Information for heat pump space heaters and heat pump combination heaters

Warm climate and High temperature

ENERTECH GROUP
Enertech AB, 341 26 Ljungby

Model(s):	CTC EcoPart 410 + CTC EcoLogic			
Air-to-water heat pump:	No	Energy efficiency 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:	141	%
Equipped with a supplementary heater:	No	Package efficiency class:		-
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
Rated heat output (*)	*Prated*	**10**	kW
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T j			
T j = – 7 °C	*Pdh*	**na**	kW
T j = + 2 °C	*Pdh*	**9,3**	kW
T j = + 7 °C	*Pdh*	**9,5**	kW
T j = + 12 °C	*Pdh*	**9,8**	kW
T j = bivalent temperature	*Pdh*	**9,3**	kW
T j = operation limit temperature	*Pdh*	**na**	kW
For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C)	*Pdh*	**na**	kW
Bivalent temperature	T_{biv}	**3**	°C
Cycling interval capacity for heating	P_{cych}	**na**	kW
Degradation co-efficient (**)	*Cdh*	**0,99**	-
Power consumption in modes other than active mode			
Off mode	P_{OFF}	**0,018**	*kW*
Thermostat-off mode	P_{TO}	**0,003**	*kW*
Standby mode	P_{SB}	**0,018**	*kW*
Crankcase heater mode	P_{CK}	**0,000**	*kW*
Other items			
Capacity control		**Fixed**	
Sound power level, indoors/ outdoors	L_{WA}	**49/na**	*dB*
Annual energy consumption	Q_{HE}	**3701**	*kWh*

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency	η_s	**137**	%
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	*COPd*	**na**	-
T j = +2 °C	*COPd*	**3,10**	-
T j = +7 °C	*COPd*	**3,47**	-
T j = +12 °C	*COPd*	**4,15**	-
T j = bivalent temperature	*COPd*	**3,21**	-
T j = operation limit temperature	*COPd*	**na**	-
For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C)	*COPd*	**na**	-
For air-to-water heat pumps: Operation limit temperature	*TOL*	**na**	°C
Cycling interval efficiency	*COPcyc*	**na**	-
Heating water operating limit temperature	*WTOL*	**65**	°C
Supplementary heater			
Rated heat output (*)	*Psup*	**0,8**	*kW*
Type of energy input		***Electric***	
For air-to-water heat pumps: Rated air flow rate, outdoors	-	**na**	*m3/h*
For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	**1,9**	*m3/h*

For heat pump combination heater:

Declared load profile		**na**		**Water heating energy efficiency**	η_{wh}	**na**	%
Daily electricity consumption	Qelec	**na**	kWh	Daily fuel consumption	Q_{fuel}	**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.

Information for heat pump space heaters and heat pump combination heaters

Warm climate and Low temperature

ENERTECH GROUP
Enertech AB, 341 26 Ljungby

Model(s):	CTC EcoPart 410 + CTC EcoLogic			
Air-to-water heat pump:	No	Energy efficiency 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:	183	%
Equipped with a supplementary heater:	No	Package efficiency class:		-
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
Rated heat output (*)	*Prated*	11	kW
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T j			
T j = – 7 °C	*Pdh*	na	kW
T j = + 2 °C	*Pdh*	10,0	kW
T j = + 7 °C	*Pdh*	10,1	kW
T j = + 12 °C	*Pdh*	10,2	kW
T j = bivalent temperature	*Pdh*	10	kW
T j = operation limit temperature	*Pdh*	na	kW
For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C)	*Pdh*	na	kW
Bivalent temperature	T_{biv}	3	°C
Cycling interval capacity for heating	P_{cych}	na	kW
Degradation co-efficient (**)	*Cdh*	0,98	-
Power consumption in modes other than active mode			
Off mode	P_{OFF}	0,018	*kW*
Thermostat-off mode	P_{TO}	0,014	*kW*
Standby mode	P_{SB}	0,018	*kW*
Crankcase heater mode	P_{CK}	0,000	*kW*
Other items			
Capacity control		Fixed	
Sound power level, indoors/ outdoors	L_{WA}	49/na	*dB*
Annual energy consumption	Q_{HE}	3079	*kWh*

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency	η_s	179	%
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	*COPd*	na	-
T j = +2 °C	*COPd*	4,60	-
T j = +7 °C	*COPd*	4,82	-
T j = +12 °C	*COPd*	5,10	-
T j = bivalent temperature	*COPd*	4,67	-
T j = operation limit temperature	*COPd*	na	-
For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C)	*COPd*	na	-
For air-to-water heat pumps: Operation limit temperature	*TOL*	na	°C
Cycling interval efficiency	*COPcyc*	na	-
Heating water operating limit temperature	*WTOL*	65	°C
Supplementary heater			
Rated heat output (*)	*Psup*	0,8	*kW*
Type of energy input		Electric	
For air-to-water heat pumps: Rated air flow rate, outdoors	-	na	*m3/h*
For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	2,3	*m3/h*

For heat pump combination heater:

Declared load profile		na		**Water heating energy efficiency**	η_{wh}	na	%
Daily electricity consumption	Qelec	na	kWh	Daily fuel consumption	Q_{fuel}	na	kWh
Annual electricity consumption	AEC	na	kWh	Annual fuel consumption	AFC	na	GJ

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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.

Information for heat pump space heaters and heat pump combination heaters

Average climate and High temperature

ENERTECH GROUP
Enertech AB, 341 26 Ljungby

Model(s):	CTC EcoPart 410 + CTC EcoLogic			
Air-to-water heat pump:	No	Energy efficiency class:	A++	-
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:	142	%
Equipped with a supplementary heater:	No	Package efficiency class:	A++	-
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
Rated heat output (*)	*Prated*	11	kW
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T j			
T j = – 7 °C	*Pdh*	9,4	kW
T j = + 2 °C	*Pdh*	9,5	kW
T j = + 7 °C	*Pdh*	9,7	kW
T j = + 12 °C	*Pdh*	9,9	kW
T j = bivalent temperature	*Pdh*	9,4	kW
T j = operation limit temperature	*Pdh*	na	kW
For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C)	*Pdh*	na	kW
Bivalent temperature	T_{biv}	-7	°C
Cycling interval capacity for heating	P_{cych}	na	kW
Degradation co-efficient (**)	*Cdh*	0,99	-
Power consumption in modes other than active mode			
Off mode	P_{OFF}	0,018	*kW*
Thermostat-off mode	P_{TO}	0,003	*kW*
Standby mode	P_{SB}	0,018	*kW*
Crankcase heater mode	P_{CK}	0,000	*kW*
Other items			
Capacity control		Fixed	
Sound power level, indoors/ outdoors	L_{WA}	49/na	*dB*
Annual energy consumption	Q_{HE}	5999	*kWh*

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency	η_s	138	%
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	*COPd*	3,28	-
T j = +2 °C	*COPd*	3,66	-
T j = +7 °C	*COPd*	4,03	-
T j = +12 °C	*COPd*	4,41	-
T j = bivalent temperature	*COPd*	3,28	-
T j = operation limit temperature	*COPd*	na	-
For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C)	*COPd*	na	-
For air-to-water heat pumps: Operation limit temperature	*TOL*	na	°C
Cycling interval efficiency	*COPcyc*	na	-
Heating water operating limit temperature	*WTOL*	65	°C
Supplementary heater			
Rated heat output (*)	*Psup*	1,3	*kW*
Type of energy input		*Electric*	
For air-to-water heat pumps: Rated air flow rate, outdoors	-	na	*m3/h*
For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	1,9	*m3/h*

For heat pump combination heater:

Declared load profile		na		**Water heating energy efficiency**	η_{wh}	na	%
Daily electricity consumption	Qelec	na	kWh	Daily fuel consumption	Q_{fuel}	na	kWh
Annual electricity consumption	AEC	na	kWh	Annual fuel consumption	AFC	na	GJ

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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.

