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 425 + CTC EcoLogic, CTC EcoPart i425 PRO			
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*	24	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*	27,2	kW
T j = + 7 °C	*Pdh*	22,2	kW
T j = + 12 °C	*Pdh*	23,0	kW
T j = bivalent temperature	*Pdh*	22,0	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}	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}	0,005	*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}	50/na	*dB*
Annual energy consumption	Q_{HE}	8728	*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*	3,08	-
T j = +7 °C	*COPd*	3,45	-
T j = +12 °C	*COPd*	4,14	-
T j = bivalent temperature	*COPd*	3,18	-
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*	1,0	*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	-	3,1/1,6	*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 425 + CTC EcoLogic, CTC EcoPart i425 PRO			
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:	184	%
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*	**26**	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*	**23,6**	kW
T j = + 7 °C	*Pdh*	**23,8**	kW
T j = + 12 °C	*Pdh*	**24,0**	kW
T j = bivalent temperature	*Pdh*	**23,6**	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}	**0,022**	*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}	**50/na**	*dB*
Annual energy consumption	Q_{HE}	**7236**	*kWh*

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency	η_s	**180**	%
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*	**4,83**	-
T j = +12 °C	*COPd*	**5,11**	-
T j = bivalent temperature	*COPd*	**4,68**	-
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*	**1,8**	*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	-	**3,8/2,0**	*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 425 + CTC EcoLogic, CTC EcoPart i425 PRO			
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*	24	kW
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T j			
T j = – 7 °C	*Pdh*	22,0	kW
T j = + 2 °C	*Pdh*	22,4	kW
T j = + 7 °C	*Pdh*	22,8	kW
T j = + 12 °C	*Pdh*	23,2	kW
T j = bivalent temperature	*Pdh*	22,0	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*	0,99	-
Power consumption in modes other than active mode			
Off mode	P_{OFF}	0,018	*kW*
Thermostat-off mode	P_{TO}	0,005	*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}	50/na	*dB*
Annual energy consumption	Q_{HE}	14168	*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*	3,25	-
T j = +2 °C	*COPd*	3,64	-
T j = +7 °C	*COPd*	4,02	-
T j = +12 °C	*COPd*	4,40	-
T j = bivalent temperature	*COPd*	3,25	-
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*	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	-	3,1/1,6	*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 425 + CTC EcoLogic, CTC EcoPart i425 PRO			
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:	186	%
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*	26	kW
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T j			
T j = – 7 °C	*Pdh*	23,6	kW
T j = + 2 °C	*Pdh*	23,8	kW
T j = + 7 °C	*Pdh*	24,0	kW
T j = + 12 °C	*Pdh*	24,2	kW
T j = bivalent temperature	*Pdh*	23,6	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}	0,022	*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}	50/na	*dB*
Annual energy consumption	Q_{HE}	11628	*kWh*

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency	η_s	182	%
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*	5,06	-
T j = +12 °C	*COPd*	5,23	-
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*	3,2	*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	-	3,8/2,0	*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 425 + CTC EcoLogic, CTC EcoPart i425 PRO			
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*	24	kW
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T j			
T j = – 7 °C	*Pdh*	22,4	kW
T j = + 2 °C	*Pdh*	22,8	kW
T j = + 7 °C	*Pdh*	23,2	kW
T j = + 12 °C	*Pdh*	23,4	kW
T j = bivalent temperature	*Pdh*	22,0	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}	-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}	0,005	*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}	50/na	*dB*
Annual energy consumption	Q_{HE}	16390	*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*	3,56	-
T j = +2 °C	*COPd*	3,94	-
T j = +7 °C	*COPd*	4,29	-
T j = +12 °C	*COPd*	4,54	-
T j = bivalent temperature	*COPd*	3,25	-
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*	2,8	*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	-	3,1/1,6	*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 425 + CTC EcoLogic, CTC EcoPart i425 PRO			
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:	189	%
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*	24	kW
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T j			
T j = – 7 °C	*Pdh*	23,8	kW
T j = + 2 °C	*Pdh*	24,0	kW
T j = + 7 °C	*Pdh*	24,2	kW
T j = + 12 °C	*Pdh*	24,2	kW
T j = bivalent temperature	*Pdh*	23,6	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}	0,022	*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}	50/na	*dB*
Annual energy consumption	Q_{HE}	12746	*kWh*

