

Information requirements for heat pumps

Energy Index: SCOP

Regulations: calculated according to commission regulation (EU) 2013/813, implementing the directive of the european commission 2009/125/ec "ecodesign".

Climate: Average

Source type: Outdoor air

User type: Low temperature

User flow: Constant user flow rate

Model: PAE 1101 Kp							
Air-to-water heat pump: yes							
Water-to-water heat pump: no							
Brine-to-water heat pump: no							
Low-temperature heat pump: yes							
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.							
Parameters shall be declared for average, colder and warmer climate conditions							
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated heat output (*)	<i>P_{rated}</i>	87	kW	Seasonal space heating energy efficiency	η_s	139	%
Declared heating capacity for part load at indoor temperature 20 °C and outdoor temperature <i>T_j</i>				Declared coefficient of performance or gas utilisation efficiency/auxiliary energy factor for part load at given outdoor temperatures <i>T_j</i>			
<i>T_j</i> = -7°C	<i>P_{dh}</i>	72.0	kW	<i>T_j</i> = -7°C	<i>COP_d</i>	2.23	-
<i>T_j</i> = 2°C	<i>P_{dh}</i>	43.0	kW	<i>T_j</i> = 2°C	<i>COP_d</i>	3.39	-
<i>T_j</i> = 7°C	<i>P_{dh}</i>	50.1	kW	<i>T_j</i> = 7°C	<i>COP_d</i>	4.96	-
<i>T_j</i> = 12°C	<i>P_{dh}</i>	57.7	kW	<i>T_j</i> = 12°C	<i>COP_d</i>	6.71	-
<i>T_{biv}</i> = -6°C	<i>P_{dh}</i>	73.9	kW	<i>T_{biv}</i> = -6°C	<i>COP_d</i>	2.30	-
<i>TOL</i> = -10°C	<i>P_{dh}</i>	66.9	kW	<i>TOL</i> = -10°C	<i>COP_d</i>	2.05	-
For air-to-water heat pumps: Operation limit temperature <i>T_j</i> = -°C	<i>P_{dh}</i>	-	kW	For air-to-water heat pumps: <i>T_j</i> = +-°C	<i>COP_d</i>	-	-
Bivalent temperature	<i>T_{biv}</i>	-6	°C	For air-to-water heat pumps: Operation limit temperature	<i>T_{ol}</i>	-10	°C
Cycling interval capacity for heating	<i>P_{cyh}</i>	-	kW	Cycling interval efficiency	<i>COP_{cyh}</i>	-	-
Degradation co-efficient chillers (**)	<i>C_{dh}</i>	1.0	-	Heating water operating limit temperature	<i>WTol</i>	77	°C
Power consumption in modes other than 'active mode'				Supplementary heater			
Off mode	<i>P_{OFF}</i>	0.100	kW	Rated heat output (**)	<i>P_{sup}</i>	-	kW
Thermostat-off mode	<i>P_{TO}</i>	0.483	kW	Type of energy input		-	
Standby mode	<i>P_{SB}</i>	0.100	kW				
Crankcase heater mode	<i>P_{CK}</i>		kW				
Other items				For air-to-air heat pumps:			
Capacity control		staged		air flow rate, outdoor measured	-	47603	m ³ /h
Sound power level, indoor/outdoor	<i>L_{WA}</i>	0/90	dB	For water/brine-to-air heat pumps: Rated brine	-	-	m ³ /h



measured				or water flow rate,	
Annual energy consumption	Q_{HE}	50841	kWh	outdoor side heat exchanger	

Contact details	prova
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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

$P_{designh}$, and the rated heat output of a supplementary heater P_{sup} is equal to the supplementary capacity for heating $sup(Tj)$.

(**) If Cdh is not determined by measurement then the default degradation coefficient is $Cdh = 0,9$.