MITSUBISHI ELECTRIC
HYDRONICS & IT COOLING SYSTEMS S.p.A.

Climaveneta **Technical Documentation**
ERACS2-WQ-G05_0802_1702_201812_EN

REGULATION (EU) N. 813/2013

Ecodesign requirements for space heaters

MULTIFUNCTION UNITS WATER SOURCE

ERACS2-WQ-G05 0802 - 1702

Heating Capacity Range 193 - 323 [kW] - (EN14511 VALUE)
Nominal Heating Capacity at TdesignH Range 222 - 372 [kW]

EN

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1. REGULATION (EU) N. 813/2013

1.1 Scope of the document

This documenti is compliant with the Commission Regulation (EU) N. 813/2013 reguarding “REQUIREMENTS FOR PRODUCT INFORMATION” (Annex II, Point 5) and it is made by the required information set out of the Table 2, Annex II of the Regulation called “Information requirements for heat pump space heaters and heat pump combination heaters”.

1.2 REGULATION (EU) N. 813/2013 description

The COMMISSION REGULATION (EU) N. 813/2013 of 2 August 2013, implementing Directive 2009/125/EC of the European Parliament and of the Council, establishes ecodesign requirements for the placing on the market and/or putting into service of space heaters and combination heaters with a rated heat output ≤ 400 kW, including those integrated in packages of space heater, temperature control and solar device or packages of combination heater, temperature control and solar device as defined in Article 2 of Commission Delegated Regulation (EU) N. 811/2013.

1.3 Description of the data declared by Mitsubishi Electric Hydronics & IT Cooling Systems

- Heat pump combination heater: heat pump space heater that is designed to also provide heat to deliver hot drinking.
- Low-temperature application: application where the heat pump space heater delivers its declared capacity for heating at an indoor heat exchanger outlet temperature of 35 °C.
- Medium-temperature application: application where the heat pump space heater or heat pump combination heater delivers its declared capacity for heating at an indoor heat exchanger outlet temperature of 55 °C.
- TdesignH: temperature at reference design conditions.
- PdesignH , Design load for heating: the rated heat output of a heat pump space heater or heat pump combination heater at the reference design temperature, whereby the design load for heating is equal to the part load for heating with outdoor temperature equal to reference design temperature, expressed in kW.
- Seasonal space heating energy efficiency (ηs): ratio between the space heating demand for a designated heating season, supplied by a heater and the annual energy consumption required to meet this demand, expressed in %.
- Seasonal space heating energy efficiency class: efficiency class determined on the basis of its seasonal space heating energy efficiency with a difference distribution between heaters and low temperature heat pumps.
- Low-temperature heat pump: heat pump space heater that is specifically designed for low-temperature application, and that cannot deliver heating water with an outlet temperature of 52 °C at an inlet dry (wet) bulb temperature of – 7 °C (– 8 °C) in the reference design conditions for average climate.
- Bivalent temperature: the outdoor temperature declared by the manufacturer for heating at which the declared capacity for heating equals the part load for heating and below which the declared capacity for heating requires supplementary capacity for heating to meet the part load for heating.
- Operation limit temperature: the outdoor temperature declared by the manufacturer for heating, below which the air-to-water heat pump space heater or air-to-water heat pump combination heater will not be able to deliver any heating capacity and the declared capacity for heating is equal to zero.
- Degradation coefficient: measure of efficiency loss due to cycling of heat pump space heaters or heat pump combination heaters.
- Off mode: a condition in which the heat pump space heater or heat pump combination heater is connected to the mains power source and is not providing any function.
- Thermostat-off mode: condition corresponding to the hours with no heating load and activated heating function, whereby the heating function is switched on but the heat pump space heater or heat pump combination heater is not operational.
- Standby mode: condition where the heater is connected to the mains power source, depends on energy input from the mains power source to work as intended and provides only the following functions, which may persist for an indefinite time: reactivation function, or reactivation function and only an indication of enabled reactivation function, and/or information or status display.
- Crankcase heater mode: condition in which a heating device is activated to avoid the refrigerant migrating to the compressor so as to limit the refrigerant concentration in oil when the compressor is started.
- Seasonal coefficient of performance (SCOP): the overall coefficient of performance of a heat pump heater representative of the designated heating season, calculated as the reference annual heating demand divided by the annual energy consumption.
- Supplementary capacity for heating: rated heat output of a supplementary heater that supplements the declared capacity for heating to meet the part load for heating, if the declared capacity for heating is less than the part load for heating.
- Capacity control: ability of a heat pump space heater or heat pump combination heater to change its capacity by changing the volumetric flow rate of at least one of the fluids needed to operate the refrigeration cycle.
- Annual energy consumption: means the energy consumption required to meet the reference annual heating demand for a designated heating season.
- Sound power level (LWA): the A-weighted sound power level, indoors and/or outdoors, expressed in dB.

