# **ENERTECH GROUP**Enertech AB, 341 26 Ljungby

Warm climate and High temperature

Model(s): CTC EcoPart 430 + CTC EcoLogic, CTC EcoPart i430 PRO Energy efficiency class: Air-to-water heat pump: No 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: 140 % Equipped with a supplementary heater: Package efficiency class: No Heat pump combination heater: No

Parameters shall be declared for medium-temperature application, except for low-temperature heat pumps. For low-temperature heat pumps, parameters shall be declared for low-temperature application.

Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated heat output (*)	Prated	30	kW	Seasonal space heating energy efficiency	$\eta_s$	136	%
Declared capacity for heating for outdoor temperature T j	or part load at in	door temperatu	re 20 °C and	Declared coefficient of performal part load at indoor temperature :			
T j = - 7 °C	Pdh	na	kW	T j = - 7 °C	COPd	na	-
T j = + 2 °C	Pdh	27,0	kW	T j = +2 °C	COPd	3,11	-
T j = + 7 °C	Pdh	27,6	kW	T j = +7 °C	COPd	3,48	-
T j = + 12 °C	Pdh	28,4	kW	T j = +12 °C	COPd	4,12	-
T j = bivalent temperature	Pdh	27,0	kW	T j = bivalent temperature	COPd	3,21	-
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 <sub>biv</sub>	3	°C	For air-to-water heat pumps: Operation limit temperature	TOL	na	°C
Cycling interval capacity for heating	P <sub>cych</sub>	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 <sub>TO</sub>	0,032	kW				
Standby mode	$P_{SB}$	0,018	kW	Type of energy input		Electric	
Crankcase heater mode	P <sub>CK</sub>	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 <sub>WA</sub>	53/na	dB	For water-/brine-to-water heat pumps: Rated brine or water			
Annual energy consumption	Q <sub>HE</sub>	10792	kWh	flow rate, outdoor heat exchanger	-	3,1/2,1	m3/h
For heat pump combination he	ater:						
Declared load profile		na		Water heating energy efficiency	$\eta_{wh}$	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	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

Yes

### Warm climate and Low temperature

Model(s):

Air-to-water heat pump:

Water-to-water heat pump:

Brine-to-water heat pump:

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%

VII

3,5

Low-temperature heat pump:		No		Package efficiency:	174	%	
Equipped with a supplementar	y heater:	No		Package efficiency class:		-	
Heat pump combination heate	r:	No					
			ion, except fo	r low-temperature heat pumps. For l	ow- tempera	iture heat pui	mps,
parameters shall be declared for	-						
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated heat output (*)	Prated	32	kW	Seasonal space heating energy efficiency	$\eta_{s}$	170	%
Declared capacity for heating foutdoor temperature T j	or part load at inc	loor 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	29,0	kW	T j = +2 °C	COPd	4,55	-
T j = + 7 °C	Pdh	29,4	kW	T j = +7 °C	COPd	4,76	-
T j = + 12 °C	Pdh	29,6	kW	T j = +12 °C	COPd	5,02	-
T j = bivalent temperature	Pdh	29,2	kW	T j = bivalent temperature	COPd	4,62	-
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 <sub>biv</sub>	3	°C	For air-to-water heat pumps: Operation limit temperature	TOL	na	°C
Cycling interval capacity for heating	P <sub>cych</sub>	na	kW	Cycling interval efficiency	СОРсус	na	-
Degradation co-efficient (**)	Cdh	0,96	-	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	2,4	kW
Thermostat-off mode	P <sub>TO</sub>	0,097	kW				
Standby mode	$P_{SB}$	0,018	kW	Type of energy input		Electric	
Crankcase heater mode	P <sub>CK</sub>	0,000	kW				
Other items	C.	3,000	!				
Capacity control		Fixed		For air-to-water heat pumps: Rated air flow rate, outdoors	-	na	m3/h
Sound power level, indoors/ outdoors	L <sub>WA</sub>	53/na	dB	For water-/brine-to-water heat pumps: Rated brine or water			
Annual energy consumption	Q <sub>HE</sub>	9404	kWh	flow rate, outdoor heat exchanger	-	3,8/2,6	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 electricity consumption	AEC	na	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			

CTC EcoPart 430 + CTC EcoLogic, CTC EcoPart i430 PRO

Energy efficiency class:

Controller contribution:

Controller class:

<sup>(\*)</sup> 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 GROUP

# Average climate and High temperature

Model(s):

Air-to-water heat pump:

**Declared load profile** 

Annual electricity

consumption Contact details

Daily electricity consumption

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:	141	%		
Equipped with a supplementar	y heater:	No		Package efficiency class:	A++	-		
Heat pump combination heate		No						
parameters shall be declared to parameters shall be declared to			ion, except fo	r low-temperature heat pumps. For	low- tempera	iture heat pu	mps,	
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit	
Rated heat output (*)	Prated	32	kW	Seasonal space heating energy efficiency	$\eta_s$	137	%	
Declared capacity for heating for outdoor temperature T j	or part load at ir	ndoor temperatu	re 20 °C and	d Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature				
T j = -7 °C	Pdh	27,2	kW	T j = − 7 °C	COPd	3,29	] -	
T j = + 2 °C	Pdh	27,8	kW	T j = +2 °C	COPd	3,68	-	
T j = + 7 °C	Pdh	28,4	kW	T j = +7 °C	COPd	4,03	-	
T j = + 12 °C	Pdh	28,8	kW	T j = +12 °C	COPd	4,37	-	
T j = bivalent temperature	Pdh	27,2	kW	T j = bivalent temperature	COPd	3,34	-	
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 <sub>biv</sub>	-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	e <u>mode</u>	-	Supplementary heater			3	
Off mode	P OFF	0,018	kW	Rated heat output (*)	Psup	5,4	kW	
Thermostat-off mode	P <sub>TO</sub>	0,032	kW					
Standby mode	$P_{SB}$	0,018	kW	Type of energy input		Electric		
Crankcase heater mode	P <sub>CK</sub>	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 <sub>WA</sub>	53/na	dB	For water-/brine-to-water heat pumps: Rated brine or water				
Annual energy consumption	Q <sub>HE</sub>	18316	kWh	flow rate, outdoor heat exchanger	-	3,1/2,1	m3/h	

CTC EcoPart 430 + CTC EcoLogic, CTC EcoPart i430 PRO

Energy efficiency class:

