IMMERGAS

USER'S MANUAL

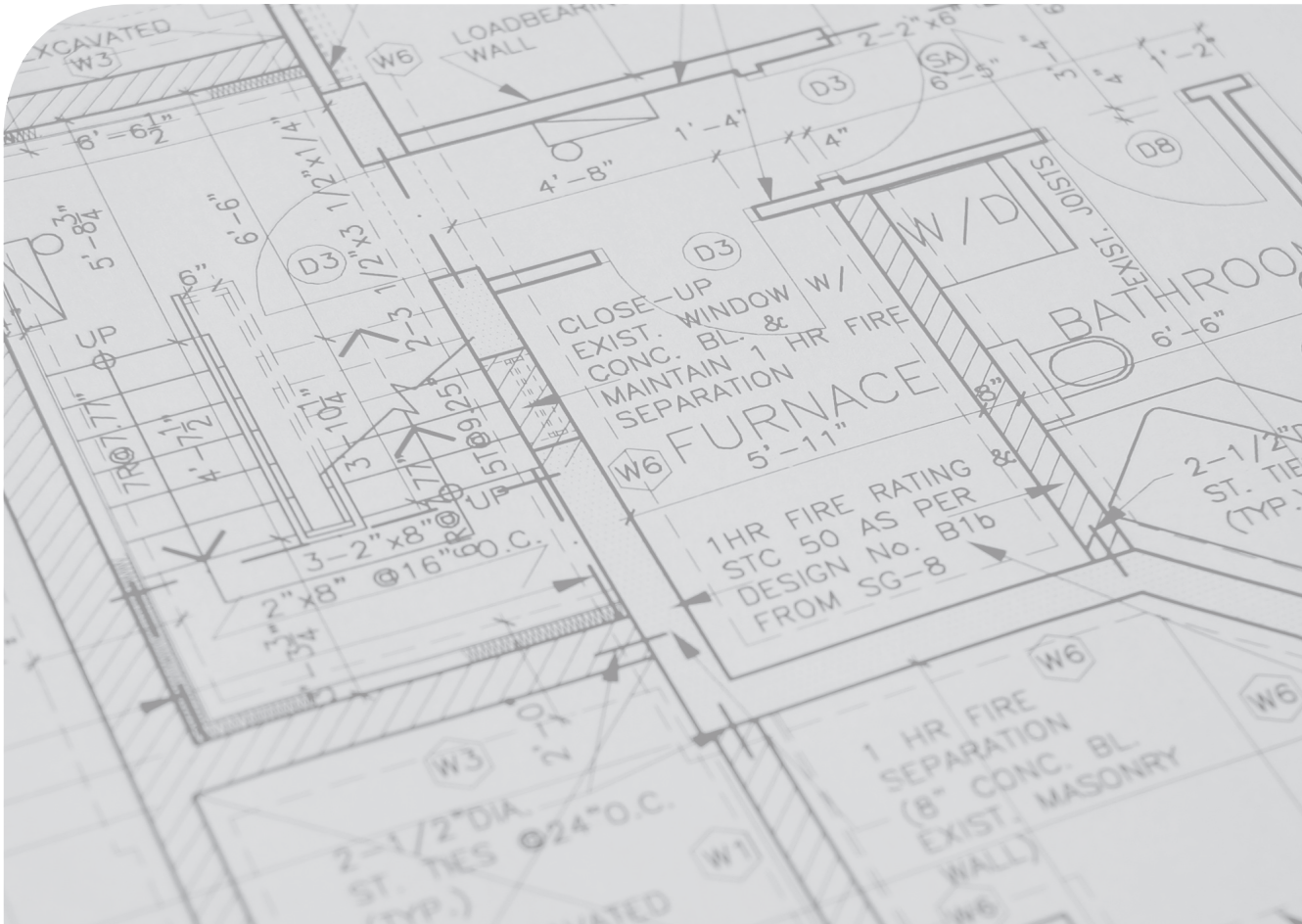
MAGIS M4/6/8

Block heat pumps
Single-phase
Technical Data

IE

Instructions and recommendations

1.047662ENG



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Dear Customer

Congratulations for having chosen a top-quality Immergas product, able to assure well-being and safety for a long period of time. As an Immergas customer you can also count on a Qualified Authorised After-Sales Technical Assistance Centre, prepared and updated to guarantee the constant efficiency of your products. Read the following pages carefully: you will be able to draw useful tips on the proper use of the device, compliance with which will confirm your satisfaction with the Immergas product.
For assistance and routine maintenance, contact Authorised Technical Service Centres: they have original spare parts and are specifically trained directly by the manufacturer.

The company **IMMERGAS S.p.A.**, with registered office in via Cisa Ligure 95 42041 Brescello (RE), declares that the design, manufacturing and after-sales assistance processes comply with the requirements of standard **UNI EN ISO 9001:2015**.
For further details on the product CE marking, request a copy of the Declaration of Conformity from the manufacturer, specifying the appliance model and the language of the country.
The manufacturer declines all liability due to printing or transcription errors, reserving the right to make any modifications to its technical and commercial documents without forewarning.

GENERAL RECOMMENDATIONS

- The instruction booklet is an integral and essential part of the product and must be given to the new user in the case of transfer or succession of ownership.
- It must be stored with care and consulted carefully, as all of the warnings provide important safety indications for installation, use and maintenance stages.
- In compliance with the legislation in force, the systems must be designed by qualified professionals, within the dimensional limits established by the Law. Installation and maintenance must be performed in compliance with the regulations in force, according to the manufacturer's instructions and by professionally qualified staff, meaning staff with specific technical skills in the plant sector, as provided for by Law.
- Improper installation or assembly of the Immergas device and/or components, accessories, kits and devices can cause unexpected problems for people, animals and objects. Read the instructions provided with the product carefully to ensure proper installation.
- This instructions manual provides technical information for installing Immergas products. As for the other issues related to the installation of products (e.g. safety at the workplace, environmental protection, accident prevention), it is necessary to comply with the provisions of the standards in force and the principles of good practice.
- All Immergas products are protected with suitable transport packaging.
- The material must be stored in a dry place protected from the weather.
- Maintenance must be carried out by skilled technical staff. For example, the Authorised Service Centre that represents a guarantee of qualifications and professionalism.
- The appliance must only be destined for the use for which it has been expressly declared. Any other use will be considered improper and therefore potentially dangerous.
- If errors occur during installation, operation and maintenance, due to non-compliance with technical laws in force, standards or instructions contained in this booklet (or however supplied by the manufacturer), the manufacturer is excluded from any contractual and extra-contractual liability for any damages and the device warranty is invalidated.

- This manual provides a detailed explanation on the precautions to be taken during use.
- Read this manual carefully before using the wall-mounted control unit to guarantee its proper operation.
- After you have read this manual, keep it for future consultation.

- Do not use tools to accelerate the defrosting process or to clean equipment other than those recommended by the manufacturer.
- The appliance must be stored in such a way as to avoid mechanical damage, in a well-ventilated environment and without ignition sources in continuous operation (for example: open flames, gas appliance or electric stoves in operation).
- Do not puncture or burn.
- Be aware that refrigerants are odourless.

- For further information regarding legislative and statutory provisions relative to the installation of heat pumps, consult the Immergas site at the following address: www.immergas.com

1 TECHNICAL DATA

1.1 MEDIUM TEMPERATURE APPLICATIONS

Model	For medium temperature applications				
	Energy efficiency class	Sound power of unit	Medium zone temperatures		
			Nominal heat output	Space heating seasonal energy efficiency	For space heating, annual power consumption
	-	dB	kW	%	kWh
MAGIS M4	A++	55,0	4,4	129,5	2744
MAGIS M6	A++	58,0	5,7	137,9	3345
MAGIS M8	A++	59,0	6,6	131,5	4056

Model	For medium temperature applications				
	Energy efficiency class	Sound power of unit	Cold zones temperatures		
			Nominal heat output	Space heating seasonal energy efficiency	For space heating, annual power consumption
	-	dB	kW	%	kWh
MAGIS M4	A++	55,0	3,4	102,1	3159
MAGIS M6	A++	58,0	4,3	111,1	3681
MAGIS M8	A++	59,0	5,8	112,0	4950

Model	For medium temperature applications				
	Energy efficiency class	Sound power of unit	Hot zones temperatures		
			Nominal heat output	Space heating seasonal energy efficiency	For space heating, annual power consumption
	-	dB	kW	%	kWh
MAGIS M4	A++	55,0	5,0	162,4	1621
MAGIS M6	A++	58,0	5,1	164,7	1640
MAGIS M8	A++	59,0	8,37	176,9	2485

1.2 LOW TEMPERATURE APPLICATIONS

Model	For low temperature applications				
	Energy efficiency class	Sound power of unit	Medium zone temperatures		
			Nominal heat output	Space heating seasonal energy efficiency	For space heating, annual power consumption
	-	dB	kW	%	kWh
MAGIS M4	A+++	55,0	5,5	191,0	2351
MAGIS M6	A+++	58,0	6,8	195,0	2845
MAGIS M8	A+++	59,0	8,1	205,6	3218

Model	For low temperature applications				
	Energy efficiency class	Sound power of unit	Cold zones temperatures		
			Nominal heat output	Space heating seasonal energy efficiency	For space heating, annual power consumption
	-	dB	kW	%	kWh
MAGIS M4	A+++	55,0	4,6	159,5	2769
MAGIS M6	A+++	58,0	5,6	165,3	3300
MAGIS M8	A+++	59,0	7,0	170,0	3976

Model	For low temperature applications				
	Energy efficiency class	Sound power of unit	Hot zones temperatures		
			Nominal heat output	Space heating seasonal energy efficiency	For space heating, annual power consumption
	-	dB	kW	%	kWh
MAGIS M4	A+++	55,0	5,5	255,4	1146
MAGIS M6	A+++	58,0	6,1	259,8	1244
MAGIS M8	A+++	59,0	8,1	276,6	1551