2. CLIMAVENETA CONTENTS UNIT

2.1 Table index

MULTIFUNCTION UNITS WATER SOURCE

ERACS2-WQ-G05 0802 - 1702

Heating Capacity Range 193 - 323 [kW]

Nominal Heating Capacity at TdesignH Range 222 - 372 [kW]

ERACS2-WQ-G05 /0802 LOW TEMPERATURE application			
Air-to-water heat pump:	yes / no		no
Water-to-water heat pump:	yes / no		yes
Brine-to-water heat pump:	yes / no		no
Low-temperature heat pump:	yes / no		no
With supplementary heater:	yes / no		no
Mixed unit with heat pump:	yes / no		no
Temperature application (1)	(low 35°C/ medium 55°C)		low 35°C
Water flow rate	fixed / variable		fixed
Outlet temperature	fixed / variable		variable
Parameters are declared for average/warmer/colder climate conditions (1)	average / warmer / colder		average
Rated heat output at Tdesignh	**Prated = Pdesignh**	**[kW]**	**251**
Seasonal space heating energy efficiency	**ηs**	**[%]**	**211**
Seasonal space heating energy efficiency class	**-**	**-**	
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj			
Declared capacity for heating with outdoor temperature Tj = – 7 °C	Pdh	[kW]	222
Declared capacity for heating with outdoor temperature Tj = +2 °C	Pdh	[kW]	135
Declared capacity for heating with outdoor temperature Tj = +7 °C	Pdh	[kW]	86,8
Declared capacity for heating with outdoor temperature Tj = +12 °C	Pdh	[kW]	71,1
Declared capacity for heating with outdoor temperature Tj = Bivalent temperature	Pdh	[kW]	222
Declared capacity for heating with outdoor temperature Tj = Operation limit temperature	Pdh	[kW]	221
For air-to-water heat pumps: Tj = – 15 °C (if TOL < – 20 °C)	Pdh	[kW]	-
Bivalent temperature	Tbiv	[°C]	-7
Degradation coefficient	Cdh	-	0,90
Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj			
Declared coefficient of performance with outdoor temperature Tj = – 7 °C	COPd	-	5,34
Declared coefficient of performance with outdoor temperature Tj = +2 °C	COPd	-	5,60
Declared coefficient of performance with outdoor temperature Tj = +7 °C	COPd	-	5,71
Declared coefficient of performance with outdoor temperature Tj = +12 °C	COPd	-	5,70
Declared coefficient of performance with outdoor temperature Tj = Bivalent temperature	COPd	-	5,34
Declared coefficient of performance with outdoor temperature Tj = Operation limit temperature	COPd	-	5,21
For air-to-water heat pumps: Tj = – 15 °C (if TOL < – 20 °C)	COPd	-	-
For air-to-water HP : Operation limit temperature	TOL	[°C]	-
Heating water operating limit temperature	WTOL	[°C]	55
Power consumption in modes other than active mode			
Off mode	POFF	[kW]	0,000
Thermostat-off mode	PTO	[kW]	2,556
Standby mode	PSB	[kW]	0,437
Crankcase heater mode	PCK	[kW]	0,437
Supplementary heater			
Nominal heating capacity	Psup	[kW]	29,9
Other items			
Capacity control	fixed / variable		variable
Sound power level, indoors	LWA	[dB(A)]	94
Sound power level, outdoors	LWA	[dB(A)]	-
Annual electricity consumption for heating	QHE	[kWh]	94532
Outdoor heat exchanger			
For air-to-water HP: Rated air flow rate, outdoors	Qairsource	[m³/h]	-
For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	Qwater/brine source	[m³/h]	52

(1) The parameters are declared for application at medium temperature, except in the case of low temperature heat pumps. For low temperature heat pumps, the parameters are declared for application at low temperature.

