Service manual
Pellet Boiler
Eco-PK 70-120

HARGASSNER
HEIZTECHNIK DER ZUKUNFT

Follow and store this manual

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HARGASSNER Heating technology for *Biomass* A 4952 Weng OÖ Tel.: +43/7723/5274-0 Fax: +43/7723/5274-5 office@hargassner.at

Dear customer!

Thank you for choosing an innovative wood biomass boiler from our company. The boiler from Hargassner Ges mbH is a state of the art product and manufactured to the latest production standards. We are very pleased about your decision and guarantee that you've chosen a reliable quality product.

Keep this service manual at hand.

This service manual is for trained and qualified personnel only.

Only Hargassner trained and authorised personnel are allowed to access the boiler control.

1 Parameter list - Customer

Menu	Description	Default	ModBus address
1	HWT 1 day timer Mo-Su	ON 17:00 OFF 20:00	2001
to parametrise "Week clock" (menu no. D9 in installer settings)			
1a-g	HWT 1 week timer	Mo Tu We Th Fr Sa Su ON 17:00 00:00 OFF 20:00 00:00	2005 - 2035 (intervals of 5)
2	HWT 1 set temperature	60 °C	2040
2_HT	HWT 1 set temperature	60 °C	
2a	HWT 1 circulation pump	ON 06:00 11:00 OFF 08:00 13:00	2045
3	Heat circuit 1 day timer Mo-Su	ON 06:00 15:00 OFF 09:00 22:00	2049
to parametrise "Week clock" (menu no. D9 in installer settings)			
3a-g	Heat circuit 1 week timer	Mo Tu We Th Fr Sa Su ON 06:00 15:00 OFF 09:00 22:00	2053 - 2083 (intervals of 5)
4	Heat circuit 1 Day room temperature	20 °C	2088
5	Heat circuit 1 Reduced room temperature	16 °C	2090
6	Heat circuit 2 day timer Mo-Su	ON 06:00 15:00 OFF 09:00 22:00	2092
to parametrise "Week clock" (menu no. D9 in installer settings)			
6a-g	Heat circuit 2 week timer	Mo Tu We Th Fr Sa Su ON 06:00 15:00 OFF 09:00 22:00	2096 - 2126 (intervals of 5)
7	Heat circuit 2 Day room temperature	20 °C	2131
8	Heat circuit 2 Reduced room temperature	16 °C	2133
9	Automatically fill and suction times	ON 08:00 00:00 OFF 19:00 00:00	
Heat circuit board A			
HP1	HWT A day timer Mo-Su	ON 17:00 OFF 20:00	2140
HP1a-g	HWT A week timer	Mo Tu We Th Fr Sa Su ON 17:00 00:00 OFF 20:00 00:00	2145 - 2175 (intervals of 5)
HP2	HWT A set temperature	60 °C	2180
HP2_HT	HWT A set temperature	60 °C	
HP2a	Circulation pump HWT A	ON 06:00 11:00 OFF 08:00 13:00	2181
HP3	Heat circuit A day timer Mo-Su	ON 06:00 15:00 OFF 09:00 22:00	2190
HP3a-g	Heat circuit A week timer	Mo Tu We Th Fr Sa Su ON 06:00 15:00 OFF 09:00 22:00	2195 - 2225 (intervals of 5)
HP4	Heat circuit A Day room temperature	20 °C	2230
HP5	Heat circuit A Reduced room temperature	16 °C	2232
Extension module 1			
H1	HWT 2 day timer Mo-Su	ON 17:00 OFF 20:00	2234

