

Domestic hot WATER storage tank of 200, 300 litres with main coil and back-up 3kW electrical resistor
- Magnesium Sacrificial Anode
- Stainless steel tank and coil
- Painted sheet metal outer casing and insulation material, thickness 50mm
- Internal installation

- **HBI_WTS (230V~50Hz)**
- **HBI_WTST (400V 3N~50Hz)**

Domestic hot WATER storage tank of 200, 300 litres with main coil, supplementary coil and back-up 3kW electrical resistor
- Magnesium Sacrificial Anode
- Stainless steel tank and coil
- Painted sheet metal outer casing and insulation material, thickness 50mm
- Internal installation

## Compatibility of the domestic hot water storage tank with HSI

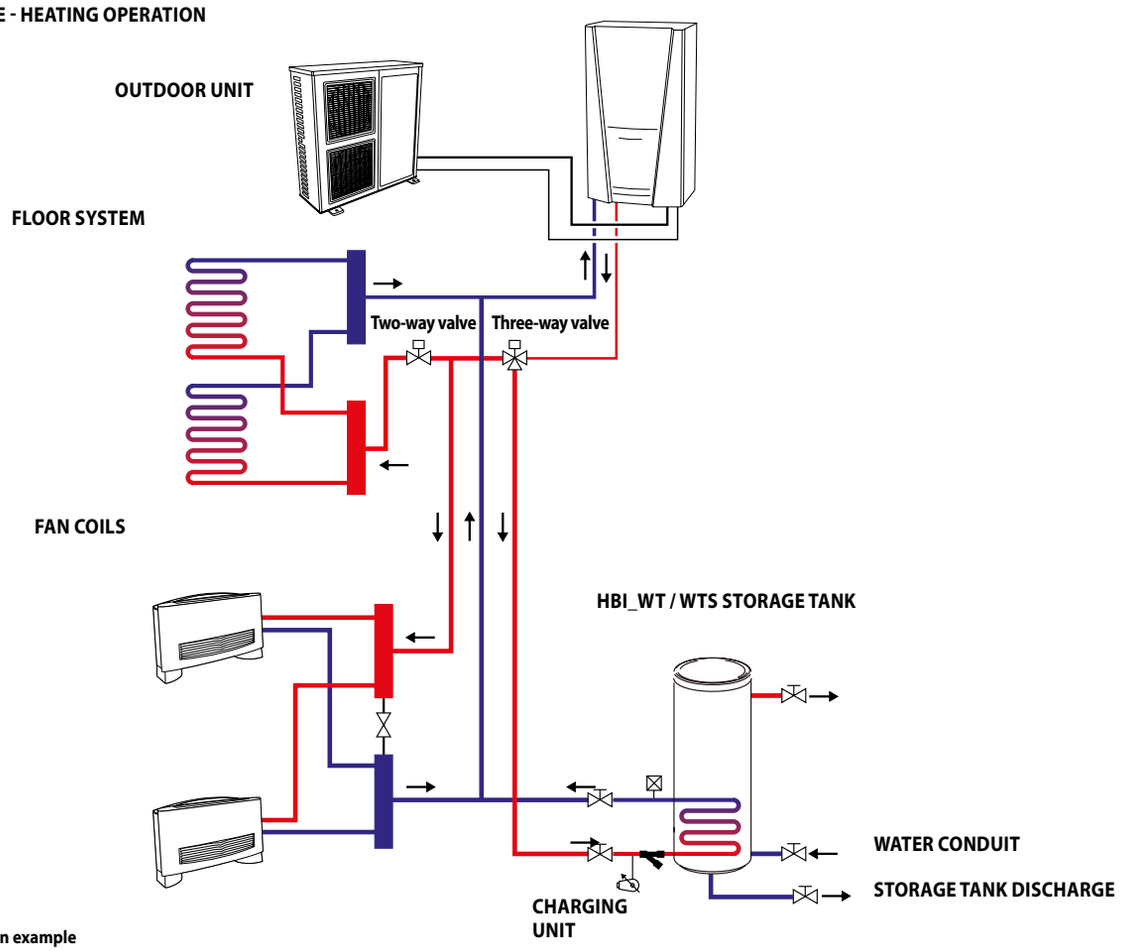
| | HSI080C | HSI100C | HSI120CT | HSI140CT |
|---|---|---|---|---|
| **MODEL 230V~50Hz** | **HSI080E** | **HSI100E** | **HSI120ET** | **HSI140ET** |
| HBI200WT/WTS | • | • | - | - |
| HBI300WT/WTS | • | • | - | - |
| | | | | |
| **MODEL 400V 3N~50Hz** | - | - | | |
| HBI200WTT/WTST | - | - | • | • |
| HBI300WTT/WTST | - | - | • | • |

