

MECH-iS-G07 0051 – 0112

AIR SOURCED CHILLER



For outdoor installation
Cooling Capacity: 50 – 110kW

Outdoor unit for the production of chilled water with variable speed scroll compressors, optimised for R32 in a single-circuit configuration, micro-channel full-aluminium condenser coils, braze welded plate heat exchanger, axial-flow variable speed fans (inverter driven) with BLDC motor and electronic expansion valve as standard.

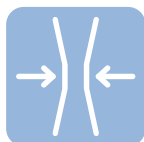
Flexible and reliable, the MECH-iS-G07 easily adapts to different thermal load conditions due to precise temperature control together with the use of inverter technology. High performance levels, both at full and partial loads, are achieved thanks to the unit's accurate design and the use of a fixed speed motor together with a variable speed (inverter) motor.

Low Noise Operation



Narrow Footprint

only 1.1m wide across the range



High Efficiency Performance



MITSUBISHI ELECTRIC HYDRONICS & IT COOLING SYSTEMS

AIR SOURCED CHILLER

Key Features

High Efficiency Inverter Compressors

The MECH-iS-G07 utilises Mitsubishi Electric Inverter Scroll Compressors to deliver high part load efficiency and low compressor turndown. Larger units use an inverter compressor arrangement in tandem with one fixed speed compressor to achieve higher capacities.

EC Condenser Fans

Supplied as standard, Mitsubishi Electric EC Fans further enhance the operating efficiency providing superior part load performance.

R32 Refrigerant

Low global warming potential (GWP) R32 refrigerant is zero ozone depleting and has a GWP 66% less than R410A – all while offering benefits of higher efficiency and a lower refrigerant charge.

Plate Heat Exchanger

Braze welded AISI 316 plate heat exchanger is insulated with 9mm thick closed cell neoprene insulation with a thermal conductivity of 0.33W/mK at 0°C.

Microchannel Air Source Coil

An aluminium microchannel on a longitudinal v-shaped structure optimises airflow and heat transfer. Made entirely in aluminium, the coils are not subjected to galvanic corrosion. Fins and manifolds are made of aluminium AA3003, while the channels are made of Long Life Alloy (LLA).

Electronic Expansion Valve

The use of the electronic expansion valve improves variable demand performance and guarantees energy savings due to efficiency optimisation in various different working conditions. This translates into a reduction in operating consumption, a faster start-up of the unit and a wider extension of the operating limits.

Wide Operating Range

Capable of delivering chilled water as low as -12°C and up to 24°C the MECH-iS-G07 range is a versatile solution suitable for a variety of temperature applications including process, hotels, offices, hospitals and data centre facilities.

Low Noise Operation

Operating from just 77dBA*1 (SWL), the MECH-iS-G07 range comes standard with an inverter driven Mitsubishi Electric Compressor in an acoustic enclosure and whisper quiet EC fans to deliver low noise performance.

Group Controls with Dynamic Master

Load sharing, sequencing, active redundancy, priority of resource activation and alarm management are only some of the LAN functions that the unit is able to manage when connected to a group of chillers. Dynamic Master logic ensures system stability even in case of alarm or malfunction.

*1 Size 0051

*2 MECH-iS-G07 /0051 EN14511.

*3 MECH-iS-G07 /0102. Regulation (EU) N.2281/2016.