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H1a-g	HWT 2 week timer	Mo Tu We Th Fr Sa Su ON 17:00 00:00 OFF 20:00 00:00	2240 - 2270 (intervals of 5)
H2	HWT 2 set temperature	60 °C	2275
H2_HT	HWT 2 set temperature	60 °C	
H2a	Circulation pump HWS 2	ON 06:00 11:00 OFF 08:00 13:00	2280
H3	Heat circuit 3 day timer Mo-Su	ON 06:00 15:00 OFF 09:00 22:00	2269
H3a-g	Heat circuit 3 week timer	Mo Tu We Th Fr Sa Su ON 17:00 00:00 OFF 20:00 00:00	2285 - 2315 (intervals of 5)
H4	Heat circuit 3 Day room temperature	20 °C	2320
H5	Heat circuit 3 Reduced room temperature	16 °C	2322
H6	Heat circuit 4 day timer Mo-Su	ON 06:00 15:00 OFF 09:00 22:00	2325
H6a-g	Heat circuit 4 week timer	Mo Tu We Th Fr Sa Su ON 17:00 00:00 OFF 20:00 00:00	2330 - 2360 (intervals of 5)
H7	Heat circuit 4 Day room temperature	20 °C	2365
H8	Heat circuit 4 Reduced room temperature	16 °C	2367
Extension module 2			
H11	HWT 3 day timer Mo-Su	ON 17:00 OFF 20:00	2369
H11a-g	HWT 3 week timer	Mo Tu We Th Fr Sa Su ON 17:00 00:00 OFF 20:00 00:00	2375 - 2405 (intervals of 5)
H12	HWT 3 set temperature	60 °C	2410
H 12_HT	HWT 3 set temperature	60 °C	
H12a	Circulation pump HWS 3	ON 06:00 11:00 OFF 08:00 13:00	2411
H13	Heat circuit 5 day timer Mo-Su	ON 06:00 15:00 OFF 09:00 22:00	2416
H13a-g	Heat circuit 5 week timer	Mo Tu We Th Fr Sa Su ON 17:00 00:00 OFF 20:00 00:00	2421 - 2451 (intervals of 5)
H14	Heat circuit 5 Day room temperature	20 °C	2456
H15	Heat circuit 5 Reduced room temperature	16 °C	2458
H16	Heat circuit 6 day timer Mo-Su	ON 06:00 15:00 OFF 09:00 22:00	2460
H16a-g	Heat circuit 6 week timer	Mo Tu We Th Fr Sa Su ON 17:00 00:00 OFF 20:00 00:00	2465 - 2495 (intervals of 5)
H17	Heat circuit 6 Day room temperature	20 °C	2500
H18	Heat circuit 6 Reduced room temperature	16 °C	2502
Heat circuit board B			
H 21	HWT B day timer	ON 06:00 15:00 OFF 09:00 22:00	
H 21a-g	HWT B week timer	Mo Tu We Th Fr Sa Su ON 17:00 00:00 OFF 20:00 00:00	

H 22	Set temperature HWT B	60 °C	
H 22_HT	Set temperature HWT B	60 °C	
H 22a	HWT B circulation pump	ON 06:00 11:00 OFF 08:00 13:00	
H 23	Heat circuit B day timer	ON 06:00 15:00 OFF 09:00 22:00	
H 23a-g	Heat circuit B week timer	Mo Tu We Th Fr Sa Su ON 17:00 00:00 OFF 20:00 00:00	
H 24	Heat circuit B Day room temperature	20 °C	
H 25	Heat circuit B Reduced room temperature	16 °C	
If "Outside temperature shut down - separated" is chosen (Installer level No. D12), different temperatures per heat circuit may be set.			
11	All heat circuits off when outside temperature exceeded	16 °C	2504
11a-h	Heat circuit 1 - A and ext. HC off at outside temperature	16 °C	2505 - 2512 (intervals of 1)
11i	Heat circuit B heating off above outside temperature	16 °C	
12	All heat circuits off during day setback	8 °C	2513
12a-g	Heat circuit 1 - A off at day setback	8 °C	2514 - 2520 (intervals of 1)
12 h	Heat circuit B heating off for day setback	8 °C	
13	All heat circuits off during night setback	-5 °C	2521
13a-g	Heat circuit 1 - A off during night setback	-5 °C	2522 - 2528 (intervals of 1)
13 h	Heat circuit B heating off for night setback	-5 °C	
15	Holiday mode	not active	2530
15a-g	Holiday mode heat circuit 1 - A	not active	2540 - 2600
16	Holiday time	from...until...	---
16a-g	Holiday time heat circuit 1 - A	from...until...	---
18	Ash suction	not active	2610
18a	De-ash Start	No	
19	Fuel	Pellets	2611
20	Date / Time		---
21	Release - Remote maintenance	not released	2613
21a	Release remote maintenance, automatic deactivation of release (0 Min. = no deactivation; for pellet combi only)	10 Min.	2614
22	Firing Off	not active	
No. 23 - 24i	Power box; see Power box manual		
30	Pellets-Fill level		---
30a	Consumption display pellet storage room capacity		
31	Pellet - Auto fill automatic and at suction times	depending on pellet combi boiler	2725 / 2713
40	Planned de-ash planned de-ash	ON 00:00 00:00 OFF 00:00 00:00	
41	Planned de-ash cascade	ON 00:00 00:00 OFF 00:00 00:00	
No. X1 - X7a	Fresh-water station settings See the fresh-water station operating manual		

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2 Parameter list - Installer