2 PRODUCT DATA SHEET

Space heating appliance with heat pump		Unit	MAGIS M4	MAGIS M6	MAGIS M8
Space heating	Energy efficiency class 35°C (low temperature application)	-	A+++	A+++	A+++
	Energy efficiency class 55°C (medium temperature application)	-	A++	A++	A++
Sound power of unit	Low temperature medium weather application	dB	55,0	58,0	59,0
	Medium weather temperature application	dB	55,0	58,0	59,0

Medium weather (design temperature = -10°C)		Unit	MAGIS M4	MAGIS M6	MAGIS M8
Space heating 35°C	P_{rated} (declared heating capacity) @ -10°C	kW	5,5	6,8	8,1
	Space heating seasonal energy efficiency (η_s)	%	191,0	195,0	205,6
	Annual power consumption	kWh	2351	2845	3218
Space heating 55°C	P_{rated} (declared heating capacity) @ -10°C	kW	4,4	5,7	6,6
	Space heating seasonal energy efficiency (η_s)	%	129,5	137,9	131,5
	Annual power consumption	kWh	2744	3345	4056

Low temperature application medium weather space heating partial load conditions		Unit	MAGIS M4	MAGIS M6	MAGIS M8
(A) Condition (-7°C)	P_{dh} (Declared heating capacity)	kW	4,88	6,03	7,18
	COP_d (Declared COP)	-	3,19	3,09	3,35
	C_{dh} (Degradation coefficient)	-	0,9	0,9	0,9
(B) Condition (2°C)	P_{dh} (Declared heating capacity)	kW	3,05	3,88	4,65
	COP_d (Declared COP)	-	4,78	4,85	5,09
	C_{dh} (Degradation coefficient)	-	0,9	0,9	0,9
(C) Condition (7°C)	P_{dh} (Declared heating capacity)	kW	1,93	2,39	2,9
	COP_d (Declared COP)	-	6,13	6,63	6,82
	C_{dh} (Degradation coefficient)	-	0,9	0,9	0,9
(D) Condition (12°C)	P_{dh} (Declared heating capacity)	kW	1,48	1,39	1,63
	COP_d (Declared COP)	-	8,05	7,93	8,35
	C_{dh} (Degradation coefficient)	-	0,9	0,9	0,9

Low temperature application medium weather space heating partial load conditions		Unit	MAGIS M4	MAGIS M6	MAGIS M8
(E) Tol (operation limit temperature)	Tol (operation limit temperature)	°C	-10	-10	-10
	P_{dh} (Declared heating capacity)	kW	4,41	5,36	6,44
	COP_d (Declared COP)	-	2,86	2,76	3,04
	W_{TOL} (Water heating limit operation)	°C	65	65	65
(F) $T_{bivalente}$ temperature	T_{blv}	°C	-7	-7	-7
	P_{dh} (Declared heating capacity)	kW	4,88	6,03	7,18
	COP_d (Declared COP)	-	3,19	3,09	3,35
Supplementary capacity to P_{design}	P_{sup} (@$T_{designh}$: –10°C)	kW	1,11	1,45	1,68

Medium temperature application average weather temperature space heating partial load conditions		Unit	MAGIS M4	MAGIS M6	MAGIS M8
(A) Condition (-7°C)	P_{dh} (Declared heating capacity)	kW	3,89	5,04	5,84
	COP_d (Declared COP)	-	2,17	2,17	2,16
	C_{dh} (Degradation coefficient)	-	0,9	0,9	0,9
(B) Condition (2°C)	P_{dh} (Declared heating capacity)	kW	2,38	3,12	3,75
	COP_d (Declared COP)	-	3,30	3,51	3,30
	C_{dh} (Degradation coefficient)	-	0,9	0,9	0,9
(C) Condition (7°C)	P_{dh} (Declared heating capacity)	kW	2,94	2,08	2,42
	COP_d (Declared COP)	-	4,41	4,54	4,34
	C_{dh} (Degradation coefficient)	-	0,9	0,9	0,9
(D) Condition (12°C)	P_{dh} (Declared heating capacity)	kW	1,32	1,28	1,39
	COP_d (Declared COP)	-	5,66	5,59	5,33
	C_{dh} (Degradation coefficient)	-	0,9	0,9	0,9
(E) Tol (operation limit temperature)	Tol (operation limit temperature)	°C	-10	-10	-10
	P_{dh} (Declared heating capacity)	kW	3,42	4,52	4,9
	COP_d (Declared COP)	-	1,91	1,91	1,84
	W_{TOL} (Water heating limit operation)	°C	65	65	65
(F) $T_{bivalente}$ temperature	T_{blv}	°C	-7	-7	-7
	P_{dh} (Declared heating capacity)	kW	3,89	5,04	5,84
	COP_d (Declared COP)	-	2,17	2,17	2,16
Supplementary capacity to P_{design}	P_{sup} (@$T_{designh}$: –10°C)	kW	0,98	1,18	1,69

Cold weather (Design temperature = -22°C)		Unit	MAGIS M4	MAGIS M6	MAGIS M8
Space heating 35°C	P_{rated} (declared heating capacity) @ -22°C	kW	4,6	5,6	7,0
	Space heating seasonal energy efficiency (η_s)	%	159,5	165,3	170,0
	Annual power consumption	kWh	2769	3300	3976
Space heating 55°C	P_{rated} (declared heating capacity) @ -22°C	kW	3,4	4,3	5,8
	Space heating seasonal energy efficiency (η_s)	%	102,1	111,1	112,0
	Annual power consumption	kWh	3159	3681	4950

Low temperature application cold weather space heating partial load conditions		Unit	MAGIS M4	MAGIS M6	MAGIS M8
(A) Condition (-7°C)	P_{dh} (Declared heating capacity)	kW	2,75	3,42	4,46
	COP_d (Declared COP)	-	3,49	3,59	3,66
	C_{dh} (Degradation coefficient)	-	0,9	0,9	0,9
(B) Condition (2°C)	P_{dh} (Declared heating capacity)	kW	1,77	2,06	2,69
	COP_d (Declared COP)	-	4,95	5,21	5,20
	C_{dh} (Degradation coefficient)	-	0,9	0,9	0,9
(C) Condition (7°C)	P_{dh} (Declared heating capacity)	kW	1,17	1,46	1,65
	COP_d (Declared COP)	-	5,53	6,24	6,53
	C_{dh} (Degradation coefficient)	-	0,9	0,9	0,9
(D) Condition (12°C)	P_{dh} (Declared heating capacity)	kW	1,43	1,44	1,65
	COP_d (Declared COP)	-	7,67	7,66	7,96
	C_{dh} (Degradation coefficient)	-	0,9	0,9	0,9
(E) Tol (operation limit temperature)	Tol (operation limit temperature)	°C	-22	-22	-22
	P_{dh} (Declared heating capacity)	kW	2,8	3,48	4,06
	COP_d (Declared COP)	-	1,97	1,96	1,95
	W_{TOL} (Water heating limit operation)	°C	65	65	65
(F) $T_{bivalente}$ temperature	T_{blv}	°C	-15	-15	-15
	P_{dh} (Declared heating capacity)	kW	3,72	4,59	5,69
	COP_d (Declared COP)	-	2,57	2,53	2,83
Supplementary capacity to P_{design}	P_{sup} (@$T_{designh}$: –22°C)	kW	1,76	2,15	2,91

Medium temperature application cold weather space heating partial load conditions		Unit	MAGIS M4	MAGIS M6	MAGIS M8
(A) Condition (-7°C)	P_{dh} (Declared heating capacity)	kW	2,13	2,70	3,86
	COP_d (Declared COP)	-	2,32	2,46	2,48
	C_{dh} (Degradation coefficient)	-	0,9	0,9	0,9
(B) Condition (2°C)	P_{dh} (Declared heating capacity)	kW	1,28	1,60	2,21
	COP_d (Declared COP)	-	2,99	3,36	3,35
	C_{dh} (Degradation coefficient)	-	0,9	0,9	0,9
(C) Condition (7°C)	P_{dh} (Declared heating capacity)	kW	1,01	1,02	1,44
	COP_d (Declared COP)	-	3,86	3,94	4,11
	C_{dh} (Degradation coefficient)	-	0,9	0,9	0,9
(D) Condition (12°C)	P_{dh} (Declared heating capacity)	kW	1,36	1,37	1,46
	COP_d (Declared COP)	-	6,28	6,35	5,92
	C_{dh} (Degradation coefficient)	-	0,9	0,9	0,9
(E) Tol (operation limit temperature)	Tol (operation limit temperature)	°C	-22	-22	-22
	P_{dh} (Declared heating capacity)	kW	1,64	2,09	2,8
	COP_d (Declared COP)	-	1,02	1,13	1,22
	W_{TOL} (Water heating limit operation)	°C	65	65	65
(F) $T_{bivalente}$ temperature	T_{blv}	°C	-15	-15	-15
	P_{dh} (Declared heating capacity)	kW	2,74	3,47	4,71
	COP_d (Declared COP)	-	1,74	1,86	1,9
Supplementary capacity to P_{design}	P_{sup} (@$T_{designh}$: –22°C)	kW	1,72	2,17	2,97

Warm weather (Design temperature = 2°C)		Unit	MAGIS M4	MAGIS M6	MAGIS M8
Space heating 35°C	P_{rated} (declared heating capacity) @ -2°C	kW	5,5	6,1	8,1
	Space heating seasonal energy efficiency (η_s)	%	255,4	259,8	276,6
	Annual power consumption	kWh	1146	1244	1551
Space heating 55°C	P_{rated} (declared heating capacity) @ -2°C	kW	5,0	5,1	8,37
	Space heating seasonal energy efficiency (η_s)	%	162,4	164,7	176,9
	Annual power consumption	kWh	1621	1640	2485

