



# ENERG

енергия · ενεργεια



10080401

alpha innotec

Hybrox 5



55 °C

35 °C



**40** dB



**45** dB





# ENERGY

10080401

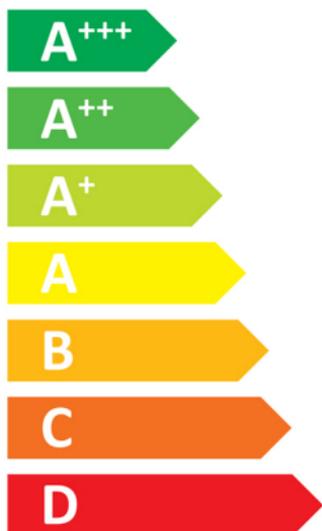
alpha innotec

Hybrox 5



55 °C

35 °C



A<sup>++</sup>

A<sup>+++</sup>



40 dB



45 dB

■ 5  
■ 6  
■ 6  
kW

■ 5  
■ 6  
■ 6  
kW





# ENERG

енергия · ενεργεια

Y

IJA

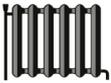
IE

IA

10080401

alpha innotec

Hybrox 5 + Lux 2.1



A<sup>++</sup>

A<sup>+++</sup>

A<sup>++</sup>

A<sup>++</sup>

A<sup>+</sup>

A

B

C

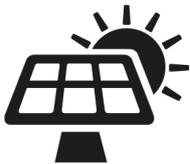
D

E

F

G

+



+



+



+



package (heat pumps and combination heater with heat pump) - Hybrox 5 + Lux 2.1

Seasonal space heating energy efficiency of heat pump ( $\eta_s$ ) ① 142 %

**Rated heat output of the heat pump ( $P_{rated}$  kW)** 6

Temperature control Class II (Table 1) + ② 2 %

Supplementary boiler  
package with hot water storage tank no  $P_{sup}$  kW (rated heat output of supplementary heater)

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

( $\alpha_{WE}$ : see Table 3)  $(\alpha_{WE})$

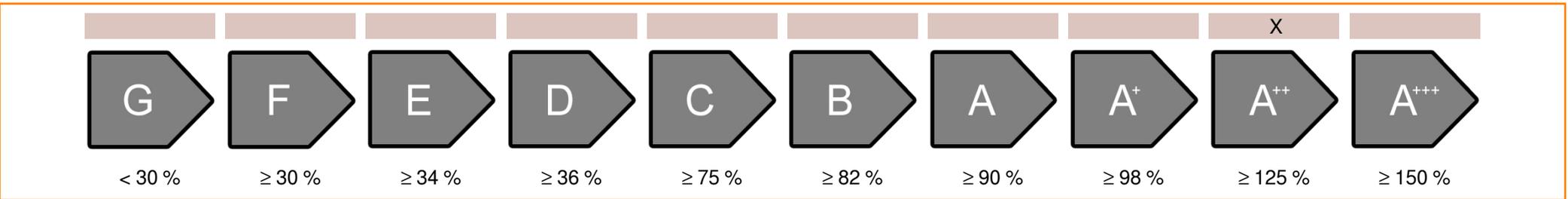
solar contribution  $(A_{Koll} m^2)$   $(\eta_{Koll} \%)$   
 $(V_{Sp} m^3)$   $(standstill\ heat\ loss\ of\ the\ hot\ water\ storage\ tank\ in\ W)$   
 $(\eta_{Sp}: Table\ 2)$

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

Seasonal space heating energy efficiency of package ⑤ 144 %

*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 ( $\eta_s$ ) under colder climate conditions** 115 %

**Seasonal space heating energy efficiency of the heat pump ( $\eta_s$ ) under warmer climate conditions** 158 %

colder ⑤ 144 -V 28 = 116 warmer ⑤ 144 +VI 16 = 160

<b>heatpump datasheet:</b>			
<b>manufacturer:</b>	alpha innotec		
<b>model:</b>	Hybrox 5		
<b>Information concerning energy efficiency class and rated heat output:</b>			
	average / low	average / medium	
energy efficiency class space heater:	A+++	A++	-
rated heat output:	6	6	kW
energy efficiency space heater:	187	142	%
annual final energy consumption space heater	2698	3226	kWh
sound power level indoors		40	dB
<b>special precautions concerning assembly, installation or maintenance</b>			
All instructional work in this manual may only be carried out by qualified specialist personnel in compliance with local regulations.			
<b>additional information</b>	low	medium	
rated heat output colder climate	5	5	kW
rated heat output warmer climate	6	6	kW
energy efficiency space heater colder climate	146	115	%
energy efficiency space heater warmer climate	206	158	%
annual energy consumption space heater colder climate	3375	4190	kWh
annual energy consumption space heater warmer climate	1580	2027	kWh
sound power level outdoors		45	dB

<b>technical data of the temperature controller</b>		
<b>manufacturer:</b>	<b>alpha innotec</b>	
<b>model:</b>	<b>Lux 2.1</b>	
controller class	II	-
contribution of the controller to the energy efficiency space heater	2	%