Controller class:

kWh

kWh

na

na

na

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Qelec

AEC

Water heating energy

Daily fuel consumption

Annual fuel consumption

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e<u>fficiency</u>

 $\eta_{\mathsf{wh}}$ 

 $\mathbf{Q}_{\text{fuel}}$ 

AFC

na

na

na

kWh

<sup>(\*)</sup> 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

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Average climate and Low 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:	178	%	
Equipped with a supplementary	y heater:	No		Package efficiency class:	A+++	-	
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	-	re application.					
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated heat output (*)	Prated	32	kW	Seasonal space heating energy efficiency	$\eta_{s}$	174	%
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	29,2	kW	T j = - 7 °C	COPd	4,64	] -
T j = + 2 °C	Pdh	29,4	kW	T j = +2 °C	COPd	4,81	-
T j = + 7 °C	Pdh	29,6	kW	T j = +7 °C	COPd	4,97	-
T j = + 12 °C	Pdh	29,8	kW	T j = +12 °C	COPd	5,13	-
T j = bivalent temperature	Pdh	29,2	kW	T j = bivalent temperature	COPd	4,64	-
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 <sub>biv</sub>	-7	°C	For air-to-water heat pumps: Operation limit temperature	TOL	na	°C
Cycling interval capacity for heating	P <sub>cych</sub>	na	kW	Cycling interval efficiency	СОРсус	na	_
Degradation co-efficient (**)	Cdh	0,96	-	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	4,0	kW
Thermostat-off mode	P <sub>TO</sub>	0,097	kW				
Standby mode	$P_{SB}$	0,018	kW	Type of energy input		Electric	
Crankcase heater mode	P <sub>CK</sub>	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 <sub>WA</sub>	53/na	dB	For water-/brine-to-water heat pumps: Rated brine or water			
Annual energy consumption	Q <sub>HE</sub>	14934	kWh	flow rate, outdoor heat exchanger	-	3,8/2,6	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		kWh	Annual fuel consumption	AFC	na	GJ

CTC EcoPart 430 + CTC EcoLogic, CTC EcoPart i430 PRO

Energy efficiency class:

Controller class:

<sup>(\*)</sup> 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.

### **Cold climate and High temperature**

Model(s):

Air-to-water heat pump:

Daily electricity consumption

Annual electricity

consumption Contact details Qelec

AEC

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711 to water near pamp.		110		Energy enfecticy class.			
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:	144	%	
Equipped with a supplementar	ry heater:	No		Package efficiency class:		_	
Heat pump combination heate		No					
		erature applicat	tion, except fo	r low-temperature heat pumps. For	low- tempera	ture heat pui	nps,
parameters shall be declared f	or low-temperatu	re application.					
Item	Symbol	Value	Unit	Item	Symbol	Value	Uni
Rated heat output (*)	Prated	30	kW	Seasonal space heating energy efficiency	η <sub>s</sub>	140	%
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	27,6	kW	T j = - 7 °C	COPd	3,59	] -
Г j = + 2 °C	Pdh	28,2	kW	T j = +2 °C	COPd	3,94	-
Г j = + 7 °C	Pdh	28,6	kW	T j = +7 °C	COPd	4,26	-
Γ j = + 12 °C	Pdh	29,0	kW	T j = +12 °C	COPd	4,49	-
「j = bivalent temperature	Pdh	27,2	kW	T j = bivalent temperature	COPd	3,28	-
T j = operation limit temperature	Pdh	na	kW	T j = operation limit temperature	COPd	na	-
For air-to-water heat pumps: $j = -15 ^{\circ}\text{C}$ (if TOL < $-20 ^{\circ}\text{C}$ )	Pdh	na	kW	For air-to-water heat pumps: T j = $-15$ °C (if TOL < $-20$ °C)	COPd	na	-
Bivalent temperature	T <sub>biv</sub>	-18	°C	For air-to-water heat pumps: Operation limit temperature	TOL	na	°C
Cycling interval capacity for neating	P <sub>cych</sub>	na	kW	Cycling interval efficiency	СОРсус	na	-
Degradation co-efficient (**)	Cdh	0,99	-	Heating water operating limit temperature	WTOL	65	°C
ower consumption in modes	other than active	mode	=	Supplementary heater			
Off mode	P OFF	0,018	kW	Rated heat output (*)	Psup	3,4	kV
hermostat-off mode	P <sub>TO</sub>	0,032	kW				
tandby mode	P <sub>SB</sub>	0,018	kW	Type of energy input		Electric	
Crankcase heater mode	P <sub>CK</sub>	0,000	kW				
Other items			•	1			
Capacity control		Fixed		For air-to-water heat pumps: Rated air flow rate, outdoors	-	na	m3,
Sound power level, indoors/ outdoors	L <sub>WA</sub>	53/na	dB	For water-/brine-to-water heat pumps: Rated brine or water			
Annual energy consumption	Q <sub>HE</sub>	20278	kWh	flow rate, outdoor heat exchanger	-	3,1/2,1	m3,
or heat pump combination he	eater:						
Declared load profile		na	_	Water heating energy efficiency	$\eta_{wh}$	na	%
Daily alactricity concurs attac	Oalaa		lawh	Daily final consumntion	06.1	l	1.14

CTC EcoPart 430 + CTC EcoLogic, CTC EcoPart i430 PRO

Energy efficiency class:

kWh

kWh

na

na

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Daily fuel consumption

Annual fuel consumption

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Qfuel

AFC

kWh

GJ

na

na

<sup>(\*)</sup> 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

### **Cold climate and Low temperature**

Model(s):

Air-to-water heat pump:

Water-to-water heat pump:

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VII

Brine-to-water heat pump:		Yes		Controller contribution:	3,5	%	
Low-temperature heat pump:		No		Package efficiency:	180	%	
Equipped with a supplementar	y heater:	No		Package efficiency class:		-	
Heat pump combination heater	r:	No					
Parameters shall be declared for	or medium-temp	erature applicat	tion, except for	low-temperature heat pumps. For	low- tempera	ture heat pur	nps,
parameters shall be declared for	or low-temperatu	re application.					
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated heat output (*)	Prated	32	kW	Seasonal space heating energy efficiency	$\eta_{\mathcal{S}}$	176	%
Declared capacity for heating for outdoor temperature T j	or part load at ind	door temperatu	ıre 20°C and	Declared coefficient of performation part load at indoor temperature			
T j = - 7 °C	Pdh	29,4	kW	T j = - 7 °C	COPd	4,84	] -
T j = + 2 °C	Pdh	29,6	kW	T j = +2 °C	COPd	4,98	1 -
T j = + 7 °C	Pdh	29,8	kW	T j = +7 °C	COPd	5,08	-
T j = + 12 °C	Pdh	29,8	kW	T j = +12 °C	COPd	5,11	-
T j = bivalent temperature	Pdh	29,2	kW	T j = bivalent temperature	COPd	4,67	-
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 <sub>biv</sub>	-18	°c	For air-to-water heat pumps: Operation limit temperature	TOL	na	°C
Cycling interval capacity for heating	P <sub>cych</sub>	na	kW	Cycling interval efficiency	СОРсус	na	-
Degradation co-efficient (**)	Cdh	0,96	-	Heating water operating limit temperature	WTOL	65	°C
Power consumption in modes of	other than active	mode	•	Supplementary heater			
Off mode	P <sub>OFF</sub>	0,018	kW	Rated heat output (*)	Psup	3,6	kW
Thermostat-off mode	P <sub>TO</sub>	0,097	kW				
Standby mode	$P_{SB}$	0,018	kW	Type of energy input		Electric	
Crankcase heater mode	P <sub>CK</sub>	0,000	kW				
Other items	CA	3,000	1		<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 <sub>WA</sub>	53/na	dB	For water-/brine-to-water heat pumps: Rated brine or water			
Annual energy consumption	Q <sub>HE</sub>	8758	kWh	flow rate, outdoor heat exchanger	-	3,8/2,6	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

CTC EcoPart 430 + CTC EcoLogic, CTC EcoPart i430 PRO

Energy efficiency class:

Controller class:

<sup>(\*)</sup> 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 430 + CTC EcoZenith 550

Energy efficiency class:

Controller contribution:

Controller class:

### Warm climate and High temperature

Model(s):

Air-to-water heat pump:

Water-to-water heat pump:

Brine-to-water heat pump:

Enertech AB, 341 26 Ljungby

%

VII

3,5

Brille-to-water fleat pullip.		163		Controller Contribution.	3,3	/0	
Low-temperature heat pump:		No		Package efficiency:	124	%	
Equipped with a supplementar	y heater:	Yes		Package efficiency class:		-	
Heat pump combination heate	r:	Yes					
		erature applicat	tion, except fo	r low-temperature heat pumps. For	low- tempera	ature heat pui	nps,
parameters shall be declared f	or low-temperati	ure application.					
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated heat output (*)	Prated	29	kW	Seasonal space heating energy efficiency	$\eta_{s}$	120	%
Declared capacity for heating foutdoor temperature T j	or part load at in	door temperatu	ire 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	26,8	kW	T j = +2 °C	COPd	2,77	-
T j = + 7 °C	Pdh	27,2	kW	T j = +7 °C	COPd	3,09	-
T j = + 12 °C	Pdh	28,0	kW	T j = +12 °C	COPd	3,65	-
T j = bivalent temperature	Pdh	26,9	kW	T j = bivalent temperature	COPd	2,86	-
T j = operation limit temperature	Pdh	26,8	kW	T j = operation limit temperature	COPd	2,77	-
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 <sub>biv</sub>	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	other than active	mode		Supplementary heater			
Off mode	P OFF	0,025	kW	Rated heat output (*)	Psup	2,2	kW
Thermostat-off mode	P <sub>TO</sub>	0,119	kW			•	
Standby mode	P <sub>SB</sub>	0,025	kW	Type of energy input		Electric	
Crankcase heater mode	P <sub>CK</sub>	0,000	kW				
	, ck	0,000	NVV				
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 <sub>WA</sub>	53/na	dB	For water-/brine-to-water heat pumps: Rated brine or water			
Annual energy consumption	Q <sub>HE</sub>	12132	kWh	flow rate, outdoor heat exchanger		3,1/2,1	m3/h
For heat pump combination he	eater:						
Declared load profile		XXL		Water heating energy efficiency	$\eta_{\sf wh}$	100	%
Daily electricity consumption	Qelec	9,851	kWh	Daily fuel consumption	Qfuel	NA	kWh
Annual electricity consumption	AEC	2167	kWh	Annual fuel consumption	AFC	NA	GJ
Contact details	Enertech AB, Box	309, SE-341 26	Ljungby Tel +	46 372 88000 www.ctc.se		· ·	

<sup>(\*)</sup> 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:

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Rated heat output (*)  Declared capacity for heating for part outdoor temperature T j  T j = -7 °C  T j = +2 °C  T j = +7 °C  T j = +12 °C  T j = bivalent temperature  T j = operation limit temperature  For air-to-water heat numps:	er: Y. Y. ium-temperature rmbol rated	value 31	Unit kW	Package efficiency: Package efficiency class:  r low-temperature heat pumps. For litem  Seasonal space heating energy efficiency  Declared coefficient of perform part load at indoor temperatur  T j = -7 °C  T j = +2 °C  T j = +7 °C	Symbol $\eta_{S}$ nance or primar	Value 146 ry energy rati	Unit % o for
Heat pump combination heater:  Parameters shall be declared for med parameters shall be declared for low-litem  Sy  Rated heat output (*)  Declared capacity for heating for part outdoor temperature T j  T j = -7 °C  T j = +2 °C  T j = +7 °C  T j = +12 °C  T j = bivalent temperature  T j = operation limit temperature  For air-to-water heat numps:	ium-temperature rmbol rated load at indo Pdh Pdh Pdh Pdh Pdh	value 31 or temperatur 28,6 28,9 29,3	Unit  kW  re 20 °C and  kW  kW  kW	r low-temperature heat pumps. For  Item  Seasonal space heating energy efficiency  Declared coefficient of perform part load at indoor temperatur  T j = -7 °C  T j = +2 °C	Symbol $\eta_S$ nance or primare 20 °C and out	Value 146 ry energy rati	Unit % o for
Parameters shall be declared for med parameters shall be declared for low-fitem  Sy  Rated heat output (*)  Pr  Declared capacity for heating for part outdoor temperature T j  T j = -7 °C  T j = +2 °C  T j = +7 °C  T j = +12 °C  T j = bivalent temperature  T j = operation limit temperature  For air-to-water heat numps:	ium-temperature imbol rated  load at indo  Pdh Pdh Pdh Pdh Pdh	ature application.  Value  31  or temperatur  28,6  28,9  29,3	Unit  kW  re 20 °C and  kW  kW  kW	Seasonal space heating energy efficiency  Declared coefficient of perform part load at indoor temperature  T j = -7 °C  T j = +2 °C	Symbol $\eta_S$ nance or primare 20 °C and out	Value 146 ry energy rati	Unit % o for
parameters shall be declared for low-  Item  Sy  Rated heat output (*)  Pr  Declared capacity for heating for part outdoor temperature T j  T j = -7 °C  T j = +2 °C  T j = +7 °C  T j = +12 °C  T j = bivalent temperature  T j = operation limit temperature  For air-to-water heat numps:	rated  load at indo  Pdh Pdh Pdh Pdh Pdh Pdh	na 28,6 28,9 29,3	Unit  kW  re 20 °C and  kW  kW  kW	Seasonal space heating energy efficiency  Declared coefficient of perform part load at indoor temperature  T j = -7 °C  T j = +2 °C	Symbol $\eta_S$ nance or primare 20 °C and out	Value 146 ry energy rati	Unit % o for
Rated heat output (*)  Pr  Declared capacity for heating for part outdoor temperature T j  T j = -7 °C  T j = +2 °C  T j = +7 °C  T j = +12 °C  T j = bivalent temperature  T j = operation limit temperature  For air-to-water heat numps:	rated  load at indo  Pdh Pdh Pdh Pdh Pdh Pdh	Nalue 31 or temperatur  na 28,6 28,9 29,3	kW re 20 °C and kW kW kW	Seasonal space heating energy efficiency  Declared coefficient of perform part load at indoor temperatur  T j = -7 °C T j = +2 °C	η <sub>S</sub> nance or primale 20 °C and out	146 ry energy rati	% o for
Rated heat output (*)  Pr  Declared capacity for heating for part outdoor temperature T j  T j = -7 °C  T j = +2 °C  T j = +7 °C  T j = +12 °C  T j = bivalent temperature  T j = operation limit temperature  For air-to-water heat numps:	rated  load at indo  Pdh Pdh Pdh Pdh Pdh	na 28,6 28,9 29,3	kW re 20 °C and kW kW kW	Seasonal space heating energy efficiency  Declared coefficient of perform part load at indoor temperatur  T j = -7 °C T j = +2 °C	η <sub>S</sub> nance or primale 20 °C and out	146 ry energy rati	% o for
Declared capacity for heating for part outdoor temperature T j  T j = -7 °C  T j = +2 °C  T j = +7 °C  T j = +12 °C  T j = bivalent temperature  T j = operation limit temperature  For air-to-water heat numps:	load at indo  Pdh Pdh Pdh Pdh Pdh	na 28,6 28,9 29,3	re 20 °C and kW kW kW	Declared coefficient of perform part load at indoor temperature  T j = -7 °C  T j = +2 °C	n <sub>s</sub> nance or priman e 20 °C and out COPd	ry energy rati	o for
outdoor temperature T j  T j = -7 °C  T j = +2 °C  T j = +7 °C  T j = +12 °C  T j = bivalent temperature  T j = operation limit temperature  For air-to-water heat numps:	Pdh Pdh Pdh Pdh Pdh Pdh	na 28,6 28,9 29,3	kW kW kW	part load at indoor temperatur $T j = -7 ^{\circ}C$ $T j = +2 ^{\circ}C$	e 20 °C and out		
T j = + 2 °C  T j = + 7 °C  T j = + 12 °C  T j = bivalent temperature  T j = operation limit temperature  For air-to-water heat numps:	Pdh Pdh Pdh Pdh	28,6 28,9 29,3	kW kW	T j = +2 °C			
T j = + 7 °C  T j = + 12 °C  T j = bivalent temperature  T j = operation limit temperature  For air-to-water heat numps:	Pdh Pdh Pdh	28,9 29,3	kW	1 1 -	COPd	na	-
T j = + 12 °C  T j = bivalent temperature  T j = operation limit temperature  For air-to-water heat numps:	Pdh Pdh	29,3		T j = +7 °C		4,03	-
T j = bivalent temperature  T j = operation limit temperature  For air-to-water heat numps:	Pdh		kW		COPd	4,22	-
T j = operation limit temperature  For air-to-water heat numps:		28 7	i	T j = +12 °C	COPd	4,45	-
temperature  For air-to-water heat numps:	Pdh	20,7	kW	T j = bivalent temperature	COPd	4,09	-
For air-to-water heat pumps:		28,6	kW	T j = operation limit temperature	COPd	4,03	-
T j = -15  °C (if TOL  < -20  °C)	Pdh	na	kW	For air-to-water heat pumps: $T j = -15 ^{\circ}C \text{ (if TOL } < -20 ^{\circ}C)$	COPd	na	-
Bivalent temperature 7	T <sub>biv</sub>	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	0,94	-	Heating water operating limit temperature	WTOL	65	°C
Power consumption in modes other th	han active m	iode		Supplementary heater			
Off mode F	OFF	0,025	kW	Rated heat output (*)	Psup	2,3	kW
Thermostat-off mode	Р то	0,357	kW				
Standby mode	P <sub>SB</sub>	0,025	kW	Type of energy input		Electric	
	P <sub>CK</sub>	0,000	kW				
Other items	CK	0,000					
Capacity control		Fixed		For air-to-water heat pumps: Rated air flow rate, outdoors	-	na	m3/h
Sound power level, indoors/ outdoors	· WA	53/na	dB	For water-/brine-to-water heat pumps: Rated brine or water			
Annual energy consumption Q	HE	10756	kWh	flow rate, outdoor heat exchanger	-	3,8/2,6	m3/h
For heat pump combination heater:							
Declared load profile		XXL		Water heating energy efficiency	$\eta_{\sf wh}$	100	%
Daily electricity consumption C	Qelec	9,851	kWh	Daily fuel consumption	Qfuel	NA	kWh
Annual electricity consumption Contact details Enertee	AEC	2167	kWh	Annual fuel consumption	AFC	NA	GJ

CTC EcoPart 430 + CTC EcoZenith 550

Energy efficiency class:

Controller class:

<sup>(\*)</sup> 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 GROUP

Average climate and High temperature

Model(s):