Low temperature application warm weather space heating partial load conditions		Unit	MAGIS M4	MAGIS M6	MAGIS M8
(B) Condition (2°C)	P_{dh} (Declared heating capacity)	kW	5,34	5,93	7,56
	COP_d (Declared COP)	-	3,94	3,91	3,98
	C_{dh} (Degradation coefficient)	-	0,9	0,9	0,9
(C) Condition (7°C)	P_{dh} (Declared heating capacity)	kW	3,56	3,93	5,22
	COP_d (Declared COP)	-	5,92	5,89	6,26
	C_{dh} (Degradation coefficient)	-	0,9	0,9	0,9
(D) Condition (12°C)	P_{dh} (Declared heating capacity)	kW	1,63	1,79	2,62
	COP_d (Declared COP)	-	7,91	8,20	9,23
	C_{dh} (Degradation coefficient)	-	0,9	0,9	0,9
(E) Tol (operation limit temperature)	Tol (operation limit temperature)	°C	2	2	2
	P_{dh} (Declared heating capacity)	kW	5,34	5,93	7,56
	COP_d (Declared COP)	-	3,94	3,91	3,98
	W_{TOL} (Water heating limit operation)	°C	65	65	65
(F) $T_{bivalente}$ temperature	T_{blv}	°C	7	7	7
	P_{dh} (Declared heating capacity)	kW	3,56	3,93	5,22
	COP_d (Declared COP)	-	5,92	5,89	6,26
Supplementary capacity to P_{design}	P_{sup} (@$T_{designh}$: 2°C)	kW	0,18	0,18	0,55

Medium temperature application warm weather space heating partial load conditions		Unit	MAGIS M4	MAGIS M6	MAGIS M8
(B) Condition (2°C)	P_{dh} (Declared heating capacity)	kW	4,83	5,02	7,55
	COP_d (Declared COP)	-	2,51	2,48	2,59
	C_{dh} (Degradation coefficient)	-	0,9	0,9	0,9
(C) Condition (7°C)	P_{dh} (Declared heating capacity)	kW	3,22	3,31	5,38
	COP_d (Declared COP)	-	3,68	3,67	4,01
	C_{dh} (Degradation coefficient)	-	0,9	0,9	0,9
(D) Condition (12°C)	P_{dh} (Declared heating capacity)	kW	1,47	1,60	2,31
	COP_d (Declared COP)	-	5,15	5,29	5,55
	C_{dh} (Degradation coefficient)	-	0,9	0,9	0,9

Medium temperature application warm weather space heating partial load conditions		Unit	MAGIS M4	MAGIS M6	MAGIS M8
(E) Tol (operation limit temperature)	Tol (operation limit temperature)	°C	2	2	2
	P_{dh} (Declared heating capacity)	kW	4,83	5,02	7,55
	COP_d (Declared COP)	-	2,51	2,48	2,59
	W_{TOL} (Water heating limit operation)	°C	65	65	65
(F) $T_{bivalente}$ temperature	T_{blv}	°C	7	7	7
	P_{dh} (Declared heating capacity)	kW	3,22	3,31	5,38
	COP_d (Declared COP)	-	3,68	3,67	4,01
Supplementary capacity to P_{design}	P_{sup} (@$T_{designh}$: 2°C)	kW	0,18	0,12	0,82

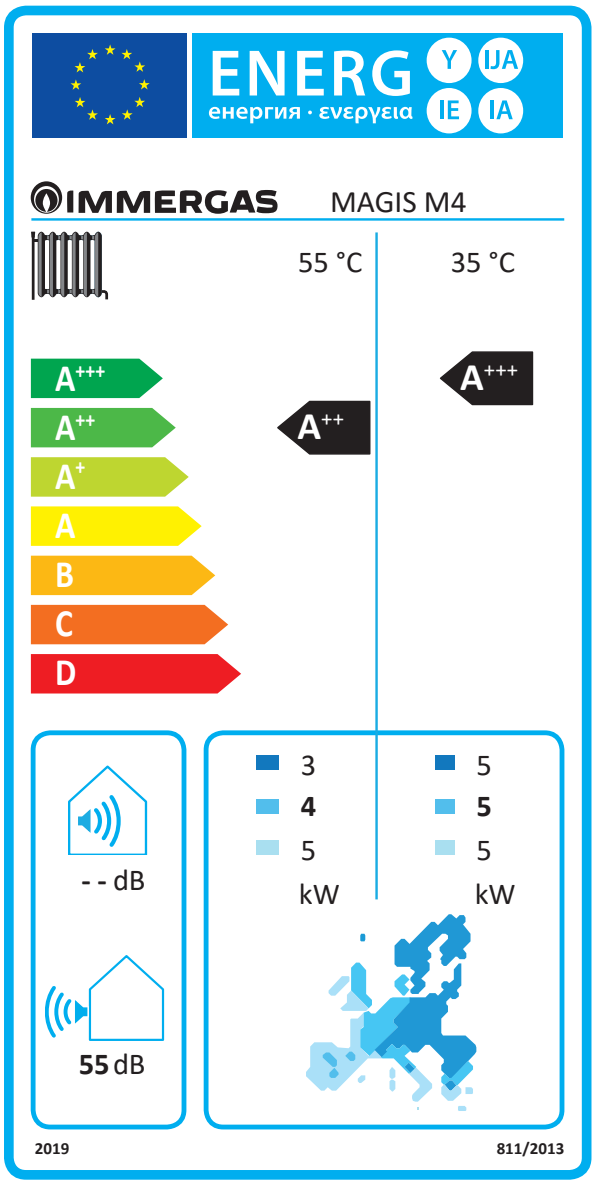
		Unit	MAGIS M4	MAGIS M6	MAGIS M8
Description of the product	Air-water heat pump	Y/N	yes	yes	yes
	Water-water heat pump	Y/N	no	no	no
	Brine to water heat pump	Y/N	no	no	no
	Low temperature heat pump	Y/N	no	no	no
	Equipped with additional heater	Y/N	no	no	no
	Mixed central heating device with heat pump:	Y/N	no	no	no
Air-water unit	Nominal air flow	m^3/h	2770	2770	4030
Brine/water to water unit	Water/brine at nominal flow rate (H/E outdoor)		/	/	/

Space heating appliance with heat pump		Unit	MAGIS M4	MAGIS M6	MAGIS M8
Other	Capacity control	-	VARIABLE	VARIABLE	VARIABLE
	P_{off} (Power consumption OFF Mode)	kW	0,014	0,014	0,014
	P_{to} (Power consumption with thermostat at OFF Mode)	kW	0,024	0,024	0,024
	P_{sb} (Power consumption in Standby Mode)	kW	0,014	0,014	0,014
	P_{CK} (Electric crankcase heater model)	kW	0,000	0,000	0,000
	Q_{elec} (Daily electricity consumption)	kWh	/	/	/
	Q_{fuel} (Daily fuel consumption)	kWh	/	/	/

Details and precautions on installation, maintenance and assembly can be found in the use and installation manual.
Data of the product data sheets according to the directive on energy labelling 2010/30/EC (EU) 811/2013.

2.1 PRODUCT LABELS

Magis M4



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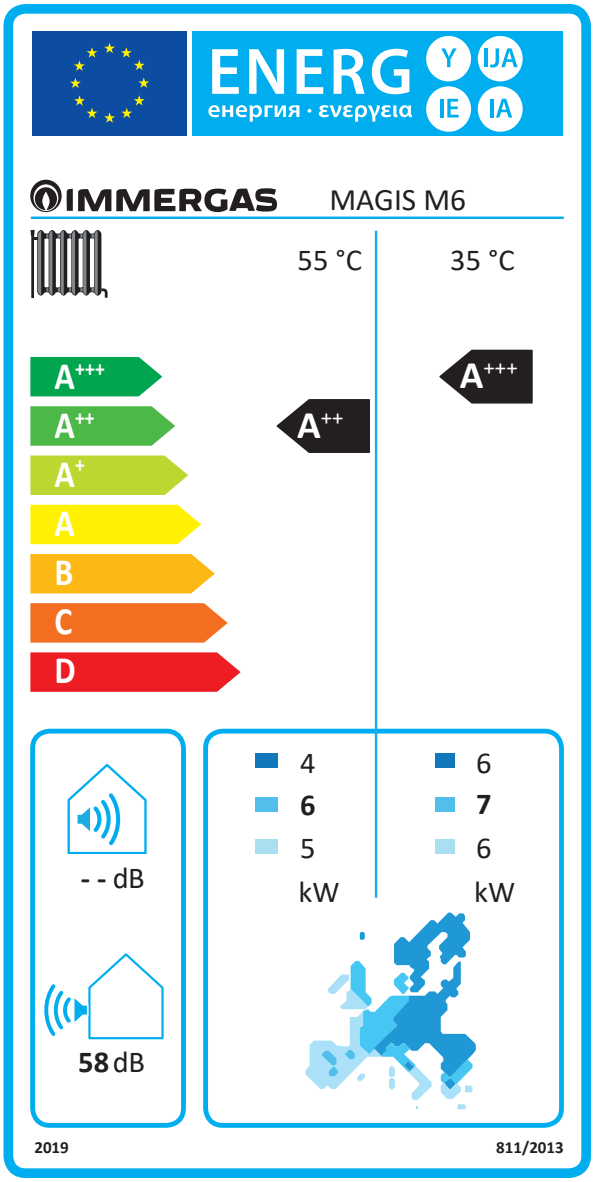
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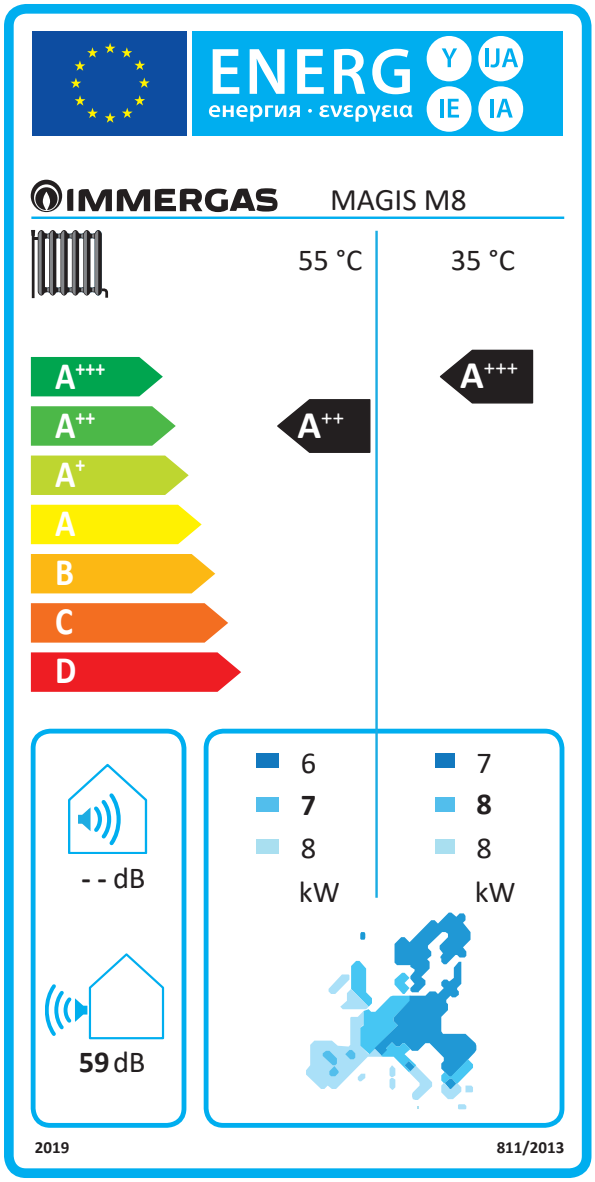
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3 TECHNICAL PARAMETERS

