

ENERG 🖤 🕮 енергия · ενεργεια (ІЕ)

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10074842

alpha innotec

SW 302H3 + Luxtronik 2.1





manufacturer:	alpha innotec		
model:	SW 302H3		
Information concerning energy efficiency class and rate	ed heat output:		
	-		•
	average / low	average / medium	
energy efficiency class space heater:	A+++	A++	-
rated heat output:	30	27	kW
energy efficiency space heater:	204	141	%
annual final energy consumption space heater	11548	14796	kWh
sound power level indoors		50	dB
All instructional work in this manual may only be carried out b		nnel in compliance with loca	1
All instructional work in this manual may only be carried out b		nnel in compliance with loca	1
special precautions concerning assembly, installation All instructional work in this manual may only be carried out b regulations. additional information		nnel in compliance with loca	۱ ۱
All instructional work in this manual may only be carried out b regulations. additional information	y qualified specialist perso		al kW
All instructional work in this manual may only be carried out b regulations. additional information rated heat output colder climate	y qualified specialist perso	medium	
All instructional work in this manual may only be carried out b regulations. additional information rated heat output colder climate rated heat output warmer climate	low 30	medium 27	kW
All instructional work in this manual may only be carried out b regulations.	low 30 30	medium 27 27	kW kW
All instructional work in this manual may only be carried out b regulations. additional information rated heat output colder climate rated heat output warmer climate energy effiency space heater colder climate	low 30 210	medium 27 27 144	kW kW %

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dB

sound power level outdoors

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

Model				SW 302H3			
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				
tem	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated heat output	Prated	27	kW	Seasonal space heating energy efficiency	ηS	140,6	%
Declared coefficient of perform emperature 20°C and outdoo			indoor	Declared coefficient of perfor temperature 20°C and outdoo			ndoor
ſj = -7°C	Pdh	26,9	kW	Tj = -7°C	COPd	3,14	-
ſj = +2°C	Pdh	27,9	kW	Tj = +2°C	COPd	3,67	-
ſj = +7°C	Pdh	28,6	kW	Tj = +7°C	COPd	4,08	-
Гj = +12°С	Pdh	29,2	kW	Tj = +12°C	COPd	4,55	-
Γj = bivalent temperature	Pdh	26,6	kW	Tj = bivalent temperature	COPd	3,01	-
[j = operation limit temperature	Pdh	26,6	kW	Tj = operation limit temperature	COPd	3,01	-
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}	-10	°C	For air-to-water heat pumps: Operation limit temperature	TOL	-10	°C
Cycling interval capacity for neating	Pcych	-	kW	Cycling interval efficiency	COPcyc	-	-
Degradation co-efficient (**)	Cdh	1,0	-	Heating water operating limit temperature	WTOL	65	°C
Power consumption in modes	other that	n active mod	e	Supplementary heater			
Off mode	P _{OFF}	0,015	kW	Rated heat output	Psup	-	kW
Thermostat-off mode	P _{TO}	0,015	kW	Type of energy input		electrical	
Standby mode	P _{SB}	0,015	kW	-			
Crankcase heater mode	P _{CK}	-	kW	-			
Dther items			•				
Capacity control		fixed		For air-to-water heat pumps: Rated air flow rate, outdoors	-	-	m³/h
ound power level, ndoors/outdoors	L _{WA}	50 / -	dB	For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	7	m ³ /h
Emissions of nitrogen oxides	NO _X	-	mg/kWh				
For heat pump combination he	eater:	-					
Declared load profile		-		Water heating energy efficiency	η_{wh}	-	%
Daily electricity consumption	Q _{elec}	-	kWh	Daily fuel consumption	Qfuel	-	kWh
Contact details		Iand GmbH Ir	ndustriestr. 3	95359 Kasendorf Germany			-
*) For heat pump space heaters a	and heat pu out of a sup	imp combinat plementary he	ion heaters, eater Psup is	the rated heat output Prated is equ equal to the supplementary capac			