Menu	Description	Default	ModBus (Offset 40000)
Heat circuit 1			
A1	Heat circuit 1	Mixer	2615
A2	Heat circuit 1 steepness	1.6	2616
A2a	Heat circuit 1 steepness FLH	0.6	
A3	Heat circuit 1 Flow temperature - minimum	30 °C	2618
A3a	Heat circuit 1 Flow temperature Minimum FLH	22 °C	
A4	Heat circuit 1 Flow temperature - maximum	70 °C	2619
A4a	Heat circuit 1 Flow temperature Maximum FLH	45 °C	
A5	Heat circuit 1 mixer runtime	90 Sec	2620
A6	Heat circuit 1 remote control	Not available	2621
A6a	Heat circuit 1 remote control	with room sensor	2622
A6b	Heat circuit 1 display - room device	HWT 1	2623
A6c	Heat circuit 1 display - room device FR40 display	No selection	
A6d	Heat circuit 1 room correction remote control	0 °C	
A6e	Heat circuit 1 Pumps shutdown after room temperature exceeded Room controller	not activated	3038
A6f	Heat circuit 1 external contact FR25	Normally open contact	
A7	Heat circuit 1 district line pump	no district line	2626
A8	Heat circuit 1 summer-bath heating	Off	2627
A8a	Heat circuit 1 summer bath heating Accumulator - minimum temperature	20 °C	2628
A8b	Heat circuit 1 summer bath heating - day timer Mo-Su	ON 06:00 18:00 OFF 09:00 21:00	2629
A8c	Heat circuit 1 summer bath heating Flow-set	30 °C	2634
A8d	Heat circuit 1 HWT priority for summer bath heating	inactive	
A9	Heat circuit 1 screed	Off	2635
A9a	Heat circuit 1 screed paused	No	
A10	Heat circuit 1 Loxone connection error - emergency operation set temperature	30 °C	
Heat circuit 2			
A11	Heat circuit 2	Not available	2642
A12	Heat circuit 2 steepness	1.6	2643
A12a	Heat circuit 2 FLH steepness	0.6	
A13	Heat circuit 2 Flow temperature - minimum	30 °C	2645
A13a	Heat circuit 2 Floor heating flow temp. minimum	22 °C	
A14	Heat circuit 2 Flow temperature - maximum	70 °C	2646
A14a	Heat circuit 2 FLH flow temp. maximum	45 °C	
A15	Heat circuit 2 mixer runtime	90 Sec	2647
A16	Heat circuit 2 remote control	Not available	2648
A16a	Heat circuit 2 remote control	with room sensor	2649
A16b	Heat circuit 2 display - room device	HWT 1	2650
A16c	Heat circuit 2 display - room device FR40 display	No selection	
A16d	Heat circuit 2 room correction remote control	0 °C	
A16e	Heat circuit 2 Pumps shutdown after room temperature exceeded Room controller	not activated	3039
A16f	Heat circuit 2 external contact FR25	Normally open contact	
A17	Heat circuit 2 district line pump	no district line	2653
A18	Heat circuit 2 summer bath heating	Off	2654
A18a	Heat circuit 2 summer bath heating Accumulator - minimum temperature	20 °C	2655

A18b	Heat circuit 2 summer bath heating - day timer Mo-Su	ON 06:00 18:00 OFF 09:00 21:00	2656
A18c	Heat circuit 2 summer bath heating Flow-set	30 °C	2661
A18d	Heat circuit 2 HWT priority for summer bath heating	inactive	
A19	Heat circuit 2 screed	Off	2662
A19a	Heat circuit 2 screed paused	No	
A20	Heat circuit 2 Loxone connection error - emergency operation set temperature	30 °C	
Heat circuit 3			
A21	Heat circuit 3	Not available	2669
A22	Heat circuit 3 steepness	1.6	2670
A22a	Heat circuit 3 Floor heating steepness	0.6	
A23	Heat circuit 3 Flow temperature - minimum	30 °C	2672
A23a	Heat circuit 3 Floor heating flow temp. minimum	22 °C	
A24	Heat circuit 3 Flow temperature - maximum	70 °C	2673
A24a	Heat circuit 3 FBH flow temp. maximum	45 °C	
A25	Heat circuit 3 mixer runtime	90 Sec	2674
A26	Heat circuit 3 remote control	Not available	2675
A26a	Heat circuit 3 remote control	with room sensor	2676
A26b	Heat circuit 3 display - room device	HWT 1	2677
A26c	Heat circuit 3 display - room device FR40 display	No selection	
A26d	Heat circuit 3 room correction remote control	0 °C	
A26e	Heat circuit 3 Pumps shutdown after room temperature exceeded Room controller	not activated	3040
A26f	Heat circuit 3 external contact FR25	Normally open contact	
A27	Heat circuit 3 district line pump	no district line	2680
A28	Heat circuit 3 summer bath heating	Off	2681
A28a	Heat circuit 3 summer bath heating Accumulator - minimum temperature	20 °C	2682
A28b	Heat circuit 3 summer bath heating - day timer Mo-Su	ON 06:00 18:00 OFF 09:00 21:00	2685
A28c	Heat circuit 3 summer bath heating Flow-set	30 °C	2690
A28d	Heat circuit 3 HWT priority for summer bath heating	inactive	
A29	Heat circuit 3 screed	Off	2691
A29a	Heat circuit 3 screed paused	No	
A30	Heat circuit 3 Loxone connection error - emergency operation set temperature	30 °C	
Heat circuit 4			
A31	Heat circuit 4	Not available	2698
A32	Heat circuit 4 steepness	1.6	2699
A32a	Heat circuit 4 Floor heating steepness	0.6	
A33	Heat circuit 4 Flow temperature - minimum	30 °C	2701
A33a	Heat circuit 4 Floor heating flow temp. minimum	22 °C	
A34	Heat circuit 4 Flow temperature - maximum	70 °C	2702
A34a	Heat circuit 4 Floor heating flow temp. maximum	45 °C	
A35	Heat circuit 4 mixer runtime	90 Sec	2703
A36	Heat circuit 4 remote control	Not available	2704
A36a	Heat circuit 4 remote control	with room sensor	2705
A36b	Heat circuit 4 display - room device	HWT 1	2706
A36c	Heat circuit 4 display - room device FR40 display	No selection	
A36d	Heat circuit 4 room correction remote control	0 °C	
A36e	Heat circuit 4 Pumps shutdown after room temperature exceeded Room controller	not activated	3041