Specifications



MECH-iS-G07

| | | 0051 | 0061 | 0071 | 0082 | 0092 | 0102 | 0112 |
|---|---------|----------|----------|----------|----------|----------|----------|----------|
| Power supply | V/ph/Hz | 400/3/50 | 400/3/50 | 400/3/50 | 400/3/50 | 400/3/50 | 400/3/50 | 400/3/50 |
| PERFORMANCE | | | | | | | | |
| COOLING ONLY (EN14511 VALUE) | | | | | | | | |
| Cooling capacity (1) (4) | kW | 50 | 60 | 70 | 80 | 90 | 100 | 110 |
| EER (1) (4) | kW/kW | 3.28 | 3.11 | 2.58 | 3.02 | 2.74 | 3.15 | 2.87 |
| COOLING ONLY (GROSS VALUE) | | | | | | | | |
| 16°C/10°C | | | | | | | | |
| Cooling capacity (2) | kW | 54.69 | 65.32 | 75.82 | 87.6 | 98.2 | 109.4 | 120.1 |
| EER (2) | kW/kW | 3.52 | 3.33 | 2.73 | 3.26 | 2.94 | 3.40 | 3.10 |
| 23°C/15°C | | | | | | | | |
| Cooling capacity (3) | kW | 62.37 | 73.93 | 85 | 100.1 | 111.5 | 124.7 | 136.4 |
| EER (3) | kW/kW | 3.92 | 3.64 | 2.94 | 3.64 | 3.23 | 3.80 | 3.42 |
| ENERGY EFFICIENCY | | | | | | | | |
| SEASONAL EFFICIENCY IN COOLING (REG. EU 2016/2281) | | | | | | | | |
| Ambient refrigeration | | | | | | | | |
| Prated, c (9) | kW | 50 | 60 | 70 | 80 | 90 | 100 | 110 |
| SEER (9) (10) | | 5.29 | 5.28 | 4.98 | 5.15 | 5.12 | 5.32 | 5.29 |
| Performance ηs (9) (11) | % | 209 | 208 | 196 | 203 | 202 | 210 | 209 |
| SEPR HT (12) | | 6.29 | 5.96 | 5.18 | 6.27 | 6.04 | 5.98 | 5.89 |
| EXCHANGERS | | | | | | | | |
| HEAT EXCHANGER USER SIDE IN COOLING | | | | | | | | |
| Water flow (1) | L/s | 2.39 | 2.87 | 3.35 | 3.83 | 4.31 | 4.79 | 5.27 |
| Pressure drop at the heat exchanger (1) (4) | kPa | 15.6 | 22.5 | 30.6 | 23.6 | 29.9 | 28.3 | 34.2 |
| REFRIGERANT CIRCUIT | | | | | | | | |
| Compressors nr. | No. | 1 | 1 | 1 | 2 | 2 | 2 | 2 |
| No. Circuits | No. | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Refrigerant charge | kg | 8 | 8 | 8 | 11 | 11 | 13 | 13 |
| NOISE LEVEL | | | | | | | | |
| Total sound Pressure (5) | dB(A) | 45 | 46 | 48 | 48 | 49 | 50 | 50 |
| Total sound power level in cooling (6) (7) | dB(A) | 77 | 78 | 80 | 80 | 81 | 82 | 82 |
| SIZE AND WEIGHT | | | | | | | | |
| A (8) | mm | 2085 | 2085 | 2085 | 2600 | 2600 | 3225 | 3225 |
| B (8) | mm | 1100 | 1100 | 1100 | 1100 | 1100 | 1100 | 1100 |
| H (8) | mm | 2400 | 2400 | 2400 | 2400 | 2400 | 2400 | 2400 |
| Operating weight (8) | kg | 630 | 630 | 630 | 830 | 830 | 940 | 940 |

- (1) Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
 (2) Plant (side) cooling exchanger water (in/out) 16°C/10°C; Source (side) heat exchanger air (in) 35°C.
 (3) Plant (side) cooling exchanger water (in/out) 23°C/15°C; Source (side) heat exchanger air (in) 35°C.
 (4) Values in compliance with EN14511.

- (5) Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
 (6) Sound power on the basis of measurements taken in compliance with ISO9614.
 (7) Sound power level in cooling, outdoors.
 (8) Unit in standard configuration, without optional accessories.
 (9) Parameter calculated according to [REGULATION (EU) N. 2016/2281].

- (10) Seasonal energy efficiency ratio.
 (11) Seasonal space cooling energy efficiency.
 (12) Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281].
 Data highlighted in green are Eurovent Certified.

Optional Extras

- Condenser coil corrosion protection coatings
- Copper aluminium condenser coil
- Integrated hydronic group – pumps and tanks
- Lights and power socket
- Compressor suction and discharge valves
- BMS Interface – such as Bacnet and ModBus
- Partial heat recovery – desuperheater
- Night Mode
- Energy Monitoring
- Soft start (for fixed speed compressors)
- User interface versions including KIPLink
- Multi-unit manager onboard
- Refrigerant leak detection
- ...for more options refer to Databook

For more information please visit our website or call our Applied Products Sales Team.
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