

IMMERGAS

Product Fiche





MAGIS

M12 - 14 - 16

Block heat pumps
Single phase - Three-phase



1 TECHNICAL DATA MODELS 12 - 14 - 16 KW.

1.1 MEDIUM TEMPERATURE APPLICATIONS.

Single-phase.

Model	For medium temperature applications				
	Energy efficiency class	Sound power of unit	Medium zone temperatures		
			Rated heat output	Space heating seasonal energy efficiency	For space heating, annual power consumption
	-	dB	kW	%	kWh
MAGIS M12	A++	65	11.6	135.1	6927
MAGIS M14	A++	65	12.1	135.6	7202
MAGIS M16	A++	68	13.0	133.3	7895

Model	For medium temperature applications				
	Energy efficiency class	Sound power of unit	Cold zones temperatures		
			Rated heat output	Space heating seasonal energy efficiency	For space heating, annual power consumption
	-	dB	kW	%	kWh
MAGIS M12	A++	65	10.3	117.8	8419
MAGIS M14	A++	65	11.0	118.9	8866
MAGIS M16	A++	68	11.8	121.8	9309

Model	For medium temperature applications				
	Energy efficiency class	Sound power of unit	Hot zones temperatures		
			Rated heat output	Space heating seasonal energy efficiency	For space heating, annual power consumption
	-	dB	kW	%	kWh
MAGIS M12	A++	65	12.5	174.0	3776
MAGIS M14	A++	65	14.17	174.9	4258
MAGIS M16	A++	68	14.17	176.0	4231

Three-phase.

Model	For medium temperature applications				
	Energy efficiency class	Sound power of unit	Medium zone temperatures		
			Rated heat output	Space heating seasonal energy efficiency	For space heating, annual power consumption
			kW	%	kWh
MAGIS M12 T	A++	65	11.6	135.1	6928
MAGIS M14 T	A++	65	12.1	135.6	7203
MAGIS M16 T	A++	68	13.0	133.2	7896

Model	For medium temperature applications				
	Energy efficiency class	Sound power of unit	Cold zones temperatures		
			Rated heat output	Space heating seasonal energy efficiency	For space heating, annual power consumption
			kW	%	kWh
MAGIS M12 T	A++	65	10.3	117.7	8420
MAGIS M14 T	A++	65	11.0	118.9	8867
MAGIS M16 T	A++	68	11.8	121.8	9310

Model	For medium temperature applications				
	Energy efficiency class	Sound power of unit	Hot zones temperatures		
			Rated heat output	Space heating seasonal energy efficiency	For space heating, annual power consumption
			kW	%	kWh
MAGIS M12 T	A++	65	12.5	173.8	3780
MAGIS M14 T	A++	65	14.17	174.7	4262
MAGIS M16 T	A++	68	14.17	175.8	4236

1.2 LOW TEMPERATURE APPLICATIONS.

Single-phase.

Model	For low temperature applications				
	Energy efficiency class	Sound power of unit	Medium zone temperatures		
			Rated heat output	Space heating seasonal energy efficiency	For space heating, annual power consumption
			kW	%	kWh
MAGIS M12	A+++	65	12.0	189.4	5152
MAGIS M14	A+++	65	13.7	185.7	6012
MAGIS M16	A+++	68	15.2	181.7	6804

Model	For low temperature applications				
	Energy efficiency class	Sound power of unit	Cold zones temperatures		
			Rated heat output	Space heating seasonal energy efficiency	For space heating, annual power consumption
			kW	%	kWh
MAGIS M12	A+++	65	11.4	160.2	6870
MAGIS M14	A+++	65	12.6	159.6	7667
MAGIS M16	A+++	68	13.7	157.8	8431

Model	For low temperature applications				
	Energy efficiency class	Sound power of unit	Hot zones temperatures		
			Rated heat output	Space heating seasonal energy efficiency	For space heating, annual power consumption
			kW	%	kWh
MAGIS M12	A+++	65	11.1	256.1	2292
MAGIS M14	A+++	65	12.1	260.3	2457
MAGIS M16	A+++	68	13.1	248.5	2781

Three-phase.

Model	For low temperature applications				
	Energy efficiency class	Sound power of unit	Medium zone temperatures		
			Rated heat output	Space heating seasonal energy efficiency	For space heating, annual power consumption
			kW	%	kWh
MAGIS M12 T	A+++	65	12.0	189.3	5153
MAGIS M14 T	A+++	65	13.7	185.6	6013
MAGIS M16 T	A+++	68	15.2	181.6	6805

Model	For low temperature applications				
	Energy efficiency class	Sound power of unit	Cold zones temperatures		
			Rated heat output	Space heating seasonal energy efficiency	For space heating, annual power consumption
			kW	%	kWh
MAGIS M12 T	A+++	65	11.4	160.2	6871
MAGIS M14 T	A+++	65	12.6	159.6	7667
MAGIS M16 T	A+++	68	13.7	157.8	8431

Model	For low temperature applications				
	Energy efficiency class	Sound power of unit	Hot zones temperatures		
			Rated heat output	Space heating seasonal energy efficiency	For space heating, annual power consumption
			kW	%	kWh
MAGIS M12 T	A+++	65	11.1	255.6	2296
MAGIS M14 T	A+++	65	12.1	259.8	2462
MAGIS M16 T	A+++	68	13.1	248.1	2786

2

PRODUCT DATA SHEET MODELS 12 - 14 - 16 KW.

Single-phase.

Space heating appliance with heat pump		Model	MAGIS M12	MAGIS M14	MAGIS M16
Sound power of unit (*)	Low temperature medium weather application	dB	65.0	65.0	68.0
	Medium weather temperature application	dB	65.0	65.0	68.0
Space heating	Energy efficiency class 35°C (low temperature application)	-	A+++	A+++	A+++
Space heating	Energy efficiency class 55°C (medium temperature application)	-	A++	A++	A++
Medium weather (design temperature = -10°C)					
Space heating 35°C	P _{rated} (declared heating capacity) @ -10°C	kW	12.0	13.7	15.2
	Space heating seasonal energy efficiency (η _s)	%	189.4	185.7	181.7
	Annual power consumption	kWh	5152	6012	6804
Space heating 55°C	P _{rated} (declared heating capacity) @ -10°C	kW	11.6	12.1	13.0
	Space heating seasonal energy efficiency (η _s)	%	135.1	135.6	133.3
	Annual power consumption	kWh	6927	7202	7895
Low temperature application medium weather space heating partial load conditions					
(A) Condition (-7°C)	P _{dh} (Declared heating capacity)	kW	10.61	12.14	13.45
	COP _d (Declared COP)	-	2.88	2.79	2.72
	C _{dh} (Degradation coefficient)	-	0.90	0.90	0.90
(B) Condition (2°C)	P _{dh} (Declared heating capacity)	kW	6.69	7.94	8.56
	COP _d (Declared COP)	-	4.65	4.52	4.41
	C _{dh} (Degradation coefficient)	-	0.90	0.90	0.90
(C) Condition (7°C)	P _{dh} (Declared heating capacity)	kW	4.44	5.20	5.70
	COP _d (Declared COP)	-	6.62	6.68	6.56
	C _{dh} (Degradation coefficient)	-	0.90	0.90	0.90
(D) Condition (12°C)	P _{dh} (Declared heating capacity)	kW	3.74	3.75	3.78
	COP _d (Declared COP)	-	8.47	8.52	8.51
	C _{dh} (Degradation coefficient)	-	0.90	0.90	0.90

Space heating appliance with heat pump		Model	MAGIS M12	MAGIS M14	MAGIS M16
(E) Tol (operation limit temperature)	Tol (operation limit temperature)	°C	-10.00	-10.00	-10.00
	P _{dh} (Declared heating capacity)	kW	10.74	11.47	12.52
	COP _d (Declared COP)	-	2.77	2.59	2.48
	W _{TOL} (Water heating limit operation)	°C	65.00	65.00	65.00
(F) T _{bivalent} temperature	T _{blv}	°C	-7.00	-7.00	-7.00
	P _{dh} (Declared heating capacity)	kW	10.61	12.14	13.45
	COP _d (Declared COP)	-	2.88	2.79	2.72
Supplementary capacity to P _{design}	P _{sup} (@T _{designh} : -10°C)	kW	1.26	2.23	2.68
Medium temperature application medium weather space heating partial load conditions					
(A) Condition (-7°C)	P _{dh} (Declared heating capacity)	kW	10.24	10.68	11.52
	COP _d (Declared COP)	-	2.01	2.01	1.99
	C _{dh} (Degradation coefficient)	-	0.90	0.90	0.90
(B) Condition (2°C)	P _{dh} (Declared heating capacity)	kW	6.52	6.86	7.18
	COP _d (Declared COP)	-	3.44	3.43	3.34
	C _{dh} (Degradation coefficient)	-	0.90	0.90	0.90
(C) Condition (7°C)	P _{dh} (Declared heating capacity)	kW	4.36	4.63	4.67
	COP _d (Declared COP)	-	4.59	4.66	4.61
	C _{dh} (Degradation coefficient)	-	0.90	0.90	0.90
(D) Condition (12°C)	P _{dh} (Declared heating capacity)	kW	3.29	3.31	3.31
	COP _d (Declared COP)	-	6.05	6.13	6.07
	C _{dh} (Degradation coefficient)	-	0.90	0.90	0.90

Space heating appliance with heat pump		Model	MAGIS M12	MAGIS M14	MAGIS M16
(E) Tol (operation limit temperature)	Tol (operation limit temperature)	°C	-10.00	-10.00	-10.00
	P _{dh} (Declared heating capacity)	kW	9.10	9.19	10.33
	COP _d (Declared COP)	-	1.79	1.76	1.80
	W _{TOL} (Water heating limit operation)	°C	65.00	65.00	65.00
(F) T _{bivalent} temperature	T _{blv}	°C	-7.00	-7.00	-7.00
	P _{dh} (Declared heating capacity)	kW	10.24	10.68	11.52
	COP _d (Declared COP)	-	2.01	2.01	1.99
Supplementary capacity to P _{design}	P _{sup} (@T _{designh} : -10°C)	kW	2.50	2.91	2.67
Cold weather (Design temperature = -22°C)					
Space heating 35°C	P _{rated} (declared heating capacity) @ -22°C	kW	11.4	12.6	13.7
	Space heating seasonal energy efficiency (η _s)	%	160.2	159.6	157.8
	Annual power consumption	kWh	6870	7667	8431
Space heating 55°C	P _{rated} (declared heating capacity) @ -22°C	kW	10.3	11.0	11.8
	Space heating seasonal energy efficiency (η _s)	%	117.8	118.9	121.8
	Annual power consumption	kWh	8419	8866	9309
Low temperature application cold weather space heating partial load conditions					
(A) Condition (-7°C)	P _{dh} (Declared heating capacity)	kW	7.05	7.96	8.31
	COP _d (Declared COP)	-	3.48	3.44	3.37
	C _{dh} (Degradation coefficient)	-	0.90	0.90	0.90
(B) Condition (2°C)	P _{dh} (Declared heating capacity)	kW	4.67	5.05	5.26
	COP _d (Declared COP)	-	4.96	4.92	4.86
	C _{dh} (Degradation coefficient)	-	0.90	0.90	0.90
(C) Condition (7°C)	P _{dh} (Declared heating capacity)	kW	3.14	3.15	3.62
	COP _d (Declared COP)	-	6.10	6.11	6.49
	C _{dh} (Degradation coefficient)	-	0.90	0.90	0.90