Unit in standard configuration/execution, without optional accessories.

ERACS2-WQ-G05 /0802 MEDIUM TEMPERATURE application			
Air-to-water heat pump:	yes / no		no
Water-to-water heat pump:	yes / no		yes
Brine-to-water heat pump:	yes / no		no
Low-temperature heat pump:	yes / no		no
With supplementary heater:	yes / no		no
Mixed unit with heat pump:	yes / no		no
Temperature application (1)	(low 35°C/ medium 55°C)		medium 55°C
Water flow rate	fixed / variable		fixed
Outlet temperature	fixed / variable		variable
Parameters are declared for average/warmer/colder climate conditions (1)	average / warmer / colder		average
Rated heat output at Tdesignh	**Prated = Pdesignh**	**[kW]**	**222**
Seasonal space heating energy efficiency	**ηs**	**[%]**	**163**
Seasonal space heating energy efficiency class	**-**	**-**	
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj			
Declared capacity for heating with outdoor temperature Tj = – 7 °C	Pdh	[kW]	196
Declared capacity for heating with outdoor temperature Tj = +2 °C	Pdh	[kW]	120
Declared capacity for heating with outdoor temperature Tj = +7 °C	Pdh	[kW]	76,8
Declared capacity for heating with outdoor temperature Tj = +12 °C	Pdh	[kW]	67,2
Declared capacity for heating with outdoor temperature Tj = Bivalent temperature	Pdh	[kW]	196
Declared capacity for heating with outdoor temperature Tj = Operation limit temperature	Pdh	[kW]	193
For air-to-water heat pumps: Tj = – 15 °C (if TOL < – 20 °C)	Pdh	[kW]	-
Bivalent temperature	Tbiv	[°C]	-7
Degradation coefficient	Cdh	-	0,90
Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj			
Declared coefficient of performance with outdoor temperature Tj = – 7 °C	COPd	-	3,54
Declared coefficient of performance with outdoor temperature Tj = +2 °C	COPd	-	4,14
Declared coefficient of performance with outdoor temperature Tj = +7 °C	COPd	-	4,93
Declared coefficient of performance with outdoor temperature Tj = +12 °C	COPd	-	5,73
Declared coefficient of performance with outdoor temperature Tj = Bivalent temperature	COPd	-	3,54
Declared coefficient of performance with outdoor temperature Tj = Operation limit temperature	COPd	-	3,28
For air-to-water heat pumps: Tj = – 15 °C (if TOL < – 20 °C)	COPd	-	-
For air-to-water HP : Operation limit temperature	TOL	[°C]	-
Heating water operating limit temperature	WTOL	[°C]	55
Power consumption in modes other than active mode			
Off mode	POFF	[kW]	0,000
Thermostat-off mode	PTO	[kW]	1,139
Standby mode	PSB	[kW]	0,437
Crankcase heater mode	PCK	[kW]	0,437
Supplementary heater			
Nominal heating capacity	Psup	[kW]	29,2
Other items			
Capacity control	fixed / variable		variable
Sound power level, indoors	LWA	[dB(A)]	94
Sound power level, outdoors	LWA	[dB(A)]	-
Annual electricity consumption for heating	QHE	[kWh]	107486
Outdoor heat exchanger			
For air-to-water HP: Rated air flow rate, outdoors	Qairsource	[m³/h]	-
For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	Qwater/brine source	[m³/h]	40

(1) The parameters are declared for application at medium temperature, except in the case of low temperature heat pumps. For low temperature heat pumps, the parameters are declared for application at low temperature.

Unit in standard configuration/execution, without optional accessories.