A36f	Heat circuit 4 external contact FR25	Normally open contact	
A37	Heat circuit 4 district line pump	no district line	2709
A38	Heat circuit 4 summer bath heating	Off	2710
A38a	Heat circuit 4 summer bath heating Accumulator - minimum temperature	20 °C	2711
A38b	Heat circuit 4 summer bath heating - day timer Mo-Su	ON 06:00 18:00 OFF 09:00 21:00	2712
A38c	Heat circuit 4 summer bath heating Flow-set	30 °C	2720
A38d	Heat circuit 4 HWT priority for summer bath heating	inactive	
A39	Heat circuit 4 screed	Off	2721
A39a	Heat circuit 4 screed paused	No	
A40	Heat circuit 4 Loxone connection error - emergency operation set temperature	30 °C	
Heat circuit 5			
A41	Heat circuit 5	Not available	2730
A42	Heat circuit 5 steepness	1.6	2731
A42a	Heat circuit 5 Floor heating steepness	0.6	
A43	Heat circuit 5 Flow temperature - minimum	30 °C	2733
A43a	Heat circuit 5 Floor heating flow temp. minimum	22 °C	
A44	Heat circuit 5 Flow temperature - maximum	70 °C	2734
A44a	Heat circuit 5 Floor heating flow temp. maximum	45 °C	
A45	Heat circuit 5 mixer runtime	90 Sec	2735
A46	Heat circuit 5 remote control	Not available	2736
A46a	Heat circuit 5 remote control	with room sensor	2737
A46b	Heat circuit 5 display - room device	HWT 1	2738
A46c	Heat circuit 5 display - room device FR40 display	No selection	
A46d	Heat circuit 5 room correction remote control	0 °C	
A46e	Heat circuit 5 Pumps shutdown after room temperature exceeded Room controller	not activated	3042
A46f	Heat circuit 5 external contact FR25	Normally open contact	
A47	Heat circuit 5 district line pump	no district line	2742
A48	Heat circuit 5 summer bath heating	Off	2743
A48a	Heat circuit 5 summer bath heating Accumulator - minimum temperature	20 °C	2744
A48b	Heat circuit 5 summer bath heating - day timer Mo-Su	ON 06:00 18:00 OFF 09:00 21:00	2745
A48c	Heat circuit 5 summer bath heating Flow-set	30 °C	2750
A48d	Heat circuit 5 HWT priority for summer bath heating	inactive	
A49	Heat circuit 5 screed	Off	2751
A49a	Heat circuit 5 screed paused	No	
A50	Heat circuit 5 Loxone connection error - emergency operation set temperature	30 °C	
Heat circuit 6			
A51	Heat circuit 6	Mixer	2758
A52	Heat circuit 6 steepness	1.6	2759
A52a	Heat circuit 6 Floor heating steepness	0.6	
A53	Heat circuit 6 Flow temperature - minimum	30 °C	2761
A53a	Heat circuit 6 Floor heating flow temp. minimum	22 °C	
A54	Heat circuit 6 Flow temperature - maximum	70 °C	2762
A54a	Heat circuit 6 Floor heating flow temp. maximum	45 °C	
A55	Heat circuit 6 mixer runtime	90 Sec	2763
A56	Heat circuit 6 remote control	Not available	2764
A56a	Heat circuit 6 remote control	with room sensor	2765
A56b	Heat circuit 6 display - room device	HWT 1	2766