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency	η_s	185	%
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*	5,06	-
T j = +7 °C	*COPd*	5,18	-
T j = +12 °C	*COPd*	5,20	-
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*	1,4	*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	-	3,8/2,0	*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

Warm climate and High temperature

ENERTECH GROUP
Enertech AB, 341 26 Ljungby

Model(s):	**CTC EcoPart 425 + 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:	**123**	%
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*	**25**	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*	**23,5**	kW
T j = + 7 °C	*Pdh*	**23,8**	kW
T j = + 12 °C	*Pdh*	**24,5**	kW
T j = bivalent temperature	*Pdh*	**23,6**	kW
T j = operation limit temperature	*Pdh*	**23,5**	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}	**0,025**	*kW*
Thermostat-off mode	P_{TO}	**0,117**	*kW*
Standby mode	P_{SB}	**0,025**	*kW*
Crankcase heater mode	P_{CK}	**0,000**	*kW*
Other items			
Capacity control		**Fixed**	
Sound power level, indoors/ outdoors	L_{WA}	**50/na**	*dB*
Annual energy consumption	Q_{HE}	**10694**	*kWh*

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency	η_s	**119**	%
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*	**2,79**	-
T j = +7 °C	*COPd*	**3,09**	-
T j = +12 °C	*COPd*	**3,64**	-
T j = bivalent temperature	*COPd*	**2,87**	-
T j = operation limit temperature	*COPd*	**2,79**	-
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	-	**3,1/1,6**	*m3/h*

For heat pump combination heater:

Declared load profile		**XXL**		**Water heating energy efficiency**	η_{wh}	**101**	%
Daily electricity consumption	Qelec	**9,750**	kWh	Daily fuel consumption	Q_{fuel}	**NA**	kWh
Annual electricity consumption	AEC	**2145**	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 425 + 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:	**147**	%
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*	**29**	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*	**25,1**	kW
T j = + 7 °C	*Pdh*	**25,3**	kW
T j = + 12 °C	*Pdh*	**25,6**	kW
T j = bivalent temperature	*Pdh*	**25,2**	kW
T j = operation limit temperature	*Pdh*	**25,1**	kW
For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C)	*Pdh*	**na**	kW
Bivalent temperature	T_{biv}	**4**	°C
Cycling interval capacity for heating	P_{cych}	**na**	kW
Degradation co-efficient (**)	*Cdh*	**0,94**	-
Power consumption in modes other than active mode			
Off mode	P_{OFF}	**0,025**	*kW*
Thermostat-off mode	P_{TO}	**0,354**	*kW*
Standby mode	P_{SB}	**0,025**	*kW*
Crankcase heater mode	P_{CK}	**0,000**	*kW*
Other items			
Capacity control		**Fixed**	
Sound power level, indoors/ outdoors	L_{WA}	**50/na**	*dB*
Annual energy consumption	Q_{HE}	**10386**	*kWh*

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency	η_s	**143**	%
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*	**4,02**	-
T j = +7 °C	*COPd*	**4,23**	-
T j = +12 °C	*COPd*	**4,45**	-
T j = bivalent temperature	*COPd*	**4,14**	-
T j = operation limit temperature	*COPd*	**4,02**	-
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*	**4,4**	*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	-	**3,8/2,0**	*m3/h*

For heat pump combination heater:

Declared load profile		**XXL**		**Water heating energy efficiency**	η_{wh}	**101**	%
Daily electricity consumption	Qelec	**9,750**	kWh	Daily fuel consumption	Q_{fuel}	**NA**	kWh
Annual electricity consumption	AEC	**2145**	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 425 + 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:	**124**	%
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*	**28**	kW
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T j			
T j = – 7 °C	*Pdh*	**23,7**	kW
T j = + 2 °C	*Pdh*	**24,0**	kW
T j = + 7 °C	*Pdh*	**24,4**	kW
T j = + 12 °C	*Pdh*	**24,9**	kW
T j = bivalent temperature	*Pdh*	**23,7**	kW
T j = operation limit temperature	*Pdh*	**23,5**	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}	**0,011**	*kW*
Thermostat-off mode	P_{TO}	**0,117**	*kW*
Standby mode	P_{SB}	**0,025**	*kW*
Crankcase heater mode	P_{CK}	**0,000**	*kW*
Other items			
Capacity control		**Fixed**	
Sound power level, indoors/ outdoors	L_{WA}	**50/na**	*dB*
Annual energy consumption	Q_{HE}	**18065**	*kWh*

