

MECH-iF-G05 0411 - 0902

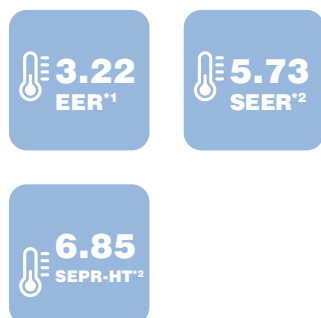
INVERTER AIR SOURCED CHILLER



For outdoor installation
Cooling Capacity: 407 – 921kW

An outdoor unit designed for the production of chilled water, with variable-speed single screw compressors optimised for R513A - EC fans, micro-channel full-aluminium condensing coils, shell and tube evaporator, and an expansion valve with an economiser designed by Mitsubishi Electric Hydronics & IT Cooling Systems. The accurate sizing of all internal components and the use of variable speed technology ensures unit flexibility, reliability and maximum efficiency in every operating condition.

High Efficiency Performance



*1 MECH-iF-G05 0802, EN14511 value.

*2 MECH-iF-G05 0902, regulation (EU) N.2016/ 2281.

**MITSUBISHI ELECTRIC
HYDRONICS & IT COOLING SYSTEMS**

INVERTER AIR SOURCED CHILLER

Key Features

Inverter-Screw Compressors

Features Mitsubishi Electric designed variable-speed single screw compressors. These extremely compact units integrate an oil separator and feature variable speed technology, with an external air-cooled inverter for maximum efficiency.

Low GWP Refrigerant

New generation refrigerant R513A offers a reduced greenhouse effect compared to traditional HFC refrigerants (GWP of R513A = 572, GWP of R134a = 1300 as per IPCC Rev. 5), with zero impact on the ozone layer.

Shell and Tube Heat Exchanger

The high efficiency shell and tube heat exchanger acts as an evaporator, with refrigerant flowing inside the pipes and water flowing outside on the shell side. The heat exchanger is a single-pass type, providing nearly perfect counterflow heat exchange.

Aluminium Micro-Channel Heat Exchanger with Reduced Energy Depletion Cooler

Microchannel coils are positioned in a "V" block structure to optimise airflow and heat transfer. The unit comes with internally developed RED (Reduced Exergy Depletion) Cooler Technology, a patented solution that improves unit efficiency and reduces exergy loss in the expansion phase. The refrigerant is subcooled in dedicated coils, where it is cooled to a temperature very close to the outside air, making the most of the subcooling energy.

Wide Operating Range

Full load operation is guaranteed up to 48°C outdoor air temperature during the summer season and down to -20°C outdoor air temperature during the winter season with dedicated accessories. The unit is capable of producing chilled water with evaporator output temperatures ranging from -10°C to 18°C.

Unit with Partial Heat Recovery (-D Configuration as an option)

Each refrigerant circuit includes a desuperheater, enabling partial recovery of superheat energy. Approximately 20% of the total cooling capacity can be reclaimed as usable heat, that can be used for domestic hot water production or other secondary uses, such as the integration of an existing boiler system.

Capacity Range

VERSION		COOLING CAPACITY
	STANDARD EFFICIENCY	414 – 921kW
NR	LOW NOISE	411 – 913kW
SL	SUPER LOW NOISE	407 – 904kW

Performance data overleaf.

Specifications



MECH-IF-G05/G05-NR/G05-SL

		MECH-IF-G05			MECH-IF-G05-NR			MECH-IF-G05-SL		
		0411	0802	0902	0411	0802	0902	0411	0802	0902
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	400/3/50	400/3/50
PERFORMANCE										
COOLING ONLY (GROSS VALUE)										
Cooling capacity (1)	kW	414.40	814.70	921.10	411.00	807.00	913.00	407.10	799.60	903.70
Total power input (1)	kW	133.70	249.60	289.60	134.50	251.00	291.10	135.60	252.80	293.10
EER (1)	kW/kW	3.10	3.26	3.18	3.06	3.22	3.14	3.00	3.16	3.08
COOLING ONLY (EN14511 VALUE)										
Cooling capacity (1) (2)	kW	413.90	814.10	920.40	410.60	806.30	912.40	406.60	799.00	903.10
EER (1) (2)	kW/kW	3.06	3.22	3.15	3.01	3.17	3.10	2.96	3.12	3.05
ENERGY EFFICIENCY										
SEASONAL EFFICIENCY IN COOLING (REG. EU 2016/2281)										
Ambient refrigeration										
Prated, c (7)	kW	413.90	814.10	920.40	410.60	806.30	912.40	406.60	799.00	903.10
SEER (7) (8)		5.34	5.62	5.73	5.33	5.61	5.73	5.32	5.62	5.73
Performance ηs (7) (9)	%	210.00	222.00	226.00	210.00	222.00	226.00	210.00	222.00	226.00
SEPR HT (10)		6.36	6.72	6.85	6.35	6.70	6.83	6.34	6.70	6.82
EXCHANGERS										
HEAT EXCHANGER USER SIDE IN COOLING										
Water flow (1)	L/s	19.82	38.96	44.05	19.66	38.59	43.66	19.47	38.24	43.22
Pressure drop at the heat exchanger (1) (2)	kPa	54.10	50.90	40.70	53.30	50.00	40.10	52.50	49.30	39.40
REFRIGERANT CIRCUIT										
Compressors nr.	No.	1	2	2	1	2	2	1	2	2
No. Circuits	No.	1	2	2	1	2	2	1	2	2
Theoretical refrigerant charge	kg	89	170	199	89	170	199	89	170	199
NOISE LEVEL										
Total sound Pressure (3)	dB(A)	64	65	70	61	62	68	57	58	64
Total sound power level in cooling (4) (5)	dB(A)	96	98	103	93	95	101	89	91	97
SIZE AND WEIGHT										
A - Length (6)	mm	4,150	7,900	9,150	4,150	7,900	9,150	4,150	7,900	9,150
B - Width (6)	mm	2,260	2,260	2,260	2,260	2,260	2,260	2,260	2,260	2,260
H - Height (6)	mm	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500
Operating weight (6)	kg	4,350	8,150	8,610	4,350	8,150	8,610	4,410	8,240	8,700

- (1) Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
 (2) Values in compliance with EN14511.
 (3) 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.
 (4) Sound power on the basis of measurements taken in compliance with ISO 9614.

- (5) Sound power level in cooling, outdoors.
 (6) Unit in standard configuration, without optional accessories.
 (7) Parameter calculated according to [REGULATION (EU) N. 2016/2281].
 (8) Seasonal energy efficiency ratio.
 (9) Seasonal space cooling energy efficiency.

- (10) Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281].
 (11) The units highlighted in this publication contain [GWP100 631] fluorinated greenhouse gases.

Data highlighted in green are Eurovent Certified.

Optional Extras

- User Interface Versions including KIPLINK
- Automatic Circuit Breakers
- Double Power Supply (ATS)
- Noise Reducer
- Cu/Al Coils, also available with Pre-Painted fins, or Blygold treatment
- Fast Restart
- BMS Interface – Bacnet, ModBus etc
- Microchannel Coils with E-Coating
- Anti-intrusion Grills
- Hydronic Group
- Hydraulic Decoupler Probe
- Compressor Suction Valve
- Variable Pump Flow Control
- Thermal Energy Meter
- Night Mode
- Refrigerant Leak Detector
- HPC (Hydronic Plant Optimisation)
- Oversized EC Fans
- Multi Manager

For more information please visit our website or call our Applied Products Sales Team.
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PUBLISHED SEP 2026

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