Space heating appliance with heat pump		Model	MAGIS M12	MAGIS M14	MAGIS M16
(D) Condition (12°C)	P_{dh} (Declared heating capacity)	kW	3.57	3.57	3.34
	COP_d (Declared COP)	-	7.87	7.82	7.40
	C_{dh} (Degradation coefficient)	-	0.90	0.90	0.90
(E) Tol (operation limit temperature)	Tol (operation limit temperature)	°C	-22.00	-22.00	-22.00
	P_{dh} (Declared heating capacity)	kW	7.01	7.57	8.88
	COP_d (Declared COP)	-	1.98	1.92	1.97
	W_{TOL} (Water heating limit operation)	°C	65.00	65.00	65.00
(F) $T_{bivalent}$ temperature	T_{blv}	°C	-15.00	-15.00	-15.00
	P_{dh} (Declared heating capacity)	kW	9.28	10.31	11.22
	COP_d (Declared COP)	-	2.59	2.53	2.43
Supplementary capacity to P_{design}	P_{sup} (@ $T_{designh}$: -22°C)	kW	4.40	5.03	4.82
Medium temperature application cold weather space heating partial load conditions					
(A) Condition (-7°C)	P_{dh} (Declared heating capacity)	kW	6.63	6.89	7.64
	COP_d (Declared COP)	-	2.63	2.66	2.65
	C_{dh} (Degradation coefficient)	-	0.90	0.90	0.90
(B) Condition (2°C)	P_{dh} (Declared heating capacity)	kW	4.06	4.32	4.42
	COP_d (Declared COP)	-	3.60	3.66	3.79
	C_{dh} (Degradation coefficient)	-	0.90	0.90	0.90
(C) Condition (7°C)	P_{dh} (Declared heating capacity)	kW	2.78	3.06	2.97
	COP_d (Declared COP)	-	4.54	4.72	4.81
	C_{dh} (Degradation coefficient)	-	0.90	0.90	0.90
(D) Condition (12°C)	P_{dh} (Declared heating capacity)	kW	3.33	3.33	3.43
	COP_d (Declared COP)	-	6.25	6.25	6.29
	C_{dh} (Degradation coefficient)	-	0.90	0.90	0.90
(E) Tol (operation limit temperature)	Tol (operation limit temperature)	°C	-22.00	-22.00	-22.00
	P_{dh} (Declared heating capacity)	kW	4.19	4.20	5.21
	COP_d (Declared COP)	-	1.13	1.13	1.23
	W_{TOL} (Water heating limit operation)	°C	65.00	65.00	65.00

Space heating appliance with heat pump		Model	MAGIS M12	MAGIS M14	MAGIS M16
(F) T_{bivalent} temperature	T_{blv}	°C	-15.00	-15.00	-15.00
	P_{dh} (Declared heating capacity)	kW	8.41	8.94	9.61
	COP_d (Declared COP)	-	1.84	1.79	1.86
Supplementary capacity to P_{design}	P_{sup} (@ $T_{\text{designh}}: -22^\circ\text{C}$)	kW	6.12	6.80	6.59
Warm weather (Design temperature = 2°C)					
Space heating 35°C	P_{rated} (declared heating capacity) @ -2°C	kW	11.1	12.1	13.1
	Space heating seasonal energy efficiency (η_s)	%	256.1	260.3	248.5
	Annual power consumption	kWh	2292	2457	2781
Space heating 55°C	P_{rated} (declared heating capacity) @ -2°C	kW	12.5	14.17	14.17
	Space heating seasonal energy efficiency (η_s)	%	174.0	174.9	176.0
	Annual power consumption	kWh	3776	4258	4231
Low temperature application warm weather space heating partial load conditions					
(B) Condition (2°C)	P_{dh} (Declared heating capacity)	kW	11.10	12.04	13.10
	COP_d (Declared COP)	-	3.59	3.44	3.35
	C_{dh} (Degradation coefficient)	-	0.90	0.90	0.90
(C) Condition (7°C)	P_{dh} (Declared heating capacity)	kW	7.14	7.78	8.41
	COP_d (Declared COP)	-	5.87	5.84	5.36
	C_{dh} (Degradation coefficient)	-	0.90	0.90	0.90
(D) Condition (12°C)	P_{dh} (Declared heating capacity)	kW	3.55	3.75	3.87
	COP_d (Declared COP)	-	7.94	8.25	8.11
	C_{dh} (Degradation coefficient)	-	0.90	0.90	0.90
(E) Tol (operation limit temperature)	Tol (operation limit temperature)	°C	2.00	2.00	2.00
	P_{dh} (Declared heating capacity)	kW	11.10	12.04	13.10
	COP_d (Declared COP)	-	3.59	3.44	3.35
	W_{TOL} (Water heating limit operation)	°C	65.00	65.00	65.00
(F) T_{bivalent} temperature	T_{blv}	°C	7.00	7.00	7.00
	P_{dh} (Declared heating capacity)	kW	7.14	7.78	8.41
	COP_d (Declared COP)	-	5.87	5.84	5.36
Supplementary capacity to P_{design}	P_{sup} (@ $T_{\text{designh}}: 2^\circ\text{C}$)	kW	0.00	0.06	0.00

Space heating appliance with heat pump		Model	MAGIS M12	MAGIS M14	MAGIS M16
Medium temperature application warm weather space heating partial load conditions					
(B) Condition (2°C)	P_{dh} (Declared heating capacity)	kW	12.07	13.04	13.38
	COP_d (Declared COP)	-	2.31	2.20	2.29
	C_{dh} (Degradation coefficient)	-	0.90	0.90	0.90
(C) Condition (7°C)	P_{dh} (Declared heating capacity)	kW	8.04	9.11	9.11
	COP_d (Declared COP)	-	3.86	3.89	3.89
	C_{dh} (Degradation coefficient)	-	0.90	0.90	0.90
(D) Condition (12°C)	P_{dh} (Declared heating capacity)	kW	3.75	4.08	4.06
	COP_d (Declared COP)	-	5.70	5.90	5.86
	C_{dh} (Degradation coefficient)	-	0.90	0.90	0.90
(E) Tol (operation limit temperature)	Tol (operation limit temperature)	°C	2.00	2.00	2.00
	P_{dh} (Declared heating capacity)	kW	12.07	13.04	13.38
	COP_d (Declared COP)	-	2.31	2.20	2.29
	W_{TOL} (Water heating limit operation)	°C	65.00	65.00	65.00
(F) $T_{bivalent}$ temperature	T_{biv}	°C	7.00	7.00	7.00
	P_{dh} (Declared heating capacity)	kW	8.04	9.11	9.11
	COP_d (Declared COP)	-	3.86	3.89	3.89
Supplementary capacity to P_{design}	P_{sup} (@ $T_{designh}$: 2°C)	kW	0.43	1.13	0.79
0					
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	Yes	Yes	Yes
	Mixed central heating device with heat pump:	Y/N	No	No	No
Air-water unit	Nominal air flow	m³/h	4060	4060	4650
Brine/water to water unit	Water/brine at nominal flow rate (H/E outdoor)		/	/	/

Space heating appliance with heat pump		Model	MAGIS M12	MAGIS M14	MAGIS M16
Other	Capacity control	-	Inverter	Inverter	Inverter
	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.

Three-phase.

Space heating appliance with heat pump		Model	MAGIS M12 T	MAGIS M14 T	MAGIS M16 T
Sound power of unit (*)	Low temperature medium weather application	dB	65.0	65.0	68.0
	Medium weather temperature application	dB	65.0	65.0	68.0
Space heating	Energy efficiency class 35°C (low temperature application)	-	A+++	A+++	A+++
Space heating	Energy efficiency class 55°C (medium temperature application)	-	A++	A++	A++
Medium weather (design temperature = -10°C)					
Space heating 35°C	P_{rated} (declared heating capacity) @ -10°C	kW	12.0	13.7	15.2
	Space heating seasonal energy efficiency (η_s)	%	189.3	185.6	181.6
	Annual power consumption	kWh	5153	6013	6805
Space heating 55°C	P_{rated} (declared heating capacity) @ -10°C	kW	11.6	12.1	13.0
	Space heating seasonal energy efficiency (η_s)	%	135.1	135.6	133.2
	Annual power consumption	kWh	6928	7203	7896
Low temperature application medium weather space heating partial load conditions					
(A) Condition (-7°C)	P_{dh} (Declared heating capacity)	kW	10.61	12.14	13.45
	COP_d (Declared COP)	-	2.88	2.79	2.72
	C_{dh} (Degradation coefficient)	-	0.90	0.90	0.90

Space heating appliance with heat pump		Model	MAGIS M12 T	MAGIS M14 T	MAGIS M16 T
(B) Condition (2°C)	P _{dh} (Declared heating capacity)	kW	6.69	7.94	8.56
	COP _d (Declared COP)	-	4.65	4.52	4.41
	C _{dh} (Degradation coefficient)	-	0.90	0.90	0.90
(C) Condition (7°C)	P _{dh} (Declared heating capacity)	kW	4.44	5.20	5.70
	COP _d (Declared COP)	-	6.62	6.68	6.56
	C _{dh} (Degradation coefficient)	-	0.90	0.90	0.90
(D) Condition (12°C)	P _{dh} (Declared heating capacity)	kW	3.74	3.75	3.78
	COP _d (Declared COP)	-	8.47	8.52	8.51
	C _{dh} (Degradation coefficient)	-	0.90	0.90	0.90
(E) Tol (operation limit temperature)	Tol (operation limit temperature)	°C	-10.00	-10.00	-10.00
	P _{dh} (Declared heating capacity)	kW	10.74	11.47	12.52
	COP _d (Declared COP)	-	2.77	2.59	2.48
	W _{TOL} (Water heating limit operation)	°C	65.00	65.00	65.00
(F) T _{bivalent} temperature	T _{blv}	°C	-7.00	-7.00	-7.00
	P _{dh} (Declared heating capacity)	kW	10.61	12.14	13.45
	COP _d (Declared COP)	-	2.88	2.79	2.72
Supplementary capacity to P _{design}	P _{sup} (@T _{designh} : -10°C)	kW	1.26	2.23	2.68
Medium temperature application medium weather space heating partial load conditions					
(A) Condition (-7°C)	P _{dh} (Declared heating capacity)	kW	10.24	10.68	11.52
	COP _d (Declared COP)	-	2.01	2.01	1.99
	C _{dh} (Degradation coefficient)	-	0.90	0.90	0.90
(B) Condition (2°C)	P _{dh} (Declared heating capacity)	kW	6.52	6.86	7.18
	COP _d (Declared COP)	-	3.44	3.43	3.34
	C _{dh} (Degradation coefficient)	-	0.90	0.90	0.90
(C) Condition (7°C)	P _{dh} (Declared heating capacity)	kW	4.36	4.63	4.67
	COP _d (Declared COP)	-	4.59	4.66	4.61
	C _{dh} (Degradation coefficient)	-	0.90	0.90	0.90

