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 417 + CTC EcoLogic			
Air-to-water heat pump:	No	Energy efficiency class:		-
Water-to-water heat pump:	No	Controller class:	VII	-
Brine-to-water heat pump:	Yes	Controller contribution:	3,5	%
Low-temperature heat pump:	No	Package efficiency:	141	%
Equipped with a supplementary heater:	No	Package efficiency class:		-
Heat pump combination heater:	No			

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

Item	Symbol	Value	Unit
Rated heat output (*)	*Prated*	17	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*	15,9	kW
T j = + 7 °C	*Pdh*	16,0	kW
T j = + 12 °C	*Pdh*	16,5	kW
T j = bivalent temperature	*Pdh*	15,9	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}	0,008	*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}	56/na	*dB*
Annual energy consumption	Q_{HE}	6315	*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*	3,07	-
T j = +7 °C	*COPd*	3,42	-
T j = +12 °C	*COPd*	4,09	-
T j = bivalent temperature	*COPd*	3,17	-
T j = operation limit temperature	*COPd*	na	-
For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C)	*COPd*	na	-
For air-to-water heat pumps: Operation limit temperature	*TOL*	na	°C
Cycling interval efficiency	*COPcyc*	na	-
Heating water operating limit temperature	*WTOL*	65	°C
Supplementary heater			
Rated heat output (*)	*Psup*	1,3	*kW*
Type of energy input		Electric	
For air-to-water heat pumps: Rated air flow rate, outdoors	-	na	*m3/h*
For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	3,1	*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 417 + 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:	**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*	**18**	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*	**16,9**	kW
T j = + 7 °C	*Pdh*	**17,0**	kW
T j = + 12 °C	*Pdh*	**17,3**	kW
T j = bivalent temperature	*Pdh*	**16,9**	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}	**0,027**	*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}	**56/na**	*dB*
Annual energy consumption	Q_{HE}	**5180**	*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*	**4,55**	-
T j = +7 °C	*COPd*	**4,78**	-
T j = +12 °C	*COPd*	**5,06**	-
T j = bivalent temperature	*COPd*	**4,63**	-
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**	*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 417 + 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:	141	%
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*	18	kW
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T j			
T j = – 7 °C	*Pdh*	16	kW
T j = + 2 °C	*Pdh*	16,1	kW
T j = + 7 °C	*Pdh*	16,4	kW
T j = + 12 °C	*Pdh*	16,7	kW
T j = bivalent temperature	*Pdh*	16	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}	0,008	*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}	56/na	*dB*
Annual energy consumption	Q_{HE}	10286	*kWh*

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency	η_s	137	%
Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T j			
T j = – 7 °C	*COPd*	3,23	-
T j = +2 °C	*COPd*	3,60	-
T j = +7 °C	*COPd*	3,97	-
T j = +12 °C	*COPd*	4,36	-
T j = bivalent temperature	*COPd*	3,23	-
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*	2,2	*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	-	3,1	*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 417 + CTC EcoLogic			
Air-to-water heat pump:	No	Energy efficiency class:	A++	-
Water-to-water heat pump:	No	Controller class:	VII	-
Brine-to-water heat pump:	Yes	Controller contribution:	3,5	%
Low-temperature heat pump:	No	Package efficiency:	185	%
Equipped with a supplementary heater:	No	Package efficiency class:	A+++	-
Heat pump combination heater:	No			

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

Item	Symbol	Value	Unit
Rated heat output (*)	*Prated*	19	kW
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T j			
T j = – 7 °C	*Pdh*	16,9	kW
T j = + 2 °C	*Pdh*	17,1	kW
T j = + 7 °C	*Pdh*	17,2	kW
T j = + 12 °C	*Pdh*	17,4	kW
T j = bivalent temperature	*Pdh*	16,9	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}	0,027	*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}	56/na	*dB*
Annual energy consumption	Q_{HE}	8362	*kWh*