climate: (colder/average/warmer) average Item Symbol Value Unit Item Symbol Value Unit Rated heat output Prated 30 kW Seasonal space heating energy efficiency η S 203.8 % 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 29.7 kW Tj = -7°C COPd 4.94 - Tj = +7°C Pdh 30.0 kW Tj = +7°C COPd 5.26 - Tj = +12°C Pdh 30.6 kW Tj = +12°C COPd 5.98 - Tj = operation limit temperature Pdh 29.6 kW Tj = operation limit temperature COPd 4.88 - For air-to-water heat pumps: Tj = coperation limit temperature Pdh 29.6 kW Tj = operation limit temperature COPd 4.88 - For air-to-water heat pumps: Tj = coperation limit temperature Tow - For air-to-water heat pumps: To Cli = -15°C (if TOL < -20°C) - -	Model				SW 302H3			
Water-to-water heat pump: (yes/no) no Low-temperature heat pump: (yes/no) no Cow-temperature heat pump: (yes/no) no combination heater with: (yes/no) no application: (low/modium) low combination heater with: (yes/no) no application: (low/modium) low itemate: (coldor/averaga/warmer) averaga Rated heat output Pratod 30 kW Beasonal space heating emergy efficiency nS 203.8 % Declared coefficient of performance for part load at indoor temperature 20*C and outdoor temperature 1 temperature 20*C and outdoor temperature 20*C and outdoor temperature 20*C and outdoor temperature 1 temperature 20*C and outdoor	Air-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 elimate: (colder/average/warmar) average tem Symbol Value Unit Item Symbol Value Unit Rated heat output Praited 30 kW Seasonal space heating energy efficiency ns 203,8 % 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 1=-7*C COPd 4,84 - Tj = -7*C Pdh 30,0 kW Tj = +7*C COPd 5,58 - Tj = +7*C Pdh 30,6 kW Tj = +17*C COPd 4,88 - Tj = bivalent temperature Pdh 29.6 kW Tj = eits*C (TOL - 2.0*C) Pdd 4,88 - Tj = operation limit temperature Pdh 2.9.6 kW Tj = operation limit temperature COPd 4,88 - Tj = operation co-e	Brine-to-water heat pump: (yes/no)			yes				
Equipped with supplementary heator: (yes/no) yes combination heater with: (yes/no) no application: (low/medium) low climate: (colder/average/warmer) average tem Symbol Value Unit Rated heat output Prated 30 KW Seasonal space heating energy efficiency ns 203.8 % Declared coefficient of performance for part load at indoor temperature 20°C and outdoor temperature T Declared coefficient of performance for part load at indoor temperature 20°C and outdoor temperature T T T] = -7°C Pdh 29.7 KW T] = -7°C COPd 4.94 - T] = +7°C Pdh 30.0 KW T] = +2°C COPd 5.58 - T] = +12°C Pdh 30.0 KW T] = +2°C COPd 5.58 - T] = +12°C Pdh 29.6 KW T] = operation limit temperature COPd 4.88 - T] = operation limit temperature Pdh 29.6 KW T] = operation limit temperature COPd 4.88<				no				
combination heater with: (yes/no) no application: (low/medium) low climate: (colder/average/warmer) average tem Symbol Value Unit Item Symbol Value Unit Rated heat output Prated 30 kW Seasonal space heating energy efficiency ns 203,8 % Declared coefficient of performance for part load at indoor temperature 20°C and outdoor temperature TI Declared coefficient of performance for part load at indoor temperature 20°C and outdoor temperature TI Ti = 7°C COPd 4,94 - Tj = -7°C Pdh 30,0 kW Tj = +2°C COPd 5,58 - Tj = +2°C Pdh 30,6 kW Tj = +2°C COPd 5,83 - Tj = braitent kemperature Pdh 29,6 kW Tj = operation limit temperature COPd 4,88 - Tj = operation limit temperature Pdh 29,6 kW Tj = operation limit temperature COPd 4,88 - T = obraichen temperature Pdh 29,6								
application: (low/medium) low climate: (colder/average/warmer) average time Symbol Value Unit Item Symbol Value Unit Rated heat output Prated 30 kW Seasonal space heating energy efficiency nS 203,8 % Rated heat output Prated 30 kW Seasonal space heating energy efficiency nS 203,8 % 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 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 Tj = +2°C Pdh 30,0 kW Tj = -7°C COPd 5,28 - Tj = +12°C Pdh 30,8 kW Tj = peration limit temperature COPd 4,88 - Tj = oracido (if COL < 20°C)								
