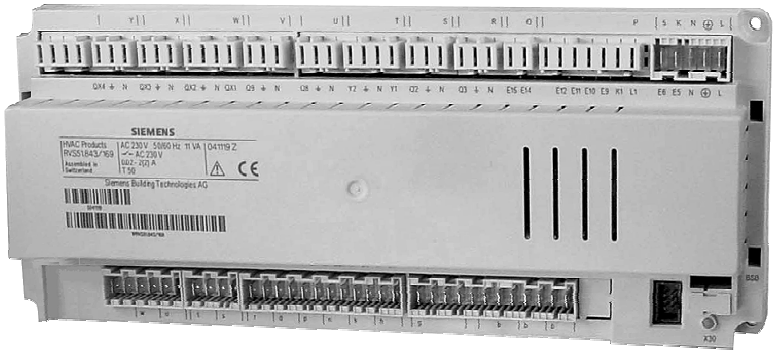
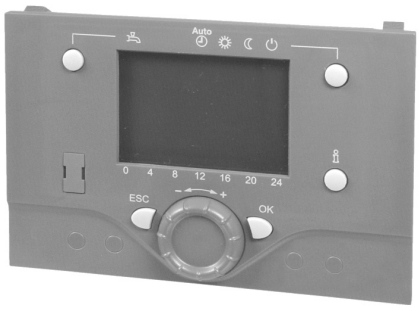
SIEMENS





Albatros^2
Heat Pump Controller
User Manual OEM

RVS51.843
AVS75..
AVS37..
QAA75..
QAA78..
QAA55..

Edition 2.0
Controller series B
CE1U2355en_01a
14. June 2006

Siemens Schweiz AG
HVAC Products

Contents

1 Overview of settings

The table on the following pages shows all available settings up to the OEM level.
Certain operating lines may get hidden, depending on the controller version in use.

Legend

E	=	enduser
I	=	commissioning
F	=	heating engineer
O	=	OEM
ZN	=	line number

Operating line	Operating level	Function	Default value	Min	Max	Unit
Time of day and date						
1	E	Hours/minutes	-	00:00	23:59	hh:mm
2	E	Day/month	-	01.01	31.12	dd.mm
3	E	Year	-	2004	2099	yyyy
5	F	Start of summertime	25.03	01.01	31.12	dd.mm
6	F	End of summertime	25.10	01.01	31.12	dd.mm
Operator section						
20	E	Language German* ¦ …	*	1	8	-
22	F	Info Temporarily* ¦ Permanently	*	1	2	-
24	F	Lighting Off ¦ Temporarily* ¦ Permanently	*	0	2	-
26	F	Operation lock Off* ¦ On	*	0	1	-
27	F	Programming lock Off* ¦ On	*	0	1	-
30	O	Read data No* ¦ Yes	*	0	1	
31	O	Write data No* ¦ Yes	*	0	1	
40	I	Used as Room unit 1* ¦ Room unit 2 ¦ Operator unit ¦Service unit	*	1	4	-
42	I	Assignment room unit 1 Heating circuit 1* ¦ Heating circuits 1 and 2	*	1	2	-
44	I	Operation HC2 Commonly with HC1* ¦ Independently	*	1	2	-
46	I	Operation HCP Commonly with HC1* ¦ Independently	*	1	2	-
48	I	Action occupancy button None ¦ Heating circuit 1* ¦ Heating circuit 2 ¦ Commonly	*	0	3	-
54	F	Readjustment room sensor	0.0	-3	3	°C
70	F	Software version	-	0	99.9	-
Wireless						
120	I	Binding No* ¦ Yes	*	0	1	
121	I	Test mode Off* ¦ On	*	0	1	
130	I	Room unit 1 Missing ¦ Ready ¦ No reception ¦ Change batt	-	0	3	-
131	I	Room unit 2 Missing ¦ Ready ¦ No reception ¦ Change batt	-	0	3	-

Operating line	Operating level	Function	Default value	Min	Max	Unit
132	I	Outside sensor Missing ¦ Ready ¦ No reception ¦ Change batt	-	0	3	-
133	I	Repeater Missing ¦ Ready ¦ No reception ¦ Change batt	-	0	3	-
134	I	Operator unit Missing ¦ Ready ¦ No reception ¦ Change batt	-	0	3	-
135	I	Service unit Missing ¦ Ready ¦ No reception ¦ Change batt	-	0	3	-
138	I	Delete all devices No* ¦ Yes	*	0	1	-
Time prog heating circuit 1						
500	E	Preselection Mo – Su* ¦ Mo - Fr ¦ Sa - Su ¦ Mo ¦ Tu ¦ We ¦ Th ¦ Fr ¦ Sa ¦Su	*	0	9	-
501	E	1st phase on	6:00	00:00	24:00	hh:mm
502	E	1st phase off	22:00	00:00	24:00	hh:mm
503	E	2nd phase on	24:00	00:00	24:00	hh:mm
504	E	2nd phase off	24:00	00:00	24:00	hh:mm
505	E	3rd phase on	24:00	00:00	24:00	hh:mm
506	E	3rd phase off	24:00	00:00	24:00	hh:mm
516	E	Default values No* ¦ Yes	*	0	1	-
Time prog heating circuit 2						
520…536						
Time program 3 / P						
540…556						
Time program 4 / DHW						
560	E	Preselection Mo – Su* ¦ Mo - Fr ¦ Sa - Su ¦ Mo ¦ Tu ¦ We ¦ Th ¦ Fr ¦ Sa ¦Su	*	0	9	-
561	E	1st phase on	00:00	00:00	24:00	hh:mm
562	E	1st phase off	05:00	00:00	24:00	hh:mm
563	E	2nd phase on	24:00	00:00	24:00	hh:mm
564	E	2nd phase off	24:00	00:00	24:00	hh:mm
565	E	3rd phase on	24:00	00:00	24:00	hh:mm
566	E	3rd phase off	24:00	00:00	24:00	hh:mm
576	E	Default values No* ¦ Yes	*	0	1	-
Holidays heating circuit 1						
642	E	Start	--.--	01.01	31.12	dd.mm
643	E	End	--.--	01.01	31.12	dd.mm
648	E	Operating level Frost protection* ¦ Reduced	*	0	1	-
Holidays heating circuit 2						
650…658						
Holidays heating circuit P						
660…668						
Heating circuit 1						
710	E	Comfort setpoint	20.0	ZN 712	ZN 716	°C
712	E	Reduced setpoint	19	ZN 714	ZN 710	°C
714	E	Frost protection setpoint	10.0	4	ZN 712	°C
716	F	Comfort setpoint max	35.0	ZN 710	35	°C
720	E	Heating curve slope	0.8	0.10	4.00	-
721	F	Heating curve displacement	0.0	-4.5	4.5	°C

