

1 GAHP A

Figure 1.1

Table 8
COMMISSION DELEGATED REGULATION (EU) No 811/2013

Technical parameters for heat pump space heaters and heat pump combination heaters

Model(s):				GAHP A HT			
Air-to-water heat pump:				yes			
Water-to-water heat pump:				no			
Brine-to-water heat pump:				no			
Low-temperature heat pump:				no			
Equipped with a supplementary heater:				no			
Heat pump combination heater:				no			
Parameters shall be declared for medium-temperature application.							
Parameters shall be declared for average, colder and warmer climate conditions.							
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
AVERAGE CLIMATE CONDITIONS							
Rated heat output (*)	<i>Prated</i>	29,6	kW	Seasonal space heating energy efficiency	η_s	111	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj			
Tj = -7 °C	<i>Pdh</i>	26,1	kW	Tj = -7 °C	<i>PERd</i>	96	%
Tj = +2 °C	<i>Pdh</i>	16,0	kW	Tj = +2 °C	<i>PERd</i>	120	%
Tj = +7 °C	<i>Pdh</i>	10,4	kW	Tj = +7 °C	<i>PERd</i>	117	%
Tj = +12 °C	<i>Pdh</i>	4,4	kW	Tj = +12 °C	<i>PERd</i>	111	%
Tj = bivalent temperature	<i>Pdh</i>	-	kW	Tj = bivalent temperature	<i>PERd</i>	-	%
Annual energy consumption	<i>Q_{HE}</i>	198	GJ				
COLDER CLIMATE CONDITIONS							
Rated heat output (*)	<i>Prated</i>	29,4	kW	Seasonal space heating energy efficiency	η_s	107	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj			
Tj = -7 °C	<i>Pdh</i>	17,9	kW	Tj = -7 °C	<i>PERd</i>	109	%
Tj = +2 °C	<i>Pdh</i>	10,9	kW	Tj = +2 °C	<i>PERd</i>	117	%
Tj = +7 °C	<i>Pdh</i>	7,1	kW	Tj = +7 °C	<i>PERd</i>	112	%
Tj = +12 °C	<i>Pdh</i>	3,2	kW	Tj = +12 °C	<i>PERd</i>	111	%
Tj = bivalent temperature	<i>Pdh</i>	-	kW	Tj = bivalent temperature	<i>PERd</i>	-	%
Tj = operation limit temperature	<i>Pdh</i>	29,4	kW	Tj = operation limit temperature	<i>PERd</i>	87	%
For air-to-water heat pumps: Tj = -15 °C (if TOL < -20 °C)	<i>Pdh</i>	24,1	kW	For air-to-water heat pumps: Tj = -15 °C (if TOL < -20 °C)	<i>PERd</i>	90	%
Annual energy consumption	<i>Q_{HE}</i>	244	GJ				
WARMER CLIMATE CONDITIONS							
Rated heat output (*)	<i>Prated</i>	36,4	kW	Seasonal space heating energy efficiency	η_s	116	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj			
Tj = +2 °C	<i>Pdh</i>	36,4	kW	Tj = +2 °C	<i>PERd</i>	119	%
Tj = +7 °C	<i>Pdh</i>	23,3	kW	Tj = +7 °C	<i>PERd</i>	122	%
Tj = +12 °C	<i>Pdh</i>	10,6	kW	Tj = +12 °C	<i>PERd</i>	116	%
Tj = bivalent temperature	<i>Pdh</i>	-	kW	Tj = bivalent temperature	<i>PERd</i>	-	%
Annual energy consumption	<i>Q_{HE}</i>	151	GJ				

Figure 1.2

Bivalent temperature	T_{biv}	TOL < $T_{designh}$	°C	For air-to-water heat pumps: Operation limit temperature	TOL	-22	°C
				Heating water operating limit temperature	$WTOL$	65	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	P_{OFF}	0,000	kW	Rated heat output	P_{sup}	-	kW
Thermostat-off mode	P_{TO}	0,021	kW				
Standby mode	P_{SB}	0,005	kW	Type of energy input	monovalent		
Crankcase heater mode	P_{CK}	-	kW				
Other items							
Capacity control	variable			For air-to-water heat pumps: Rated air flow rate, outdoors	—	11000	m³/h
Sound power level, indoors/ outdoors	L_{WA}	- / 80	dB	For water- or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	—	-	m³/h

(*) For heat pump space heaters and heat pump combination heaters, the rated heat output P_{rated} is equal to the design load for heating $P_{designh}$, and the rated heat output of a supplementary heater P_{sup} is equal to the supplementary capacity for heating $sup(T_j)$.