ERACS2-WQ-G05 /1002 LOW TEMPERATURE application			
Air-to-water heat pump:	yes / no		no
Water-to-water heat pump:	yes / no		yes
Brine-to-water heat pump:	yes / no		no
Low-temperature heat pump:	yes / no		no
With supplementary heater:	yes / no		no
Mixed unit with heat pump:	yes / no		no
Temperature application (1)	(low 35°C/ medium 55°C)		low 35°C
Water flow rate	fixed / variable		fixed
Outlet temperature	fixed / variable		variable
Parameters are declared for average/warmer/colder climate conditions (1)	average / warmer / colder		average
Rated heat output at Tdesignh	**Prated = Pdesignh**	**[kW]**	**311**
Seasonal space heating energy efficiency	**ηs**	**[%]**	**210**
Seasonal space heating energy efficiency class	**-**	**-**	
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj			
Declared capacity for heating with outdoor temperature Tj = – 7 °C	Pdh	[kW]	275
Declared capacity for heating with outdoor temperature Tj = +2 °C	Pdh	[kW]	167
Declared capacity for heating with outdoor temperature Tj = +7 °C	Pdh	[kW]	108
Declared capacity for heating with outdoor temperature Tj = +12 °C	Pdh	[kW]	86,2
Declared capacity for heating with outdoor temperature Tj = Bivalent temperature	Pdh	[kW]	275
Declared capacity for heating with outdoor temperature Tj = Operation limit temperature	Pdh	[kW]	274
For air-to-water heat pumps: Tj = – 15 °C (if TOL < – 20 °C)	Pdh	[kW]	-
Bivalent temperature	Tbiv	[°C]	-7
Degradation coefficient	Cdh	-	0,90
Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj			
Declared coefficient of performance with outdoor temperature Tj = – 7 °C	COPd	-	5,23
Declared coefficient of performance with outdoor temperature Tj = +2 °C	COPd	-	5,64
Declared coefficient of performance with outdoor temperature Tj = +7 °C	COPd	-	5,66
Declared coefficient of performance with outdoor temperature Tj = +12 °C	COPd	-	5,57
Declared coefficient of performance with outdoor temperature Tj = Bivalent temperature	COPd	-	5,23
Declared coefficient of performance with outdoor temperature Tj = Operation limit temperature	COPd	-	5,13
For air-to-water heat pumps: Tj = – 15 °C (if TOL < – 20 °C)	COPd	-	-
For air-to-water HP : Operation limit temperature	TOL	[°C]	-
Heating water operating limit temperature	WTOL	[°C]	55
Power consumption in modes other than active mode			
Off mode	POFF	[kW]	0,000
Thermostat-off mode	PTO	[kW]	3,668
Standby mode	PSB	[kW]	0,437
Crankcase heater mode	PCK	[kW]	0,437
Supplementary heater			
Nominal heating capacity	Psup	[kW]	37,1
Other items			
Capacity control	fixed / variable		variable
Sound power level, indoors	LWA	[dB(A)]	95
Sound power level, outdoors	LWA	[dB(A)]	-
Annual electricity consumption for heating	QHE	[kWh]	117708
Outdoor heat exchanger			
For air-to-water HP: Rated air flow rate, outdoors	Qairsource	[m³/h]	-
For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	Qwater/brine source	[m³/h]	65

(1) The parameters are declared for application at medium temperature, except in the case of low temperature heat pumps. For low temperature heat pumps, the parameters are declared for application at low temperature.

Unit in standard configuration/execution, without optional accessories.

