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 EcoAir 410 + CTC EcoLogic**
Air-to-water heat pump:	**Yes**
Water-to-water heat pump:	**No**
Brine-to-water heat pump:	**No**
Low-temperature heat pump:	**No**
Equipped with a supplementary heater:	**No**
Heat pump combination heater:	**No**

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

Item	Symbol	Value	Unit
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*	**6,6**	kW
T j = + 2 °C	*Pdh*	**8,6**	kW
T j = + 7 °C	*Pdh*	**11,1**	kW
T j = + 12 °C	*Pdh*	**13,3**	kW
T j = bivalent temperature	*Pdh*	**7,0**	kW
T j = operation limit temperature	*Pdh*	**5,9**	kW
For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C)	*Pdh*	**na**	kW
Bivalent temperature	T_{biv}	**-5**	°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}	**0,013**	*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}	**na/58**	*dB*
Annual energy consumption	Q_{HE}	**5826**	*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*	**2,22**	-
T j = +2 °C	*COPd*	**3,07**	-
T j = +7 °C	*COPd*	**3,99**	-
T j = +12 °C	*COPd*	**5,04**	-
T j = bivalent temperature	*COPd*	**2,46**	-
T j = operation limit temperature	*COPd*	**1,95**	-
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*	**-10**	°C
Cycling interval efficiency	*COPcyc*	**na**	-
Heating water operating limit temperature	*WTOL*	**55**	°C
Supplementary heater			
Rated heat output (*)	*Psup*	**2,8**	*kW*
Type of energy input		***Electric***	
For air-to-water heat pumps: Rated air flow rate, outdoors	-	**4100**	*m3/h*
For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	**na**	*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

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.

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Water-to-water heat pump:	**No**
Brine-to-water heat pump:	**No**
Low-temperature heat pump:	**No**
Equipped with a supplementary heater:	**No**
Heat pump combination heater:	**No**

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

Item	Symbol	Value	Unit
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*	**7,4**	kW
T j = + 2 °C	*Pdh*	**9,0**	kW
T j = + 7 °C	*Pdh*	**11,7**	kW
T j = + 12 °C	*Pdh*	**14,0**	kW
T j = bivalent temperature	*Pdh*	**7,8**	kW
T j = operation limit temperature	*Pdh*	**607,0**	kW
For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C)	*Pdh*	**na**	kW
Bivalent temperature	T_{biv}	**-5**	°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}	**0,041**	*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}	**na/58**	*dB*
Annual energy consumption	Q_{HE}	**5063**	*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*	**3,25**	-
T j = +2 °C	*COPd*	**3,94**	-
T j = +7 °C	*COPd*	**5,08**	-
T j = +12 °C	*COPd*	**6,23**	-
T j = bivalent temperature	*COPd*	**3,42**	-
T j = operation limit temperature	*COPd*	**2,97**	-
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*	**-10**	°C
Cycling interval efficiency	*COPcyc*	**na**	-
Heating water operating limit temperature	*WTOL*	**55**	°C
Supplementary heater			
Rated heat output (*)	*Psup*	**2,9**	*kW*
Type of energy input		***Electric***	
For air-to-water heat pumps: Rated air flow rate, outdoors	-	**4100**	*m3/h*
For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	**na**	*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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