Additional information required by COMMISSION REGULATION (EU) No 813/2013, Table 2:

Emissions of nitrogen oxides: NO_x 40 mg/kWh

2 GAHP A S1

Figure 2.1

Table 8
COMMISSION DELEGATED REGULATION (EU) No 811/2013

Technical parameters for heat pump space heaters and heat pump combination heaters

Model(s):				GAHP A HT S1			
Air-to-water heat pump:				yes			
Water-to-water heat pump:				no			
Brine-to-water heat pump:				no			
Low-temperature heat pump:				no			
Equipped with a supplementary heater:				no			
Heat pump combination heater:				no			
Parameters shall be declared for medium-temperature application.							
Parameters shall be declared for average, colder and warmer climate conditions.							
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
AVERAGE CLIMATE CONDITIONS							
Rated heat output (*)	<i>Prated</i>	29,6	kW	Seasonal space heating energy efficiency	η_s	113	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj			
Tj = -7 °C	<i>Pdh</i>	26,1	kW	Tj = -7 °C	<i>PERd</i>	97	%
Tj = +2 °C	<i>Pdh</i>	16,0	kW	Tj = +2 °C	<i>PERd</i>	122	%
Tj = +7 °C	<i>Pdh</i>	10,4	kW	Tj = +7 °C	<i>PERd</i>	119	%
Tj = +12 °C	<i>Pdh</i>	4,4	kW	Tj = +12 °C	<i>PERd</i>	113	%
Tj = bivalent temperature	<i>Pdh</i>	-	kW	Tj = bivalent temperature	<i>PERd</i>	-	%
Annual energy consumption	<i>Q_{HE}</i>	195	GJ				
COLDER CLIMATE CONDITIONS							
Rated heat output (*)	<i>Prated</i>	29,4	kW	Seasonal space heating energy efficiency	η_s	109	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj			
Tj = -7 °C	<i>Pdh</i>	17,9	kW	Tj = -7 °C	<i>PERd</i>	110	%
Tj = +2 °C	<i>Pdh</i>	10,9	kW	Tj = +2 °C	<i>PERd</i>	119	%
Tj = +7 °C	<i>Pdh</i>	7,1	kW	Tj = +7 °C	<i>PERd</i>	114	%
Tj = +12 °C	<i>Pdh</i>	3,2	kW	Tj = +12 °C	<i>PERd</i>	113	%
Tj = bivalent temperature	<i>Pdh</i>	-	kW	Tj = bivalent temperature	<i>PERd</i>	-	%
Tj = operation limit temperature	<i>Pdh</i>	29,4	kW	Tj = operation limit temperature	<i>PERd</i>	88	%
For air-to-water heat pumps: Tj = -15 °C (if TOL < -20 °C)	<i>Pdh</i>	24,1	kW	For air-to-water heat pumps: Tj = -15 °C (if TOL < -20 °C)	<i>PERd</i>	91	%
Annual energy consumption	<i>Q_{HE}</i>	239	GJ				
WARMER CLIMATE CONDITIONS							
Rated heat output (*)	<i>Prated</i>	36,4	kW	Seasonal space heating energy efficiency	η_s	117	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj			
Tj = +2 °C	<i>Pdh</i>	36,4	kW	Tj = +2 °C	<i>PERd</i>	120	%
Tj = +7 °C	<i>Pdh</i>	23,3	kW	Tj = +7 °C	<i>PERd</i>	123	%
Tj = +12 °C	<i>Pdh</i>	10,6	kW	Tj = +12 °C	<i>PERd</i>	118	%
Tj = bivalent temperature	<i>Pdh</i>	-	kW	Tj = bivalent temperature	<i>PERd</i>	-	%
Annual energy consumption	<i>Q_{HE}</i>	150	GJ				

Figure 2.2

Bivalent temperature	T_{biv}	TOL < $T_{designh}$	°C	For air-to-water heat pumps: Operation limit temperature	TOL	-22	°C
				Heating water operating limit temperature	$WTOL$	65	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	P_{OFF}	0,000	kW	Rated heat output	P_{sup}	-	kW
Thermostat-off mode	P_{TO}	0,021	kW				
Standby mode	P_{SB}	0,005	kW	Type of energy input	monovalent		
Crankcase heater mode	P_{CK}	-	kW				
Other items							
Capacity control	variable			For air-to-water heat pumps: Rated air flow rate, outdoors	—	11000	m³/h
Sound power level, indoors/ outdoors	L_{WA}	- / 74	dB	For water- or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	—	-	m³/h

(*) For heat pump space heaters and heat pump combination heaters, the rated heat output $Prated$ is equal to the design load for heating $P_{designh}$, and the rated heat output of a supplementary heater P_{sup} is equal to the supplementary capacity for heating $sup(T_j)$.

Additional information required by COMMISSION REGULATION (EU) No 813/2013, Table 2:

Emissions of nitrogen oxides: NO_x 40 mg/kWh

3 GAHP A INDOOR

Figure 3.1

Table 8
COMMISSION DELEGATED REGULATION (EU) No 811/2013

Technical parameters for heat pump space heaters and heat pump combination heaters

