

Heat pump model		Master Therm		AQ22IC	
Heat pump type		Brine/Water			
Supplementary heater		No			
Heat pump combination heater		Yes			
Reference heating season		Average			
Reference water temperature		LOW, 35°C			
Full load heating		Prated [kW]	6,73		
Seasonal efficiency		η_s [%]	177		
Annual electricity consumption		Q_{HE} [kWh]	3011		
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	0,876	
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 [%]	133		
Annual electricity consumption		Q_{HE} [kWh]	3749		
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	0,893	
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 [%]	177		
Annual electricity consumption		Q_{HE} [kWh]	1945		
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	0,924	
TOL (E)	2	6,73	4,22	0,900	
Tbivalent (F)	2	6,73	4,22	0,900	

Heat pump model	Master Therm	AQ22IC
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Reference heating season		Warmer		
Reference water temperature		High, 55°C		
Full load heating		Prated [kW]	6,40	
Seasonal efficiency		η_s [%]	129	
Annual electricity consumption		Q_{HE} [kWh]	2498	
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	0,937
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 [%]	186	
Annual electricity consumption		Q_{HE} [kWh]	3456	
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	0,907
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 [%]	140	
Annual electricity consumption		Q_{HE} [kWh]	4320	
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	0,925
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	AQ22IC
Power consumption in modes other than "active mode"			
Off mode	P_{OFF} [kW]	0,028	
Thermostat off mode	P_{TO} [kW]	0,018	
Standby mode	P_{SB} [kW]	0,018	
Crankcaseheater mode	P_{CK} [kW]	-	
Supplementary heater capacity			
Supplementary heater capacity	P_{sup} [kW]	3-4 (4,5-6)	
Supplementary heater type	[-]	electricity	
Capacity control			
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	

Heat pump model	Master Therm	AQ22IC
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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	7	6
Space heating seasonal efficiency, Average climate	%	177	133
Space heating annual electricity consumption, Average cl.	kWh	3011	3749

Nominal heating capacity Pdesign, Colder climate	kW	7	6
Space heating seasonal efficiency, Colder climate	%	186	140
Space heating annual electricity consumption, Colder cl.	kWh	3456	4320

Nominal heating capacity Pdesign, Warmer climate	kW	7	6
Space heating seasonal efficiency, Warmer climate	%	177	129
Space heating annual electricity consumption, Warmer cl.	kWh	1945	2498

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	%	179	135
Set Space heating energy efficiency class, Average climate	-	A+++	A++
Set Space heating seasonal efficiency, Colder climate	%	188	142
Set Space heating seasonal efficiency, Warmer climate	%	179	131

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	%	181	137
Set Space heating energy efficiency class, Average climate	-	A+++	A++
Set Space heating seasonal efficiency, Colder climate	%	190	144
Set Space heating seasonal efficiency, Warmer climate	%	181	133

Heat pump model	Master Therm	AQ261C
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Heat pump type	Brine/Water
Supplementary heater	No
Heat pump combination heater	Yes

Reference heating season		Average		
Reference water temperature		LOW, 35°C		
Full load heating	Prated [kW]	8,98		
Seasonal efficiency	η_s [%]	191		A+++
Annual electricity consumption	Q_{HE} [kWh]	3721		
Average 35°C	Outdoor heat exchanger	Declared capacity	COP at part load	Degradation Coefficient
	Outdoor air			
	Tj [°C]	Pdh [kW]	COPd (-)	Cdh (-)
A	-7	8,06	4,34	0,900
B	2	4,99	4,91	0,900
C	7	3,16	5,51	0,900
D	12	2,53	5,51	0,961
TOL (E)	-10	8,98	4,24	0,900
Tbivalent (F)	-10	8,98	4,24	0,900