Space heating appliance with heat pump		Model	MAGIS M12 T	MAGIS M14 T	MAGIS M16 T
(D) Condition (12°C)	P _{dh} (Declared heating capacity)	kW	3.29	3.31	3.31
	COP _d (Declared COP)	-	6.05	6.13	6.07
	C _{dh} (Degradation coefficient)	-	0.90	0.90	0.90
(E) Tol (operation limit temperature)	Tol (operation limit temperature)	°C	-10.00	-10.00	-10.00
	P _{dh} (Declared heating capacity)	kW	9.10	9.19	10.33
	COP _d (Declared COP)	-	1.79	1.76	1.80
	W _{TOL} (Water heating limit operation)	°C	65.00	65.00	65.00
(F) T _{bivalent} temperature	T _{blv}	°C	-7.00	-7.00	-7.00
	P _{dh} (Declared heating capacity)	kW	10.24	10.68	11.52
	COP _d (Declared COP)	-	2.01	2.01	1.99
Supplementary capacity to P _{design}	P _{sup} (@T _{designh} : -10°C)	kW	2.50	2.91	2.67
Cold weather (Design temperature = -22°C)					
Space heating 35°C	P _{rated} (declared heating capacity) @ -22°C	kW	11.4	12.6	13.7
	Space heating seasonal energy efficiency (η _s)	%	160.2	159.6	157.8
	Annual power consumption	kWh	6871	7667	8431
Space heating 55°C	P _{rated} (declared heating capacity) @ -22°C	kW	10.3	11.0	11.8
	Space heating seasonal energy efficiency (η _s)	%	117.7	118.9	121.8
	Annual power consumption	kWh	8420	8867	9310
Low temperature application cold weather space heating partial load conditions					
(A) Condition (-7°C)	P _{dh} (Declared heating capacity)	kW	7.05	7.96	8.31
	COP _d (Declared COP)	-	3.48	3.44	3.37
	C _{dh} (Degradation coefficient)	-	0.90	0.90	0.90
(B) Condition (2°C)	P _{dh} (Declared heating capacity)	kW	4.67	5.05	5.26
	COP _d (Declared COP)	-	4.96	4.92	4.86
	C _{dh} (Degradation coefficient)	-	0.90	0.90	0.90
(C) Condition (7°C)	P _{dh} (Declared heating capacity)	kW	3.14	3.15	3.62
	COP _d (Declared COP)	-	6.10	6.11	6.49
	C _{dh} (Degradation coefficient)	-	0.90	0.90	0.90

Space heating appliance with heat pump		Model	MAGIS M12 T	MAGIS M14 T	MAGIS M16 T
(D) Condition (12°C)	P _{dh} (Declared heating capacity)	kW	3.57	3.57	3.34
	COP _d (Declared COP)	-	7.87	7.82	7.40
	C _{dh} (Degradation coefficient)	-	0.90	0.90	0.90
(E) Tol (operation limit temperature)	Tol (operation limit temperature)	°C	-22.00	-22.00	-22.00
	P _{dh} (Declared heating capacity)	kW	7.01	7.57	8.88
	COP _d (Declared COP)	-	1.98	1.92	1.97
	W _{TOL} (Water heating limit operation)	°C	65.00	65.00	65.00
(F) T _{bivalent} temperature	T _{blv}	°C	-15.00	-15.00	-15.00
	P _{dh} (Declared heating capacity)	kW	9.28	10.31	11.22
	COP _d (Declared COP)	-	2.59	2.53	2.43
Supplementary capacity to P _{design}	P _{sup} (@T _{designh} : -22°C)	kW	4.40	5.03	4.82
Medium temperature application cold weather space heating partial load conditions					
(A) Condition (-7°C)	P _{dh} (Declared heating capacity)	kW	6.63	6.89	7.64
	COP _d (Declared COP)	-	2.63	2.66	2.65
	C _{dh} (Degradation coefficient)	-	0.90	0.90	0.90
(B) Condition (2°C)	P _{dh} (Declared heating capacity)	kW	4.06	4.32	4.42
	COP _d (Declared COP)	-	3.60	3.66	3.79
	C _{dh} (Degradation coefficient)	-	0.90	0.90	0.90
(C) Condition (7°C)	P _{dh} (Declared heating capacity)	kW	2.78	3.06	2.97
	COP _d (Declared COP)	-	4.54	4.72	4.81
	C _{dh} (Degradation coefficient)	-	0.90	0.90	0.90
(D) Condition (12°C)	P _{dh} (Declared heating capacity)	kW	3.33	3.33	3.43
	COP _d (Declared COP)	-	6.25	6.25	6.29
	C _{dh} (Degradation coefficient)	-	0.90	0.90	0.90
(E) Tol (operation limit temperature)	Tol (operation limit temperature)	°C	-22.00	-22.00	-22.00
	P _{dh} (Declared heating capacity)	kW	4.19	4.20	5.21
	COP _d (Declared COP)	-	1.13	1.13	1.23
	W _{TOL} (Water heating limit operation)	°C	65.00	65.00	65.00

Space heating appliance with heat pump		Model	MAGIS M12 T	MAGIS M14 T	MAGIS M16 T
(F) T_{bivalent} temperature	T_{blv}	°C	-15.00	-15.00	-15.00
	P_{dh} (Declared heating capacity)	kW	8.41	8.94	9.61
	COP_d (Declared COP)	-	1.84	1.79	1.86
Supplementary capacity to P_{design}	P_{sup} (@ $T_{\text{designh}}: -22^\circ\text{C}$)	kW	6.12	6.80	6.59
Warm weather (Design temperature = 2°C)					
Space heating 35°C	P_{rated} (declared heating capacity) @ -2°C	kW	11.1	12.1	13.1
	Space heating seasonal energy efficiency (η_s)	%	255.6	259.8	248.1
	Annual power consumption	kWh	2296	2462	2786
Space heating 55°C	P_{rated} (declared heating capacity) @ -2°C	kW	12.5	14.17	14.17
	Space heating seasonal energy efficiency (η_s)	%	173.8	174.9	175.8
	Annual power consumption	kWh	3780	4262	4236
Low temperature application warm weather space heating partial load conditions					
(B) Condition (2°C)	P_{dh} (Declared heating capacity)	kW	11.10	12.04	13.10
	COP_d (Declared COP)	-	3.59	3.44	3.35
	C_{dh} (Degradation coefficient)	-	0.90	0.90	0.90
(C) Condition (7°C)	P_{dh} (Declared heating capacity)	kW	7.14	7.78	8.41
	COP_d (Declared COP)	-	5.87	5.84	5.36
	C_{dh} (Degradation coefficient)	-	0.90	0.90	0.90
(D) Condition (12°C)	P_{dh} (Declared heating capacity)	kW	3.55	3.75	3.87
	COP_d (Declared COP)	-	7.94	8.25	8.11
	C_{dh} (Degradation coefficient)	-	0.90	0.90	0.90
(E) Tol (operation limit temperature)	Tol (operation limit temperature)	°C	2.00	2.00	2.00
	P_{dh} (Declared heating capacity)	kW	11.10	12.04	13.10
	COP_d (Declared COP)	-	3.59	3.44	3.35
	W_{TOL} (Water heating limit operation)	°C	65.00	65.00	65.00
(F) T_{bivalent} temperature	T_{blv}	°C	7.00	7.00	7.00
	P_{dh} (Declared heating capacity)	kW	7.14	7.78	8.41
	COP_d (Declared COP)	-	5.87	5.84	5.36
Supplementary capacity to P_{design}	P_{sup} (@ $T_{\text{designh}}: 2^\circ\text{C}$)	kW	0.00	0.06	0.00

Space heating appliance with heat pump		Model	MAGIS M12 T	MAGIS M14 T	MAGIS M16 T
Medium temperature application warm weather space heating partial load conditions					
(B) Condition (2°C)	P_{dh} (Declared heating capacity)	kW	12.07	13.04	13.38
	COP_d (Declared COP)	-	2.31	2.20	2.29
	C_{dh} (Degradation coefficient)	-	0.90	0.90	0.90
(C) Condition (7°C)	P_{dh} (Declared heating capacity)	kW	8.04	9.11	9.11
	COP_d (Declared COP)	-	3.86	3.89	3.89
	C_{dh} (Degradation coefficient)	-	0.90	0.90	0.90
(D) Condition (12°C)	P_{dh} (Declared heating capacity)	kW	3.75	4.08	4.06
	COP_d (Declared COP)	-	5.70	5.90	5.86
	C_{dh} (Degradation coefficient)	-	0.90	0.90	0.90
(E) Tol (operation limit temperature)	Tol (operation limit temperature)	°C	2.00	2.00	2.00
	P_{dh} (Declared heating capacity)	kW	12.07	13.04	13.38
	COP_d (Declared COP)	-	2.31	2.20	2.29
	W_{TOL} (Water heating limit operation)	°C	65.00	65.00	65.00
(F) $T_{bivalent}$ temperature	T_{biv}	°C	7.00	7.00	7.00
	P_{dh} (Declared heating capacity)	kW	8.04	9.11	9.11
	COP_d (Declared COP)	-	3.86	3.89	3.89
Supplementary capacity to P_{design}	P_{sup} (@ $T_{designh}$: 2°C)	kW	0.43	1.13	0.79
0					
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	Yes	Yes	Yes
	Mixed central heating device with heat pump:	Y/N	No	No	No
Air-water unit	Nominal air flow	m³/h	4060	4060	4650
Brine/water to water unit	Water/brine at nominal flow rate (H/E outdoor)		/	/	/

Space heating appliance with heat pump		Model	MAGIS M12 T	MAGIS M14 T	MAGIS M16 T
Other	Capacity control	-	Inverter	Inverter	Inverter
	P_{off} (Power consumption OFF Mode)	kW	0.020	0.020	0.020
	P_{to} (Power consumption with thermostat at OFF Mode)	kW	0.030	0.030	0.030
	P_{sb} (Power consumption in Standby Mode)	kW	0.020	0.020	0.020
	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.

3 TECHNICAL PARAMETERS MODELS 12 - 14 - 16 KW.

Single-phase.

Technical Parameters								
Model:	MAGIS M12							
Air-water heat pump:	Yes							
Water-water heat pump:	No							
Brine to water heat pump:	No							
Low temperature heat pump:	No							
Equipped with additional heater:	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}	11.6	kW		Space heating seasonal energy efficiency	η _s	135.1	%
Central heating capacity declared for a partial load at indoor temperature of 20°C and outdoor temperature T _j					Central heating capacity declared for a partial load at indoor temperature of 20°C and outdoor temperature T _j			
T _j = -7°C	P _{dh}	10.24	kW		T _j = -7°C	COP _d	2.01	-
T _j = 2°C	P _{dh}	6.52	kW		T _j = 2°C	COP _d	3.44	-
T _j = 7°C	P _{dh}	4.36	kW		T _j = 7°C	COP _d	4.59	-
T _j = 12°C	P _{dh}	3.29	kW		T _j = 12°C	COP _d	6.05	-
T _j = bivalent temperature	P _{dh}	10.24	kW		T _j = bivalent temperature	COP _d	2.01	-
T _j = operating limit	P _{dh}	9.10	kW		T _j = operating limit	COP _d	1.79	-
For air-water heat pumps: T _j = -15°C	P _{dh}	-	kW		For air-water heat pumps: T _j = -15°C	COP _d	-	-
Bivalent temperature	T _{biv}	-7	°C		For air-water heat pumps: Operation 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 _{TOL}	65	°C
Power consumption in modes other than active mode					Additional heater			
OFF mode	P _{off}	0.014	kW		Rated heat output (*)	P _{sup}	2.50	kW
Standby Mode	P _{sb}	0.014	kW		Type of energy supplied	Electric		
Thermostat OFF mode	P _{to}	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	-	4060	m³/h
Sound power level, indoors/outdoors	L _{WA}	-/65	dB		For water or brine-water heat pumps: Rated water or brine flow rate, heat exchanger outdoors	-	-	m³/h
Annual power consumption	Q _{HE}	6927	kWh					
For mixed central heating appliances with a heat pump:								
Declared 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(T _j).								
(**) If C _{dh} is not determined by measuring, the default degradation coefficient is C _{dh} = 0.9.								