## Domestic hot water storage tank technical data

| **HSI_C/CT** | | | **HBI200WT/WTT** | **HBI200WTS/WTST** | **HBI300WT/WTT** | **HBI300WTS/WTST** |
|---|---|---|---|---|---|---|
| **Electrical Data** | | | 230V~50Hz - 400V 3~50Hz | 230V~50Hz - 400V 3~50Hz | 230V~50Hz - 400V 3~50Hz | 230V~50Hz - 400V 3~50Hz |
| Capacity | | l | 200 | 200 | 300 | 300 |
| Min. temperature setting | * | °C | 40 | | | |
| Max. temperature setting | * | °C | 80 | | | |
| **Electric resistor** | | | | | | |
| Quantity | | no. | 1 | | | |
| Power | | kW | 3 | | | |
| Input Current | | A | 13 | | | |
| **Hydraulic connections** | | | | | | |
| Use (in/out) | | Type/Ø | G 1/2" (Female) | | | |
| Main coil | | Type/Ø | G 3/4" (Female) | | | |
| Supplementary coil (L) | | Type/Ø | / | G 3/4" (Female) | / | G 3/4" (Female) |
| **Supplementary coil technical data** | | | | | | |
| Length | | m | / | 10 | / | 10 |
| Ø x Thickness | | mm | / | 22 x 0,8 | / | 22 x 0,8 |

* With electric resistors without electric resistors 40 ÷ 50 °C

**SYSTEM EXAMPLE - HEATING OPERATION**




**The drawing is only an example**

## Technical data

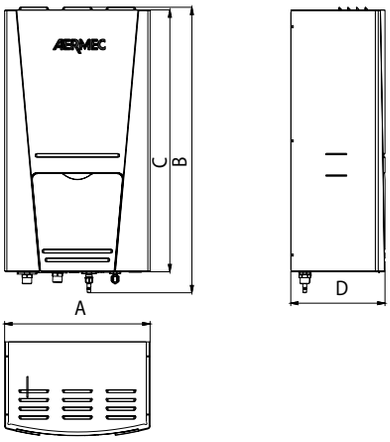
| HSI_C/CT | | | | 80C | 100C | 120CT | 140CT |
|---|---|---|---|---|---|---|---|
| HSI_E/ET | | | | 80E | 100E | 120ET | 140ET |
| | | | V/ph/Hz | 220~240V 50Hz | 220~240V 50Hz | 380-415V~3N 50Hz | 380-415V~3N 50Hz |
| 12°C/7°C | Cooling power | (1) | kW | 5,5 | 6.9 | 9,6 | 10,0 |
| | Absorbed power | (1) | kW | 1,85 | 2.34 | 3,02 | 3.22 |
| | HSI_E/ET max. power absorbed | (1) | kW | 6,2 | 6,2 | 6,2 | 6,2 |
| | EER | (1) | | 2,97 | 2,95 | 3,18 | 3.11 |
| | ESEER | (1) | | 3,20 | 3.10 | 3.40 | 3.40 |
| | Eurovent class - cold | (1) | | A | B | A | A |
| | Water flow rate | (1) | l/h | 946 | 1187 | 1651 | 1720 |
| | Useful head | (1) | kPa | 15 | 15 | 15 | 15 |
| 40°C/45°C | Thermal power | (2) | kW | 7.7 | 9.0 | 12,0 | 12.8 |
| | Absorbed power | (2) | kW | 2.26 | 2.65 | 3,24 | 3.56 |
| | COP | (2) | | 3.41 | 3.4 | 3,70 | 3.60 |
| | Eurovent class - hot | (2) | | A | A | A | A |
| | Water flow rate | (2) | l/h | 1324 | 1548 | 2064 | 2202 |
| | Useful head | (2) | kPa | | | | |
| 23°C/18°C | Cooling power | (3) | kW | 8.2 | 9,7 | 13,5 | 14,0 |
| | Absorbed power | (3) | kW | 1,86 | 2,46 | 3.46 | 3.68 |
| | EER | (3) | | 4.41 | 3,94 | 3.90 | 3,80 |
| | Water flow rate | (3) | l/h | 1410 | 1668 | 2322 | 2408 |
| | Useful head | (3) | kPa | 15 | 15 | 15 | 15 |
| 30°C/35°C | Thermal power | (4) | kW | 8,0 | 9,2 | 12,0 | 14,0 |
| | Absorbed power | (4) | kW | 1,85 | 2.19 | 2,67 | 3,33 |
| | COP | (4) | | 4.32 | 4,20 | 4.49 | 4,20 |
| | Water flow rate | (4) | l/h | 1376 | 1582 | 2064 | 2408 |
| | Useful head | (4) | kPa | 15 | 15 | 15 | 15 |
| | **Performance in average climate conditions** | | | | | | |
| | Pdesignh | (5) | | 6,20 | 6,50 | 8,40 | 9,20 |
| | SCOP | (5) | | 4,07 | 3,99 | 4,15 | 4,09 |
| | ηs | (5) | | 160 | 157 | 163 | 161 |
| | Efficiency Energy Class | (7) | | A++ | A++ | A++ | A++ |
| | Pdesignh | (6) | | 5,60 | 5,60 | 10,00 | 11,00 |
| | SCOP | (6) | | 3,15 | 3,15 | 3,42 | 3,40 |
| | ηs | (6) | | 126 | 126 | 138 | 138 |
| | Efficiency Energy Class | (7) | | A++ | A++ | A++ | A++ |

