

Air/water monobloc heat pumps with R32 gas, hot/cold reversible

Datasheet
1032EN  12/2020

Heat pumps are high-efficiency domestic heating and cooling systems.

They exploit the cooling cycle technology to "pump" the heat from the outside to the inside (heating) or, in reversible mode, to transfer heat from the inside to the outside (cooling) with reduced power consumptions.

Heat pumps can be used both in winter and summer to create global air conditioning systems working on a single energy source: electricity. Heat pumps have been officially acknowledged as a major renewable source thanks to the unlimited natural energy offered by air.

The new HPM monobloc heat pumps with R32 cooling gas are characterized by an outstanding energy performance of low impact, with characteristics that anticipate the European regulation requirements.

The goal of environment-protection policies is to cut down greenhouse gas emissions by 80-95 % compared to 1990 by 2050 and to limit the global temperature rise of 2 °C to prevent undesired effects on climate.

To such end, the 517/2014 European Regulation provides for a reduction of greenhouse gas emissions which will progressively lead to forbid in 2025 the use of gases with global warming potential (GWP*) exceeding 750 in cooling-gas devices under 3 kg. When considering cooling gases currently available on the market, the R32 gas already meets the European provisions that will be enforced in 2025.

As R410A, the R32 gas features an ODP (Ozone Depletion Potential) equal to zero, which means that it doesn't affect the ozone layer when released in the atmosphere.

However, it also features a GWP index much lower (675) than R410A (2088), which means it has a lower impact on the environment.

Heat pumps working on R32 gas require less cooling fluid while providing higher efficiency.

The R32 gas is also characterized by low levels of toxicity and flammability, so in case of accidental leaks in a domestic installation it would never present a concentration able to spark the gas and burst.

* The Global Warming Potential (GWP) indicates how much a substance contributes to the global greenhouse effect and compares the impact of 1 kg of gas to 1 kg of CO₂ in 100 years.

➤ Versions and product codes

PRODUCT CODE	ELECTRIC POWER V / Ph / Hz	NOMINAL CALORIFIC POWER (A7W35) [kW]	COP*	NOMINAL COOLING POWER (A35W18) [kW]	EER*
HPMY204	230 V / 1 / 50 Hz	4,55	4,78	5,51	5,02
HPMY206	230 V / 1 / 50 Hz	6,08	4,51	6,18	4,82
HPMY208	230 V / 1 / 50 Hz	7,81	4,38	7,72	4,38
HPMY210	230 V / 1 / 50 Hz	10,1	4,43	9,5	4,41
HPMY212	230 V / 1 / 50 Hz	11,8	4,32	11,6	4,16
HPMY214	230 V / 1 / 50 Hz	14,1	4,85	14	5,4
HPMX214	400 V / 3 / 50 Hz	14,1	4,85	14	5,4
HPMY216	230 V / 1 / 50 Hz	16,3	4,67	15,8	5,02
HPMX216	400 V / 3 / 50 Hz	16,3	4,67	15,8	5,02
HPMX218	400 V / 3 / 50 Hz	17,9	4,40	17,10	4,76

* The nominal heating (COP) and cooling (EER) performances are determined according to the UNI EN 14511 Standard.

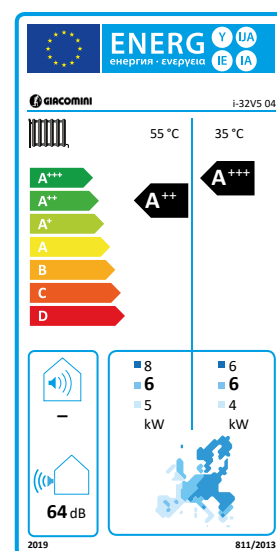
Optionals

- HPTY001 (HP-T series): additional temperature probe for domestic hot water production
- HPVY001 (HP-V series): rubber anti-vibration supports for installation between the floor and the heat pump to prevent transmission of vibrations to the building structure and undesired noise
- HPRCY001 (HP-RC series): multifunction touch-screen remote control to control multiple heat pumps of both in-series and partial-load systems
- HPRCY002 (HP-RC series): wall-mount remote control

🔗 **NOTE.** For more details on sales terms and conditions, contact our Sales Managers.