Technical Parameters								
Model:	MAGIS M12							
Air-water heat pump:	Yes							
Water-water heat pump:	No							
Brine to water heat pump:	No							
Low temperature heat pump:	No							
Equipped with additional heater:	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}	10.3	kW		Space heating seasonal energy efficiency	η _s	117.8	%
Central heating capacity declared for a partial load at indoor temperature of 20°C and outdoor temperature T _j					Central heating capacity declared for a partial load at indoor temperature of 20°C and outdoor temperature T _j			
T _j = -7°C	P _{dh}	6.63	kW		T _j = -7°C	COP _d	2.63	-
T _j = 2°C	P _{dh}	4.06	kW		T _j = 2°C	COP _d	3.60	-
T _j = 7°C	P _{dh}	2.78	kW		T _j = 7°C	COP _d	4.54	-
T _j = 12°C	P _{dh}	3.33	kW		T _j = 12°C	COP _d	6.25	-
T _j = bivalent temperature	P _{dh}	8.41	kW		T _j = bivalent temperature	COP _d	1.84	-
T _j = operating limit	P _{dh}	4.19	kW		T _j = operating limit	COP _d	1.13	-
For air-water heat pumps: T _j = -15°C	P _{dh}	-	kW		For air-water heat pumps: T _j = -15°C	COP _d	-	-
Bivalent temperature	T _{biv}	-15	°C		For air-water heat pumps: Operation 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 _{TOL}	65	°C
Power consumption in modes other than active mode					Additional heater			
OFF mode	P _{off}	0.014	kW		Rated heat output (*)	P _{sup}	6.12	kW
Standby Mode	P _{sb}	0.014	kW		Type of energy supplied	Electric		
Thermostat OFF mode	P _{to}	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	-	4060	m³/h
Sound power level, indoors/outdoors	L _{WA}	-	dB		For water or brine-water heat pumps: Rated water or brine flow rate, heat exchanger outdoors	-	-	m³/h
Annual power consumption	Q _{HE}	8419	kWh					
For mixed central heating appliances with a heat pump:								
Declared 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(T _j).								
(**) If C _{dh} is not determined by measuring, the default degradation coefficient is C _{dh} = 0.9.								

Technical Parameters							
Model:	MAGIS M12						
Air-water heat pump:	Yes						
Water-water heat pump:	No						
Brine to water heat pump:	No						
Low temperature heat pump:	No						
Equipped with additional heater:	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}	12.5	kW	Space heating seasonal energy efficiency	η _s	174.0	%
Central heating capacity declared for a partial load at indoor temperature of 20°C and outdoor temperature T _j				Central heating capacity declared for a partial load at indoor temperature of 20°C and outdoor temperature T _j			
T _j = -7°C	P _{dh}	-	kW	T _j = -7°C	COP _d	-	-
T _j = 2°C	P _{dh}	12.07	kW	T _j = 2°C	COP _d	2.31	-
T _j = 7°C	P _{dh}	8.04	kW	T _j = 7°C	COP _d	3.86	-
T _j = 12°C	P _{dh}	3.75	kW	T _j = 12°C	COP _d	5.70	-
T _j = bivalent temperature	P _{dh}	8.04	kW	T _j = bivalent temperature	COP _d	3.86	-
T _j = operating limit	P _{dh}	12.07	kW	T _j = operating limit	COP _d	2.31	-
For air-water heat pumps: T _j = -15°C	P _{dh}	-	kW	For air-water heat pumps: T _j = -15°C	COP _d	-	-
Bivalent temperature	T _{biv}	7	°C	For air-water heat pumps: Operation limit temperature	TOL	2	°C
Capacity of the cycle range for central heating	P _{cyc}	-	kW	Efficiency of cycle range	COP _{cyc}	-	-
Degradation coefficient (**)	C _{dh}	0.9	-	Heating water operation limit temperature	W _{TOL}	65	°C
Power consumption in modes other than active mode				Additional heater			
OFF mode	P _{off}	0.014	kW	Rated heat output (*)	P _{sup}	0.43	kW
Standby Mode	P _{sb}	0.014	kW	Type of energy supplied	Electric		
Thermostat OFF mode	P _{to}	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	-	4060	m³/h
Sound power level, indoors/outdoors	L _{WA}	-	dB	For water or brine-water heat pumps: Rated water or brine flow rate, heat exchanger outdoors	-	-	m³/h
Annual power consumption	Q _{HE}	3776	kWh				
For mixed central heating appliances with a heat pump:							
Declared 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(T _j).							
(**) If C _{dh} is not determined by measuring, the default degradation coefficient is C _{dh} = 0.9.							

Technical Parameters							
Model:	MAGIS M14						
Air-water heat pump:	Yes						
Water-water heat pump:	No						
Brine to water heat pump:	No						
Low temperature heat pump:	No						
Equipped with additional heater:	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}	12.08	kW	Space heating seasonal energy efficiency	η _i	135.6	%
Central heating capacity declared for a partial load at indoor temperature of 20°C and outdoor temperature T _j				Central heating capacity declared for a partial load at indoor temperature of 20°C and outdoor temperature T _j			
T _j = -7°C	P _{dh}	10.68	kW	T _j = -7°C	COP _d	2.01	-
T _j = 2°C	P _{dh}	6.86	kW	T _j = 2°C	COP _d	3.43	-
T _j = 7°C	P _{dh}	4.63	kW	T _j = 7°C	COP _d	4.66	-
T _j = 12°C	P _{dh}	3.31	kW	T _j = 12°C	COP _d	6.13	-
T _j = bivalent temperature	P _{dh}	10.68	kW	T _j = bivalent temperature	COP _d	2.01	-
T _j = operating limit	P _{dh}	9.19	kW	T _j = operating limit	COP _d	1.76	-
For air-water heat pumps: T _j = -15°C	P _{dh}	-	kW	For air-water heat pumps: T _j = -15°C	COP _d	-	-
Bivalent temperature	T _{biv}	-7	°C	For air-water heat pumps: Operation limit temperature	TOL	-10	°C
Capacity of the cycle range for central heating	P _{cyc}	-	kW	Efficiency of cycle range	COP _{cyc}	-	-
Degradation coefficient (**)	C _{dh}	0.9	-	Heating water operation limit temperature	W _{TOL}	65	°C
Power consumption in modes other than active mode				Additional heater			
OFF mode	P _{off}	0.014	kW	Rated heat output (*)	P _{sup}	2.91	kW
Standby Mode	P _{sb}	0.014	kW	Type of energy supplied	Electric		
Thermostat OFF mode	P _{to}	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	-	4060	m³/h
Sound power level, indoors/outdoors	L _{WA}	-/65	dB	For water or brine-water heat pumps: Rated water or brine flow rate, heat exchanger outdoors	-	-	m³/h
Annual power consumption	Q _{HE}	7202	kWh				
For mixed central heating appliances with a heat pump:							
Declared 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(T _j).							
(**) If C _{dh} is not determined by measuring, the default degradation coefficient is C _{dh} = 0.9.							

Technical Parameters							
Model:	MAGIS M14						
Air-water heat pump:	Yes						
Water-water heat pump:	No						
Brine to water heat pump:	No						
Low temperature heat pump:	No						
Equipped with additional heater:	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}	11.0	kW	Space heating seasonal energy efficiency	η _i	118.9	%
Central heating capacity declared for a partial load at indoor temperature of 20°C and outdoor temperature T _j				Central heating capacity declared for a partial load at indoor temperature of 20°C and outdoor temperature T _j			
T _j = -7°C	P _{dh}	6.89	kW	T _j = -7°C	COP _d	2.66	-
T _j = 2°C	P _{dh}	4.32	kW	T _j = 2°C	COP _d	3.66	-
T _j = 7°C	P _{dh}	3.06	kW	T _j = 7°C	COP _d	4.72	-
T _j = 12°C	P _{dh}	3.33	kW	T _j = 12°C	COP _d	6.25	-
T _j = bivalent temperature	P _{dh}	8.94	kW	T _j = bivalent temperature	COP _d	1.79	-
T _j = operating limit	P _{dh}	4.20	kW	T _j = operating limit	COP _d	1.13	-
For air-water heat pumps: T _j = -15°C	P _{dh}	-	kW	For air-water heat pumps: T _j = -15°C	COP _d	-	-
Bivalent temperature	T _{biv}	-15	°C	For air-water heat pumps: Operation limit temperature	TOL	-22	°C
Capacity of the cycle range for central heating	P _{cyc}	-	kW	Efficiency of cycle range	COP _{cyc}	-	-
Degradation coefficient (**)	C _{dh}	0.9	-	Heating water operation limit temperature	W _{TOL}	65	°C
Power consumption in modes other than active mode				Additional heater			
OFF mode	P _{off}	0.014	kW	Rated heat output (*)	P _{sup}	6.80	kW
Standby Mode	P _{sb}	0.014	kW				
Thermostat OFF mode	P _{to}	0.024	kW	Type of energy supplied	Electric		
Crankcase heater mode electrical	P _{ck}	0.000	kW				
Other items							
Capacity control	Variable			For air-water heat pumps: Rated air flow rate outdoors	-	4060	m³/h
Sound power level, indoors/outdoors	L _{WA}	-	dB	For water or brine-water heat pumps: Rated water or brine flow rate, heat exchanger outdoors	-	-	m³/h
Annual power consumption	Q _{HE}	8866	kWh				
For mixed central heating appliances with a heat pump:							
Declared 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(T _j).							
(**) If C _{dh} is not determined by measuring, the default degradation coefficient is C _{dh} = 0.9.							

Technical Parameters							
Model:	MAGIS M14						
Air-water heat pump:	Yes						
Water-water heat pump:	No						
Brine to water heat pump:	No						
Low temperature heat pump:	No						
Equipped with additional heater:	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}	14.17	kW	Space heating seasonal energy efficiency	η _i	174.9	%
Central heating capacity declared for a partial load at indoor temperature of 20°C and outdoor temperature T _j				Central heating capacity declared for a partial load at indoor temperature of 20°C and outdoor temperature T _j			
T _j = -7°C	P _{dh}	-	kW	T _j = -7°C	COP _d	-	-
T _j = 2°C	P _{dh}	13.04	kW	T _j = 2°C	COP _d	2.20	-
T _j = 7°C	P _{dh}	9.11	kW	T _j = 7°C	COP _d	3.89	-
T _j = 12°C	P _{dh}	4.08	kW	T _j = 12°C	COP _d	5.90	-
T _j = bivalent temperature	P _{dh}	9.11	kW	T _j = bivalent temperature	COP _d	3.89	-
T _j = operating limit	P _{dh}	13.04	kW	T _j = operating limit	COP _d	2.20	-
For air-water heat pumps: T _j = -15°C	P _{dh}	-	kW	For air-water heat pumps: T _j = -15°C	COP _d	-	-
Bivalent temperature	T _{biv}	7	°C	For air-water heat pumps: Operation limit temperature	TOL	2	°C
Capacity of the cycle range for central heating	P _{cyc}	-	kW	Efficiency of cycle range	COP _{cyc}	-	-
Degradation coefficient (**)	C _{dh}	0.9	-	Heating water operation limit temperature	W _{TOL}	65	°C
Power consumption in modes other than active mode				Additional heater			
OFF mode	P _{off}	0.014	kW	Rated heat output (*)	P _{sup}	1.13	kW
Standby Mode	P _{sb}	0.014	kW	Type of energy supplied	Electric		
Thermostat OFF mode	P _{to}	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	-	4060	m³/h
Sound power level, indoors/outdoors	L _{WA}	-	dB	For water or brine-water heat pumps: Rated water or brine flow rate, heat exchanger outdoors	-	-	m³/h
Annual power consumption	Q _{HE}	4258	kWh				
For mixed central heating appliances with a heat pump:							
Declared 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(T _j).							
(**) If C _{dh} is not determined by measuring, the default degradation coefficient is C _{dh} = 0.9.							