Information for heat pump space heaters and heat pump combination heaters

Average climate and Low temperature

ENERTECH GROUP
Enertech AB, 341 26 Ljungby

Model(s):	CTC EcoPart 410 + CTC EcoLogic			
Air-to-water heat pump:	No	Energy efficiency class:	A++	-
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:	185	%
Equipped with a supplementary heater:	No	Package efficiency class:	A+++	-
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
Rated heat output (*)	*Prated*	11	kW
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T j			
T j = – 7 °C	*Pdh*	10,0	kW
T j = + 2 °C	*Pdh*	10,1	kW
T j = + 7 °C	*Pdh*	10,2	kW
T j = + 12 °C	*Pdh*	10,3	kW
T j = bivalent temperature	*Pdh*	10,0	kW
T j = operation limit temperature	*Pdh*	na	kW
For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C)	*Pdh*	na	kW
Bivalent temperature	T_{biv}	-7	°C
Cycling interval capacity for heating	P_{cych}	na	kW
Degradation co-efficient (**)	*Cdh*	0,98	-
Power consumption in modes other than active mode			
Off mode	P_{OFF}	0,018	*kW*
Thermostat-off mode	P_{TO}	0,014	*kW*
Standby mode	P_{SB}	0,018	*kW*
Crankcase heater mode	P_{CK}	0,000	*kW*
Other items			
Capacity control		Fixed	
Sound power level, indoors/ outdoors	L_{WA}	49/na	*dB*
Annual energy consumption	Q_{HE}	4944	*kWh*

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency	η_s	181	%
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	*COPd*	4,69	-
T j = +2 °C	*COPd*	4,88	-
T j = +7 °C	*COPd*	5,05	-
T j = +12 °C	*COPd*	5,22	-
T j = bivalent temperature	*COPd*	4,69	-
T j = operation limit temperature	*COPd*	na	-
For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C)	*COPd*	na	-
For air-to-water heat pumps: Operation limit temperature	*TOL*	na	°C
Cycling interval efficiency	*COPcyc*	na	-
Heating water operating limit temperature	*WTOL*	65	°C
Supplementary heater			
Rated heat output (*)	*Psup*	1,3	*kW*
Type of energy input		*Electric*	
For air-to-water heat pumps: Rated air flow rate, outdoors	-	na	*m3/h*
For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	2,3	*m3/h*

For heat pump combination heater:

Declared load profile		na	
Daily electricity consumption	Qelec	na	kWh
Annual electricity consumption	AEC	na	kWh

Water heating energy efficiency	η_{wh}	na	%
Daily fuel consumption	Q_{fuel}	na	kWh
Annual fuel consumption	AFC	na	GJ

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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.

Information for heat pump space heaters and heat pump combination heaters

Cold climate and High temperature

ENERTECH GROUP
Enertech AB, 341 26 Ljungby

Model(s):	**CTC EcoPart 410 + CTC EcoLogic**			
Air-to-water heat pump:	**No**	Energy efficiency 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:	**145**	%
Equipped with a supplementary heater:	**No**	Package efficiency class:		-
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
Rated heat output (*)	*Prated*	**10**	kW
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T j			
T j = – 7 °C	*Pdh*	**9,5**	kW
T j = + 2 °C	*Pdh*	**9,7**	kW
T j = + 7 °C	*Pdh*	**9,8**	kW
T j = + 12 °C	*Pdh*	**10,0**	kW
T j = bivalent temperature	*Pdh*	**9,4**	kW
T j = operation limit temperature	*Pdh*	**na**	kW
For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C)	*Pdh*	**na**	kW
Bivalent temperature	T_{biv}	**-18**	°C
Cycling interval capacity for heating	P_{cych}	**na**	kW
Degradation co-efficient (**)	*Cdh*	**0,99**	-
Power consumption in modes other than active mode			
Off mode	P_{OFF}	**0,018**	*kW*
Thermostat-off mode	P_{TO}	**0,003**	*kW*
Standby mode	P_{SB}	**0,018**	*kW*
Crankcase heater mode	P_{CK}	**0,000**	*kW*
Other items			
Capacity control		**Fixed**	
Sound power level, indoors/ outdoors	L_{WA}	**49/na**	*dB*
Annual energy consumption	Q_{HE}	**6939**	*kWh*

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency	η_s	**141**	%
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	*COPd*	**3,58**	-
T j = +2 °C	*COPd*	**3,96**	-
T j = +7 °C	*COPd*	**4,29**	-
T j = +12 °C	*COPd*	**4,54**	-
T j = bivalent temperature	*COPd*	**3,27**	-
T j = operation limit temperature	*COPd*	**na**	-
For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C)	*COPd*	**na**	-
For air-to-water heat pumps: Operation limit temperature	*TOL*	**na**	°C
Cycling interval efficiency	*COPcyc*	**na**	-
Heating water operating limit temperature	*WTOL*	**65**	°C
Supplementary heater			
Rated heat output (*)	*Psup*	**1,2**	*kW*
Type of energy input		***Electric***	
For air-to-water heat pumps: Rated air flow rate, outdoors	-	**na**	*m3/h*
For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	**1,9**	*m3/h*

For heat pump combination heater:

Declared load profile		**na**	
Daily electricity consumption	Qelec	**na**	kWh
Annual electricity consumption	AEC	**na**	kWh

Water heating energy efficiency	η_{wh}	**na**	%
Daily fuel consumption	Q_{fuel}	**na**	kWh
Annual fuel consumption	AFC	**na**	GJ

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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.

Information for heat pump space heaters and heat pump combination heaters

Cold climate and Low temperature

ENERTECH GROUP
Enertech AB, 341 26 Ljungby

Model(s):	CTC EcoPart 410 + CTC EcoLogic			
Air-to-water heat pump:	No	Energy efficiency 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:	188	%
Equipped with a supplementary heater:	No	Package efficiency class:		-
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
Rated heat output (*)	*Prated*	**11**	kW
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T j			
T j = – 7 °C	*Pdh*	**10,1**	kW
T j = + 2 °C	*Pdh*	**10,2**	kW
T j = + 7 °C	*Pdh*	**10,2**	kW
T j = + 12 °C	*Pdh*	**10,2**	kW
T j = bivalent temperature	*Pdh*	**10,0**	kW
T j = operation limit temperature	*Pdh*	**na**	kW
For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C)	*Pdh*	**na**	kW
Bivalent temperature	T_{biv}	**-20**	°C
Cycling interval capacity for heating	P_{cych}	**na**	kW
Degradation co-efficient (**)	*Cdh*	**0,98**	-
Power consumption in modes other than active mode			
Off mode	P_{OFF}	**0,018**	*kW*
Thermostat-off mode	P_{TO}	**0,014**	*kW*
Standby mode	P_{SB}	**0,018**	*kW*
Crankcase heater mode	P_{CK}	**0,000**	*kW*
Other items			
Capacity control		**Fixed**	
Sound power level, indoors/ outdoors	L_{WA}	**49/na**	*dB*
Annual energy consumption	Q_{HE}	**5414**	*kWh*

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency	η_s	**184**	%
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	*COPd*	**4,89**	-
T j = +2 °C	*COPd*	**5,05**	-
T j = +7 °C	*COPd*	**5,16**	-
T j = +12 °C	*COPd*	**5,19**	-
T j = bivalent temperature	*COPd*	**4,66**	-
T j = operation limit temperature	*COPd*	**na**	-
For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C)	*COPd*	**na**	-
For air-to-water heat pumps: Operation limit temperature	*TOL*	**na**	°C
Cycling interval efficiency	*COPcyc*	**na**	-
Heating water operating limit temperature	*WTOL*	**65**	°C
Supplementary heater			
Rated heat output (*)	*Psup*	**0,6**	*kW*
Type of energy input		***Electric***	
For air-to-water heat pumps: Rated air flow rate, outdoors	-	**na**	*m3/h*
For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	**2,3**	*m3/h*

For heat pump combination heater:

Declared load profile		**na**	
Daily electricity consumption	Qelec	**na**	kWh
Annual electricity consumption	AEC	**na**	kWh

Water heating energy efficiency	η_{wh}	**na**	%
Daily fuel consumption	Q_{fuel}	**na**	kWh
Annual fuel consumption	AFC	**na**	GJ

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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.