Model(s):				GAHP A INDOOR			
Air-to-water heat pump:				yes			
Water-to-water heat pump:				no			
Brine-to-water heat pump:				no			
Low-temperature heat pump:				no			
Equipped with a supplementary heater:				no			
Heat pump combination heater:				no			
Parameters shall be declared for medium-temperature application.							
Parameters shall be declared for average, colder and warmer climate conditions.							
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
AVERAGE CLIMATE CONDITIONS							
Rated heat output (*)	<i>Prated</i>	30,1	kW	Seasonal space heating energy efficiency	η_s	112	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj			
Tj = -7 °C	<i>Pdh</i>	26,5	kW	Tj = -7 °C	<i>PERd</i>	96	%
Tj = +2 °C	<i>Pdh</i>	16,3	kW	Tj = +2 °C	<i>PERd</i>	121	%
Tj = +7 °C	<i>Pdh</i>	10,5	kW	Tj = +7 °C	<i>PERd</i>	117	%
Tj = +12 °C	<i>Pdh</i>	4,5	kW	Tj = +12 °C	<i>PERd</i>	111	%
Tj = bivalent temperature	<i>Pdh</i>	-	kW	Tj = bivalent temperature	<i>PERd</i>	-	%
Annual energy consumption	<i>Q_{HE}</i>	200	GJ				
COLDER CLIMATE CONDITIONS							
Rated heat output (*)	<i>Prated</i>	29,8	kW	Seasonal space heating energy efficiency	η_s	108	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj			
Tj = -7 °C	<i>Pdh</i>	18,2	kW	Tj = -7 °C	<i>PERd</i>	109	%
Tj = +2 °C	<i>Pdh</i>	11,0	kW	Tj = +2 °C	<i>PERd</i>	118	%
Tj = +7 °C	<i>Pdh</i>	7,2	kW	Tj = +7 °C	<i>PERd</i>	113	%
Tj = +12 °C	<i>Pdh</i>	3,3	kW	Tj = +12 °C	<i>PERd</i>	111	%
Tj = bivalent temperature	<i>Pdh</i>	-	kW	Tj = bivalent temperature	<i>PERd</i>	-	%
Tj = operation limit temperature	<i>Pdh</i>	29,8	kW	Tj = operation limit temperature	<i>PERd</i>	87	%
For air-to-water heat pumps: Tj = -15 °C (if TOL < -20 °C)	<i>Pdh</i>	24,4	kW	For air-to-water heat pumps: Tj = -15 °C (if TOL < -20 °C)	<i>PERd</i>	90	%
Annual energy consumption	<i>Q_{HE}</i>	245	GJ				
WARMER CLIMATE CONDITIONS							
Rated heat output (*)	<i>Prated</i>	36,6	kW	Seasonal space heating energy efficiency	η_s	116	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj			
Tj = +2 °C	<i>Pdh</i>	36,6	kW	Tj = +2 °C	<i>PERd</i>	119	%
Tj = +7 °C	<i>Pdh</i>	23,4	kW	Tj = +7 °C	<i>PERd</i>	122	%
Tj = +12 °C	<i>Pdh</i>	10,6	kW	Tj = +12 °C	<i>PERd</i>	117	%
Tj = bivalent temperature	<i>Pdh</i>	-	kW	Tj = bivalent temperature	<i>PERd</i>	-	%
Annual energy consumption	<i>Q_{HE}</i>	152	GJ				

Figure 3.2

Bivalent temperature	T_{biv}	TOL < T _{designh}	°C	For air-to-water heat pumps: Operation limit temperature	TOL	-22	°C
				Heating water operating limit temperature	$WTOL$	65	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	P_{OFF}	0,000	kW	Rated heat output	P_{sup}	-	kW
Thermostat-off mode	P_{TO}	0,021	kW				
Standby mode	P_{SB}	0,005	kW	Type of energy input	monovalent		
Crankcase heater mode	P_{CK}	-	kW				
Other items							
Capacity control	variable			For air-to-water heat pumps: Rated air flow rate, outdoors	—	11000	m³/h
Sound power level, indoors/ outdoors	L_{WA}	- / 74	dB	For water- or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	—	-	m³/h

(*) For heat pump space heaters and heat pump combination heaters, the rated heat output P_{rated} is equal to the design load for heating $P_{designh}$, and the rated heat output of a supplementary heater P_{sup} is equal to the supplementary capacity for heating $sup(T_j)$.

Additional information required by COMMISSION REGULATION (EU) No 813/2013, Table 2:

Emissions of nitrogen oxides: NO_x 40 mg/kWh

4 GAHP-AR

Figure 4.1

Table 8
COMMISSION DELEGATED REGULATION (EU) No 811/2013

Technical parameters for heat pump space heaters and heat pump combination heaters