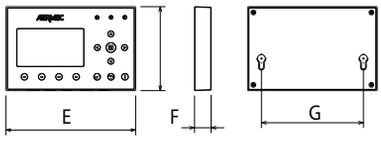
**Data (14511:2013)**
(1) Water evaporator 12°C/7°C, Outside air 35°C
(2) Water condenser 40°C/45°C, Outside air 7°C d.b./6°C w.b.
(3) Water evaporator 23°C/18°C, Outside air 35°C
(4) Water condenser 30°C/35°C, Outside air 7°C d.b./6°C w.b.
(5) Efficiency in applications for low temperatures (35°C)
(6) Efficiency in applications for average temperatures (55°C)
(7) Energy efficiency class in accordance with regulation no.811/2013 Pdesignh ≤ 70kW

| HSI_C/CT | | 80C | 100C | 120CT | 140CT |
|---|---|---|---|---|---|
| HSI_E/ET | | 80E | 100E | 120ET | 140ET |
| **Electrical Data** | | 220~240V 50Hz | 220~240V 50Hz | 380-415V~3N 50Hz | 380-415V~3N 50Hz |
| Total current absorbed when cold | A | 13,8 | 13,8 | 6.9 | 6.9 |
| Total current absorbed when hot | A | 16,4 | 16,4 | 8.2 | 8.2 |
| **HSI_C / CT outdoor unit** | | | | | |
| **Rotary Two Stage Inverter Compressor** | | | | | |
| Compressors | no. | 1 | | | |
| Circuit | no. | 1 | | | |
| Coolant gas | Type | R410A | | | |
| **Chiller Connections** | | | | | |
| Gas line | mm(inch) | 15,9(5/8") | | | |
| Liquid Line | mm(inch) | 9,52(3/8") | | | |
| **Axial Fans Inverter** | | | | | |
| Fans | no. | 1 | 1 | 2 | 2 |
| Air flow rate, cooling | | 3511 | 3511 | 2917 | 7500 |
| **Sound Data** | | | | | |
| sound power level | dB(A) | 67 | 67 | 70 | 70 |
| Sound pressure level | dB(A) | 53 | 53 | 57 | 57 |
| **HSI_E / ET Indoor Unit** | | | | | |
| **System side heat exchanger - Plates** | | | | | |
| Quantity | no. | 1 | | | |
| **Circulator** | | | | | |
| Quantity | no. | 1 | | | |
| Input Power | kW | 105 | | | |
| **Expansion tank** | | | | | |
| Quantity | no. | 1 | | | |
| Capacity | l | 10 | | | |
| Max pressure | bar | 3 | | | |
| **Electric resistor** | | | | | |
| Quantity | no. | 1 | | | |
| Power | kW | 6 | | | |
| Stages | no. (kW) | 2 (3+3) | 2 (3+3) | 1 (6) | 1 (6) |
| **Connections** | | | | | |
| **Chiller Connections** | | | | | |
| Gas line | mm(inch) | 15,9(5/8") | | | |
| Liquid Line | mm(inch) | 9,52(3/8") | | | |
| **Hydraulic connections** | | | | | |
| In | inch(type) | G1 (Male) | | | |
| Out | inch(type) | G1 (Male) | | | |