Operating line	Operating level	Function	Default value	Min	Max	Unit
726	F	Heating curve adaption Off* ¦ On	*	0	1	-
730	E	Summer/winter heating limit	18	– – – / 8	30	°C
732	F	24-hour heating limit	-3	– – – / -10	10	°C
740	I	Flow temp setpoint min	8	8	ZN 741	°C
741	I	Flow temp setpoint max	50	ZN 740	95	°C
750	F	Room influence	20	– – – / 1	100	%
760	F	Room temp limitation	1	– – – / 0.5	4	°C
770	F	Boost heating	– – –	– – – / 0	20	°C
780	F	Quick setback Off ¦ Down to reduced setpoint* ¦ Down to frost prot setpoint	*	0	2	-
790	F	Optimum start control max	0	0	360	min
791	F	Optimum stop control max	0	0	360	min
800	F	Reduced setp increase start	– – –	– – – / -30	10	°C
801	F	Reduced setp increase end	-15	-30	ZN 800	°C
820	F	Overtemp prot pump circuit Off* ¦ On	Off	0	1	-
830	F	Mixing valve boost	0	0	50	°C
832	F	Actuator type 2-position ¦ 3-position*	*	0	1	-
833	F	Switching differential 2-pos	2	0	20	°C
834	F	Actuator running time	120	30	873	s
835	O	Mixing valve Xp	32	1	100	°C
836	O	Mixing valve Tn	120	10	873	s
850	F	Floor curing function Off* ¦ Functional heating ¦ Curing heating ¦ Functional/curing heating ¦ Manually	*	0	4	-
851	F	Floor curing setp manually	25	0	95	°C
855	E	Floor curing setp current	0	0	95	°C
856	E	Floor curing day current	0	0	32	-
860	F	Recooling storage tank Off ¦ Heating mode ¦ Always*	*	0	2	-
Cooling circuit 1						
901	E	Operating mode Off ¦ Automatic*	1	0	1	-
902	E	Comfort setpoint	24	ZN710	35	°C
907	E	Release 24h/day* ¦ Time program HC ¦ time program 3/HCP ¦ Time program 4/DHW	1	1	4	-
908	I	Flow temp setp at OT 25°C	20	8	35	°C
909	I	Flow temp setp at OT 35°C	16	8	35	°C
912	I	Cooling limit at OT	24	8	35	°C
913	F	Lock time attend of heating	48	8	100	h
918	F	Summer comp start at OT	26	20	35	°C
919	F	Summer comp end at OT	30	20	35	°C
920	F	Summer comp setp increase	2	1	10	°C
923	I	Flow temp setp min OT 25°C	18	8	35	°C
924	I	Flow temp setp min OT 35°C	18	8	35	°C
928	F	Room influence	100	1	100	°C
932	F	Room temp limitation	1	0.5	4	°C
937	F	Frost prot plant CC pump	1	0	1	-

Operating line	Operating level	Function	Default value	Min	Max	Unit
		Off ¦ On*				
939	F	Actuator type 2-position ¦ 3-position*	1	0	1	-
940	F	Switching differential 2-pos	2	0	20	°C
941	F	Actuator running time	120	30	875	s
942	O	Mixing valve Xp	32	1	100	°C
943	O	Mixing valve Tn	20	10	873	s
945	I	Mixing valve in heating mode Open* ¦ Closed	0	- - - / 0	1	-
946	F	Lock time dewpoint limiter	60	10	600	min
947	F	Flow temp setp incr hygro	3	1	10	°C
Heating circuit 2						
1010…1160 (same as heating circuit 1)						
Heating circuit P						
1300	E	Operating mode Protection ¦ Automatic* ¦ Reduced ¦ Comfort	*	0	3	-
1310…1460						
Domestic hot water						
1610	E	Nominal setpoint	50	ZN 1612	TempBwMax	°C
1612	E	Reduced setpoint	40	8	ZN 1610	°C
1614	O	Nominal setpoint max	65	8	80	°C
1620	I	Release 24h/day ¦ Time programs HCs ¦ Time program 4/DHW*	*	0	2	-
1630	I	Charging priority Absolute* ¦ Shifting ¦ None ¦ MC shifting, PC absolute	*	0	3	-
1640	F	Legionella function Off* ¦ Periodically ¦ Fixed weekday	*	0	2	-
1641	F	Legionella funct periodically	3	1	7	Days
1642	F	Legionella funct weekday Monday ¦ Tuesday ¦ Wednesday ¦ Thursday ¦ Friday ¦ Saturday ¦ Sunday*	*	1	7	-
1644	F	Legionella funct time	– – –	– – – / 00:00	23:50	hh:mm
1645	F	Legionella funct setpoint	65	55	95	°C
1646	F	Legionella funct duration	– – –	– – – / 10	360	min
1647	F	Legionella funct circ pump Off ¦ On*	*	0	1	-
1660	I	Circulating pump release Time program 3/HCP ¦ DHW release* ¦ Time program 4/DHW	*	1	3	-
1661	I	Circulating pump cycling Off ¦ On*	*	0	1	-
Heat pump						
2800	I	Frost protection cond pump Off* ¦ On	*	0	1	-
2802	I	Prerun time cond pump	5	0	240	s
2803	I	Overrun time cond pump	5	0	240	s
2805	O	Req temp diff condenser	– – –	– – – / 1	20	°C
2806	O	Max dev temp diff cond	3	1	10	°C
2815	I	Source frost prot temp	2	– – – / -20	30	°C
2816	I	Source protection temperature	-5	– – – / -30	50	°C
2817	I	Switching diff source prot	3	1	10	°C
2818	I	Increase source prot temp	2	0	10	°C
2819	I	Prerun time source pump	15	0	240	s

Operating line	Operating level	Function	Default value	Min	Max	Unit
2820	I	Overrun time source pump	5	0	240	s
2821	F	Source startup time max	5	1	10	min
2822	F	Time limit source temp min	4	1	24	h
2823	O	Req temp diff evaporator	– – –	– – – / 1	20	°C
2824	O	Max dev temp diff evap	2	1	10	°C
2840	I	Switching diff return temp	4	1	20	°C
2842	I	Compressor run time min	20	0	120	min
2843	I	Compressor off time min	20	0	120	min
2844	F	Switch-off temp max	55	8	100	°C
2845	O	Red switch-off temp max	2	0	20	°C
2846	O	Hot-gas temperature max	125	20	140	°C
2847	O	Swi diff hot-gas temp max	10	1	40	°C
2848	O	Reduction hot-gas temp max	10	0	20	°C
2860	F	Lock stage 2 with DHW Off* ¦ On	*	0	1	-
2861	F	Release stage 2 below OT	5	– – – / -30	30	°C
2862	O	Locking time stage 2	10	0	40	min
2863	O	Release integral stage 2	250	0	500	°C*min
2864	O	Reset integral stage 2	10	0	500	°C*min
2865	F	Compr sequence changeover	100	– – – / 10	1000	h
2886	F	Compensation heat deficit Off ¦ On*	*	0	1	-
2887	F	Temp threshold mode	23	10	60	°C
2888	O	Temp threshold mode	2	0	120	s
2889	O	Duration error repetition	24	1	40	h
2890	O	Reset error winding prot Manually ¦ Automatically*	*	1	2	-
2891	O	Time to automatic reset	6	– – – / 1	40	h
2951	I	Release defrost below OT	7	5	20	°C
2952	O	Swi diff defrost	3.5	0	15	°C
2953	O	Temp diff defrost max	20	5	50	°C
2954	O	Evapor temp defrost end	15	2	40	°C
2958	I	Number defrost attempts max	3	0	10	-
2959	O	Defrost stabilization time	9	0	20	min
2962	I	Duration defrost lock	30	0	100	min
2963	I	Time up to forced defrost	120	60	600	min
2964	I	Defrost time max	10	1	42	min
2965	I	Dripping time evapor	2	0	10	min
2966	O	Cooling down time evapor	5	0	120	s
2970	O	Switch-off temp min	12	5	40	°C
3000	I	Switch-off temp max cooling	40	20	60	°C
Solar						
3810	F	Temp diff on	8	ZN 3811	40	°C
3811	F	Temp diff off	4	0	ZN 3812	°C
3812	F	Charg temp min DHW st tank	– – –	– – – / 8	95	°C
3830	F	Collector start function	– – –	– – – / 5	60	min
3831	F	Min run time collector pump	60	5	120	s
3840	F	Collector frost protection	– – –	– – – / -20	5	°C
3850	F	Collector overtemp prot	– – –	– – – / 30	200	°C