Reference heating season		Average		
Reference water temperature		High, 55°C		
Full load heating	Prated [kW]	8,64		
Seasonal efficiency	η_s [%]	145		A++
Annual electricity consumption	Q_{HE} [kWh]	4666		
Average 55°C	Outdoor heat exchanger	Declared capacity	COP at part load	Degradation Coefficient
	Outdoor air			
	Tj [°C]	Pdh [kW]	COPd (-)	Cdh (-)
A	-7	8,05	3,03	0,900
B	2	4,71	3,76	0,900
C	7	3,14	4,42	0,900
D	12	1,82	4,53	0,955
TOL (E)	-10	8,64	2,86	0,900
Tbivalent (F)	-10	8,64	2,86	0,900

Reference heating season		Warmer		
Reference water temperature		Low, 35°C		
Full load heating	Prated [kW]	8,98		
Seasonal efficiency	η_s [%]	180		
Annual electricity consumption	Q_{HE} [kWh]	2556		
Warmer 35°C	Outdoor heat exchanger	Declared capacity	COP at part load	Degradation Coefficient
	Outdoor air			
	Tj [°C]	Pdh [kW]	COPd (-)	Cdh (-)
B	2	8,98	4,24	0,900
C	7	6,21	4,69	0,900
D	12	2,54	5,65	0,900
TOL (E)	2	8,98	4,24	0,900
Tbivalent (F)	2	8,98	4,24	0,900

Heat pump model	Master Therm	AQ261C
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Reference heating season		Warmer		
Reference water temperature		High, 55°C		
Full load heating		Prated [kW]	8,64	
Seasonal efficiency		η_s [%]	143	
Annual electricity consumption		Q_{HE} [kWh]	3058	
Warmer 55°C	Outdoor heat exchanger	Declared capacity	COP at part load	Degradation Coefficient
	Outdoor air			
	Tj [°C]	Pdh [kW]	COPd (-)	Cdh (-)
B	2	8,64	2,86	0,900
C	7	5,77	3,34	0,900
D	12	2,53	4,42	0,900
TOL (E)	2	8,64	2,86	0,900
Tbivalent (F)	2	8,64	2,86	0,900

Reference heating season		Colder		
Reference water temperature		Low, 35°C		
Full load heating		Prated [kW]	8,98	
Seasonal efficiency		η_s [%]	199	
Annual electricity consumption		Q_{HE} [kWh]	4282	
Colder 35°C	Outdoor heat exchanger	Declared capacity	COP at part load	Degradation Coefficient
	Outdoor air			
	Tj [°C]	Pdh [kW]	COPd (-)	Cdh (-)
A	-7	5,61	4,84	0,900
B	2	3,41	5,51	0,900
C	7	2,29	5,65	0,900
D	12	2,27	5,51	0,956
TOL (E)	-22	8,98	4,24	0,900
Tbivalent (F)	-22	8,98	4,24	0,900
G	-15	7,44	4,53	0,900

Reference heating season		Colder		
Reference water temperature		High, 55°C		
Full load heating		Prated [kW]	8,64	
Seasonal efficiency		η_s [%]	150	
Annual electricity consumption		Q_{HE} [kWh]	5379	
Colder 55°C	Outdoor heat exchanger	Declared capacity	COP at part load	Degradation Coefficient
	Outdoor air			
	Tj [°C]	Pdh [kW]	COPd (-)	Cdh (-)
A	-7	5,86	3,56	0,989
B	2	3,36	4,32	0,900
C	7	2,21	4,76	0,900
D	12	2,21	4,76	0,961
TOL (E)	-22	8,64	2,86	0,900
Tbivalent (F)	-22	8,64	2,86	0,900
G	-15	7,58	3,19	0,900

Heat pump model	Master Therm	AQ261C
Power consumption in modes other than "active mode"		
Off mode	P_{OFF} [kW]	0,018
Thermostat off mode	P_{TO} [kW]	0,018
Standby mode	P_{SB} [kW]	0,018
Crankcaseheater mode	P_{CK} [kW]	-
Supplementary heater capacity		
Supplementary heater capacity	P_{sup} [kW]	3-4 (4,5-6)
Supplementary heater type	[-]	electricity
Capacity control		
Capacity control		Variable
Sound power level Indoor	L_{WA} [dBA]	48
Sound power level Outdoor	L_{WA} [dBA]	-
Rated brine flow	[m ³ /h]	1,73
Declared load profile / Tapping cycle		
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 + pAD, Master Therm custom SW	
Class	VI	
Contribution	%	4,0