Information for heat pump space heaters and heat pump combination heaters

Warm climate and High temperature

ENERTECH GROUP
Enertech AB, 341 26 Ljungby

Model(s):	**CTC EcoPart 410 + CTC EcoZenith 250**			
Air-to-water heat pump:	**No**	Energy efficiency 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:	**128**	%
Equipped with a supplementary heater:	**yes**	Package efficiency class:		-
Heat pump combination heater:	**Yes**			

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
Rated heat output (*)	*Prated*	**10**	kW
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T j			
T j = – 7 °C	*Pdh*	**na**	kW
T j = + 2 °C	*Pdh*	**9,3**	kW
T j = + 7 °C	*Pdh*	**9,5**	kW
T j = + 12 °C	*Pdh*	**9,8**	kW
T j = bivalent temperature	*Pdh*	**9,3**	kW
T j = operation limit temperature	*Pdh*	**9,3**	kW
For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C)	*Pdh*	**na**	kW
Bivalent temperature	T_{biv}	**3**	°C
Cycling interval capacity for heating	P_{cych}	**na**	kW
Degradation co-efficient (**)	*Cdh*	**0,99**	-
Power consumption in modes other than active mode			
Off mode	P_{OFF}	**0,018**	*kW*
Thermostat-off mode	P_{TO}	**0,026**	*kW*
Standby mode	P_{SB}	**0,018**	*kW*
Crankcase heater mode	P_{CK}	**0,000**	*kW*
Other items			
Capacity control		**Fixed**	
Sound power level, indoors/ outdoors	L_{WA}	**49/na**	*dB*
Annual energy consumption	Q_{HE}	**4090**	*kWh*

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency	η_s	**124**	%
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	*COPd*	**na**	-
T j = +2 °C	*COPd*	**2,86**	-
T j = +7 °C	*COPd*	**3,20**	-
T j = +12 °C	*COPd*	**3,78**	-
T j = bivalent temperature	*COPd*	**2,96**	-
T j = operation limit temperature	*COPd*	**2,86**	-
For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C)	*COPd*	**na**	-
For air-to-water heat pumps: Operation limit temperature	*TOL*	**na**	°C
Cycling interval efficiency	*COPcyc*	**na**	-
Heating water operating limit temperature	*WTOL*	**65**	°C
Supplementary heater			
Rated heat output (*)	*Psup*	**0,8**	*kW*
Type of energy input		***Electric***	
For air-to-water heat pumps: Rated air flow rate, outdoors	-	**na**	*m3/h*
For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	**1,9**	*m3/h*

For heat pump combination heater:

Declared load profile		**L**		**Water heating energy efficiency**	η_{wh}	**87**	%
Daily electricity consumption	Qelec	**5,377**	kWh	Daily fuel consumption	Q_{fuel}	**na**	kWh
Annual electricity consumption	AEC	**1183**	kWh	Annual fuel consumption	AFC	**na**	GJ

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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.

Information for heat pump space heaters and heat pump combination heaters

Warm climate and Low temperature

ENERTECH GROUP
Enertech AB, 341 26 Ljungby

Model(s):	**CTC EcoPart 410 + CTC EcoZenith 250**			
Air-to-water heat pump:	**No**	Energy efficiency 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:	**156**	%
Equipped with a supplementary heater:	**yes**	Package efficiency class:		-
Heat pump combination heater:	**Yes**			

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
Rated heat output (*)	*Prated*	**11**	kW
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T j			
T j = – 7 °C	*Pdh*	**na**	kW
T j = + 2 °C	*Pdh*	**10,0**	kW
T j = + 7 °C	*Pdh*	**10,1**	kW
T j = + 12 °C	*Pdh*	**10,2**	kW
T j = bivalent temperature	*Pdh*	**10,0**	kW
T j = operation limit temperature	*Pdh*	**10,0**	kW
For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C)	*Pdh*	**na**	kW
Bivalent temperature	T_{biv}	**3**	°C
Cycling interval capacity for heating	P_{cych}	**na**	kW
Degradation co-efficient (**)	*Cdh*	**0,96**	-
Power consumption in modes other than active mode			
Off mode	P_{OFF}	**0,018**	*kW*
Thermostat-off mode	P_{TO}	**0,082**	*kW*
Standby mode	P_{SB}	**0,018**	*kW*
Crankcase heater mode	P_{CK}	**0,000**	*kW*
Other items			
Capacity control		**Fixed**	
Sound power level, indoors/ outdoors	L_{WA}	**49/na**	*dB*
Annual energy consumption	Q_{HE}	**3592**	*kWh*

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency	η_s	**152**	%
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	*COPd*	**na**	-
T j = +2 °C	*COPd*	**4,16**	-
T j = +7 °C	*COPd*	**4,35**	-
T j = +12 °C	*COPd*	**4,58**	-
T j = bivalent temperature	*COPd*	**4,22**	-
T j = operation limit temperature	*COPd*	**4,16**	-
For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C)	*COPd*	**na**	-
For air-to-water heat pumps: Operation limit temperature	*TOL*	**na**	°C
Cycling interval efficiency	*COPcyc*	**na**	-
Heating water operating limit temperature	*WTOL*	**65**	°C
Supplementary heater			
Rated heat output (*)	*Psup*	**0,8**	*kW*
Type of energy input		***Electric***	
For air-to-water heat pumps: Rated air flow rate, outdoors	-	**na**	*m3/h*
For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	**2,3**	*m3/h*

For heat pump combination heater:

Declared load profile		**L**	
Daily electricity consumption	Qelec	**5,377**	kWh
Annual electricity consumption	AEC	**1183**	kWh

Water heating energy efficiency	η_{wh}	**87**	%
Daily fuel consumption	Q_{fuel}	**na**	kWh
Annual fuel consumption	AFC	**na**	GJ

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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.

Information for heat pump space heaters and heat pump combination heaters

Average climate and High temperature

ENERTECH GROUP
Enertech AB, 341 26 Ljungby

Model(s):	**CTC EcoPart 410 + CTC EcoZenith 250**			
Air-to-water heat pump:	**No**	Energy efficiency class:	**A++**	-
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:	**129**	%
Equipped with a supplementary heater:	**yes**	Package efficiency class:	**A++**	-
Heat pump combination heater:	**Yes**			

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
Rated heat output (*)	*Prated*	**11**	kW
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T j			
T j = – 7 °C	*Pdh*	**9,4**	kW
T j = + 2 °C	*Pdh*	**9,6**	kW
T j = + 7 °C	*Pdh*	**9,7**	kW
T j = + 12 °C	*Pdh*	**9,9**	kW
T j = bivalent temperature	*Pdh*	**9,4**	kW
T j = operation limit temperature	*Pdh*	**9,3**	kW
For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C)	*Pdh*	**na**	kW
Bivalent temperature	T_{biv}	**-6**	°C
Cycling interval capacity for heating	P_{cych}	**na**	kW
Degradation co-efficient (**)	*Cdh*	**0,98**	-
Power consumption in modes other than active mode			
Off mode	P_{OFF}	**0,018**	*kW*
Thermostat-off mode	P_{TO}	**0,026**	*kW*
Standby mode	P_{SB}	**0,018**	*kW*
Crankcase heater mode	P_{CK}	**0,000**	*kW*
Other items			
Capacity control		**Fixed**	
Sound power level, indoors/ outdoors	L_{WA}	**49/na**	*dB*
Annual energy consumption	Q_{HE}	**6900**	*kWh*

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency	η_s	**125**	%
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	*COPd*	**3,02**	-
T j = +2 °C	*COPd*	**3,39**	-
T j = +7 °C	*COPd*	**3,69**	-
T j = +12 °C	*COPd*	**4,00**	-
T j = bivalent temperature	*COPd*	**3,08**	-
T j = operation limit temperature	*COPd*	**2,86**	-
For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C)	*COPd*	**na**	-
For air-to-water heat pumps: Operation limit temperature	*TOL*	**na**	°C
Cycling interval efficiency	*COPcyc*	**na**	-
Heating water operating limit temperature	*WTOL*	**65**	°C
Supplementary heater			
Rated heat output (*)	*Psup*	**1,8**	*kW*
Type of energy input		***Electric***	
For air-to-water heat pumps: Rated air flow rate, outdoors	-	**na**	*m3/h*
For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	**1,9**	*m3/h*

For heat pump combination heater:

Declared load profile		**L**		**Water heating energy efficiency**	η_{wh}	**x**	%
Daily electricity consumption	Qelec	**x**	kWh	Daily fuel consumption	Q_{fuel}	**NA**	kWh
Annual electricity consumption	AEC	**x**	kWh	Annual fuel consumption	AFC	**NA**	GJ

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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.