Model	MAGIS M4						
Air/water heat pump			yes	Low temperature heat pump			no
Water/water heat pump			no	With Supplementary heater			no
Brine/water heat pump			no	Mixed central heating device with heat pump:			no
Declared weather condition: MEDIUM							
The parameters are declared for the medium temperature application.							
Element	**Symbol**	**Value**	**Unit**	**Element**	**Symbol**	**Value**	**Unit**
Rated heat output (*)	P_{rated}	4,4	kW	Room central heating seasonal energy efficiency	η_s	129,5	%
Central heating capacity declared for a partial load at indoor temperature of 20°C and outdoor temperature Tj				Central heating capacity declared for a partial load at indoor temperature of 20°C and outdoor temperature Tj			
T_j = – 7 °C	Pdh	3,89	kW	T_j = – 7 °C	COPd	2,17	-
T_j = + 2 °C	Pdh	2,38	kW	T_j = + 2 °C	COPd	3,30	-
T_j = + 7 °C	Pdh	2,94	kW	T_j = + 7 °C	COPd	4,41	-
T_j = + 12 °C	Pdh	1,32	kW	T_j = + 12 °C	COPd	5,66	-
T_j = bivalent temperature	Pdh	3,89	kW	T_j = bivalent temperature	COPd	2,17	-
T_j = operating limit temperature	Pdh	3,42	kW	T_j = operating limit temperature	COPd	1,91	-
For air-water heat pumps: Tj = -15°C	Pdh	-	kW	For air-water heat pumps: Tj = -15°C	COPd	-	-
Bivalent temperature	T_{biv}	-7	°C	For air/water heat pumps: Operating limit temperature	TOL	-10	°C
Capacity of the cycle range for central heating	P_{cych}	-	kW	Efficiency of cycle range	COP_{cyc}	-	-
Degradation coefficient (**)	C_{dh}	0,9	-	Heating water operation limit temperature	W_{TOLp}	65	°C
Power consumption in modes other than active mode				Additional heater			
OFF mode	P_{OFF}	0,014	kW	Rated heat output (*)	Psup	0,98	kW
Standby Mode	P_{TO}	0,014	kW	Type of energy supplied	electrical		
Thermostat OFF mode	P_{SB}	0,024	kW				
Crankcase heater mode electrical	P_{CK}	0,000	kW				
Other items							
Capacity control	VARIABLE			For air-water heat pumps: Rated air flow rate outdoors	-	2770	$m^3\backslash h$
Indoor/outdoor sound level	L_{WA}	-/55,0	dB	For water or brine-water heat pumps: Rated water or brine flow rate, heat exchanger outdoors	-	-	$m^3\backslash h$
Annual energy consumption	Q_{HE}	2744	kWh				
For mixed central heating appliances with a heat pump							
Stated load profile	-			Water central heating energy efficiency	η_{wh}	-	%
Daily electrical power consumption	Q_{elec}	-	kWh	Daily fuel consumption	Q_{fuel}	-	kWh
Annual electrical power consumption	AEC	-	kWh	Annual fuel consumption	AFC	-	GJ
Contact information	Immergas S.p.A. via Cisa Ligure n.95						

(*) For heat pump appliances for space heating and heating appliances mixed with heat pump, the rated heat output P_{rated} is equal to the design load for heating. $P_{designh}$ and the rated heat output of an additional heater P_{sup} is equal to the supplementary heating capacity sup(Tj).
(**) If C_{dh} is not determined by measuring, the default degradation coefficient is C_{dh} = 0.9.

Model	**MAGIS M4**						
Air/water heat pump			yes	Low temperature heat pump			no
Water/water heat pump			no	With Supplementary heater			no
Brine/water heat pump			no	Mixed central heating device with heat pump:			no
Declared weather condition: COLD							
The parameters are declared for the medium temperature application.							
Element	**Symbol**	**Value**	**Unit**	**Element**	**Symbol**	**Value**	**Unit**
Rated heat output (*)	P_{rated}	3,4	kW	Room central heating seasonal energy efficiency	η_s	102,1	%
Central heating capacity declared for a partial load at indoor temperature of 20°C and outdoor temperature Tj				Central heating capacity declared for a partial load at indoor temperature of 20°C and outdoor temperature Tj			
T_j = – 7 °C	Pdh	2,13	kW	T_j = – 7 °C	COPd	2,32	-
T_j = + 2 °C	Pdh	1,28	kW	T_j = + 2 °C	COPd	2,99	-
T_j = + 7 °C	Pdh	1,01	kW	T_j = + 7 °C	COPd	3,86	-
T_j = + 12 °C	Pdh	1,36	kW	T_j = + 12 °C	COPd	6,28	-
T_j = bivalent temperature	Pdh	2,74	kW	T_j = bivalent temperature	COPd	1,74	-
T_j = operating limit temperature	Pdh	1,64	kW	T_j = operating limit temperature	COPd	1,02	-
For air-water heat pumps: Tj = -15°C	Pdh	-	kW	For air-water heat pumps: Tj = -15°C	COPd	-	-
Bivalent temperature	T_{biv}	-15	°C	For air/water heat pumps: Operating limit temperature	TOL	-22	°C
Capacity of the cycle range for central heating	P_{cych}	-	kW	Efficiency of cycle range	COP_{cyc}	-	-
Degradation coefficient (**)	C_{dh}	0,9	-	Heating water operation limit temperature	W_{TOLp}	65	°C
Power consumption in modes other than active mode				Additional heater			
OFF mode	P_{OFF}	0,014	kW	Rated heat output (*)	Psup	1,72	kW
Standby Mode	P_{TO}	0,014	kW	Type of energy supplied	electrical		
Thermostat OFF mode	P_{SB}	0,024	kW				
Crankcase heater mode electrical	P_{CK}	0,000	kW				
Other items							
Capacity control	VARIABLE			For air-water heat pumps: Rated air flow rate outdoors	-	2770	$m^3\backslash h$
Indoor/outdoor sound level	L_{WA}	-/-	dB	For water or brine-water heat pumps: Rated water or brine flow rate, heat exchanger outdoors	-	-	$m^3\backslash h$
Annual energy consumption	Q_{HE}	3159	kWh				
For mixed central heating appliances with a heat pump							
Stated load profile	-			Water central heating energy efficiency	η_{wh}	-	%
Daily electrical power consumption	Q_{elec}	-	kWh	Daily fuel consumption	Q_{fuel}	-	kWh
Annual electrical power consumption	AEC	-	kWh	Annual fuel consumption	AFC	-	GJ
Contact information	Immergas S.p.A. via Cisa Ligure n.95						

(*) For heat pump appliances for space heating and heating appliances mixed with heat pump, the rated heat output P_{rated} is equal to the design load for heating. $P_{designh}$ and the rated heat output of an additional heater P_{sup} is equal to the supplementary heating capacity sup(Tj).
(**) If C_{dh} is not determined by measuring, the default degradation coefficient is C_{dh} = 0.9.

