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 408 + 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:	139	%
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*	8	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*	7,6	kW
T j = + 7 °C	*Pdh*	7,8	kW
T j = + 12 °C	*Pdh*	8,0	kW
T j = bivalent temperature	*Pdh*	7,7	kW
T j = operation limit temperature	*Pdh*	7,6	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}	0,004	*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}	43/na	*dB*
Annual energy consumption	Q_{HE}	3083	*kWh*

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency	η_s	135	%
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*	3,13	-
T j = +7 °C	*COPd*	3,46	-
T j = +12 °C	*COPd*	4,12	-
T j = bivalent temperature	*COPd*	3,22	-
T j = operation limit temperature	*COPd*	3,13	-
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	-	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 408 + 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:	181	%
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*	9	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*	8,2	kW
T j = + 7 °C	*Pdh*	8,3	kW
T j = + 12 °C	*Pdh*	8,4	kW
T j = bivalent temperature	*Pdh*	8,2	kW
T j = operation limit temperature	*Pdh*	8,2	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}	0,013	*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}	43/na	*dB*
Annual energy consumption	Q_{HE}	2558	*kWh*

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency	η_s	177	%
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*	4,58	-
T j = +7 °C	*COPd*	4,81	-
T j = +12 °C	*COPd*	5,09	-
T j = bivalent temperature	*COPd*	4,66	-
T j = operation limit temperature	*COPd*	4,58	-
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	-	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

Average climate and High temperature

ENERTECH GROUP
Enertech AB, 341 26 Ljungby

Model(s):	CTC EcoPart 408 + 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:	140	%
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*	9	kW
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T j			
T j = – 7 °C	*Pdh*	7,7	kW
T j = + 2 °C	*Pdh*	7,9	kW
T j = + 7 °C	*Pdh*	8,0	kW
T j = + 12 °C	*Pdh*	8,1	kW
T j = bivalent temperature	*Pdh*	7,7	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}	-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}	0,004	*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}	43/na	*dB*
Annual energy consumption	Q_{HE}	4995	*kWh*

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency	η_s	136	%
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*	3,62	-
T j = +7 °C	*COPd*	4	-
T j = +12 °C	*COPd*	4,38	-
T j = bivalent temperature	*COPd*	3,13	-
T j = operation limit temperature	*COPd*	3,28	-
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	-	1,6	*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

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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 408 + 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:	184	%
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*	9	kW
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T j			
T j = – 7 °C	*Pdh*	8,2	kW
T j = + 2 °C	*Pdh*	8,3	kW
T j = + 7 °C	*Pdh*	8,3	kW
T j = + 12 °C	*Pdh*	8,4	kW
T j = bivalent temperature	*Pdh*	8,2	kW
T j = operation limit temperature	*Pdh*	8,2	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}	0,013	*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}	43/na	*dB*
Annual energy consumption	Q_{HE}	4092	*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*	4,67	-
T j = +2 °C	*COPd*	4,86	-
T j = +7 °C	*COPd*	5,04	-
T j = +12 °C	*COPd*	5,21	-
T j = bivalent temperature	*COPd*	4,67	-
T j = operation limit temperature	*COPd*	4,58	-
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	-	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

Cold climate and High temperature

ENERTECH GROUP
Enertech AB, 341 26 Ljungby

Model(s):	CTC EcoPart 408 + 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:	143	%
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*	9	kW
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T j			
T j = – 7 °C	*Pdh*	7,8	kW
T j = + 2 °C	*Pdh*	8,0	kW
T j = + 7 °C	*Pdh*	8,1	kW
T j = + 12 °C	*Pdh*	8,2	kW
T j = bivalent temperature	*Pdh*	7,7	kW
T j = operation limit temperature	*Pdh*	7,6	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}	0,004	*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}	43/na	*dB*
Annual energy consumption	Q_{HE}	5773	*kWh*

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency	η_s	139	%
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*	3,55	-
T j = +2 °C	*COPd*	3,92	-
T j = +7 °C	*COPd*	4,27	-
T j = +12 °C	*COPd*	4,52	-
T j = bivalent temperature	*COPd*	3,28	-
T j = operation limit temperature	*COPd*	3,13	-
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	-	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