Model(s):				GAHP-AR			
Air-to-water heat pump:				yes			
Water-to-water heat pump:				no			
Brine-to-water heat pump:				no			
Low-temperature heat pump:				no			
Equipped with a supplementary heater:				no			
Heat pump combination heater:				no			
Parameters shall be declared for medium-temperature application.							
Parameters shall be declared for average, colder and warmer climate conditions.							
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
AVERAGE CLIMATE CONDITIONS							
Rated heat output (*)	<i>Prated</i>	28,4	kW	Seasonal space heating energy efficiency	η_s	110	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj			
Tj = -7 °C	<i>Pdh</i>	25,0	kW	Tj = -7 °C	<i>PERd</i>	93	%
Tj = +2 °C	<i>Pdh</i>	15,3	kW	Tj = +2 °C	<i>PERd</i>	118	%
Tj = +7 °C	<i>Pdh</i>	9,9	kW	Tj = +7 °C	<i>PERd</i>	116	%
Tj = +12 °C	<i>Pdh</i>	4,3	kW	Tj = +12 °C	<i>PERd</i>	118	%
Tj = bivalent temperature	<i>Pdh</i>	-	kW	Tj = bivalent temperature	<i>PERd</i>	-	%
Annual energy consumption	<i>Q_{HE}</i>	207	GJ				
COLDER CLIMATE CONDITIONS							
Rated heat output (*)	<i>Prated</i>	26,7	kW	Seasonal space heating energy efficiency	η_s	105	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj			
Tj = -7 °C	<i>Pdh</i>	16,3	kW	Tj = -7 °C	<i>PERd</i>	103	%
Tj = +2 °C	<i>Pdh</i>	9,9	kW	Tj = +2 °C	<i>PERd</i>	116	%
Tj = +7 °C	<i>Pdh</i>	6,4	kW	Tj = +7 °C	<i>PERd</i>	114	%
Tj = +12 °C	<i>Pdh</i>	2,9	kW	Tj = +12 °C	<i>PERd</i>	112	%
Tj = bivalent temperature	<i>Pdh</i>	-	kW	Tj = bivalent temperature	<i>PERd</i>	-	%
Tj = operation limit temperature	<i>Pdh</i>	26,7	kW	Tj = operation limit temperature	<i>PERd</i>	89	%
For air-to-water heat pumps: Tj = -15 °C (if TOL < -20 °C)	<i>Pdh</i>	21,9	kW	For air-to-water heat pumps: Tj = -15 °C (if TOL < -20 °C)	<i>PERd</i>	92	%
Annual energy consumption	<i>Q_{HE}</i>	242	GJ				
WARMER CLIMATE CONDITIONS							
Rated heat output (*)	<i>Prated</i>	32,6	kW	Seasonal space heating energy efficiency	η_s	120	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj			
Tj = +2 °C	<i>Pdh</i>	32,6	kW	Tj = +2 °C	<i>PERd</i>	121	%
Tj = +7 °C	<i>Pdh</i>	20,9	kW	Tj = +7 °C	<i>PERd</i>	128	%
Tj = +12 °C	<i>Pdh</i>	9,5	kW	Tj = +12 °C	<i>PERd</i>	111	%
Tj = bivalent temperature	<i>Pdh</i>	-	kW	Tj = bivalent temperature	<i>PERd</i>	-	%
Annual energy consumption	<i>Q_{HE}</i>	141	GJ				

Figure 4.2

Bivalent temperature	T_{biv}	TOL < $T_{designh}$	°C	For air-to-water heat pumps: Operation limit temperature	TOL	-22	°C
				Heating water operating limit temperature	$WTOL$	60	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	P_{OFF}	0,000	kW	Rated heat output	P_{sup}	-	kW
Thermostat-off mode	P_{TO}	0,023	kW	Type of energy input	monovalent		
Standby mode	P_{SB}	0,007	kW				
Crankcase heater mode	P_{CK}	-	kW				
Other items							
Capacity control		fixed		For air-to-water heat pumps: Rated air flow rate, outdoors	—	11000	m³/h
Sound power level, indoors/ outdoors	L_{WA}	- / 80	dB	For water- or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	—	-	m³/h

(*) For heat pump space heaters and heat pump combination heaters, the rated heat output P_{rated} is equal to the design load for heating $P_{designh}$, and the rated heat output of a supplementary heater P_{sup} is equal to the supplementary capacity for heating $sup(T_j)$.

Additional information required by COMMISSION REGULATION (EU) No 813/2013, Table 2:

Emissions of nitrogen oxides: NO_x 48 mg/kWh

5 GAHP-AR S

Figure 5.1

Table 8
COMMISSION DELEGATED REGULATION (EU) No 811/2013

Technical parameters for heat pump space heaters and heat pump combination heaters

Model(s):				GAHP-AR S			
Air-to-water heat pump:				yes			
Water-to-water heat pump:				no			
Brine-to-water heat pump:				no			
Low-temperature heat pump:				no			
Equipped with a supplementary heater:				no			
Heat pump combination heater:				no			
Parameters shall be declared for medium-temperature application.							
Parameters shall be declared for average, colder and warmer climate conditions.							
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
AVERAGE CLIMATE CONDITIONS							
Rated heat output (*)	Prated	28,4	kW	Seasonal space heating energy efficiency	ηs	111	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj			
Tj = -7 °C	Pdh	25,0	kW	Tj = -7 °C	PERd	94	%
Tj = +2 °C	Pdh	15,3	kW	Tj = +2 °C	PERd	119	%
Tj = +7 °C	Pdh	9,9	kW	Tj = +7 °C	PERd	118	%
Tj = +12 °C	Pdh	4,3	kW	Tj = +12 °C	PERd	121	%
Tj = bivalent temperature	Pdh	-	kW	Tj = bivalent temperature	PERd	-	%
Annual energy consumption	QHE	207	GJ				
COLDER CLIMATE CONDITIONS							
Rated heat output (*)	Prated	26,7	kW	Seasonal space heating energy efficiency	ηs	105	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj			
Tj = -7 °C	Pdh	16,3	kW	Tj = -7 °C	PERd	103	%
Tj = +2 °C	Pdh	9,9	kW	Tj = +2 °C	PERd	116	%
Tj = +7 °C	Pdh	6,4	kW	Tj = +7 °C	PERd	114	%
Tj = +12 °C	Pdh	2,9	kW	Tj = +12 °C	PERd	112	%
Tj = bivalent temperature	Pdh	-	kW	Tj = bivalent temperature	PERd	-	%
Tj = operation limit temperature	Pdh	26,7	kW	Tj = operation limit temperature	PERd	89	%
For air-to-water heat pumps: Tj = -15 °C (if TOL < -20 °C)	Pdh	21,9	kW	For air-to-water heat pumps: Tj = -15 °C (if TOL < -20 °C)	PERd	92	%
Annual energy consumption	QHE	242	GJ				
WARMER CLIMATE CONDITIONS							
Rated heat output (*)	Prated	32,6	kW	Seasonal space heating energy efficiency	ηs	120	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj			
Tj = +2 °C	Pdh	32,6	kW	Tj = +2 °C	PERd	121	%
Tj = +7 °C	Pdh	20,9	kW	Tj = +7 °C	PERd	120	%
Tj = +12 °C	Pdh	9,5	kW	Tj = +12 °C	PERd	113	%
Tj = bivalent temperature	Pdh	-	kW	Tj = bivalent temperature	PERd	-	%
Annual energy consumption	QHE	141	GJ				