➤ Energy efficiency ErP

PRODUCT CODE	HEATING ENERGY EFFICIENCY CLASS	
	55 °C	35 °C
HPMY204	A++	A+++
HPMY206	A++	A+++
HPMY208	A++	A+++
HPMY210	A++	A+++
HPMY212	A++	A+++
HPMY214	A++	A+++
HPMX214	A++	A+++
HPMY216	A++	A+++
HPMX216	A++	A+++
HPMX218	A++	A+++



➤ Main features

- R32 high-efficiency cooling gas with low environmental impact
- The perfect match for radiant and combined systems (heating/cooling)
- They autonomously control the main operational logics (heating, cooling, domestic hot water production) based on well-defined priorities, and according to the actual weather conditions, to provide top efficiency and money saving
- Possibility to control mixing valves, diverters, secondary circuit circulators and integrate external heat sources
- Optional "modular" installation for commercial and industrial applications of medium dimension
- Domestic hot water production when combined to an external boiler
- Integration with solar panels when combined to an external boiler
- Variety of programmable parameters for full customization of use

➤ Construction characteristics



- User control system with microcontroller regulation, overheating control logic through electronic expansion valve
- Twin Rotary DC inverter compressors
- Brushless DC axial fans
- Source exchanger: circuitation optimized by finned coil with copper pipes and hydrophilic-treated aluminum fins
- Usage-point exchanger: AISI 316 stainless steel brazed plate exchanger with reduced losses of pressure on water circuit
- Copper pipe cooling circuit, including: condensation control, electronic thermostatic valve, inversion valve, high/low pressure switches, fluid separator and receiver, service and control valves, twin pressure outlets, high/low pressure transducers
- Integrated hydraulic circuit: high-efficiency variable speed brushless circulator, expansion vase, flow switch, air vent valve, safety valve (6 bar), pressure gauge, drain cock

➤ Benefits

- Comfort: the DC Inverter technology adjusts the power required to air condition the rooms, rapidly reaching the set point and maintaining it with outstanding precision
- Efficiency: the modulation of the DC Inverter compressor adjusts the settings without wasting energy
- Environment friendly: compared to boilers, heat pumps produce no direct CO₂ emissions. Notwithstanding the reduced electric consumptions, indirect CO₂ emissions (those connected to power plants used for operation) still represent 25% of traditional heating systems. The R32 cooling gas also provides higher efficiency with low environmental impact, in line with the 517/2014 European Regulation
- Money saving: by exploiting the energy of air, it requires a small amount of electricity to produce the heating power required, especially in radiant systems with a reduced temperature difference
- Reliability: every component of the compressor is lubricated evenly at any rotational speed. Start up must be carried out by an Authorized Technical Service