Operating line	Operating level	Function	Default value	Min	Max	Unit
3860	F	Evaporation heat carrier	– – –	– – – / 60	200	°C
Buffer storage tank						
4708	I	Forced charging setp cooling	– – –	8	35	°C
4709	I	Forced charging heating None* ¦ To forced charging setpoint ¦ To slave pointer setpoint	*	0	2	-
4710	I	Forced charg setp heating	50	20	80	°C
4711	I	Forced charging time	02:00	– – – / 00:00	23:50	hh:mm
4712	I	Forced charg duration max	4	1	20	h
4722	F	Temp diff buffer/HC	0	-20	20	°C
4723	F	Temp diff buffer/CC	0	-20	20	°C
4726	F	Max st tank temp cool mode	25	10	40	°C
DHW storage tank						
5010	O	Charging Once/day ¦ Several times/day*	*	0	1	-
5020	F	Flow setpoint boost	0	0	30	°C
5022	F	Type of charging With B3 ¦ With B3/B31* ¦ With B3, legio B3/B31	With B3/B31			
5024	F	Switching diff	5	0	20	°C
5030	F	Charging time limitation	240	– – – / 10	600	min
5050	F	Charging temp max	80	8	ZN 5051 OEM	°C
5051	O	Storage tank temp max	90	ZN 5050	95	°C
5055	F	Recooling temp	60	8	95	°C
5056	F	Recooling heat gen/HCs Off* ¦ On	*	0	1	-
5057	F	Recooling collector Off* ¦ Summer ¦ Always	*	0	2	-
5060	F	El imm heater optg mode Substitute* ¦ Summer ¦ Always	*	1	3	-
5061	F	El immersion heater release 24h/day ¦ DHW release*¦ Time program4/ DHW	*	1	3	-
5070	O	Automatic push Off* ¦ On	*	0	1	-
5090	F	With buffer storage tank No* ¦ Yes	*	0	1	-
Configuration						
5700	I	Presetting	– – –	– – – / 1	16	-
5710	I	Heating circuit 1 Off ¦ On*	*	0	1	-
5711	I	Cooling circuit 1 Off* ¦ 4-pipe system ¦ 2-pipe system	*	0	2	
5712	I	Use of mixing valve 1 None ¦ Heating ¦ Cooling ¦ Heating and cooling*	*	0	3	
5731	I	DHW control element Q3 None ¦ Charging pump* ¦ Diverting valve	*	0	2	-
5800	I	Heat source Brine* ¦ Water ¦ Air	*	1	2	-
5801	I	Differential HC at OT -10°C	7	0	20	°C
5870	I	Combi storage tank No* ¦ Yes	*	0	1	-
5890	I	Relay output QX1 None* ¦ Compressor 2 K2¦ El imm heater flow K26¦ El imm heater buffer K16	*	0	3	-
5891	I	Relay output QX2 None* ¦ Circulating pump Q4 ¦ El imm heater DHW K6 ¦	*	0	11	-

Operating line	Operating level	Function	Default value	Min	Max	Unit
		Alarm output K10 ¦ Heat circuit pump HCP Q20 ¦ H1 pump Q15 ¦ 2nd pump speed HC1 Q21 ¦ 2nd pump speed HC2 Q22 ¦ 2nd pump speed HCP Q23 ¦ Diverting valve cooling Y21 ¦ Process revers valve Y22 ¦ Collector pump Q5				
5892	I	Relay output QX3 None* ¦ Circulating pump Q4 ¦ El imm heater DHW K6 ¦ Alarm output K10 ¦ Heat circuit pump HCP Q20 ¦ H1 pump Q15 ¦ 2nd pump speed HC1 Q21 ¦ 2nd pump speed HC2 Q22 ¦ 2nd pump speed HCP Q23 ¦ Diverting valve cooling Y21 ¦ Process revers valve Y22 ¦ Collector pump Q5	*	0	11	-
5894	I	Relay output QX4 None* ¦ Circulating pump Q4 ¦ El imm heater DHW K6 ¦ Alarm output K10 ¦ Heat circuit pump HCP Q20 ¦ H1 pump Q15 ¦ 2nd pump speed HC1 Q21 ¦ 2nd pump speed HC2 Q22 ¦ 2nd pump speed HCP Q23 ¦ Diverting valve cooling Y21 ¦ Process revers valve Y22 ¦ Collector pump Q5	*	0	11	-
5930	I	Sensor input BX1 None ¦ Buffer st tank sensor B4 ¦ buffer st tank sensor B41 ¦ Collector sensor B6 ¦ DHW sensor B31* ¦ Hot-gas sensor B82 ¦ Refrig sensor liquid B83	*	0	6	-
5931	I	Sensor input BX2 None ¦ Buffer st tank sensor B4 ¦ Buffer st tank sensor B41 ¦ Collector sensor B6* ¦ DHW sensor B31 ¦ Hot-gas sensor B82 ¦ Refrig sensor liquid B83	*	0	6	-
5932	I	Sensor input BX3 None ¦ Buffer st tank sensor B4* ¦ Buffer st tank sensor B41 ¦ Collector sensor B6 ¦ DHW sensor B31 ¦ Hot-gas sensor B82 ¦ Refrig sensor liquid B83	*	0	6	-
5933	I	Sensor input BX4 None ¦ Buffer st tank sensor B4 ¦ Buffer st tank sensor B41* ¦ Collector sensor B6 ¦ DHW sensor B31 ¦ Hot-gas sensor B82 ¦ Refrig sensor liquid B83	*	0	6	-
5950	I	Function input H1 Optg mode change HCs+DHW* ¦ Optg mode changeover HCs ¦ Optg mode changeover HC1 ¦ Optg mode changeover HC2 ¦ Optg mode changeover HCP ¦ Error/alarm message ¦ Min flow temp setpoint ¦ Excess heat discharge ¦ Flow temp increase hygro	*	1	10	-
5951	I	Contact type H1 NC ¦ NO*	*	0	1	-
5952	I	Min flow temp setpoint H1	40	8	120	°C
5954	I	Heat request 10V H1	100	5	130	°C
5995	O	Cont type low tariff E5 NC ¦ NO*	*	0	1	-
5996	O	Cont type HP lock E6 NC ¦ NO*	*	0	1	-
5999	O	Cont type LP monitor E9 NC ¦ NO*	*	0	1	-
6000	O	Cont type HP monitor E10 NC ¦ NO*	*	0	1	-
6001	O	Cont type wind protV1 E11 NC ¦ NO*	*	0	1	-
6005	O	Cont type P/F source E15 NC ¦ NO*	*	0	1	-
6006	O	Cont type input E12, E17 NC ¦ NO*	*	0	1	-
6007	O	Cont type input E14, E16 NC ¦ NO*	*	0	1	-