Heat pump model	Master Therm	AQ261C
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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	9	9
Space heating seasonal efficiency, Average climate	%	191	145
Space heating annual electricity consumption, Average cl.	kWh	3721	4666

Nominal heating capacity Pdesign, Colder climate	kW	9	9
Space heating seasonal efficiency, Colder climate	%	199	150
Space heating annual electricity consumption, Colder cl.	kWh	4282	5379

Nominal heating capacity Pdesign, Warmer climate	kW	9	9
Space heating seasonal efficiency, Warmer climate	%	180	143
Space heating annual electricity consumption, Warmer cl.	kWh	2556	3058

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	%	193	147
Set Space heating energy efficiency class, Average climate	-	A+++	A++
Set Space heating seasonal efficiency, Colder climate	%	201	152
Set Space heating seasonal efficiency, Warmer climate	%	182	145

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	%	195	149
Set Space heating energy efficiency class, Average climate	-	A+++	A++
Set Space heating seasonal efficiency, Colder climate	%	203	154
Set Space heating seasonal efficiency, Warmer climate	%	184	147

Heat pump model		Master Therm		AQ37IC	
Heat pump type				Brine/Water	
Supplementary heater				No	
Heat pump combination heater				Yes	
Reference heating season				Average	
Reference water temperature				LOW, 35°C	
Full load heating		Prated [kW]		15,27	
Seasonal efficiency		η_s [%]		197	
Annual electricity consumption		Q_{HE} [kWh]		6144	
Average 35°C	Outdoor heat exchanger	Declared capacity	COP at part load	Degradation Coefficient	
	Outdoor air				
	Tj [°C]	Pdh [kW]	COPd (-)	Cdh (-)	
A	-7	13,65	4,54	0,900	
B	2	8,63	5,04	0,900	
C	7	5,42	5,60	0,900	
D	12	2,62	5,60	0,962	
TOL (E)	-10	15,27	4,44	0,900	
Tivalent (F)	-10	15,27	4,44	0,900	
Reference heating season				Average	
Reference water temperature				High, 55°C	
Full load heating		Prated [kW]		13,89	
Seasonal efficiency		η_s [%]		152	
Annual electricity consumption		Q_{HE} [kWh]		7191	
Average 55°C	Outdoor heat exchanger	Declared capacity	COP at part load	Degradation Coefficient	
	Outdoor air				
	Tj [°C]	Pdh [kW]	COPd (-)	Cdh (-)	
A	-7	12,35	3,16	0,900	
B	2	8,17	3,92	0,900	
C	7	5,00	4,59	0,900	
D	12	2,52	4,70	0,966	
TOL (E)	-10	13,89	3,00	0,900	
Tivalent (F)	-10	13,89	3,00	0,900	
Reference heating season				Warmer	
Reference water temperature				Low, 35°C	
Full load heating		Prated [kW]		15,27	
Seasonal efficiency		η_s [%]		193	
Annual electricity consumption		Q_{HE} [kWh]		4055	
Warmer 35°C	Outdoor heat exchanger	Declared capacity	COP at part load	Degradation Coefficient	
	Outdoor air				
	Tj [°C]	Pdh [kW]	COPd (-)	Cdh (-)	
B	2	15,27	4,44	0,900	
C	7	10,33	4,82	0,900	
D	12	4,39	5,73	0,900	
TOL (E)	2	15,27	4,44	0,900	
Tivalent (F)	2	15,27	4,44	0,900	

