



# ENERG

енергия · ενεργεια



10068041

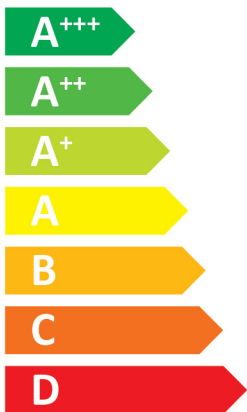
alpha innotec

SWC 42H3



55 °C

35 °C



**43** dB



- dB

■ 5  
■ **5**  
■ 5  
kW

■ 6  
■ **6**  
■ 6  
kW





# ENERGY

10068041

alpha innotec

SWC 42H3



55 °C

35 °C



**43** dB



- dB

■ 5  
■ **5**  
■ 5  
kW

■ 6  
■ **6**  
■ 6  
kW





# ENERG

енергия · ενεργεια

Y

IJA

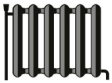
IE

IA

10068041

alpha innotec

SWC 42H3 + Luxtronik 2.1



A<sup>++</sup>

A<sup>+++</sup>

A<sup>++</sup>

A<sup>++</sup>

A<sup>+</sup>

A

B

C

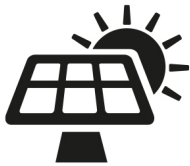
D

E

F

G

+



+



+



+



package (heat pumps and combination heater with heat pump) - SWC 42H3 + Luxtronik 2.1

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

① 127 %

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

5

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<sup>2</sup>)

( $\eta_{Koll}$  %)

( $V_{Sp}$  m<sup>3</sup>)

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

( $\eta_{Sp}$ : Table 2)

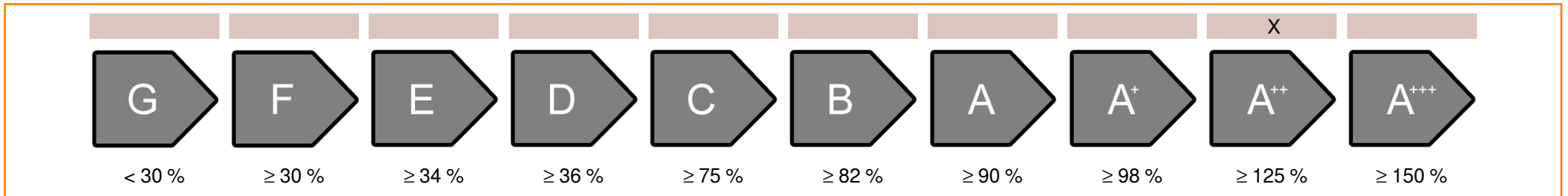
$((294/P_{rated} \times 11) \times (A_{Koll} \text{ m}^2) + (115/P_{rated} \times 11) \times (V_{Sp} \text{ m}^3)) \times 0,45 \times ((\eta_{Koll} \%)/100) \times (\eta_{Sp}) = +$  ④ %

Seasonal space heating energy efficiency of package

⑤ 130 %

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**

132 %

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

126 %

colder ⑤ 130 -V -5 = 135 warmer ⑤ 130 +VI -1 = 129

<b>heatpump datasheet:</b>			
<b>manufacturer:</b>	alpha innotec		
<b>model:</b>	SWC 42H3		
<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	5	kW
energy efficiency space heater:	191	127	%
annual final energy consumption space heater	2304	2954	kWh
sound power level indoors		43	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	6	5	kW
rated heat output warmer climate	6	5	kW
energy efficiency space heater colder climate	198	132	%
energy efficiency space heater warmer climate	190	126	%
annual energy consumption space heater colder climate	2634	3382	kWh
annual energy consumption space heater warmer climate	1556	1993	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>SWC 42H3</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	5	kW	<b>Seasonal space heating energy efficiency</b>	$\eta_S$	126,8	%
<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	4,3	kW	Tj = -7°C	COPd	2,79	-
Tj = +2°C	Pdh	4,5	kW	Tj = +2°C	COPd	3,45	-
Tj = +7°C	Pdh	4,7	kW	Tj = +7°C	COPd	3,93	-
Tj = +12°C	Pdh	4,9	kW	Tj = +12°C	COPd	4,35	-
Tj = bivalent temperature	Pdh	4,3	kW	Tj = bivalent temperature	COPd	2,79	-
Tj = operation limit temperature	Pdh	4,2	kW	Tj = operation limit temperature	COPd	2,58	-
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>	0,7	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>	43 / -	dB	For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	1	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>SWC 42H3</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	6	kW	<b>Seasonal space heating energy efficiency</b>	$\eta_S$	190,7	%
<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	4,9	kW	Tj = -7°C	COPd	4,87	-
Tj = +2°C	Pdh	5,0	kW	Tj = +2°C	COPd	5,17	-
Tj = +7°C	Pdh	5,0	kW	Tj = +7°C	COPd	5,46	-
Tj = +12°C	Pdh	5,1	kW	Tj = +12°C	COPd	5,54	-
Tj = bivalent temperature	Pdh	4,9	kW	Tj = bivalent temperature	COPd	4,87	-
Tj = operation limit temperature	Pdh	4,9	kW	Tj = operation limit temperature	COPd	4,70	-
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>	0,7	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>	43 / -	dB	For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	1	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.							