Operating line	Operating level	Function	Default value	Min	Max	Unit
6020	I	Function extension module 1 None ¦ Heating circuit* ¦ Cooling circuit 1	*	0	2	-
6100	F	Readjustm outside sensor	0.0	-3.0	3.0	°C
6110	F	Time constant building	20	0	50	h
6112	O	Gradient room model	60	0	300	min/°C
6120	F	Frost protection plant Off ¦ On*	*	0	1	-
6200	I	Save sensors No* ¦ Yes	*	0	1	-
6201	F	Reset sensors No* ¦ Yes	*	0	1	-
6204	F	Save parameters No* ¦ Yes	*	0	1	-
6205	F	Reset to default parameters No* ¦ Yes	*	0	1	-
6212	I	Check no heat source 1	-	0	199999	-
6213	I	Check no heat source 2	-	0	199999	-
6215	I	Check no storage tank	-	0	199999	-
6217	I	Check no heating circuits	-	0	199999	-
6220	F	Software version	-	0	99.9	-
6222	O	Device hours run	00:00	00:00	20833:00:00	h:min:s
Fault						
6710	I	Reset alarm relay No* ¦ Yes	*	0	1	-
6711	I	Reset HP No* ¦ Yes	*	0	1	-
6740	F	Flow temp 1 alarm	– – –	– – – / 10	240	min
6741	F	Flow temp 2 alarm	– – –	– – – / 10	240	min
6800	F	History 1	-			
6801	F	Error code 2	-	0	255	-
6802	F	History 2	-			
6803	F	Error code 1	-	0	255	-
6804	F	History 3	-			
6805	F	SW diagnstic code 1	-	0	255	-
6806	F	Burner control phase 1	-			
6807	F	Error code 2	-	0	255	-
6808	F	History 5	-			
6809	F	Error code 2	-	0	255	-
6810	F	History 2	-			
6811	F	Error code 2	-	0	255	-
6812	F	History 7	-			
6813	F	Error code 2	-	0	255	-
6814	F	History 8	-			
6815	F	SW diagnostic code 2	-	0	255	-
6816	F	History 9	-			
6817	F	Error code 2	-	0	255	-
6818	F	History 10	-			
6819	F	Error code 2	-	0	255	-
6820	O	Reset history No* ¦ Yes	*	0	1	-

Operating line	Operating level	Function	Default value	Min	Max	Unit
Maintenance / service						
7070	I	HP interval	– – –	– – – / 1	240	months
7071	I	HP time since maint	0	0	240	months
7072	I	Max starts compr1/hrs run	– – –	– – – / 0.1	12.0	-
7073	I	Cur starts compr1/hrs run	0	0	12.0	-
7074	I	Max starts compr2/hrs run	– – –	– – – / 0.1	12.0	-
7075	I	Cur starts compr2/hrs run	0	0	12.0	-
7076	I	Diff condens max/week	– – –	– – – / 1	250	-
7077	I	Cur diff condens max/week	0	0	250	-
7078	I	Diff condens min/week	– – –	– – – / 1	250	-
7079	I	Cur diff condens min/week	0	0	250	-
7080	I	Diff evap max/week	– – –	– – – / 1	250	-
7081	I	Cur diff evap max/week	0	0	250	-
7082	I	Diff evap min/week	– – –	– – – / 1	250	-
7083	I	Cur diff evap min/week	0	0	250	-
7090	I	DHW storage tank interval	– – –	– – – / 1	240	months
7091	I	DHW stor tank since maint	0	0	240	months
7092	I	DHW charg temp HP min	40	8	80	°C
7093	I	Curr DHW charg temp HP	-	8	80	°C
7141	E	Emergency operation Off* ¦ On	*	0	1	-
7142	F	Emergency op function type Manually* ¦ Automatically	*	1	2	-
7150	I	Simulation outside temp	– – –	– – – / -50	50	°C
7152	I	Triggering defrost No* ¦ Yes	*	0	1	-
7160	F	Reset limitation No* ¦ Yes	*	0	1	-
7180	O	Text responsibility 1 No display of responisibility* ¦ Only display of phone no ¦ Service ¦ Customer service ¦ Installer ¦ Janitor ¦ Administration ¦ Refrigeration engineer ¦ Hotline	*	0	8	-
7181	I	Phone no. responsibility 1		0	16	digits
7182	O	Text responsibility 2 No display of responisibility* ¦ Only display of phone no ¦ Service ¦ Customer service ¦ Installer ¦ Janitor ¦ Administration ¦ Refrigeration engineer ¦ Hotline	*	0	8	-
7183	I	Phone no. responsibility 2		0	16	digits
7184	O	Text responsibility 3 No display of responisibility* ¦ Only display of phone no ¦ Service ¦ Customer service ¦ Installer ¦ Janitor ¦ Administration ¦ Refrigeration engineer ¦ Hotline	*	0	8	-
7185	O	Phone no. responsibility 3		0	16	digits
7186	O	Text responsibility 4 No display of responisibility* ¦ Only display of phone no ¦ Service ¦ Customer service ¦ Installer ¦ Janitor ¦ Administration ¦ Refrigeration engineer ¦ Hotline	*	0	8	-
7187	O	Phone no. responsibility 4		0	16	digits
7188	O	Text responsibility 5 No display of responisibility* ¦ Only display of phone no ¦ Service ¦ Customer service ¦ Installer ¦ Janitor ¦ Administration ¦ Refrigeration engineer ¦ Hotline	*	0	8	-
7189	O	Phone no. responsibility 5		0	16	digits

Operating line	Operating level	Function	Default value	Min	Max	Unit
Input/output test						
7700	I	Relay test No test* ¦ Everything off ¦ Source pump Q8 / Fan K 19 ¦ Compressor 1 K1 ¦ Condenser pump Q9 ¦ DHW pump Q3 ¦ Heating circuit pump Q2¦ Heat circ mix valve op Y1¦ Heat circ mix valve cl Y2 ¦ Relay output QX23 module 1 ¦ Relay output QX21 module 1 ¦ Relay output QX22 module 1 ¦ Relay output QX1 ¦ Relay output QX2 ¦ Relay output QX3 ¦ Relay output QX4	*	0	15	-
7730	I	Outside temp B9	-	-50.0	50.0	°C
7732	I	Flow temp B1	-	0.0	140.0	°C
7750	I	DHW temp B3	-	0.0	140.0	°C
7770	I	Flow temp HP B21	-	0.0	140.0	°C
7771	I	Return temp HP B71	-	0.0	140.0	°C
7772	I	Hot-gas temp B81	-	0.0	140.0	°C
7775	I	Source inlet temp B91	-	-50.0	50.0	°C
7777	I	Sensor temp B92, B84	-	-50.0	50.0	°C
7820	I	Sensor temp BX 1	-	-28	350	°C
7821	I	Sensor temp BX 2	-	-28	350	°C
7822	I	Sensor temp BX 3	-	-28	350	°C
7823	I	Sensor temp BX 4	-	-28	350	°C
7830	I	Sensor temp BX21 module 1	-	-28	350	°C
7840	I	Voltage signal H1	-	0.0	10.0	Volt
7841	I	Contact state H1 Open ¦ Closed	-	0	1	-
7885	I	Low tariff E5 0V ¦ 230V	-	0	1	-
7886	I	HP lock E6 0V ¦ 230V	-	0	1	-
7889	I	Low-pressure switch E9 0V ¦ 230V	-	0	1	-
7890	I	High-pressure switch E10 0V ¦ 230V	-	0	1	-
7891	I	Winding prot compr 1 E11 0V ¦ 230V	-	0	1	-
7895	I	Pressure/flow source E15 0V ¦ 230V	-	0	1	-
7896	I	Signal input E12, E17 0V ¦ 230V	-	0	1	-
7897	I	Signal input E14, E16 0V ¦ 230V	-	0	1	-
State						
8000	I	State heating circuit 1	-	0	255	-
8001	I	State heating circuit 2	-	0	255	-
8002	I	State heating circuit P	-	0	255	-
8003	I	State DHW	-	0	255	-
8006	I	State heat pump	-	0	255	-
8007	I	State solar	-	0	255	-
8010	I	State buffer storage tank	-	0	255	-
8050	I	History 1	-			
8051	I	State code 1	-	0	255	-
8052	I	History 2	-			
8053	I	State code 2	-	0	255	-