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency	η_s	181	%
Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T j			
T j = – 7 °C	*COPd*	4,64	-
T j = +2 °C	*COPd*	4,83	-
T j = +7 °C	*COPd*	5,01	-
T j = +12 °C	*COPd*	5,18	-
T j = bivalent temperature	*COPd*	4,64	-
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*	2,3	*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	-	3,8	*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 417 + 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:	144	%
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*	17	kW
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T j			
T j = – 7 °C	*Pdh*	16,1	kW
T j = + 2 °C	*Pdh*	16,4	kW
T j = + 7 °C	*Pdh*	16,6	kW
T j = + 12 °C	*Pdh*	16,8	kW
T j = bivalent temperature	*Pdh*	15,9	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}	-19	°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}	0,008	*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}	56/na	*dB*
Annual energy consumption	Q_{HE}	11554	*kWh*

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency	η_s	140	%
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*	3,51	-
T j = +2 °C	*COPd*	3,89	-
T j = +7 °C	*COPd*	4,24	-
T j = +12 °C	*COPd*	4,50	-
T j = bivalent temperature	*COPd*	3,19	-
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	-	3,1	*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 417 + 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:	**166**	%
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*	**18**	kW
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T j			
T j = – 7 °C	*Pdh*	**17,1**	kW
T j = + 2 °C	*Pdh*	**17,2**	kW
T j = + 7 °C	*Pdh*	**17,3**	kW
T j = + 12 °C	*Pdh*	**17,3**	kW
T j = bivalent temperature	*Pdh*	**16,9**	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*	**0,99**	-
Power consumption in modes other than active mode			
Off mode	P_{OFF}	**0,018**	*kW*
Thermostat-off mode	P_{TO}	**0,027**	*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}	**56/na**	*dB*
Annual energy consumption	Q_{HE}	**9166**	*kWh*

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency	η_s	**184**	%
Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T j			
T j = – 7 °C	*COPd*	**4,84**	-
T j = +2 °C	*COPd*	**5,01**	-
T j = +7 °C	*COPd*	**5,13**	-
T j = +12 °C	*COPd*	**5,15**	-
T j = bivalent temperature	*COPd*	**4,61**	-
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	-	**3,8**	*m3/h*

For heat pump combination heater:

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

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

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

Information for heat pump space heaters and heat pump combination heaters

Warm climate and High temperature

ENERTECH GROUP
Enertech AB, 341 26 Ljungby

Model(s):	**CTC EcoPart 417 + 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:	**124**	%
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*	**17**	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*	**15,9**	kW
T j = + 7 °C	*Pdh*	**16,0**	kW
T j = + 12 °C	*Pdh*	**16,5**	kW
T j = bivalent temperature	*Pdh*	**15,9**	kW
T j = operation limit temperature	*Pdh*	**15,9**	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}	**0,052**	*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}	**56/na**	*dB*
Annual energy consumption	Q_{HE}	**7168**	*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*	**na**	-
T j = +2 °C	*COPd*	**2,77**	-
T j = +7 °C	*COPd*	**3,07**	-
T j = +12 °C	*COPd*	**3,64**	-
T j = bivalent temperature	*COPd*	**2,85**	-
T j = operation limit temperature	*COPd*	**2,77**	-
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	-	**3,1**	*m3/h*

For heat pump combination heater:

Declared load profile		**XL**	
Daily electricity consumption	Qelec	**7,659**	kWh
Annual electricity consumption	AEC	**1685**	kWh

Water heating energy efficiency	η_{wh}	**100**	%
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 417 + 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*	**18**	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*	**16,9**	kW
T j = + 7 °C	*Pdh*	**17,0**	kW
T j = + 12 °C	*Pdh*	**17,3**	kW
T j = bivalent temperature	*Pdh*	**16,9**	kW
T j = operation limit temperature	*Pdh*	**16,9**	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}	**0,146**	*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}	**56/na**	*dB*
Annual energy consumption	Q_{HE}	**6208**	*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*	**na**	-
T j = +2 °C	*COPd*	**4,01**	-
T j = +7 °C	*COPd*	**4,20**	-
T j = +12 °C	*COPd*	**4,43**	-
T j = bivalent temperature	*COPd*	**4,07**	-
T j = operation limit temperature	*COPd*	**4,01**	-
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**	*m3/h*