Figure 5.2

Bivalent temperature	T_{biv}	TOL < $T_{designh}$	°C	For air-to-water heat pumps: Operation limit temperature	TOL	-22	°C
				Heating water operating limit temperature	$WTOL$	60	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	P_{OFF}	0,000	kW	Rated heat output	P_{sup}	-	kW
Thermostat-off mode	P_{TO}	0,023	kW	Type of energy input	monovalent		
Standby mode	P_{SB}	0,007	kW				
Crankcase heater mode	P_{CK}	-	kW				
Other items							
Capacity control		fixed		For air-to-water heat pumps: Rated air flow rate, outdoors	—	11000	m³/h
Sound power level, indoors/ outdoors	L_{WA}	- / 75	dB	For water- or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	—	-	m³/h

(*) For heat pump space heaters and heat pump combination heaters, the rated heat output P_{rated} is equal to the design load for heating $P_{designh}$, and the rated heat output of a supplementary heater P_{sup} is equal to the supplementary capacity for heating $sup(T_j)$.

Additional information required by COMMISSION REGULATION (EU) No 813/2013, Table 2:

Emissions of nitrogen oxides: NO_x 48 mg/kWh

6 GAHP GS

Figure 6.1

Table 8
COMMISSION DELEGATED REGULATION (EU) No 811/2013

Technical parameters for heat pump space heaters and heat pump combination heaters

Model(s):				GAHP GS			
Air-to-water heat pump:				no			
Water-to-water heat pump:				no			
Brine-to-water heat pump:				yes			
Low-temperature heat pump:				no			
Equipped with a supplementary heater:				no			
Heat pump combination heater:				no			
Parameters shall be declared for medium-temperature application.							
Parameters shall be declared for average, colder and warmer climate conditions.							
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
AVERAGE CLIMATE CONDITIONS							
Rated heat output (*)	<i>Prated</i>	37,4	kW	Seasonal space heating energy efficiency	η_s	125	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj			
Tj = -7 °C	<i>Pdh</i>	32,9	kW	Tj = -7 °C	<i>PERd</i>	128	%
Tj = +2 °C	<i>Pdh</i>	20,2	kW	Tj = +2 °C	<i>PERd</i>	130	%
Tj = +7 °C	<i>Pdh</i>	13,1	kW	Tj = +7 °C	<i>PERd</i>	128	%
Tj = +12 °C	<i>Pdh</i>	5,6	kW	Tj = +12 °C	<i>PERd</i>	123	%
Tj = bivalent temperature	<i>Pdh</i>	-	kW	Tj = bivalent temperature	<i>PERd</i>	-	%
Annual energy consumption	<i>Q_{HE}</i>	223	GJ				
COLDER CLIMATE CONDITIONS							
Rated heat output (*)	<i>Prated</i>	37,4	kW	Seasonal space heating energy efficiency	η_s	124	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj			
Tj = -7 °C	<i>Pdh</i>	22,8	kW	Tj = -7 °C	<i>PERd</i>	129	%
Tj = +2 °C	<i>Pdh</i>	13,8	kW	Tj = +2 °C	<i>PERd</i>	128	%
Tj = +7 °C	<i>Pdh</i>	9,0	kW	Tj = +7 °C	<i>PERd</i>	126	%
Tj = +12 °C	<i>Pdh</i>	4,1	kW	Tj = +12 °C	<i>PERd</i>	122	%
Tj = bivalent temperature	<i>Pdh</i>	-	kW	Tj = bivalent temperature	<i>PERd</i>	-	%
Tj = operation limit temperature	<i>Pdh</i>	37,4	kW	Tj = operation limit temperature	<i>PERd</i>	128	%
For air-to-water heat pumps: Tj = -15 °C (if TOL < -20 °C)	<i>Pdh</i>	30,7	kW	For air-to-water heat pumps: Tj = -15 °C (if TOL < -20 °C)	<i>PERd</i>	128	%
Annual energy consumption	<i>Q_{HE}</i>	268	GJ				
WARMER CLIMATE CONDITIONS							
Rated heat output (*)	<i>Prated</i>	37,4	kW	Seasonal space heating energy efficiency	η_s	124	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj			
Tj = +2 °C	<i>Pdh</i>	37,4	kW	Tj = +2 °C	<i>PERd</i>	128	%
Tj = +7 °C	<i>Pdh</i>	23,9	kW	Tj = +7 °C	<i>PERd</i>	129	%
Tj = +12 °C	<i>Pdh</i>	10,9	kW	Tj = +12 °C	<i>PERd</i>	127	%
Tj = bivalent temperature	<i>Pdh</i>	-	kW	Tj = bivalent temperature	<i>PERd</i>	-	%
Annual energy consumption	<i>Q_{HE}</i>	145	GJ				