A56c	Heat circuit 6 display - room device FR40 display	No selection	
A56d	Heat circuit 6 room correction remote control	0 °C	
A56e	Heat circuit 6 Pumps shutdown after room temperature exceeded Room controller	not activated	3043
A56f	Heat circuit 6 external contact FR25	Normally open contact	
A57	Heat circuit 6 district line pump	no district line	2770
A58	Heat circuit 6 summer bath heating	Off	2771
A58a	Heat circuit 6 summer bath heating Accumulator - minimum temperature	20 °C	2772
A58b	Heat circuit 6 summer bath heating - day timer Mo-Su	ON 06:00 18:00 OFF 09:00 21:00	2773
A58c	Heat circuit 6 summer bath heating Flow-set	30 °C	2778
A58d	Heat circuit 6 HWT priority for summer bath heating	inactive	
A59	Heat circuit 6 screed	Off	2779
A59a	Heat circuit 6 screed paused	No	
A60	Heat circuit 6 Loxone connection error - emergency operation set temperature	30 °C	
Heat circuit A			
A61	Heat circuit A	Not available	2786
A62	Heat circuit A steepness	1.6	2787
A62a	Heat circuit A steepness FLH	0.6	
A63	Heat circuit A Flow temperature - minimum	30 °C	2789
A63a	Heat circuit 1 FBH flow temp. minimum	22 °C	
A64	Heat circuit A Flow temperature - maximum	70 °C	2790
A64a	Heat circuit A Flow temperature Maximum FLH	45 °C	
A65	Heat circuit A mixer runtime	90 Sec	2791
A66	Heat circuit A remote control	Not available	2792
A66a	Heat circuit A remote control	with room sensor	2793
A66b	Heat circuit A display - room device	HWT 1	2794
A66c	Heat circuit A display - room device FR40 display	No selection	
A66d	Heat circuit A room correction remote control	0 °C	
A66e	Heat circuit A Pumps shutdown after room temperature exceeded Room controller	not activated	3044
A66f	Heat circuit A external contact FR25	Normally open contact	
A67	Heat circuit A district line pump	no district line	2798
A68	Heat circuit A summer bath heating	Off	2799
A68a	Heat circuit A summer bath heating Accumulator - minimum temperature	20 °C	2800
A68b	Heat circuit A summer bath heating - day timer Mo-Su	ON 06:00 18:00 OFF 09:00 21:00	2801
A68c	Heat circuit A summer bath heating Flow-set	30 °C	2806
A68d	Heat circuit A HWT priority for summer bath heating	inactive	
A69	Heat circuit A screed	Off	2807
A69a	Heat circuit A screed paused	No	
A70	Heat circuit A Loxone connection error - emergency operation set temperature	30 °C	
Heat circuit B			
A71	Heat circuit B	Not available	
A72	Heat circuit B steepness	1.6	
A72a	Heat circuit B steepness FLH	0.6	
A73	Heat circuit B Flow temperature - minimum	30 °C	
A73a	Heat circuit B Flow temperature Minimum FLH	22 °C	
A74	Heat circuit B Flow temperature - maximum	70 °C	
A74a	Heat circuit B Flow temperature Maximum FLH	45 °C	

A75	Heat circuit B mixer runtime	90 Sec	
A76	Heat circuit B remote control	Not available	
A76a	Heat circuit B remote control	with room sensor	
A76b	Heat circuit B display - room device	HWT 1	
A76c	Heat circuit B display - room device FR40 display	No selection	
A76d	Heat circuit B room correction remote control	0 °C	
A76e	Heat circuit B Pumps shutdown after room temperature exceeded Room controller	not activated	
A76f	Heat circuit B external contact FR25	Normally open contact	
A77	Heat circuit B district line pump	no district line	
A78	Heat circuit B summer bath heating	Off	
A78a	Heat circuit B summer bath heating Accumulator - minimum temperature	20 °C	
A78b	Heat circuit B summer bath heating - day timer Mo-Su	ON 06:00 18:00 OFF 09:00 21:00	
A78c	Heat circuit B summer bath heating Flow-set	30 °C	
A78d	Heat circuit B HWT priority for summer bath heating	inactive	
A79	Heat circuit B screed	Off	
A79a	Heat circuit B screed paused	No	
A80	Heat circuit B Loxone connection error - emergency operation set temperature	30 °C	
A91 - A98	PowerBox; see PowerBox manual		
All heat circuits			
A100	All heat circuits Screed - number of temperature phases	8	
A101a	All heat circuits Screed - temperature flow set	20 °C	
A101b	All heat circuits Screed - temperature flow set	25 °C	
A101c	All heat circuits Screed - temperature flow set	30 °C	
A101d	All heat circuits Screed - temperature flow set	35 °C	
A101e	All heat circuits Screed - temperature flow set	40 °C	
A101f	All heat circuits Screed - temperature flow set	45 °C	
A101g	All heat circuits Screed - temperature flow set	35 °C	
A101h	All heat circuits Screed - temperature flow set	25 °C	
A101i-r	All heat circuits Screed - temperature flow set	20 °C	
A102a	All heat circuits Screed - number of days	1 day	
A102b	All heat circuits Screed - number of days	1 day	
A102c	All heat circuits Screed - number of days	1 day	
A102d	All heat circuits Screed - number of days	1 day	
A102e	All heat circuits Screed - number of days	1 day	
A102f	All heat circuits Screed - number of days	4 days	
A102g	All heat circuits Screed - number of days	1 day	
A102h	All heat circuits Screed - number of days	1 day	
A102i-r	All heat circuits Screed - number of days	0 days	
A103	All heat circuits Screed - hysteresis	2 K	
HWT 1			
B1	HWT 1	not available	2814
B2	HWT 1 HWT temperature - hysteresis	6 °C	2815
B3	HWT 1 HWT temperature - minimum	40 °C	2816
B4	HWT 1 Legionella protection	Off	2817
B5	HWT 1 Legionella protection set temperature	70 °C	2818
B6	HWT 1 Legionella protection - weekly programme	ON 17:00 00:00 OFF 00:00 00:00	2819
B7	HWT 1 district line pump	no district line	2825

