No

CTC EcoPart 412 + CTC EcoLogic

Energy efficiency class:

Controller class:

Warm climate and High temperature

Model(s):

Air-to-water heat pump:

Water-to-water heat pump:

Enertech AB, 341 26 Ljungby

VII

Brine-to-water heat pump:		Yes		Controller contribution:	3,5	%	
Low-temperature heat pump:		No		Package efficiency:	141	%	
Equipped with a supplementary	y heater:	No		Package efficiency class:		-	
Heat pump combination heater	·:	No					
Parameters shall be declared fo	or medium-temp	erature applica	tion, except for	r low-temperature heat pumps. For	low- tempera	ture heat pu	mps,
parameters shall be declared for	-	re application.					
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated heat output (*)	Prated	12	kW	Seasonal space heating energy efficiency	η_{s}	137	%
Declared capacity for heating for outdoor temperature T j	or part load at in	door temperatu	ıre 20 °C and	Declared coefficient of performation part load at indoor temperature	•		
T j = - 7 °C	Pdh	na	kW	T j = - 7 °C	COPd	na] -
T j = + 2 °C	Pdh	13,6	kW	T j = +2 °C	COPd	3,08] -
T j = + 7 °C	Pdh	11,1	kW	T j = +7 °C	COPd	3,45] -
T j = + 12 °C	Pdh	11,5	kW	T j = +12 °C	COPd	4,14	
T j = bivalent temperature	Pdh	11	kW	T j = bivalent temperature	COPd	3,18	-
T j = operation limit temperature	Pdh	na	kW	T j = operation limit temperature	COPd	na] -
For air-to-water heat pumps: T j = -15 °C (if TOL < -20 °C)	Pdh	na	kW	For air-to-water heat pumps: T j = - 15 °C (if TOL < - 20 °C)	COPd	na	_
Bivalent temperature	T _{biv}	3	°C	For air-to-water heat pumps: Operation limit temperature	TOL	na	°C
Cycling interval capacity for heating	P cych	na	kW	Cycling interval efficiency	СОРсус	na	-
Degradation co-efficient (**)	Cdh	0,99	-	Heating water operating limit temperature	WTOL	65	°C
Power consumption in modes of	ther than active	mode	_	Supplementary heater			_
Off mode	P OFF	0,018	kW	Rated heat output (*)	Psup	0,5	kW
Thermostat-off mode	P _{TO}	0,005	kW				
Standby mode	P_{SB}	0,018	kW	Type of energy input		Electric	
Crankcase heater mode	P _{CK}	0,000	kW				
Other items		•	•		•		
Capacity control		Fixed		For air-to-water heat pumps: Rated air flow rate, outdoors	-	na	m3/h
Sound power level, indoors/ outdoors	L _{WA}	50/na	dB	For water-/brine-to-water heat pumps: Rated brine or water			
Annual energy consumption	Q _{HE}	4364	kWh	flow rate, outdoor heat exchanger		2,1	m3/h
For heat pump combination he	ater:						
Declared load profile		na		Water heating energy efficiency	$\eta_{\sf wh}$	na	%
Daily electricity consumption	Qelec	na	kWh	Daily fuel consumption	Qfuel	na	kWh
Annual electricity	AEC	na	kWh	Annual fuel consumption	AFC	na	GJ

^(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj). (**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.

No

CTC EcoPart 412 + CTC EcoLogic

Energy efficiency class:

Controller class:

Warm climate and Low temperature

Model(s):

Air-to-water heat pump:

Water-to-water heat pump:

Enertech AB, 341 26 Ljungby

VII

Brine-to-water heat pump:		Yes		Controller contribution:	3,5	%	
Low-temperature heat pump:		No		Package efficiency:	184	%	
Equipped with a supplementar	y heater:	No		Package efficiency class:		-	
Heat pump combination heater	r:	No					
Parameters shall be declared fo	or medium-temp	erature applicat	tion, except for	r low-temperature heat pumps. For	low- tempera	ture heat pu	mps,
parameters shall be declared for	or low-temperati	ure application.					
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated heat output (*)	Prated	13	kW	Seasonal space heating energy efficiency	η_{s}	180	%
Declared capacity for heating for outdoor temperature T j	or part load at in	door temperatu	ıre 20°C and	Declared coefficient of performation part load at indoor temperature	•		
T j = - 7 °C	Pdh	na	kW	T j = - 7 °C	COPd	na] -
T j = + 2 °C	Pdh	11,8	kW	T j = +2 °C	COPd	4,60	-
T j = + 7 °C	Pdh	11,9	kW	T j = +7 °C	COPd	4,83] -
T j = + 12 °C	Pdh	12,0	kW	T j = +12 °C	COPd	5,11	-
T j = bivalent temperature	Pdh	11,8	kW	T j = bivalent temperature	COPd	4,68] -
T j = operation limit temperature	Pdh	na	kW	T j = operation limit temperature	COPd	na	-
For air-to-water heat pumps: T j = -15 °C (if TOL < -20 °C)	Pdh	na	kW	For air-to-water heat pumps: T j = - 15 °C (if TOL < - 20 °C)	COPd	na	-
Bivalent temperature	T _{biv}	3	°C	For air-to-water heat pumps: Operation limit temperature	TOL	na	°C
Cycling interval capacity for heating	P _{cych}	na	kW	Cycling interval efficiency	СОРсус	na] -
Degradation co-efficient (**)	Cdh	0,98	-	Heating water operating limit temperature	WTOL	65	°C
Power consumption in modes of	other than active	mode		Supplementary heater			
Off mode	P OFF	0,018	kW	Rated heat output (*)	Psup	0,9	kW
Thermostat-off mode	P TO	0,022	kW				-
Standby mode	P_{SB}	0,018	kW	Type of energy input		Electric	
Crankcase heater mode	P _{CK}	0,000	kW				
Other items	- CA	5,000	!		!		
Capacity control		Fixed		For air-to-water heat pumps: Rated air flow rate, outdoors	-	na	m3/h
Sound power level, indoors/ outdoors	L _{WA}	50/na	dB	For water-/brine-to-water heat pumps: Rated brine or water			
Annual energy consumption	Q _{HE}	3618	kWh	flow rate, outdoor heat exchanger	-	2,6	m3/h
For heat pump combination he	ater:						
Declared load profile		na		Water heating energy efficiency	$\eta_{\sf wh}$	na	%
Daily electricity consumption	Qelec	na	kWh	Daily fuel consumption	Qfuel	na	kWh
Annual electricity	AEC	na	kWh	Annual fuel consumption	AFC	na	GJ

^(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj). (**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.

No

CTC EcoPart 412 + CTC EcoLogic

Energy efficiency class:

Controller class:

ENERTECH

Average climate and High temperature

Model(s):

Air-to-water heat pump:

Water-to-water heat pump:

Enertech AB, 341 26 Ljungby

A++

VII

	Yes		Controller contribution:	3,5	%	
	No		Package efficiency:	142	%	
y heater:	No		Package efficiency class:	A++	-	
r:	No					
or medium-temp	erature applica	tion, except for	r low-temperature heat pumps. For	low- tempera	nture heat pu	mps,
or low-temperatu	re application.					
Symbol	Value	Unit	Item	Symbol	Value	Unit
Prated	12	kW	Seasonal space heating energy efficiency	$\eta_{\mathcal{S}}$	138	%
or part load at in	door temperatu	ure 20 °C and				
Pdh	11	kW	T j = - 7 °C	COPd	3,25] -
Pdh	11,2	kW	T j = +2 °C	COPd	3,64] -
Pdh	11,4	kW	T j = +7 °C	COPd	4,02] -
Pdh	11,6	kW	T j = +12 °C	COPd	4,40	_
Pdh	11	kW	T j = bivalent temperature	COPd	3,25	-
Pdh	na	kW	T j = operation limit temperature	COPd	na	_
Pdh	na	kW	For air-to-water heat pumps: T j = - 15 °C (if TOL < - 20 °C)	COPd	na	_
T _{biv}	-7	°C	For air-to-water heat pumps: Operation limit temperature	TOL	na	°C
P cych	na	kW	Cycling interval efficiency	СОРсус	na	-
Cdh	0,99	-	Heating water operating limit temperature	WTOL	65	°C
other than active	mode	_	Supplementary heater			_
P OFF	0,018	kW	Rated heat output (*)	Psup	1,5	kW
P _{TO}	0,005	kW				
P_{SB}	0,018	kW	Type of energy input		Electric	
P _{CK}	0,000	kW				
	•	•		•		
	Fixed		For air-to-water heat pumps: Rated air flow rate, outdoors	-	na	m3/h
L _{WA}	50/na	dB	For water-/brine-to-water heat pumps: Rated brine or water			
Q _{HE}	7084	kWh	flow rate, outdoor heat exchanger	-	2,1	m3/h
ater:			<u> </u>			
	na	_	Water heating energy efficiency	$\eta_{\sf wh}$	na	%
Qelec	na	kWh	Daily fuel consumption	Q fuel	na	kWh
Qelec						
	or medium-tempor low-temperature. Symbol Prated Or part load at in Pdh Pdh Pdh Pdh Pdh Pdh Pdh Pdh Pdh Pd	No y heater: No r: No or medium-temperature application. Symbol Value Prated 12 or part load at indoor temperature Pdh 11,2 Pdh 11,4 Pdh 11,6 Pdh 11 Pdh 11,6 Pdh 11 Pdh na Pdh na Pdh 0,99 other than active mode Poff 0,018 Pro 0,005 PsB 0,018 PcK 0,000 Fixed L WA 50/na Q HE 7084 ater:	No y heater: No remedium-temperature application, except for or low-temperature application. Symbol Value Unit Prated 12 kW or part load at indoor temperature 20 °C and Pdh 11,2 kW Pdh 11,4 kW Pdh 11,6 kW Pdh 11,6 kW Pdh 11 kW Pdh 11 kW Pdh 10 kW Pdh 11 kW Pdh 1	No Package efficiency: y heater: No Package efficiency class: No remedium-temperature application, except for low-temperature heat pumps. For or low-temperature application. Symbol Value Unit Item Prated 12 kW Seasonal space heating energy efficiency or part load at indoor temperature 20 °C and Declared coefficient of perform part load at indoor temperature Pdh 11, kW T j = -7 °C Pdh 11, kW T j = +2 °C Pdh 11, kW T j = +12 °C Pdh 11, kW T j = bivalent temperature Pdh 11 kW T j = bivalent temperature T j = operation limit temperature T j = operation limit temperature T j = -15 °C (if TOL < -20 °C) For air-to-water heat pumps: T j = -15 °C (if TOL < -20 °C) For air-to-water heat pumps: Operation limit temperature Pcych na kW Cycling interval efficiency Heating water operating limit temperature Poss 0,018 kW Heating water operating limit temperature For air-to-water heat pumps: Operation limit temperature Supplementary heater Rated heat output (*) For air-to-water heat pumps: Rated air flow rate, outdoors For water-/brine-to-water heat pumps: Rated air flow rate, outdoors For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	No Package efficiency: 142 / heater: No Package efficiency class: A++ No Package efficiency class: A++ Package efficienc	No Package efficiency: 142 % Package efficiency: 142 % Package efficiency class: A++ To medium-temperature application, except for low-temperature heat pumps. For low-temperature heat pumps for low-temperature application. Symbol Value Unit Item Symbol Value Prated 12 kW Seasonal space heating energy efficiency In S 138 Frated 11 kW Tj = -7 °C COPd JA25 Path 11,4 kW Tj = +2 °C COPd JA64 Path 11,6 kW Tj = +2 °C COPd JA64 Path 11,6 kW Tj = +12 °C COPd JA64 Path 11,6 kW Tj = +12 °C COPd JA64 Path 11 kW Tj = -15 °C COPd JA64 Path 11 kW Tj = -15 °C COPd JA64 Path 11 kW Tj = -15 °C COPd JA64 Path 12 kW Tj = +12 °C COPd JA64 Path 13 kW Tj = -15 °C COPd JA64 Path 14 kW Tj = -15 °C COPd JA64 Path 15 kW Tj = -15 °C COPd JA64 Path 16 kW Tj = -15 °C COPd JA64 Path 17 kW Tj = -15 °C COPd JA64 Path 18 kW Tj = -15 °C (if TOL < -20 °C) Pair - 15 °C (if TOL < -20 °C) Pair - 15 °C (if TOL < -20 °C) Pare 10,018 kW Por 10,005 kW Por 10,0