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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 408 + 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:	187	%
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*	9	kW
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T j			
T j = – 7 °C	*Pdh*	8,3	kW
T j = + 2 °C	*Pdh*	8,3	kW
T j = + 7 °C	*Pdh*	8,4	kW
T j = + 12 °C	*Pdh*	8,4	kW
T j = bivalent temperature	*Pdh*	8,2	kW
T j = operation limit temperature	*Pdh*	8,2	kW
For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C)	*Pdh*	na	kW
Bivalent temperature	T_{biv}	-19	°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}	0,013	*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}	43/na	*dB*
Annual energy consumption	Q_{HE}	4612	*kWh*

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency	η_s	183	%
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*	4,88	-
T j = +2 °C	*COPd*	5,04	-
T j = +7 °C	*COPd*	5,16	-
T j = +12 °C	*COPd*	5,19	-
T j = bivalent temperature	*COPd*	4,67	-
T j = operation limit temperature	*COPd*	4,58	-
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	-	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 408 + 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*	**8**	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*	**7,6**	kW
T j = + 7 °C	*Pdh*	**7,8**	kW
T j = + 12 °C	*Pdh*	**8,0**	kW
T j = bivalent temperature	*Pdh*	**7,7**	kW
T j = operation limit temperature	*Pdh*	**7,6**	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}	**0,018**	*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}	**43/na**	*dB*
Annual energy consumption	Q_{HE}	**3356**	*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*	**2,91**	-
T j = +7 °C	*COPd*	**3,22**	-
T j = +12 °C	*COPd*	**3,80**	-
T j = bivalent temperature	*COPd*	**3,00**	-
T j = operation limit temperature	*COPd*	**2,91**	-
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	-	**1,6**	*m3/h*

For heat pump combination heater:

Declared load profile		**L**		**Water heating energy efficiency**	η_{wh}	**88,1**	%
Daily electricity consumption	Qelec	**5,292**	kWh	Daily fuel consumption	Q_{fuel}	**na**	kWh
Annual electricity consumption	AEC	**1164**	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 408 + 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:	**158**	%
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*	**9**	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*	**8,2**	kW
T j = + 7 °C	*Pdh*	**8,3**	kW
T j = + 12 °C	*Pdh*	**8,4**	kW
T j = bivalent temperature	*Pdh*	**8,2**	kW
T j = operation limit temperature	*Pdh*	**8,2**	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}	**0,055**	*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}	**43/na**	*dB*
Annual energy consumption	Q_{HE}	**2910**	*kWh*

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency	η_s	**154**	%
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*	**4,19**	-
T j = +7 °C	*COPd*	**4,38**	-
T j = +12 °C	*COPd*	**4,63**	-
T j = bivalent temperature	*COPd*	**4,25**	-
T j = operation limit temperature	*COPd*	**4,19**	-
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	-	**2,0**	*m3/h*

For heat pump combination heater:

Declared load profile		**L**		**Water heating energy efficiency**	η_{wh}	**88,1**	%
Daily electricity consumption	Qelec	**5,292**	kWh	Daily fuel consumption	Q_{fuel}	**na**	kWh
Annual electricity consumption	AEC	**1164**	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

Average climate and High temperature

ENERTECH GROUP
Enertech AB, 341 26 Ljungby

Model(s):	**CTC EcoPart 408 + 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*	**9**	kW
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T j			
T j = – 7 °C	*Pdh*	**7,7**	kW
T j = + 2 °C	*Pdh*	**7,9**	kW
T j = + 7 °C	*Pdh*	**8,0**	kW
T j = + 12 °C	*Pdh*	**8,1**	kW
T j = bivalent temperature	*Pdh*	**7,7**	kW
T j = operation limit temperature	*Pdh*	**7,6**	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}	**0,018**	*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}	**43/na**	*dB*
Annual energy consumption	Q_{HE}	**5670**	*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*	**3,05**	-
T j = +2 °C	*COPd*	**3,39**	-
T j = +7 °C	*COPd*	**3,71**	-
T j = +12 °C	*COPd*	**4,03**	-
T j = bivalent temperature	*COPd*	**3,11**	-
T j = operation limit temperature	*COPd*	**2,91**	-
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*	**1,5**	*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	-	**1,6**	*m3/h*

For heat pump combination heater:

Declared load profile		**L**	
Daily electricity consumption	Qelec	**5,292**	kWh
Annual electricity consumption	AEC	**1164**	kWh

Water heating energy efficiency	η_{wh}	**88,1**	%
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 408 + 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:	**163**	%
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*	**10**	kW
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T j			
T j = – 7 °C	*Pdh*	**8,2**	kW
T j = + 2 °C	*Pdh*	**8,3**	kW
T j = + 7 °C	*Pdh*	**8,3**	kW
T j = + 12 °C	*Pdh*	**8,4**	kW
T j = bivalent temperature	*Pdh*	**8,2**	kW
T j = operation limit temperature	*Pdh*	**8,2**	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}	**0,055**	*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}	**43/na**	*dB*
Annual energy consumption	Q_{HE}	**4816**	*kWh*

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency	η_s	**159**	%
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*	**4,27**	-
T j = +2 °C	*COPd*	**4,44**	-
T j = +7 °C	*COPd*	**4,59**	-
T j = +12 °C	*COPd*	**4,73**	-
T j = bivalent temperature	*COPd*	**4,31**	-
T j = operation limit temperature	*COPd*	**4,19**	-
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*	**1,5**	*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	-	**2,0**	*m3/h*

For heat pump combination heater:

Declared load profile		**L**		**Water heating energy efficiency**	η_{wh}	**88,1**	%
Daily electricity consumption	Qelec	**5,292**	kWh	Daily fuel consumption	Q_{fuel}	**na**	kWh
Annual electricity consumption	AEC	**1164**	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 408 + 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*	**9**	kW
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T j			
T j = – 7 °C	*Pdh*	**7,8**	kW
T j = + 2 °C	*Pdh*	**8,0**	kW
T j = + 7 °C	*Pdh*	**8,1**	kW
T j = + 12 °C	*Pdh*	**8,2**	kW
T j = bivalent temperature	*Pdh*	**7,7**	kW
T j = operation limit temperature	*Pdh*	**7,6**	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}	**0,018**	*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}	**43/na**	*dB*
Annual energy consumption	Q_{HE}	**6273**	*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*	**3,31**	-
T j = +2 °C	*COPd*	**3,63**	-
T j = +7 °C	*COPd*	**3,92**	-
T j = +12 °C	*COPd*	**4,14**	-
T j = bivalent temperature	*COPd*	**3,05**	-
T j = operation limit temperature	*COPd*	**2,91**	-
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	-	**1,6**	*m3/h*

For heat pump combination heater:

Declared load profile		**L**		**Water heating energy efficiency**	η_{wh}	**88,1**	%
Daily electricity consumption	Qelec	**5,292**	kWh	Daily fuel consumption	Q_{fuel}	**na**	kWh
Annual electricity consumption	AEC	**1164**	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 408 + 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:	**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*	**9**	kW
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T j			
T j = – 7 °C	*Pdh*	**8,3**	kW
T j = + 2 °C	*Pdh*	**8,3**	kW
T j = + 7 °C	*Pdh*	**8,4**	kW
T j = + 12 °C	*Pdh*	**8,4**	kW
T j = bivalent temperature	*Pdh*	**8,2**	kW
T j = operation limit temperature	*Pdh*	**8,2**	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}	**0,055**	*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}	**43/na**	*dB*
Annual energy consumption	Q_{HE}	**5383**	*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*	**4,46**	-
T j = +2 °C	*COPd*	**4,59**	-
T j = +7 °C	*COPd*	**4,69**	-
T j = +12 °C	*COPd*	**4,71**	-
T j = bivalent temperature	*COPd*	**4,3**	-
T j = operation limit temperature	*COPd*	**4,19**	-
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	-	**2,0**	*m3/h*

For heat pump combination heater:

