

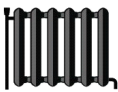


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10081001

ALPHA INNOTECH Hybrox SE 5 1P



55°C

35°C



A++

A+++



40 dB



49 dB

5
5
5
kW

5
5
6
kW



2019

811/2013



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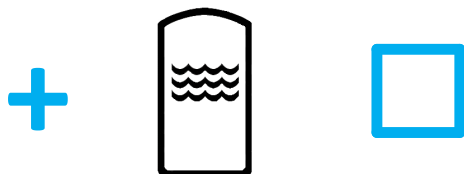
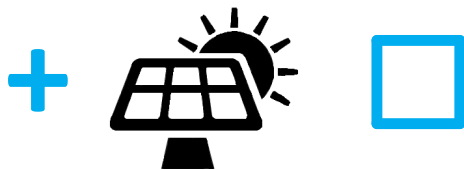


10081001

alpha innotec Hybrox SE 5 1P + HPC



A⁺⁺



A⁺⁺⁺

A⁺⁺

A⁺

A

B

C

D

E

F

G

A⁺⁺

package (heat pumps and combination heater with heat pump) - Hybrox SE 5 1P + HPC

Seasonal space heating energy efficiency of heat pump (η_s)	132 %
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Rated heat output of the heat pump (Prated kW)	5
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Temperature control	Class	II	(Table 1)	2	2	%
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Supplementary boiler

package with hot water storage tank	no	Psup kW (rated heat output of supplementary heater)
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no	Psup kW (rated heat output of supplementary heater)
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ηs % (sup)

$$(\eta_s \% (\text{sup}) - 1) \times (\alpha_{WP}) = - 3 \text{ } \boxed{} \%$$

(α_{WE} : see Table 3) (α_{WE})

$$\alpha_{WE} = \frac{1}{\alpha_{WE} + 1} \quad (\alpha_{WE})$$

solar contribution		($A_{\text{Koll}} \text{ m}^2$)		($\eta_{\text{Koll}} \%$)
		($V_{\text{Sp}} \text{ m}^3$)		(standstill heat loss of the hot water storage tank in W)

$(A_{\text{Koll}} \text{ m}^2)$		$(\eta_{\text{Koll}} \%)$
$(V_{\text{Sp}} \text{ m}^3)$		(standstill heat loss of the hot water storage tank in W)

(V_{sp}m³) (standstill heat loss of the hot water storage tank in W)

	$(\eta_{\text{Koll}} \%)$
	(standstill heat loss of the hot water storage tank in W)

(standstill heat loss of the hot water storage tank in W)

(η_{Sp} : Table 2)

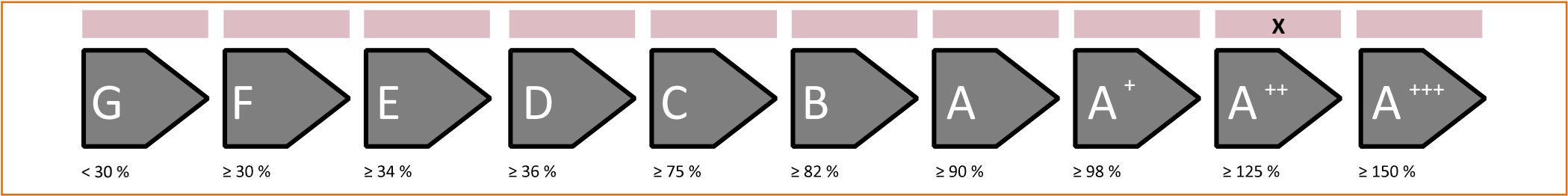
$$\left(\frac{294}{P_{\text{rated}}} \times 11 \right) \times (A_{\text{Koll}} \text{ m}^2) + \left(\frac{115}{P_{\text{rated}}} \times 11 \right) \times (V_{\text{Sp}} \text{ m}^3) \times 0,45 \times \left(\frac{\eta_{\text{Koll}} \%}{100} \right) \times (\eta_{\text{Sp}}) = \quad + \quad 4 \quad \%$$