Information for heat pump space heaters and heat pump combination heaters

Average climate and Low temperature

ENERTECH GROUP
Enertech AB, 341 26 Ljungby

Model(s):	**CTC EcoPart 410 + CTC EcoZenith 250**			
Air-to-water heat pump:	**No**	Energy efficiency class:	**A++**	-
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:	**161**	%
Equipped with a supplementary heater:	**yes**	Package efficiency class:	**A+++**	-
Heat pump combination heater:	**Yes**			

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
Rated heat output (*)	*Prated*	**12**	kW
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T j			
T j = – 7 °C	*Pdh*	**10,0**	kW
T j = + 2 °C	*Pdh*	**10,1**	kW
T j = + 7 °C	*Pdh*	**10,2**	kW
T j = + 12 °C	*Pdh*	**10,3**	kW
T j = bivalent temperature	*Pdh*	**10,0**	kW
T j = operation limit temperature	*Pdh*	**10,0**	kW
For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C)	*Pdh*	**na**	kW
Bivalent temperature	T_{biv}	**-6**	°C
Cycling interval capacity for heating	P_{cych}	**na**	kW
Degradation co-efficient (**)	*Cdh*	**0,96**	-
Power consumption in modes other than active mode			
Off mode	P_{OFF}	**0,018**	*kW*
Thermostat-off mode	P_{TO}	**0,082**	*kW*
Standby mode	P_{SB}	**0,018**	*kW*
Crankcase heater mode	P_{CK}	**0,000**	*kW*
Other items			
Capacity control		**Fixed**	
Sound power level, indoors/ outdoors	L_{WA}	**49/na**	*dB*
Annual energy consumption	Q_{HE}	**5938**	*kWh*

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency	η_s	**157**	%
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	*COPd*	**4,24**	-
T j = +2 °C	*COPd*	**4,40**	-
T j = +7 °C	*COPd*	**4,54**	-
T j = +12 °C	*COPd*	**4,68**	-
T j = bivalent temperature	*COPd*	**4,27**	-
T j = operation limit temperature	*COPd*	**4,16**	-
For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C)	*COPd*	**na**	-
For air-to-water heat pumps: Operation limit temperature	*TOL*	**na**	°C
Cycling interval efficiency	*COPcyc*	**na**	-
Heating water operating limit temperature	*WTOL*	**65**	°C
Supplementary heater			
Rated heat output (*)	*Psup*	**1,9**	*kW*
Type of energy input		***Electric***	
For air-to-water heat pumps: Rated air flow rate, outdoors	-	**na**	*m3/h*
For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	**2,3**	*m3/h*

For heat pump combination heater:

Declared load profile		**L**	
Daily electricity consumption	Qelec	**5,377**	kWh
Annual electricity consumption	AEC	**1183**	kWh

Water heating energy efficiency	η_{wh}	**87**	%
Daily fuel consumption	Q_{fuel}	**na**	kWh
Annual fuel consumption	AFC	**na**	GJ

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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.

Information for heat pump space heaters and heat pump combination heaters

Cold climate and High temperature

ENERTECH GROUP
Enertech AB, 341 26 Ljungby

Model(s):	**CTC EcoPart 410 + CTC EcoZenith 250**			
Air-to-water heat pump:	**No**	Energy efficiency 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:	**131**	%
Equipped with a supplementary heater:	**yes**	Package efficiency class:		-
Heat pump combination heater:	**Yes**			

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
Rated heat output (*)	*Prated*	**10**	kW
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T j			
T j = – 7 °C	*Pdh*	**9,5**	kW
T j = + 2 °C	*Pdh*	**9,7**	kW
T j = + 7 °C	*Pdh*	**9,8**	kW
T j = + 12 °C	*Pdh*	**10,0**	kW
T j = bivalent temperature	*Pdh*	**9,4**	kW
T j = operation limit temperature	*Pdh*	**9,3**	kW
For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C)	*Pdh*	**na**	kW
Bivalent temperature	T_{biv}	**-18**	°C
Cycling interval capacity for heating	P_{cych}	**na**	kW
Degradation co-efficient (**)	*Cdh*	**0,98**	-
Power consumption in modes other than active mode			
Off mode	P_{OFF}	**0,018**	*kW*
Thermostat-off mode	P_{TO}	**0,026**	*kW*
Standby mode	P_{SB}	**0,018**	*kW*
Crankcase heater mode	P_{CK}	**0,000**	*kW*
Other items			
Capacity control		**Fixed**	
Sound power level, indoors/ outdoors	L_{WA}	**49/na**	*dB*
Annual energy consumption	Q_{HE}	**7647**	*kWh*

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency	η_s	**127**	%
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	*COPd*	**3,30**	-
T j = +2 °C	*COPd*	**3,62**	-
T j = +7 °C	*COPd*	**3,90**	-
T j = +12 °C	*COPd*	**4,11**	-
T j = bivalent temperature	*COPd*	**3,02**	-
T j = operation limit temperature	*COPd*	**2,86**	-
For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C)	*COPd*	**na**	-
For air-to-water heat pumps: Operation limit temperature	*TOL*	**na**	°C
Cycling interval efficiency	*COPcyc*	**na**	-
Heating water operating limit temperature	*WTOL*	**65**	°C
Supplementary heater			
Rated heat output (*)	*Psup*	**1,2**	*kW*
Type of energy input		***Electric***	
For air-to-water heat pumps: Rated air flow rate, outdoors	-	**na**	*m3/h*
For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	**1,9**	*m3/h*

For heat pump combination heater:

Declared load profile		**L**	
Daily electricity consumption	Qelec	**5,377**	kWh
Annual electricity consumption	AEC	**1183**	kWh

Water heating energy efficiency	η_{wh}	**87**	%
Daily fuel consumption	Q_{fuel}	**na**	kWh
Annual fuel consumption	AFC	**na**	GJ

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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.

Information for heat pump space heaters and heat pump combination heaters

Cold climate and Low temperature

ENERTECH GROUP
Enertech AB, 341 26 Ljungby

Model(s):	**CTC EcoPart 410 + CTC EcoZenith 250**			
Air-to-water heat pump:	**No**	Energy efficiency 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:	**162**	%
Equipped with a supplementary heater:	**yes**	Package efficiency class:		-
Heat pump combination heater:	**Yes**			

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
Rated heat output (*)	*Prated*	**11**	kW
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T j			
T j = – 7 °C	*Pdh*	**10,1**	kW
T j = + 2 °C	*Pdh*	**10,2**	kW
T j = + 7 °C	*Pdh*	**10,2**	kW
T j = + 12 °C	*Pdh*	**10,2**	kW
T j = bivalent temperature	*Pdh*	**10,0**	kW
T j = operation limit temperature	*Pdh*	**10,0**	kW
For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C)	*Pdh*	**na**	kW
Bivalent temperature	T_{biv}	**-18**	°C
Cycling interval capacity for heating	P_{cych}	**na**	kW
Degradation co-efficient (**)	*Cdh*	**0,96**	-
Power consumption in modes other than active mode			
Off mode	P_{OFF}	**0,018**	*kW*
Thermostat-off mode	P_{TO}	**0,082**	*kW*
Standby mode	P_{SB}	**0,018**	*kW*
Crankcase heater mode	P_{CK}	**0,000**	*kW*
Other items			
Capacity control		**Fixed**	
Sound power level, indoors/ outdoors	L_{WA}	**49/na**	*dB*
Annual energy consumption	Q_{HE}	**6656**	*kWh*

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency	η_s	**158**	%
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	*COPd*	**4,42**	-
T j = +2 °C	*COPd*	**4,54**	-
T j = +7 °C	*COPd*	**4,64**	-
T j = +12 °C	*COPd*	**4,66**	-
T j = bivalent temperature	*COPd*	**4,26**	-
T j = operation limit temperature	*COPd*	**4,16**	-
For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C)	*COPd*	**na**	-
For air-to-water heat pumps: Operation limit temperature	*TOL*	**na**	°C
Cycling interval efficiency	*COPcyc*	**na**	-
Heating water operating limit temperature	*WTOL*	**65**	°C
Supplementary heater			
Rated heat output (*)	*Psup*	**1,2**	*kW*
Type of energy input		***Electric***	
For air-to-water heat pumps: Rated air flow rate, outdoors	-	**na**	*m3/h*
For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	**2,3**	*m3/h*

For heat pump combination heater:

Declared load profile		**L**	
Daily electricity consumption	Qelec	**x**	kWh
Annual electricity consumption	AEC	**x**	kWh

Water heating energy efficiency	η_{wh}	**x**	%
Daily fuel consumption	Q_{fuel}	**NA**	kWh
Annual fuel consumption	AFC	**NA**	GJ

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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.