^(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj). (**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.

No

Yes

CTC EcoPart 412 + CTC EcoLogic

Energy efficiency class:

Controller contribution:

Controller class:

Average climate and Low temperature

Model(s):

Air-to-water heat pump:

Water-to-water heat pump:

Brine-to-water heat pump:

Enertech AB, 341 26 Ljungby

%

A++

VII

3,5

Low-temperature heat pump:		No		Package efficiency:	186	%	
Equipped with a supplementar	y heater:	No		Package efficiency class:	A+++	-	
Heat pump combination heate	r:	No					
			ion, except for	r low-temperature heat pumps. Fo	r low- tempera	ture heat pu	ımps,
parameters shall be declared f	· · · · · · · · · · · · · · · · · · ·						
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated heat output (*)	Prated	13	kW	Seasonal space heating energy efficiency	η_{s}	182	%
Declared capacity for heating foutdoor temperature T j	or part load at inc	door temperatu	re 20 °C and	Declared coefficient of perform part load at indoor temperatur			
T j = - 7 °C	Pdh	11,8	kW	T j = - 7 °C	COPd	4,69] -
T j = + 2 °C	Pdh	11,9	kW	T j = +2 °C	COPd	4,88] -
T j = + 7 °C	Pdh	12,0	kW	T j = +7 °C	COPd	5,06	
T j = + 12 °C	Pdh	12,1	kW	T j = +12 °C	COPd	5,23	
T j = bivalent temperature	Pdh	11,8	kW	T j = bivalent temperature	COPd	4,69	-
T j = operation limit temperature	Pdh	na	kW	T j = operation limit temperature	COPd	na] -
For air-to-water heat pumps: T j = -15 °C (if TOL < -20 °C)	Pdh	na	kW	For air-to-water heat pumps: T j = - 15 °C (if TOL < - 20 °C)	COPd	na	-
Bivalent temperature	T _{biv}	-7	°C	For air-to-water heat pumps: Operation limit temperature	TOL	na	°C
Cycling interval capacity for heating	P cych	na	kW	Cycling interval efficiency	СОРсус	na	-
Degradation co-efficient (**)	Cdh	0,98	-	Heating water operating limit temperature	WTOL	65	°C
Power consumption in modes	other than active	mode	-	Supplementary heater			_
Off mode	P OFF	0,018	kW	Rated heat output (*)	Psup	1,6	kW
Thermostat-off mode	P _{TO}	0,022	kW				
Standby mode	P_{SB}	0,018	kW	Type of energy input		Electric	
Crankcase heater mode	P _{CK}	0,000	kW				
Other items			•				
Capacity control		Fixed		For air-to-water heat pumps: Rated air flow rate, outdoors	-	na	m3/h
Sound power level, indoors/ outdoors	L _{WA}	50/na	dB	For water-/brine-to-water heat pumps: Rated brine or water			
Annual energy consumption	Q _{HE}	5814	kWh	flow rate, outdoor heat exchanger	-	2,6	m3/h
For heat pump combination he	eater:						
Declared load profile		na	_	Water heating energy efficiency	η_{wh}	na	%
Daily electricity consumption	Qelec	na	kWh	Daily fuel consumption	Qfuel	na	kWh
Annual electricity consumption	AEC	na	kWh	Annual fuel consumption	AFC	na	GJ
Contact details	Enertech AB, Box	309, SE-341 26	Ljungby Tel +4	16 372 88000 www.ctc.se			

^(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj). (**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.

No

CTC EcoPart 412 + CTC EcoLogic

Energy efficiency class:

Controller class:

Cold climate and High temperature

Model(s):

Air-to-water heat pump:

Water-to-water heat pump:

Enertech AB, 341 26 Ljungby

VII

Brine-to-water heat pump:		Yes		Controller contribution:	3,5	%	
Low-temperature heat pump:		No		Package efficiency:	145	%	
Equipped with a supplementary	/ heater:	No		Package efficiency class:		-	
Heat pump combination heater	:	No					
				r low-temperature heat pumps. For	low- tempera	ture heat pu	mps,
parameters shall be declared fo	r low-temperatu	re application.					
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated heat output (*)	Prated	12	kW	Seasonal space heating energy efficiency	η_{s}	141	%
Declared capacity for heating for outdoor temperature T j	or part load at in	door temperatu	ıre 20 °C and	Declared coefficient of performation part load at indoor temperature			
T j = - 7 °C	Pdh	11,2	kW	T j = - 7 °C	COPd	3,56] -
T j = + 2 °C	Pdh	11,4	kW	T j = +2 °C	COPd	3,94] -
T j = + 7 °C	Pdh	11,6	kW	T j = +7 °C	COPd	4,29] -
T j = + 12 °C	Pdh	11,7	kW	T j = +12 °C	COPd	4,54	_
T j = bivalent temperature	Pdh	11	kW	T j = bivalent temperature	COPd	3,25	-
T j = operation limit temperature	Pdh	na	kW	T j = operation limit temperature	COPd	na	-
For air-to-water heat pumps: T j = -15 °C (if TOL < -20 °C)	Pdh	na	kW	For air-to-water heat pumps: T j = - 15 °C (if TOL < - 20 °C)	COPd	na	-
Bivalent temperature	T _{biv}	-18	°C	For air-to-water heat pumps: Operation limit temperature	TOL	na	°C
Cycling interval capacity for heating	P _{cych}	na	kW	Cycling interval efficiency	СОРсус	na	-
Degradation co-efficient (**)	Cdh	0,99	-	Heating water operating limit temperature	WTOL	65	°C
Power consumption in modes o	ther than active	mode		Supplementary heater			
Off mode	P _{OFF}	0,018	kW	Rated heat output (*)	Psup	1,4	kW
Thermostat-off mode	P _{TO}	0,005	kW				-
Standby mode	P_{SB}	0,018	kW	Type of energy input		Electric	
Crankcase heater mode	P _{CK}	0,000	kW				
Other items	<u> </u>	, , , , , ,	•		•		
Capacity control		Fixed		For air-to-water heat pumps: Rated air flow rate, outdoors	-	na	m3/l
Sound power level, indoors/ outdoors	L _{WA}	50/na	dB	For water-/brine-to-water heat pumps: Rated brine or water			
Annual energy consumption	Q _{HE}	8195	kWh	flow rate, outdoor heat exchanger	-	2,1	m3/l
For heat pump combination he	ater:						
Declared load profile		na		Water heating energy efficiency	$\eta_{\sf wh}$	na	%
Daily electricity consumption	Qelec	na	kWh	Daily fuel consumption	Qfuel	na	kWh
Annual electricity	AEC	na	kWh	Annual fuel consumption	AFC	na	GJ

^(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj). (**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.

No

CTC EcoPart 412 + CTC EcoLogic

Energy efficiency class:

Controller class:

ENERTECH

Cold climate and Low temperature

Model(s):

Air-to-water heat pump:

Water-to-water heat pump:

Enertech AB, 341 26 Ljungby

VII

water-to-water neat pump.		INU		Controller class.	VII		
Brine-to-water heat pump:		Yes		Controller contribution:	3,5	%	
Low-temperature heat pump:		No		Package efficiency:	189	%	
Equipped with a supplementar	y heater:	No		Package efficiency class:		-	
Heat pump combination heater	••	No					
Parameters shall be declared for	or medium-tempo	erature applicat	ion, except for	r low-temperature heat pumps. For	low- tempera	ture heat pu	mps,
parameters shall be declared for		ire application.					
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated heat output (*)	Prated	12	kW	Seasonal space heating energy efficiency	η_{s}	185	%
Declared capacity for heating for outdoor temperature T j	or part load at ind	door temperatu	re 20 °C and	Declared coefficient of performation part load at indoor temperature			
T j = -7 °C	Pdh	11,9	kW	T j = - 7 °C	COPd	4,89] -
T j = + 2 °C	Pdh	12,0	kW	T j = +2 °C	COPd	5,06	-
T j = + 7 °C	Pdh	12,1	kW	T j = +7 °C	COPd	5,18	-
T j = + 12 °C	Pdh	12,1	kW	T j = +12 °C	COPd	5,20] -
T j = bivalent temperature	Pdh	11,8	kW	T j = bivalent temperature	COPd	4,66	-
T j = operation limit temperature	Pdh	na	kW	T j = operation limit temperature	COPd	na	-
For air-to-water heat pumps: T j = -15 °C (if TOL < -20 °C)	Pdh	na	kW	For air-to-water heat pumps: T j = -15 °C (if TOL < -20 °C)	COPd	na	_
Bivalent temperature	T _{biv}	-20	°C	For air-to-water heat pumps: Operation limit temperature	TOL	na	°C
Cycling interval capacity for heating	P _{cych}	na	kW	Cycling interval efficiency	СОРсус	na	_
Degradation co-efficient (**)	Cdh	0,98	-	Heating water operating limit temperature	WTOL	65	°C
Power consumption in modes of	other than active	mode	_	Supplementary heater			_
Off mode	P OFF	0,018	kW	Rated heat output (*)	Psup	0,7	kW
Thermostat-off mode	P _{TO}	0,022	kW			,	
Standby mode	P _{SB}	0,018	kW	Type of energy input		Electric	
Crankcase heater mode	P _{CK}	0,000	kW				
Other items		•	•		•		
Capacity control		Fixed		For air-to-water heat pumps: Rated air flow rate, outdoors	-	na	m3/h
Sound power level, indoors/ outdoors	L _{WA}	50/na	dB	For water-/brine-to-water heat pumps: Rated brine or water			
Annual energy consumption	Q _{HE}	6373	kWh	flow rate, outdoor heat exchanger	-	2,6	m3/h
For heat pump combination he	ater:		•	· · · · ·		•	
Declared load profile		na		Water heating energy efficiency	$\eta_{\sf wh}$	na	%
Daily electricity consumption	Qelec	na	kWh	Daily fuel consumption	Qfuel	na	kWh
Annual electricity consumption	AEC	na	kWh	Annual fuel consumption	AFC	na	GJ
	Enertech AB, Box	309, SE-341 26	Ljungby Tel +4	16 372 88000 www.ctc.se			

^(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj). (**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.

No

CTC EcoPart 412 + CTC EcoZenith 250

Energy efficiency class:

VII

Controller class:

ENERTECH GROUP

Warm climate and High temperature

Model(s):

Air-to-water heat pump:

Water-to-water heat pump:

Enertech AB, 341 26 Ljungby

Brine-to-water heat pump:		Yes		Controller contribution:	3,5	%		
Low-temperature heat pump:		No		Package efficiency:	126	%		
Equipped with a supplementary	y heater:	Yes		Package efficiency class:		-		
Heat pump combination heater		Yes						
		erature applicat	tion, except for	r low-temperature heat pumps. For	low- tempera	ture heat pu	mps,	
parameters shall be declared fo	or low-temperatu	re application.						
ltem	Symbol	Value	Unit	Item	Symbol	Value	Unit	
Rated heat output (*)	Prated	12	kW	Seasonal space heating energy efficiency	η_{s}	122	%	
Declared capacity for heating foutdoor temperature T j	or part load at in	door temperatu	re 20 °C and	Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature				
T j = - 7 °C	Pdh	na	kW	T j = - 7 °C	COPd	na] -	
T j = + 2 °C	Pdh	10,9	kW	T j = +2 °C	COPd	2,81] -	
T j = + 7 °C	Pdh	11,3	kW	T j = +7 °C	COPd	3,14] -	
T j = + 12 °C	Pdh	11,7	kW	T j = +12 °C	COPd	3,72	-	
T j = bivalent temperature	Pdh	11,0	kW	T j = bivalent temperature	COPd	2,90	-	
T j = operation limit temperature	Pdh	10,9	kW	T j = operation limit temperature	COPd	2,81	-	
For air-to-water heat pumps: T j = - 15 °C (if TOL < - 20 °C)	Pdh	na	kW	For air-to-water heat pumps: T j = - 15 °C (if TOL < - 20 °C)	COPd	na	-	
Bivalent temperature	T _{biv}	3	°C	For air-to-water heat pumps: Operation limit temperature	TOL	na	°C	
Cycling interval capacity for heating	P _{cych}	na	kW	Cycling interval efficiency	СОРсус	na	-	
Degradation co-efficient (**)	Cdh	0,99	-	Heating water operating limit temperature	WTOL	65	°C	
Power consumption in modes of	ther than active	mode		Supplementary heater				
Off mode	P OFF	0,018	kW	Rated heat output (*)	Psup	1,3	kW	
Thermostat-off mode	P _{TO}	0,034	kW					
Standby mode	P_{SB}	0,018	kW	Type of energy input		Electric		
Crankcase heater mode	P _{CK}	0,000	kW					
Other items	<u> </u>							
Capacity control		Fixed		For air-to-water heat pumps: Rated air flow rate, outdoors	-	na	m3/h	
Sound power level, indoors/ outdoors	L _{WA}	50/na	dB	For water-/brine-to-water heat pumps: Rated brine or water				
Annual energy consumption	Q _{HE}	4905	kWh	flow rate, outdoor heat exchanger	-	2,1	m3/h	
For heat pump combination he	ater:							
Declared load profile		L		Water heating energy efficiency	$\eta_{\sf wh}$	86	%	
Daily electricity consumption	Qelec	5,434	kWh	Daily fuel consumption	Qfuel	na	kWh	
Annual electricity	AEC	1195	kWh	Annual fuel consumption	AFC	na	GJ	

^(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj). (**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.

No

Warm climate and Low temperature

Model(s):

Air-to-water heat pump:

Water-to-water heat pump:

Enertech AB, 341 26 Ljungby

water-to-water neat pump.		INU		Controller class.	VII	-	
Brine-to-water heat pump:		Yes		Controller contribution:	3,5	%	
Low-temperature heat pump:		No		Package efficiency:	154	%	
Equipped with a supplementar	y heater:	Yes		Package efficiency class:		-	
Heat pump combination heate	r:	Yes					
				r low-temperature heat pumps. For	low- tempera	ature heat pu	mps,
parameters shall be declared for							
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated heat output (*)	Prated	13	kW	Seasonal space heating energy efficiency	η_{s}	150	%
Declared capacity for heating for outdoor temperature T j	or part load at in	door temperatu	ire 20 °C and	Declared coefficient of performation part load at indoor temperature	•		
T j = - 7 °C	Pdh	na	kW	T j = - 7 °C	COPd	na] -
T j = + 2 °C	Pdh	11,9	kW	T j = +2 °C	COPd	4,11] -
T j = + 7 °C	Pdh	12,0	kW	T j = +7 °C	COPd	4,30	
T j = + 12 °C	Pdh	12,1	kW	T j = +12 °C	COPd	4,54	
T j = bivalent temperature	Pdh	11,9	kW	T j = bivalent temperature	COPd	4,17	-
T j = operation limit temperature	Pdh	11,9	kW	T j = operation limit temperature	COPd	4,11	-
For air-to-water heat pumps: T j = -15 °C (if TOL < -20 °C)	Pdh	na	kW	For air-to-water heat pumps: T j = - 15 °C (if TOL < - 20 °C)	COPd	na	-
Bivalent temperature	T _{biv}	3	°C	For air-to-water heat pumps: Operation limit temperature	TOL	na	°C
Cycling interval capacity for heating	P cych	na	kW	Cycling interval efficiency	СОРсус	na	_
Degradation co-efficient (**)	Cdh	0,95	-	Heating water operating limit temperature	WTOL	65	°C
Power consumption in modes of	other than active	mode	7	Supplementary heater			-
Off mode	P _{OFF}	0,018	kW	Rated heat output (*)	Psup	0,9	kW
Thermostat-off mode	P _{TO}	0,110	kW				
Standby mode	P_{SB}	0,018	kW	Type of energy input		Electric	
Crankcase heater mode	P _{CK}	0,000	kW				
Other items			,				
Capacity control		Fixed		For air-to-water heat pumps: Rated air flow rate, outdoors	-	na	m3/h
Sound power level, indoors/ outdoors	L _{WA}	50/na	dB	For water-/brine-to-water heat pumps: Rated brine or water			
Annual energy consumption	Q _{HE}	4331	kWh	flow rate, outdoor heat exchanger	-	2,6	m3/h
For heat pump combination he	ater:						
Declared load profile		L		Water heating energy efficiency	$\eta_{\sf wh}$	86	%
Daily electricity consumption	Qelec	5,434	kWh	Daily fuel consumption	Qfuel	na	kWh
Annual electricity	AEC	1195	kWh	Annual fuel consumption	AFC	na	GJ

CTC EcoPart 412 + CTC EcoZenith 250

Energy efficiency class:

VII

Controller class:

www.ctc.se

consumption Contact details

^(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj). (**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.

No

ENERTECH

Average climate and High temperature

Model(s):

consumption Contact details

Air-to-water heat pump:

Water-to-water heat pump:

Enertech AB, 341 26 Ljungby

A++

VII

The state of the s								
Brine-to-water heat pump:		Yes		Controller contribution:	3,5	%		
Low-temperature heat pump:		No		Package efficiency:	127	%		
Equipped with a supplementary	y heater:	Yes		Package efficiency class:	A++	-		
Heat pump combination heater	r:	Yes						
			tion, except for	r low-temperature heat pumps. For	low- tempera	nture heat pu	mps,	
parameters shall be declared for	•	ure application.						
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit	
Rated heat output (*)	Prated	13	kW	Seasonal space heating energy efficiency	η_{s}	123	%	
Declared capacity for heating for outdoor temperature T j	or part load at in	door temperatu	ire 20 °C and	Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature				
T j = -7 °C	Pdh	11,1	kW	T j = - 7 °C	COPd	2,97] -	
T j = + 2 °C	Pdh	11,5	kW	T j = +2 °C	COPd	3,32] -	
T j = + 7 °C	Pdh	11,6	kW	T j = +7 °C	COPd	3,63	-	
T j = + 12 °C	Pdh	11,8	kW	T j = +12 °C	COPd	3,94	-	
T j = bivalent temperature	Pdh	11,2	kW	T j = bivalent temperature	COPd	3,02	-	
T j = operation limit temperature	Pdh	10,9	kW	T j = operation limit temperature	COPd	2,81	-	
For air-to-water heat pumps: T j = -15 °C (if TOL < -20 °C)	Pdh	na	kW	For air-to-water heat pumps: T j = - 15 °C (if TOL < - 20 °C)	COPd	na	-	
Bivalent temperature	T _{biv}	-6	°C	For air-to-water heat pumps: Operation limit temperature	TOL	na	°C	
Cycling interval capacity for heating	P _{cych}	na	kW	Cycling interval efficiency	СОРсус	na	-	
Degradation co-efficient (**)	Cdh	0,99	-	Heating water operating limit temperature	WTOL	65	°C	
Power consumption in modes of	other than active	mode	_	Supplementary heater			=	
Off mode	P OFF	0,018	kW	Rated heat output (*)	Psup	2,2	kW	
Thermostat-off mode	P _{TO}	0,034	kW					
Standby mode	P_{SB}	0,018	kW	Type of energy input		Electric		
Crankcase heater mode	P _{CK}	0,000	kW					
Other items		<u>.</u>						
Capacity control		Fixed		For air-to-water heat pumps: Rated air flow rate, outdoors	-	na	m3/h	
Sound power level, indoors/ outdoors	L _{WA}	50/na	dB	For water-/brine-to-water heat pumps: Rated brine or water				
Annual energy consumption	Q _{HE}	8476	kWh	flow rate, outdoor heat exchanger	-	2,1	m3/h	
For heat pump combination he	ater:							
Declared load profile		L		Water heating energy efficiency	η_{wh}	86	%	
Daily electricity consumption	Qelec	5,434	kWh	Daily fuel consumption	Qfuel	na	kWh	
Annual electricity consumption	AEC	1195	kWh	Annual fuel consumption	AFC	na	G1	

CTC EcoPart 412 + CTC EcoZenith 250

Energy efficiency class:

Controller class:

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^(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj). (**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.