Technical Parameters							
Model:	MAGIS M16						
Air-water heat pump:	Yes						
Water-water heat pump:	No						
Brine to water heat pump:	No						
Low temperature heat pump:	No						
Equipped with additional heater:	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}	13.0	kW	Space heating seasonal energy efficiency	η _i	133.3	%
Central heating capacity declared for a partial load at indoor temperature of 20°C and outdoor temperature T _j				Central heating capacity declared for a partial load at indoor temperature of 20°C and outdoor temperature T _j			
T _j = -7°C	P _{dh}	11.52	kW	T _j = -7°C	COP _d	1.99	-
T _j = 2°C	P _{dh}	7.18	kW	T _j = 2°C	COP _d	3.34	-
T _j = 7°C	P _{dh}	4.67	kW	T _j = 7°C	COP _d	4.61	-
T _j = 12°C	P _{dh}	3.31	kW	T _j = 12°C	COP _d	6.07	-
T _j = bivalent temperature	P _{dh}	11.52	kW	T _j = bivalent temperature	COP _d	1.99	-
T _j = operating limit	P _{dh}	10.33	kW	T _j = operating limit	COP _d	1.80	-
For air-water heat pumps: T _j = -15°C	P _{dh}	-	kW	For air-water heat pumps: T _j = -15°C	COP _d	-	-
Bivalent temperature	T _{biv}	-7	°C	For air-water heat pumps: Operation limit temperature	TOL	-10	°C
Capacity of the cycle range for central heating	P _{cyc}	-	kW	Efficiency of cycle range	COP _{cyc}	-	-
Degradation coefficient (**)	C _{dh}	0.9	-	Heating water operation limit temperature	W _{TOL}	65	°C
Power consumption in modes other than active mode				Additional heater			
OFF mode	P _{off}	0.014	kW	Rated heat output (*)	P _{sup}	2.67	kW
Standby Mode	P _{sb}	0.014	kW	Type of energy supplied	Electric		
Thermostat OFF mode	P _{to}	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	-	4650	m³/h
Sound power level, indoors/outdoors	L _{WA}	-/68	dB	For water or brine-water heat pumps: Rated water or brine flow rate, heat exchanger outdoors	-	-	m³/h
Annual power consumption	Q _{HE}	7895	kWh				
For mixed central heating appliances with a heat pump:							
Declared 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(T _j).							
(**) If C _{dh} is not determined by measuring, the default degradation coefficient is C _{dh} = 0.9.							

Technical Parameters							
Model:	MAGIS M16						
Air-water heat pump:	Yes						
Water-water heat pump:	No						
Brine to water heat pump:	No						
Low temperature heat pump:	No						
Equipped with additional heater:	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}	11.8	kW	Space heating seasonal energy efficiency	η _i	121.8	%
Central heating capacity declared for a partial load at indoor temperature of 20°C and outdoor temperature T _j				Central heating capacity declared for a partial load at indoor temperature of 20°C and outdoor temperature T _j			
T _j = -7°C	P _{dh}	7.64	kW	T _j = -7°C	COP _d	2.65	-
T _j = 2°C	P _{dh}	4.42	kW	T _j = 2°C	COP _d	3.79	-
T _j = 7°C	P _{dh}	2.97	kW	T _j = 7°C	COP _d	4.81	-
T _j = 12°C	P _{dh}	3.43	kW	T _j = 12°C	COP _d	6.29	-
T _j = bivalent temperature	P _{dh}	9.61	kW	T _j = bivalent temperature	COP _d	1.86	-
T _j = operating limit	P _{dh}	5.21	kW	T _j = operating limit	COP _d	1.23	-
For air-water heat pumps: T _j = -15°C	P _{dh}	-	kW	For air-water heat pumps: T _j = -15°C	COP _d	-	-
Bivalent temperature	T _{biv}	-15	°C	For air-water heat pumps: Operation limit temperature	TOL	-22	°C
Capacity of the cycle range for central heating	P _{cyc}	-	kW	Efficiency of cycle range	COP _{cyc}	-	-
Degradation coefficient (**)	C _{dh}	0.9	-	Heating water operation limit temperature	W _{TOL}	65	°C
Power consumption in modes other than active mode				Additional heater			
OFF mode	P _{off}	0.014	kW	Rated heat output (*)	P _{sup}	6.59	kW
Standby Mode	P _{sb}	0.014	kW	Type of energy supplied	Electric		
Thermostat OFF mode	P _{to}	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	-	4650	m³/h
Sound power level, indoors/outdoors	L _{WA}	-	dB	For water or brine-water heat pumps: Rated water or brine flow rate, heat exchanger outdoors	-	-	m³/h
Annual power consumption	Q _{HE}	9309	kWh				
For mixed central heating appliances with a heat pump:							
Declared 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(T _j).							
(**) If C _{dh} is not determined by measuring, the default degradation coefficient is C _{dh} = 0.9.							

Technical Parameters							
Model:	MAGIS M16						
Air-water heat pump:	Yes						
Water-water heat pump:	No						
Brine to water heat pump:	No						
Low temperature heat pump:	No						
Equipped with additional heater:	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}	14.17	kW	Space heating seasonal energy efficiency	η _s	176.0	%
Central heating capacity declared for a partial load at indoor temperature of 20°C and outdoor temperature T _j				Central heating capacity declared for a partial load at indoor temperature of 20°C and outdoor temperature T _j			
T _j = -7°C	P _{dh}	-	kW	T _j = -7°C	COP _d	-	-
T _j = 2°C	P _{dh}	13.38	kW	T _j = 2°C	COP _d	2.29	-
T _j = 7°C	P _{dh}	9.11	kW	T _j = 7°C	COP _d	3.89	-
T _j = 12°C	P _{dh}	4.06	kW	T _j = 12°C	COP _d	5.86	-
T _j = bivalent temperature	P _{dh}	9.11	kW	T _j = bivalent temperature	COP _d	3.89	-
T _j = operating limit	P _{dh}	13.38	kW	T _j = operating limit	COP _d	2.29	-
For air-water heat pumps: T _j = -15°C	P _{dh}	-	kW	For air-water heat pumps: T _j = -15°C	COP _d	-	-
Bivalent temperature	T _{biv}	7	°C	For air-water heat pumps: Operation limit temperature	TOL	2	°C
Capacity of the cycle range for central heating	P _{cyc}	-	kW	Efficiency of cycle range	COP _{cyc}	-	-
Degradation coefficient (**)	C _{dh}	0.9	-	Heating water operation limit temperature	W _{TOL}	65	°C
Power consumption in modes other than active mode				Additional heater			
OFF mode	P _{off}	0.014	kW	Rated heat output (*)	P _{sup}	0.79	kW
Standby Mode	P _{sb}	0.014	kW	Type of energy supplied	Electric		
Thermostat OFF mode	P _{to}	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	-	4650	m³/h
Sound power level, indoors/outdoors	L _{WA}	-	dB	For water or brine-water heat pumps: Rated water or brine flow rate, heat exchanger outdoors	-	-	m³/h
Annual power consumption	Q _{HE}	4231	kWh				
For mixed central heating appliances with a heat pump:							
Declared 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(T _j).							
(**) If C _{dh} is not determined by measuring, the default degradation coefficient is C _{dh} = 0.9.							

Three-phase.

Technical Parameters							
Model:	MAGIS M12 T						
Air-water heat pump:	Yes						
Water-water heat pump:	No						
Brine to water heat pump:	No						
Low temperature heat pump:	No						
Equipped with additional heater:	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}	11.6	kW	Space heating seasonal energy efficiency	η _s	135.1	%
Central heating capacity declared for a partial load at indoor temperature of 20°C and outdoor temperature T _j				Central heating capacity declared for a partial load at indoor temperature of 20°C and outdoor temperature T _j			
T _j = -7°C	P _{dh}	10.24	kW	T _j = -7°C	COP _d	2.01	-
T _j = 2°C	P _{dh}	6.52	kW	T _j = 2°C	COP _d	3.44	-
T _j = 7°C	P _{dh}	4.36	kW	T _j = 7°C	COP _d	4.59	-
T _j = 12°C	P _{dh}	3.29	kW	T _j = 12°C	COP _d	6.05	-
T _j = bivalent temperature	P _{dh}	10.24	kW	T _j = bivalent temperature	COP _d	2.01	-
T _j = operating limit	P _{dh}	9.10	kW	T _j = operating limit	COP _d	1.79	-
For air-water heat pumps: T _j = -15°C	P _{dh}	-	kW	For air-water heat pumps: T _j = -15°C	COP _d	-	-
Bivalent temperature	T _{biv}	-7	°C	For air-water heat pumps: Operation limit temperature	TOL	-10	°C
Capacity of the cycle range for central heating	P _{cyc}	-	kW	Efficiency of cycle range	COP _{cyc}	-	-
Degradation coefficient (**)	C _{dh}	0.9	-	Heating water operation limit temperature	W _{TOL}	65	°C
Power consumption in modes other than active mode				Additional heater			
OFF mode	P _{off}	0.020	kW	Rated heat output (*)	P _{sup}	2.50	kW
Standby Mode	P _{sb}	0.020	kW				
Thermostat OFF mode	P _{to}	0.030	kW	Type of energy supplied	Electric		
Crankcase heater mode electrical	P _{ck}	0.000	kW				
Other items							
Capacity control	Variable			For air-water heat pumps: Rated air flow rate outdoors	-	4060	m³/h
Sound power level, indoors/outdoors	L _{WA}	-/65	dB	For water or brine-water heat pumps: Rated water or brine flow rate, heat exchanger outdoors	-	-	m³/h
Annual power consumption	Q _{HE}	6928	kWh				
For mixed central heating appliances with a heat pump:							
Declared 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(T _j).							
(**) If C _{dh} is not determined by measuring, the default degradation coefficient is C _{dh} = 0.9.							

Technical Parameters							
Model:	MAGIS M12 T						
Air-water heat pump:	Yes						
Water-water heat pump:	No						
Brine to water heat pump:	No						
Low temperature heat pump:	No						
Equipped with additional heater:	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}	10.3	kW	Space heating seasonal energy efficiency	η _i	117.7	%
Central heating capacity declared for a partial load at indoor temperature of 20°C and outdoor temperature T _j				Central heating capacity declared for a partial load at indoor temperature of 20°C and outdoor temperature T _j			
T _j = -7°C	P _{dh}	6.63	kW	T _j = -7°C	COP _d	2.63	-
T _j = 2°C	P _{dh}	4.06	kW	T _j = 2°C	COP _d	3.60	-
T _j = 7°C	P _{dh}	2.78	kW	T _j = 7°C	COP _d	4.54	-
T _j = 12°C	P _{dh}	3.33	kW	T _j = 12°C	COP _d	6.25	-
T _j = bivalent temperature	P _{dh}	8.41	kW	T _j = bivalent temperature	COP _d	1.84	-
T _j = operating limit	P _{dh}	4.19	kW	T _j = operating limit	COP _d	1.13	-
For air-water heat pumps: T _j = -15°C	P _{dh}	-	kW	For air-water heat pumps: T _j = -15°C	COP _d	-	-
Bivalent temperature	T _{biv}	-15	°C	For air-water heat pumps: Operation limit temperature	TOL	-22	°C
Capacity of the cycle range for central heating	P _{cyc}	-	kW	Efficiency of cycle range	COP _{cyc}	-	-
Degradation coefficient (**)	C _{dh}	0.9	-	Heating water operation limit temperature	W _{TOL}	65	°C
Power consumption in modes other than active mode				Additional heater			
OFF mode	P _{off}	0.020	kW	Rated heat output (*)	P _{sup}	6.12	kW
Standby Mode	P _{sb}	0.020	kW				
Thermostat OFF mode	P _{to}	0.030	kW	Type of energy supplied	Electric		
Crankcase heater mode electrical	P _{ck}	0.000	kW				
Other items							
Capacity control	Variable			For air-water heat pumps: Rated air flow rate outdoors	-	4060	m³/h
Sound power level, indoors/outdoors	L _{WA}	-	dB	For water or brine-water heat pumps: Rated water or brine flow rate, heat exchanger outdoors	-	-	m³/h
Annual power consumption	Q _{HE}	8420	kWh				
For mixed central heating appliances with a heat pump:							
Declared 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(T _j).							
(**) If C _{dh} is not determined by measuring, the default degradation coefficient is C _{dh} = 0.9.							