Heat pump model	Master Therm	AQ37IC
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Reference heating season		Warmer		
Reference water temperature		High, 55°C		
Full load heating		Prated [kW]	13,89	
Seasonal efficiency		η_s [%]	149	
Annual electricity consumption		Q_{HE} [kWh]	4734	
Warmer 55°C	Outdoor heat exchanger	Declared capacity	COP at part load	Degradation Coefficient
	Outdoor air			
	T_j [°C]	Pdh [kW]	COPd (-)	Cdh (-)
B	2	13,89	3,00	0,900
C	7	9,68	3,49	0,900
D	12	4,17	4,59	0,900
TOL (E)	2	13,89	3,00	0,900
Tivalent (F)	2	13,89	3,00	0,900

Reference heating season		Colder		
Reference water temperature		Low, 35°C		
Full load heating		Prated [kW]	15,27	
Seasonal efficiency		η_s [%]	204	
Annual electricity consumption		Q_{HE} [kWh]	7115	
Colder 35°C	Outdoor heat exchanger	Declared capacity	COP at part load	Degradation Coefficient
	Outdoor air			
	T_j [°C]	Pdh [kW]	COPd (-)	Cdh (-)
A	-7	9,68	4,96	0,900
B	2	5,95	5,60	0,900
C	7	3,87	5,73	0,900
D	12	3,50	5,60	0,971
TOL (E)	-22	15,27	4,44	0,900
Tivalent (F)	-22	15,27	4,44	0,900
G	-15	12,93	4,73	0,900

Reference heating season		Colder		
Reference water temperature		High, 55°C		
Full load heating		Prated [kW]	13,99	
Seasonal efficiency		η_s [%]	157	
Annual electricity consumption		Q_{HE} [kWh]	8334	
Colder 55°C	Outdoor heat exchanger	Declared capacity	COP at part load	Degradation Coefficient
	Outdoor air			
	T_j [°C]	Pdh [kW]	COPd (-)	Cdh (-)
A	-7	9,12	3,72	0,900
B	2	5,64	4,49	0,900
C	7	3,39	4,91	0,900
D	12	3,39	4,91	0,974
TOL (E)	-22	13,99	3,07	0,900
Tivalent (F)	-22	13,99	3,07	0,900
G	-15	12,14	3,36	0,900

Heat pump model	Master Therm	AQ37IC
Power consumption in modes other than "active mode"		
Off mode	P_{OFF} [kW]	0,018
Thermostat off mode	P_{TO} [kW]	0,018
Standby mode	P_{SB} [kW]	0,018
Crankcaseheater mode	P_{CK} [kW]	-
Supplementary heater capacity		
Supplementary heater capacity	P_{sup} [kW]	4,5-6
Supplementary heater type	[-]	electricity
Capacity control		
Capacity control		Variable
Sound power level Indoor	L_{WA} [dBA]	48
Sound power level Outdoor	L_{WA} [dBA]	-
Rated brine flow	[m ³ /h]	2,42
Declared load profile / Tapping cycle		
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 + pAD, Master Therm custom SW	
Class	VI	
Contribution	%	4,0

Heat pump model	Master Therm	AQ371C
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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	15	14
Space heating seasonal efficiency, Average climate	%	197	152
Space heating annual electricity consumption, Average cl.	kWh	6144	7191
Nominal heating capacity Pdesign, Colder climate	kW	15	14
Space heating seasonal efficiency, Colder climate	%	204	157
Space heating annual electricity consumption, Colder cl.	kWh	7115	8334
Nominal heating capacity Pdesign, Warmer climate	kW	15	14
Space heating seasonal efficiency, Warmer climate	%	193	149
Space heating annual electricity consumption, Warmer cl.	kWh	4055	4734
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	%	199	154
Set Space heating energy efficiency class, Average climate	-	A+++	A+++
Set Space heating seasonal efficiency, Colder climate	%	206	159
Set Space heating seasonal efficiency, Warmer climate	%	195	151

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	%	201	156
Set Space heating energy efficiency class, Average climate	-	A+++	A+++
Set Space heating seasonal efficiency, Colder climate	%	208	161
Set Space heating seasonal efficiency, Warmer climate	%	197	153