Declared load profile		**L**		**Water heating energy efficiency**	η_{wh}	**88,1**	%
Daily electricity consumption	Qelec	**5,292**	kWh	Daily fuel consumption	Q_{fuel}	**na**	kWh
Annual electricity consumption	AEC	**1164**	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 408 + 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*	**8**	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*	**7,6**	kW
T j = + 7 °C	*Pdh*	**7,8**	kW
T j = + 12 °C	*Pdh*	**8,0**	kW
T j = bivalent temperature	*Pdh*	**7,7**	kW
T j = operation limit temperature	*Pdh*	**7,6**	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}	**0,014**	*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}	**43/na**	*dB*
Annual energy consumption	Q_{HE}	**3015**	*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*	**2,91**	-
T j = +7 °C	*COPd*	**3,22**	-
T j = +12 °C	*COPd*	**3,80**	-
T j = bivalent temperature	*COPd*	**3,00**	-
T j = operation limit temperature	*COPd*	**2,91**	-
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	-	**1,6**	*m3/h*

For heat pump combination heater:

Declared load profile		**XL**		**Water heating energy efficiency**	η_{wh}	**102**	%
Daily electricity consumption	Qelec	**7,449**	kWh	Daily fuel consumption	Q_{fuel}	**NA**	kWh
Annual electricity consumption	AEC	**1639**	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 Low temperature

ENERTECH GROUP
Enertech AB, 341 26 Ljungby

Model(s):	**CTC EcoPart 408 + 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:	**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*	**9**	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*	**8,2**	kW
T j = + 7 °C	*Pdh*	**8,3**	kW
T j = + 12 °C	*Pdh*	**8,4**	kW
T j = bivalent temperature	*Pdh*	**8,2**	kW
T j = operation limit temperature	*Pdh*	**8,2**	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}	**0,035**	*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}	**43/na**	*dB*
Annual energy consumption	Q_{HE}	**2439**	*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*	**na**	-
T j = +2 °C	*COPd*	**4,19**	-
T j = +7 °C	*COPd*	**4,38**	-
T j = +12 °C	*COPd*	**4,63**	-
T j = bivalent temperature	*COPd*	**4,25**	-
T j = operation limit temperature	*COPd*	**4,19**	-
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	-	**2,0**	*m3/h*

For heat pump combination heater:

Declared load profile		**XL**		**Water heating energy efficiency**	η_{wh}	**102**	%
Daily electricity consumption	Qelec	**7,449**	kWh	Daily fuel consumption	Q_{fuel}	**NA**	kWh
Annual electricity consumption	AEC	**1639**	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

Average climate and High temperature

ENERTECH GROUP
Enertech AB, 341 26 Ljungby

Model(s):	**CTC EcoPart 408 + 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:	**130**	%
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*	**7,7**	kW
T j = + 2 °C	*Pdh*	**7,9**	kW
T j = + 7 °C	*Pdh*	**8,0**	kW
T j = + 12 °C	*Pdh*	**8,1**	kW
T j = bivalent temperature	*Pdh*	**7,7**	kW
T j = operation limit temperature	*Pdh*	**7,6**	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}	**0,014**	*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}	**43/na**	*dB*
Annual energy consumption	Q_{HE}	**5248**	*kWh*

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency	η_s	**126**	%
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*	**3,05**	-
T j = +2 °C	*COPd*	**3,39**	-
T j = +7 °C	*COPd*	**3,71**	-
T j = +12 °C	*COPd*	**4,03**	-
T j = bivalent temperature	*COPd*	**3,11**	-
T j = operation limit temperature	*COPd*	**2,91**	-
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*	**1,5**	*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	-	**1,6**	*m3/h*

For heat pump combination heater:

Declared load profile		**XL**		**Water heating energy efficiency**	η_{wh}	**102**	%
Daily electricity consumption	Qelec	**7,449**	kWh	Daily fuel consumption	Q_{fuel}	**NA**	kWh
Annual electricity consumption	AEC	**1639**	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 408 + 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:	**165**	%
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*	**8,2**	kW
T j = + 2 °C	*Pdh*	**8,3**	kW
T j = + 7 °C	*Pdh*	**8,3**	kW
T j = + 12 °C	*Pdh*	**8,4**	kW
T j = bivalent temperature	*Pdh*	**8,2**	kW
T j = operation limit temperature	*Pdh*	**8,2**	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}	**0,035**	*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}	**43/na**	*dB*
Annual energy consumption	Q_{HE}	**4542**	*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*	**4,27**	-
T j = +2 °C	*COPd*	**4,43**	-
T j = +7 °C	*COPd*	**4,58**	-
T j = +12 °C	*COPd*	**4,73**	-
T j = bivalent temperature	*COPd*	**4,27**	-
T j = operation limit temperature	*COPd*	**4,19**	-
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	-	**2,0**	*m3/h*

