

<b>Heat pump model</b>	<b>Master Therm</b>	<b>AQ37IP</b>
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Heat pump type	Brine/Water
Supplementary heater	No
Heat pump combination heater	No

Reference heating season			Average	SCOP 4,93
Reference water temperature			LOW, 35°C	
Full load heating		Prated [kW]	16,79	A+++
Seasonal efficiency		ηs [%]	189	
Annual electricity consumption		QHE [kWh]	7034	
Average 35°C	Outdoor heat exchanger	Declared capacity	COP at part load	
	Brine			
	TJ [°C]	Pdh [kW]	COPd (-)	
A	0	15,28	3,71	
B	0	9,34	4,93	
C	0	6,09	5,90	
D	0	3,04	5,90	
TOL (E)	0	16,79	3,45	
Tbivalent (F)	0	16,79	3,45	

Reference heating season			Average	SCOP 3,98
Reference water temperature			High, 55°C	
Full load heating		Prated [kW]	16,18	A+++
Seasonal efficiency		ηs [%]	151	
Annual electricity consumption		QHE [kWh]	8401	
Average 55°C	Outdoor heat exchanger	Declared capacity	COP at part load	
	Brine			
	Tj [°C]			
		Pdh [kW]	COPd (-)	
A	0	14,40	2,77	
B	0	8,82	4,00	
C	0	5,91	4,90	
D	0	2,96	4,94	
TOL (E)	0	16,18	2,57	
Tbivalent (F)	0	16,18	2,57	

Reference heating season		Warmer	
Reference water temperature		Low, 35°C	
Full load heating	Prated [kW]		16,79
Seasonal efficiency	ηs [%]		196
Annual electricity consumption		QHE [kWh]	4403
Warmer 35°C	Outdoor heat exchanger	Declared capacity	COP at part load
	Brine		
	TJ [°C]		
B	0	Pdh [kW]	COPd (-)
C	0		
D	0		
TOL (E)	0		
Tbivalent (F)	0		

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Reference heating season		Warmer	
Reference water temperature		High, 55°C	
Full load heating		Prated [kW]	16,18
Seasonal efficiency		$\eta_s$ [%]	151
Annual electricity consumption		Q <sub>HE</sub> [kWh]	5421
Warmer 55°C	Outdoor heat exchanger	Declared capacity	COP at part load
	Brine		
	T <sub>j</sub> [°C]	P <sub>dh</sub> [kW]	COP <sub>d</sub> (-)
B	0	16,18	2,57
C	0	10,64	3,57
D	0	4,91	4,85
TOL (E)	0	16,18	2,57
Tbivalent (F)	0	16,18	2,57

Reference heating season		Colder	
Reference water temperature		Low, 35°C	
Full load heating		Prated [kW]	16,79
Seasonal efficiency		$\eta_s$ [%]	202
Annual electricity consumption		Q <sub>HE</sub> [kWh]	7868
Colder 35°C	Outdoor heat exchanger	Declared capacity	COP at part load
	Brine		
	T <sub>j</sub> [°C]	P <sub>dh</sub> [kW]	COP <sub>d</sub> (-)
A	0	10,17	4,85
B	0	6,29	5,84
C	0	4,07	6,05
D	0	3,04	5,90
TOL (E)	0	16,79	3,45
Tbivalent (F)	0	16,79	3,45
G	0	13,78	4,13

Reference heating season		Colder	
Reference water temperature		High, 55°C	
Full load heating		Prated [kW]	16,18
Seasonal efficiency		$\eta_s$ [%]	160
Annual electricity consumption		Q <sub>HE</sub> [kWh]	9486
Colder 55°C	Outdoor heat exchanger	Declared capacity	COP at part load
	Brine		
	T <sub>j</sub> [°C]	P <sub>dh</sub> [kW]	COP <sub>d</sub> (-)
A	0	9,96	3,79
B	0	6,08	4,70
C	0	3,98	5,16
D	0	2,98	5,16
TOL (E)	0	16,18	2,57
Tbivalent (F)	0	16,18	2,57
G	0	13,20	3,14

Heat pump model	Master Therm	AQ37IP
Power consumption in modes other than "active mode"		
Off mode	P <sub>OFF</sub> [kW]	0,018
Thermostat off mode	P <sub>TO</sub> [kW]	0,018
Standby mode	P <sub>SB</sub> [kW]	0,018
Crankcaseheater mode	P <sub>CK</sub> [kW]	-
Supplementary heater capacity	P <sub>sup</sub> [kW]	-
Supplementary heater type	[-]	electricity
Capacity control		Variable
Sound power level Indoor	L <sub>WA</sub> [dBA]	48
Sound power level Outdoor	L <sub>WA</sub> [dBA]	-
Rated water flow	[m³/h]	2,76
Temperature controller		
Type	Carel pCO5+HS/pCOOEM+HS, Master Therm custom SW	
Class	II	
Contribution	%	2,0
Temperature controller + Room Terminal		
Type	Carel pCO5+HS/pCOOEM+HS + 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	17	16
Space heating seasonal efficiency, Average climate	%	189	151
Space heating annual electricity consumption, Average cl.	kWh	7034	8401
Nominal heating capacity Pdesign, Colder climate	kW	17	16
Space heating seasonal efficiency, Colder climate	%	202	160
Space heating annual electricity consumption, Colder cl.	kWh	7868	9486
Nominal heating capacity Pdesign, Warmer climate	kW	17	16
Space heating seasonal efficiency, Warmer climate	%	196	151
Space heating annual electricity consumption, Warmer cl.	kWh	4403	5421
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	%	191	153
Set Space heating energy efficiency class, Average climate	-	A+++	A+++
Set Space heating seasonal efficiency, Colder climate	%	204	162
Set Space heating seasonal efficiency, Warmer climate	%	198	153

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	%	193	155
Set Space heating energy efficiency class, Average climate	-	A+++	A+++
Set Space heating seasonal efficiency, Colder climate	%	206	164
Set Space heating seasonal efficiency, Warmer climate	%	200	155