Technical Parameters							
Model:	MAGIS M12 T						
Air-water heat pump:	Yes						
Water-water heat pump:	No						
Brine to water heat pump:	No						
Low temperature heat pump:	No						
Equipped with additional heater:	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}	12.5	kW	Space heating seasonal energy efficiency	η _i	173.8	%
Central heating capacity declared for a partial load at indoor temperature of 20°C and outdoor temperature T _j				Central heating capacity declared for a partial load at indoor temperature of 20°C and outdoor temperature T _j			
T _j = -7°C	P _{dh}	-	kW	T _j = -7°C	COP _d	-	-
T _j = 2°C	P _{dh}	12.07	kW	T _j = 2°C	COP _d	2.31	-
T _j = 7°C	P _{dh}	8.04	kW	T _j = 7°C	COP _d	3.86	-
T _j = 12°C	P _{dh}	3.75	kW	T _j = 12°C	COP _d	5.70	-
T _j = bivalent temperature	P _{dh}	8.04	kW	T _j = bivalent temperature	COP _d	3.86	-
T _j = operating limit	P _{dh}	12.07	kW	T _j = operating limit	COP _d	2.31	-
For air-water heat pumps: T _j = -15°C	P _{dh}	-	kW	For air-water heat pumps: T _j = -15°C	COP _d	-	-
Bivalent temperature	T _{biv}	7	°C	For air-water heat pumps: Operation limit temperature	TOL	2	°C
Capacity of the cycle range for central heating	P _{cyc}	-	kW	Efficiency of cycle range	COP _{cyc}	-	-
Degradation coefficient (**)	C _{dh}	0.9	-	Heating water operation limit temperature	W _{TOL}	65	°C
Power consumption in modes other than active mode				Additional heater			
OFF mode	P _{off}	0.020	kW	Rated heat output (*)	P _{sup}	0.43	kW
Standby Mode	P _{sb}	0.020	kW	Type of energy supplied	Electric		
Thermostat OFF mode	P _{to}	0.030	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	-	4060	m³/h
Sound power level, indoors/outdoors	L _{WA}	-	dB	For water or brine-water heat pumps: Rated water or brine flow rate, heat exchanger outdoors	-	-	m³/h
Annual power consumption	Q _{HE}	3780	kWh				
For mixed central heating appliances with a heat pump:							
Declared 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(T _j).							
(**) If C _{dh} is not determined by measuring, the default degradation coefficient is C _{dh} = 0.9.							

Technical Parameters								
Model:	MAGIS M14 T							
Air-water heat pump:	Yes							
Water-water heat pump:	No							
Brine to water heat pump:	No							
Low temperature heat pump:	No							
Equipped with additional heater:	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}	12.08	kW		Space heating seasonal energy efficiency	η _s	135.6	%
Central heating capacity declared for a partial load at indoor temperature of 20°C and outdoor temperature T _j					Central heating capacity declared for a partial load at indoor temperature of 20°C and outdoor temperature T _j			
T _j = -7°C	P _{dh}	10.68	kW		T _j = -7°C	COP _d	2.01	-
T _j = 2°C	P _{dh}	6.86	kW		T _j = 2°C	COP _d	3.43	-
T _j = 7°C	P _{dh}	4.63	kW		T _j = 7°C	COP _d	4.66	-
T _j = 12°C	P _{dh}	3.31	kW		T _j = 12°C	COP _d	6.13	-
T _j = bivalent temperature	P _{dh}	10.68	kW		T _j = bivalent temperature	COP _d	2.01	-
T _j = operating limit	P _{dh}	9.19	kW		T _j = operating limit	COP _d	1.76	-
For air-water heat pumps: T _j = -15°C	P _{dh}	-	kW		For air-water heat pumps: T _j = -15°C	COP _d	-	-
Bivalent temperature	T _{biv}	-7	°C		For air-water heat pumps: Operation limit temperature	TOL	-10	°C
Capacity of the cycle range for central heating	P _{cyc}	-	kW		Efficiency of cycle range	COP _{cyc}	-	-
Degradation coefficient (**)	C _{dh}	0.9	-		Heating water operation limit temperature	W _{TOL}	65	°C
Power consumption in modes other than active mode					Additional heater			
OFF mode	P _{off}	0.020	kW		Rated heat output (*)	P _{sup}	1.40	kW
Standby Mode	P _{sb}	0.020	kW		Type of energy supplied	Electric		
Thermostat OFF mode	P _{to}	0.030	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	-	4060	m³/h
Sound power level, indoors/outdoors	L _{WA}	-/65	dB		For water or brine-water heat pumps: Rated water or brine flow rate, heat exchanger outdoors	-	-	m³/h
Annual power consumption	Q _{HE}	7203	kWh					
For mixed central heating appliances with a heat pump:								
Declared 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(T _j).								
(**) If C _{dh} is not determined by measuring, the default degradation coefficient is C _{dh} = 0.9.								

Technical Parameters							
Model:	MAGIS M14 T						
Air-water heat pump:	Yes						
Water-water heat pump:	No						
Brine to water heat pump:	No						
Low temperature heat pump:	No						
Equipped with additional heater:	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}	11.0	kW	Space heating seasonal energy efficiency	η _i	118.9	%
Central heating capacity declared for a partial load at indoor temperature of 20°C and outdoor temperature T _j				Central heating capacity declared for a partial load at indoor temperature of 20°C and outdoor temperature T _j			
T _j = -7°C	P _{dh}	6.89	kW	T _j = -7°C	COP _d	2.66	-
T _j = 2°C	P _{dh}	4.32	kW	T _j = 2°C	COP _d	3.66	-
T _j = 7°C	P _{dh}	3.06	kW	T _j = 7°C	COP _d	4.72	-
T _j = 12°C	P _{dh}	3.33	kW	T _j = 12°C	COP _d	6.25	-
T _j = bivalent temperature	P _{dh}	8.94	kW	T _j = bivalent temperature	COP _d	1.79	-
T _j = operating limit	P _{dh}	4.20	kW	T _j = operating limit	COP _d	1.13	-
For air-water heat pumps: T _j = -15°C	P _{dh}	-	kW	For air-water heat pumps: T _j = -15°C	COP _d	-	-
Bivalent temperature	T _{biv}	-15	°C	For air-water heat pumps: Operation limit temperature	TOL	-22	°C
Capacity of the cycle range for central heating	P _{cyc}	-	kW	Efficiency of cycle range	COP _{cyc}	-	-
Degradation coefficient (**)	C _{dh}	0.9	-	Heating water operation limit temperature	W _{TOL}	65	°C
Power consumption in modes other than active mode				Additional heater			
OFF mode	P _{off}	0.020	kW	Rated heat output (*)	P _{sup}	6.80	kW
Standby Mode	P _{sb}	0.020	kW	Type of energy supplied	Electric		
Thermostat OFF mode	P _{to}	0.030	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	-	4060	m³/h
Sound power level, indoors/outdoors	L _{WA}	-	dB	For water or brine-water heat pumps: Rated water or brine flow rate, heat exchanger outdoors	-	-	m³/h
Annual power consumption	Q _{HE}	8867	kWh				
For mixed central heating appliances with a heat pump:							
Declared 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(T _j).							
(**) If C _{dh} is not determined by measuring, the default degradation coefficient is C _{dh} = 0.9.							

Technical Parameters							
Model:	MAGIS M14 T						
Air-water heat pump:	Yes						
Water-water heat pump:	No						
Brine to water heat pump:	No						
Low temperature heat pump:	No						
Equipped with additional heater:	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}	14.17	kW	Space heating seasonal energy efficiency	η _i	174.7	%
Central heating capacity declared for a partial load at indoor temperature of 20°C and outdoor temperature T _j				Central heating capacity declared for a partial load at indoor temperature of 20°C and outdoor temperature T _j			
T _j = -7°C	P _{dh}	-	kW	T _j = -7°C	COP _d	-	-
T _j = 2°C	P _{dh}	13.04	kW	T _j = 2°C	COP _d	2.20	-
T _j = 7°C	P _{dh}	9.11	kW	T _j = 7°C	COP _d	3.89	-
T _j = 12°C	P _{dh}	4.08	kW	T _j = 12°C	COP _d	5.90	-
T _j = bivalent temperature	P _{dh}	9.11	kW	T _j = bivalent temperature	COP _d	3.89	-
T _j = operating limit	P _{dh}	13.04	kW	T _j = operating limit	COP _d	2.20	-
For air-water heat pumps: T _j = -15°C	P _{dh}	-	kW	For air-water heat pumps: T _j = -15°C	COP _d	-	-
Bivalent temperature	T _{biv}	7	°C	For air-water heat pumps: Operation limit temperature	TOL	2	°C
Capacity of the cycle range for central heating	P _{cyc}	-	kW	Efficiency of cycle range	COP _{cyc}	-	-
Degradation coefficient (**)	C _{dh}	0.9	-	Heating water operation limit temperature	W _{TOL}	65	°C
Power consumption in modes other than active mode				Additional heater			
OFF mode	P _{off}	0.020	kW	Rated heat output (*)	P _{sup}	1.13	kW
Standby Mode	P _{sb}	0.020	kW	Type of energy supplied	Electric		
Thermostat OFF mode	P _{to}	0.030	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	-	4060	m³/h
Sound power level, indoors/outdoors	L _{WA}	-	dB	For water or brine-water heat pumps: Rated water or brine flow rate, heat exchanger outdoors	-	-	m³/h
Annual power consumption	Q _{HE}	4262	kWh				
For mixed central heating appliances with a heat pump:							
Declared 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(T _j).							
(**) If C _{dh} is not determined by measuring, the default degradation coefficient is C _{dh} = 0.9.							

Technical Parameters							
Model:	MAGIS M16 T						
Air-water heat pump:	Yes						
Water-water heat pump:	No						
Brine to water heat pump:	No						
Low temperature heat pump:	No						
Equipped with additional heater:	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}	13.0	kW	Space heating seasonal energy efficiency	η _s	133.2	%
Central heating capacity declared for a partial load at indoor temperature of 20°C and outdoor temperature T _j				Central heating capacity declared for a partial load at indoor temperature of 20°C and outdoor temperature T _j			
T _j = -7°C	P _{dh}	11.52	kW	T _j = -7°C	COP _d	1.99	-
T _j = 2°C	P _{dh}	7.18	kW	T _j = 2°C	COP _d	3.34	-
T _j = 7°C	P _{dh}	4.67	kW	T _j = 7°C	COP _d	4.61	-
T _j = 12°C	P _{dh}	3.31	kW	T _j = 12°C	COP _d	6.07	-
T _j = bivalent temperature	P _{dh}	11.52	kW	T _j = bivalent temperature	COP _d	1.99	-
T _j = operating limit	P _{dh}	10.33	kW	T _j = operating limit	COP _d	1.80	-
For air-water heat pumps: T _j = -15°C	P _{dh}	-	kW	For air-water heat pumps: T _j = -15°C	COP _d	-	-
Bivalent temperature	T _{biv}	-7	°C	For air-water heat pumps: Operation limit temperature	TOL	-10	°C
Capacity of the cycle range for central heating	P _{cyc}	-	kW	Efficiency of cycle range	COP _{cyc}	-	-
Degradation coefficient (**)	C _{dh}	0.9	-	Heating water operation limit temperature	W _{TOL}	65	°C
Power consumption in modes other than active mode				Additional heater			
OFF mode	P _{off}	0.020	kW	Rated heat output (*)	P _{sup}	2.67	kW
Standby Mode	P _{sb}	0.020	kW				
Thermostat OFF mode	P _{to}	0.030	kW	Type of energy supplied	Electric		
Crankcase heater mode electrical	P _{ck}	0.000	kW				
Other items							
Capacity control	Variable			For air-water heat pumps: Rated air flow rate outdoors	-	4650	m³/h
Sound power level, indoors/outdoors	L _{WA}	-/68	dB	For water or brine-water heat pumps: Rated water or brine flow rate, heat exchanger outdoors	-	-	m³/h
Annual power consumption	Q _{HE}	7896	kWh				
For mixed central heating appliances with a heat pump:							
Declared 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(T _j).							
(**) If C _{dh} is not determined by measuring, the default degradation coefficient is C _{dh} = 0.9.							