Figure 6.2

Bivalent temperature	T_{biv}	TOL < T _{designh}	°C	For air-to-water heat pumps: Operation limit temperature	TOL	-	°C
				Heating water operating limit temperature	$WTOL$	65	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	P_{OFF}	0,000	kW	Rated heat output	P_{sup}	-	kW
Thermostat-off mode	P_{TO}	0,019	kW				
Standby mode	P_{SB}	0,005	kW	Type of energy input	monovalent		
Crankcase heater mode	P_{CK}	-	kW				
Other items							
Capacity control	variable			For air-to-water heat pumps: Rated air flow rate, outdoors	—	-	m³/h
Sound power level, indoors/ outdoors	L_{WA}	- / 66	dB	For water- or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	—	3,0	m³/h

(*) For heat pump space heaters and heat pump combination heaters, the rated heat output P_{rated} is equal to the design load for heating $P_{designh}$, and the rated heat output of a supplementary heater P_{sup} is equal to the supplementary capacity for heating $sup(T_j)$.

Additional information required by COMMISSION REGULATION (EU) No 813/2013, Table 2:

Emissions of nitrogen oxides: NO_x 40 mg/kWh

7 GAHP WS

Figure 7.1

Table 8
COMMISSION DELEGATED REGULATION (EU) No 811/2013

Technical parameters for heat pump space heaters and heat pump combination heaters

Model(s):				GAHP WS			
Air-to-water heat pump:				no			
Water-to-water heat pump:				yes			
Brine-to-water heat pump:				no			
Low-temperature heat pump:				no			
Equipped with a supplementary heater:				no			
Heat pump combination heater:				no			
Parameters shall be declared for medium-temperature application.							
Parameters shall be declared for average, colder and warmer climate conditions.							
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
AVERAGE CLIMATE CONDITIONS							
Rated heat output (*)	<i>Prated</i>	41,5	kW	Seasonal space heating energy efficiency	η_s	127	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj			
Tj = -7 °C	<i>Pdh</i>	36,5	kW	Tj = -7 °C	<i>PERd</i>	139	%
Tj = +2 °C	<i>Pdh</i>	22,4	kW	Tj = +2 °C	<i>PERd</i>	135	%
Tj = +7 °C	<i>Pdh</i>	14,5	kW	Tj = +7 °C	<i>PERd</i>	127	%
Tj = +12 °C	<i>Pdh</i>	6,2	kW	Tj = +12 °C	<i>PERd</i>	121	%
Tj = bivalent temperature	<i>Pdh</i>	-	kW	Tj = bivalent temperature	<i>PERd</i>	-	%
Annual energy consumption	<i>Q_{HE}</i>	243	GJ				
COLDER CLIMATE CONDITIONS							
Rated heat output (*)	<i>Prated</i>	41,5	kW	Seasonal space heating energy efficiency	η_s	125	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj			
Tj = -7 °C	<i>Pdh</i>	25,3	kW	Tj = -7 °C	<i>PERd</i>	135	%
Tj = +2 °C	<i>Pdh</i>	15,4	kW	Tj = +2 °C	<i>PERd</i>	128	%
Tj = +7 °C	<i>Pdh</i>	10,0	kW	Tj = +7 °C	<i>PERd</i>	124	%
Tj = +12 °C	<i>Pdh</i>	4,6	kW	Tj = +12 °C	<i>PERd</i>	119	%
Tj = bivalent temperature	<i>Pdh</i>	-	kW	Tj = bivalent temperature	<i>PERd</i>	-	%
Tj = operation limit temperature	<i>Pdh</i>	41,5	kW	Tj = operation limit temperature	<i>PERd</i>	142	%
For air-to-water heat pumps: Tj = -15 °C (if TOL < -20 °C)	<i>Pdh</i>	34,0	kW	For air-to-water heat pumps: Tj = -15 °C (if TOL < -20 °C)	<i>PERd</i>	138	%
Annual energy consumption	<i>Q_{HE}</i>	294	GJ				
WARMER CLIMATE CONDITIONS							
Rated heat output (*)	<i>Prated</i>	41,5	kW	Seasonal space heating energy efficiency	η_s	126	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj			
Tj = +2 °C	<i>Pdh</i>	41,5	kW	Tj = +2 °C	<i>PERd</i>	142	%
Tj = +7 °C	<i>Pdh</i>	26,6	kW	Tj = +7 °C	<i>PERd</i>	136	%
Tj = +12 °C	<i>Pdh</i>	12,0	kW	Tj = +12 °C	<i>PERd</i>	125	%
Tj = bivalent temperature	<i>Pdh</i>	-	kW	Tj = bivalent temperature	<i>PERd</i>	-	%
Annual energy consumption	<i>Q_{HE}</i>	158	GJ				