ERACS2-WQ-G05 /1002 MEDIUM TEMPERATURE application			
Air-to-water heat pump:	yes / no		no
Water-to-water heat pump:	yes / no		yes
Brine-to-water heat pump:	yes / no		no
Low-temperature heat pump:	yes / no		no
With supplementary heater:	yes / no		no
Mixed unit with heat pump:	yes / no		no
Temperature application (1)	(low 35°C/ medium 55°C)		medium 55°C
Water flow rate	fixed / variable		fixed
Outlet temperature	fixed / variable		variable
Parameters are declared for average/warmer/colder climate conditions (1)	average / warmer / colder		average
Rated heat output at Tdesignh	**Prated = Pdesignh**	**[kW]**	**277**
Seasonal space heating energy efficiency	**ηs**	**[%]**	**168**
Seasonal space heating energy efficiency class	**-**	**-**	
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj			
Declared capacity for heating with outdoor temperature Tj = – 7 °C	Pdh	[kW]	245
Declared capacity for heating with outdoor temperature Tj = +2 °C	Pdh	[kW]	149
Declared capacity for heating with outdoor temperature Tj = +7 °C	Pdh	[kW]	95,9
Declared capacity for heating with outdoor temperature Tj = +12 °C	Pdh	[kW]	81,6
Declared capacity for heating with outdoor temperature Tj = Bivalent temperature	Pdh	[kW]	245
Declared capacity for heating with outdoor temperature Tj = Operation limit temperature	Pdh	[kW]	242
For air-to-water heat pumps: Tj = – 15 °C (if TOL < – 20 °C)	Pdh	[kW]	-
Bivalent temperature	Tbiv	[°C]	-7
Degradation coefficient	Cdh	-	0,90
Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj			
Declared coefficient of performance with outdoor temperature Tj = – 7 °C	COPd	-	3,53
Declared coefficient of performance with outdoor temperature Tj = +2 °C	COPd	-	4,35
Declared coefficient of performance with outdoor temperature Tj = +7 °C	COPd	-	5,03
Declared coefficient of performance with outdoor temperature Tj = +12 °C	COPd	-	5,73
Declared coefficient of performance with outdoor temperature Tj = Bivalent temperature	COPd	-	3,53
Declared coefficient of performance with outdoor temperature Tj = Operation limit temperature	COPd	-	3,29
For air-to-water heat pumps: Tj = – 15 °C (if TOL < – 20 °C)	COPd	-	-
For air-to-water HP : Operation limit temperature	TOL	[°C]	-
Heating water operating limit temperature	WTOL	[°C]	55
Power consumption in modes other than active mode			
Off mode	POFF	[kW]	0,000
Thermostat-off mode	PTO	[kW]	1,640
Standby mode	PSB	[kW]	0,437
Crankcase heater mode	PCK	[kW]	0,437
Supplementary heater			
Nominal heating capacity	Psup	[kW]	35,6
Other items			
Capacity control	fixed / variable		variable
Sound power level, indoors	LWA	[dB(A)]	95
Sound power level, outdoors	LWA	[dB(A)]	-
Annual electricity consumption for heating	QHE	[kWh]	130389
Outdoor heat exchanger			
For air-to-water HP: Rated air flow rate, outdoors	Qairsource	[m³/h]	-
For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	Qwater/brine source	[m³/h]	50

(1) The parameters are declared for application at medium temperature, except in the case of low temperature heat pumps. For low temperature heat pumps, the parameters are declared for application at low temperature.

Unit in standard configuration/execution, without optional accessories.