B8	HWT 1 circulation pump	Not available	2826
B8a	HWT 1 circulation pump - runtime	180 sec	2827
B8b	HWT 1 circulation pump - downtime	15 Min	2828
B9	Energy saving mode	Enabled	
B9a	Energy saving mode after a period of	30 min	
B9b	HWT 1 Maximum pump runtime for HWT loading	0 h	
	HWT 2		
B11	HWT 2	not available	2829
B12	HWT 2 HWT temperature - hysteresis	6 °C	2830
B13	HWT 2 HWT temperature - minimum	40 °C	2831
B14	HWT 2 Legionella protection	Off	2832
B15	HWT 2 Legionella protection - set temperature	70 °C	2833
B16	HWT 2 Legionella protection - weekly programme	ON 18:00 00:00 OFF 00:00 00:00	2834
B17	HWT 2 district line pump	no district line	2839
B18	HWT 2 circulation pump	Not available	2840
B18a	HWT 2 circulation pump - runtime	180 sec	2841
B18b	HWT 2 circulation pump - downtime	15 Min	2842
B19	Energy saving mode	not activated	
B19a	Energy saving mode after a period of	30 min	
B19b	HWT 2 Maximum pump runtime for HWT loading	0 h	
	HWT 3		
B21	HWT 3	not available	2843
B22	HWT 3 HWT temperature - hysteresis	6 °C	2844
B23	HWT 3 HWT temperature - minimum	40 °C	2845
B24	HWT 3 Legionella protection	Off	2846
B25	HWT 3 Legionella protection - set temperature	70 °C	2847
B26	HWT 3 Legionella protection - weekly programme	ON 19:00 00:00 OFF 00:00 00:00	2848
B27	HWT 3 district line pump	no district line	2853
B28	HWT 3 circulation pump	Not available	2854
B28a	HWT 3 circulation pump - runtime	180 sec	2855
B28b	HWT 3 circulation pump - downtime	15 Min	2856
B29	Energy saving mode	not activated	
B29a	Energy saving mode after a period of	30 min	
B29b	HWT 3 Maximum pump runtime for HWT loading	0 h	
	HWT A		
B31	HWT A	Available	2857
B32	HWT A HWT temperature - hysteresis	6 °C	2858
B33	HWT A HWT temperature - minimum	40 °C	2859
B34	HWT A Legionella protection	Off	2860
B35	HWT A Legionella protection - set temperature	70 °C	2861
B36	HWT A Legionella protection - weekly programme	ON 19:00 00:00 OFF 00:00 00:00	2862
B37	HWT A district line pump	no district line	2867
B38	HWT A circulation pump	Not available	2868
B38a	HWT A circulation pump - runtime	180 sec	2869
B38b	HWT A circulation pump - downtime	15 Min	2870
B39	Energy saving mode	not activated	
B39a	Energy saving mode after a period of	30 min	