Information for heat pump space heaters and heat pump combination heaters

Warm climate and High temperature

ENERTECH GROUP
Enertech AB, 341 26 Ljungby

Model(s):	**CTC EcoPart 410 + CTC EcoZenith 550**			
Air-to-water heat pump:	**No**	Energy efficiency 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:	**128**	%
Equipped with a supplementary heater:	**yes**	Package efficiency class:		-
Heat pump combination heater:	**Yes**			

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
Rated heat output (*)	*Prated*	**10**	kW
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T j			
T j = – 7 °C	*Pdh*	**na**	kW
T j = + 2 °C	*Pdh*	**9,3**	kW
T j = + 7 °C	*Pdh*	**9,5**	kW
T j = + 12 °C	*Pdh*	**9,8**	kW
T j = bivalent temperature	*Pdh*	**9,3**	kW
T j = operation limit temperature	*Pdh*	**9,3**	kW
For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C)	*Pdh*	**na**	kW
Bivalent temperature	T_{biv}	**3**	°C
Cycling interval capacity for heating	P_{cych}	**na**	kW
Degradation co-efficient (**)	*Cdh*	**0,99**	-
Power consumption in modes other than active mode			
Off mode	P_{OFF}	**0,018**	*kW*
Thermostat-off mode	P_{TO}	**0,019**	*kW*
Standby mode	P_{SB}	**0,018**	*kW*
Crankcase heater mode	P_{CK}	**0,000**	*kW*
Other items			
Capacity control		**Fixed**	
Sound power level, indoors/ outdoors	L_{WA}	**49/na**	*dB*
Annual energy consumption	Q_{HE}	**4070**	*kWh*

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency	η_s	**124**	%
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	*COPd*	**na**	-
T j = +2 °C	*COPd*	**2,86**	-
T j = +7 °C	*COPd*	**3,20**	-
T j = +12 °C	*COPd*	**3,78**	-
T j = bivalent temperature	*COPd*	**2,96**	-
T j = operation limit temperature	*COPd*	**2,86**	-
For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C)	*COPd*	**na**	-
For air-to-water heat pumps: Operation limit temperature	*TOL*	**na**	°C
Cycling interval efficiency	*COPcyc*	**na**	-
Heating water operating limit temperature	*WTOL*	**65**	°C
Supplementary heater			
Rated heat output (*)	*Psup*	**0,8**	*kW*
Type of energy input		***Electric***	
For air-to-water heat pumps: Rated air flow rate, outdoors	-	**na**	*m3/h*
For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	**1,9**	*m3/h*

For heat pump combination heater:

Declared load profile		**XL**		**Water heating energy efficiency**	η_{wh}	**101**	%
Daily electricity consumption	Qelec	**7,552**	kWh	Daily fuel consumption	Q_{fuel}	**NA**	kWh
Annual electricity consumption	AEC	**1661**	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.

Information for heat pump space heaters and heat pump combination heaters

Warm climate and Low temperature

ENERTECH GROUP
Enertech AB, 341 26 Ljungby

Model(s):	**CTC EcoPart 410 + CTC EcoZenith 550**			
Air-to-water heat pump:	**No**	Energy efficiency 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:	**160**	%
Equipped with a supplementary heater:	**yes**	Package efficiency class:		-
Heat pump combination heater:	**Yes**			

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
Rated heat output (*)	*Prated*	**11**	kW
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T j			
T j = – 7 °C	*Pdh*	**na**	kW
T j = + 2 °C	*Pdh*	**10,0**	kW
T j = + 7 °C	*Pdh*	**10,1**	kW
T j = + 12 °C	*Pdh*	**10,2**	kW
T j = bivalent temperature	*Pdh*	**10,0**	kW
T j = operation limit temperature	*Pdh*	**10,0**	kW
For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C)	*Pdh*	**na**	kW
Bivalent temperature	T_{biv}	**3**	°C
Cycling interval capacity for heating	P_{cych}	**na**	kW
Degradation co-efficient (**)	*Cdh*	**0,97**	-
Power consumption in modes other than active mode			
Off mode	P_{OFF}	**0,018**	*kW*
Thermostat-off mode	P_{TO}	**0,051**	*kW*
Standby mode	P_{SB}	**0,018**	*kW*
Crankcase heater mode	P_{CK}	**0,000**	*kW*
Other items			
Capacity control		**Fixed**	
Sound power level, indoors/ outdoors	L_{WA}	**49/na**	*dB*
Annual energy consumption	Q_{HE}	**3506**	*kWh*

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency	η_s	**156**	%
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	*COPd*	**na**	-
T j = +2 °C	*COPd*	**4,16**	-
T j = +7 °C	*COPd*	**4,35**	-
T j = +12 °C	*COPd*	**4,58**	-
T j = bivalent temperature	*COPd*	**4,22**	-
T j = operation limit temperature	*COPd*	**4,16**	-
For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C)	*COPd*	**na**	-
For air-to-water heat pumps: Operation limit temperature	*TOL*	**na**	°C
Cycling interval efficiency	*COPcyc*	**na**	-
Heating water operating limit temperature	*WTOL*	**65**	°C
Supplementary heater			
Rated heat output (*)	*Psup*	**0,8**	*kW*
Type of energy input		***Electric***	
For air-to-water heat pumps: Rated air flow rate, outdoors	-	**na**	*m3/h*
For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	**2,3**	*m3/h*

For heat pump combination heater:

Declared load profile		**XL**	
Daily electricity consumption	Qelec	**7,552**	kWh
Annual electricity consumption	AEC	**1661**	kWh

Water heating energy efficiency	η_{wh}	**101**	%
Daily fuel consumption	Q_{fuel}	**NA**	kWh
Annual fuel consumption	AFC	**NA**	GJ

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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.

Information for heat pump space heaters and heat pump combination heaters

Average climate and High temperature

ENERTECH GROUP
Enertech AB, 341 26 Ljungby

Model(s):	**CTC EcoPart 410 + CTC EcoZenith 550**			
Air-to-water heat pump:	**No**	Energy efficiency class:	**A++**	-
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:	**141**	%
Equipped with a supplementary heater:	**yes**	Package efficiency class:	**A++**	-
Heat pump combination heater:	**Yes**			

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
Rated heat output (*)	*Prated*	**9**	kW
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T j			
T j = – 7 °C	*Pdh*	**9,4**	kW
T j = + 2 °C	*Pdh*	**9,6**	kW
T j = + 7 °C	*Pdh*	**9,7**	kW
T j = + 12 °C	*Pdh*	**9,9**	kW
T j = bivalent temperature	*Pdh*	**9,4**	kW
T j = operation limit temperature	*Pdh*	**9,3**	kW
For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C)	*Pdh*	**na**	kW
Bivalent temperature	T_{biv}	**-6**	°C
Cycling interval capacity for heating	P_{cych}	**na**	kW
Degradation co-efficient (**)	*Cdh*	**0,99**	-
Power consumption in modes other than active mode			
Off mode	P_{OFF}	**0,018**	*kW*
Thermostat-off mode	P_{TO}	**0,019**	*kW*
Standby mode	P_{SB}	**0,018**	*kW*
Crankcase heater mode	P_{CK}	**0,000**	*kW*
Other items			
Capacity control		**Fixed**	
Sound power level, indoors/ outdoors	L_{WA}	**49/na**	*dB*
Annual energy consumption	Q_{HE}	**6880**	*kWh*

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency	η_s	**137**	%
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	*COPd*	**3,02**	-
T j = +2 °C	*COPd*	**3,39**	-
T j = +7 °C	*COPd*	**3,69**	-
T j = +12 °C	*COPd*	**4,00**	-
T j = bivalent temperature	*COPd*	**3,08**	-
T j = operation limit temperature	*COPd*	**2,86**	-
For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C)	*COPd*	**na**	-
For air-to-water heat pumps: Operation limit temperature	*TOL*	**na**	°C
Cycling interval efficiency	*COPcyc*	**na**	-
Heating water operating limit temperature	*WTOL*	**65**	°C
Supplementary heater			
Rated heat output (*)	*Psup*	**1,8**	*kW*
Type of energy input		***Electric***	
For air-to-water heat pumps: Rated air flow rate, outdoors	-	**na**	*m3/h*
For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	**1,9**	*m3/h*

For heat pump combination heater:

Declared load profile		**XL**	
Daily electricity consumption	Qelec	**7,552**	kWh
Annual electricity consumption	AEC	**1661**	kWh

Water heating energy efficiency	η_{wh}	**101**	%
Daily fuel consumption	Q_{fuel}	**NA**	kWh
Annual fuel consumption	AFC	**NA**	GJ

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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.