Seasonal space heating energy efficiency of package	5	134	%
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5	134	%
---	-----	---

rounded to the
nearest integer

Seasonal space heating energy efficiency class of package



Seasonal space heating energy efficiency under colder or warmer climate conditions

Seasonal space heating energy efficiency of the heat pump (η_s) under colder climate conditions	129	%
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Seasonal space heating energy efficiency of the heat pump (η_s) under warmer climate conditions	154	%
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colder **5** 134 -V 3 = 131 warmer **5** 134 +VI 22 = 156

5 134 -V 3 = 131 warmer 5 134 +VI 22 = 156

134 -V 3 = 131 warmer 5 134 +VI 22 = 156

-V 3 = 131 warmer 5 134 +VI 22 = 156

3 = 131 warmer 5 134 +VI 22 = 156

= 131 warmer 5 134 +VI 22 = 156

131 warmer 5 134 +VI 22 = 156

warmer 5 134 +VI 22 = 156

5 134 +VI 22 = 156

134	+VI	22	=	156
-----	-----	----	---	-----

$$+VI \quad 22 = 156$$
$$22 = 156$$

= 156

156

heatpump datasheet:			
manufacturer:		alpha innotec	
model:		Hybrox SE 5 1P	
Information concerning energy efficiency class and rated heat output:			
	average / low	average / medium	
energy efficiency class space heater:	A+++	A++	
rated heat output:	5	5	kW
energy efficiency space heater:	187	132	%
annual final energy consumption space heater	2216	2816	kWh
sound power level indoors		40	dB
special precautions concerning assembly, installation or maintenance			
All instructional work in this manual may only be carried out by qualified specialist personnel in compliance with local regulations.			
additional information	low	medium	
rated heat output under colder climate conditions	5	5	kW
rated heat output under warmer climate conditions	6	5	kW
energy efficiency space heater under colder climate conditions	163	129	%
energy efficiency space heater under warmer climate conditions	246	154	%
annual energy consumption space heater under colder climate conditions	2856	3429	kWh
annual energy consumption space heater under warmer climate conditions	1181	1603	kWh
sound power level outdoors		49	dB

technical data of the temperature controller		
manufacturer:	alpha innotec	
model:	HPC	
controller class	II	-
contribution of the controller to the energy efficiency space heater	2	%

Model				Hybrox SE 5 1P			
Air-to-water heat pump: (yes/no)				yes			
Brine-to-water heat pump: (yes/no)				no			
Water-to-water heat pump: (yes/no)				no			
Low-temperature heat pump: (yes/no)				no			
Equipped with supplementary heater: (yes/no)				no			
combination heater with				no			
application: (low/medium)				medium			
climate: (colder/average/warmer)				average			
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated heat output	Prated	5	kW	Seasonal space heating energy efficiency	η_s	132	%
Declared coefficient of performance for part load at indoor temperature 20°C and outdoor temperature Tj				Declared coefficient of performance for part load at indoor temperature 20°C and outdoor temperature Tj			
Tj = -7°C	Pdh	4,1	kW	Tj = -7°C	COPd	2,40	-
Tj = +2°C	Pdh	2,4	kW	Tj = +2°C	COPd	3,29	-
Tj = +7°C	Pdh	1,7	kW	Tj = +7°C	COPd	4,16	-
Tj = +12°C	Pdh	1,0	kW	Tj = +12°C	COPd	4,9	-
Tj = bivalent temperature	Pdh	4,1	kW	Tj = bivalent temperature	COPd	2,40	-
Tj = operation limit temperature	Pdh	3,6	kW	Tj = operation limit temperature	COPd	1,95	-
For air-to-water heat pumps: Tj = +15°C (if TOL < -20°C)	Pdh		kW	For air-to-water heat pumps: Tj = +15°C (if TOL < -20°C)	COPd		-
Bivalent temperature	T _{biv}	-7,0	°C	For air-to-water heat pumps: Operation limit temperature	TOL	-10,00	°C
Cycling interval capacity for heating	P _{cyh}		kW	Cycling interval efficiency	COP _{cyh}		-
Degradation co-efficient (**)	Cdh	0,9	-	Heating water operating limit temperature	WTOL	75,00	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	P _{OFF}	0,006	kW	Rated heat output	P _{sup}	1	kW
Thermostat-off mode	P _{TO}	0,006	kW	Type of energy input	electrical		
Standby mode	P _{SB}	0,006	kW				
Crankcase heater mode	P _{CK}	0,000	kW				
Other items				For air-to-water heat pumps: Rated air flow rate, outdoors			
Capacity control	variable			For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	2450	m³/h	m³/h
sound power level, indoors/outdoors	L _{WA}	40/49	dB				
Emissions of nitrogen oxides	NO _x	-	mg/kWh				
For heat pump combination heater:							
Declared load profile	-			Water heating energy efficiency	η_{wh}	-	%
Daily electricity consumption	Q _{elec}		kWh	Daily fuel consumption	Q _{fuel}	0	kWh
Contact details	ait deutschland GmbH, Industriestr. 3, 95359 Kasendorf, Germany						
(*) 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 s							
(**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.							