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B39b	HWT A maximum pump runtime when HWT is loading	0 h	
HWT B			
B41	HWT B	Available	2857
B42	HWT B HWT temperature - hysteresis	6 °C	2858
B43	HWT B HWT temperature - minimum	40 °C	2859
B44	HWT B Legionella protection	Off	2860
B45	HWT B Legionella protection - set temperature	70 °C	2861
B46	HWT B Legionella protection - weekly programme	ON 17:00 00:00 OFF 00:00 00:00	2862
B47	HWT B district line pump	no district line	2867
B48	HWT B circulation pump	Not available	2868
B48a	HWT B circulation pump - runtime	180 Sec	2869
B48b	HWT B circulation pump - downtime	15 Min	2870
B49	Energy saving mode	not activated	
B49a	Energy saving mode after a period of	30 min	
B49b	Hot water tank B maximum pump runtime when hot water tank is loading	0 h	
B60	HWT priority automatic	On	2871
B90	Release - HWT temperature - minimum	ON 06:00 00:00 OFF 22:00 00:00	2872
B100 - B117	Fresh-water station; see fresh-water station (FWS) manual		
Accumulator			
C1a	Back-end protection	RL-mixer+acc.-pump	2880
C1b	Return mixer runtime	140 sec	2881
C2	Accumulator loading	not available	2882
C2a	Automatic accumulator loading	Yes	
C2b	Accumulator volume	0 l	
C2c	Display of accumulator fill level	Yes	
C3	Accumulator loading Accumulator	Accumulator/HWT external	2883
C3a	Accumulator loading	Accumulator sensor - boiler	2884
C3b	Accumulator loading HWT internal	HWT sensor A	2885
C4	End accumulator loading at temperature	60 °C	2886
C4a	Accumulator loading minimum boiler set temperature	78 °C	2887
C4a_HT	Accumulator loading minimum boiler set temperature	78 °C	3035
C4b	Stop sensor for accumulator loading (due to domestic hot water production)	Accumulator bottom	2888
C4c	Accumulator minimum temperature (top sensor)	0 °C	3029
C4c1	Accumulator day timer accumulator minimum temperature	ON 00:00 00:00 OFF 24:00 00:00	
C4d	Accumulator loading power reduction at fill level over	85 %	3037
C4e	Error detection accumulator sensor bottom after	30 min	3047
C5	Forced accumulator loading - week timer	ON 00:00 00:00 OFF 00:00 00:00	
C5a	No forced accumulator loading at outside temperature over	0 °C	
C6	External heat circuit with analogue control	Deactivated	2895
C6a	External heat circuit - set temperature	69 °C	2896
C6a_HT	External heat circuit - set temperature	69 °C	3036
C7	Function pump output	District line pump 2	2897
C8	External heat circuits on DLP	no district line	2898

C9	External heat	Not available	2899
General information			
D1a	HKM 0 display HKM display	No selection	
D1b	HKM 1 display HKM display	No selection	
D1c	HKM 2 display HKM display	No selection	
D1f	Consumption display	not available	2909
D2	Frost protection pumps on below outside temperature	1 °C	2910
D3	Frost protection HC flow set temperature	7 °C	2911
D4	Changeover - day setback	ON 06:00 00:00 OFF 22:00 00:00	2912
D5	eCleaner settings See the eCleaner operating manual		
D5a	De-ash - Ash suction	not available	2917
D5b	Release ash suction	ON 06:00 00:00 OFF 22:30 00:00	2918
D5s	Release cleaning device de-ash pellets	ON 00:00 00:00 OFF 24:00 00:00	2930
D6s	Release cleaning device de-ash pellets	ON 06:00 00:00 OFF 22:30 00:00	
D7	All heat circuits summer shutdown - lock time	120 Min	2975
D8	Summer time	autom. changeover	2976
D9	Day/Week timer	Day timer	2977
D10	Number of blocks for week timer	2	2978
D11	Release holiday mode	No	2979
D11a	Holiday mode	all HC together	2980
D12	Outside temperature - shutdown	all HC together	2981
D13	Outside sensor	Available	2982
D20	TMS	Not available	2984
D21	TMF	Not available	2985
D21a	TMF2	Available	2986
D23	Info / Trend	Do not display	2988
D24	Modbus activated	No	2989
D25	KNX activated	No	
D31	Operating mode	Suction + auger	2990
D31a	Changeover unit	Not available	2991
D31b	Switch over to other position after:	10 days	2992
D31c	Changeover unit	Step motor (AUP)	
D31e	First suction cycle after fuel storage room filling	Current position	
D31j	AUP blocked position	No selection	
D31k	AUP empty position	No selection	
D32	Controlled district line superelevation	5 °C	2993
D33	Controlled district line mixer runtime	140 sec	2994
D40	Storage level	0	
D40a	Top up storage level	0	
D41	Text1 ext. error		
D42	Text2 ext. error		
D42a	Input - external error	Normally open contact	
D43	Text1 ext. info		
D44	Text2 ext. info		
D44a	Input - external info	Normally open contact	