Model				Hybrox 5			
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)				yes			
combination heater with: (yes/no)				no			
application: (low/medium)				medium			
climate: (colder/average/warmer)				average			
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated heat output	Prated	6	kW	Seasonal space heating energy efficiency	$\eta_S$	142,2	%
<b>Declared coefficient of performance for part load at indoor temperature 20°C and outdoor temperature Tj</b>				<b>Declared coefficient of performance for part load at indoor temperature 20°C and outdoor temperature Tj</b>			
Tj = -7°C	Pdh	5,0	kW	Tj = -7°C	COPd	2,32	-
Tj = +2°C	Pdh	3,2	kW	Tj = +2°C	COPd	3,53	-
Tj = +7°C	Pdh	2,1	kW	Tj = +7°C	COPd	4,81	-
Tj = +12°C	Pdh	2,5	kW	Tj = +12°C	COPd	6,36	-
Tj = bivalent temperature	Pdh	5,2	kW	Tj = bivalent temperature	COPd	2,41	-
Tj = operation limit temperature	Pdh	4,2	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 <sub>biv</sub>	-6	°C	For air-to-water heat pumps: Operation limit temperature	TOL	-10	°C
Cycling interval capacity for heating	P <sub>cyh</sub>	-	kW	Cycling interval efficiency	COP <sub>cyh</sub>	-	-
Degradation co-efficient (**)	Cdh	1,0	-	Heating water operating limit temperature	WTOL	65	°C
<b>Power consumption in modes other than active mode</b>				<b>Supplementary heater</b>			
Off mode	P <sub>OFF</sub>	0,017	kW	Rated heat output	P <sub>sup</sub>	1,5	kW
Thermostat-off mode	P <sub>TO</sub>	0,021	kW	Type of energy input	electrical		
Standby mode	P <sub>SB</sub>	0,017	kW				
Crankcase heater mode	P <sub>CK</sub>	-	kW				
<b>Other items</b>							
Capacity control	variable			For air-to-water heat pumps: Rated air flow rate, outdoors	-	3.500	m <sup>3</sup> /h
sound power level, indoors/outdoors	L <sub>WA</sub>	40 / 45	dB	For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	-	m <sup>3</sup> /h
Emissions of nitrogen oxides	NO <sub>x</sub>	-	mg/kWh				
<b>For heat pump combination heater:</b>							
Declared load profile	-			Water heating energy efficiency	$\eta_{wh}$	-	%
Daily electricity consumption	Q <sub>elec</sub>	-	kWh	Daily fuel consumption	Q <sub>fuel</sub>	-	kWh
<b>Contact details</b>	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 sup(Tj).							
(**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.							

Model				Hybrox 5			
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)				yes			
combination heater with: (yes/no)				no			
application: (low/medium)				low			
climate: (colder/average/warmer)				average			
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated heat output	Prated	6	kW	Seasonal space heating energy efficiency	$\eta_S$	186,9	%
<b>Declared coefficient of performance for part load at indoor temperature 20°C and outdoor temperature Tj</b>				<b>Declared coefficient of performance for part load at indoor temperature 20°C and outdoor temperature Tj</b>			
Tj = -7°C	Pdh	5,4	kW	Tj = -7°C	COPd	3,12	-
Tj = +2°C	Pdh	3,3	kW	Tj = +2°C	COPd	4,59	-
Tj = +7°C	Pdh	2,3	kW	Tj = +7°C	COPd	6,40	-
Tj = +12°C	Pdh	2,5	kW	Tj = +12°C	COPd	7,68	-
Tj = bivalent temperature	Pdh	5,6	kW	Tj = bivalent temperature	COPd	3,23	-
Tj = operation limit temperature	Pdh	4,9	kW	Tj = operation limit temperature	COPd	2,85	-
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 <sub>biv</sub>	-6	°C	For air-to-water heat pumps: Operation limit temperature	TOL	-10	°C
Cycling interval capacity for heating	P <sub>cyh</sub>	-	kW	Cycling interval efficiency	COP <sub>cyh</sub>	-	-
Degradation co-efficient (**)	Cdh	1,0	-	Heating water operating limit temperature	WTOL	65	°C
<b>Power consumption in modes other than active mode</b>				<b>Supplementary heater</b>			
Off mode	P <sub>OFF</sub>	0,017	kW	Rated heat output	P <sub>sup</sub>	1,3	kW
Thermostat-off mode	P <sub>TO</sub>	0,021	kW	Type of energy input	electrical		
Standby mode	P <sub>SB</sub>	0,017	kW				
Crankcase heater mode	P <sub>CK</sub>	-	kW				
<b>Other items</b>							
Capacity control	variable			For air-to-water heat pumps: Rated air flow rate, outdoors	-	3.500	m <sup>3</sup> /h
sound power level, indoors/outdoors	L <sub>WA</sub>	40 / 45	dB	For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	-	m <sup>3</sup> /h
Emissions of nitrogen oxides	NO <sub>x</sub>	-	mg/kWh				
<b>For heat pump combination heater:</b>							
Declared load profile	-			Water heating energy efficiency	$\eta_{wh}$	-	%
Daily electricity consumption	Q <sub>elec</sub>	-	kWh	Daily fuel consumption	Q <sub>fuel</sub>	-	kWh
<b>Contact details</b>	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 sup(Tj).							
(**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.							