Air-to-water heat pump:

Water-to-water heat pump:

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Brine-to-water heat pump:		Yes		Controller contribution:	3,5	%	
Low-temperature heat pump:		No		Package efficiency:	125	%	
Equipped with a supplementary	heater:	Yes		Package efficiency class:	A++	-	
Heat pump combination heater		Yes					
			tion, except fo	r low-temperature heat pumps. For	low- tempera	iture heat pu	mps,
parameters shall be declared fo	-		Unit	lka	Symbol	Value	Unit
Item	Symbol	Value	I	Item	Symbol	Value	Unit
Rated heat output (*)	Prated	32	kW	Seasonal space heating energy efficiency	$\eta_{s}$	121	%
Declared capacity for heating for outdoor temperature T j	or part load at in	door temperatu	ire 20 °C and	Declared coefficient of performa part load at indoor temperature			
T j = - 7 °C	Pdh	27,00	kW	T j = - 7 °C	COPd	2,92	] -
T j = + 2 °C	Pdh	27,4	kW	T j = +2 °C	COPd	3,26	-
T j = + 7 °C	Pdh	27,9	kW	T j = +7 °C	COPd	3,57	-
T j = + 12 °C	Pdh	28,4	kW	T j = +12 °C	COPd	3,88	-
T j = bivalent temperature	Pdh	27,1	kW	T j = bivalent temperature	COPd	2,97	-
T j = operation limit temperature	Pdh	26,8	kW	T j = operation limit temperature	COPd	2,77	-
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 <sub>biv</sub>	-6	°C	For air-to-water heat pumps: Operation limit temperature	TOL	na	°C
Cycling interval capacity for heating	P <sub>cych</sub>	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 o	ther than active	mode	_	Supplementary heater			_
Off mode	P OFF	0,025	kW	Rated heat output (*)	Psup	5,1	kW
Thermostat-off mode	P <sub>TO</sub>	0,119	kW				
Standby mode	$P_{SB}$	0,025	kW	Type of energy input		Electric	
Crankcase heater mode	P <sub>CK</sub>	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 <sub>WA</sub>	53/na	dB	For water-/brine-to-water heat pumps: Rated brine or water			
Annual energy consumption	Q <sub>HE</sub>	20510	kWh	flow rate, outdoor heat exchanger	-	3,1/2,1	m3/h
For heat pump combination hea	ater:						
Declared load profile		XXL		Water heating energy efficiency	$\eta_{\sf wh}$	100	%
Daily electricity consumption	Qelec	9,851	kWh	Daily fuel consumption	Qfuel	NA	kWh
Annual electricity	AEC	2167	kWh	Annual fuel consumption	AFC	NA	GJ

CTC EcoPart 430 + CTC EcoZenith 550

Energy efficiency class:

Controller class:

A+

VII

consumption Contact details

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<sup>(\*)</sup> 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 430 + 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++

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Brine-to-water heat pump:		Yes		Controller contribution:	3,5	%	
Low-temperature heat pump:		No		Package efficiency:	155	%	
Equipped with a supplementar	y heater:	Yes		Package efficiency class:	A+++	-	
Heat pump combination heater	r:	Yes					
Parameters shall be declared fo	or medium-temp	erature applicat	tion, except for	r low-temperature heat pumps. For	low- tempera	ture heat pui	mps,
parameters shall be declared for	or low-temperati	ure application.					
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated heat output (*)	Prated	34	kW	Seasonal space heating energy efficiency	$\eta_{s}$	151	%
Declared capacity for heating foutdoor 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	28,70	kW	T j = - 7 °C	COPd	4,11	] -
T j = + 2 °C	Pdh	29,0	kW	T j = +2 °C	COPd	4,27	1 -
T j = + 7 °C	Pdh	29,2	kW	T j = +7 °C	COPd	4,41	-
T j = + 12 °C	Pdh	29,5	kW	T j = +12 °C	COPd	4,55	-
T j = bivalent temperature	Pdh	28,8	kW	T j = bivalent temperature	COPd	4,14	-
T j = operation limit temperature	Pdh	28,6	kW	T j = operation limit temperature	COPd	4,03	-
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 <sub>biv</sub>	-6	°C	For air-to-water heat pumps: Operation limit temperature	TOL	na	°C
Cycling interval capacity for heating	P <sub>cych</sub>	na	kW	Cycling interval efficiency	СОРсус	na	-
Degradation co-efficient (**)	Cdh	0,94	-	Heating water operating limit temperature	WTOL	65	°C
Power consumption in modes of	other than active	mode		Supplementary heater			-
Off mode	P OFF	0,025	kW	Rated heat output (*)	Psup	5,4	kW
Thermostat-off mode	P TO	0,357	kW				-
Standby mode	$P_{SB}$	0,025	kW	Type of energy input		Electric	
Crankcase heater mode	P <sub>CK</sub>	0,000	kW				
Other items	- CA	5,000	ļ		!		
Capacity control		Fixed		For air-to-water heat pumps: Rated air flow rate, outdoors	-	na	m3/h
Sound power level, indoors/ outdoors	L <sub>WA</sub>	53/na	dB	For water-/brine-to-water heat pumps: Rated brine or water			
Annual energy consumption	Q <sub>HE</sub>	17699	kWh	flow rate, outdoor heat exchanger	-	3,8/2,6	m3/h
For heat pump combination he	ater:						
Declared load profile		XXL		Water heating energy efficiency	$\eta_{\sf wh}$	100	%
Daily electricity consumption	Qelec	9,851	kWh	Daily fuel consumption	Qfuel	NA	kWh
Annual electricity	AEC	2167	kWh	Annual fuel consumption	AFC	NA	GJ

<sup>(\*)</sup> 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 430 + CTC EcoZenith 550

Energy efficiency class:

Controller contribution:

Controller class:

### **Cold 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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%

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3,5

					-,-		
Low-temperature heat pump:		No		Package efficiency:	126	%	
Equipped with a supplementar	ry heater:	Yes		Package efficiency class:		-	
Heat pump combination heate	er:	Yes					
Parameters shall be declared f	or medium-temp		ion, except fo	r low-temperature heat pumps. For l	ow- tempera	ature heat pui	mps,
parameters shall be declared f	or low-temperatu	ire application.					
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated heat output (*)	Prated	31	kW	Seasonal space heating energy efficiency	$\eta_s$	122	%
Declared capacity for heating foutdoor temperature T j	for part load at ind	door temperatu	re 20 °C and	Declared coefficient of performa part load at indoor temperature			
T j = -7 °C	Pdh	27,30	kW	T j = - 7 °C	COPd	3,19	] -
T j = + 2 °C	Pdh	27,8	kW	T j = +2 °C	COPd	3,50	-
T j = + 7 °C	Pdh	28,2	kW	T j = +7 °C	COPd	3,78	-
T j = + 12 °C	Pdh	28,6	kW	T j = +12 °C	COPd	3,99	-
T j = bivalent temperature	Pdh	27,0	kW	T j = bivalent temperature	COPd	2,95	-
T j = operation limit temperature	Pdh	26,8	kW	T j = operation limit temperature	COPd	2,77	-
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	3,00	-
Bivalent temperature	T <sub>biv</sub>	-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	other than active	mode	•	Supplementary heater			
Off mode	P OFF	0,025	kW	Rated heat output (*)	Psup	4,3	kW
Thermostat-off mode	P <sub>TO</sub>	0,119	kW				
Standby mode	$P_{SB}$	0,025	kW	Type of energy input		Electric	
Crankcase heater mode	P <sub>CK</sub>	0,000	kW				
Other items	CA	3,000		1			
Capacity control		Fixed		For air-to-water heat pumps: Rated air flow rate, outdoors	-	na	m3/
Sound power level, indoors/ outdoors	L <sub>WA</sub>	53/na	dB	For water-/brine-to-water heat pumps: Rated brine or water			
Annual energy consumption	Q <sub>HE</sub>	23522	kWh	flow rate, outdoor heat exchanger	-	3,1/2,1	m3/
For heat pump combination he	eater:			1 1ee			
Declared load profile		XXL		Water heating energy efficiency	$\eta_{\sf wh}$	100	%
Daily electricity consumption	Qelec	9,851	kWh	Daily fuel consumption	Qfuel	NA	kW
Annual electricity consumption	AEC	2167	kWh	Annual fuel consumption	AFC	NA	GJ
	Enertech AB, Box	309, SE-341 26	Ljungby Tel +	46 372 88000 www.ctc.se			

<sup>(\*)</sup> 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 430 + CTC EcoZenith 550

Energy efficiency class:

Controller class:

Model(s):

Air-to-water heat pump:

Water-to-water heat pump:

GROUP Enertech AB, 341 26 Ljungby

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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:	155	%	
Equipped with a supplementar	y heater:	Yes		Package efficiency class:		-	
Heat pump combination heate	r:	Yes					
		erature applicat	ion, except for	r low-temperature heat pumps. For	low- tempera	ture heat pui	mps,
parameters shall be declared for	or low-temperati	re application.					
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated heat output (*)	Prated	33	kW	Seasonal space heating energy efficiency	$\eta_{s}$	151	%
Declared capacity for heating f 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	29,10	kW	T j = - 7 °C	COPd	4,29	] -
T j = + 2 °C	Pdh	29,3	kW	T j = +2 °C	COPd	4,42	-
T j = + 7 °C	Pdh	29,4	kW	T j = +7 °C	COPd	4,51	_
T j = + 12 °C	Pdh	29,4	kW	T j = +12 °C	COPd	4,53	-
T j = bivalent temperature	Pdh	28,8	kW	T j = bivalent temperature	COPd	4,16	-
T j = operation limit temperature	Pdh	28,6	kW	T j = operation limit temperature	COPd	4,03	-
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	4,19	-
Bivalent temperature	T <sub>biv</sub>	-17	°C	For air-to-water heat pumps: Operation limit temperature	TOL	na	°C
Cycling interval capacity for heating	P <sub>cych</sub>	na	kW	Cycling interval efficiency	СОРсус	na	-
Degradation co-efficient (**)	Cdh	0,94	] -	Heating water operating limit temperature	WTOL	65	°C
Power consumption in modes	other than active	mode	_	Supplementary heater			_
Off mode	P OFF	0,025	kW	Rated heat output (*)	Psup	4,6	kW
Thermostat-off mode	P <sub>TO</sub>	0,357	kW				
Standby mode	P <sub>SB</sub>	0,025	kW	Type of energy input		Electric	
Crankcase heater mode	P <sub>CK</sub>	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 <sub>WA</sub>	53/na	dB	For water-/brine-to-water heat pumps: Rated brine or water			
Annual energy consumption	Q <sub>HE</sub>	20588	kWh	flow rate, outdoor heat exchanger	-	3,8/2,6	m3/h
For heat pump combination he	ater:			· · · · · · · · · · · · · · · · · · ·			
Declared load profile		XXL		Water heating energy efficiency	$\eta_{\sf wh}$	100	%
Daily electricity consumption	Qelec	9,851	kWh	Daily fuel consumption	Qfuel	NA	kWh
Annual electricity consumption	AEC	2167	kWh	Annual fuel consumption	AFC	NA	GJ
	Enertech AB, Box	309, SE-341 26	Ljungby Tel +4	16 372 88000 www.ctc.se			

<sup>(\*)</sup> 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 430 + CTC EcoBasic

Energy efficiency class:

Controller class:

### Warm climate and High temperature

Model(s):

Air-to-water heat pump:

Water-to-water heat pump:

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Brine-to-water heat pump:		Yes		Controller contribution:	1	%	
Low-temperature heat pump:		No		Package efficiency:	106	%	
Equipped with a supplementary	/ heater:	No		Package efficiency class:		-	
Heat pump combination heater	:	No					
		* *	ion, except fo	r low-temperature heat pumps. Fo	r low- tempera	ture heat pu	mps,
parameters shall be declared for	r low-temperatu	re application.					
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated heat output (*)	Prated	28	kW	Seasonal space heating energy efficiency	<b>′</b> ղ <sub>ջ</sub>	105	%
Declared capacity for heating for outdoor temperature T j	or part load at in	door temperatu	re 20 °C and	Declared coefficient of perforn part load at indoor temperatur			
T j = -7 °C	Pdh	33,2	kW	T j = - 7 °C	COPd	7,56	] -
T j = + 2 °C	Pdh	26,8	kW	T j = +2 °C	COPd	3,11	-
T j = + 7 °C	Pdh	26,6	kW	T j = +7 °C	COPd	2,98	-
T j = + 12 °C	Pdh	26,4	kW	T j = +12 °C	COPd	2,81	-
T j = bivalent temperature	Pdh	26,8	kW	T j = bivalent temperature	COPd	3,11	-
T j = operation limit temperature	Pdh	26,8	kW	T j = operation limit temperature	COPd	3,11	-
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 <sub>biv</sub>	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	0,007	kW	Rated heat output (*)	Psup	2,0	kW
Thermostat-off mode	P <sub>TO</sub>	0,032	kW				
Standby mode	P <sub>SB</sub>	0,007	kW	Type of energy input		Electric	
Crankcase heater mode	P <sub>CK</sub>	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 <sub>WA</sub>	53/na	dB	For water-/brine-to-water hear pumps: Rated brine or water	t		
Annual energy consumption	Q <sub>HE</sub>	33642	kWh	flow rate, outdoor heat exchanger	-	3,1/2,2	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	G۱
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<sup>(\*)</sup> 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 430 + CTC EcoBasic