Information for heat pump space heaters and heat pump combination heaters

Average climate and Low temperature

ENERTECH GROUP
Enertech AB, 341 26 Ljungby

Model(s):	**CTC EcoPart 410 + CTC EcoZenith 550**			
Air-to-water heat pump:	**No**	Energy efficiency class:	**A++**	-
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:	**164**	%
Equipped with a supplementary heater:	**yes**	Package efficiency class:	**A+++**	-
Heat pump combination heater:	**Yes**			

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
Rated heat output (*)	*Prated*	**11**	kW
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T j			
T j = – 7 °C	*Pdh*	**10,0**	kW
T j = + 2 °C	*Pdh*	**10,1**	kW
T j = + 7 °C	*Pdh*	**10,2**	kW
T j = + 12 °C	*Pdh*	**10,3**	kW
T j = bivalent temperature	*Pdh*	**10,0**	kW
T j = operation limit temperature	*Pdh*	**10,0**	kW
For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C)	*Pdh*	**na**	kW
Bivalent temperature	T_{biv}	**-7**	°C
Cycling interval capacity for heating	P_{cych}	**na**	kW
Degradation co-efficient (**)	*Cdh*	**0,97**	-
Power consumption in modes other than active mode			
Off mode	P_{OFF}	**0,018**	*kW*
Thermostat-off mode	P_{TO}	**0,051**	*kW*
Standby mode	P_{SB}	**0,018**	*kW*
Crankcase heater mode	P_{CK}	**0,000**	*kW*
Other items			
Capacity control		**Fixed**	
Sound power level, indoors/ outdoors	L_{WA}	**49/na**	*dB*
Annual energy consumption	Q_{HE}	**5582**	*kWh*

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency	η_s	**160**	%
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	*COPd*	**4,24**	-
T j = +2 °C	*COPd*	**4,39**	-
T j = +7 °C	*COPd*	**4,53**	-
T j = +12 °C	*COPd*	**4,68**	-
T j = bivalent temperature	*COPd*	**4,24**	-
T j = operation limit temperature	*COPd*	**4,16**	-
For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C)	*COPd*	**na**	-
For air-to-water heat pumps: Operation limit temperature	*TOL*	**na**	°C
Cycling interval efficiency	*COPcyc*	**na**	-
Heating water operating limit temperature	*WTOL*	**65**	°C
Supplementary heater			
Rated heat output (*)	*Psup*	**1,3**	*kW*
Type of energy input		***Electric***	
For air-to-water heat pumps: Rated air flow rate, outdoors	-	**na**	*m3/h*
For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	**2,3**	*m3/h*

For heat pump combination heater:

Declared load profile		**XL**	
Daily electricity consumption	Qelec	**7,552**	kWh
Annual electricity consumption	AEC	**1661**	kWh

Water heating energy efficiency	η_{wh}	**101**	%
Daily fuel consumption	Q_{fuel}	**NA**	kWh
Annual fuel consumption	AFC	**NA**	GJ

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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.

Information for heat pump space heaters and heat pump combination heaters

Cold climate and High temperature

ENERTECH GROUP
Enertech AB, 341 26 Ljungby

Model(s):	**CTC EcoPart 410 + CTC EcoZenith 550**			
Air-to-water heat pump:	**No**	Energy efficiency 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:	**132**	%
Equipped with a supplementary heater:	**yes**	Package efficiency class:		-
Heat pump combination heater:	**Yes**			

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
Rated heat output (*)	*Prated*	**10**	kW
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T j			
T j = – 7 °C	*Pdh*	**9,5**	kW
T j = + 2 °C	*Pdh*	**9,7**	kW
T j = + 7 °C	*Pdh*	**9,8**	kW
T j = + 12 °C	*Pdh*	**10,0**	kW
T j = bivalent temperature	*Pdh*	**9,4**	kW
T j = operation limit temperature	*Pdh*	**9,3**	kW
For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C)	*Pdh*	**na**	kW
Bivalent temperature	T_{biv}	**-18**	°C
Cycling interval capacity for heating	P_{cych}	**na**	kW
Degradation co-efficient (**)	*Cdh*	**0,99**	-
Power consumption in modes other than active mode			
Off mode	P_{OFF}	**0,018**	*kW*
Thermostat-off mode	P_{TO}	**0,019**	*kW*
Standby mode	P_{SB}	**0,018**	*kW*
Crankcase heater mode	P_{CK}	**0,000**	*kW*
Other items			
Capacity control		**Fixed**	
Sound power level, indoors/ outdoors	L_{WA}	**49/na**	*dB*
Annual energy consumption	Q_{HE}	**7618**	*kWh*

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency	η_s	**128**	%
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	*COPd*	**3,30**	-
T j = +2 °C	*COPd*	**3,62**	-
T j = +7 °C	*COPd*	**3,90**	-
T j = +12 °C	*COPd*	**4,11**	-
T j = bivalent temperature	*COPd*	**3,02**	-
T j = operation limit temperature	*COPd*	**2,86**	-
For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C)	*COPd*	**na**	-
For air-to-water heat pumps: Operation limit temperature	*TOL*	**na**	°C
Cycling interval efficiency	*COPcyc*	**na**	-
Heating water operating limit temperature	*WTOL*	**65**	°C
Supplementary heater			
Rated heat output (*)	*Psup*	**1,2**	*kW*
Type of energy input		***Electric***	
For air-to-water heat pumps: Rated air flow rate, outdoors	-	**na**	*m3/h*
For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	**1,9**	*m3/h*

For heat pump combination heater:

Declared load profile		**XL**		**Water heating energy efficiency**	η_{wh}	**101**	%
Daily electricity consumption	Qelec	**7,552**	kWh	Daily fuel consumption	Q_{fuel}	**NA**	kWh
Annual electricity consumption	AEC	**1661**	kWh	Annual fuel consumption	AFC	**NA**	GJ

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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.

Information for heat pump space heaters and heat pump combination heaters

Cold climate and Low temperature

ENERTECH GROUP
Enertech AB, 341 26 Ljungby

Model(s):	**CTC EcoPart 410 + CTC EcoZenith 550**			
Air-to-water heat pump:	**No**	Energy efficiency 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:	**165**	%
Equipped with a supplementary heater:	**yes**	Package efficiency class:		-
Heat pump combination heater:	**Yes**			

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
Rated heat output (*)	*Prated*	**11**	kW
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T j			
T j = – 7 °C	*Pdh*	**10,1**	kW
T j = + 2 °C	*Pdh*	**10,2**	kW
T j = + 7 °C	*Pdh*	**10,2**	kW
T j = + 12 °C	*Pdh*	**10,2**	kW
T j = bivalent temperature	*Pdh*	**10,0**	kW
T j = operation limit temperature	*Pdh*	**10,0**	kW
For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C)	*Pdh*	**na**	kW
Bivalent temperature	T_{biv}	**-18**	°C
Cycling interval capacity for heating	P_{cych}	**na**	kW
Degradation co-efficient (**)	*Cdh*	**0,97**	-
Power consumption in modes other than active mode			
Off mode	P_{OFF}	**0,018**	*kW*
Thermostat-off mode	P_{TO}	**0,051**	*kW*
Standby mode	P_{SB}	**0,018**	*kW*
Crankcase heater mode	P_{CK}	**0,000**	*kW*
Other items			
Capacity control		**Fixed**	
Sound power level, indoors/ outdoors	L_{WA}	**49/na**	*dB*
Annual energy consumption	Q_{HE}	**6528**	*kWh*

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency	η_s	**161**	%
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	*COPd*	**4,42**	-
T j = +2 °C	*COPd*	**4,54**	-
T j = +7 °C	*COPd*	**4,64**	-
T j = +12 °C	*COPd*	**4,66**	-
T j = bivalent temperature	*COPd*	**4,26**	-
T j = operation limit temperature	*COPd*	**4,16**	-
For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C)	*COPd*	**na**	-
For air-to-water heat pumps: Operation limit temperature	*TOL*	**na**	°C
Cycling interval efficiency	*COPcyc*	**na**	-
Heating water operating limit temperature	*WTOL*	**65**	°C
Supplementary heater			
Rated heat output (*)	*Psup*	**1,2**	*kW*
Type of energy input		***Electric***	
For air-to-water heat pumps: Rated air flow rate, outdoors	-	**na**	*m3/h*
For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	**2,3**	*m3/h*

For heat pump combination heater:

Declared load profile		**XL**		**Water heating energy efficiency**	η_{wh}	**101**	%
Daily electricity consumption	Qelec	**7,552**	kWh	Daily fuel consumption	Q_{fuel}	**NA**	kWh
Annual electricity consumption	AEC	**1661**	kWh	Annual fuel consumption	AFC	**NA**	GJ

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Information for heat pump space heaters and heat pump combination heaters