Climate: (colder/average/warmer) average Item Symbol Value Unit Item Symbol Value Unit Rated heat output Prated 30 kW Seasonal space heating energy efficiency nS 203,8 % 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 29,7 kW Tj = -7°C COPd 4,94 - Tj = +2°C Pdh 30,0 kW Tj = +2°C COPd 5,58 - Tj = +12°C Pdh 30,6 kW Tj = +12°C COPd 5,58 - Tj = +12°C Pdh 29,6 kW Tj = -12°C COPd 4,88 - Tj = oparation limit temperature Pdh 2,9,6 kW Tj = -12°C COPd 4,88 - For air-to-water heat pumps: Tj Pdh - KW For air-to-water heat pumps: Tj COPd - - Operation limit temperature Tou -10 °C	combination heater with: (yes/no))			no			
Item Symbol Value Unit Item Symbol Value Unit Rated heat output Prated 30 kW Seasonal space heating energy efficiency η S 203,8 % 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 Declared coefficient of performance for part load at indoor temperature 20°C and outdoor temperature Tj Tj = -7°C Pdh 30,0 kW Tj = +2°C COPd 4,94 - Tj = +2°C Pdh 30,3 kW Tj = +2°C COPd 5,58 - Tj = +12°C Pdh 30,6 kW Tj = +2°C COPd 5,93 - Tj = operation limit temperature Pdh 29,6 kW Tj = operation limit temperature COPd 4,88 - Tj = operation limit temperature COPd 4,88 - - - - - - - - - - - - - -	application: (low/medium)				low			
Rated heat output Prated 30 kW Seasonal space heating energy efficiency nS 203,8 % Declared coefficient of performance for part load at indoor temperature 20°C and outdoor temperature Tj Image: Comperature 20°C and outdoor temperature Tj Declared coefficient of performance for part load at indoor temperature 20°C and outdoor temperature Tj Image: Comperature 20°C and outdoor temperature Tj Tj = +7°C Pdh 30,0 kW Tj = +7°C COPd 4,94 - Tj = +2°C Pdh 30,0 kW Tj = +7°C COPd 5,58 - Tj = +12°C Pdh 30,6 kW Tj = +12°C COPd 5,58 - Tj = operation limit temperature Pdh 29,6 kW Tj = ovalent temperature COPd 4,88 - For air-to-water heat pumps: Tj Pdh - KW For air-to-water heat pumps: Tj COPd -				average				
Declared coefficient of performance for part load at indoor temperature 20°C and outdoor temperature 7Declared coefficient of performance for part load at indoor temperature 20°C and outdoor temperature 7Tj = -7°CPdh29,7kWTj = -7°CCOPd4,94-Tj = +2°CPdh30,0kWTj = +2°CCOPd5,26-Tj = +2°CPdh30,6KWTj = +2°CCOPd5,58-Tj = +12°CPdh30,6KWTj = +12°CCOPd5,58-Tj = bivalent temperaturePdh29,6KWTj = bivalent temperatureCOPd4,88-Tj = operation limit temperaturePdh29,6KWTj = operation limit temperatureCOPd4,88-For air-to-water heat pumps: Tj e-15°C (if TOL < -20°C)	Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
temperature 20°C and outdoor temperature TjTj = -7°CPdh29.7KWTj = -7°CCOPd4.94.Tj = +2°CPdh30.0kWTj = +2°CCOPd5.26Tj = +7°CPdh30.3kWTj = +7°CCOPd5.58Tj = +12°CPdh30.6kWTj = +12°CCOPd5.93Tj = operation limit temperaturePdh29.6kWTj = operation limit temperatureCOPd4.88.Tj = operation limit temperaturePdh29.6kWTj = operation limit temperatureCOPd4.88.For air-to-water heat pumps:TjCycling interval capacity for heatingPcychCycling interval capacity for heatingCore<	Rated heat output	Prated	30	kW	• •	ηS	203,8	%
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $				Declared coefficient of performance for part load at indoor				
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	Tj = -7°C	Pdh	29,7	kW	Tj = -7°C	COPd	4,94	-
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	•	Pdh	30,0	kW	-	COPd		-
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $		Pdh		kW	•	COPd		-