For heat pump combination heater:

Declared load profile		**XL**		**Water heating energy efficiency**	η_{wh}	**102**	%
Daily electricity consumption	Qelec	**7,449**	kWh	Daily fuel consumption	Q_{fuel}	**NA**	kWh
Annual electricity consumption	AEC	**1639**	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 408 + 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*	**9**	kW
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T j			
T j = – 7 °C	*Pdh*	**7,8**	kW
T j = + 2 °C	*Pdh*	**8,0**	kW
T j = + 7 °C	*Pdh*	**8,1**	kW
T j = + 12 °C	*Pdh*	**8,2**	kW
T j = bivalent temperature	*Pdh*	**7,7**	kW
T j = operation limit temperature	*Pdh*	**7,6**	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*	**0,99**	-
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}	**43/na**	*dB*
Annual energy consumption	Q_{HE}	**5781**	*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*	**3,31**	-
T j = +2 °C	*COPd*	**3,64**	-
T j = +7 °C	*COPd*	**3,93**	-
T j = +12 °C	*COPd*	**4,14**	-
T j = bivalent temperature	*COPd*	**3,09**	-
T j = operation limit temperature	*COPd*	**2,91**	-
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	-	**1,6**	*m3/h*

For heat pump combination heater:

Declared load profile		**XL**		**Water heating energy efficiency**	η_{wh}	**102**	%
Daily electricity consumption	Qelec	**7,449**	kWh	Daily fuel consumption	Q_{fuel}	**NA**	kWh
Annual electricity consumption	AEC	**1639**	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 408 + 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:	**167**	%
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*	**9**	kW
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T j			
T j = – 7 °C	*Pdh*	**8,3**	kW
T j = + 2 °C	*Pdh*	**8,3**	kW
T j = + 7 °C	*Pdh*	**8,4**	kW
T j = + 12 °C	*Pdh*	**8,4**	kW
T j = bivalent temperature	*Pdh*	**8,2**	kW
T j = operation limit temperature	*Pdh*	**8,2**	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}	**0,035**	*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}	**43/na**	*dB*
Annual energy consumption	Q_{HE}	**4374**	*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*	**4,46**	-
T j = +2 °C	*COPd*	**4,59**	-
T j = +7 °C	*COPd*	**4,69**	-
T j = +12 °C	*COPd*	**4,71**	-
T j = bivalent temperature	*COPd*	**4,30**	-
T j = operation limit temperature	*COPd*	**4,19**	-
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	-	**2,0**	*m3/h*

For heat pump combination heater:

Declared load profile		**XL**		**Water heating energy efficiency**	η_{wh}	**102**	%
Daily electricity consumption	Qelec	**7,449**	kWh	Daily fuel consumption	Q_{fuel}	**NA**	kWh
Annual electricity consumption	AEC	**1639**	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 408 + 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:	110	%
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*	**8**	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*	**7,6**	kW
T j = + 7 °C	*Pdh*	**7,6**	kW
T j = + 12 °C	*Pdh*	**7,6**	kW
T j = bivalent temperature	*Pdh*	**7,6**	kW
T j = operation limit temperature	*Pdh*	**7,6**	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}	**0,004**	*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}	**43/na**	*dB*
Annual energy consumption	Q_{HE}	**3756**	*kWh*