Warm climate and High temperature

ENERTECH GROUP
Enertech AB, 341 26 Ljungby

Model(s):	CTC EcoPart 410 + CTC Basic			
Air-to-water heat pump:	No	Energy efficiency class:		-
Water-to-water heat pump:	No	Controller class:	I	-
Brine-to-water heat pump:	Yes	Controller contribution:	1	%
Low-temperature heat pump:	No	Package efficiency:	107	%
Equipped with a supplementary heater:	No	Package efficiency class:		-
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
Rated heat output (*)	*Prated*	**10**	kW
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T j			
T j = – 7 °C	*Pdh*	**na**	kW
T j = + 2 °C	*Pdh*	**9,3**	kW
T j = + 7 °C	*Pdh*	**9,2**	kW
T j = + 12 °C	*Pdh*	**9,2**	kW
T j = bivalent temperature	*Pdh*	**9,3**	kW
T j = operation limit temperature	*Pdh*	**9,3**	kW
For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C)	*Pdh*	**na**	kW
Bivalent temperature	T_{biv}	**3**	°C
Cycling interval capacity for heating	P_{cych}	**na**	kW
Degradation co-efficient (**)	*Cdh*	**1**	-
Power consumption in modes other than active mode			
Off mode	P_{OFF}	**0,007**	*kW*
Thermostat-off mode	P_{TO}	**0,003**	*kW*
Standby mode	P_{SB}	**0,007**	*kW*
Crankcase heater mode	P_{CK}	**0,000**	*kW*
Other items			
Capacity control		**Fixed**	
Sound power level, indoors/ outdoors	L_{WA}	**49/na**	*dB*
Annual energy consumption	Q_{HE}	**4709**	*kWh*

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency	η_s	**106**	%
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	*COPd*	**na**	-
T j = +2 °C	*COPd*	**3,10 kr**	-
T j = +7 °C	*COPd*	**2,96**	-
T j = +12 °C	*COPd*	**2,79**	-
T j = bivalent temperature	*COPd*	**3,10 kr**	-
T j = operation limit temperature	*COPd*	**3,10**	-
For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C)	*COPd*	**na**	-
For air-to-water heat pumps: Operation limit temperature	*TOL*	**na**	°C
Cycling interval efficiency	*COPcyc*	**na**	-
Heating water operating limit temperature	*WTOL*	**65**	°C
Supplementary heater			
Rated heat output (*)	*Psup*	**0,7**	*kW*
Type of energy input		***Electric***	
For air-to-water heat pumps: Rated air flow rate, outdoors	-	**na**	*m3/h*
For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	**1,9**	*m3/h*

For heat pump combination heater:

Declared load profile		**na**	
Daily electricity consumption	Qelec	**na**	kWh
Annual electricity consumption	AEC	**na**	kWh

Water heating energy efficiency	η_{wh}	**na**	%
Daily fuel consumption	Q_{fuel}	**NA**	kWh
Annual fuel consumption	AFC	**NA**	GJ

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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.

Information for heat pump space heaters and heat pump combination heaters

Warm climate and Low temperature

ENERTECH GROUP
Enertech AB, 341 26 Ljungby

Model(s):	CTC EcoPart 410 + CTC Basic			
Air-to-water heat pump:	No	Energy efficiency class:		-
Water-to-water heat pump:	No	Controller class:	I	-
Brine-to-water heat pump:	Yes	Controller contribution:	1	%
Low-temperature heat pump:	No	Package efficiency:	163	%
Equipped with a supplementary heater:	No	Package efficiency class:		-
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
Rated heat output (*)	*Prated*	**11**	kW
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T j			
T j = – 7 °C	*Pdh*	**na**	kW
T j = + 2 °C	*Pdh*	**10,0**	kW
T j = + 7 °C	*Pdh*	**9,9**	kW
T j = + 12 °C	*Pdh*	**9,8**	kW
T j = bivalent temperature	*Pdh*	**10,0**	kW
T j = operation limit temperature	*Pdh*	**10,0**	kW
For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C)	*Pdh*	**na**	kW
Bivalent temperature	T_{biv}	**3**	°C
Cycling interval capacity for heating	P_{cych}	**na**	kW
Degradation co-efficient (**)	*Cdh*	**0,99**	-
Power consumption in modes other than active mode			
Off mode	P_{OFF}	**0,007**	*kW*
Thermostat-off mode	P_{TO}	**0,014**	*kW*
Standby mode	P_{SB}	**0,007**	*kW*
Crankcase heater mode	P_{CK}	**0,000**	*kW*
Other items			
Capacity control		**Fixed**	
Sound power level, indoors/ outdoors	L_{WA}	**49/na**	*dB*
Annual energy consumption	Q_{HE}	**3372**	*kWh*

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency	η_s	**162**	%
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	*COPd*	**na**	-
T j = +2 °C	*COPd*	**4,60**	-
T j = +7 °C	*COPd*	**4,46**	-
T j = +12 °C	*COPd*	**4,29**	-
T j = bivalent temperature	*COPd*	**4,60**	-
T j = operation limit temperature	*COPd*	**4,60**	-
For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C)	*COPd*	**na**	-
For air-to-water heat pumps: Operation limit temperature	*TOL*	**na**	°C
Cycling interval efficiency	*COPcyc*	**na**	-
Heating water operating limit temperature	*WTOL*	**65**	°C
Supplementary heater			
Rated heat output (*)	*Psup*	**0,8**	*kW*
Type of energy input		***Electric***	
For air-to-water heat pumps: Rated air flow rate, outdoors	-	**na**	*m3/h*
For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	**2,3**	*m3/h*

For heat pump combination heater:

Declared load profile		**na**	
Daily electricity consumption	Qelec	**na**	kWh
Annual electricity consumption	AEC	**na**	kWh

Water heating energy efficiency	η_{wh}	**na**	%
Daily fuel consumption	Q_{fuel}	**NA**	kWh
Annual fuel consumption	AFC	**NA**	GJ

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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.

Information for heat pump space heaters and heat pump combination heaters

Average climate and High temperature

ENERTECH GROUP
Enertech AB, 341 26 Ljungby

Model(s):	**CTC EcoPart 410 + CTC Basic**			
Air-to-water heat pump:	**No**	Energy efficiency class:	**A+**	-
Water-to-water heat pump:	**No**	Controller class:	**I**	-
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**			

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
Rated heat output (*)	*Prated*	**11**	kW
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T j			
T j = – 7 °C	*Pdh*	**9,3**	kW
T j = + 2 °C	*Pdh*	**9,2**	kW
T j = + 7 °C	*Pdh*	**9,2**	kW
T j = + 12 °C	*Pdh*	**9,1**	kW
T j = bivalent temperature	*Pdh*	**9,3**	kW
T j = operation limit temperature	*Pdh*	**9,3**	kW
For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C)	*Pdh*	**na**	kW
Bivalent temperature	T_{biv}	**-6**	°C
Cycling interval capacity for heating	P_{cych}	**na**	kW
Degradation co-efficient (**)	*Cdh*	**1**	-
Power consumption in modes other than active mode			
Off mode	P_{OFF}	**0,007**	*kW*
Thermostat-off mode	P_{TO}	**0,003**	*kW*
Standby mode	P_{SB}	**0,007**	*kW*
Crankcase heater mode	P_{CK}	**0**	*kW*
Other items			
Capacity control		**Fixed**	
Sound power level, indoors/ outdoors	L_{WA}	**49/na**	*dB*
Annual energy consumption	Q_{HE}	**7880**	*kWh*

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency	η_s	**107**	%
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	*COPd*	**3,10**	-
T j = +2 °C	*COPd*	**2,94**	-
T j = +7 °C	*COPd*	**2,84**	-
T j = +12 °C	*COPd*	**2,73**	-
T j = bivalent temperature	*COPd*	**3,10**	-
T j = operation limit temperature	*COPd*	**3,10**	-
For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C)	*COPd*	**na**	-
For air-to-water heat pumps: Operation limit temperature	*TOL*	**na**	°C
Cycling interval efficiency	*COPcyc*	**na**	-
Heating water operating limit temperature	*WTOL*	**65**	°C
Supplementary heater			
Rated heat output (*)	*Psup*	**1,7**	*kW*
Type of energy input		**Electric**	
For air-to-water heat pumps: Rated air flow rate, outdoors	-	**na**	*m3/h*
For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	**1,9**	*m3/h*

For heat pump combination heater:

Declared load profile		**na**	
Daily electricity consumption	Qelec	**na**	kWh
Annual electricity consumption	AEC	**na**	kWh

Water heating energy efficiency	η_{wh}	**na**	%
Daily fuel consumption	Q_{fuel}	**NA**	kWh
Annual fuel consumption	AFC	**NA**	GJ

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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.