Figure 7.2

Bivalent temperature	T_{biv}	TOL < $T_{designh}$	°C	For air-to-water heat pumps: Operation limit temperature	TOL	-	°C
				Heating water operating limit temperature	$WTOL$	65	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	P_{OFF}	0,000	kW	Rated heat output	P_{sup}	-	kW
Thermostat-off mode	P_{TO}	0,019	kW				
Standby mode	P_{SB}	0,005	kW	Type of energy input	monovalent		
Crankcase heater mode	P_{CK}	-	kW				
Other items							
Capacity control	variable			For air-to-water heat pumps: Rated air flow rate, outdoors	—	-	m³/h
Sound power level, indoors/ outdoors	L_{WA}	- / 66	dB	For water- or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	—	2,9	m³/h

(*) For heat pump space heaters and heat pump combination heaters, the rated heat output P_{rated} is equal to the design load for heating $P_{designh}$, and the rated heat output of a supplementary heater P_{sup} is equal to the supplementary capacity for heating $sup(T_j)$.

Additional information required by COMMISSION REGULATION (EU) No 813/2013, Table 2:

Emissions of nitrogen oxides: NO_x 40 mg/kWh

8 AY00-120

Figure 8.1

Table 7
COMMISSION DELEGATED REGULATION (EU) No 811/2013

Technical parameters for boiler space heaters, boiler combination heaters and cogeneration space heaters							
Model(s):				AY120			
Condensing boiler:				yes			
Low-temperature (**) boiler:				no			
B11 boiler:				no			
Cogeneration space heater:				no	If yes, equipped with a supplementary heater:		no
Combination heater:				no			
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated heat output	<i>Prated</i>	34,9	kW	Seasonal space heating energy efficiency	η_s	90,7	%
For boiler space heaters and boiler combination heaters: Useful heat output				For boiler space heaters and boiler combination heaters: Useful efficiency			
At rated heat output and high-temperature regime (*)	P_4	34,4	kW	At rated heat output and high-temperature regime (*)	η_4	98,6	%
At 30 % of rated heat output and low-temperature regime (**)	P_I	8,6	kW	At 30 % of rated heat output and low-temperature regime (**)	η_I	107,5	%
Auxiliary electricity consumption				Other items			
At full load	<i>elmax</i>	0,185	kW	Standby heat loss	P_{stby}	0,058	kW
At part load	<i>elmin</i>	0,080	kW	Ignition burner power consumption	P_{ign}	0	kW
In standby mode	P_{SB}	0,005	kW	Annual energy consumption	Q_{HE}	286,2	GJ
				Sound power level, indoors	L_{WA}	- / 57,0	dB

(*) High-temperature regime means 60 °C return temperature at heater inlet and 80 °C feed temperature at heater outlet.

(**) Low temperature means for condensing boilers 30 °C, for low-temperature boilers 37 °C and for other heaters 50 °C return temperature (at heater inlet).

Additional information required by COMMISSION REGULATION (EU) No 813/2013, Table 1:

Emissions of nitrogen oxides: NO_x 31 mg/kWh

9 DDC PANEL

Figure 9.1 DDC Technical Data Sheets



IT : REGOLAMENTO DELEGATO (UE) N. 811/2013 DELLA COMMISSIONE
 EN : COMMISSION DELEGATED REGULATION (EU) No 811/2013
 FR : RÈGLEMENT DÉLÉGUÉ (UE) N° 811/2013 DE LA COMMISSION
 DE : DELEGIERTE VERORDNUNG (EU) Nr. 811/2013 DER KOMMISSION
 NL : GEDELEGEEERDE VERORDENING (EU) Nr. 811/2013 VAN DE COMMISSIE
 CS : NAŘÍZENÍ KOMISE V PŘENESENÉ PRÁVOMOCI (EU) č. 811/2013
 PL : ROZPORZĄDZENIE DELEGOWANE KOMISJI (UE) NR 811/2013

DISPOSITIVI DI CONTROLLO DELLA TEMPERATURA
 TEMPERATURE CONTROLS
 RÉGULATEURS DE TEMPÉRATURE
 TEMPERATURREGLER
 TEMPERATUURREGELAARS
 REGULÁTORY TEPLŮTY
 REGULATORY TEMPERATURE