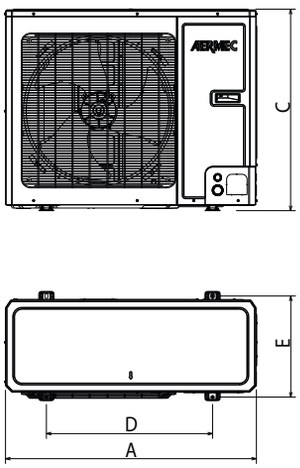
**Sound power (Cold operation)** Aermec determines the sound power value based on measures in accordance with standard UNI EN ISO 9614-2, in compliance with that set forth by the Eurovent certification.
**Sound pressure (Cold operation)** Sound pressure measured in a free field, 10 m from the external surface of the unit (according to the UNI EN ISO 3744).
**N.B.: For further information, please refer to the selection programme or the technical documentation available at www.aermec.com**

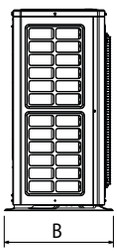
## Size data



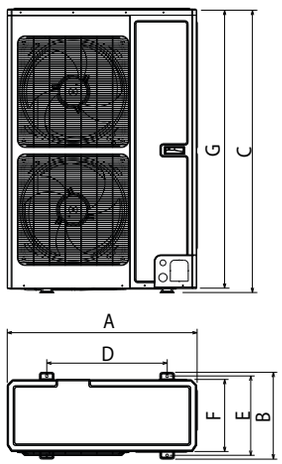




| | | HSI80E | HSI100E | HSI120ET | HSI140ET |
|---|---|---|---|---|---|
| A | mm | 500 | | | |
| B | mm | 981 | | | |
| C | mm | 900 | | | |
| D | mm | 324 | | | |
| E | mm | 164,4 | | | |
| F | mm | 21 | | | |
| G | mm | 129,4 | | | |
| Net weight | kg | 56 | 56 | 58 | 58 |

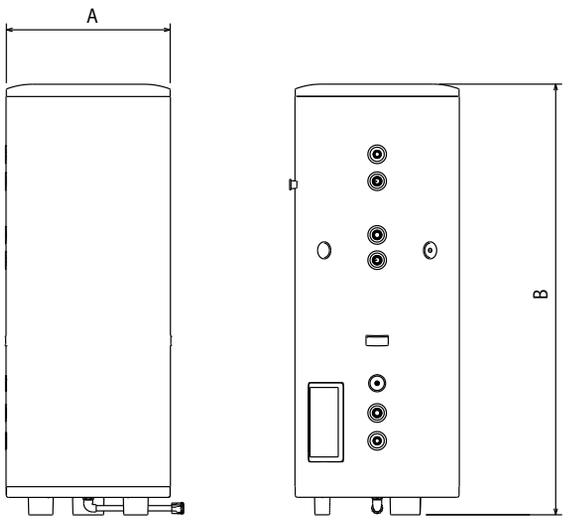



| | | HSI080C | HSI100C |
|---|---|---|---|
| A | mm | 980 | 980 |
| B | mm | 427 | 427 |
| C | mm | 788 | 788 |
| D | mm | 650 | 650 |
| E | mm | 395 | 395 |
| Net weight | kg | 85 | 85 |




| | | HSI120CT | HSI140CT |
|---|---|---|---|
| A | mm | 900 | 900 |
| B | mm | 412 | 412 |
| C | mm | 1345 | 1345 |
| D | mm | 572 | 572 |
| E | mm | 378 | 378 |
| F | mm | 340 | 340 |
| G | mm | 1326 | 1326 |
| Net weight | kg | 126 | 126 |




| | | HBI200WT | HBI200WTS | HBI300WT | HBI300WTS | HBI200WTT | HBI200WTST | HBI300WTT | HBI300WTST |
|---|---|---|---|---|---|---|---|---|---|
| A | mm | 540 | 540 | 620 | 620 | 540 | 540 | 620 | 620 |
| B | mm | 1595 | 1595 | 1620 | 1620 | 1595 | 1595 | 1620 | 1620 |
| Net weight | kg | 68 | 71 | 82 | 87 | 68 | 71 | 82 | 87 |

Code: SHSIUY.02 / 1709

Aermec reserves the right to make all modification deemed necessary for improving the product at any time with any modification of technical data.

**Aermec S.p.A.**
Via Roma, 996 - 37040 Bevilacqua (VR) - Italia
Tel. 0442633111 - Telefax 044293577
www.aermec.com