

Heat pump model	Master Therm	AQ17ICP-1
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Heat pump type	Brine/Water
Supplementary heater	No
Heat pump combination heater	Yes

Reference heating season		Average		SCOP 4,87
Reference water temperature		LOW, 35°C		
Full load heating		Prated [kW]	3,87	
Seasonal efficiency		η_s [%]	187	A+++
Annual electricity consumption		Q_{HE} [kWh]	1639	
Average 35°C	Outdoor heat exchanger	Declared capacity	COP at part load	Degradation Coefficient
	Outdoor air			
	T_j [°C]	Pdh [kW]	COPd (-)	Cdh (-)
A	-7	3,55	4,40	0,900
B	2	2,02	4,99	0,900
C	7	1,39	5,44	0,900
D	12	0,99	5,44	0,935
TOL (E)	-10	3,87	4,29	0,900
Tbivalent (F)	-10	3,87	4,29	0,900

Reference heating season		Average		SCOP 3,76
Reference water temperature		High, 55°C		
Full load heating		Prated [kW]	3,52	
Seasonal efficiency		η_s [%]	143	A++
Annual electricity consumption		Q_{HE} [kWh]	1929	
Average 55°C	Outdoor heat exchanger	Declared capacity	COP at part load	Degradation Coefficient
	Outdoor air			
	T_j [°C]	Pdh [kW]	COPd (-)	Cdh (-)
A	-7	3,27	3,19	0,900
B	2	1,94	3,81	0,900
C	7	1,25	4,32	0,900
D	12	0,95	4,45	0,944
TOL (E)	-10	3,52	3,03	0,900
Tbivalent (F)	-10	3,52	3,03	0,900

Reference heating season		Warmer		
Reference water temperature		Low, 35°C		
Full load heating		Prated [kW]	3,87	
Seasonal efficiency		η_s [%]	185	
Annual electricity consumption		Q_{HE} [kWh]	1068	
Warmer 35°C	Outdoor heat exchanger	Declared capacity	COP at part load	Degradation Coefficient
	Outdoor air			
	T_j [°C]	Pdh [kW]	COPd (-)	Cdh (-)
B	2	3,87	4,29	0,900
C	7	2,60	4,79	0,900
D	12	1,13	5,56	0,900
TOL (E)	2	3,87	4,29	0,900
Tbivalent (F)	2	3,87	4,29	0,900

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Reference heating season		Warmer		
Reference water temperature		High, 55°C		
Full load heating		Prated [kW]	3,52	
Seasonal efficiency		η_s [%]	138	
Annual electricity consumption		Q_{HE} [kWh]	1289	
Warmer 55°C	Outdoor heat exchanger	Declared capacity	COP at part load	Degradation Coefficient
	Outdoor air			
	Tj [°C]	Pdh [kW]	COPd (-)	Cdh (-)
B	2	3,52	3,03	0,900
C	7	2,39	3,44	0,900
D	12	1,07	4,32	0,900
TOL (E)	2	3,52	3,03	0,900
Tbivalent (F)	2	3,52	3,03	0,900

Reference heating season		Colder		
Reference water temperature		Low, 35°C		
Full load heating		Prated [kW]	3,87	
Seasonal efficiency		η_s [%]	195	
Annual electricity consumption		Q_{HE} [kWh]	1881	
Colder 35°C	Outdoor heat exchanger	Declared capacity	COP at part load	Degradation Coefficient
	Outdoor air			
	Tj [°C]	Pdh [kW]	COPd (-)	Cdh (-)
A	-7	2,41	4,92	0,900
B	2	1,46	5,44	0,900
C	7	1,00	5,56	0,900
D	12	0,99	5,44	0,935
TOL (E)	-22	3,87	4,29	0,900
Tbivalent (F)	-22	3,87	4,29	0,900
G	-15	5,54	4,46	0,990

Reference heating season		Colder		
Reference water temperature		High, 55°C		
Full load heating		Prated [kW]	Climate	
Seasonal efficiency		η_s [%]	0	
Annual electricity consumption		Q_{HE} [kWh]	16	
Colder 55°C	Outdoor heat exchanger	Declared capacity	COP at part load	Degradation Coefficient
	Outdoor air			
	Tj [°C]	Pdh [kW]	COPd (-)	Cdh (-)
A	-7	2,18	3,65	0,900
B	2	1,37	4,24	0,900
C	7	0,96	4,66	0,942
D	12	0,96	4,66	0,942
TOL (E)	-22	3,52	3,03	0,900
Tbivalent (F)	-22	3,52	3,03	0,900
G	-15	5,37	3,13	0,993

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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]	-
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]	0,95

Declared load profile / Tapping cycle		L
Daily electricity consumption	Q_{elec} [kWh]	3,332
Water heating energy efficiency	η_{wh} [%]	86

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 + pGDx, Master Therm custom SW	
Class	VI	
Contribution	%	4,0

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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	4	4
Space heating seasonal efficiency, Average climate	%	187	143
Space heating annual electricity consumption, Average cl.	kWh	1639	1929

Nominal heating capacity Pdesign, Colder climate	kW	4	Climate
Space heating seasonal efficiency, Colder climate	%	195	0
Space heating annual electricity consumption, Colder cl.	kWh	1881	16

Nominal heating capacity Pdesign, Warmer climate	kW	4	4
Space heating seasonal efficiency, Warmer climate	%	185	138
Space heating annual electricity consumption, Warmer cl.	kWh	1068	1289

Sound power level Lwa	dBA	48
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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	%	189	145
Set Space heating energy efficiency class, Average climate	-	A+++	A++
Set Space heating seasonal efficiency, Colder climate	%	197	2
Set Space heating seasonal efficiency, Warmer climate	%	187	140

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	%	191	147
Set Space heating energy efficiency class, Average climate	-	A+++	A++
Set Space heating seasonal efficiency, Colder climate	%	199	4
Set Space heating seasonal efficiency, Warmer climate	%	189	142