No

CTC EcoPart 412 + CTC EcoZenith 250

Energy efficiency class:

Controller class:

Average climate and Low temperature

Model(s):

Air-to-water heat pump:

Water-to-water heat pump:

Enertech AB, 341 26 Ljungby

A++

VII

Brine-to-water heat pump:		Yes		Controller contribution:	3,5	%	
Low-temperature heat pump:		No		Package efficiency:	159	%	
Equipped with a supplementary	y heater:	Yes		Package efficiency class:	A+++	-	
Heat pump combination heater	r:	Yes					
			tion, except for	r low-temperature heat pumps. For	low- tempera	ture heat pu	mps,
parameters shall be declared fo		re application.					
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated heat output (*)	Prated	14	kW	Seasonal space heating energy efficiency	$\eta_{\mathcal{S}}$	155	%
Declared capacity for heating for outdoor temperature T j	or part load at in	door temperatu	re 20 °C and	Declared coefficient of performation part load at indoor temperature			
T j = - 7 °C	Pdh	11,9	kW	T j = - 7 °C	COPd	4,19] -
T j = + 2 °C	Pdh	12,0	kW	T j = +2 °C	COPd	4,36	-
T j = + 7 °C	Pdh	12,1	kW	T j = +7 °C	COPd	4,50	-
T j = + 12 °C	Pdh	12,2	kW	T j = +12 °C	COPd	4,64	_
T j = bivalent temperature	Pdh	11,9	kW	T j = bivalent temperature	COPd	4,21	-
T j = operation limit temperature	Pdh	11,9	kW	T j = operation limit temperature	COPd	4,11	_
For air-to-water heat pumps: T j = - 15 °C (if TOL < - 20 °C)	Pdh	na	kW	For air-to-water heat pumps: T j = - 15 °C (if TOL < - 20 °C)	COPd	na	-
Bivalent temperature	T _{biv}	-6	°C	For air-to-water heat pumps: Operation limit temperature	TOL	na	°c
Cycling interval capacity for heating	P _{cych}	na	kW	Cycling interval efficiency	СОРсус	na	-
Degradation co-efficient (**)	Cdh	0,95	-	Heating water operating limit temperature	WTOL	65	°C
Power consumption in modes o	other than active	mode	_	Supplementary heater			_
Off mode	P OFF	0,018	kW	Rated heat output (*)	Psup	2,2	kW
Thermostat-off mode	P _{TO}	0,110	kW				
Standby mode	P_{SB}	0,018	kW	Type of energy input		Electric	
Crankcase heater mode	P _{CK}	0,000	kW				
Other items		•	•		•		
Capacity control		Fixed		For air-to-water heat pumps: Rated air flow rate, outdoors	-	na	m3/l
Sound power level, indoors/ outdoors	L _{WA}	50/na	dB	For water-/brine-to-water heat pumps: Rated brine or water			
Annual energy consumption	Q _{HE}	7153	kWh	flow rate, outdoor heat exchanger	-	2,6	m3/l
For heat pump combination he	ater:			<u> </u>			
Declared load profile		L		Water heating energy efficiency	$\eta_{\sf wh}$	86	%
Daily electricity consumption	Qelec	5,434	kWh	Daily fuel consumption	Qfuel	na	kWł
Annual electricity	AEC	1195	kWh	Annual fuel consumption	AFC	na	GJ

^(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj). (**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.

No

CTC EcoPart 412 + CTC EcoZenith 250

Energy efficiency class:

Controller class:

Cold climate and High temperature

Model(s):

Air-to-water heat pump:

Water-to-water heat pump:

Enertech AB, 341 26 Ljungby

VII

water-to-water neat pump.		NU		CONTRONET Class.	VII		
Brine-to-water heat pump:		Yes		Controller contribution:	3,5	%	
Low-temperature heat pump:		No		Package efficiency:	129	%	
Equipped with a supplementar	y heater:	Yes		Package efficiency class:		-	
Heat pump combination heater	r:	Yes					
				r low-temperature heat pumps. For	low- tempera	ture heat pu	mps,
parameters shall be declared for	-	re application.					
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated heat output (*)	Prated	13	kW	Seasonal space heating energy efficiency	η_{s}	125	%
Declared capacity for heating for outdoor temperature T j	or part load at in	door temperatu	ire 20 °C and	Declared coefficient of performation part load at indoor temperature			
T j = - 7 °C	Pdh	11,4	kW	T j = - 7 °C	COPd	3,24] -
T j = + 2 °C	Pdh	11,6	kW	T j = +2 °C	COPd	3,56	-
T j = + 7 °C	Pdh	11,8	kW	T j = +7 °C	COPd	3,85	
T j = + 12 °C	Pdh	11,9	kW	T j = +12 °C	COPd	4,06	
T j = bivalent temperature	Pdh	11,1	kW	T j = bivalent temperature	COPd	3,00	-
T j = operation limit temperature	Pdh	10,9	kW	T j = operation limit temperature	COPd	2,81	-
For air-to-water heat pumps: T j = -15 °C (if TOL < -20 °C)	Pdh	na	kW	For air-to-water heat pumps: T j = - 15 °C (if TOL < - 20 °C)	COPd	na	-
Bivalent temperature	T _{biv}	-17	°C	For air-to-water heat pumps: Operation limit temperature	TOL	na	°c
Cycling interval capacity for heating	P _{cych}	na	kW	Cycling interval efficiency	СОРсус	na	_
Degradation co-efficient (**)	Cdh	0,98	-	Heating water operating limit temperature	WTOL	65	°c
Power consumption in modes of	other than active	mode		Supplementary heater			
Off mode	P OFF	0,018	kW	Rated heat output (*)	Psup	1,9	kW
Thermostat-off mode	P _{TO}	0,034	kW				
Standby mode	P_{SB}	0,018	kW	Type of energy input		Electric	
Crankcase heater mode	P _{CK}	0,000	kW				
Other items			•				
Capacity control		Fixed		For air-to-water heat pumps: Rated air flow rate, outdoors	-	na	m3/
Sound power level, indoors/ outdoors	L WA	50/na	dB	For water-/brine-to-water heat pumps: Rated brine or water			
Annual energy consumption	Q _{HE}	9526	kWh	flow rate, outdoor heat exchanger	-	2,1	m3/
For heat pump combination he	ater:						
Declared load profile		L		Water heating energy efficiency	$\eta_{\sf wh}$	86	%
Daily electricity consumption	Qelec	5,434	kWh	Daily fuel consumption	Qfuel	na	kWl
Annual electricity	AEC	1195	kWh	Annual fuel consumption	AFC	na	GJ

^(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj). (**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.

No

CTC EcoPart 412 + CTC EcoZenith 250

Energy efficiency class:

Controller class:

Model(s):

Air-to-water heat pump:

Water-to-water heat pump:

Enertech AB, 341 26 Ljungby

VII

water-to-water neat pump.		NU		Controller class.	VII		
Brine-to-water heat pump:		Yes		Controller contribution:	3,5	%	
Low-temperature heat pump:		No		Package efficiency:	160	%	
Equipped with a supplementar	y heater:	Yes		Package efficiency class:		-	
Heat pump combination heate	r:	Yes					
			ion, except for	r low-temperature heat pumps. For	ow- tempera	ture heat pu	mps,
parameters shall be declared for							
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated heat output (*)	Prated	13	kW	Seasonal space heating energy efficiency	η_s	156	%
Declared capacity for heating for outdoor temperature T j	or part load at ind	door temperatu	re 20 °C and	Declared coefficient of performa part load at indoor temperature			
T j = - 7 °C	Pdh	12,0	kW	T j = - 7 °C	COPd	4,37] -
T j = + 2 °C	Pdh	12,1	kW	T j = +2 °C	COPd	4,50	-
T j = + 7 °C	Pdh	12,1	kW	T j = +7 °C	COPd	4,60	-
T j = + 12 °C	Pdh	12,2	kW	T j = +12 °C	COPd	4,62] -
T j = bivalent temperature	Pdh	11,9	kW	T j = bivalent temperature	COPd	4,21	-
T j = operation limit temperature	Pdh	11,9	kW	T j = operation limit temperature	COPd	4,11	-
For air-to-water heat pumps: T j = -15 °C (if TOL < -20 °C)	Pdh	na	kW	For air-to-water heat pumps: T j = - 15 °C (if TOL < - 20 °C)	COPd	na	_
Bivalent temperature	T _{biv}	-18	°C	For air-to-water heat pumps: Operation limit temperature	TOL	na	°C
Cycling interval capacity for heating	P cych	na	kW	Cycling interval efficiency	СОРсус	na	_
Degradation co-efficient (**)	Cdh	0,95	_	Heating water operating limit temperature	WTOL	65	°C
Power consumption in modes of	other than active	mode		Supplementary heater			
Off mode	P OFF	0,018	kW	Rated heat output (*)	Psup	1,5	kW
Thermostat-off mode	P _{TO}	0,110	kW			,	
Standby mode	P_{SB}	0,018	kW	Type of energy input		Electric	
Crankcase heater mode	P _{CK}	0,000	kW				
Other items					ļ		
Capacity control		Fixed		For air-to-water heat pumps: Rated air flow rate, outdoors	-	na	m3/h
Sound power level, indoors/ outdoors	L WA	50/na	dB	For water-/brine-to-water heat pumps: Rated brine or water			
Annual energy consumption	Q _{HE}	8028	kWh	flow rate, outdoor heat exchanger	<u>-</u>	2,6	m3/h
For heat pump combination he	ater:						
Declared load profile		L		Water heating energy efficiency	$\eta_{\sf wh}$	86	%
Daily electricity consumption	Qelec	5,434	kWh	Daily fuel consumption	Qfuel	na	kWh
Annual electricity consumption	AEC	1195	kWh	Annual fuel consumption	AFC	na	GJ
Contact details	Enertech AB, Box	309, SE-341 26	Ljungby Tel +4	46 372 88000 www.ctc.se			

^(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj). (**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.