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency	η_s	**120**	%
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*	**2,93**	-
T j = +2 °C	*COPd*	**3,25**	-
T j = +7 °C	*COPd*	**3,56**	-
T j = +12 °C	*COPd*	**3,87**	-
T j = bivalent temperature	*COPd*	**2,98**	-
T j = operation limit temperature	*COPd*	**2,79**	-
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*	**4,5**	*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	-	**3,1/1,6**	*m3/h*

For heat pump combination heater:

Declared load profile		**XXL**		**Water heating energy efficiency**	η_{wh}	**101**	%
Daily electricity consumption	Qelec	**9,750**	kWh	Daily fuel consumption	Q_{fuel}	**NA**	kWh
Annual electricity consumption	AEC	**2145**	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 425 + 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:	**153**	%
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*	**30**	kW
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T j			
T j = – 7 °C	*Pdh*	**25,2**	kW
T j = + 2 °C	*Pdh*	**25,4**	kW
T j = + 7 °C	*Pdh*	**25,6**	kW
T j = + 12 °C	*Pdh*	**25,8**	kW
T j = bivalent temperature	*Pdh*	**25,2**	kW
T j = operation limit temperature	*Pdh*	**25,1**	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*	**0,94**	-
Power consumption in modes other than active mode			
Off mode	P_{OFF}	**0,025**	*kW*
Thermostat-off mode	P_{TO}	**0,354**	*kW*
Standby mode	P_{SB}	**0,025**	*kW*
Crankcase heater mode	P_{CK}	**0,000**	*kW*
Other items			
Capacity control		**Fixed**	
Sound power level, indoors/ outdoors	L_{WA}	**50/na**	*dB*
Annual energy consumption	Q_{HE}	**15661**	*kWh*

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency	η_s	**149**	%
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*	**4,10**	-
T j = +2 °C	*COPd*	**4,26**	-
T j = +7 °C	*COPd*	**4,40**	-
T j = +12 °C	*COPd*	**4,54**	-
T j = bivalent temperature	*COPd*	**4,13**	-
T j = operation limit temperature	*COPd*	**4,02**	-
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*	**4,7**	*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	-	**3,8/2,0**	*m3/h*

For heat pump combination heater:

Declared load profile		**XXL**		**Water heating energy efficiency**	η_{wh}	**101**	%
Daily electricity consumption	Qelec	**9,750**	kWh	Daily fuel consumption	Q_{fuel}	**NA**	kWh
Annual electricity consumption	AEC	**2145**	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 425 + 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:	**126**	%
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*	**27**	kW
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T j			
T j = – 7 °C	*Pdh*	**23,9**	kW
T j = + 2 °C	*Pdh*	**24,3**	kW
T j = + 7 °C	*Pdh*	**24,7**	kW
T j = + 12 °C	*Pdh*	**25,0**	kW
T j = bivalent temperature	*Pdh*	**23,7**	kW
T j = operation limit temperature	*Pdh*	**23,5**	kW
For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C)	*Pdh*	**na**	kW
Bivalent temperature	T_{biv}	**-17**	°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}	**0,025**	*kW*
Thermostat-off mode	P_{TO}	**0,117**	*kW*
Standby mode	P_{SB}	**0,025**	*kW*
Crankcase heater mode	P_{CK}	**0,000**	*kW*
Other items			
Capacity control		**Fixed**	
Sound power level, indoors/ outdoors	L_{WA}	**50/na**	*dB*
Annual energy consumption	Q_{HE}	**20723**	*kWh*

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency	η_s	**122**	%
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*	**3,18**	-
T j = +2 °C	*COPd*	**3,49**	-
T j = +7 °C	*COPd*	**3,77**	-
T j = +12 °C	*COPd*	**3,98**	-
T j = bivalent temperature	*COPd*	**2,96**	-
T j = operation limit temperature	*COPd*	**2,79**	-
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*	**3,8**	*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	-	**3,1/1,6**	*m3/h*

