



# ENERG

енергия · ενεργεια



10070642

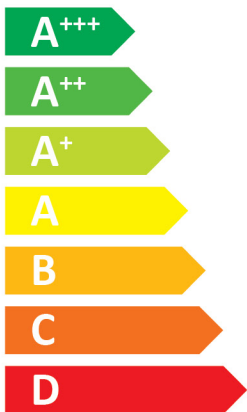
alpha innotec

SW 172H3



55 °C

35 °C



A++

A+++



**48** dB



- dB

■ 18  
■ **18**  
■ 18  
kW

■ 19  
■ **19**  
■ 20  
kW





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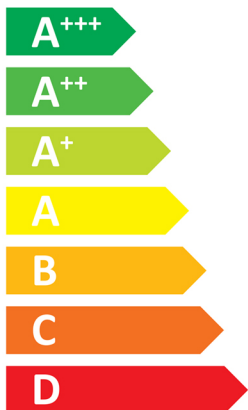
alpha innotec

SW 172H3



55 °C

35 °C



A<sup>++</sup>

A<sup>+++</sup>



**48** dB



- dB

- 18
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kW

- 19
- **19**
- 20

kW





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Y

IJA

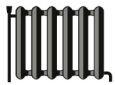
IE

IA

10070642

alpha innotec

SW 172H3 + Luxtronik 2.1



A<sup>++</sup>

A<sup>+++</sup>

A<sup>+++</sup>

A<sup>++</sup>

A<sup>+</sup>

A

B

C

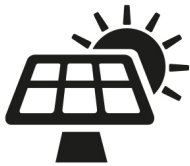
D

E

F

G

+



+



+



+



package (heat pumps and combination heater with heat pump) - SW 172H3 + Luxtronik 2.1

Seasonal space heating energy efficiency of heat pump ( $\eta_s$ ) ① 149 %

**Rated heat output of the heat pump ( $P_{rated}$  kW)** 18

Temperature control Class VII (Table 1) + ② 3,5 %

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)  $(\alpha_{WE})$

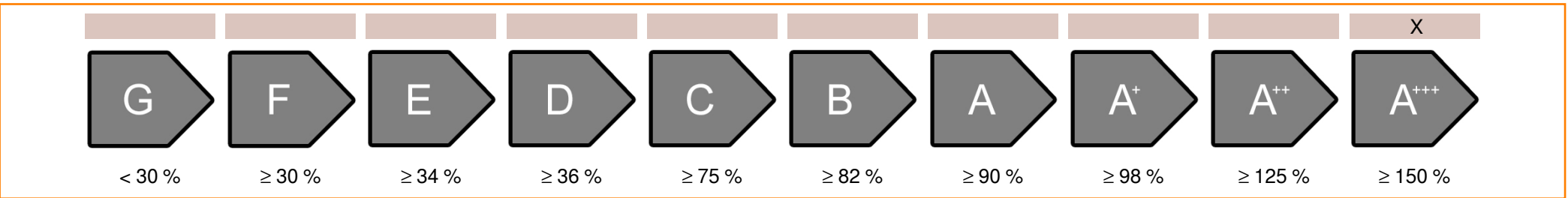
solar contribution  $(A_{Koll} m^2)$   $(\eta_{Koll} \%)$   
 $(V_{Sp} m^3)$   $(standstill\ heat\ loss\ of\ the\ hot\ water\ storage\ tank\ in\ W)$   
 $(\eta_{Sp}: Table\ 2)$

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

Seasonal space heating energy efficiency of package ⑤ 152 %

*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** 153 %

**Seasonal space heating energy efficiency of the heat pump ( $\eta_s$ ) under warmer climate conditions** 150 %

colder ⑤ 152 -V -5 = 157 warmer ⑤ 152 +VI 1 = 153

<b>heatpump datasheet:</b>			
<b>manufacturer:</b>	alpha innotec		
<b>model:</b>	SW 172H3		
<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:	19	18	kW
energy efficiency space heater:	206	149	%
annual final energy consumption space heater	7397	9400	kWh
sound power level indoors		48	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	19	18	kW
rated heat output warmer climate	20	18	kW
energy efficiency space heater colder climate	213	153	%
energy efficiency space heater warmer climate	208	150	%
annual energy consumption space heater colder climate	8527	10799	kWh
annual energy consumption space heater warmer climate	4908	6257	kWh
sound power level outdoors		-	dB