No

CTC EcoPart 412 + CTC EcoZenith 550

Energy efficiency class:

Controller class:

Warm climate and High temperature

Model(s):

Air-to-water heat pump:

Water-to-water heat pump:

Enertech AB, 341 26 Ljungby

VII

	Yes		Controller contribution:	3,5	%	
	No		Package efficiency:	126	%	
heater:	Yes				-	
	Yes		,			
		tion, except for	low-temperature heat pumps. For	low- tempera	ture heat pu	mps,
r low-temperatu	re application.					
Symbol	Value	Unit	Item	Symbol	Value	Unit
Prated	12	kW	Seasonal space heating energy efficiency	η_s	122	%
or part load at ind	door temperatu	ire 20 °C and				
Pdh	na	kW	T j = - 7 °C	COPd	na] -
Pdh	10,9	kW	T j = +2 °C	COPd	2,81] -
Pdh	11,3	kW	T j = +7 °C	COPd	3,14] -
Pdh	11,7	kW	T j = +12 °C	COPd	3,72] -
Pdh	11,0	kW	T j = bivalent temperature	COPd	2,90	-
Pdh	10,9	kW	T j = operation limit temperature	COPd	2,81	_
Pdh	na	kW	For air-to-water heat pumps: T j = - 15 °C (if TOL < - 20 °C)	COPd	na	_
T _{biv}	3	°C	For air-to-water heat pumps: Operation limit temperature	TOL	na	°C
P _{cych}	na	kW	Cycling interval efficiency	СОРсус	na	_
Cdh	0,99	-	Heating water operating limit temperature	WTOL	65	°C
ther than active	mode	_	Supplementary heater			_
P _{OFF}	0,018	kW	Rated heat output (*)	Psup	0,9	kW
P _{TO}	0,025	kW				-
P_{SB}	0,018	kW	Type of energy input		Electric	
		kW				
	<u>, </u>					
	Fixed		For air-to-water heat pumps: Rated air flow rate, outdoors	-	na	m3/h
L _{WA}	50/na	dB	For water-/brine-to-water heat pumps: Rated brine or water			
Q _{HE}	4879	kWh	· ·	-	2,1	m3/h
ater:						
	XL		Water heating energy efficiency	$\eta_{\scriptscriptstyle \sf wh}$	100	%
Qelec	7,620	kWh	Daily fuel consumption	Qfuel	NA	kWh
		_				
	Symbol Prated or part load at incomplete properties of part load at incomplete part lo	No heater: Yes response redium-temperature application. Symbol Value Prated 12 or part load at indoor temperature Pdh	No r heater: Yes Yes r medium-temperature application, except for or low-temperature application. Symbol Value Unit Prated 12 kW Prated 10,9 Pdh 10,9 Pdh 11,3 Pdh 11,7 Pdh 11,0 Pdh 11,0 Pdh 10,9 Pdh 11,3 Pdh 10,9 Pdh 11,3 Pdh 10,9 Pdh 11,3 Pdh 11,0 Pd	No Package efficiency: // heater: Yes Package efficiency class: // redum-temperature application, except for low-temperature heat pumps. For ir low-temperature application. Symbol Value Unit Prated 12 kW Seasonal space heating energy efficiency	No Package efficiency: 126 / heater: Yes Package efficiency class: Test Package efficiency class: Tendium-temperature application. Symbol Value Unit Proted 12 kW Proted 12 kW Pach 12 kW Pach 10,9 kW Pach 11,3 kW Pach 11,7 kW Pach 11,0 kW Pach 11,0 kW Pach 10,9 kW Pach 20,0 kW Pach 10,9 kW Pach 20,0 kW Pach 20	No Package efficiency: 126 % rheater: Yes Package efficiency class: redium-temperature application, except for low-temperature heat pumps. For low-temperature heat pumps row-temperature application. Symbol Value Unit Item Symbol Value Prated 12 kW or part load at indoor temperature 20 °C and Padh 10.9 kW Padh 10.9 kW Padh 11.,7 kW Padh 11.,7 kW Padh 11.,0 kW Padh 11.,0 kW Padh 10.99 kW T j = +12 °C COPd 2.81 T j = 5°C (if TOL < 20 °C) T j = bivalent temperature Part load at indoor temperature COPd 2.81 T j = -15 °C (if TOL < 20 °C) T j = bivalent temperature Padh 10.99 cych na kW Cadh 0.999 challed kW Para 0.018 kW Para 0.0018 kW Para 0.0000 kW Fixed For air-to-water heat pumps: Rated heat output (*) Psup 0.99 Type of energy input Electric For air-to-water heat pumps: Rated air flow rate, outdoors heat pumps: Rated brine or water flow rate, outdoor heat pumps: Rated brine or water flow rate, outdoor heat exchanger XL Water heating energy Flown 100

^(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj). (**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.

Warm climate and Low temperature

Model(s):

Air-to-water heat pump:

Enertech AB, 341 26 Ljungby

				,			
Water-to-water heat pump:		No		Controller class:	VII	-	
Brine-to-water heat pump:		Yes		Controller contribution:	3,5	%	
Low-temperature heat pump:		No		Package efficiency:	158	%	
Equipped with a supplementar	v heater:	Yes		Package efficiency class:		_	
Heat pump combination heate		Yes		the same of the sa			
			ion, except fo	r low-temperature heat pumps. For	low- tempera	ature heat pu	mps,
parameters shall be declared for							
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated heat output (*)	Prated	13	kW	Seasonal space heating energy efficiency	η _s	154	%
Declared capacity for heating for outdoor temperature T j	or part load at in	door temperatu	re 20 °C and	Declared coefficient of performa part load at indoor temperature			
T j = - 7 °C	Pdh	na	kW	T j = - 7 °C	COPd	na	-
T j = + 2 °C	Pdh 	11,9	kW	T j = +2 °C	COPd	4,11	↓ ·
T j = + 7 °C	Pdh 	12,0	kW	T j = +7 °C	COPd	4,30	- ∤
T j = + 12 °C	Pdh	12,1	kW	T j = +12 °C	COPd	4,54	↓ -
T j = bivalent temperature	Pdh	11,9	kW	T j = bivalent temperature	COPd	4,17	-
T j = operation limit temperature	Pdh	11,9	kW	T j = operation limit temperature	COPd	4,11	-
For air-to-water heat pumps: T j = -15 °C (if TOL < -20 °C)	Pdh	na	kW	For air-to-water heat pumps: T j = - 15 °C (if TOL < - 20 °C)	COPd	na	-
Bivalent temperature	T _{biv}	3	°C	For air-to-water heat pumps: Operation limit temperature	TOL	na	°C
Cycling interval capacity for heating	P cych	na	kW	Cycling interval efficiency	СОРсус	na	-
Degradation co-efficient (**)	Cdh	0,97	-	Heating water operating limit temperature	WTOL	65	°C
Power consumption in modes of	other than active	mode	-	Supplementary heater			_
Off mode	P OFF	0,018	kW	Rated heat output (*)	Psup	0,9	kW
Thermostat-off mode	P _{TO}	0,073	kW				
Standby mode	P_{SB}	0,018	kW	Type of energy input		Electric	
Crankcase heater mode	P _{CK}	0,000	kW				
Other items		,	!	1			
Capacity control		Fixed		For air-to-water heat pumps: Rated air flow rate, outdoors	-	na	m3/h
Sound power level, indoors/ outdoors	L WA	50/na	dB	For water-/brine-to-water heat pumps: Rated brine or water			
Annual energy consumption	Q _{HE}	4228	kWh	flow rate, outdoor heat exchanger	-	2,6	m3/h
For heat pump combination he	ater:						
Declared load profile		XL		Water heating energy efficiency	η_{wh}	100	%
Daily electricity consumption	Qelec	7,620	kWh	Daily fuel consumption	Qfuel	NA	kWh
Annual electricity	AEC	1676	kWh	Annual fuel consumption	AFC	NA	GJ

CTC EcoPart 412 + CTC EcoZenith 550

Energy efficiency class:

consumption Contact details

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^(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj). (**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.

No

Average climate and High temperature

Model(s):

Air-to-water heat pump:

Water-to-water heat pump:

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A+

VII

Brine-to-water heat pump:		Yes		Controller contribution:	3,5	%	
Low-temperature heat pump:		No		Package efficiency:	127	%	
Equipped with a supplementary	heater:	Yes		Package efficiency class:	A++	-	
Heat pump combination heater		Yes					
Parameters shall be declared fo parameters shall be declared fo			tion, except fo	r low-temperature heat pumps. For	low- tempera	ture heat pu	mps,
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated heat output (*)	Prated	13	kW	Seasonal space heating energy efficiency	η _s	123	%
Declared capacity for heating foo outdoor temperature T j	or part load at in	door temperatu	ire 20 °C and	Declared coefficient of perform part load at indoor temperature			
T j = - 7 °C	Pdh	11,1	kW	T j = - 7 °C	COPd	2,97] -
T j = + 2 °C	Pdh	11,5	kW	T j = +2 °C	COPd	3,32] -
T j = + 7 °C	Pdh	11,6	kW	T j = +7 °C	COPd	3,63	
T j = + 12 °C	Pdh	11,8	kW	T j = +12 °C	COPd	3,94	-
T j = bivalent temperature	Pdh	11,2	kW	T j = bivalent temperature	COPd	3,02	-
T j = operation limit temperature	Pdh	10,9	kW	T j = operation limit temperature	COPd	2,81	_
For air-to-water heat pumps: T j = -15 °C (if TOL < -20 °C)	Pdh	na	kW	For air-to-water heat pumps: T j = - 15 °C (if TOL < - 20 °C)	COPd	na	-
Bivalent temperature	T _{biv}	-6	°C	For air-to-water heat pumps: Operation limit temperature	TOL	na	°C
Cycling interval capacity for heating	P cych	na	kW	Cycling interval efficiency	СОРсус	na	_
Degradation co-efficient (**)	Cdh	0,99	-	Heating water operating limit temperature	WTOL	65	°C
Power consumption in modes o	ther than active	mode	7	Supplementary heater			7
Off mode	P _{OFF}	0,018	kW	Rated heat output (*)	Psup	2,3	kW
Thermostat-off mode	P _{TO}	0,025	kW				
Standby mode	P_{SB}	0,018	kW	Type of energy input		Electric	
Crankcase heater mode	P _{CK}	0,000	kW				
Other items							
Capacity control		Fixed		For air-to-water heat pumps: Rated air flow rate, outdoors	-	na	m3/h
Sound power level, indoors/ outdoors	L _{WA}	50/na	dB	For water-/brine-to-water heat pumps: Rated brine or water			
Annual energy consumption	Q _{HE}	7388	kWh	flow rate, outdoor heat exchanger	-	2,1	m3/h
For heat pump combination hea	ater:						
Declared load profile		XL		Water heating energy efficiency	$\eta_{\sf wh}$	100	%
Daily electricity consumption	Qelec	7,620	kWh	Daily fuel consumption	Q fuel	NA	kWh
Annual electricity	AEC	1676	kWh	Annual fuel consumption	AFC	NA	GJ

