Heat pump model	**Master Therm**	**AQ22I-1**

Heat pump type	Brine/Water
Supplementary heater	Yes
Heat pump combination heater	No

Reference heating season			**Average**	
Reference water temperature			**LOW, 35°C**	
Full load heating		**Prated [kW]**	**6.73**	
Seasonal efficiency		**η_S [%]**	**181**	**A+++**
Annual electricity consumption		**Q_{HE} [kWh]**	**2944**	
Average 35°C	Outdoor heat exchanger	Declared capacity	COP at part load	Degradation Coefficient
	Outdoor air			
	Tj [°C]	Pdh [kW]	COPd (-)	Cdh (-)
A	-7	5.92	4.29	0.900
B	2	3.62	4.65	0.900
C	7	2.38	5.28	0.900
D	12	1.19	5.28	0.947
TOL (E)	-10	6.73	4.22	0.900
Tbivalent (F)	-10	6.73	4.22	0.900

Reference heating season			**Average**	
Reference water temperature			**High, 55°C**	
Full load heating		**Prated [kW]**	**6.40**	
Seasonal efficiency		**η_S [%]**	**135**	**A++**
Annual electricity consumption		**Q_{HE} [kWh]**	**3690**	
Average 55°C	Outdoor heat exchanger	Declared capacity	COP at part load	Degradation Coefficient
	Outdoor air			
	Tj [°C]	Pdh [kW]	COPd (-)	Cdh (-)
A	-7	5.52	2.96	0.900
B	2	3.40	3.56	0.900
C	7	2.32	4.10	0.900
D	12	1.10	4.22	0.954
TOL (E)	-10	6.40	2.83	0.900
Tbivalent (F)	-10	6.40	2.83	0.900

Reference heating season			**Warmer**	
Reference water temperature			**Low, 35°C**	
Full load heating		**Prated [kW]**	**6.73**	
Seasonal efficiency		**η_S [%]**	**183**	
Annual electricity consumption		**Q_{HE} [kWh]**	**1883**	
Warmer 35°C	Outdoor heat exchanger	Declared capacity	COP at part load	Degradation Coefficient
	Outdoor air			
	Tj [°C]	Pdh [kW]	COPd (-)	Cdh (-)
B	2	6.73	4.22	0.900
C	7	4.27	4.51	0.900
D	12	2.00	5.43	0.900
TOL (E)	2	6.73	4.22	0.900
Tbivalent (F)	2	6.73	4.22	0.900

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Heat pump model	**Master Therm**	**AQ22I-1**

Reference heating season			**Warmer**	
Reference water temperature			**High, 55°C**	
Full load heating		**Prated [kW]**	**6.40**	
Seasonal efficiency		**η_S [%]**	**132**	
Annual electricity consumption		**Q_{HE} [kWh]**	**2436**	
Warmer 55°C	Outdoor heat exchanger	Declared capacity	COP at part load	Degradation Coefficient
	Outdoor air			
	Tj [°C]	Pdh [kW]	COPd (-)	Cdh (-)
B	2	6.40	2.83	0.900
C	7	4.07	3.21	0.900
D	12	1.82	4.11	0.900
TOL (E)	2	6.40	2.83	0.900
Tbivalent (F)	2	6.40	2.83	0.900

Reference heating season			**Colder**	
Reference water temperature			**Low, 35°C**	
Full load heating		**Prated [kW]**	**6.78**	
Seasonal efficiency		**η_S [%]**	**188**	
Annual electricity consumption		**Q_{HE} [kWh]**	**3413**	
Colder 35°C	Outdoor heat exchanger	Declared capacity	COP at part load	Degradation Coefficient
	Outdoor air			
	Tj [°C]	Pdh [kW]	COPd (-)	Cdh (-)
A	-7	4.01	4.62	0.900
B	2	2.63	5.19	0.900
C	7	1.76	5.43	0.900
D	12	1.58	5.28	0.960
TOL (E)	-22	6.78	4.40	0.900
Tbivalent (F)	-22	6.78	4.40	0.900
G	-15	5.54	4.46	0.900