T = bivalent temperaturePdh29,6kWT = bivalent temperatureCOPd4,88-T = operation limit temperaturePdh29,6kWT = operation limit temperatureCOPd4,88-For air-to-water heat pumps: T = -15°C (if TOL < -20°C)	Tj = +12°C	Pdh		kW		COPd		-
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $		Pdh			-	COPd		-
$ = -15^{\circ}C (if TOL < -20^{\circ}C) $ Bivalent temperature $ T_{biv} -10 $ $ = -15^{\circ}C (if TOL < -20^{\circ}C) $ For air-to-water heat pumps: $ TOL -10 $ $ COPcyc $		Pdh		kW	, ,	COPd		-
Content Operation limit temperature Image: Content is a content is content is a content is content is a content i	For air-to-water heat pumps: Tj = -15°C (if TOL < -20°C)	Pdh	-	kW		COPd	-	-
heating Image <	Bivalent temperature	T _{biv}	-10	°C		TOL	-10	°C
Power consumption in modes other than active mode Supplementary heater Off mode P _{OFF} 0,015 kW Rated heat output Psup - kW Thermostat-off mode P _{TO} 0,015 kW Rated heat output Psup - kW Thermostat-off mode P _{TO} 0,015 kW Type of energy input electrical Standby mode P _{SB} 0,015 kW Type of energy input electrical Crankcase heater mode P _{CK} - kW Porticities electrical Other items Capacity control fixed For air-to-water heat pumps: Rated air flow rate, outdoors - m³/n sound power level, indoors/outdoors L _{WA} 50 / - dB For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger - 7 m³/n Emissions of nitrogen oxides NO _X - mg/kWh - - % Declared load profile - KWh Daily fuel consumption Qfuel - kWh Daily electricity consumption Q _{ellec} - kWh Daily fuel consumption		Pcych	-	kW	Cycling interval efficiency	COPcyc	-	-
Off mode P _{OFF} 0,015 kW Rated heat output Psup - kW Thermostat-off mode P _{TO} 0,015 kW Type of energy input electrical Standby mode P _{SB} 0,015 kW Type of energy input electrical Crankcase heater mode P _{CK} - kW Type of energy input electrical Other items Capacity control fixed For air-to-water heat pumps: Rated air flow rate, outdoors - - m³/h sound power level, indoors/outdoors L _{WA} 50 / - dB For water-/brine-to-water heat pumps: Rated bine or water flow rate, outdoor heat exchanger - 7 m³/h Emissions of nitrogen oxides NO _X - mg/kWh - % Declared load profile - Mater heating energy efficiency n _{wh} - % Daily electricity consumption Q _{elec} - kWh Daily fuel consumption Qfuel - kWh Contact details ait deutschland GmbH Industriestr. 3 95359 Kasendorf Germany (*) For heat pump space heaters and heat pump combination heaters peuplementary capacity for heat	Degradation co-efficient (**)	Cdh	1,0	-		WTOL	65	°C
Thermostat-off mode PTO 0,015 kW Type of energy input electrical Standby mode PSB 0,015 kW Image: Standby mode PCK - kW Image: Standby mode PCK - kW Image: Standby mode electrical electrical Crankcase heater mode PCK - kW Image: Standby mode PCK - kW Image: Standby mode electrical electrical Other items Capacity control fixed For air-to-water heat pumps: Rated air flow rate, outdoors - - m³/h Sound power level, indoors/outdoors LWA 50 / - dB For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger - 7 m³/h Emissions of nitrogen oxides NOx - mg/kWh - - 7 m³/h For heat pump combination heater: - - mg/kWh - - % Declared load profile - - kWh Daily fuel consumption Qfuel - kWh Daily electricity consumption Qelec - kWh	Power consumption in modes	s other that	n active mod	le	Supplementary heater			
$\begin{array}{ c c c c } \hline \begin{tabular}{ c c c } \hline \begin{tabular}{ c c c } \hline \begin{tabular}{ c c } \hline \hline \begin{tabular}{ c c } $	Off mode	P _{OFF}	0,015	kW	Rated heat output	Psup	-	kW
Standby mode P _{SB} 0,015 kW Crankcase heater mode P _{CK} - kW Other items Capacity control fixed For air-to-water heat pumps: Rated air flow rate, outdoors - - m³/h Sound power level, indoors/outdoors L _{WA} 50 / - dB For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger - 7 m³/h Emissions of nitrogen oxides NO _X - mg/kWh - - % Declared load profile - - KWh Daily fuel consumption Qfuel - kWh Daily electricity consumption Q _{elec} - kWh Daily fuel consumption Qfuel - 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 sup(Tj).	Thermostat-off mode		0,015	kW	Type of energy input		electrical	