ERACS2-WQ-G05 /1102 LOW TEMPERATURE application			
Air-to-water heat pump:	yes / no		no
Water-to-water heat pump:	yes / no		yes
Brine-to-water heat pump:	yes / no		no
Low-temperature heat pump:	yes / no		no
With supplementary heater:	yes / no		no
Mixed unit with heat pump:	yes / no		no
Temperature application (1)	(low 35°C/ medium 55°C)		low 35°C
Water flow rate	fixed / variable		fixed
Outlet temperature	fixed / variable		variable
Parameters are declared for average/warmer/colder climate conditions (1)	average / warmer / colder		average
Rated heat output at Tdesignh	**Prated = Pdesignh**	**[kW]**	**355**
Seasonal space heating energy efficiency	**ηs**	**[%]**	**195**
Seasonal space heating energy efficiency class	**-**	**-**	
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj			
Declared capacity for heating with outdoor temperature Tj = – 7 °C	Pdh	[kW]	314
Declared capacity for heating with outdoor temperature Tj = +2 °C	Pdh	[kW]	191
Declared capacity for heating with outdoor temperature Tj = +7 °C	Pdh	[kW]	123
Declared capacity for heating with outdoor temperature Tj = +12 °C	Pdh	[kW]	105
Declared capacity for heating with outdoor temperature Tj = Bivalent temperature	Pdh	[kW]	314
Declared capacity for heating with outdoor temperature Tj = Operation limit temperature	Pdh	[kW]	313
For air-to-water heat pumps: Tj = – 15 °C (if TOL < – 20 °C)	Pdh	[kW]	-
Bivalent temperature	Tbiv	[°C]	-7
Degradation coefficient	Cdh	-	0,90
Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj			
Declared coefficient of performance with outdoor temperature Tj = – 7 °C	COPd	-	5,18
Declared coefficient of performance with outdoor temperature Tj = +2 °C	COPd	-	5,17
Declared coefficient of performance with outdoor temperature Tj = +7 °C	COPd	-	5,23
Declared coefficient of performance with outdoor temperature Tj = +12 °C	COPd	-	5,21
Declared coefficient of performance with outdoor temperature Tj = Bivalent temperature	COPd	-	5,18
Declared coefficient of performance with outdoor temperature Tj = Operation limit temperature	COPd	-	5,07
For air-to-water heat pumps: Tj = – 15 °C (if TOL < – 20 °C)	COPd	-	-
For air-to-water HP : Operation limit temperature	TOL	[°C]	-
Heating water operating limit temperature	WTOL	[°C]	55
Power consumption in modes other than active mode			
Off mode	POFF	[kW]	0,000
Thermostat-off mode	PTO	[kW]	5,258
Standby mode	PSB	[kW]	0,437
Crankcase heater mode	PCK	[kW]	0,437
Supplementary heater			
Nominal heating capacity	Psup	[kW]	42,5
Other items			
Capacity control	fixed / variable		variable
Sound power level, indoors	LWA	[dB(A)]	97
Sound power level, outdoors	LWA	[dB(A)]	-
Annual electricity consumption for heating	QHE	[kWh]	144196
Outdoor heat exchanger			
For air-to-water HP: Rated air flow rate, outdoors	Qairsource	[m³/h]	-
For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	Qwater/brine source	[m³/h]	74

(1) The parameters are declared for application at medium temperature, except in the case of low temperature heat pumps. For low temperature heat pumps, the parameters are declared for application at low temperature.

Unit in standard configuration/execution, without optional accessories.

ERACS2-WQ-G05 /1102 MEDIUM TEMPERATURE application			
Air-to-water heat pump:	yes / no		no
Water-to-water heat pump:	yes / no		yes
Brine-to-water heat pump:	yes / no		no
Low-temperature heat pump:	yes / no		no
With supplementary heater:	yes / no		no
Mixed unit with heat pump:	yes / no		no
Temperature application (1)	(low 35°C/ medium 55°C)		medium 55°C
Water flow rate	fixed / variable		fixed
Outlet temperature	fixed / variable		variable
Parameters are declared for average/warmer/colder climate conditions (1)	average / warmer / colder		average
Rated heat output at Tdesignh	**Prated = Pdesignh**	**[kW]**	**318**
Seasonal space heating energy efficiency	**ηs**	**[%]**	**149**
Seasonal space heating energy efficiency class	**-**	**-**	
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj			
Declared capacity for heating with outdoor temperature Tj = – 7 °C	Pdh	[kW]	281
Declared capacity for heating with outdoor temperature Tj = +2 °C	Pdh	[kW]	171
Declared capacity for heating with outdoor temperature Tj = +7 °C	Pdh	[kW]	110
Declared capacity for heating with outdoor temperature Tj = +12 °C	Pdh	[kW]	98,7
Declared capacity for heating with outdoor temperature Tj = Bivalent temperature	Pdh	[kW]	281
Declared capacity for heating with outdoor temperature Tj = Operation limit temperature	Pdh	[kW]	278
For air-to-water heat pumps: Tj = – 15 °C (if TOL < – 20 °C)	Pdh	[kW]	-
Bivalent temperature	Tbiv	[°C]	-7
Degradation coefficient	Cdh	-	0,90
Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj			
Declared coefficient of performance with outdoor temperature Tj = – 7 °C	COPd	-	3,44
Declared coefficient of performance with outdoor temperature Tj = +2 °C	COPd	-	3,71
Declared coefficient of performance with outdoor temperature Tj = +7 °C	COPd	-	4,49
Declared coefficient of performance with outdoor temperature Tj = +12 °C	COPd	-	5,30
Declared coefficient of performance with outdoor temperature Tj = Bivalent temperature	COPd	-	3,44
Declared coefficient of performance with outdoor temperature Tj = Operation limit temperature	COPd	-	3,19
For air-to-water heat pumps: Tj = – 15 °C (if TOL < – 20 °C)	COPd	-	-
For air-to-water HP : Operation limit temperature	TOL	[°C]	-
Heating water operating limit temperature	WTOL	[°C]	55
Power consumption in modes other than active mode			
Off mode	POFF	[kW]	0,000
Thermostat-off mode	PTO	[kW]	2,301
Standby mode	PSB	[kW]	0,437
Crankcase heater mode	PCK	[kW]	0,437
Supplementary heater			
Nominal heating capacity	Psup	[kW]	40,2
Other items			
Capacity control	fixed / variable		variable
Sound power level, indoors	LWA	[dB(A)]	97
Sound power level, outdoors	LWA	[dB(A)]	-
Annual electricity consumption for heating	QHE	[kWh]	167995
Outdoor heat exchanger			
For air-to-water HP: Rated air flow rate, outdoors	Qairsource	[m³/h]	-
For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	Qwater/brine source	[m³/h]	57