Energy efficiency class:

Controller class:

# Warm climate and Low temperature

Model(s):

Air-to-water heat pump:

Water-to-water heat pump:

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water to water near pamp:		110		controller class.	•		
Brine-to-water heat pump:		Yes		Controller contribution:	1	%	
Low-temperature heat pump:		No		Package efficiency:	156	%	
Equipped with a supplementary	y heater:	No		Package efficiency class:		_	
Heat pump combination heater	r:	No					
Parameters shall be declared for	or medium-temp	erature applicat	tion, except fo	r low-temperature heat pumps. For	low- tempera	iture heat pui	mps,
parameters shall be declared for	or low-temperatu	re application.					
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated heat output (*)	Prated	32	kW	Seasonal space heating energy efficiency	$\eta_{s}$	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	NA	kW	T j = - 7 °C	COPd	NA	] -
T j = + 2 °C	Pdh	29,0	kW	T j = +2 °C	COPd	4,55	-
T j = + 7 °C	Pdh	28,8	kW	T j = +7 °C	COPd	4,42	-
T j = + 12 °C	Pdh	28,6	kW	T j = +12 °C	COPd	4,26	-
T j = bivalent temperature	Pdh	29,0	kW	T j = bivalent temperature	COPd	4,55	-
T j = operation limit temperature	Pdh	29	kW	T j = operation limit temperature	COPd	4,55	-
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 <sub>biv</sub>	3	°C	For air-to-water heat pumps: Operation limit temperature	TOL	na	°C
Cycling interval capacity for heating	P <sub>cych</sub>	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		mode	7	Supplementary heater			1
Off mode	P OFF	0,007	kW	Rated heat output (*)	Psup	2,2	kW
Thermostat-off mode	P <sub>TO</sub>	0,097	kW				
Standby mode	$P_{SB}$	0,007	kW	Type of energy input		Electric	
Crankcase heater mode	P <sub>CK</sub>	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 <sub>WA</sub>	53/na	dB	For water-/brine-to-water heat pumps: Rated brine or water			
Annual energy consumption	Q <sub>HE</sub>	10256	kWh	flow rate, outdoor heat exchanger	-	3,8/2,6	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

<sup>(\*)</sup> 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.

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consumption Contact details

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CTC EcoPart 430 + CTC EcoBasic

Energy efficiency class:

A+

## Average climate and High temperature

Model(s):

Air-to-water heat pump:

**Declared load profile** 

Annual electricity

consumption Contact details

Daily electricity consumption

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All to water near pamp.				Energy emoleticy class.	Ai			
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:	108	%		
Equipped with a supplementary	heater:	No		Package efficiency class:	A+	-		
Heat pump combination heater	:	No						
			ion, except for	r low-temperature heat pumps. For	low- tempera	ture heat pui	mps,	
parameters shall be declared fo		re application.						
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit	
Rated heat output (*)	Prated	32	kW	Seasonal space heating energy efficiency	$\eta_{s}$	107	%	
Declared capacity for heating for outdoor 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				
T j = - 7 °C	Pdh	27	kW	T j = - 7 °C	COPd	3,11	] -	
T j = + 2 °C	Pdh	26,6	kW	T j = +2 °C	COPd	2,95	] -	
T j = + 7 °C	Pdh	26,4	kW	T j = +7 °C	COPd	2,86	-	
T j = + 12 °C	Pdh	26,4	kW	T j = +12 °C	COPd	2,76	-	
T j = bivalent temperature	Pdh	27,0	kW	T j = bivalent temperature	COPd	3,11	-	
T j = operation limit temperature	Pdh	27	kW	T j = operation limit temperature	COPd	3,11	-	
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 <sub>biv</sub>	-6	°C	For air-to-water heat pumps: Operation limit temperature	TOL	na	°C	
Cycling interval capacity for heating	P <sub>cych</sub>	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	4,8	kW	
Thermostat-off mode	P <sub>TO</sub>	0,032	kW			<del></del>		
Standby mode	P <sub>SB</sub>	0,007	kW	Type of energy input		Electric		
Crankcase heater mode	P <sub>CK</sub>	0	kW					
Other items		•	,		•			
Capacity control		Fixed		For air-to-water heat pumps: Rated air flow rate, outdoors	- na /			
Sound power level, indoors/ outdoors	L <sub>WA</sub>	53/na	dB	For water-/brine-to-water heat pumps: Rated brine or water				
Annual energy consumption	Q <sub>HE</sub>	22778	kWh	flow rate, outdoor heat exchanger	-	3,1/2,2	m3/h	

kWh

kWh

na

na

na

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Qelec

AEC

Water heating energy

Daily fuel consumption

Annual fuel consumption

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efficiency

 $\eta_{\mathsf{wh}}$ 

 $\mathbf{Q}_{\text{fuel}}$ 

AFC

na

na

na

kWh

<sup>(\*)</sup> 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 430 + CTC EcoBasic

Energy efficiency class:

### Average climate and Low temperature

Model(s):

Air-to-water heat pump:

Annual energy consumption

Daily electricity consumption

**Declared load profile** 

Annual electricity

consumption Contact details

For heat pump combination heater:

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3,8/2,6

na

na

na

 $\eta_{\mathsf{wh}}$ 

 $\mathbf{Q}_{\text{fuel}}$ 

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:	160	%	
Equipped with a supplementary	y heater:	No		Package efficiency class:	A+++	-	
Heat pump combination heater	r:	No					
				low-temperature heat pumps. For	low- 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	32	kW	Seasonal space heating energy efficiency	$\eta_s$	159	%
Declared capacity for heating for outdoor temperature T j	or part load at in	door temperatu	ure 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	28,8	kW	T j = +2 °C	COPd	4,38	] -
T j = + 7 °C	Pdh	28,6	kW	T j = +7 °C	COPd	4,29	<b>↓</b> -
T j = + 12 °C	Pdh	28,6	kW	T j = +12 °C	COPd	4,20	-
T j = bivalent temperature	Pdh	29,0	kW	T j = bivalent temperature	COPd	4,55	-
T j = operation limit temperature	Pdh	29,0	kW	T j = operation limit temperature	COPd	4,55	-
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 <sub>biv</sub>	-7	°c	For air-to-water heat pumps: Operation limit temperature	TOL	na	°C
Cycling interval capacity for heating	P <sub>cych</sub>	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	0,007	kW	Rated heat output (*)	Psup	3,8	kW
Thermostat-off mode	P <sub>TO</sub>	0,097	kW				
Standby mode	P <sub>SB</sub>	0,007	kW	Type of energy input		Electric	
Crankcase heater mode	P <sub>CK</sub>	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 <sub>WA</sub>	53/na	dB	For water-/brine-to-water heat pumps: Rated brine or water			

(\*) 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.

kWh

kWh

kWh

8113

na

na

na

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 $Q_{HE}$ 

Qelec

AEC

flow rate, outdoor heat

Water heating energy

Daily fuel consumption

Annual fuel consumption

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exchanger

efficiency

No

Yes

No

No

### **Cold climate and High temperature**

Equipped with a supplementary heater:

Model(s):

Air-to-water heat pump:

Water-to-water heat pump:

Brine-to-water heat pump:

Low-temperature heat pump:

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I 1 %

%

107

Heat pump combination heater: No

Parameters shall be declared for medium-temperature application, except for low-temperature heat pumps. For low-temperature heat pumps, parameters shall be declared for low-temperature application.

Energy efficiency class:

Controller contribution:

Package efficiency class:

Package efficiency:

Controller class:

CTC EcoPart 430 + CTC EcoBasic

Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated heat output (*)	Prated	30	kW	Seasonal space heating energy efficiency	η <sub>s</sub>	106	%
Declared capacity for heating foutdoor temperature T j	or part load at in	Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T j					
T j = -7 °C	Pdh	26,6	kW	T j = - 7 °C	COPd	2,97	-
T j = + 2 °C	Pdh	26,4	kW	T j = +2 °C	COPd	2,86	-
T j = + 7 °C	Pdh	26,4	kW	T j = +7 °C	COPd	2,79	-
T j = + 12 °C	Pdh	26,2	kW	T j = +12 °C	COPd	2,73	-
T j = bivalent temperature	Pdh	27,0	kW	T j = bivalent temperature	COPd	3,11	-
T j = operation limit temperature	Pdh	26,8	kW	T j = operation limit temperature	COPd	3,11	-
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 <sub>biv</sub>	-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	other than active	mode		Supplementary heater			
Off mode	P <sub>OFF</sub>	0,007	kW	Rated heat output (*)	Psup	3,2	kW
Thermostat-off mode	P <sub>TO</sub>	0,032	kW			•	
Standby mode	$P_{SB}$	0,007	kW	Type of energy input		Electric	
Crankcase heater mode	P <sub>CK</sub>	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 <sub>WA</sub>	53/na	dВ	For water-/brine-to-water heat pumps: Rated brine or water			
Annual energy consumption	Q <sub>HE</sub>	25954	kWh	flow rate, outdoor heat exchanger	-	3,1/2,2	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			

<sup>(\*)</sup> 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.

#### Cold climate and Low temperature Model(s): CTC EcoPart 430 + CTC EcoBasic Air-to-water heat pump: No Energy efficiency class: Water-to-water heat pump: No Controller class: Brine-to-water heat pump: Yes Controller contribution: % Low-temperature heat pump: No Package efficiency: 158 % Equipped with a supplementary heater: Package efficiency class: No Heat pump combination heater: No

Parameters shall be declared for medium-temperature application, except for low-temperature heat pumps. For low- temperature heat pumps, parameters shall be declared for low-temperature application.

Item	Symbol	Value	Unit	Item	Symbol	Value	Unit	
Rated heat output (*)	Prated	30	kW	Seasonal space heating energy efficiency	$\eta_{s}$	157	%	
Declared capacity for heating for part load at indoor temperature 20 $^{\circ}\text{C}$ and outdoor temperature T j				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T j				
T j = -7 °C	Pdh	28,8	kW	T j = - 7 °C	COPd	4,40	-	
T j = + 2 °C	Pdh	28,6	kW	T j = +2 °C	COPd	4,29	-	
T j = + 7 °C	Pdh	28,6	kW	T j = +7 °C	COPd	4,23	-	
T j = + 12 °C	Pdh	28,6	kW	T j = +12 °C	COPd	4,17	-	
T j = bivalent temperature	Pdh	29,0	kW	T j = bivalent temperature	COPd	4,55	-	
T j = operation limit temperature	Pdh	29	kW	T j = operation limit temperature	COPd	4,55	-	
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 <sub>biv</sub>	-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	0,97	-	Heating water operating limit temperature	WTOL	65	°C	
Power consumption in modes other than active mode				Supplementary heater				
Off mode	P <sub>OFF</sub>	0,007	kW	Rated heat output (*)	Psup	1,6	kW	
Thermostat-off mode	P <sub>TO</sub>	0,097	kW			•		
Standby mode	$P_{SB}$	0,007	kW	Type of energy input		Electric		
Crankcase heater mode	P <sub>CK</sub>	0,000	kW					
Other items		<u> </u>	<del>!</del>					
Capacity control		Fixed		For air-to-water heat pumps: Rated air flow rate, outdoors	-	na	m3/h	
Sound power level, indoors/ outdoors	L <sub>WA</sub>	53/na	dB	For water-/brine-to-water heat pumps: Rated brine or water				
Annual energy consumption	Q <sub>HE</sub>	18324	kWh	flow rate, outdoor heat exchanger	-	3,8/2,6	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 electricity consumption	AEC	na	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				

<sup>(\*)</sup> 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.