Technical data

	HPMY204	HPMY206	HPMY208	HPMY210	HPMY212	HPMY214	HPMX214	HPMY216	HPMX216	HPMX218
Cooling power (A35W7) [kW]	4,23	5,02	6,08	7,53	8,51	11,48	11,48	13,8	13,8	15,04
Absorbed power (A35W7) [kW]	1,29	1,6	1,99	2,39	2,79	3,53	3,53	4,38	4,38	4,88
EER (A35W7)	3,28	3,14	3,05	3,15	3,05	3,25	3,25	3,15	3,15	3,08
Water flow rate (A35W7) [l/s]	0,2	0,24	0,28	0,36	0,41	0,55	0,55	0,66	0,66	0,71
Useful hydraulic head (A35W7) [kPa]	80,8	78,8	76	68,9	63,4	75	75	62,3	62,3	55,6
Cooling power (A35W18) [kW]	5,51	6,18	7,72	9,5	11,6	14	14	15,8	15,8	17,1
Absorbed power (A35W18) [kW]	1,1	1,28	1,76	2,15	2,79	2,59	2,59	3,15	3,15	3,59
EER (A35W18)	5,02	4,82	4,38	4,41	4,16	5,4	5,4	5,02	5,02	4,76
SEER (seasonal EER W12)	4,07	4,12	4,25	4,15	4,25	4,62	4,62	4,8	4,8	4,91
Calorific power (A7W35) [kW]	4,55	6,08	7,81	10,1	11,8	14,1	14,1	16,3	16,3	17,9
Absorbed power (A7W35) [kW]	0,95	1,35	1,78	2,28	2,73	2,91	2,91	3,49	3,49	4,07
COP (A7W35)	4,78	4,51	4,38	4,43	4,32	4,85	4,85	4,67	4,67	4,40
Calorific power (A7W45) [kW]	4,47	5,88	7,58	9,76	11,47	13,56	13,56	15,77	15,77	17,32
Absorbed power (A7W45) [kW]	1,17	1,66	2,17	2,8	3,33	3,55	3,55	4,24	4,24	4,92
COP (A7W45)	3,82	3,54	3,5	3,48	3,44	3,82	3,82	3,72	3,72	3,52
Water flow rate (A7W45) [l/s]	0,22	0,28	0,37	0,47	0,55	0,65	0,65	0,76	0,76	0,83
Useful hydraulic head (A7W45) [kPa]	80	75,8	66,3	55,2	43,4	63,6	63,6	48,5	48,5	37,3
SCOP (seasonal COP W35)	4,53	4,46	4,46	4,53	4,47	4,48	4,48	4,50	4,50	4,46
Working external temperature [°C]	Heating Room T: -20÷30 °C Outlet water T: 25÷60 °C			Cooling Room T: -10÷46 °C Outlet water T: 5÷25 °C			Domestic hot water Room T with water at max 39 °C: -20÷40 °C Room T with water at max 55 °C: -10÷35 °C Outlet water T: 20÷60 °C			
Anti-freeze kit ⁽¹⁾						Included				
Type of cooling gas	R32									
Fans (n°, type)	1, Brushless DC Motor					2, Brushless DC Motor				
Type of compressor	Twin rotary DC Inverter									
Electric power [V / Ph / Hz]	230 / 1 / 50	230 / 1 / 50	230 / 1 / 50	230 / 1 / 50	230 / 1 / 50	230 / 1 / 50	400 / 3 / 50	230 / 1 / 50	400 / 3 / 50	400 / 3 / 50
Max absorbed power [kW]	3	3,6	4	4,8	5,2	6,7	6,7	7,1	7,1	8,5
Max absorbed current [A]	13,2	15,6	17,6	20,7	22,7	29,2	9,7	31	10,3	12,2
Circulator max power [kW]	0,075	0,075	0,075	0,075	0,075	0,14	0,14	0,14	0,14	0,14

	HPMY204	HPMY206	HPMY208	HPMY210	HPMY212	HPMY214	HPMX214	HPMY216	HPMX216	HPMX218
Hydraulic connections	1" M	1" M	1" M	1" M	1" M	1" M	1" M	1" M	1" M	1" M
Min water volume [l]	35	40	40	50	60	60	60	70	70	70
 Min water flow rate to be guaranteed (A35W7) [l/s]	0,13	0,15	0,17	0,23	0,25	0,34	0,34	0,34	0,34	0,41
 Max water flow rate to be guaranteed (A35W7) [l/s]	0,34	0,4	0,46	0,6	0,68	0,92	0,92	0,92	0,92	1,1
Acoustic power [dB(A)] ⁽²⁾	64	64	64	64	65	68	68	68	68	68
Dimensions(LxHxW) [mm]	924x828x379			1047x936x466			1044x1409x455			
Shipping weight [kg]	84	84	84	110	110	134	148	140	154	154
Working weight [kg]	72	72	72	96	96	121	136	126	141	141

⁽¹⁾ The anti-freeze kit includes a self-heating wire to wind around the external unit base, near the condensation coil, and two PET resistors on the plate exchanger sides

⁽²⁾ Heating mode (A7W35); value established based on measurements carried out according to the UNI EN ISO 9614-2 Standard in full compliance with the Eurovent certification specifications

Correction factors for glycol-based applications

Correction factors for the water flow rate and losses of pressure must be applied to the values obtained without glycol. The water flow rate correction factor is calculated so as to maintain the same temperature difference resulting when using glycol. The loss of pressure correction factor is applied to the water flow rate value adjusted by the water flow rate correction factor.