Operating line	Operating level	Function	Default value	Min	Max	Unit
8054	I	History 3	-			
8055	I	State code 3	-	0	255	-
8056	I	History 4	-			
8057	I	State code 4	-	0	255	-
8058	I	History 5	-			
8059	I	State code 5	-	0	255	-
8060	I	History 6	-			
8061	I	State code 6	-	0	255	-
8062	I	History 7	-			
8063	I	State code 7	-	0	255	-
8064	I	History 8	-			
8065	I	State code 8	-	0	255	-
8066	I	History 9	-			
8067	I	State code 9	-	0	255	-
8068	I	History 10	-			
8069	I	State code 10	-	0	255	-
8070	O	Reset history No* ¦ Yes	*	0	1	-
Diagnostics heat source						
8400	I	Compressor 1 K1 Off ¦ On	-	0	1	-
8401	I	Compressor 2 K2 Off ¦ On	-	0	1	-
8402	I	El imm heater flow K26 Off ¦ On	-	0	1	-
8403	I	Source pump Q8 Off ¦ On	-	0	1	-
8405	I	Condensor pump Q9 Off ¦ On	-	0	1	-
8410	E	Return temp HP	-	0.0	140.0	°C
8411	E	Setpoint HP	-	0.0	140.0	°C
8412	E	Flow temp HP	-	0.0	140.0	°C
8415	I	Hot-gas temp 1	-	0.0	140.0	°C
8416	I	Hot-gas temp max	-	0.0	140.0	°C
8417	I	Hot-gas temp 2	-	0.0	140.0	°C
8420	I	Refrig temp liquid	-	0.0	140.0	°C
8425	I	Temp diff condensor	-	-50.0	140.0	°C
8426	I	Temp diff evaporator	-	-50.0	140.0	°C
8427	E	Source inlet temp	-	-50.0	50.0	°C
8428	I	Source inlet temp min	-	-50.0	50.0	°C
8429	E	Source outlet temp	-	-50.0	50.0	°C
8430	I	Source outlet temp min	-	-50.0	50.0	°C
8440	I	Remain stage1 off time min	---	(0) 1	255	min
8441	I	Remain stage2 off time min	---	(0) 1	255	min
8442	I	Remain stage1 on time min	---	(0) 1	255	min
8443	I	Remain stage2 on time min	---	(0) 1	255	min
8444	I	Remain limit source temp min	---	(0) 1	65535	min
8445	I	Remain auto reset	---	(0) 1	255	h
8446	I	Compressor sequence 1-2 ¦ 2-1	---	0	1	-
8450	F	Hours run compressor 1	0	0	65535	h

Operating line	Operating level	Function	Default value	Min	Max	Unit
8451	F	Start counter compressor 1	0	0	199'999	-
8452	F	Hours run compressor 2	0	0	65535	h
8453	F	Start counter compressor 2	0	0	199'999	-
8454	F	Locking time HP	0	0	65535	h
8455	F	Counter number of locks HP	0	0	65535	-
8456	F	Hours run el flow	0	0	65535	h
8457	F	Start counter el flow	0	0	65535	-
8470	I	Fan K19 Off* ¦ On	*	0	1	-
8471	I	Process revers valve Y22 Off* ¦ On	*	0	1	-
8475	I	Evaporator temp	0	-50	50	°C
8477	I	Temp diff defrost act value	0	-50	50	°C
8478	I	Temp diff defrost setpoint	0	-50	50	°C
8480	I	Remain time defrost lock	0	0	255	min
8481	I	Remain time forced defrost	00:00	00:00	07:00	h/min
8485	I	Number of defrost attempts	0	0	10	-
8510	I	Collector temp 1	-	-28	200	°C
8511	I	Collector temp 1 max	200	-28	200	°C
8512	I	Collector temp 1 min	-28	-28	200	°C
8513	I	dT collector 1/DHW	0	-28	200	°C
8530	F	Hours run solar yield	00:00	00:00	65535	h
8531	F	Hours run collect overtemp	00:00	00:00	65535	h
Diagnostics consumers						
8700	E	Outside temp	-	-50.0	50.0	°C
8701	E	Outside temp min	-	-50.0	50.0	°C
8702	E	Outside temp max	-	-50.0	50.0	°C
8703	I	Outside temp attenuated	-	-50.0	50.0	°C
8704	I	Outside temp composite	-	-50.0	50.0	°C
8730	I	Heating circuit pump Q2 Off ¦ On	-	0	1	-
8731	I	Heating circ mix valve op Y1 Off ¦ On	-	0	1	-
8732	I	Heat circ mix valve cl Y2 Off ¦ On	-	0	1	-
8740	E	Room temp 1	-	0.0	50.0	°C
8741	E	Room setpoint 1	20	4.0	35.0	°C
8742	O	Room temp 1 model	-	0.0	50.0	°C
8743	E	Flow temp 1	-	0.0	140.0	°C
8744	E	Flow temp setpoint 1	-	0.0	140.0	°C
8751	I	Cooling circuit pump Q24	-	0	1	-
8752	I	Cool circ mix valve op Y23	-	0	1	-
8753	I	Cool circ mix valve cl Y24	-	0	1	-
8754	I	Diverting valve cooling Y21	-	0	1	-
8756	E	Flow temp cooling 1	-	0	140	°C
8757	E	Flow temp setp cooling 1	-	0	140	°C
8760	I	Heating circuit pump Q6 Off ¦ On	-	0	1	-
8761	I	Heat circ mix valve op Y5 Off ¦ On	-	0	1	-

Operating line	Operating level	Function	Default value	Min	Max	Unit
8762	I	Heat circ mix valve cl Y6 Off ¦ On	-	0	1	-
8770	E	Room temp 2	-	0.0	50.0	°C
8771	E	Room setpoint 2	20	4.0	35.0	°C
8772	O	Room temp 2 model	-	0.0	50.0	°C
8773	E	Flow temp 2	-	0.0	140.0	°C
8774	E	Flow temp setpoint 2	-	0.0	140.0	°C
8800	E	Room temp P	-	0.0	50.0	°C
8801	E	Room setpoint P	20	4.0	35.0	°C
8802	O	Room temp P model	-	0.0	50.0	°C
8803	E	Flow temp setpoint P	-	0.0	140.0	°C
8820	I	DHW pump Q3 Off ¦ On	-	0	1	-
8821	I	El imm heater DHW K6 Off ¦ On	-	0	1	-
8830	E	DHW temp 1	-	0.0	140.0	°C
8831	E	DHW temp setpoint	55	8.0	80.0	°C
8832	I	DHW temp 2	-	0.0	140.0	°C
8840	F	Start counter DHW pump	0	0	65535	h
8841	F	Start counter DHW pump	0	0	65535	-
8842	F	Hours run el DHW	0	0	65535	h
8843	F	Start counter el DHW	0	0	65535	-
8970	I	El imm heater buffer K16 Off ¦ On	-	0	1	-
8980	E	Buffer storage tank temp 1	-	0.0	140.0	°C
8981	E	Buffer storage tank setp	-	0.0	140.0	°C
8982	E	Buffer storage tank temp 2	-	0.0	140.0	°C
8990	F	Hours run el buffer	0	0	65535	h
8991	F	Start counter el buffer	0	0	65535	-
9000	I	Flow temp setpoint H1	-	5.0	130.0	°C
9031	I	Relay output QX1 Off ¦ On	-	0	1	-
9032	I	Relay output QX2 Off ¦ On	-	0	1	-
9033	I	Relay output QX3 Off ¦ On	-	0	1	-
9034	I	Relay output QX4 Off ¦ On	-	0	1	-

2 The settings in detail

2.1 Operator section

Operation and display

Line no.	*Operating line*
30	**Read data** No Yes
31	**Write data** No Yes

Read data

The setting data of all operating levels are copied from the controller to the memory of the operator unit. This means that previous data in the operator unit will be overwritten.