IT	Il nome o marchio del fornitore	L'identificativo del modello del fornitore	La classe del dispositivo di controllo della temperatura	Il contributo del dispositivo di controllo della temperatura all'efficienza energetica stagionale di riscaldamento d'ambiente in %, arrotondata alla cifra intera più vicina
EN	Supplier's name or trade mark	Supplier's model identifier	The class of the temperature control	The contribution of the temperature control to seasonal space heating energy efficiency in %, rounded to one decimal place
FR	Le nom du fournisseur ou la marque commerciale	La référence du modèle donnée par le fournisseur	La classe du régulateur de température	La contribution du régulateur de température à l'efficacité énergétique saisonnière pour le chauffage des locaux, en %, arrondie à la première décimale
DE	Name oder Warenzeichen des Lieferanten	Modellkennung des Lieferanten	Die Klasse des Temperaturreglers	Beitrag des Temperaturreglers zur jahreszeitbedingten Raumheizungs-Energieeffizienz in Prozent, auf eine Dezimalstelle gerundet
NL	De naam van de leverancier of het handelsmerk	De typeaanduiding van de leverancier	De klasse van de temperatuurregelaar	De bijdrage van de temperatuurregelaar aan de seizoensgebonden energie-efficiëntie voor ruimteverwarming in %, afgerond tot op één decimaal
CS	Název nebo ochranná známka dodavatele	Identifikační značka modelu používaná dodavatelem	Třída regulátoru teploty	Přínos regulátoru teploty k sezonní energetické účinnosti vytápění, vyjádřený v % a zaokrouhlený na jedno desetinné místo
PL	Nazwa dostawcy lub jego znak towarowy	Identyfikator modelu dostawcy	Klasa regulatora temperatury	Udział regulatora temperatury w sezonowej efektywności energetycznej ogrzewania pomieszczeń w %, w zaokrągleniu do jednego miejsca po przecinku
Robur		DDC	III	2%

10 CCI PANEL

Figure 10.1 Fiches Technique CCI



IT	: REGOLAMENTO DELEGATO (UE) N. 811/2013 DELLA COMMISSIONE	DISPOSITIVI DI CONTROLLO DELLA TEMPERATURA
EN	: COMMISSION DELEGATED REGULATION (EU) No 811/2013	TEMPERATURE CONTROLS
FR	: RÈGLEMENT DÉLÉGUÉ (UE) N° 811/2013 DE LA COMMISSION	RÉGULATEURS DE TEMPÉRATURE
DE	: DELEGIERTE VERORDNUNG (EU) Nr. 811/2013 DER KOMMISSION	TEMPERATURREGLER
NL	: GEDELEGEEERDE VERORDENING (EU) Nr. 811/2013 VAN DE COMMISSIE	TEMPERATUURREGELAARS
CS	: NAŘÍZENÍ KOMISE V PŘENESENÉ PRÁVOMOCI (EU) č. 811/2013	REGULÁTORY TEPLOTY
PL	: ROZPORZĄDZENIE DELEGOWANE KOMISJI (UE) NR 811/2013	REGULATORY TEMPERATURY

IT	Il nome o marchio del fornitore	L'identificativo del modello del fornitore	La classe del dispositivo di controllo della temperatura	Il contributo del dispositivo di controllo della temperatura all'efficienza energetica stagionale di riscaldamento d'ambiente in %, arrotondata alla cifra intera più vicina
EN	Supplier's name or trade mark	Supplier's model identifier	The class of the temperature control	The contribution of the temperature control to seasonal space heating energy efficiency in %, rounded to one decimal place
FR	Le nom du fournisseur ou la marque commerciale	La référence du modèle donnée par le fournisseur	La classe du régulateur de température	La contribution du régulateur de température à l'efficacité énergétique saisonnière pour le chauffage des locaux, en %, arrondie à la première décimale
DE	Name oder Warenzeichen des Lieferanten	Modellkennung des Lieferanten	Die Klasse des Temperaturreglers	Beitrag des Temperaturreglers zur jahreszeitbedingten Raumheizungs-Energieeffizienz in Prozent, auf eine Dezimalstelle gerundet
NL	De naam van de leverancier of het handelsmerk	De typeaanduiding van de leverancier	De klasse van de temperatuurregelaar	De bijdrage van de temperatuurregelaar aan de seizoensgebonden energie-efficiëntie voor ruimteverwarming in %, afgerond tot op één decimaal
CS	Název nebo ochranná známka dodavatele	Identifikační značka modelu používaná dodavatelem	Třída regulátoru teploty	Přínos regulátoru teploty k sezonní energetické účinnosti vytápění, vyjádřený v % a zaokrouhlený na jedno desetinné místo
PL	Nazwa dostawcy lub jego znak towarowy	Identyfikator modelu dostawcy	Klasa regulatora temperatury	Udział regulatora temperatury w sezonowej efektywności energetycznej ogrzewania pomieszczeń w %, w zaokrągleniu do jednego miejsca po przecinku
Robur		CCI	III	2%

1/1

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11 BUFFER TANKS AND DHW TANKS

Table 11.1 Buffer tanks and DHW tanks

Item code	Description	Loss (W)	Loss (kWh/24h)	Specific loss (W/K)	Volume (l)	Energy efficiency class
OSRB000	300-litre thermal tank	90	2,24	2,07	270	C
OSRB001	500-litre thermal tank	126	3,02	2,79	476	D
OSRB004	300-litre DHW tank	85	2,03	1,88	263	C
OSRB005	500-litre DHW tank	130	3,13	2,90	470	D
OSRB006	500-litre DHW tank with integrated coil	130	3,13	2,90	470	D