CTC EcoPart 412 + CTC EcoZenith 550

Energy efficiency class:

Controller class:

consumption Contact details **1676**

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AFC

GJ

^(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj). (**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.

No

CTC EcoPart 412 + CTC EcoZenith 550

Energy efficiency class:

Controller class:

Average climate and Low temperature

Model(s):

Air-to-water heat pump:

Water-to-water heat pump:

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A++

VII

		NU		COTILIONET Class.	VII		
Brine-to-water heat pump:		Yes		Controller contribution:	3,5	%	
Low-temperature heat pump:		No		Package efficiency:	162	%	
Equipped with a supplementary	y heater:	Yes		Package efficiency class:	A+++	-	
Heat pump combination heater	r:	Yes					
			tion, except for	r low-temperature heat pumps. For	low- tempera	ture heat pu	mps,
parameters shall be declared for		re application.					
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated heat output (*)	Prated	13	kW	Seasonal space heating energy efficiency	η_{s}	158	%
Declared capacity for heating for outdoor temperature T j	or part load at in	door temperatu	ire 20 °C and	Declared coefficient of performation part load at indoor temperature	•		
T j = - 7 °C	Pdh	11,9	kW	T j = - 7 °C	COPd	4,19] -
T j = + 2 °C	Pdh	12,0	kW	T j = +2 °C	COPd	4,34] -
T j = + 7 °C	Pdh	12,1	kW	T j = +7 °C	COPd	4,49	
T j = + 12 °C	Pdh	12,2	kW	T j = +12 °C	COPd	4,64	
T j = bivalent temperature	Pdh	11,9	kW	T j = bivalent temperature	COPd	4,19	-
T j = operation limit temperature	Pdh	11,9	kW	T j = operation limit temperature	COPd	4,11	-
For air-to-water heat pumps: T j = -15 °C (if TOL < -20 °C)	Pdh	na	kW	For air-to-water heat pumps: T j = - 15 °C (if TOL < - 20 °C)	COPd	na	_
Bivalent temperature	T _{biv}	-7	°C	For air-to-water heat pumps: Operation limit temperature	TOL	na	°C
Cycling interval capacity for heating	P _{cych}	na	kW	Cycling interval efficiency	СОРсус	na	_
Degradation co-efficient (**)	Cdh	0,97	-	Heating water operating limit temperature	WTOL	65	°C
Power consumption in modes o	other than active	mode	•	Supplementary heater			
Off mode	P OFF	0,002	kW	Rated heat output (*)	Psup	1,6	kW
Thermostat-off mode	P _{TO}	0,073	kW				
Standby mode	P_{SB}	0,018	kW	Type of energy input		Electric	
Crankcase heater mode	P _{CK}	0,000	kW				
Other items		,	ļ		!		
Capacity control		Fixed		For air-to-water heat pumps: Rated air flow rate, outdoors	-	na	m3/l
Sound power level, indoors/ outdoors	L _{WA}	50/na	dB	For water-/brine-to-water heat pumps: Rated brine or water			
Annual energy consumption	Q _{HE}	6728	kWh	flow rate, outdoor heat exchanger	-	2,6	m3/l
For heat pump combination he	ater:			<u>-</u>			
Declared load profile		XL		Water heating energy efficiency	$\eta_{\sf wh}$	100	%
Daily electricity consumption	Qelec	7,620	kWh	Daily fuel consumption	Qfuel	NA	kWł
Annual electricity	AEC	1676	kWh	Annual fuel consumption	AFC	NA	GJ

^(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj). (**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.

No

CTC EcoPart 412 + CTC EcoZenith 550

Energy efficiency class:

VII

Controller class:

Model(s):

Air-to-water heat pump:

Water-to-water heat pump:

Brine-to-water heat pump:		Yes		Controller contribution:	3,5	%	
Low-temperature heat pump:		No		Package efficiency:	129	%	
Equipped with a supplementary	heater:	Yes		Package efficiency class:		-	
Heat pump combination heater	:	Yes					
			ion, except fo	r low-temperature heat pumps. Fo	or low- tempera	ture heat pu	mps,
parameters shall be declared for	r low-temperatu	ire application.					
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated heat output (*)	Prated	12	kW	Seasonal space heating energy efficiency	η _s	125	%
Declared capacity for heating for outdoor temperature T j	or part load at ind	door temperatu	re 20 °C and	Declared coefficient of perform part load at indoor temperatu			
T j = -7 °C	Pdh	11,4	kW	T j = - 7 °C	COPd	3,23] -
T j = + 2 °C	Pdh	11,6	kW	T j = +2 °C	COPd	3,55	-
T j = + 7 °C	Pdh	11,7	kW	T j = +7 °C	COPd	3,84	-
T j = + 12 °C	Pdh	11,9	kW	T j = +12 °C	COPd	4,05	-
T j = bivalent temperature	Pdh	11,1	kW	T j = bivalent temperature	COPd	2,96	-
T j = operation limit temperature	Pdh	10,9	kW	T j = operation limit temperature	COPd	2,81	-
For air-to-water heat pumps: T j = -15 °C (if TOL < -20 °C)	Pdh	na	kW	For air-to-water heat pumps: T j = -15 °C (if TOL < -20 °C)	COPd	na	-
Bivalent temperature	T _{biv}	-18	°C	For air-to-water heat pumps: Operation limit temperature	TOL	na	°C
Cycling interval capacity for heating	P _{cych}	na	kW	Cycling interval efficiency	СОРсус	na	-
Degradation co-efficient (**)	Cdh	0,99	-	Heating water operating limit temperature	WTOL	65	°C
Power consumption in modes of	ther than active	mode		Supplementary heater			
Off mode	P OFF	0,018	kW	Rated heat output (*)	Psup	1,5	kW
Thermostat-off mode	P _{TO}	0,025	kW				-
Standby mode	P_{SB}	0,018	kW	Type of energy input		Electric	
Crankcase heater mode	P _{CK}	0,000	kW				
Other items		•		1			
Capacity control		Fixed		For air-to-water heat pumps: Rated air flow rate, outdoors	-	na	m3/h
Sound power level, indoors/ outdoors	L _{WA}	50/na	dB	For water-/brine-to-water hea pumps: Rated brine or water	t		
Annual energy consumption	Q _{HE}	9177	kWh	flow rate, outdoor heat exchanger	-	2,1	m3/h
For heat pump combination he	ater:			<u> </u>		<u> </u>	
Declared load profile		XL		Water heating energy efficiency	$\eta_{\sf wh}$	100	%
Daily electricity consumption	Qelec	7,620	kWh	Daily fuel consumption	Qfuel	NA	kWh
Annual electricity consumption	AEC	1676	kWh	Annual fuel consumption	AFC	NA	G۱
Contact details	nertech AB, Box	309, SE-341 26	Ljungby Tel +4	46 372 88000 www.ctc.se			

^(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj). (**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.

Air-to-water heat pump: Water-to-water heat pump: No Brine-to-water heat pump: Yes	Energy efficiency class: Controller class:	VII	-	
<u> </u>		VII	-	
Brine-to-water heat pump: Yes	Cantas II an acastaile ati an			
	Controller contribution:	3,5	%	
Low-temperature heat pump: No	Package efficiency:	163	%	
Equipped with a supplementary heater: Yes	Package efficiency class:		-	
Heat pump combination heater: Yes				

Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated heat output (*)	Prated	13	kW	Seasonal space heating energy efficiency	η_{s}	159	%
Declared capacity for heating foutdoor temperature T j	for part load at ind	door temperatui	re 20 °C and	Declared coefficient of performal part load at indoor temperature 2			
T j = -7 °C	Pdh	12,0	kW	T j = - 7 °C	COPd	4,37] -
T j = + 2 °C	Pdh	12,1	kW	T j = +2 °C	COPd	4,50	-
T j = + 7 °C	Pdh	12,1	kW	T j = +7 °C	COPd	4,60	-
T j = + 12 °C	Pdh	12,2	kW	T j = +12 °C	COPd	4,62	_
T j = bivalent temperature	Pdh	11,9	kW	T j = bivalent temperature	COPd	4,21	-
T j = operation limit temperature	Pdh	11,9	kW	T j = operation limit temperature	COPd	4,11	-
For air-to-water heat pumps: T j = -15 °C (if TOL < -20 °C)	Pdh	na	kW	For air-to-water heat pumps: T j = -15 °C (if TOL < -20 °C)	COPd	na	-
Bivalent temperature	T _{biv}	-18	°C	For air-to-water heat pumps: Operation limit temperature	TOL	na	°C
Cycling interval capacity for heating	P cych	na	kW	Cycling interval efficiency	СОРсус	na	-
Degradation co-efficient (**)	Cdh	0,97	-	Heating water operating limit temperature	WTOL	65	°C
Power consumption in modes	other than active	mode	_	Supplementary heater			
Off mode	P OFF	0,018	kW	Rated heat output (*)	Psup	1,5	kW
Thermostat-off mode	P _{TO}	0,073	kW				
Standby mode	P _{SB}	0,018	kW	Type of energy input		Electric	
Crankcase heater mode	P _{CK}	0,000	kW				
Other items		,	ļ.				
Capacity control		Fixed		For air-to-water heat pumps: Rated air flow rate, outdoors	-	na	m3/h
Sound power level, indoors/ outdoors	L _{WA}	50/na	dB	For water-/brine-to-water heat pumps: Rated brine or water			
Annual energy consumption	Q _{HE}	7875	kWh	flow rate, outdoor heat exchanger	-	2,6	m3/h
For heat pump combination he	eater:						
Declared load profile		XL		Water heating energy efficiency	η_{wh}	100	%
Daily electricity consumption	Qelec	7,620	kWh	Daily fuel consumption	Qfuel	NA	kWh
Annual electricity consumption	AEC	1676	kWh	Annual fuel consumption	AFC	NA	GJ
Contact details	Enertech AB, Box	309, SE-341 26	Ljungby Tel +4	16 372 88000 www.ctc.se			

^(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj). (**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.