For heat pump combination heater:

Declared load profile		**XXL**		**Water heating energy efficiency**	η_{wh}	**101**	%
Daily electricity consumption	Qelec	**9,750**	kWh	Daily fuel consumption	Q_{fuel}	**NA**	kWh
Annual electricity consumption	AEC	**2145**	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 425 + 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:	**153**	%
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*	**29**	kW
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T j			
T j = – 7 °C	*Pdh*	**25,4**	kW
T j = + 2 °C	*Pdh*	**25,6**	kW
T j = + 7 °C	*Pdh*	**25,7**	kW
T j = + 12 °C	*Pdh*	**25,7**	kW
T j = bivalent temperature	*Pdh*	**25,2**	kW
T j = operation limit temperature	*Pdh*	**25,1**	kW
For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C)	*Pdh*	**na**	kW
Bivalent temperature	T_{biv}	**-17**	°C
Cycling interval capacity for heating	P_{cych}	**na**	kW
Degradation co-efficient (**)	*Cdh*	**0,93**	-
Power consumption in modes other than active mode			
Off mode	P_{OFF}	**0,025**	*kW*
Thermostat-off mode	P_{TO}	**0,354**	*kW*
Standby mode	P_{SB}	**0,025**	*kW*
Crankcase heater mode	P_{CK}	**0,000**	*kW*
Other items			
Capacity control		**Fixed**	
Sound power level, indoors/ outdoors	L_{WA}	**50/na**	*dB*
Annual energy consumption	Q_{HE}	**18242**	*kWh*

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency	η_s	**149**	%
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*	**4,29**	-
T j = +2 °C	*COPd*	**4,41**	-
T j = +7 °C	*COPd*	**4,50**	-
T j = +12 °C	*COPd*	**4,52**	-
T j = bivalent temperature	*COPd*	**4,15**	-
T j = operation limit temperature	*COPd*	**4,02**	-
For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C)	*COPd*	**4,18**	-
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*	**4,0**	*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	-	**3,8/2,0**	*m3/h*

For heat pump combination heater:

Declared load profile		**XXL**		**Water heating energy efficiency**	η_{wh}	**101**	%
Daily electricity consumption	Qelec	**9,750**	kWh	Daily fuel consumption	Q_{fuel}	**NA**	kWh
Annual electricity consumption	AEC	**2145**	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 425 + CTC Eco 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:	106	%
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*	**24**	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*	**22,0**	kW
T j = + 7 °C	*Pdh*	**21,8**	kW
T j = + 12 °C	*Pdh*	**21,8**	kW
T j = bivalent temperature	*Pdh*	**22,0**	kW
T j = operation limit temperature	*Pdh*	**22,0**	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*	**1**	-
Power consumption in modes other than active mode			
Off mode	P_{OFF}	**0,007**	*kW*
Thermostat-off mode	P_{TO}	**0,005**	*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}	**50/na**	*dB*
Annual energy consumption	Q_{HE}	**11194**	*kWh*

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency	η_s	**105**	%
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*	**3,08**	-
T j = +7 °C	*COPd*	**2,94**	-
T j = +12 °C	*COPd*	**2,77**	-
T j = bivalent temperature	*COPd*	**3,08**	-
T j = operation limit temperature	*COPd*	**3,08**	-
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*	**1,6**	*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	-	**3,1/1,5**	*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 425 + CTC Eco 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*	**26**	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*	**23,6**	kW
T j = + 7 °C	*Pdh*	**23,4**	kW
T j = + 12 °C	*Pdh*	**23,2**	kW
T j = bivalent temperature	*Pdh*	**23,6**	kW
T j = operation limit temperature	*Pdh*	**23,6**	kW
For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C)	*Pdh*	**na**	kW
Bivalent temperature	T_{biv}	**4,6**	°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}	**0,007**	*kW*
Thermostat-off mode	P_{TO}	**0,022**	*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}	**50/na**	*dB*
Annual energy consumption	Q_{HE}	**7968**	*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*	**4,28**	-
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*	**1,8**	*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	-	**3,8/1,9**	*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 High temperature