(1) The parameters are declared for application at medium temperature, except in the case of low temperature heat pumps. For low temperature heat pumps, the parameters are declared for application at low temperature.

Unit in standard configuration/execution, without optional accessories.

ERACS2-WQ-G05 /1302 LOW TEMPERATURE application			
Air-to-water heat pump:	yes / no		no
Water-to-water heat pump:	yes / no		yes
Brine-to-water heat pump:	yes / no		no
Low-temperature heat pump:	yes / no		no
With supplementary heater:	yes / no		no
Mixed unit with heat pump:	yes / no		no
Temperature application (1)	(low 35°C/ medium 55°C)		low 35°C
Water flow rate	fixed / variable		fixed
Outlet temperature	fixed / variable		variable
Parameters are declared for average/warmer/colder climate conditions (1)	average / warmer / colder		average
Rated heat output at Tdesignh	**Prated = Pdesignh**	**[kW]**	**421**
Seasonal space heating energy efficiency	**ηs**	**[%]**	**207**
Seasonal space heating energy efficiency class	**-**	**-**	
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj			
Declared capacity for heating with outdoor temperature Tj = – 7 °C	Pdh	[kW]	372
Declared capacity for heating with outdoor temperature Tj = +2 °C	Pdh	[kW]	227
Declared capacity for heating with outdoor temperature Tj = +7 °C	Pdh	[kW]	146
Declared capacity for heating with outdoor temperature Tj = +12 °C	Pdh	[kW]	122
Declared capacity for heating with outdoor temperature Tj = Bivalent temperature	Pdh	[kW]	372
Declared capacity for heating with outdoor temperature Tj = Operation limit temperature	Pdh	[kW]	370
For air-to-water heat pumps: Tj = – 15 °C (if TOL < – 20 °C)	Pdh	[kW]	-
Bivalent temperature	Tbiv	[°C]	-7
Degradation coefficient	Cdh	-	0,90
Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj			
Declared coefficient of performance with outdoor temperature Tj = – 7 °C	COPd	-	5,28
Declared coefficient of performance with outdoor temperature Tj = +2 °C	COPd	-	5,50
Declared coefficient of performance with outdoor temperature Tj = +7 °C	COPd	-	5,57
Declared coefficient of performance with outdoor temperature Tj = +12 °C	COPd	-	5,54
Declared coefficient of performance with outdoor temperature Tj = Bivalent temperature	COPd	-	5,28
Declared coefficient of performance with outdoor temperature Tj = Operation limit temperature	COPd	-	5,17
For air-to-water heat pumps: Tj = – 15 °C (if TOL < – 20 °C)	COPd	-	-
For air-to-water HP : Operation limit temperature	TOL	[°C]	-
Heating water operating limit temperature	WTOL	[°C]	55
Power consumption in modes other than active mode			
Off mode	POFF	[kW]	0,000
Thermostat-off mode	PTO	[kW]	5,385
Standby mode	PSB	[kW]	0,437
Crankcase heater mode	PCK	[kW]	0,437
Supplementary heater			
Nominal heating capacity	Psup	[kW]	50,3
Other items			
Capacity control	fixed / variable		variable
Sound power level, indoors	LWA	[dB(A)]	97
Sound power level, outdoors	LWA	[dB(A)]	-
Annual electricity consumption for heating	QHE	[kWh]	161805
Outdoor heat exchanger			
For air-to-water HP: Rated air flow rate, outdoors	Qairsource	[m³/h]	-
For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	Qwater/brine source	[m³/h]	88

(1) The parameters are declared for application at medium temperature, except in the case of low temperature heat pumps. For low temperature heat pumps, the parameters are declared for application at low temperature.