Write data

With the exception of the data listed below, the setting data of all operating levels are transferred from the memory of the operator unit to the connected controller. Previous setting data in the controller will be overwritten.

The following data will not be overwritten:

Line no.	*Operating line*
3	Year
130	Room unit 1
131	Room unit 2
132	Outside sensor
133	Repeater
134	Operator unit
135	Service unit
138	Delete all devices
516	Default values
536	Default values
556	Default values
576	Default values
6222	Device hours run
6650	Outside temp source

2.2 Heating circuits / cooling circuit

Mixing valve control

Line no.				*Operating line*
HC1	*HC2*	*KK1*		
835	**1135**	**942**		**Mixing valve Xp**
836	**1136**	**943**		**Mixing valve Tn**

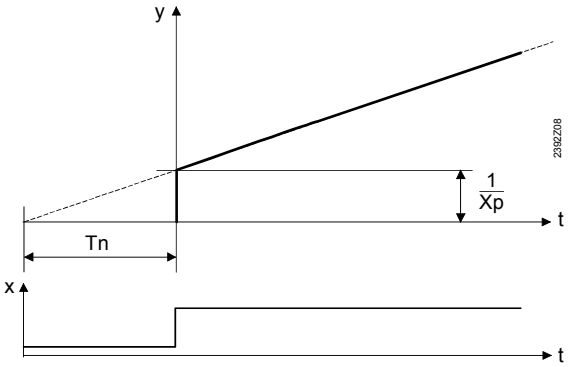
In heating mode, mixing valve 1 uses the P-band and the integral action time according to heating circuit 1 (835 / 836), in cooling mode those of cooling circuit 1 (942 / 943).

Mixing valve Xp

The proportional band defines within which change of the controlled variable Δx (ΔT of the return) the whole correcting span y (valve travel) is traversed.
The smaller the proportional band, the greater the change of the manipulated variable Δy at a given change of the controlled variable Δx.

Mixing valve Tn

The integral action time is the period of time the controller's I-part would need to produce the same change of the manipulated variable as the P-part.
An adjustment of the integral action time changes the valve's rate of response.
The longer the integral action time Tn, the slower the response of the controlled system.



2.3 DHW

setpoints

Line no.	*Operating line*
1614	**Nominal setpoint max**

This operating line is used to limit the "Nominal setpoint" (operating line 1610) at the top.

2.4 Heat pump

Condenser pump

Line no.	*Operating line*
2805	**Req temp diff condenser**
2806	**Max dev temp diff cond**

Req temp diff condenser

Required temperature differential (temperature increase) of the medium on the consumer side between condenser inlet (B71) and condenser outlet (B21).

The function is only active when both sensors are present.

Max dev temp diff cond

Maximum deviation from the required temperature differential, either upward or downward. If, for at least 3 minutes, the measured deviation is greater than the set maximum deviation, the relevant status message will appear.

Source pump

Line no.	*Operating line*
2823	**Req temp diff evaporator**
2824	**Max dev temp diff evap**

Req temp diff evaporator

Required temperature differential (temperature decrease) of the medium (water / brine) between evaporator inlet (B91) and evaporator outlet (B92).

Max dev temp diff evap

Maximum deviation from the required temperature differential, either upward or downward.
If the measured deviation is greater than the set maximum deviation, the relevant status message will appear, provided the compressor has been in operation for at least

3 minutes. With 2-stage heat pumps, the status message appears only if both stages are in operation.

In cooling mode and when using air-to-water heat pumps, parameters 2823 and 2824 are not active.

Compressor

Line no.	*Operating line*
2845	**Red switch-off temp max**
2846	**Hot-gas temperature max**
2847	**Swi diff hot-gas temp max**
2848	**Reduction hot-gas temp max**

Red switch-off temp max

The switch-off temperature (operating line 2844) will be lowered by this value.

If the flow or return temperature (B21 / B71) exceeds this level, DHW charging will be prematurely aborted and a change to space heating takes place, provided space heating calls for heat.
In this case, the heat pump continues to operate with no interruption.

If there is no demand for heat from space heating, the heat pump is switched off.
It can only resume operation when the minimum off time (operating line 2843) has elapsed, provided the flow or return temperature (B21 / B71) has dropped below the reduced maximum switch-off temperature by the amount of the adjustable switching differential (operating line 2840).

If an electric immersion heater is installed, DHW charging can be terminated. Otherwise, for DHW charging to be resumed, the DHW storage tank temperature (B3) must drop by the amount of the DHW switching differential (operating line 5024).

If a second compressor is in operation, it is always switched off when the reduced switch-off temperature is reached.

Hot-gas temperature max

This is the maximum permissible hot-gas temperature of the refrigerant (B81 / B82). The heat pump switches off when this temperature is reached. The pumps continue to run for the adjusted overrun times.

The heat pump switches on again when the hot-gas temperature drops below the maximum hot-gas temperature by the amount of the adjustable switching differential (operating line 2847) and the minimum off time (operating line 2843) has elapsed.

If the fault occurs a second time within the adjustable “Duration error repetition“ (operating line 2889), the heat pump will go to lockout and operation can only be resumed via manual reset.

Plant with 2 compressors:
If, in the event of hot-gas problems, only one compressor operates, the compressor will be switched off and the second compressor switched on.

Swi diff hot-gas temp max

For the heat pump to switch on again after reaching “Hot-gas temperature max“ (operating line 2846), the hot-gas temperature (B81 / B82) must drop below the maximum hot-gas temperature by at least the switching differential set here.

Reduction hot-gas temp max

The maximum hot-gas temperature (operating line 2846) is reduced by this value.

If the hot-gas temperature (B81 / B82) exceeds this level, DHW charging or forced buffer storage tank charging will be prematurely aborted and a change to space heating takes place, provided space heating calls for heat.

In this case, the heat pump continues to operate with no interruption.

If there is no demand for heat from space heating, the heat pump is switched off. It can only resume operation when the minimum off time (operating line 2843) has elapsed, provided the hot-gas temperature has dropped below the reduced maximum hot-gas temperature by the amount of the adjustable switching differential of the hot-gas (operating line 2847).

If an electric immersion heater is installed, DHW charging can be terminated. Otherwise, for DHW charging to be resumed, the DHW storage tank temperature (B3) must drop by the amount of the DHW switching differential (operating line 5024).

If a second compressor is in operation, it is always switched off when the reduced switch-off temperature is reached.

Compressor 2

Line no.	*Operating line*
2862	**Locking time stage 2**
2863	**Release integral stage 2**
2864	**Reset integral stage 2**

Locking time stage 2

The second stage is released only when the locking time has elapsed. The locking time starts on release of the first compressor.
The locking time enables the first compressor to reach a stable operating state before the second compressor is switched on.

Release integral stage 2

As soon as the locking time of the second heat pump stage has elapsed, the controller starts calculating the heat deficit, if there is any, and generates the current temperature gradient.
The second stage is released only if, on completion of a new “locking time stage 2“, the actual value to be anticipated lies below the required setpoint.