Reference heating season			**Colder**	
Reference water temperature			**High, 55°C**	
Full load heating		**Prated [kW]**	**6.48**	
Seasonal efficiency		**η_S [%]**	**141**	
Annual electricity consumption		**Q_{HE} [kWh]**	**4285**	
Colder 55°C	Outdoor heat exchanger	Declared capacity	COP at part load	Degradation Coefficient
	Outdoor air			
	Tj [°C]	Pdh [kW]	COPd (-)	Cdh (-)
A	-7	3.85	3.42	0.900
B	2	2.44	3.99	0.900
C	7	1.64	4.46	0.900
D	12	1.49	4.46	0.964
TOL (E)	-22	6.48	3.03	0.900
Tbivalent (F)	-22	6.48	3.03	0.900
G	-15	5.37	3.13	0.900

Heat pump model	**Master Therm**	**AQ22I-1**

Power consumption in modes other than "active mode"		
Off mode	P_{OFF} [kW]	0.012
Thermostat off mode	P_{TO} [kW]	0.012
Standby mode	P_{SB} [kW]	0.012
Crankcaseheater mode	P_{CK} [kW]	-

Supplementary heater capacity	P_{sup} [kW]	3-4 (4,5-6)
Supplementary heater type	[-]	electricity

Capacity control		Variable
Sound power level Indoor	L_{WA} [dBA]	48
Sound power level Outdoor	L_{WA} [dBA]	-
Rated brine flow	[m^3/h]	0.99

Temperature controller		
Type	Carel pCO5/pCO5+/uPC, Master Therm custom SW	
Class	II	
Contribution	%	2.0

Temperature controller + Room Terminal		
Type	Carel pCO5/pCO5+/uPC + pAD, Master Therm custom SW	
Class	VI	
Contribution	%	4.0

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Heat pump model	**Master Therm**	**AQ22I-1**

Information sheet			
Temperature application		**Low, 35°C**	**High, 55°C**
Space heating energy efficiency class, Average climate	-	A+++	A++
Nominal heating capacity Pdesign, Average climate	kW	7	6
Space heating seasonal efficiency, Average climate	%	181	135
Space heating annual electricity consumption, Average cl.	kWh	2944	3690
Nominal heating capacity Pdesign, Colder climate	kW	7	6
Space heating seasonal efficiency, Colder climate	%	188	141
Space heating annual electricity consumption, Colder cl.	kWh	3413	4285
Nominal heating capacity Pdesign, Warmer climate	kW	7	6
Space heating seasonal efficiency, Warmer climate	%	183	132
Space heating annual electricity consumption, Warmer cl.	kWh	1883	2436
Sound power level Lwa	dBA	48	

Information sheet for energy efficiency Set with Temperature controller			
Temperature application		**Low, 35°C**	**High, 55°C**
Controller Carel pCO5/pCO5+/uPC, Class	-	II	II
Controller Carel pCO5/pCO5+/uPC, Contribution	%	2.0	2.0
Set Space heating seasonal efficiency, Average climate	%	183	137
Set Space heating energy efficiency class, Average climate	-	A+++	A++
Set Space heating seasonal efficiency, Colder climate	%	190	143
Set Space heating seasonal efficiency, Warmer climate	%	185	134

Information sheet for energy efficiency Set with Temperature controller + Room Terminal			
Temperature application		**Low, 35°C**	**High, 55°C**
Controller Carel pCO5/pCO5+/uPC + pAD, Class	-	VI	VI
Controller Carel pCO5/pCO5+/uPC, +pAD, Contribution	%	4.0	4.0
Set Space heating seasonal efficiency, Average climate	%	185	139
Set Space heating energy efficiency class, Average climate	-	A+++	A++
Set Space heating seasonal efficiency, Colder climate	%	192	145
Set Space heating seasonal efficiency, Warmer climate	%	187	136

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