Unit in standard configuration/execution, without optional accessories.

ERACS2-WQ-G05 /1302 MEDIUM TEMPERATURE application			
Air-to-water heat pump:	yes / no		no
Water-to-water heat pump:	yes / no		yes
Brine-to-water heat pump:	yes / no		no
Low-temperature heat pump:	yes / no		no
With supplementary heater:	yes / no		no
Mixed unit with heat pump:	yes / no		no
Temperature application (1)	(low 35°C/ medium 55°C)		medium 55°C
Water flow rate	fixed / variable		fixed
Outlet temperature	fixed / variable		variable
Parameters are declared for average/warmer/colder climate conditions (1)	average / warmer / colder		average
Rated heat output at Tdesignh	**Prated = Pdesignh**	**[kW]**	**372**
Seasonal space heating energy efficiency	**ηs**	**[%]**	**160**
Seasonal space heating energy efficiency class	**-**	**-**	
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj			
Declared capacity for heating with outdoor temperature Tj = – 7 °C	Pdh	[kW]	329
Declared capacity for heating with outdoor temperature Tj = +2 °C	Pdh	[kW]	200
Declared capacity for heating with outdoor temperature Tj = +7 °C	Pdh	[kW]	129
Declared capacity for heating with outdoor temperature Tj = +12 °C	Pdh	[kW]	115
Declared capacity for heating with outdoor temperature Tj = Bivalent temperature	Pdh	[kW]	329
Declared capacity for heating with outdoor temperature Tj = Operation limit temperature	Pdh	[kW]	323
For air-to-water heat pumps: Tj = – 15 °C (if TOL < – 20 °C)	Pdh	[kW]	-
Bivalent temperature	Tbiv	[°C]	-7
Degradation coefficient	Cdh	-	0,90
Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj			
Declared coefficient of performance with outdoor temperature Tj = – 7 °C	COPd	-	3,53
Declared coefficient of performance with outdoor temperature Tj = +2 °C	COPd	-	4,04
Declared coefficient of performance with outdoor temperature Tj = +7 °C	COPd	-	4,83
Declared coefficient of performance with outdoor temperature Tj = +12 °C	COPd	-	5,66
Declared coefficient of performance with outdoor temperature Tj = Bivalent temperature	COPd	-	3,53
Declared coefficient of performance with outdoor temperature Tj = Operation limit temperature	COPd	-	3,28
For air-to-water heat pumps: Tj = – 15 °C (if TOL < – 20 °C)	COPd	-	-
For air-to-water HP : Operation limit temperature	TOL	[°C]	-
Heating water operating limit temperature	WTOL	[°C]	55
Power consumption in modes other than active mode			
Off mode	POFF	[kW]	0,000
Thermostat-off mode	PTO	[kW]	2,281
Standby mode	PSB	[kW]	0,437
Crankcase heater mode	PCK	[kW]	0,437
Supplementary heater			
Nominal heating capacity	Psup	[kW]	48,8
Other items			
Capacity control	fixed / variable		variable
Sound power level, indoors	LWA	[dB(A)]	97
Sound power level, outdoors	LWA	[dB(A)]	-
Annual electricity consumption for heating	QHE	[kWh]	183556
Outdoor heat exchanger			
For air-to-water HP: Rated air flow rate, outdoors	Qairsource	[m³/h]	-
For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	Qwater/brine source	[m³/h]	67

(1) The parameters are declared for application at medium temperature, except in the case of low temperature heat pumps. For low temperature heat pumps, the parameters are declared for application at low temperature.

Unit in standard configuration/execution, without optional accessories.

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