Model				Hybrox SE 5 1P			
Air-to-water heat pump: (yes/no)				yes			
Brine-to-water heat pump: (yes/no)				no			
Water-to-water heat pump: (yes/no)				no			
Low-temperature heat pump: (yes/no)				no			
Equipped with supplementary heater: (yes/no)				no			
combination heater with				no			
application: (low/medium)				low			
climate: (colder/average/warmer)				average			
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated heat output	Prated	5	kW	Seasonal space heating energy efficiency	η_s	187	%
Declared coefficient of performance for part load at indoor temperature 20°C and outdoor temperature Tj				Declared coefficient of performance for part load at indoor temperature 20°C and outdoor temperature Tj			
Tj = -7°C	Pdh	4,4	kW	Tj = -7°C	COPd	2,67	-
Tj = +2°C	Pdh	2,7	kW	Tj = +2°C	COPd	4,94	-
Tj = +7°C	Pdh	1,7	kW	Tj = +7°C	COPd	6,02	-
Tj = +12°C	Pdh	1,1	kW	Tj = +12°C	COPd	7,65	-
Tj = bivalent temperature	Pdh	4,4	kW	Tj = bivalent temperature	COPd	2,67	-
Tj = operation limit temperature	Pdh	4,1	kW	Tj = operation limit temperature	COPd	2,47	-
For air-to-water heat pumps: Tj = +15°C (if TOL < -20°C)	Pdh		kW	For air-to-water heat pumps: Tj = +15°C (if TOL < -20°C)	COPd		-
Bivalent temperature	T biv	-7,0	°C	For air-to-water heat pumps: Operation limit temperature	TOL	-10,00	°C
Cycling interval capacity for heating	Pcyc		kW	Cycling interval efficiency	COPcyc		-
Degradation co-efficient (**)	Cdh	0,9	-	Heating water operating limit temperature	WTOL	75,00	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	P OFF	0,006	kW	Rated heat output	Psup	1	kW
Thermostat-off mode	P TO	0,006	kW	Type of energy input	electrical		
Standby mode	P SB	0,006	kW				
Crankcase heater mode	P CK	0,000	kW				
Other items				For air-to-water heat pumps: Rated air flow rate, outdoors			
Capacity control	variable			For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger		2450	m³/h
sound power level, indoors/outdoors	L WA	40/49	dB				
Emissions of nitrogen oxides	NO x	-	mg/kWh				
For heat pump combination heater:							
Declared load profile	-			Water heating energy efficiency	η_{wh}	-	%
Daily electricity consumption	Q elec		kWh	Daily fuel consumption	Q fuel	-	kWh
Contact details	ait deutschland GmbH, Industriestr. 3, 95359 Kasendorf, Germany						
(*) 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 s							
(**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.							