% OF GLYCOL	FREEZING POINT [°C]	CCF EFFICIENCY CORRECTION FACTOR	IPCF ABSOLUTE POWER CORRECTION FACTOR	WFCF WATER FLOW RATE CORRECTION FACTOR	PDCF LOSSES OF PRESSURE CORRECTION FACTOR
10%	-3,2	0,985	1	1,02	1,08
20%	-7,8	0,98	0,99	1,05	1,12
30%	-14,1	0,97	0,98	1,1	1,22
40%	-22,3	0,965	0,97	1,14	1,25
50%	-33,8	0,955	0,965	1,2	1,33

➤ Installation and start up

⚠ WARNING. Start up must be carried out by an Authorized Technical Service.

🔧 NOTE. Refer to user manual for operational installation instructions.

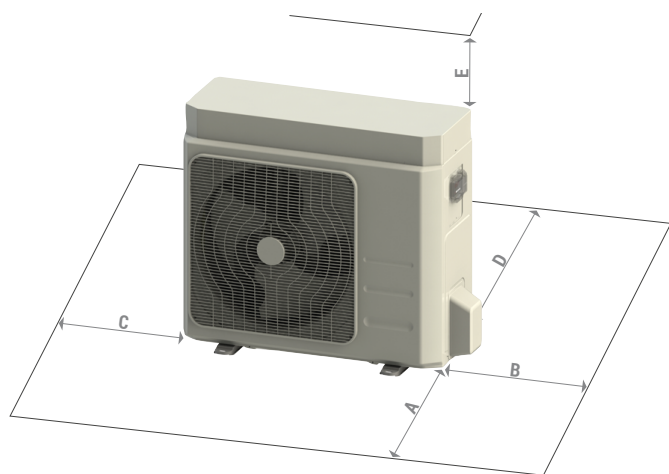
Operations to be carried out by the installer

- Full loading of hydraulic system
- Complete electric wiring between heat pump and installed accessories

Operations to be carried out by an Authorized Technical Service

- State-of-the-art inspection of hydraulic circuits according to installation technical specifications
- State-of-the-art inspection of wirings, safety alarm control, correct water flow
- Setting up of operational parameters based on project requirements
- Drawing up of "First start up" form and provision of useful operational data to the client

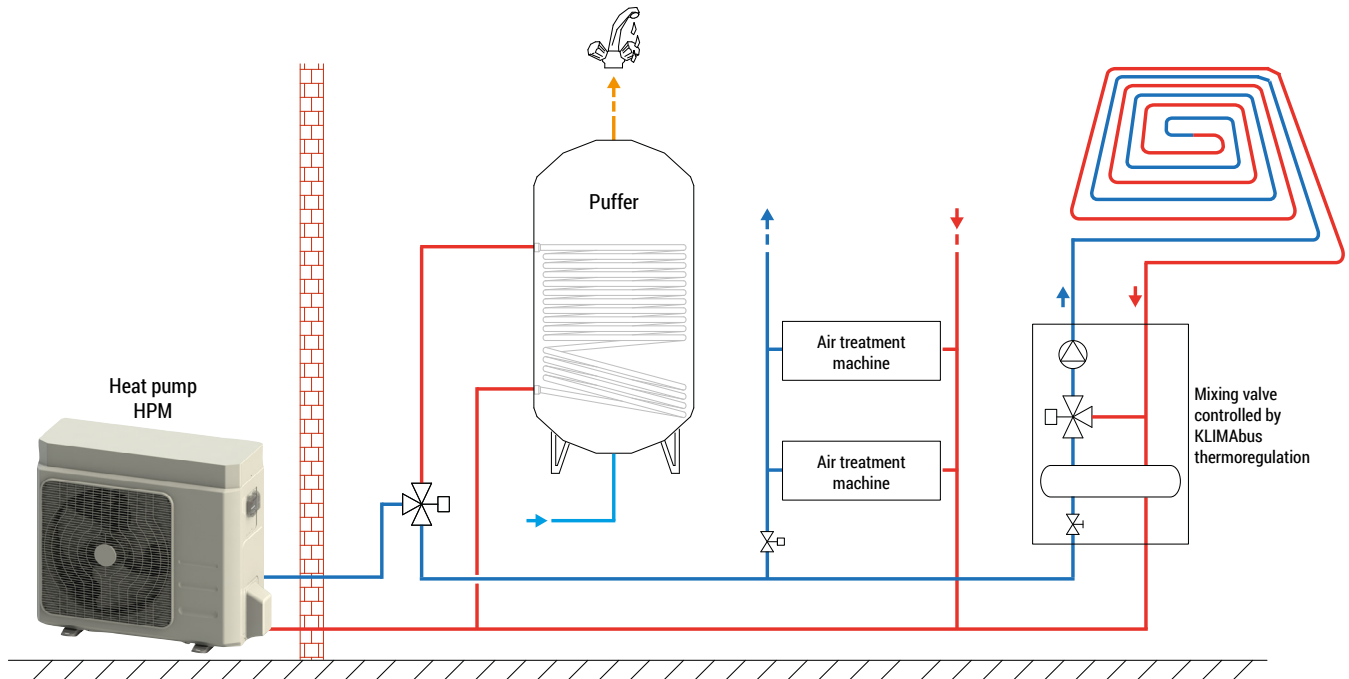
Min dimensions required for installation