<b>technical data of the temperature controller</b>		
<b>manufacturer:</b>	<b>alpha innotec</b>	
<b>model:</b>	<b>Luxtronik 2.1</b>	
controller class	VII	-
contribution of the controller to the energy efficiency space heater	3,5	%

<b>Model</b>				<b>SW 172H3</b>			
Air-to-water heat pump: (yes/no)				no			
Brine-to-water heat pump: (yes/no)				yes			
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			
<b>Item</b>	<b>Symbol</b>	<b>Value</b>	<b>Unit</b>	<b>Item</b>	<b>Symbol</b>	<b>Value</b>	<b>Unit</b>
<b>Rated heat output</b>	Prated	18	kW	<b>Seasonal space heating energy efficiency</b>	$\eta_S$	148,9	%
<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	15,8	kW	Tj = -7°C	COPd	3,27	-
Tj = +2°C	Pdh	16,3	kW	Tj = +2°C	COPd	3,90	-
Tj = +7°C	Pdh	16,6	kW	Tj = +7°C	COPd	4,39	-
Tj = +12°C	Pdh	16,9	kW	Tj = +12°C	COPd	4,99	-
Tj = bivalent temperature	Pdh	15,8	kW	Tj = bivalent temperature	COPd	3,27	-
Tj = operation limit temperature	Pdh	15,6	kW	Tj = operation limit temperature	COPd	3,07	-
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>	-7	°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	60	°C
<b>Power consumption in modes other than active mode</b>				<b>Supplementary heater</b>			
Off mode	P <sub>OFF</sub>	0,015	kW	Rated heat output	P <sub>sup</sub>	2,3	kW
Thermostat-off mode	P <sub>TO</sub>	0,015	kW	Type of energy input	electrical		
Standby mode	P <sub>SB</sub>	0,015	kW				
Crankcase heater mode	P <sub>CK</sub>	-	kW				
<b>Other items</b>							
Capacity control	fixed			For air-to-water heat pumps: Rated air flow rate, outdoors	-	-	m <sup>3</sup> /h
sound power level, indoors/outdoors	L <sub>WA</sub>	48 / -	dB	For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	4	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.							

<b>Model</b>				<b>SW 172H3</b>			
Air-to-water heat pump: (yes/no)				no			
Brine-to-water heat pump: (yes/no)				yes			
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			
<b>Item</b>	<b>Symbol</b>	<b>Value</b>	<b>Unit</b>	<b>Item</b>	<b>Symbol</b>	<b>Value</b>	<b>Unit</b>
<b>Rated heat output</b>	Prated	19	kW	<b>Seasonal space heating energy efficiency</b>	$\eta_S$	206,2	%
<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	16,9	kW	Tj = -7°C	COPd	5,07	-
Tj = +2°C	Pdh	17,1	kW	Tj = +2°C	COPd	5,38	-
Tj = +7°C	Pdh	17,2	kW	Tj = +7°C	COPd	5,69	-
Tj = +12°C	Pdh	17,3	kW	Tj = +12°C	COPd	6,04	-
Tj = bivalent temperature	Pdh	16,9	kW	Tj = bivalent temperature	COPd	5,07	-
Tj = operation limit temperature	Pdh	16,9	kW	Tj = operation limit temperature	COPd	4,93	-
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>	-7	°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	60	°C
<b>Power consumption in modes other than active mode</b>				<b>Supplementary heater</b>			
Off mode	P <sub>OFF</sub>	0,015	kW	Rated heat output	P <sub>sup</sub>	2,3	kW
Thermostat-off mode	P <sub>TO</sub>	0,015	kW	Type of energy input	electrical		
Standby mode	P <sub>SB</sub>	0,015	kW				
Crankcase heater mode	P <sub>CK</sub>	-	kW				
<b>Other items</b>							
Capacity control	fixed			For air-to-water heat pumps: Rated air flow rate, outdoors	-	-	m <sup>3</sup> /h
sound power level, indoors/outdoors	L <sub>WA</sub>	48 / -	dB	For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	4	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.							