Model	**MAGIS M4**						
Air/water heat pump			yes	Low temperature heat pump			no
Water/water heat pump			no	With Supplementary heater			no
Brine/water heat pump			no	Mixed central heating device with heat pump:			no
Declared weather condition: WARM							
The parameters are declared for the medium temperature application.							
Element	**Symbol**	**Value**	**Unit**	**Element**	**Symbol**	**Value**	**Unit**
Rated heat output (*)	P_{rated}	5,0	kW	Room central heating seasonal energy efficiency	η_s	162,4	%
Central heating capacity declared for a partial load at indoor temperature of 20°C and outdoor temperature Tj				Central heating capacity declared for a partial load at indoor temperature of 20°C and outdoor temperature Tj			
T_j = – 7 °C	Pdh	-	kW	T_j = – 7 °C	COPd	-	-
T_j = + 2 °C	Pdh	4,83	kW	T_j = + 2 °C	COPd	2,51	-
T_j = + 7 °C	Pdh	3,22	kW	T_j = + 7 °C	COPd	3,68	-
T_j = + 12 °C	Pdh	1,47	kW	T_j = + 12 °C	COPd	5,15	-
T_j = bivalent temperature	Pdh	3,22	kW	T_j = bivalent temperature	COPd	3,68	-
T_j = operating limit temperature	Pdh	4,83	kW	T_j = operating limit temperature	COPd	2,51	-
For air-water heat pumps: Tj = -15°C	Pdh	-	kW	For air-water heat pumps: Tj = -15°C	COPd	-	-
Bivalent temperature	T_{biv}	7	°C	For air/water heat pumps: Operating limit temperature	TOL	2	°C
Capacity of the cycle range for central heating	P_{cych}	-	kW	Efficiency of cycle range	COP_{cyc}	-	-
Degradation coefficient (**)	C_{dh}	0,9	-	Heating water operation limit temperature	W_{TOLp}	65	°C
Power consumption in modes other than active mode				Additional heater			
OFF mode	P_{OFF}	0,014	kW	Rated heat output (*)	Psup	0,18	kW
Standby Mode	P_{TO}	0,014	kW	Type of energy supplied	electrical		
Thermostat OFF mode	P_{SB}	0,024	kW				
Crankcase heater mode electrical	P_{CK}	0,000	kW				
Other items							
Capacity control	VARIABLE			For air-water heat pumps: Rated air flow rate outdoors	-	2770	$m^3\backslash h$
Indoor/outdoor sound level	L_{WA}	-/-	dB	For water or brine-water heat pumps: Rated water or brine flow rate, heat exchanger outdoors	-	-	$m^3\backslash h$
Annual energy consumption	Q_{HE}	1621	kWh				
For mixed central heating appliances with a heat pump							
Stated load profile	-			Water central heating energy efficiency	η_{wh}	-	%
Daily electrical power consumption	Q_{elec}	-	kWh	Daily fuel consumption	Q_{fuel}	-	kWh
Annual electrical power consumption	AEC	-	kWh	Annual fuel consumption	AFC	-	GJ
Contact information	Immergas S.p.A. via Cisa Ligure n.95						

(*) For heat pump appliances for space heating and heating appliances mixed with heat pump, the rated heat output P_{rated} is equal to the design load for heating. $P_{designh}$ and the rated heat output of an additional heater P_{sup} is equal to the supplementary heating capacity sup(Tj).
(**) If C_{dh} is not determined by measuring, the default degradation coefficient is C_{dh} = 0.9.

Model	**MAGIS M6**						
Air/water heat pump			yes	Low temperature heat pump			no
Water/water heat pump			no	With Supplementary heater			no
Brine/water heat pump			no	Mixed central heating device with heat pump:			no
Declared weather condition: MEDIUM							
The parameters are declared for the medium temperature application.							
Element	**Symbol**	**Value**	**Unit**	**Element**	**Symbol**	**Value**	**Unit**
Rated heat output (*)	P_{rated}	5,7	kW	Room central heating seasonal energy efficiency	η_s	137,9	%
Central heating capacity declared for a partial load at indoor temperature of 20°C and outdoor temperature Tj				Central heating capacity declared for a partial load at indoor temperature of 20°C and outdoor temperature Tj			
T_j = – 7 °C	Pdh	5,04	kW	T_j = – 7 °C	COPd	2,17	-
T_j = + 2 °C	Pdh	3,12	kW	T_j = + 2 °C	COPd	3,51	-
T_j = + 7 °C	Pdh	2,08	kW	T_j = + 7 °C	COPd	4,54	-
T_j = + 12 °C	Pdh	1,28	kW	T_j = + 12 °C	COPd	5,59	-
T_j = bivalent temperature	Pdh	5,04	kW	T_j = bivalent temperature	COPd	2,17	-
T_j = operating limit temperature	Pdh	4,52	kW	T_j = operating limit temperature	COPd	1,91	-
For air-water heat pumps: Tj = -15°C	Pdh	-	kW	For air-water heat pumps: Tj = -15°C	COPd	-	-
Bivalent temperature	T_{biv}	-7	°C	For air/water heat pumps: Operating limit temperature	TOL	-10	°C
Capacity of the cycle range for central heating	P_{cych}	-	kW	Efficiency of cycle range	COP_{cyc}	-	-
Degradation coefficient (**)	C_{dh}	0,9	-	Heating water operation limit temperature	W_{TOLp}	65	°C
Power consumption in modes other than active mode				Additional heater			
OFF mode	P_{OFF}	0,014	kW	Rated heat output (*)	Psup	1,18	kW
Standby Mode	P_{TO}	0,014	kW	Type of energy supplied	electrical		
Thermostat OFF mode	P_{SB}	0,024	kW				
Crankcase heater mode electrical	P_{CK}	0,000	kW				
Other items							
Capacity control	VARIABLE			For air-water heat pumps: Rated air flow rate outdoors	-	2770	$m^3\backslash h$
Indoor/outdoor sound level	L_{WA}	-/58,0	dB	For water or brine-water heat pumps: Rated water or brine flow rate, heat exchanger outdoors	-	-	$m^3\backslash h$
Annual energy consumption	Q_{HE}	3345	kWh				
For mixed central heating appliances with a heat pump							
Stated load profile	-			Water central heating energy efficiency	η_{wh}	-	%
Daily electrical power consumption	Q_{elec}	-	kWh	Daily fuel consumption	Q_{fuel}	-	kWh
Annual electrical power consumption	AEC	-	kWh	Annual fuel consumption	AFC	-	GJ
Contact information	Immergas S.p.A. via Cisa Ligure n.95						

(*) For heat pump appliances for space heating and heating appliances mixed with heat pump, the rated heat output P_{rated} is equal to the design load for heating. $P_{designh}$ and the rated heat output of an additional heater P_{sup} is equal to the supplementary heating capacity sup(Tj).
(**) If C_{dh} is not determined by measuring, the default degradation coefficient is C_{dh} = 0.9.

Model	**MAGIS M6**						
Air/water heat pump			yes	Low temperature heat pump			no
Water/water heat pump			no	With Supplementary heater			no
Brine/water heat pump			no	Mixed central heating device with heat pump:			no
Declared weather condition: COLD							
The parameters are declared for the medium temperature application.							
Element	**Symbol**	**Value**	**Unit**	**Element**	**Symbol**	**Value**	**Unit**
Rated heat output (*)	P_{rated}	4,3	kW	Room central heating seasonal energy efficiency	η_s	111,1	%
Central heating capacity declared for a partial load at indoor temperature of 20°C and outdoor temperature Tj				Central heating capacity declared for a partial load at indoor temperature of 20°C and outdoor temperature Tj			
T_j = – 7 °C	Pdh	2,70	kW	T_j = – 7 °C	COPd	2,46	-
T_j = + 2 °C	Pdh	1,60	kW	T_j = + 2 °C	COPd	3,36	-
T_j = + 7 °C	Pdh	1,02	kW	T_j = + 7 °C	COPd	3,94	-
T_j = + 12 °C	Pdh	1,37	kW	T_j = + 12 °C	COPd	6,35	-
T_j = bivalent temperature	Pdh	3,47	kW	T_j = bivalent temperature	COPd	1,86	-
T_j = operating limit temperature	Pdh	2,09	kW	T_j = operating limit temperature	COPd	1,13	-
For air-water heat pumps: Tj = -15°C	Pdh	-	kW	For air-water heat pumps: Tj = -15°C	COPd	-	-
Bivalent temperature	T_{biv}	-15	°C	For air/water heat pumps: Operating limit temperature	TOL	-22	°C
Capacity of the cycle range for central heating	P_{cych}	-	kW	Efficiency of cycle range	COP_{cyc}	-	-
Degradation coefficient (**)	C_{dh}	0,9	-	Heating water operation limit temperature	W_{TOLp}	65	°C
Power consumption in modes other than active mode				Additional heater			
OFF mode	P_{OFF}	0,014	kW	Rated heat output (*)	Psup	2,17	kW
Standby Mode	P_{TO}	0,014	kW	Type of energy supplied	electrical		
Thermostat OFF mode	P_{SB}	0,024	kW				
Crankcase heater mode electrical	P_{CK}	0,000	kW				
Other items							
Capacity control	VARIABLE			For air-water heat pumps: Rated air flow rate outdoors	-	2770	$m^3\backslash h$
Indoor/outdoor sound level	L_{WA}	-/-	dB	For water or brine-water heat pumps: Rated water or brine flow rate, heat exchanger outdoors	-	-	$m^3\backslash h$
Annual energy consumption	Q_{HE}	3681	kWh				
For mixed central heating appliances with a heat pump							
Stated load profile	-			Water central heating energy efficiency	η_{wh}	-	%
Daily electrical power consumption	Q_{elec}	-	kWh	Daily fuel consumption	Q_{fuel}	-	kWh
Annual electrical power consumption	AEC	-	kWh	Annual fuel consumption	AFC	-	GJ
Contact information	Immergas S.p.A. via Cisa Ligure n.95						

(*) For heat pump appliances for space heating and heating appliances mixed with heat pump, the rated heat output P_{rated} is equal to the design load for heating. $P_{designh}$ and the rated heat output of an additional heater P_{sup} is equal to the supplementary heating capacity sup(Tj).
(**) If C_{dh} is not determined by measuring, the default degradation coefficient is C_{dh} = 0.9.