Information for heat pump space heaters and heat pump combination heaters

Average **climate and Low temperature**

ENERTECH GROUP
Enertech AB, 341 26 Ljungby

Model(s):	CTC EcoPart 410 + CTC Basic			
Air-to-water heat pump:	No	Energy efficiency class:	A++	-
Water-to-water heat pump:	No	Controller class:	I	-
Brine-to-water heat pump:	Yes	Controller contribution:	1	%
Low-temperature heat pump:	No	Package efficiency:	166	%
Equipped with a supplementary heater:	No	Package efficiency class:	A+++	-
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
Rated heat output (*)	*Prated*	**11**	kW
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T j			
T j = – 7 °C	*Pdh*	**10,0**	kW
T j = + 2 °C	*Pdh*	**9,9**	kW
T j = + 7 °C	*Pdh*	**9,9**	kW
T j = + 12 °C	*Pdh*	**9,8**	kW
T j = bivalent temperature	*Pdh*	**10,0**	kW
T j = operation limit temperature	*Pdh*	**10,0**	kW
For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C)	*Pdh*	**na**	kW
Bivalent temperature	T_{biv}	**-7**	°C
Cycling interval capacity for heating	P_{cych}	**na**	kW
Degradation co-efficient (**)	*Cdh*	**0,99**	-
Power consumption in modes other than active mode			
Off mode	P_{OFF}	**0,007**	*kW*
Thermostat-off mode	P_{TO}	**0,014**	*kW*
Standby mode	P_{SB}	**0,007**	*kW*
Crankcase heater mode	P_{CK}	**0,000**	*kW*
Other items			
Capacity control		**Fixed**	
Sound power level, indoors/ outdoors	L_{WA}	**49/na**	*dB*
Annual energy consumption	Q_{HE}	**5397**	*kWh*

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency	η_s	**165**	%
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	*COPd*	**4,60**	-
T j = +2 °C	*COPd*	**4,42**	-
T j = +7 °C	*COPd*	**4,33**	-
T j = +12 °C	*COPd*	**4,23**	-
T j = bivalent temperature	*COPd*	**4,60**	-
T j = operation limit temperature	*COPd*	**4,60**	-
For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C)	*COPd*	**na**	-
For air-to-water heat pumps: Operation limit temperature	*TOL*	**na**	°C
Cycling interval efficiency	*COPcyc*	**na**	-
Heating water operating limit temperature	*WTOL*	**65**	°C
Supplementary heater			
Rated heat output (*)	*Psup*	**1,3**	*kW*
Type of energy input		***Electric***	
For air-to-water heat pumps: Rated air flow rate, outdoors	-	**na**	*m3/h*
For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	**2,3**	*m3/h*

For heat pump combination heater:

Declared load profile		**na**	
Daily electricity consumption	Qelec	**na**	kWh
Annual electricity consumption	AEC	**na**	kWh

Water heating energy efficiency	η_{wh}	**na**	%
Daily fuel consumption	Q_{fuel}	**NA**	kWh
Annual fuel consumption	AFC	**NA**	GJ

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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.

Information for heat pump space heaters and heat pump combination heaters

Cold climate and High temperature

ENERTECH GROUP
Enertech AB, 341 26 Ljungby

Model(s):	CTC EcoPart 410 + CTC Basic			
Air-to-water heat pump:	No	Energy efficiency class:		-
Water-to-water heat pump:	No	Controller class:	I	-
Brine-to-water heat pump:	Yes	Controller contribution:	1	%
Low-temperature heat pump:	No	Package efficiency:	107	%
Equipped with a supplementary heater:	No	Package efficiency class:		-
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
Rated heat output (*)	*Prated*	**10**	kW
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T j			
T j = – 7 °C	*Pdh*	**9,2**	kW
T j = + 2 °C	*Pdh*	**9,2**	kW
T j = + 7 °C	*Pdh*	**9,2**	kW
T j = + 12 °C	*Pdh*	**9,1**	kW
T j = bivalent temperature	*Pdh*	**9,3**	kW
T j = operation limit temperature	*Pdh*	**9,3**	kW
For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C)	*Pdh*	**na**	kW
Bivalent temperature	T_{biv}	**-18**	°C
Cycling interval capacity for heating	P_{cych}	**na**	kW
Degradation co-efficient (**)	*Cdh*	**1**	-
Power consumption in modes other than active mode			
Off mode	P_{OFF}	**0,007**	*kW*
Thermostat-off mode	P_{TO}	**0,003**	*kW*
Standby mode	P_{SB}	**0,007**	*kW*
Crankcase heater mode	P_{CK}	**0,000**	*kW*
Other items			
Capacity control		**Fixed**	
Sound power level, indoors/ outdoors	L_{WA}	**49/na**	*dB*
Annual energy consumption	Q_{HE}	**8982**	*kWh*

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency	η_s	**106**	%
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	*COPd*	**2,96**	-
T j = +2 °C	*COPd*	**2,84**	-
T j = +7 °C	*COPd*	**2,77**	-
T j = +12 °C	*COPd*	**2,71**	-
T j = bivalent temperature	*COPd*	**3,10**	-
T j = operation limit temperature	*COPd*	**3,10**	-
For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C)	*COPd*	**na**	-
For air-to-water heat pumps: Operation limit temperature	*TOL*	**na**	°C
Cycling interval efficiency	*COPcyc*	**na**	-
Heating water operating limit temperature	*WTOL*	**65**	°C
Supplementary heater			
Rated heat output (*)	*Psup*	**1,1**	*kW*
Type of energy input		***Electric***	
For air-to-water heat pumps: Rated air flow rate, outdoors	-	**na**	*m3/h*
For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	**1,9**	*m3/h*

For heat pump combination heater:

Declared load profile		**na**	
Daily electricity consumption	Qelec	**na**	kWh
Annual electricity consumption	AEC	**na**	kWh

Water heating energy efficiency	η_{wh}	**na**	%
Daily fuel consumption	Q_{fuel}	**NA**	kWh
Annual fuel consumption	AFC	**NA**	GJ

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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.

Information for heat pump space heaters and heat pump combination heaters

Cold climate and Low temperature

ENERTECH GROUP
Enertech AB, 341 26 Ljungby

Model(s):	CTC EcoPart 410 + CTC Basic			
Air-to-water heat pump:	No	Energy efficiency class:		-
Water-to-water heat pump:	No	Controller class:	I	-
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:		-
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
Rated heat output (*)	*Prated*	**11**	kW
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T j			
T j = – 7 °C	*Pdh*	**9,9**	kW
T j = + 2 °C	*Pdh*	**9,8**	kW
T j = + 7 °C	*Pdh*	**9,8**	kW
T j = + 12 °C	*Pdh*	**9,8**	kW
T j = bivalent temperature	*Pdh*	**10,0**	kW
T j = operation limit temperature	*Pdh*	**10,0**	kW
For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C)	*Pdh*	**na**	kW
Bivalent temperature	T_{biv}	**-20**	°C
Cycling interval capacity for heating	P_{cych}	**na**	kW
Degradation co-efficient (**)	*Cdh*	**0,99**	-
Power consumption in modes other than active mode			
Off mode	P_{OFF}	**0,007**	*kW*
Thermostat-off mode	P_{TO}	**0,014**	*kW*
Standby mode	P_{SB}	**0,007**	*kW*
Crankcase heater mode	P_{CK}	**0,000**	*kW*
Other items			
Capacity control		**Fixed**	
Sound power level, indoors/ outdoors	L_{WA}	**49/na**	*dB*
Annual energy consumption	Q_{HE}	**6051**	*kWh*

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency	η_s	**164**	%
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	*COPd*	**4,44**	-
T j = +2 °C	*COPd*	**4,32**	-
T j = +7 °C	*COPd*	**4,26**	-
T j = +12 °C	*COPd*	**4,20**	-
T j = bivalent temperature	*COPd*	**4,60**	-
T j = operation limit temperature	*COPd*	**4,60**	-
For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C)	*COPd*	**na**	-
For air-to-water heat pumps: Operation limit temperature	*TOL*	**na**	°C
Cycling interval efficiency	*COPcyc*	**na**	-
Heating water operating limit temperature	*WTOL*	**65**	°C
Supplementary heater			
Rated heat output (*)	*Psup*	**0,6**	*kW*
Type of energy input		***Electric***	
For air-to-water heat pumps: Rated air flow rate, outdoors	-	**na**	*m3/h*
For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	**2,3**	*m3/h*

For heat pump combination heater:

Declared load profile		**na**	
Daily electricity consumption	Qelec	**na**	kWh
Annual electricity consumption	AEC	**na**	kWh

Water heating energy efficiency	η_{wh}	**na**	%
Daily fuel consumption	Q_{fuel}	**NA**	kWh
Annual fuel consumption	AFC	**NA**	GJ

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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.