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency	η_s	**109**	%
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*	**3,13**	-
T j = +7 °C	*COPd*	**3,03**	-
T j = +12 °C	*COPd*	**2,92**	-
T j = bivalent temperature	*COPd*	**3,13**	-
T j = operation limit temperature	*COPd*	**3,13**	-
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	-	**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 408 + 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:	162	%
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*	**9**	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*	**8,2**	kW
T j = + 7 °C	*Pdh*	**8,1**	kW
T j = + 12 °C	*Pdh*	**8,1**	kW
T j = bivalent temperature	*Pdh*	**8,2**	kW
T j = operation limit temperature	*Pdh*	**8,2**	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}	**0,013**	*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}	**43/na**	*dB*
Annual energy consumption	Q_{HE}	**2796**	*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*	**na**	-
T j = +2 °C	*COPd*	**4,58**	-
T j = +7 °C	*COPd*	**4,44**	-
T j = +12 °C	*COPd*	**4,26**	-
T j = bivalent temperature	*COPd*	**4,58**	-
T j = operation limit temperature	*COPd*	**4,58**	-
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	-	**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 408 + 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:	111	%
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*	9	kW
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T j			
T j = – 7 °C	*Pdh*	7,6	kW
T j = + 2 °C	*Pdh*	7,6	kW
T j = + 7 °C	*Pdh*	7,6	kW
T j = + 12 °C	*Pdh*	7,6	kW
T j = bivalent temperature	*Pdh*	7,6	kW
T j = operation limit temperature	*Pdh*	7,6	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*	1	-
Power consumption in modes other than active mode			
Off mode	P_{OFF}	0,007	*kW*
Thermostat-off mode	P_{TO}	0,004	*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}	43/na	*dB*
Annual energy consumption	Q_{HE}	6029	*kWh*

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency	η_s	110	%
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*	3,13	-
T j = +2 °C	*COPd*	3,01	-
T j = +7 °C	*COPd*	2,94	-
T j = +12 °C	*COPd*	2,87	-
T j = bivalent temperature	*COPd*	3,13	-
T j = operation limit temperature	*COPd*	3,13	-
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	*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	-	1,5	*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

Average **climate and Low temperature**

ENERTECH GROUP
Enertech AB, 341 26 Ljungby

Model(s):	CTC EcoPart 408 + 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:	164	%
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*	9	kW
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T j			
T j = – 7 °C	*Pdh*	8,2	kW
T j = + 2 °C	*Pdh*	8,1	kW
T j = + 7 °C	*Pdh*	8,1	kW
T j = + 12 °C	*Pdh*	8,1	kW
T j = bivalent temperature	*Pdh*	8,2	kW
T j = operation limit temperature	*Pdh*	8,2	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}	0,013	*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}	43/na	*dB*
Annual energy consumption	Q_{HE}	4467	*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*	4,58	-
T j = +2 °C	*COPd*	4,40	-
T j = +7 °C	*COPd*	4,30	-
T j = +12 °C	*COPd*	4,20	-
T j = bivalent temperature	*COPd*	4,58	-
T j = operation limit temperature	*COPd*	4,58	-
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		**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 408 + 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:	111	%
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*	**8**	kW
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T j			
T j = – 7 °C	*Pdh*	**7,6**	kW
T j = + 2 °C	*Pdh*	**7,6**	kW
T j = + 7 °C	*Pdh*	**7,6**	kW
T j = + 12 °C	*Pdh*	**7,6**	kW
T j = bivalent temperature	*Pdh*	**7,6**	kW
T j = operation limit temperature	*Pdh*	**7,6**	kW
For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C)	*Pdh*	**na**	kW
Bivalent temperature	T_{biv}	**-19**	°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}	**0,004**	*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}	**43/na**	*dB*
Annual energy consumption	Q_{HE}	**6950**	*kWh*

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency	η_s	**110**	%
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*	**2,94**	-
T j = +7 °C	*COPd*	**2,90**	-
T j = +12 °C	*COPd*	**2,86**	-
T j = bivalent temperature	*COPd*	**3,13**	-
T j = operation limit temperature	*COPd*	**3,13**	-
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	-	**1,5**	*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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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 408 + 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*	**9**	kW
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T j			
T j = – 7 °C	*Pdh*	**8,1**	kW
T j = + 2 °C	*Pdh*	**8,1**	kW
T j = + 7 °C	*Pdh*	**8,1**	kW
T j = + 12 °C	*Pdh*	**8,1**	kW
T j = bivalent temperature	*Pdh*	**8,2**	kW
T j = operation limit temperature	*Pdh*	**8,2**	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}	**0,013**	*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}	**43/na**	*dB*
Annual energy consumption	Q_{HE}	**5009**	*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*	**4,41**	-
T j = +2 °C	*COPd*	**4,30**	-
T j = +7 °C	*COPd*	**4,23**	-
T j = +12 °C	*COPd*	**4,17**	-
T j = bivalent temperature	*COPd*	**4,58**	-
T j = operation limit temperature	*COPd*	**4,58**	-
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*	**0,5**	*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	-	**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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