Reset integral stage 2

If both stages together produce too much heat, the second stage is immediately switched off when the (possibly reduced) maximum switch-off temperature is reached (operating lines 2844 and 2845). The controller starts integrating the surplus heat. As soon as the set value is reached, release of the second stage is withdrawn and the first stage switched off. If the temperature drops back again below the switch-on point, the first compressor will be switched on again.

General parameters

Line no.	*Operating line*
2888	**Temp threshold mode**
2889	**Duration error repetition**
2890	**Reset error winding prot** Manually Automatic
2891	**Time to automatic reset**

Temp threshold mode

When starting up the compressor, no consideration is given to the low-pressure switch (E9) during the period of time that can be set here.

If the low-pressure switch responds, the heat pump goes to lockout and can only be put back into operation via manual reset.

Duration error repetition

If the same fault occurs again during this period of time, lockout is triggered. This setting becomes active before the following faults:

- High-pressure
- Maximum hot-gas temperature
- Flow switch / pressure switch

Reset error winding prot

If winding protection 1 or 2 responds, the relevant compressor will go to lockout. This operating line is used to select whether the “time up to the automatic reset” (operating line 2891) shall act on these faults.

On
On completion of the “time up to automatic reset“, the faults will automatically be reset.

Off
The compressors can only be put back into operation via manual reset.

When starting the compressor, no consideration is given to winding protection 1 and 2 (E11 / E12) for 3 seconds.

Time to automatic reset

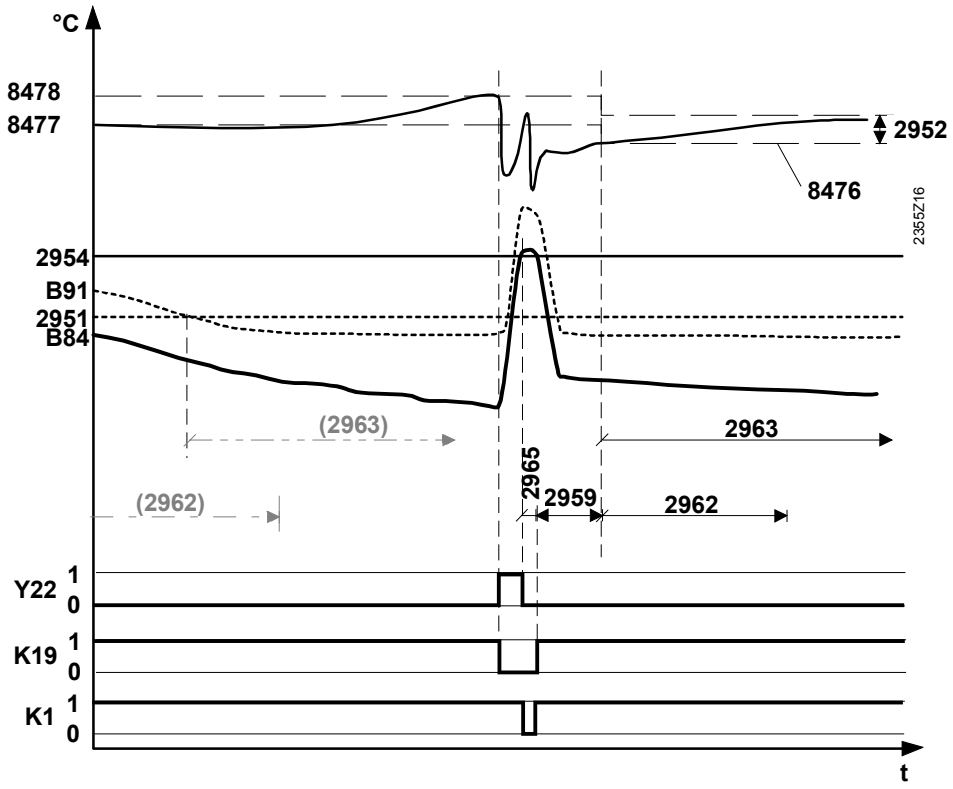
The following faults are automatically reset on completion of the time that can be set here:

- Flow switch / pressure switch
- Source temperature
- Winding protection compressor 1
- Winding protection compressor 2

Defrost

Line no.	*Operating line*
2952	**Swi diff defrost**
2953	**Temp diff defrost max**
2954	**Evapor temp defrost end**
2959	**Defrost stabilization time**
2966	**Cooling down time evapor**
2970	**Switch-off temp min**

When the compressor in on, “Duration defrost lock“ (2962) elapses. If the source temperature (B91) drops below the defrost release temperature (2951), the defrost function is enabled and “Time up to forced defrost“ (2963) starts to run. The heat pump can change to defrost mode on completion of “Duration to forced defrost“ at the lastest, and on completion of “Duration defrost lock” at the earliest. If, due to icing during this period of time, the temperature differential (8477) between the incoming outside air (B91) and the evaporator (B84) exceeds the setpoint (8478), the defrost function will be triggered.
When defrosting is successful, the evaporation temperature (B84) rises. When the evaporator exceeds the “Evapor temp defrost end“ (2954), the defrost process can be successfully completed and the compressor is switched off during the drip time (2965). Then, heating mode will be resumed. On completion of the “Defrost stabilization time“ (2959), “Temp diff defrost icefree“ (8476) is acquired for generating the new setpoint (8478). “Duration defrost lock“ or “Time up to forced defrost“ will start again.



B91 Source inlet temperature
B84 Evaporator temperature
Y22 Process reversing valve
K19 Fan source inlet
K1 Compressor 1

Switching differential defrost

If “Temp diff defrost icefree“ (8476) is exceeded by the temperature differential set here, the controller will trigger the automatic defrost function.

Temp diff defrost max

When the temperature differential between source inlet (B91) and evaporator temperature (B84) exceeds the maximum value set here, the automatic defrost function will be triggered. Prerequisite is that there is no valid value (----) of “Temp diff defrost icefree“ (8476).

Evaporator temp defrost end

The defrost process is successfully completed when the evaporator temperature has reached the temperature set here.

Defrost stabilization time

The stabilization time is used to define the period of time the heat pump requires to reach a stable operating state after heating mode has been resumed. If, after successful defrosting, the heat pump switches to heating mode, the system waits until the stabilization time has elapsed and then acquires the “Temp diff defrost icefree“ (8476). Prerequisite for this is that the temperature has dropped below the defrost release temperature (2951).

“Duration defrost lock“ (2962) and “Time up to forced defrost“ (2963) are only started when the stabilization time has elapsed.

Cooling down time

Heating mode will be resumed on completion of the defrost process and when the “Drip time evaporator“ (2965) has elpased. “Cooling down time evaporator“ is used to define how long the fan will remain off after heating mode has been resumed.
This function ensures that the incoming outside air will not evaporate.

Switch-off temp minimum

In defrost mode
Each time a defrost attempt is made, the controller acquires the temperature in the condenser circuit (B21, B71 or B4).
If, during the defrost process, the temperature in the condenser circuit falls below the “Switch-off temp minimum“, the defrost function will be unsuccessfully aborted.
On completion of “Duration defrost lock“ (2962), a new defrost attempt is made, provided this is permitted by the “Numb defrost attempts max“ (2958).

In cooling mode
If the flow (B21) or the return temperature (B71) falls below the minimum switch-off temperature, the compressor will be switched off.
The compressor will be switched on again when the temperature at both sensors has exceeded the “Minimum switch-off temperature“ by the amount of the “Switching diff return temp” (2840) and the minimum off time (2843) has elapsed.

In the case of 2-stage operation, the second compressor stage is already switched off 1 K before the minimum switch-off temperature is reached.