No

Yes

CTC EcoPart 412 + CTC Eco Basic

Energy efficiency class:

Controller contribution:

1

Controller class:

Warm climate and High temperature

Model(s):

Air-to-water heat pump:

Water-to-water heat pump:

Brine-to-water heat pump:

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%

Billie-to-water fleat pullip.		163		Controller Contribution.	-	/0	
Low-temperature heat pump:		No		Package efficiency:	106	%	
Equipped with a supplementar	y heater:	No		Package efficiency class:		-	
Heat pump combination heate		No					
		erature applica	tion, except fo	r low-temperature heat pumps. For	ow- tempera	ature heat pu	mps,
parameters shall be declared for	or low-temperati	ure application.					
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated heat output (*)	Prated	12	kW	Seasonal space heating energy efficiency	η_{s}	105	%
Declared capacity for heating foutdoor temperature T j	or part load at in	door temperatu	re 20 °C and	Declared coefficient of performa part load at indoor temperature	•		
T j = - 7 °C	Pdh	na	kW	T j = - 7 °C	COPd	na	-
T j = + 2 °C	Pdh	11,0	kW	T j = +2 °C	COPd	3,08	-
T j = + 7 °C	Pdh	10,9	kW	T j = +7 °C	COPd	2,94	-
T j = + 12 °C	Pdh	10,8	kW	T j = +12 °C	COPd	2,77	-
T j = bivalent temperature	Pdh	11	kW	T j = bivalent temperature	COPd	3,08	-
T j = operation limit temperature	Pdh	11	kW	T j = operation limit temperature	COPd	3,08	_
For air-to-water heat pumps: T j = -15 °C (if TOL < -20 °C)	Pdh	na	kW	For air-to-water heat pumps: T j = -15 °C (if TOL < -20 °C)	COPd	na	-
Bivalent temperature	T _{biv}	3	°C	For air-to-water heat pumps: Operation limit temperature	TOL	na	°C
Cycling interval capacity for heating	P cych	na	kW	Cycling interval efficiency	СОРсус	na	_
Degradation co-efficient (**)	Cdh	1	-	Heating water operating limit temperature	WTOL	65	°C
Power consumption in modes	other than active	mode	_	Supplementary heater			_
Off mode	P OFF	0,007	kW	Rated heat output (*)	Psup	0,8	kW
Thermostat-off mode	P _{TO}	0,005	kW				
Standby mode	P _{SB}	0,007	kW	Type of energy input		Electric	
Crankcase heater mode			kW	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			
	P _{CK}	0,000	KVV	+ -			
Other items Capacity control		Fixed		For air-to-water heat pumps: Rated air flow rate, outdoors	-	na	m3/h
Sound power level, indoors/ outdoors	L _{WA}	50/na	dB	For water-/brine-to-water heat pumps: Rated brine or water			
Annual energy consumption	Q _{HE}	5597	kWh	flow rate, outdoor heat exchanger	-	2,2	m3/h
For heat pump combination he	eater:						
Declared load profile		na		Water heating energy efficiency	$\eta_{\sf wh}$	na	%
Daily electricity consumption	Qelec	na	kWh	Daily fuel consumption	Qfuel	na	kWh
Annual electricity consumption	AEC	na	kWh	Annual fuel consumption	AFC	na	GJ
Contact details	Enertech AB, Box	309, SE-341 26	Ljungby Tel +	46 372 88000 www.ctc.se			

^(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj). (**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.

CTC EcoPart 412 + CTC Eco Basic

Energy efficiency class:

Warm climate and Low temperature

Model(s):

Air-to-water heat pump:

Annual electricity

consumption Contact details AEC

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				2110167 01110101107 010001			
Water-to-water heat pump:		No		Controller class:	1	-	
Brine-to-water heat pump:		Yes		Controller contribution:	1	%	
Low-temperature heat pump:		No		Package efficiency:	163	%	
Equipped with a supplementar	ry heater:	No		Package efficiency class:		-	
Heat pump combination heate	•	No		,			
		erature applicat	tion, except for	r low-temperature heat pumps. For	low- tempera	ture heat pu	mps,
parameters shall be declared f	or low-temperatu	re application.					
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated heat output (*)	Prated	13	kW	Seasonal space heating energy efficiency	η_s	162	%
Declared capacity for heating foutdoor temperature T j	for part load at in	door temperatu	re 20 °C and	Declared coefficient of performation part load at indoor temperature			
T j = -7 °C	Pdh	na	kW	T j = - 7 °C	COPd	na] -
T j = + 2 °C	Pdh	11,8	kW	T j = +2 °C	COPd	4,60] -
T j = + 7 °C	Pdh	11,7	kW	T j = +7 °C	COPd	4,46	↓ -
T j = + 12 °C	Pdh	11,6	kW	T j = +12 °C	COPd	4,28	
T j = bivalent temperature	Pdh	11,8	kW	T j = bivalent temperature	COPd	4,60	-
T j = operation limit temperature	Pdh	11,8	kW	T j = operation limit temperature	COPd	4,60	-
For air-to-water heat pumps: T j = -15 °C (if TOL < -20 °C)	Pdh	na	kW	For air-to-water heat pumps: T j = - 15 °C (if TOL < - 20 °C)	COPd	na	-
Bivalent temperature	T _{biv}	4,6	°C	For air-to-water heat pumps: Operation limit temperature	TOL	na	°C
Cycling interval capacity for heating	P cych	na	kW	Cycling interval efficiency	СОРсус	na	_
Degradation co-efficient (**)	Cdh	0,99	-	Heating water operating limit temperature	WTOL	65	°C
Power consumption in modes	other than active	mode	_	Supplementary heater			_
Off mode	P OFF	0,007	kW	Rated heat output (*)	Psup	0,9	kW
Thermostat-off mode	P _{TO}	0,022	kW				
Standby mode	P_{SB}	0,007	kW	Type of energy input		Electric	
Crankcase heater mode	P _{CK}	0,000	kW				
Other items	<u> </u>	3,000	1		1		
Capacity control		Fixed		For air-to-water heat pumps: Rated air flow rate, outdoors	-	na	m3/h
Sound power level, indoors/ outdoors	L _{WA}	50/na	dB	For water-/brine-to-water heat pumps: Rated brine or water			
Annual energy consumption	Q _{HE}	3984	kWh	flow rate, outdoor heat exchanger	-	2,6	m3/h
For heat pump combination he	eater:						
Declared load profile		na		Water heating energy efficiency	$\eta_{\sf wh}$	na	%
Daily electricity consumption	Qelec	na	kWh	Daily fuel consumption	Qfuel	na	kWh

Annual fuel consumption

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AFC

GJ

na

kWh

na

^(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj). (**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.

No

CTC EcoPart 412 + CTC Eco Basic

Energy efficiency class:

Controller class:

A+

Average climate and High temperature

Model(s):

Air-to-water heat pump:

Annual electricity

consumption Contact details AEC

Water-to-water heat pump:

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water-to-water neat pump.		NO		Controller class.			
Brine-to-water heat pump:		Yes		Controller contribution:	1	%	
Low-temperature heat pump:		No		Package efficiency:	107	%	
Equipped with a supplementar	ry heater:	No		Package efficiency class:	A+	-	
Heat pump combination heate	er:	No					
				r low-temperature heat pumps. For	· low- tempera	iture heat pu	mps,
parameters shall be declared f	-						
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated heat output (*)	Prated	13	kW	Seasonal space heating energy efficiency	η_{s}	106	%
Declared capacity for heating foutdoor temperature T j	or part load at in	door temperatu	ure 20 °C and	Declared coefficient of perform part load at indoor temperature			
T j = - 7 °C	Pdh	11,0	kW	T j = - 7 °C	COPd	3,08] -
T j = + 2 °C	Pdh	10,9	kW	T j = +2 °C	COPd	2,91] -
T j = + 7 °C	Pdh	10,8	kW	T j = +7 °C	COPd	2,81	-
T j = + 12 °C	Pdh	10,8	kW	T j = +12 °C	COPd	2,71	-
T j = bivalent temperature	Pdh	11,0	kW	T j = bivalent temperature	COPd	3,08	-
T j = operation limit temperature	Pdh	11,0	kW	T j = operation limit temperature	COPd	3,08	_
For air-to-water heat pumps: T j = -15 °C (if TOL < -20 °C)	Pdh	na	kW	For air-to-water heat pumps: T j = - 15 °C (if TOL < - 20 °C)	COPd	na	-
Bivalent temperature	T _{biv}	-6	°c	For air-to-water heat pumps: Operation limit temperature	TOL	na	°C
Cycling interval capacity for heating	P _{cych}	na	kW	Cycling interval efficiency	СОРсус	na	-
Degradation co-efficient (**)	Cdh	1	-	Heating water operating limit temperature	WTOL	65	°C
Power consumption in modes	other than active	mode	=	Supplementary heater			=
Off mode	P OFF	0,007	kW	Rated heat output (*)	Psup	2	kW
Thermostat-off mode	P _{TO}	0,005	kW				
Standby mode	P _{SB}	0,007	kW	Type of energy input		Electric	
Crankcase heater mode	P _{CK}	0,000	kW				
Other items		!					
Capacity control		Fixed		For air-to-water heat pumps: Rated air flow rate, outdoors	-	na	m3/h
Sound power level, indoors/ outdoors	L _{WA}	50/na	dB	For water-/brine-to-water heat pumps: Rated brine or water			
Annual energy consumption	Q _{HE}	9368	kWh	flow rate, outdoor heat exchanger	-	2,2	m3/h
For heat pump combination he	eater:						
Declared load profile		na		Water heating energy efficiency	η_{wh}	na	%
Daily electricity consumption	Qelec	na	kWh	Daily fuel consumption	Qfuel	na	kWh

Annual fuel consumption

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AFC

GJ

na

kWh

na

^(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj). (**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.