CODICE	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]
HPMY204	1500	500	400	400	500
HPMY206	1500	500	400	400	500
HPMY208	1500	500	400	400	500
HPMY210	1500	500	400	400	500
HPMY212	1500	500	400	400	500
HPMY214	1500	500	400	400	500
HPMX214	1500	500	400	400	500
HPMY216	1500	500	400	400	500
HPMX216	1500	500	400	400	500
HPMX218	1500	500	400	400	500

➤ Application diagram

Application example for DHW production and heating/cooling with 2 circuits



NOTE. For alternative applications contact Giacomini's Technical Assistance

➤ Product specifications

HPMY204

Air/water monobloc heat pump, hot/cold reversible. R32 low environmental impact cooling gas complying with European Regulation 517/2014. Power supply 230 V, single-phase, 50 Hz. Heating efficiency COP = 4,78 (A7W35); Cooling efficiency EER = 5,02 (A35W18) (according to Standard EN 14511). Nominal calorific power (A7W35) 4,55 kW. Nominal cooling power (A35W18) 5,51 kW. Heating energy efficiency class: A++ at 55 °C; A+++ at 35 °C. Dimensions (L x H x W): 924 x 828 x 379 mm. Shipping weight: 84 kg. Anti-freeze kit included.

HPMY206

Air/water monobloc heat pump, hot/cold reversible. R32 low environmental impact cooling gas complying with European Regulation 517/2014. Power supply 230 V, single-phase, 50 Hz. Heating efficiency COP = 4,51 (A7W35); Cooling efficiency EER = 4,82 (A35W18) (according to Standard EN 14511). Nominal calorific power (A7W35) 6,08 kW. Nominal cooling power (A35W18) 6,18 kW. Heating energy efficiency class: A++ at 55 °C; A+++ at 35 °C. Dimensions (L x H x W): 924 x 828 x 379 mm. Shipping weight: 84 kg. Anti-freeze kit included.

HPMY208

Air/water monobloc heat pump, hot/cold reversible. R32 low environmental impact cooling gas complying with European Regulation 517/2014. Power supply 230 V, single-phase, 50 Hz. Heating efficiency COP = 4,38 (A7W35); Cooling efficiency EER = 4,38 (A35W18) (according to Standard EN 14511). Nominal calorific power (A7W35) 7,81 kW. Nominal cooling power (A35W18) 7,72 kW. Heating energy efficiency class: A++ at 55 °C; A+++ at 35 °C. Dimensions (L x H x W): 924 x 828 x 379 mm. Shipping weight: 84 kg. Anti-freeze kit included.

HPMY210

Air/water monobloc heat pump, hot/cold reversible. R32 low environmental impact cooling gas complying with European Regulation 517/2014. Power supply 230 V, single-phase, 50 Hz. Heating efficiency COP = 4,43 (A7W35); Cooling efficiency EER = 4,41 (A35W18) (according to Standard EN 14511). Nominal calorific power (A7W35) 10,10 kW. Nominal cooling power (A35W18) 9,50 kW. Heating energy efficiency class: A++ at 55 °C; A+++ at 35 °C. Dimensions (L x H x W): 1047 x 936 x 466 mm. Shipping weight: 110 kg. Anti-freeze kit included.