Other items Capacity control fixed For air-to-water heat pumps: Rated air flow rate, outdoors - - m³/h sound power level, indoors/outdoors L _{WA} 50 / - dB For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger - 7 m³/h Emissions of nitrogen oxides NO _X - mg/kWh - 7 m³/h For heat pump combination heater: - - mg/kWh - % Declared load profile - - Water heating energy efficiency n _{wh} - % Daily electricity consumption Q _{elec} - kWh Daily fuel consumption Qfuel - kWh Contact details ait deutschland GmbH Industriestr. 3 95359 Kasendorf Germany - kWh Contact details 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).	Standby mode		0,015	kW				
Other items Capacity control fixed For air-to-water heat pumps: Rated air flow rate, outdoors - - m³/h sound power level, indoors/outdoors L _{WA} 50 / - dB For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger - 7 m³/h Emissions of nitrogen oxides NO _X - mg/kWh - 7 m³/h For heat pump combination heater: - - mg/kWh - % Declared load profile - - Water heating energy efficiency n _{wh} - % Daily electricity consumption Q _{elec} - kWh Daily fuel consumption Qfuel - kWh Contact details ait deutschland GmbH Industriestr. 3 95359 Kasendorf Germany - kWh Contact details 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).	Crankcase heater mode	Рск	-	kW				
Sound power level, indoors/outdoors L _{WA} 50 / - dB For water./brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger - 7 m³/h Emissions of nitrogen oxides NO _X - mg/kWh - - 7 m³/h Emissions of nitrogen oxides NO _X - mg/kWh -	Other items	•		•				
indoors/outdoors Image: Section of the secting section of the secting section of the section of the section of	Capacity control	fixed				-	-	m³/h
For heat pump combination heater: Declared load profile - Water heating energy efficiency η_{wh} - % Daily electricity consumption Q_{elec} - kWh Daily fuel consumption Qfuel - kWh Contact details ait deutschland GmbH Industriestr. 3 95359 Kasendorf Germany - kWh (*) 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).	sound power level, indoors/outdoors	L _{WA}	50 / -	dB	pumps: Rated brine or water flow rate, outdoor heat	-	7	m ³ /h
Declared load profile - Water heating energy efficiency n_wh - % Daily electricity consumption Q_elec - kWh Daily fuel consumption Qfuel - 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 sup(Tj).	Emissions of nitrogen oxides	NO _X	-	mg/kWh				
Daily electricity consumption Q _{elec} - kWh Daily fuel consumption Qfuel - kWh Contact details ait deutschland GmbH Industriestr. 3 95359 Kasendorf Germany ait deutschland GmbH Industriestr. 3 95359 Kasendorf Germany - kWh (*) 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).	For heat pump combination h	eater:	-					
Daily electricity consumption Q _{elec} - kWh Daily fuel consumption Qfuel - kWh Contact details ait deutschland GmbH Industriestr. 3 95359 Kasendorf Germany ait deutschland GmbH Industriestr. 3 95359 Kasendorf Germany - kWh (*) 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). - - kWh	Declared load profile		-		Water heating energy efficiency	η_{wh}	-	%
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 sup(Tj).	Daily electricity consumption	Q _{elec}	-	kWh	Daily fuel consumption		-	kWh
Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj).	Contact details		land GmbH Ir	ndustriestr. 3	95359 Kasendorf Germany			-
(**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh $= 0.0$								eating
$\sqrt{1}$ in our restriction to the definition of	-			-				