CTC EcoPart 412 + CTC Eco Basic

Energy efficiency class:

Average climate and Low temperature

Model(s):

Annual energy consumption

For heat pump combination heater:

Air-to-water heat pump:

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2,6

na

AFC

m3/h

kWh

GJ

A++

Water-to-water heat pump:		No		Controller class:	1	-	
Brine-to-water heat pump:		Yes		Controller contribution:	1	%	
Low-temperature heat pump:		No		Package efficiency:	165	%	
Equipped with a supplementary	heater:	No		Package efficiency class:	A+++	-	
Heat pump combination heater	:	No					
			ion, except fo	r low-temperature heat pumps. For	low- tempera	ature heat pu	mps,
parameters shall be declared fo	-						
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated heat output (*)	Prated	13	kW	Seasonal space heating energy efficiency	η_{s}	164	%
Declared capacity for heating fo outdoor temperature T j	or part load at ir	ndoor temperatu	re 20 °C and	Declared coefficient of performation part load at indoor temperature			
T j = -7 °C	Pdh	11,8	kW	T j = - 7 °C	COPd	4,60] -
T j = + 2 °C	Pdh	11,7	kW	T j = +2 °C	COPd	4,42] -
T j = + 7 °C	Pdh	11,6	kW	T j = +7 °C	COPd	4,32	
T j = + 12 °C	Pdh	11,5	kW	T j = +12 °C	COPd	4,22	
T j = bivalent temperature	Pdh	11,8	kW	T j = bivalent temperature	COPd	4,60	-
T j = operation limit temperature	Pdh	11,8	kW	T j = operation limit temperature	COPd	4,60	-
For air-to-water heat pumps: T j = -15 °C (if TOL < -20 °C)	Pdh	na	kW	For air-to-water heat pumps: T j = -15 °C (if TOL < -20 °C)	COPd	na	-
Bivalent temperature	T _{biv}	-7	°C	For air-to-water heat pumps: Operation limit temperature	TOL	na	°C
Cycling interval capacity for heating	P _{cych}	na	kW	Cycling interval efficiency	СОРсус	na	-
Degradation co-efficient (**)	Cdh	0,99	-	Heating water operating limit temperature	WTOL	65	°C
Power consumption in modes o	ther than active	mode	_	Supplementary heater			_
Off mode	P OFF	0,007	kW	Rated heat output (*)	Psup	1,5	kW
Thermostat-off mode	P _{TO}	0,022	kW				
Standby mode	P _{SB}	0,007	kW	Type of energy input		Electric	
Crankcase heater mode	P _{CK}	0,000	kW				
Other items		•			*		
Capacity control		Fixed		For air-to-water heat pumps: Rated air flow rate, outdoors	-	na	m3/h
Sound power level, indoors/ outdoors	L _{WA}	50/na	dB	For water-/brine-to-water heat pumps: Rated brine or water			

Water heating energy **Declared load profile** na η_{wh} na e<u>fficiency</u> Daily electricity consumption Qelec kWh Daily fuel consumption na \mathbf{Q}_{fuel} na Annual electricity

kWh

kWh

consumption Contact details Enertech AB, Box 309, SE-341 26 Ljungby Tel +46 372 88000 www.ctc.se

na

6373

 Q_{HE}

AEC

(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj). (**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.

flow rate, outdoor heat

Annual fuel consumption

exchanger

CTC EcoPart 412 + CTC Eco Basic

Energy efficiency class:

Cold climate and High temperature

Model(s):

Air-to-water heat pump:

Annual electricity

consumption Contact details

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na

GJ

AFC

All-to-water fleat pullip.		NU		Lifetgy efficiency class.			
Water-to-water heat pump:		No		Controller class:	1	-	
Brine-to-water heat pump:		Yes		Controller contribution:	1	%	
Low-temperature heat pump:		No		Package efficiency:	106	%	
Equipped with a supplementa	ry heater:	No		Package efficiency class:		_	
Heat pump combination heate	-	No		,			
			ion, except for	r low-temperature heat pumps. For	low- tempera	iture heat pu	mps,
parameters shall be declared t	for low-temperatu	re application.					
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated heat output (*)	Prated	12	kW	Seasonal space heating energy efficiency	η_{s}	105	%
Declared capacity for heating	for part load at in	door temperatu	re 20 °C and	Declared coefficient of performa	nce or nrima	ry energy rat	io for
outdoor temperature T j	ioi partioad at iii	door terriperatu	ire 20 Cana	part load at indoor temperature			
outuos temperature i j			-				- a ca. c
T j = -7 °C	Pdh	10,9	kW	T j = - 7 °C	COPd	2,93	-
T j = + 2 °C	Pdh	10,8	kW	T j = +2 °C	COPd	2,81	-
T j = + 7 °C	Pdh	10,8	kW	T j = +7 °C	COPd	2,75	-
T j = + 12 °C	Pdh	10,8	kW	T j = +12 °C	COPd	2,68	-
T j = bivalent temperature	Pdh	11,0	kW	T j = bivalent temperature	COPd	3,08	-
T j = operation limit temperature	Pdh	11,0	kW	T j = operation limit temperature	COPd	3,08	_
For air-to-water heat pumps: T j = -15 °C (if TOL < -20 °C)	Pdh	na	kW	For air-to-water heat pumps: T j = - 15 °C (if TOL < - 20 °C)	COPd	na	-
Bivalent temperature	T _{biv}	-18	°C	For air-to-water heat pumps: Operation limit temperature	TOL	na	°C
Cycling interval capacity for heating	P _{cych}	na	kW	Cycling interval efficiency	СОРсус	na	_
Degradation co-efficient (**)	Cdh	1	-	Heating water operating limit temperature	WTOL	65	°C
Power consumption in modes	other than active	mode	<u>_</u>	Supplementary heater			_
Off mode	P _{OFF}	0,007	kW	Rated heat output (*)	Psup	1,3	kW
Thermostat-off mode	P _{TO}	0,005	kW				
Standby mode	P_{SB}	0,007	kW	Type of energy input		Electric	
Crankcase heater mode	P _{CK}	0,000	kW				
Other items	· CK	0,000	1 ""				
Other items				.		1	7
Capacity control		Fixed		For air-to-water heat pumps: Rated air flow rate, outdoors	-	na	m3/h
Sound power level, indoors/ outdoors	L _{WA}	50/na	dB	For water-/brine-to-water heat pumps: Rated brine or water			
Annual energy consumption	Q _{HE}	10682	kWh	flow rate, outdoor heat exchanger	-	2,2	m3/h
For heat pump combination h	eater:	•	-	· · · · · · · · · · · · · · · · · · ·		-	
Declared load profile		na		Water heating energy efficiency	$\eta_{\sf wh}$	na	%
Daily electricity consumption	Qelec	na	kWh	Daily fuel consumption	Qfuel	na	kWh
			-1	i			_

Annual fuel consumption

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kWh

na

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AEC

^(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj). (**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.

CTC EcoPart 412 + CTC Eco Basic

Energy efficiency class:

Cold climate and Low temperature

Model(s):

Air-to-water heat pump:

Annual electricity

consumption Contact details AEC

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7111 to water freat partips		110		Energy emerency class.			
Water-to-water heat pump:		No		Controller class:	1	-	
Brine-to-water heat pump:		Yes		Controller contribution:	1	%	
Low-temperature heat pump:		No		Package efficiency:	164	%	
Equipped with a supplementa		No		Package efficiency class:		_	
Heat pump combination heate	-	No		,			
		erature applicat	ion, except fo	r low-temperature heat pumps. For	low- tempera	ture heat pu	mps,
parameters shall be declared f	for low-temperatu	ire application.					
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated heat output (*)	Prated	12	kW	Seasonal space heating energy efficiency	n _s	163	%
Declared capacity for heating outdoor temperature T j	for part load at ind	door temperatu	re 20 °C and	Declared coefficient of performation part load at indoor temperature			
T j = - 7 °C	Pdh	11,7	kW	T j = - 7 °C	COPd	11,70] -
T j = + 2 °C	Pdh	11,6	kW	T j = +2 °C	COPd	11,60] -
T j = + 7 °C	Pdh	11,6	kW	T j = +7 °C	COPd	11,60	-
T j = + 12 °C	Pdh	11,5	kW	T j = +12 °C	COPd	11,50	
T j = bivalent temperature	Pdh	11,8	kW	T j = bivalent temperature	COPd	11,80	-
T j = operation limit temperature	Pdh	11,8	kW	T j = operation limit temperature	COPd	11,80	-
For air-to-water heat pumps: T j = -15 °C (if TOL < -20 °C)	Pdh	na	kW	For air-to-water heat pumps: T j = -15 °C (if TOL < -20 °C)	COPd	na	-
Bivalent temperature	T _{biv}	-20	°C	For air-to-water heat pumps: Operation limit temperature	TOL	na	°C
Cycling interval capacity for heating	P cych	na	kW	Cycling interval efficiency	СОРсус	na	_
Degradation co-efficient (**)	Cdh	0,99	-	Heating water operating limit temperature	WTOL	65	°C
Power consumption in modes	other than active	mode	-	Supplementary heater			7
Off mode	P _{OFF}	0,007	kW	Rated heat output (*)	Psup	0,7	kW
Thermostat-off mode	P _{TO}	0,022	kW				
Standby mode	P_{SB}	0,007	kW	Type of energy input		Electric	
Crankcase heater mode	P _{CK}	0,000	kW				
Other items		-	-		-		
Capacity control	Fixed			For air-to-water heat pumps: Rated air flow rate, outdoors	-	na	m3/h
Sound power level, indoors/ outdoors	L _{WA}	50/na	dB	For water-/brine-to-water heat pumps: Rated brine or water			
Annual energy consumption	Q _{HE}	7152	kWh	flow rate, outdoor heat exchanger	-	2,6	m3/h
For heat pump combination he	eater:						
Declared load profile	na			Water heating energy efficiency	η_{wh}	na	%
Daily electricity consumption	Qelec	na	kWh	Daily fuel consumption	Qfuel	na	kWh
			-				-

Annual fuel consumption

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AFC

na

GJ

kWh

na

^(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj). (**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.