Model	**MAGIS M6**						
Air/water heat pump			yes	Low temperature heat pump			no
Water/water heat pump			no	With Supplementary heater			no
Brine/water heat pump			no	Mixed central heating device with heat pump:			no
Declared weather condition: WARM							
The parameters are declared for the medium temperature application.							
Element	**Symbol**	**Value**	**Unit**	**Element**	**Symbol**	**Value**	**Unit**
Rated heat output (*)	P_{rated}	5,1	kW	Room central heating seasonal energy efficiency	η_s	164,7	%
Central heating capacity declared for a partial load at indoor temperature of 20°C and outdoor temperature Tj				Central heating capacity declared for a partial load at indoor temperature of 20°C and outdoor temperature Tj			
T_j = – 7 °C	Pdh	-	kW	T_j = – 7 °C	COPd	-	-
T_j = + 2 °C	Pdh	5,02	kW	T_j = + 2 °C	COPd	2,48	-
T_j = + 7 °C	Pdh	3,31	kW	T_j = + 7 °C	COPd	3,67	-
T_j = + 12 °C	Pdh	1,60	kW	T_j = + 12 °C	COPd	5,29	-
T_j = bivalent temperature	Pdh	3,31	kW	T_j = bivalent temperature	COPd	3,67	-
T_j = operating limit temperature	Pdh	5,02	kW	T_j = operating limit temperature	COPd	2,48	-
For air-water heat pumps: Tj = -15°C	Pdh	-	kW	For air-water heat pumps: Tj = -15°C	COPd	-	-
Bivalent temperature	T_{biv}	7	°C	For air/water heat pumps: Operating limit temperature	TOL	2	°C
Capacity of the cycle range for central heating	P_{cych}	-	kW	Efficiency of cycle range	COP_{cyc}	-	-
Degradation coefficient (**)	C_{dh}	0,9	-	Heating water operation limit temperature	W_{TOLp}	65	°C
Power consumption in modes other than active mode				Additional heater			
OFF mode	P_{OFF}	0,014	kW	Rated heat output (*)	Psup	0,12	kW
Standby Mode	P_{TO}	0,014	kW	Type of energy supplied	electrical		
Thermostat OFF mode	P_{SB}	0,024	kW				
Crankcase heater mode electrical	P_{CK}	0,000	kW				
Other items							
Capacity control	VARIABLE			For air-water heat pumps: Rated air flow rate outdoors	-	2770	$m^3\backslash h$
Indoor/outdoor sound level	L_{WA}	-/-	dB	For water or brine-water heat pumps: Rated water or brine flow rate, heat exchanger outdoors	-	-	$m^3\backslash h$
Annual energy consumption	Q_{HE}	1640	kWh				
For mixed central heating appliances with a heat pump							
Stated load profile	-			Water central heating energy efficiency	η_{wh}	-	%
Daily electrical power consumption	Q_{elec}	-	kWh	Daily fuel consumption	Q_{fuel}	-	kWh
Annual electrical power consumption	AEC	-	kWh	Annual fuel consumption	AFC	-	GJ
Contact information	Immergas S.p.A. via Cisa Ligure n.95						

(*) For heat pump appliances for space heating and heating appliances mixed with heat pump, the rated heat output P_{rated} is equal to the design load for heating. $P_{designh}$ and the rated heat output of an additional heater P_{sup} is equal to the supplementary heating capacity sup(Tj).
(**) If C_{dh} is not determined by measuring, the default degradation coefficient is C_{dh} = 0.9.

Model	**MAGIS M8**						
Air/water heat pump			yes	Low temperature heat pump			no
Water/water heat pump			no	With Supplementary heater			no
Brine/water heat pump			no	Mixed central heating device with heat pump:			no
Declared weather condition: MEDIUM							
The parameters are declared for the medium temperature application.							
Element	**Symbol**	**Value**	**Unit**	**Element**	**Symbol**	**Value**	**Unit**
Rated heat output (*)	P_{rated}	6,6	kW	Room central heating seasonal energy efficiency	η_s	131,5	%
Central heating capacity declared for a partial load at indoor temperature of 20°C and outdoor temperature Tj				Central heating capacity declared for a partial load at indoor temperature of 20°C and outdoor temperature Tj			
T_j = – 7 °C	Pdh	5,84	kW	T_j = – 7 °C	COPd	2,16	-
T_j = + 2 °C	Pdh	3,75	kW	T_j = + 2 °C	COPd	3,30	-
T_j = + 7 °C	Pdh	2,42	kW	T_j = + 7 °C	COPd	4,34	-
T_j = + 12 °C	Pdh	1,39	kW	T_j = + 12 °C	COPd	5,33	-
T_j = bivalent temperature	Pdh	5,84	kW	T_j = bivalent temperature	COPd	2,16	-
T_j = operating limit temperature	Pdh	4,9	kW	T_j = operating limit temperature	COPd	1,84	-
For air-water heat pumps: Tj = -15°C	Pdh	-	kW	For air-water heat pumps: Tj = -15°C	COPd	-	-
Bivalent temperature	T_{biv}	-7	°C	For air/water heat pumps: Operating limit temperature	TOL	-10	°C
Capacity of the cycle range for central heating	P_{cych}	-	kW	Efficiency of cycle range	COP_{cyc}	-	-
Degradation coefficient (**)	C_{dh}	0,9	-	Heating water operation limit temperature	W_{TOLp}	65	°C
Power consumption in modes other than active mode				Additional heater			
OFF mode	P_{OFF}	0,014	kW	Rated heat output (*)	Psup	1,69	kW
Standby Mode	P_{TO}	0,014	kW	Type of energy supplied	electrical		
Thermostat OFF mode	P_{SB}	0,024	kW				
Crankcase heater mode electrical	P_{CK}	0,000	kW				
Other items							
Capacity control	VARIABLE			For air-water heat pumps: Rated air flow rate outdoors	-	4030	m³\h
Indoor/outdoor sound level	L_{WA}	-/59,0	dB	For water or brine-water heat pumps: Rated water or brine flow rate, heat exchanger outdoors	-	-	m³\h
Annual energy consumption	Q_{HE}	4056	kWh				
For mixed central heating appliances with a heat pump							
Stated load profile	-			Water central heating energy efficiency	η_{wh}	-	%
Daily electrical power consumption	Q_{elec}	-	kWh	Daily fuel consumption	Q_{fuel}	-	kWh
Annual electrical power consumption	AEC	-	kWh	Annual fuel consumption	AFC	-	GJ
Contact information	Immergas S.p.A. via Cisa Ligure n.95						

(*) For heat pump appliances for space heating and heating appliances mixed with heat pump, the rated heat output P_{rated} is equal to the design load for heating. $P_{designh}$ and the rated heat output of an additional heater P_{sup} is equal to the supplementary heating capacity sup(Tj).
(**) If C_{dh} is not determined by measuring, the default degradation coefficient is C_{dh} = 0.9.

Model	**MAGIS M8**						
Air/water heat pump			yes	Low temperature heat pump			no
Water/water heat pump			no	With Supplementary heater			no
Brine/water heat pump			no	Mixed central heating device with heat pump:			no
Declared weather condition: COLD							
The parameters are declared for the medium temperature application.							
Element	**Symbol**	**Value**	**Unit**	**Element**	**Symbol**	**Value**	**Unit**
Rated heat output (*)	P_{rated}	5,8	kW	Room central heating seasonal energy efficiency	η_s	112,0	%
Central heating capacity declared for a partial load at indoor temperature of 20°C and outdoor temperature Tj				Central heating capacity declared for a partial load at indoor temperature of 20°C and outdoor temperature Tj			
T_j = – 7 °C	Pdh	3,86	kW	T_j = – 7 °C	COPd	2,48	-
T_j = + 2 °C	Pdh	2,21	kW	T_j = + 2 °C	COPd	3,35	-
T_j = + 7 °C	Pdh	1,44	kW	T_j = + 7 °C	COPd	4,11	-
T_j = + 12 °C	Pdh	1,46	kW	T_j = + 12 °C	COPd	5,92	-
T_j = bivalent temperature	Pdh	4,71	kW	T_j = bivalent temperature	COPd	1,9	-
T_j = operating limit temperature	Pdh	2,8	kW	T_j = operating limit temperature	COPd	1,22	-
For air-water heat pumps: Tj = -15°C	Pdh	-	kW	For air-water heat pumps: Tj = -15°C	COPd	-	-
Bivalent temperature	T_{biv}	-15	°C	For air/water heat pumps: Operating limit temperature	TOL	-22	°C
Capacity of the cycle range for central heating	P_{cych}	-	kW	Efficiency of cycle range	COP_{cyc}	-	-
Degradation coefficient (**)	C_{dh}	0,9	-	Heating water operation limit temperature	W_{TOLp}	65	°C
Power consumption in modes other than active mode				Additional heater			
OFF mode	P_{OFF}	0,014	kW	Rated heat output (*)	Psup	2,97	kW
Standby Mode	P_{TO}	0,014	kW	Type of energy supplied	electrical		
Thermostat OFF mode	P_{SB}	0,024	kW				
Crankcase heater mode electrical	P_{CK}	0,000	kW				
Other items							
Capacity control	VARIABLE			For air-water heat pumps: Rated air flow rate outdoors	-	4030	$m^3\backslash h$
Indoor/outdoor sound level	L_{WA}	-/-	dB	For water or brine-water heat pumps: Rated water or brine flow rate, heat exchanger outdoors	-	-	$m^3\backslash h$
Annual energy consumption	Q_{HE}	4950	kWh				
For mixed central heating appliances with a heat pump							
Stated load profile	-			Water central heating energy efficiency	η_{wh}	-	%
Daily electrical power consumption	Q_{elec}	-	kWh	Daily fuel consumption	Q_{fuel}	-	kWh
Annual electrical power consumption	AEC	-	kWh	Annual fuel consumption	AFC	-	GJ
Contact information	Immergas S.p.A. via Cisa Ligure n.95						

(*) For heat pump appliances for space heating and heating appliances mixed with heat pump, the rated heat output P_{rated} is equal to the design load for heating. $P_{designh}$ and the rated heat output of an additional heater P_{sup} is equal to the supplementary heating capacity sup(Tj).
(**) If C_{dh} is not determined by measuring, the default degradation coefficient is C_{dh} = 0.9.

