

Heat Pump Datasheet

| | |
|----------------|--------------|
| Model: | EMF-2140-2-8 |
| Refrigerants: | R290 |
| Certification: | CE |
| Safety class: | A3 |

The Energy Machines™ EMF model combines efficiency, capacity modulation, and flexible installation options.

It features two independent refrigerant circuits that use natural refrigerants together with scroll compressors and frequency inverters, delivering excellent part-load performance and dependable capacity.

The EMF model is specifically designed for heating and cooling applications. Each circuit carries a refrigerant charge below 5 kg, enabling more versatile installation possibilities. With integrated controls for circulation pumps and control valves, the EMF delivers a complete heat pump and cooling solution in a single unit.



Characteristics

| Model characteristics | |
|-----------------------|------------------------------|
| Energy source | Ground, water, or waste heat |
| Compressor type | Scroll |
| Capacity control | Frequency controlled |
| Features | High capacity control range |

Performance

| Heating mode | | Cooling mode | |
|------------------------------|-------------|------------------------------|-------------|
| Heating capacity (30-140 Hz) | 11 - 107 kW | Heating capacity (30-140 Hz) | 17 - 156 kW |
| Cooling capacity (30-140 Hz) | 8 - 71 kW | Cooling capacity (30-140 Hz) | 14 - 124 kW |
| COP (60 Hz) | 2.93 | COP (60 Hz) | 4.42 |
| COP (140 Hz) | 2.68 | COP (140 Hz) | 3.38 |

COP = Coefficient of performance

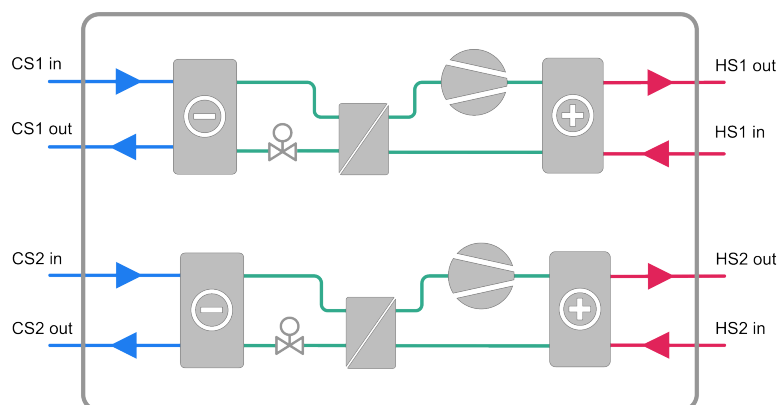
Design temperatures

| Heating mode | | Cooling mode | |
|------------------------|-------------|------------------------|-------------|
| Heated fluid (in/out) | 47°C / 53°C | Heated fluid (in/out) | 37°C / 43°C |
| Chilled fluid (in/out) | 1°C / -3°C | Chilled fluid (in/out) | 15°C / 10°C |

Chilled fluid = ethanol 26%, Heated fluid = water.

Flow and pressure drop

| Heating mode | | | Cooling mode | | |
|------------------------|---------------|---------------|------------------------|---------------|---------------|
| | Heated fluid | Chilled fluid | | Heated fluid | Chilled fluid |
| Flow (30-140 Hz) | 0.5 - 4.2 l/s | 0.5 - 4.1 l/s | Flow (30-140 Hz) | 0.7 - 6.2 l/s | 0.7 - 5.7 l/s |
| Pressure drop (140 Hz) | 32 kPa | 17 kPa | Pressure drop (140 Hz) | 67 kPa | 29 kPa |

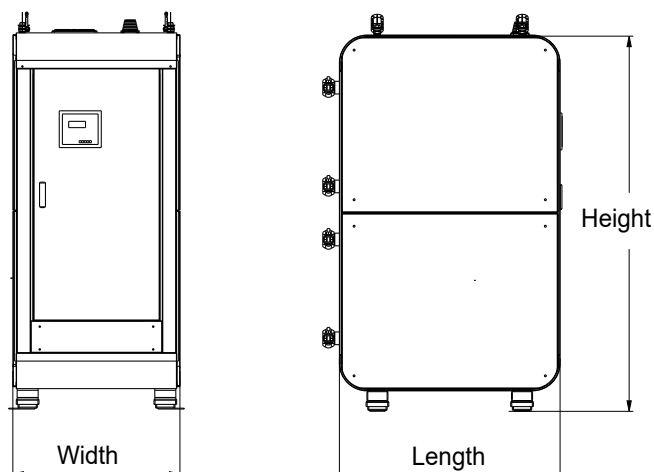


Specifications

| Refrigerant | |
|----------------------|-------|
| Type | R290 |
| GWP | 0.02 |
| Charge, C1 + C2 (kg) | 3 + 3 |

| Ventilated enclosure | |
|---|----|
| Minimum airflow [Q _{min}] (l/s) | 28 |
| Pressure difference (Pa) shall be ≥ | 20 |

Note: The ventilation fan is not provided. The pressure difference refers to the difference between the inside and outside of the ventilated enclosure.



| Electricity | |
|-----------------------------|-----|
| Power supply voltage (VAC) | 400 |
| Power supply frequency (Hz) | 50 |
| Power supply phase (ϕ) | 3 |
| Rated power input (kW) | 44 |
| Rated current (A) | 70 |
| Fuse (A) | 80 |

| Dimensions* | |
|--|------|
| Length (mm) | 1050 |
| Width (mm) | 795 |
| Height (mm) | 1743 |
| Dry weight (kg) | 550 |
| Commissioned weight (kg) | 650 |
| *See dimensional drawings for clearance requirements | |

Energy Machines has a policy of continuous product and data improvement and reserves the right to change design and specifications without notice. While Energy Machines strives for accuracy, we do not guarantee the completeness or correctness of the information.



Energy Machines ApS Denmark Nicolai Eigtveds Gade 26, 1402 Copenhagen | Niels Jernes Vej 14, 9220 Aalborg Ø
Energy Machines Oy Finland Emäsalontie 271, 06950 Emäsalo Energy Machines Inc. USA 110 East 25th Street, New York, NY 10010
Energy Machines AB Sweden Norra Skeppsbron 15, 803 10 Gävle | Regnbågsgatan 3, 417 55 Gothenburg
Mariehällsvägen 37 F, 168 65 Bromma | Hyllie Boulevard 34, 21532 Malmö
hello@energymachines.com | energymachines.com