For heat pump combination heater:

Declared load profile		**XL**	
Daily electricity consumption	Qelec	**7,659**	kWh
Annual electricity consumption	AEC	**1685**	kWh

Water heating energy efficiency	η_{wh}	**100**	%
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 417 + 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:	**125**	%
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*	**19**	kW
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T j			
T j = – 7 °C	*Pdh*	**16,0**	kW
T j = + 2 °C	*Pdh*	**16,1**	kW
T j = + 7 °C	*Pdh*	**16,4**	kW
T j = + 12 °C	*Pdh*	**16,7**	kW
T j = bivalent temperature	*Pdh*	**16,0**	kW
T j = operation limit temperature	*Pdh*	**15,9**	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}	**0,052**	*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}	**56/na**	*dB*
Annual energy consumption	Q_{HE}	**12137**	*kWh*

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency	η_s	**121**	%
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*	**2,91**	-
T j = +2 °C	*COPd*	**3,24**	-
T j = +7 °C	*COPd*	**3,55**	-
T j = +12 °C	*COPd*	**3,86**	-
T j = bivalent temperature	*COPd*	**2,96**	-
T j = operation limit temperature	*COPd*	**2,77**	-
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	-	**3,1**	*m3/h*

For heat pump combination heater:

Declared load profile		**XL**		**Water heating energy efficiency**	η_{wh}	**100**	%
Daily electricity consumption	Qelec	**7,659**	kWh	Daily fuel consumption	Q_{fuel}	**NA**	kWh
Annual electricity consumption	AEC	**1685**	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 417 + 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:	**157**	%
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*	**20**	kW
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T j			
T j = – 7 °C	*Pdh*	**16,9**	kW
T j = + 2 °C	*Pdh*	**17,1**	kW
T j = + 7 °C	*Pdh*	**17,2**	kW
T j = + 12 °C	*Pdh*	**17,4**	kW
T j = bivalent temperature	*Pdh*	**17,0**	kW
T j = operation limit temperature	*Pdh*	**16,9**	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}	**0,146**	*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}	**56/na**	*dB*
Annual energy consumption	Q_{HE}	**10312**	*kWh*

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency	η_s	**153**	%
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*	**4,09**	-
T j = +2 °C	*COPd*	**4,25**	-
T j = +7 °C	*COPd*	**4,39**	-
T j = +12 °C	*COPd*	**4,53**	-
T j = bivalent temperature	*COPd*	**4,12**	-
T j = operation limit temperature	*COPd*	**4,01**	-
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**	*m3/h*

For heat pump combination heater:

Declared load profile		**XL**	
Daily electricity consumption	Qelec	**7,659**	kWh
Annual electricity consumption	AEC	**1685**	kWh

Water heating energy efficiency	η_{wh}	**100**	%
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 417 + 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*	**18**	kW
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T j			
T j = – 7 °C	*Pdh*	**16,1**	kW
T j = + 2 °C	*Pdh*	**16,4**	kW
T j = + 7 °C	*Pdh*	**16,6**	kW
T j = + 12 °C	*Pdh*	**16,8**	kW
T j = bivalent temperature	*Pdh*	**16,0**	kW
T j = operation limit temperature	*Pdh*	**15,9**	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}	**0,052**	*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}	**56/na**	*dB*
Annual energy consumption	Q_{HE}	**13902**	*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*	**3,17**	-
T j = +2 °C	*COPd*	**3,48**	-
T j = +7 °C	*COPd*	**3,76**	-
T j = +12 °C	*COPd*	**3,97**	-
T j = bivalent temperature	*COPd*	**2,94**	-
T j = operation limit temperature	*COPd*	**2,77**	-
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*	**2,5**	*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**	*m3/h*

For heat pump combination heater:

Declared load profile		**XL**		**Water heating energy efficiency**	η_{wh}	**100**	%
Daily electricity consumption	Qelec	**7,659**	kWh	Daily fuel consumption	Q_{fuel}	**NA**	kWh
Annual electricity consumption	AEC	**1685**	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 417 + 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:	**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*	**19**	kW
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T j			
T j = – 7 °C	*Pdh*	**17,1**	kW
T j = + 2 °C	*Pdh*	**17,2**	kW
T j = + 7 °C	*Pdh*	**17,3**	kW
T j = + 12 °C	*Pdh*	**17,3**	kW
T j = bivalent temperature	*Pdh*	**17,0**	kW
T j = operation limit temperature	*Pdh*	**16,9**	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}	**0,146**	*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}	**56/na**	*dB*
Annual energy consumption	Q_{HE}	**11573**	*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*	**4,27**	-
T j = +2 °C	*COPd*	**4,39**	-
T j = +7 °C	*COPd*	**4,49**	-
T j = +12 °C	*COPd*	**4,51**	-
T j = bivalent temperature	*COPd*	**4,11**	-
T j = operation limit temperature	*COPd*	**4,01**	-
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*	**2,1**	*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	-	**3,8**	*m3/h*

For heat pump combination heater:

Declared load profile		**XL**		**Water heating energy efficiency**	η_{wh}	**100**	%
Daily electricity consumption	Qelec	**7,659**	kWh	Daily fuel consumption	Q_{fuel}	**NA**	kWh
Annual electricity consumption	AEC	**1685**	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 417 + CTC EcoBasic			
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:	109	%
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*	**17**	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*	**15,9**	kW
T j = + 7 °C	*Pdh*	**15,9**	kW
T j = + 12 °C	*Pdh*	**15,9**	kW
T j = bivalent temperature	*Pdh*	**15,9**	kW
T j = operation limit temperature	*Pdh*	**15,9**	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*	**1,00**	-
Power consumption in modes other than active mode			
Off mode	P_{OFF}	**0,007**	*kW*
Thermostat-off mode	P_{TO}	**0,008**	*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}	**56/na**	*dB*
Annual energy consumption	Q_{HE}	**7871**	*kWh*