Technical Parameters							
Model:	MAGIS M16 T						
Air-water heat pump:	Yes						
Water-water heat pump:	No						
Brine to water heat pump:	No						
Low temperature heat pump:	No						
Equipped with additional heater:	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}	11.8	kW	Space heating seasonal energy efficiency	η _i	121.8	%
Central heating capacity declared for a partial load at indoor temperature of 20°C and outdoor temperature T _j				Central heating capacity declared for a partial load at indoor temperature of 20°C and outdoor temperature T _j			
T _j = -7°C	P _{dh}	7.64	kW	T _j = -7°C	COP _d	2.65	-
T _j = 2°C	P _{dh}	4.42	kW	T _j = 2°C	COP _d	3.79	-
T _j = 7°C	P _{dh}	2.97	kW	T _j = 7°C	COP _d	4.81	-
T _j = 12°C	P _{dh}	3.43	kW	T _j = 12°C	COP _d	6.29	-
T _j = bivalent temperature	P _{dh}	9.61	kW	T _j = bivalent temperature	COP _d	1.86	-
T _j = operating limit	P _{dh}	5.21	kW	T _j = operating limit	COP _d	1.23	-
For air-water heat pumps: T _j = -15°C	P _{dh}	-	kW	For air-water heat pumps: T _j = -15°C	COP _d	-	-
Bivalent temperature	T _{biv}	-15	°C	For air-water heat pumps: Operation limit temperature	TOL	-22	°C
Capacity of the cycle range for central heating	P _{cyc}	-	kW	Efficiency of cycle range	COP _{cyc}	-	-
Degradation coefficient (**)	C _{dh}	0.9	-	Heating water operation limit temperature	W _{TOL}	65	°C
Power consumption in modes other than active mode				Additional heater			
OFF mode	P _{off}	0.020	kW	Rated heat output (*)	P _{sup}	6.59	kW
Standby Mode	P _{sb}	0.020	kW				
Thermostat OFF mode	P _{to}	0.030	kW	Type of energy supplied	Electric		
Crankcase heater mode electrical	P _{ck}	0.000	kW				
Other items							
Capacity control	Variable			For air-water heat pumps: Rated air flow rate outdoors	-	4650	m³/h
Sound power level, indoors/outdoors	L _{WA}	-	dB	For water or brine-water heat pumps: Rated water or brine flow rate, heat exchanger outdoors	-	-	m³/h
Annual power consumption	Q _{HE}	9310	kWh				
For mixed central heating appliances with a heat pump:							
Declared 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(T _j).							
(**) If C _{dh} is not determined by measuring, the default degradation coefficient is C _{dh} = 0.9.							

Technical Parameters							
Model:	MAGIS M16 T						
Air-water heat pump:	Yes						
Water-water heat pump:	No						
Brine to water heat pump:	No						
Low temperature heat pump:	No						
Equipped with additional heater:	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}	14.17	kW	Space heating seasonal energy efficiency	η _s	175.8	%
Central heating capacity declared for a partial load at indoor temperature of 20°C and outdoor temperature T _j				Central heating capacity declared for a partial load at indoor temperature of 20°C and outdoor temperature T _j			
T _j = -7°C	P _{dh}	-	kW	T _j = -7°C	COP _d	-	-
T _j = 2°C	P _{dh}	13.38	kW	T _j = 2°C	COP _d	2.29	-
T _j = 7°C	P _{dh}	9.11	kW	T _j = 7°C	COP _d	3.89	-
T _j = 12°C	P _{dh}	4.06	kW	T _j = 12°C	COP _d	5.86	-
T _j = bivalent temperature	P _{dh}	9.11	kW	T _j = bivalent temperature	COP _d	3.89	-
T _j = operating limit	P _{dh}	13.38	kW	T _j = operating limit	COP _d	2.29	-
For air-water heat pumps: T _j = -15°C	P _{dh}	-	kW	For air-water heat pumps: T _j = -15°C	COP _d	-	-
Bivalent temperature	T _{biv}	7	°C	For air-water heat pumps: Operation limit temperature	TOL	2	°C
Capacity of the cycle range for central heating	P _{cyc}	-	kW	Efficiency of cycle range	COP _{cyc}	-	-
Degradation coefficient (**)	C _{dh}	0.9	-	Heating water operation limit temperature	W _{TOL}	65	°C
Power consumption in modes other than active mode				Additional heater			
OFF mode	P _{off}	0.020	kW	Rated heat output (*)	P _{sup}	0.79	kW
Standby Mode	P _{sb}	0.020	kW	Type of energy supplied	Electric		
Thermostat OFF mode	P _{to}	0.030	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	-	4650	m³/h
Sound power level, indoors/outdoors	L _{WA}	-	dB	For water or brine-water heat pumps: Rated water or brine flow rate, heat exchanger outdoors	-	-	m³/h
Annual power consumption	Q _{HE}	4236	kWh				
For mixed central heating appliances with a heat pump:							
Declared 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(T _j).							
(**) If C _{dh} is not determined by measuring, the default degradation coefficient is C _{dh} = 0.9.							

4 INFORMATION REQUIREMENTS FOR SPACE CHILLERS MODELS 12 - 14 - 16 KW.

Single-phase.

Information requirements for space chillers								
Model:	MAGIS M12							
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}	11.3	kW		Space heating seasonal energy efficiency	η _{s,c}	192.4	%
Cooling capacity declared at partial load at outdoor temperature T _j					Cooling capacity declared at partial load at outdoor temperature T _j			
T _j = +35°C	P _{dc}	11.31	kW		T _j = +35°C	EER _d	2.61	-
T _j = +30°C	P _{dc}	8.76	kW		T _j = +30°C	EER _d	3.93	-
T _j = +25°C	P _{dc}	5.81	kW		T _j = +25°C	EER _d	5.73	-
T _j = +20°C	P _{dc}	2.63	kW		T _j = +20°C	EER _d	6.75	-
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	-	4060	m³/h
Sound power level, indoors/ outdoors	L _{WA}	-/65	dB		For water / brine-water chillers: brine or rated brine water flow rate, outdoors side heat exchanger	-	-	m³/h
Emissions of nitrogen oxides (if applicable)	NO _x (**)	-	mg/ kWh input GCV					
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 _{dh} 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 M12							
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}	11.8	kW		Space heating seasonal energy efficiency	η _{s,c}	280.9	%
Cooling capacity declared at partial load at outdoor temperature T _j					Cooling capacity declared at partial load at outdoor temperature T _j			
T _j = +35°C	P _{dc}	11.77	kW		T _j = +35°C	EER _d	3.87	-
T _j = +30°C	P _{dc}	9.21	kW		T _j = +30°C	EER _d	5.50	-
T _j = +25°C	P _{dc}	5.74	kW		T _j = +25°C	EER _d	8.66	-
T _j = +20°C	P _{dc}	3.33	kW		T _j = +20°C	EER _d	10.07	-
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	-	4060	m³/h
Sound power level, indoors/ outdoors	L _{WA}	-/64	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	-	-	m³/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 _{dh} 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 M14							
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}	12.2	kW		Space heating seasonal energy efficiency	η _{s,c}	191.4	%
Cooling capacity declared at partial load at outdoor temperature T _j					Cooling capacity declared at partial load at outdoor temperature T _j			
T _j = +35°C	P _{dc}	12.19	kW		T _j = +35°C	EER _d	2.46	-
T _j = +30°C	P _{dc}	9.41	kW		T _j = +30°C	EER _d	3.85	-
T _j = +25°C	P _{dc}	6.16	kW		T _j = +25°C	EER _d	5.80	-
T _j = +20°C	P _{dc}	2.63	kW		T _j = +20°C	EER _d	6.74	-
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	-	4060	m³/h
Sound power level, indoors/ outdoors	L _{WA}	-/65	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	-	-	m³/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 _{dh} 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 M14						
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}	13.3	kW		Space heating seasonal energy efficiency	η _{s,c}	272.8	%
Cooling capacity declared at partial load at outdoor temperature T _j					Cooling capacity declared at partial load at outdoor temperature T _j			
T _j = +35°C	P _{dc}	13.30	kW		T _j = +35°C	EER _d	3.47	-
T _j = +30°C	P _{dc}	10.20	kW		T _j = +30°C	EER _d	5.26	-
T _j = +25°C	P _{dc}	6.57	kW		T _j = +25°C	EER _d	8.45	-
T _j = +20°C	P _{dc}	3.33	kW		T _j = +20°C	EER _d	10.07	-
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	-	4060	m³/h
Sound power level, indoors/outdoors	L _{WA}	-/64	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	-	-	m³/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 _{dh} 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 M16							
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}	14.3	kW		Space heating seasonal energy efficiency	η _{s,c}	184.4	%
Cooling capacity declared at partial load at outdoor temperature T _j					Cooling capacity declared at partial load at outdoor temperature T _j			
T _j = +35°C	P _{dc}	14.31	kW		T _j = +35°C	EER _d	2.47	-
T _j = +30°C	P _{dc}	10.68	kW		T _j = +30°C	EER _d	3.63	-
T _j = +25°C	P _{dc}	6.76	kW		T _j = +25°C	EER _d	5.27	-
T _j = +20°C	P _{dc}	3.41	kW		T _j = +20°C	EER _d	7.29	-
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	-	4650	m³/h
Sound power level, indoors/outdoors	L _{WA}	-/69	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	-	-	m³/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 _{dh} 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 M16						
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}	15.4	kW		Space heating seasonal energy efficiency	η _{s,c}	266.9	%
Cooling capacity declared at partial load at outdoor temperature T _j					Cooling capacity declared at partial load at outdoor temperature T _j			
T _j = +35°C	P _{dc}	15.40	kW		T _j = +35°C	EER _d	3.50	-
T _j = +30°C	P _{dc}	11.42	kW		T _j = +30°C	EER _d	5.14	-
T _j = +25°C	P _{dc}	7.27	kW		T _j = +25°C	EER _d	7.83	-
T _j = +20°C	P _{dc}	3.40	kW		T _j = +20°C	EER _d	10.35	-
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	-	4650	m³/h
Sound power level, indoors/outdoors	L _{WA}	-/69	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	-	-	m³/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 _{dh} is not determined by measuring, the standard degradation coefficient of chillers must be 0.9.								
(**) Since September 26, 2018								

Three-phase.