Model	**MAGIS M8**						
Air/water heat pump			yes	Low temperature heat pump			no
Water/water heat pump			no	With Supplementary heater			no
Brine/water heat pump			no	Mixed central heating device with heat pump:			no
Declared weather condition: WARM							
The parameters are declared for the medium temperature application.							
Element	**Symbol**	**Value**	**Unit**	**Element**	**Symbol**	**Value**	**Unit**
Rated heat output (*)	P_{rated}	8,37	kW	Room central heating seasonal energy efficiency	η_s	176,9	%
Central heating capacity declared for a partial load at indoor temperature of 20°C and outdoor temperature Tj				Central heating capacity declared for a partial load at indoor temperature of 20°C and outdoor temperature Tj			
T_j = – 7 °C	Pdh	-	kW	T_j = – 7 °C	COPd	-	-
T_j = + 2 °C	Pdh	7,55	kW	T_j = + 2 °C	COPd	2,59	-
T_j = + 7 °C	Pdh	5,38	kW	T_j = + 7 °C	COPd	4,01	-
T_j = + 12 °C	Pdh	2,31	kW	T_j = + 12 °C	COPd	5,55	-
T_j = bivalent temperature	Pdh	5,38	kW	T_j = bivalent temperature	COPd	4,01	-
T_j = operating limit temperature	Pdh	7,55	kW	T_j = operating limit temperature	COPd	2,59	-
For air-water heat pumps: Tj = -15°C	Pdh	-	kW	For air-water heat pumps: Tj = -15°C	COPd	-	-
Bivalent temperature	T_{biv}	7	°C	For air/water heat pumps: Operating limit temperature	TOL	2	°C
Capacity of the cycle range for central heating	P_{cych}	-	kW	Efficiency of cycle range	COP_{cyc}	-	-
Degradation coefficient (**)	C_{dh}	0,9	-	Heating water operation limit temperature	W_{TOLp}	65	°C
Power consumption in modes other than active mode				Additional heater			
OFF mode	P_{OFF}	0,014	kW	Rated heat output (*)	Psup	0,82	kW
Standby Mode	P_{TO}	0,014	kW	Type of energy supplied	electrical		
Thermostat OFF mode	P_{SB}	0,024	kW				
Crankcase heater mode electrical	P_{CK}	0,000	kW				
Other items							
Capacity control	VARIABLE			For air-water heat pumps: Rated air flow rate outdoors	-	4030	m³\h
Indoor/outdoor sound level	L_{WA}	-/-	dB	For water or brine-water heat pumps: Rated water or brine flow rate, heat exchanger outdoors	-	-	m³\h
Annual energy consumption	Q_{HE}	2485	kWh				
For mixed central heating appliances with a heat pump							
Stated load profile	-			Water central heating energy efficiency	η_{wh}	-	%
Daily electrical power consumption	Q_{elec}	-	kWh	Daily fuel consumption	Q_{fuel}	-	kWh
Annual electrical power consumption	AEC	-	kWh	Annual fuel consumption	AFC	-	GJ
Contact information	Immergas S.p.A. via Cisa Ligure n.95						

(*) For heat pump appliances for space heating and heating appliances mixed with heat pump, the rated heat output P_{rated} is equal to the design load for heating. $P_{designh}$ and the rated heat output of an additional heater P_{sup} is equal to the supplementary heating capacity sup(Tj).
(**) If C_{dh} is not determined by measuring, the default degradation coefficient is C_{dh} = 0.9.

4 INFORMATION REQUIREMENTS FOR SPACE CHILLERS

Information requirements for space chillers							
Model	MAGIS M4						
Heat exchanger:	Air-Water						
Type:	Steam compression cycle						
Compressor start-up:	Electric motor						
Element	**Symbol**	**Value**	**Unit**	**Element**	**Symbol**	**Value**	**Unit**
Rated cooling capacity	$P_{rated,c}$	4,7	kW	Space heating seasonal energy efficiency	$\eta_{s,c}$	196,2	%
Cooling capacity declared for partial load at a given outdoor temperature Tj				Cooling capacity declared for partial load at a given outdoor temperature Tj			
Tj = +35°C	P_{dc}	4,70	kW	Tj = +35°C	EER_d	3,45	-
Tj = +30°C	P_{dc}	3,66	kW	Tj = +30°C	EER_d	4,76	-
Tj = +25°C	P_{dc}	2,21	kW	Tj = +25°C	EER_d	5,72	-
Tj = +20°C	P_{dc}	0,94	kW	Tj = +20°C	EER_d	5,72	-
Degradation coefficient for chillers (*)	C_{dc}	0,9	-				
Power consumption in modes other than "active mode"							
OFF mode	P_{OFF}	0,014	kW	Crankcase heater mode electrical	P_{CK}	0,000	kW
Thermostat OFF mode	P_{TO}	0,010	kW	Standby Mode	P_{SB}	0,014	kW
Other items							
Capacity control	VARIABLE			For air-water emergency chillers: air flow rate, measured outdoors	-	2770	$m^3\backslash h$
Sound power level, indoors/outdoors	L_{WA}	-\56	dB				
Emissions of nitrogen oxides (if applicable)	NO_x (**)	-	mg\kWh input GCV	For water / brine-water chillers: brine or rated brine water flow rate, outdoors side heat exchanger	-	-	$m^3\backslash h$
GWP of refrigerant	-	675	kg CO_{2eq}				
Standard rating conditions used	Low temperature application						
Contact information	Immergas S.p.A. via Cisa Ligure n.95						

(*) If C_{dc} is not determined by measuring, the standard degradation coefficient of chillers must be 0.9.
(**) Since September 26, 2018

Information requirements for space chillers							
Model	MAGIS M4						
Heat exchanger:	Air-Water						
Type:	Steam compression cycle						
Compressor start-up:	Electric motor						
Element	**Symbol**	**Value**	**Unit**	**Element**	**Symbol**	**Value**	**Unit**
Rated cooling capacity	$P_{rated,c}$	4,5	kW	Space heating seasonal energy efficiency	$\eta_{s,c}$	307,4	%
Cooling capacity declared for partial load at a given outdoor temperature Tj				Cooling capacity declared for partial load at a given outdoor temperature Tj			
Tj = +35°C	P_{dc}	4,50	kW	Tj = +35°C	EER_d	5,50	-
Tj = +30°C	P_{dc}	3,44	kW	Tj = +30°C	EER_d	7,23	-
Tj = +25°C	P_{dc}	2,19	kW	Tj = +25°C	EER_d	8,94	-
Tj = +20°C	P_{dc}	1,13	kW	Tj = +20°C	EER_d	10,48	-
Degradation coefficient for chillers (*)	C_{dc}	0,9	-				
Power consumption in modes other than "active mode"							
OFF mode	P_{OFF}	0,014	kW	Crankcase heater mode electrical	P_{CK}	0,000	kW
Thermostat OFF mode	P_{TO}	0,010	kW	Standby Mode	P_{SB}	0,014	kW
Other items							
Capacity control	VARIABLE			For air-water emergency chillers: air flow rate, measured outdoors	-	2770	$m^3\backslash h$
Sound power level, indoors/outdoors	L_{WA}	- \ 56	dB				
Emissions of nitrogen oxides (if applicable)	NO_x (**)	-	mg\ kWh input GCV	For water / brine-water chillers: brine or rated brine water flow rate, outdoors side heat exchanger	-	-	$m^3\backslash h$
GWP of refrigerant	-	675	kg CO_{2eq}				
Standard rating conditions used	Medium temperature application						
Contact information	Immergas S.p.A. via Cisa Ligure n.95						

(*) If C_{dc} is not determined by measuring, the standard degradation coefficient of chillers must be 0.9.
(**) Since September 26, 2018

Information requirements for space chillers							
Model	MAGIS M6						
Heat exchanger:	Air-Water						
Type:	Steam compression cycle						
Compressor start-up:	Electric motor						
Element	**Symbol**	**Value**	**Unit**	**Element**	**Symbol**	**Value**	**Unit**
Rated cooling capacity	$P_{rated,c}$	7,0	kW	Space heating seasonal energy efficiency	$\eta_{s,c}$	209,5	%
Cooling capacity declared for partial load at a given outdoor temperature Tj				Cooling capacity declared for partial load at a given outdoor temperature Tj			
Tj = +35°C	P_{dc}	7,00	kW	Tj = +35°C	EER_d	3,00	-
Tj = +30°C	P_{dc}	5,13	kW	Tj = +30°C	EER_d	4,00	-
Tj = +25°C	P_{dc}	3,48	kW	Tj = +25°C	EER_d	6,45	-
Tj = +20°C	P_{dc}	1,53	kW	Tj = +20°C	EER_d	7,73	-
Degradation coefficient for chillers (*)	C_{dc}	0,9	-				
Power consumption in modes other than "active mode"							
OFF mode	P_{OFF}	0,014	kW	Crankcase heater mode electrical	P_{CK}	0,000	kW
Thermostat OFF mode	P_{TO}	0,010	kW	Standby Mode	P_{SB}	0,014	kW
Other items							
Capacity control	VARIABLE			For air-water emergency chillers: air flow rate, measured outdoors	-	2770	$m^3\backslash h$
Sound power level, indoors/outdoors	L_{WA}	- \ 60	dB				
Emissions of nitrogen oxides (if applicable)	NO_x (**)	-	mg\ kWh input GCV	For water / brine-water chillers: brine or rated brine water flow rate, outdoors side heat exchanger	-	-	$m^3\backslash h$
GWP of refrigerant	-	675	kg CO_{2eq}				
Standard rating conditions used	Low temperature application						
Contact information	Immergas S.p.A. via Cisa Ligure n.95						