2.5 DHW storage tank

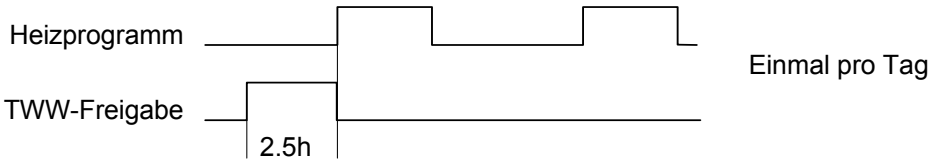
Release

Line no.	*Operating line*
5010	**Charging** Once / day Several times / day

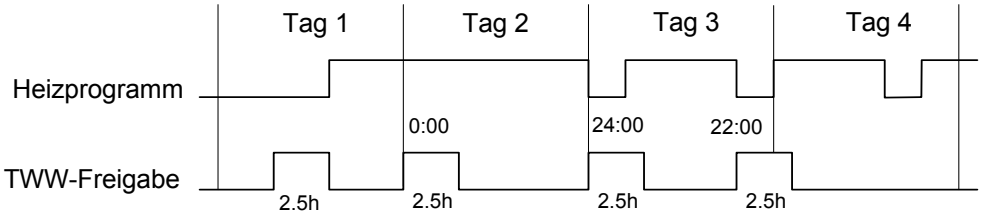
Charging

Selection of charging “Once/day“ or “Several times/day” is active only if DHW release is set according to the time programs of the heating circuits.

Once / day
Release of DHW charging is given 2.5 hours before the first heat request fom the heating circuit is received. Then, the reduced DHW setpoint applies for the whole day.

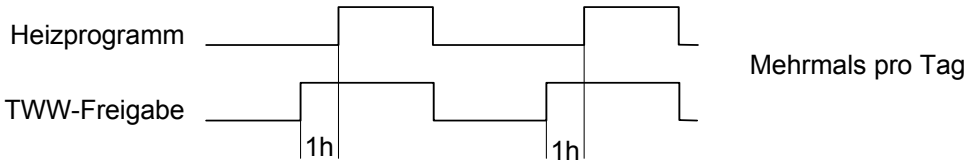


In the case of continuous heating (with no setback periods), release of DHW charging is given at 0:00. The same rule also applies if the first request for heat from the heating circuit is received before 02:30. If a request for heat is delivered at midnight, DHW charging is released after the first setback period, but no earlier than 2.5 hours before midnight.



Several times / day

When selecting “Several times/day“, release of DHW charging is put forward in time by 1 hour against the periods of time the heating circuit calls for heat, and is then maintained during these periods of time.



Overtemperature protection

Line no.	*Operating line*
5051	**Storage tank temp max**

Defines the maximum DHW storage tank temperature. This temperature must never be exceeded, even if the collector overtemperature function is active.

DHW push

Line no.	*Operating line*
5070	**Automatic push** Off On

Automatic push

The DHW push can be triggered either manually or automatically.
With the DHW push, the DHW is heated up once until the nominal setpoint is reached.

Off

The DHW push must be triggered manually. To do this, keep the DHW operating mode button on the operator or room unit depressed for at least 3 seconds. The DHW push can also be triggered when:

- The operating mode is “Off“
- Operating mode changeover acts via H1 or centrally (LPB)
- All heating circuits operate in holiday mode

On

If the DHW temperature falls below the reduced setpoint (operating line 1612) by at least 2 switching differentials (operating line 5024), one-time charging to the nominal DHW setpoint (operating line 1610) will take place again.

The automatic DHW push only works when the DHW operating mode is activated.

2.6 Configuration

Operating action of inputs E

Line no.	*Operating line*
5995	**Cont type low tariff E5** NC NO
5996	**Cont type HP lock E6** NC NO
5999	**Cont type LP monitor E9** NC NO
6000	**Cont type HP monitor E10** NC NO
6001	**Cont type wind protV1 E11** NC NO
6005	**Cont type P/F source E15** NC NO
6006	**Cont type input E12, E17** NC NO
6007	**Cont type input E14, E16** NC NO

Operating action

The operating action of the contacts can be selected.

NC contact
The contact is normally closed and must be opened to activate the selected function.

NO contact
The contact is normally open and must be closed to activate the selected function.

Building and room model

Line no.	*Operating line*
6112	**Gradient room model**

Gradient room model

The room model gradient gives the period of time in minutes the room needs to raise its temperature by 1 °C. The setting made applies to all circuits.

The parameter is used to calculate the fictive room temperature of all rooms that have no room temperature sensor (operating lines 8742, 8772, and 8802).

Device data

Line no.	*Operating line*
6222	**Device hours run**

Device hours run

This indicates the total number of operating hours since the controller was first commissioned.

2.7 Fault

History 1...10

Line no.	*Operating line*
6820	**Reset history** No Yes

Reset history

The error history with the last 10 faults, the associated actual values and setpoints and the relay output states will be deleted.

2.8 Maintenance / service

Definition of responsibilities

Line no.	*Operating line*
7180	**Text responsibility 1** No display of responsibility Only display of phone no. Service Customer service Installer Janitor Administration Refrigeration engineer Hotline
7182	**Text responsibility 2**
7184	**Text responsibility 3**
7185	**Phone no. responsibility 3**
7186	**Text responsibility 4**
7187	**Phone no. responsibility 4**
7188	**Text responsibility 5**
7189	**Phone no. responsibility 5**

Text responsibility 1 - 5

These operating lines are used to select the responsibility for text display for the relevant error and service messages.

Phone no. responsibility 3 - 5

These operating lines are used to set the responsibility phone nos. for the relevant error and service messages.

2.9 State of plant

History

Line no.	*Operating line*
8070	**Reset history** No Yes

Reset history

The status history with the last 10 status messages and the associated status codes, actual values and setpoints as well as the relay output states will be deleted.

2.10 Diagnostics of consumer

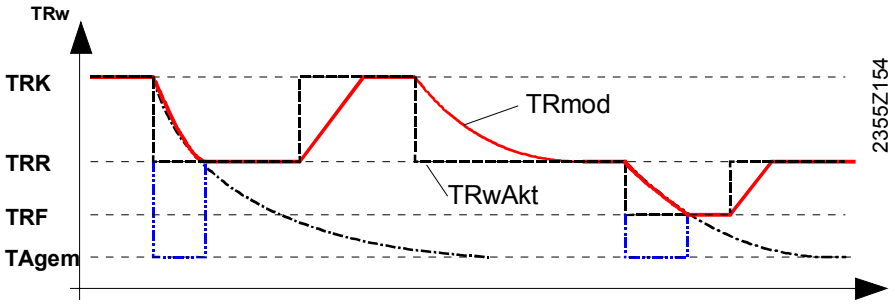
Heating circuit 1, heating circuit 2, heating circuit P

Line no.	*Operating line*
8742	**Room temp 1 model**
8772	**Room temp 2 model**
8802	**Room temp P model**

Room temperature 1 / 2 / P model

The room model calculates a fictive room temperature for rooms that have no room temperature sensor. The value calculated for each heating circuit is indicated on these operating lines.

This allows boost heating, quick setback and optimum start and stop control to be implemented with no need for using a room temperature sensor.
The calculation takes into account the attenuated outside temperature (operating line 8703), the room model gradient (operating line 6112) for switching to a higher setpoint, and the building's time constant (operating line 6110) for switching to a lower setpoint.



TRwAkt	Current room temperature setpoint
TRmod	Room temperature model
TRK	Comfort setpoint
TRR	Reduced setpoint
TRF	Frost protection setpoint
Tagem	Composite outside temperature

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