Information requirements for space chillers								
Model:		MAGIS M12 T						
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}	11.3	kW		Space heating seasonal energy efficiency	η _{s,c}	191.2	%
Cooling capacity declared at partial load at outdoor temperature T _j					Cooling capacity declared at partial load at outdoor temperature T _j			
T _j = +35°C	P _{dc}	11.31	kW		T _j = +35°C	EER _d	2.61	-
T _j = +30°C	P _{dc}	8.76	kW		T _j = +30°C	EER _d	3.93	-
T _j = +25°C	P _{dc}	5.81	kW		T _j = +25°C	EER _d	5.73	-
T _j = +20°C	P _{dc}	2.63	kW		T _j = +20°C	EER _d	6.75	-
Degradation coefficient for chillers (*)	C _{dc}	0.9	-					
Power consumption in modes other than “active mode”								
OFF mode	P _{OFF}	0.020	kW		Crankcase heater mode electrical	P _{CK}	0.000	kW
Thermostat OFF mode	P _{TO}	0.010	kW		Standby Mode	P _{SB}	0.020	kW
Other items								
Capacity control	Variable				For air-water emergency chillers: air flow rate, measured outdoors	-	4060	m³/h
Sound power level, indoors/ outdoors	L _{WA}	-/65	dB		For water / brine-water chillers: brine or rated brine water flow rate, outdoors side heat exchanger	-	-	m³/h
Emissions of nitrogen oxides (if applicable)	NO _x (**)	-	mg/ kWh input GCV					
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 _{dh} 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 M12 T						
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}	11.8	kW		Space heating seasonal energy efficiency	η _{s,c}	278.6	%
Cooling capacity declared at partial load at outdoor temperature T _j					Cooling capacity declared at partial load at outdoor temperature T _j			
T _j = +35°C	P _{dc}	11.77	kW		T _j = +35°C	EER _d	3.87	-
T _j = +30°C	P _{dc}	9.21	kW		T _j = +30°C	EER _d	5.50	-
T _j = +25°C	P _{dc}	5.74	kW		T _j = +25°C	EER _d	8.66	-
T _j = +20°C	P _{dc}	3.33	kW		T _j = +20°C	EER _d	10.07	-
Degradation coefficient for chillers (*)	C _{dc}	0.9	-					
Power consumption in modes other than “active mode”								
OFF mode	P _{OFF}	0.020	kW		Crankcase heater mode electrical	P _{CK}	0.000	kW
Thermostat OFF mode	P _{TO}	0.010	kW		Standby Mode	P _{SB}	0.020	kW
Other items								
Capacity control	Variable				For air-water emergency chillers: air flow rate, measured outdoors	-	4060	m³/h
Sound power level, indoors/outdoors	L _{WA}	-/64	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	-	-	m³/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 _{dh} 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 M14 T						
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}	12.2	kW		Space heating seasonal energy efficiency	η _{s,c}	190.3	%
Cooling capacity declared at partial load at outdoor temperature T _j					Cooling capacity declared at partial load at outdoor temperature T _j			
T _j = +35°C	P _{dc}	12.19	kW		T _j = +35°C	EER _d	2.46	-
T _j = +30°C	P _{dc}	9.41	kW		T _j = +30°C	EER _d	3.85	-
T _j = +25°C	P _{dc}	6.16	kW		T _j = +25°C	EER _d	5.80	-
T _j = +20°C	P _{dc}	2.63	kW		T _j = +20°C	EER _d	6.74	-
Degradation coefficient for chillers (*)	C _{dc}	0.9	-					
Power consumption in modes other than “active mode”								
OFF mode	P _{OFF}	0.020	kW		Crankcase heater mode electrical	P _{CK}	0.000	kW
Thermostat OFF mode	P _{TO}	0.010	kW		Standby Mode	P _{SB}	0.020	kW
Other items								
Capacity control	Variable				For air-water emergency chillers: air flow rate, measured outdoors	-	4060	m³/h
Sound power level, indoors/ outdoors	L _{WA}	-/65	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	-	-	m³/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 _{dh} 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 M14 T						
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}	13.3	kW		Space heating seasonal energy efficiency	η _{s,c}	270.9	%
Cooling capacity declared at partial load at outdoor temperature T _j					Cooling capacity declared at partial load at outdoor temperature T _j			
T _j = +35°C	P _{dc}	13.30	kW		T _j = +35°C	EER _d	3.47	-
T _j = +30°C	P _{dc}	10.20	kW		T _j = +30°C	EER _d	5.26	-
T _j = +25°C	P _{dc}	6.57	kW		T _j = +25°C	EER _d	8.45	-
T _j = +20°C	P _{dc}	3.33	kW		T _j = +20°C	EER _d	10.07	-
Degradation coefficient for chillers (*)	C _{dc}	0.9	-					
Power consumption in modes other than “active mode”								
OFF mode	P _{OFF}	0.020	kW		Crankcase heater mode electrical	P _{CK}	0.000	kW
Thermostat OFF mode	P _{TO}	0.010	kW		Standby Mode	P _{SB}	0.020	kW
Other items								
Capacity control	Variable				For air-water emergency chillers: air flow rate, measured outdoors	-	4060	m³/h
Sound power level, indoors/outdoors	L _{WA}	-/64	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	-	-	m³/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 _{dh} 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 M16 T						
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}	14.3	kW		Space heating seasonal energy efficiency	η _{s,c}	183.6	%
Cooling capacity declared at partial load at outdoor temperature T _j					Cooling capacity declared at partial load at outdoor temperature T _j			
T _j = +35°C	P _{dc}	14.31	kW		T _j = +35°C	EER _d	2.47	-
T _j = +30°C	P _{dc}	10.68	kW		T _j = +30°C	EER _d	3.63	-
T _j = +25°C	P _{dc}	6.76	kW		T _j = +25°C	EER _d	5.27	-
T _j = +20°C	P _{dc}	3.41	kW		T _j = +20°C	EER _d	7.29	-
Degradation coefficient for chillers (*)	C _{dc}	0.9	-					
Power consumption in modes other than “active mode”								
OFF mode	P _{OFF}	0.020	kW		Crankcase heater mode electrical	P _{CK}	0.000	kW
Thermostat OFF mode	P _{TO}	0.010	kW		Standby Mode	P _{SB}	0.020	kW
Other items								
Capacity control	Variable				For air-water emergency chillers: air flow rate, measured outdoors	-	4650	m³/h
Sound power level, indoors/outdoors	L _{WA}	-/69	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	-	-	m³/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 _{dh} 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 M16 T						
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}	15.4	kW		Space heating seasonal energy efficiency	η _{s,c}	265.3	%
Cooling capacity declared at partial load at outdoor temperature T _j					Cooling capacity declared at partial load at outdoor temperature T _j			
T _j = +35°C	P _{dc}	15.40	kW		T _j = +35°C	EER _d	3.50	-
T _j = +30°C	P _{dc}	11.42	kW		T _j = +30°C	EER _d	5.14	-
T _j = +25°C	P _{dc}	7.27	kW		T _j = +25°C	EER _d	7.83	-
T _j = +20°C	P _{dc}	3.40	kW		T _j = +20°C	EER _d	10.35	-
Degradation coefficient for chillers (*)	C _{dc}	0.9	-					
Power consumption in modes other than “active mode”								
OFF mode	P _{OFF}	0.020	kW		Crankcase heater mode electrical	P _{CK}	0.000	kW
Thermostat OFF mode	P _{TO}	0.010	kW		Standby Mode	P _{SB}	0.020	kW
Other items								
Capacity control	Variable				For air-water emergency chillers: air flow rate, measured outdoors	-	4650	m³/h
Sound power level, indoors/outdoors	L _{WA}	-/69	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	-	-	m³/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 _{dh} 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

MODELS 12 - 14 - 16 KW.

Single-phase.

Conditions (°C)	Model	Capacity (kW)	Absorbed power (kW)	EER/COP (/)
Room Temperature: 35/24 Water Temperature: 12/7	MAGIS M12	11.50	4.18	2.75
	MAGIS M14	12.40	4.96	2.50
	MAGIS M16	14.00	5.60	2.50
Room Temperature: 35/24 Water Temperature: 23/18	MAGIS M12	12.00	3.04	3.95
	MAGIS M14	13.50	3.74	3.61
	MAGIS M16	14.90	4.38	3.40
Room Temperature: 7/6 Water Temperature: 30/35	MAGIS M12	12.10	2.44	4.95
	MAGIS M14	14.50	3.15	4.60
	MAGIS M16	15.90	3.53	4.50
Room Temperature: 2/1 Water Temperature: 30/35	MAGIS M12	9.20	2.36	3.90
	MAGIS M14	11.00	3.06	3.60
	MAGIS M16	13.00	3.77	3.45
Room Temperature: -7/-8 Water Temperature: 30/35	MAGIS M12	10.00	3.33	3.00
	MAGIS M14	12.00	4.21	2.85
	MAGIS M16	13.10	4.85	2.70
Room Temperature: 7/6 Water Temperature: 40/45	MAGIS M12	12.30	3.32	3.70
	MAGIS M14	14.10	3.92	3.60
	MAGIS M16	16.00	4.57	3.50
Room Temperature: 2/1 Water Temperature: 40/45	MAGIS M12	10.60	3.53	3.00
	MAGIS M14	11.50	4.04	2.85
	MAGIS M16	12.70	4.46	2.85
Room Temperature: -7/-8 Water Temperature: 40/45	MAGIS M12	10.20	4.25	2.40
	MAGIS M14	11.70	4.98	2.35
	MAGIS M16	12.80	5.69	2.25
Room Temperature: 7/6 Water Temperature: 47/55	MAGIS M12	11.90	3.90	3.05
	MAGIS M14	13.80	4.68	2.95
	MAGIS M16	16.00	5.61	2.85
Room Temperature: 2/1 Water Temperature: 47/55	MAGIS M12	11.30	4.52	2.50
	MAGIS M14	12.40	5.06	2.45
	MAGIS M16	13.30	5.54	2.40
Room Temperature: -7/-8 Water Temperature: 47/55	MAGIS M12	9.80	4.78	2.05
	MAGIS M14	11.00	5.37	2.05
	MAGIS M16	12.50	6.25	2.00

Three-phase.

Conditions (°C)	Model	Capacity (kW)	Absorbed power (kW)	EER/COP (/)
Room Temperature: 35/24 Water Temperature: 12/7	MAGIS M12 T	11.50	4.18	2.75
	MAGIS M14 T	12.40	4.96	2.50
	MAGIS M16 T	14.00	5.60	2.50
Room Temperature: 35/24 Water Temperature: 23/18	MAGIS M12 T	12.00	3.04	3.95
	MAGIS M14 T	13.50	3.74	3.61
	MAGIS M16 T	14.90	4.38	3.40
Room Temperature: 7/6 Water Temperature: 30/35	MAGIS M12 T	12.10	2.44	4.95
	MAGIS M14 T	14.50	3.15	4.60
	MAGIS M16 T	15.90	3.53	4.50
Room Temperature: 2/1 Water Temperature: 30/35	MAGIS M12 T	9.20	2.36	3.90
	MAGIS M14 T	11.00	3.06	3.60
	MAGIS M16 T	13.00	3.77	3.45
Room Temperature: -7/-8 Water Temperature: 30/35	MAGIS M12 T	10.00	3.33	3.00
	MAGIS M14 T	12.00	4.21	2.85
	MAGIS M16 T	13.10	4.85	2.70
Room Temperature: 7/6 Water Temperature: 40/45	MAGIS M12 T	12.30	3.32	3.70
	MAGIS M14 T	14.10	3.92	3.60
	MAGIS M16 T	16.00	4.57	3.50
Room Temperature: 2/1 Water Temperature: 40/45	MAGIS M12 T	10.60	3.53	3.00
	MAGIS M14 T	11.50	4.04	2.85
	MAGIS M16 T	12.70	4.46	2.85
Room Temperature: -7/-8 Water Temperature: 40/45	MAGIS M12 T	10.20	4.25	2.40
	MAGIS M14 T	11.70	4.98	2.35
	MAGIS M16 T	12.80	5.69	2.25
Room Temperature: 7/6 Water Temperature: 47/55	MAGIS M12 T	11.90	3.90	3.05
	MAGIS M14 T	13.80	4.68	2.95
	MAGIS M16 T	16.00	5.61	2.85
Room Temperature: 2/1 Water Temperature: 47/55	MAGIS M12 T	11.30	4.52	2.50
	MAGIS M14 T	12.40	5.06	2.45
	MAGIS M16 T	13.30	5.54	2.40
Room Temperature: -7/-8 Water Temperature: 47/55	MAGIS M12 T	9.80	4.78	2.05
	MAGIS M14 T	11.00	5.37	2.05
	MAGIS M16 T	12.50	6.25	2.00