(*) If C_{dc} is not determined by measuring, the standard degradation coefficient of chillers must be 0.9.
(**) Since September 26, 2018

Information requirements for space chillers							
Model	MAGIS M6						
Heat exchanger:	Air-Water						
Type:	Steam compression cycle						
Compressor start-up:	Electric motor						
Element	**Symbol**	**Value**	**Unit**	**Element**	**Symbol**	**Value**	**Unit**
Rated cooling capacity	$P_{rated,c}$	6,5	kW	Space heating seasonal energy efficiency	$\eta_{s,c}$	325,9	%
Cooling capacity declared for partial load at a given outdoor temperature Tj				Cooling capacity declared for partial load at a given outdoor temperature Tj			
Tj = +35°C	P_{dc}	6,50	kW	Tj = +35°C	EER_d	4,80	-
Tj = +30°C	P_{dc}	4,48	kW	Tj = +30°C	EER_d	7,16	-
Tj = +25°C	P_{dc}	3,26	kW	Tj = +25°C	EER_d	9,64	-
Tj = +20°C	P_{dc}	1,41	kW	Tj = +20°C	EER_d	11,48	-
Degradation coefficient for chillers (*)	C_{dc}	0,9	-				
Power consumption in modes other than "active mode"							
OFF mode	P_{OFF}	0,014	kW	Crankcase heater mode electrical	P_{CK}	0,000	kW
Thermostat OFF mode	P_{TO}	0,010	kW	Standby Mode	P_{SB}	0,014	kW
Other items							
Capacity control	VARIABLE			For air-water emergency chillers: air flow rate, measured outdoors	-	2770	$m^3\backslash h$
Sound power level, indoors/outdoors	L_{WA}	- \ 58	dB				
Emissions of nitrogen oxides (if applicable)	NO_x (**)	-	mg\ kWh input GCV	For water / brine-water chillers: brine or rated brine water flow rate, outdoors side heat exchanger	-	-	$m^3\backslash h$
GWP of refrigerant	-	675	kg CO_{2eq}				
Standard rating conditions used	Medium temperature application						
Contact information	Immergas S.p.A. via Cisa Ligure n.95						

(*) If C_{dc} is not determined by measuring, the standard degradation coefficient of chillers must be 0.9.
(**) Since September 26, 2018

Information requirements for space chillers							
Model	MAGIS M8						
Heat exchanger:	Air-Water						
Type:	Steam compression cycle						
Compressor start-up:	Electric motor						
Element	**Symbol**	**Value**	**Unit**	**Element**	**Symbol**	**Value**	**Unit**
Rated cooling capacity	$P_{rated,c}$	7,45	kW	Space heating seasonal energy efficiency	$\eta_{s,c}$	229,9	%
Cooling capacity declared for partial load at a given outdoor temperature Tj				Cooling capacity declared for partial load at a given outdoor temperature Tj			
Tj = +35°C	P_{dc}	7,45	kW	Tj = +35°C	EER_d	3,35	-
Tj = +30°C	P_{dc}	5,72	kW	Tj = +30°C	EER_d	4,71	-
Tj = +25°C	P_{dc}	3,62	kW	Tj = +25°C	EER_d	6,65	-
Tj = +20°C	P_{dc}	1,64	kW	Tj = +20°C	EER_d	8,55	-
Degradation coefficient for chillers (*)	C_{dc}	0,9	-				
Power consumption in modes other than "active mode"							
OFF mode	P_{OFF}	0,014	kW	Crankcase heater mode electrical	P_{CK}	0,000	kW
Thermostat OFF mode	P_{TO}	0,010	kW	Standby Mode	P_{SB}	0,014	kW
Other items							
Capacity control	VARIABLE			For air-water emergency chillers: air flow rate, measured outdoors	-	4030	$m^3\backslash h$
Sound power level, indoors/outdoors	L_{WA}	- \ 60	dB				
Emissions of nitrogen oxides (if applicable)	NO_x (**)	-	mg\ kWh input GCV	For water / brine-water chillers: brine or rated brine water flow rate, outdoors side heat exchanger	-	-	$m^3\backslash h$
GWP of refrigerant	-	675	kg CO_{2eq}				
Standard rating conditions used	Low temperature application						
Contact information	Immergas S.p.A. via Cisa Ligure n.95						

(*) If C_{dc} is not determined by measuring, the standard degradation coefficient of chillers must be 0.9.
(**) Since September 26, 2018

Information requirements for space chillers							
Model	MAGIS M8						
Heat exchanger:	Air-Water						
Type:	Steam compression cycle						
Compressor start-up:	Electric motor						
Element	**Symbol**	**Value**	**Unit**	**Element**	**Symbol**	**Value**	**Unit**
Rated cooling capacity	$P_{rated,c}$	8,3	kW	Space heating seasonal energy efficiency	$\eta_{s,c}$	354,7	%
Cooling capacity declared for partial load at a given outdoor temperature Tj				Cooling capacity declared for partial load at a given outdoor temperature Tj			
Tj = +35°C	P_{dc}	8,30	kW	Tj = +35°C	EER_d	5,05	-
Tj = +30°C	P_{dc}	6,47	kW	Tj = +30°C	EER_d	7,02	-
Tj = +25°C	P_{dc}	4,31	kW	Tj = +25°C	EER_d	10,67	-
Tj = +20°C	P_{dc}	1,80	kW	Tj = +20°C	EER_d	13,61	-
Degradation coefficient for chillers (*)	C_{dc}	0,9	-				
Power consumption in modes other than "active mode"							
OFF mode	P_{OFF}	0,014	kW	Crankcase heater mode electrical	P_{CK}	0,000	kW
Thermostat OFF mode	P_{TO}	0,010	kW	Standby Mode	P_{SB}	0,014	kW
Other items							
Capacity control	VARIABLE			For air-water emergency chillers: air flow rate, measured outdoors	-	4030	m^3\h
Sound power level, indoors/outdoors	L_{WA}	-\60	dB				
Emissions of nitrogen oxides (if applicable)	NO_x (**)	-	mg\kWh input GCV	For water / brine-water chillers: brine or rated brine water flow rate, outdoors side heat exchanger	-	-	m^3\h
GWP of refrigerant	-	675	kg CO_{2eq}				
Standard rating conditions used	Medium temperature application						
Contact information	Immergas S.p.A. via Cisa Ligure n.95						

(*) If C_{dc} is not determined by measuring, the standard degradation coefficient of chillers must be 0.9.
(**) Since September 26, 2018

5 TECHNICAL DATA TABLE ON ENVIRONMENTAL CONDITIONS

Conditions (°C)		MAGIS M4	MAGIS M6	MAGIS M8
Room Temperature: 35/24 Water Temperature: 12/7	**Capacity (kW)**	4,7	7,0	7,45
	Absorbed power (kW)	1,36	2,33	2,22
	EER/COP (/)	3,45	3,0	3,35
Room Temperature: 35/24 Water Temperature: 23/18	**Capacity (kW)**	4,5	6,5	8,3
	Absorbed power (kW)	0,82	1,35	1,64
	EER/COP (/)	5,5	4,8	5,05
Room Temperature: 7/6 Water Temperature: 30/35	**Capacity (kW)**	4,2	6,35	8,4
	Absorbed power (kW)	0,82	1,28	1,63
	EER/COP (/)	5,1	4,95	5,15
Room Temperature: 2/1 Water Temperature: 30/35	**Capacity (kW)**	4,40	5,50	7,1
	Absorbed power (kW)	1,10	1,41	1,73
	EER/COP (/)	4,00	3,9	4,10
Room Temperature: -7/-8 Water Temperature: 30/35	**Capacity (kW)**	4,70	6,00	7,00
	Absorbed power (kW)	1,52	2,00	2,19
	EER/COP (/)	3,10	3,00	3,20
Room Temperature: 7/6 Water Temperature: 40/45	**Capacity (kW)**	4,3	6,3	8,1
	Absorbed power (kW)	1,13	1,7	2,1
	EER/COP (/)	3,8	3,7	3,85
Room Temperature: 2/1 Water Temperature: 40/45	**Capacity (kW)**	5,10	5,80	7,40
	Absorbed power (kW)	1,70	1,93	2,28
	EER/COP (/)	3,00	3,00	3,25
Room Temperature: -7/-8 Water Temperature: 40/45	**Capacity (kW)**	4,30	5,40	6,60
	Absorbed power (kW)	1,83	2,25	2,59
	EER/COP (/)	2,35	2,40	2,55
Room Temperature: 7/6 Water Temperature: 47/55	**Capacity (kW)**	4,4	6,0	7,5
	Absorbed power (kW)	1,49	2,03	2,36
	EER/COP (/)	2,95	2,95	3,18
Room Temperature: 2/1 Water Temperature: 47/55	**Capacity (kW)**	5,10	5,65	7,10
	Absorbed power (kW)	2,08	2,31	2,73
	EER/COP (/)	2,45	2,45	2,60
Room Temperature: -7/-8 Water Temperature: 47/55	**Capacity (kW)**	4,00	5,15	6,15
	Absorbed power (kW)	2,05	2,58	3,00
	EER/COP (/)	1,95	2,00	2,05

Immergas S.p.A.
42041 Brescello (RE) - Italy
Tel. 0522.689011
immergas.com

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For Technical help or for Service call ...
ALPHA HELPLINE Tel: 0344 871 8764
website: www.alpha-innovation.co.uk

Alpha
HEATING INNOVATION

Nepicar House, London Road,
Wrotham Heath, Sevenoaks,
Kent TN15 7RS

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