ENERTECH GROUP
Enertech AB, 341 26 Ljungby

Model(s):	CTC EcoPart 425 + CTC Eco 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:	107	%
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*	**26**	kW
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T j			
T j = – 7 °C	*Pdh*	**22,0**	kW
T j = + 2 °C	*Pdh*	**21,8**	kW
T j = + 7 °C	*Pdh*	**21,8**	kW
T j = + 12 °C	*Pdh*	**21,8**	kW
T j = bivalent temperature	*Pdh*	**22,0**	kW
T j = operation limit temperature	*Pdh*	**22,0**	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*	**1**	-
Power consumption in modes other than active mode			
Off mode	P_{OFF}	**0,007**	*kW*
Thermostat-off mode	P_{TO}	**0,005**	*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}	**50/na**	*dB*
Annual energy consumption	Q_{HE}	**18736**	*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*	**3,08**	-
T j = +2 °C	*COPd*	**2,91**	-
T j = +7 °C	*COPd*	**2,81**	-
T j = +12 °C	*COPd*	**2,71**	-
T j = bivalent temperature	*COPd*	**3,08**	-
T j = operation limit temperature	*COPd*	**3,08**	-
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*	**4**	*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	-	**3,1/1,5**	*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 425 + CTC Eco 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:	165	%
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*	**26**	kW
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T j			
T j = – 7 °C	*Pdh*	**23,6**	kW
T j = + 2 °C	*Pdh*	**23,4**	kW
T j = + 7 °C	*Pdh*	**23,2**	kW
T j = + 12 °C	*Pdh*	**23,0**	kW
T j = bivalent temperature	*Pdh*	**23,6**	kW
T j = operation limit temperature	*Pdh*	**23,6**	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}	**0,022**	*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}	**50/na**	*dB*
Annual energy consumption	Q_{HE}	**12746**	*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*	**4,60**	-
T j = +2 °C	*COPd*	**4,42**	-
T j = +7 °C	*COPd*	**4,32**	-
T j = +12 °C	*COPd*	**4,22**	-
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*	**3,0**	*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	-	**3,8/1,9**	*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

Cold climate and High temperature

ENERTECH GROUP
Enertech AB, 341 26 Ljungby

Model(s):	CTC EcoPart 425 + CTC Eco 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:	106	%
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*	**24**	kW
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T j			
T j = – 7 °C	*Pdh*	**21,8**	kW
T j = + 2 °C	*Pdh*	**21,6**	kW
T j = + 7 °C	*Pdh*	**21,6**	kW
T j = + 12 °C	*Pdh*	**21,6**	kW
T j = bivalent temperature	*Pdh*	**22,0**	kW
T j = operation limit temperature	*Pdh*	**22,0**	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*	**1**	-
Power consumption in modes other than active mode			
Off mode	P_{OFF}	**0,007**	*kW*
Thermostat-off mode	P_{TO}	**0,005**	*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}	**50/na**	*dB*
Annual energy consumption	Q_{HE}	**21364**	*kWh*

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency	η_s	**105**	%
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*	**2,93**	-
T j = +2 °C	*COPd*	**2,81**	-
T j = +7 °C	*COPd*	**2,75**	-
T j = +12 °C	*COPd*	**2,68**	-
T j = bivalent temperature	*COPd*	**3,08**	-
T j = operation limit temperature	*COPd*	**3,08**	-
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*	**2,6**	*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	-	**3,1/1,5**	*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 425 + CTC Eco 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:	164	%
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*	**24**	kW
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T j			
T j = – 7 °C	*Pdh*	**23,4**	kW
T j = + 2 °C	*Pdh*	**23,2**	kW
T j = + 7 °C	*Pdh*	**23,2**	kW
T j = + 12 °C	*Pdh*	**23,0**	kW
T j = bivalent temperature	*Pdh*	**23,6**	kW
T j = operation limit temperature	*Pdh*	**23,6**	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}	**0,022**	*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}	**50/na**	*dB*
Annual energy consumption	Q_{HE}	**14304**	*kWh*

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency	η_s	**163**	%
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*	**11,70**	-
T j = +2 °C	*COPd*	**11,60**	-
T j = +7 °C	*COPd*	**11,60**	-
T j = +12 °C	*COPd*	**11,50**	-
T j = bivalent temperature	*COPd*	**11,80**	-
T j = operation limit temperature	*COPd*	**11,80**	-
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*	**1,4**	*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	-	**3,8/1,9**	*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.