HPMY212

Air/water monobloc heat pump, hot/cold reversible. R32 low environmental impact cooling gas complying with European Regulation 517/2014. Power supply 230 V, single-phase, 50 Hz. Heating efficiency COP = 4,32 (A7W35); Cooling efficiency EER = 4,16 (A35W18) (according to Standard EN 14511). Nominal calorific power (A7W35) 11,80 kW. Nominal cooling power (A35W18) 11,60 kW. Heating energy efficiency class: A++ at 55 °C; A+++ at 35 °C. Dimensions (L x H x W): 1047 x 936 x 466 mm. Shipping weight: 110 kg. Anti-freeze kit included.

HPMY214

Air/water monobloc heat pump, hot/cold reversible. R32 low environmental impact cooling gas complying with European Regulation 517/2014. Power supply 230 V, single-phase, 50 Hz. Heating efficiency COP = 4,85 (A7W35); Cooling efficiency EER = 5,40 (A35W18) (according to Standard EN 14511). Nominal calorific power (A7W35) 14,10 kW. Nominal cooling power (A35W18) 14,00 kW. Heating energy efficiency class: A++ at 55 °C; A+++ at 35 °C. Dimensions (L x H x W): 1044 x 1409 x 448 mm. Shipping weight: 134 kg. Anti-freeze kit included.

HPMX214

Air/water monobloc heat pump, hot/cold reversible. R32 low environmental impact cooling gas complying with European Regulation 517/2014. Power supply 400 V, three-phase, 50 Hz. Heating efficiency COP = 4,85 (A7W35); Cooling efficiency EER = 5,40 (A35W18) (according to Standard EN 14511). Nominal calorific power (A7W35) 14,10 kW. Nominal cooling power (A35W18) 14,00 kW. Heating energy efficiency class: A++ at 55 °C; A+++ at 35 °C. Dimensions (L x H x W): 1044 x 1409 x 448 mm. Shipping weight: 148 kg. Anti-freeze kit included.

HPMY216

Air/water monobloc heat pump, hot/cold reversible. R32 low environmental impact cooling gas complying with European Regulation 517/2014. Power 230 V, single-phase, 50 Hz. Heating efficiency COP = 4,67 (A7W35); Cooling efficiency EER = 5,02 (A35W18) (according to Standard EN 14511). Nominal calorific power (A7W35) 16,30 kW. Nominal cooling power (A35W18) 15,80 kW. Heating energy efficiency class: A++ at 55 °C; A+++ at 35 °C. Dimensions (L x H x W): 1044 x 1409 x 448 mm. Shipping weight: 140 kg. Anti-freeze kit included.

HPMX216

Air/water monobloc heat pump, hot/cold reversible. R32 low environmental impact cooling gas complying with European Regulation 517/2014. Power 400 V, three-phase, 50 Hz. Heating efficiency COP = 4,67 (A7W35); Cooling efficiency EER = 5,02 (A35W18) (according to Standard EN 14511). Nominal calorific power (A7W35) 16,30 kW. Nominal cooling power (A35W18) 15,80 kW. Heating energy efficiency class: A++ at 55 °C; A+++ at 35 °C. Dimensions (L x H x W): 1044 x 1409 x 448 mm. Shipping weight: 154 kg. Anti-freeze kit included.

HPMX218

Air/water monobloc heat pump, hot/cold reversible. R32 low environmental impact cooling gas complying with European Regulation 517/2014. Power 400 V, three-phase, 50 Hz. Heating efficiency COP = 4,40 (A7W35); Cooling efficiency EER = 4,76 (A35W18) (according to Standard EN 14511). Nominal calorific power (A7W35) 17,90 kW. Nominal cooling power (A35W18) 17,10 kW. Heating energy efficiency class: A++ at 55 °C; A+++ at 35 °C. Dimensions (L x H x W): 1044 x 1409 x 448 mm. Shipping weight: 154 kg. Anti-freeze kit included.

⚠ Safety Warning. Installation, commissioning and periodical maintenance of the product must be carried out by qualified operators in compliance with national regulations and/or local standards. A qualified installer must take all required measures, including use of Individual Protection Devices, for his and others' safety. An improper installation may damage people, animals or objects towards which Giacomini S.p.A. may not be held liable.

♻ Package Disposal. Carton boxes: paper recycling. Plastic bags and bubble wrap: plastic recycling.

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