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency	η_s	**108**	%
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*	**3,07**	-
T j = +7 °C	*COPd*	**2,98**	-
T j = +12 °C	*COPd*	**2,88**	-
T j = bivalent temperature	*COPd*	**3,07**	-
T j = operation limit temperature	*COPd*	**3,07**	-
For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C)	*COPd*	**na**	-
For air-to-water heat pumps: Operation limit temperature	*TOL*	**na**	°C
Cycling interval efficiency	*COPcyc*	**na**	-
Heating water operating limit temperature	*WTOL*	**65**	°C
Supplementary heater			
Rated heat output (*)	*Psup*	**1,2**	*kW*
Type of energy input		***Electric***	
For air-to-water heat pumps: Rated air flow rate, outdoors	-	**na**	*m3/h*
For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	**3,1**	*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 417 + CTC EcoBasic			
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*	**18**	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*	**16,9**	kW
T j = + 7 °C	*Pdh*	**16,8**	kW
T j = + 12 °C	*Pdh*	**16,6**	kW
T j = bivalent temperature	*Pdh*	**16,9**	kW
T j = operation limit temperature	*Pdh*	**16,9**	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}	**0,027**	*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}	**56/na**	*dB*
Annual energy consumption	Q_{HE}	**5751**	*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*	**4,55**	-
T j = +7 °C	*COPd*	**4,41**	-
T j = +12 °C	*COPd*	**4,23**	-
T j = bivalent temperature	*COPd*	**4,55**	-
T j = operation limit temperature	*COPd*	**4,55**	-
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	-	**3,8**	*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 417 + CTC EcoBasic			
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:	110	%
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*	18	kW
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T j			
T j = – 7 °C	*Pdh*	15,9	kW
T j = + 2 °C	*Pdh*	15,9	kW
T j = + 7 °C	*Pdh*	15,9	kW
T j = + 12 °C	*Pdh*	15,9	kW
T j = bivalent temperature	*Pdh*	15,9	kW
T j = operation limit temperature	*Pdh*	15,9	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*	1,00	-
Power consumption in modes other than active mode			
Off mode	P_{OFF}	0,007	*kW*
Thermostat-off mode	P_{TO}	0,008	*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}	56/na	*dB*
Annual energy consumption	Q_{HE}	12670	*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*	3,07	-
T j = +2 °C	*COPd*	2,96	-
T j = +7 °C	*COPd*	2,90	-
T j = +12 °C	*COPd*	2,84	-
T j = bivalent temperature	*COPd*	3,07	-
T j = operation limit temperature	*COPd*	3,07	-
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*	2,1	*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	-	3,1	*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 417 + CTC EcoLogic			
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*	19	kW
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T j			
T j = – 7 °C	*Pdh*	16,9	kW
T j = + 2 °C	*Pdh*	16,7	kW
T j = + 7 °C	*Pdh*	16,7	kW
T j = + 12 °C	*Pdh*	16,6	kW
T j = bivalent temperature	*Pdh*	16,9	kW
T j = operation limit temperature	*Pdh*	16,9	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}	0,027	*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}	56/na	*dB*
Annual energy consumption	Q_{HE}	9217	*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*	4,55	-
T j = +2 °C	*COPd*	4,37	-
T j = +7 °C	*COPd*	4,27	-
T j = +12 °C	*COPd*	4,17	-
T j = bivalent temperature	*COPd*	4,55	-
T j = operation limit temperature	*COPd*	4,55	-
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*	2,2	*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	*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 417 + CTC EcoBasic			
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:	109	%
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*	**17**	kW
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T j			
T j = – 7 °C	*Pdh*	**15,9**	kW
T j = + 2 °C	*Pdh*	**16,4**	kW
T j = + 7 °C	*Pdh*	**16,4**	kW
T j = + 12 °C	*Pdh*	**16,4**	kW
T j = bivalent temperature	*Pdh*	**16,4**	kW
T j = operation limit temperature	*Pdh*	**16,4**	kW
For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C)	*Pdh*	**16,4**	kW
Bivalent temperature	T_{biv}	**-20**	°C
Cycling interval capacity for heating	P_{cych}	**na**	kW
Degradation co-efficient (**)	*Cdh*	**1,00**	-
Power consumption in modes other than active mode			
Off mode	P_{OFF}	**0,007**	*kW*
Thermostat-off mode	P_{TO}	**0,008**	*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}	**56/na**	*dB*
Annual energy consumption	Q_{HE}	**14203**	*kWh*

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency	η_s	**108**	%
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*	**2,97**	-
T j = +2 °C	*COPd*	**2,90**	-
T j = +7 °C	*COPd*	**2,86**	-
T j = +12 °C	*COPd*	**2,82**	-
T j = bivalent temperature	*COPd*	**3,07**	-
T j = operation limit temperature	*COPd*	**3,07**	-
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*	**0,9**	*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**	*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 417 + CTC EcoBasic			
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*	**18**	kW
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T j			
T j = – 7 °C	*Pdh*	**16,7**	kW
T j = + 2 °C	*Pdh*	**16,7**	kW
T j = + 7 °C	*Pdh*	**16,6**	kW
T j = + 12 °C	*Pdh*	**16,6**	kW
T j = bivalent temperature	*Pdh*	**16,9**	kW
T j = operation limit temperature	*Pdh*	**16,9**	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}	**0,027**	*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}	**56/na**	*dB*
Annual energy consumption	Q_{HE}	**10344**	*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*	**4,38**	-
T j = +2 °C	*COPd*	**4,27**	-
T j = +7 °C	*COPd*	**4,21**	-
T j = +12 °C	*COPd*	**4,14**	-
T j = bivalent temperature	*COPd*	**4,55**	-
T j = operation limit temperature	*COPd*	**4,55**	-
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*	**0,9**	*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	-	**3,8**	*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.