D45	Boiler System pressure monitoring	not activated	
D45a	Notice when water pressure is below	0.8 bar	
D45b	Error when water pressure is below	0.5 bar	
D45c	Notice when water pressure is above	0.0 bar	
D45d	Error when water pressure is above	0.0 bar	
D50	Manual de-ash - customer	Not available	
D51	Planned de-ash - customer	Not available	
D65	Error output	Error and info message	
D66	HC/HWT on standard screen	No selection	
D70	Boiler fuel extraction	FE-fuel extraction with agitator	
D71	Pump on for frost protection (heat circuits and HWT)	no selection	
D72	Pump on for frost protection (accumulator, differential controller,...)	no selection	
D73	Boiler frost protection if boiler temperature or return below	20 °C	
D75	Function of terminal 52/53	FGTM	
D75a	Stoppage text (issued when external stoppage is active)	External stoppage	
D100-D103	Sensor board 2 PT1000 S1 (S2, S3, S4)	SB-PT1K-1 (2, 3, 4)	
D104-D107	Sensor board 2 NiCrNi T1 (T2, T3, T4)	SB-NiCrNi T1 (T2, T3, T4)	
D108-D109	Sensor board 2 IMPULS 1 (2)	SB-IMPULS-1 (2)	
D110-D1017	Sensor board 2 AIN 1 (2 - 8)	SB-AIN-1 (2-8)	
Cascade			
F1	Cascade	Not available	
F2	Cascade address	A	
F3	Cascade priority	P1	
F4	Accumulator	Accumulator (HWT internal)	
F4a	Accumulator	Accumulator with 2 sensors	
F6	Number of slave boilers	1	
F6b	Simultaneous modulation	6	
F7	Minimum runtime superelevation	10 h	
F8	Maximum runtime superelevation	30 h	
F9	Maximum output	90 %	
F10	Maximum runtime - full load	30 min	
F11	Maximum runtime - minimum output	60 Min	
F12	Reset runtime - full load	1 Min	
F13	Maximum deviation - boiler/header	8 °C	
F14	Switch on boiler	1	
F14a	When fill level is below	0 %	
F15	Switch on boiler	1	
F15a	When fill level is below	0 %	
F16	Switch on boiler	1	
F16a	When fill level is below	0 %	
F17	Number of boilers on when there is an external demand	0	
F17a	Start next boiler after info	No	
F17b	Forced activation from	0 Min	

F17e	Start free boiler during de-ash if accumulator fill level < C4d	No	
F18	Boiler set temperature during CAN error	75 °C	
F18a	External boiler	Not available	
F18a1	EH cascade priority		
F18a2	Boiler start delay in case of external error	5 Min	
F18a3	Message if EH not OK	Enabled	
F18b	Cascade CHP	Not available	
F18c	CHP cascade priority	P 1	
F18d	CHP shutdown temperature	65 °C	
F18e	Boiler start delay in case of external warning	5 Min	
F18f	Request CHP until accumulator fill level is greater	60 %	
F18g	Message if CHP not OK	Enabled	
F18h	Block CHP if accumulator is mixed	Yes	
F19	Reset - cascade	No	
F20 - F20e	Boilers (A - F) disabled	No	
F20y	CHP disabled	No	
F20z	External boiler deactivated	No	
F21 - F21e	Boilers (A - F)	No selection	
F21y	CHP	No selection	
F21z	External boiler	No selection	
Differential controller			
G1	Differential controller function	not available	
G2	Differential controller active at heat source	30 °C	
G2a	Differential controller shutdown at heat source	95 °C	
G2b	Differential controller active at heat source	55 °C	
G4	Differential controller Circuit 1 (priority circuit) selection differential sensor	Differential sensor S2	
G4a	Differential controller Superelevation of heat source (circuit 1)	10 °C	
G4b	Differential controller Hysteresis (circuit 1)	5 °C	
G4c	Differential controller shutdown differential controller (circuit 1)	65 °C	
G5	Differential controller circuit 2 (non-priority circuit) selection of differential sensor	Accumulator sensor - bottom	
G5a	Differential controller Superelevation of heat source (circuit 2)	10 °C	
G5b	Differential controller Hysteresis (circuit 2)	5 °C	
G5c	Differential controller shutdown differential controller (circuit 2)	65 °C	
G5d	Differential controller Parallel operation circuits 1 + 2	No (without valve)	
G5e	Differential controller Changeover to circuit 2 if difference for circuit 1 is smaller than	4 °C	
G5f	Differential controller Changeover to circuit 2 if circuit 1 is over	60 °C	
G5g	Differential controller Time delay for changeover to circuit 2	1 Min	
G6	Differential controller External heat boiler	with return mixer	
G6a	Differential controller Mixer runtime	120 Sec	
G6b	Differential controller Return temperature - set value	60 °C	
G6c	Differential controller Info when return temperature is not reached	50 °C	
G6d	Differential controller Time for info	60 Min	
G6e	Differential controller External heat boiler - sensor selection	Accumulator sensor - bottom	
G6f	Differential controller Superelevation of heat source (external heat boiler)	10 °C	
G6g	Differential controller Hysteresis (external heat boiler)	5 °C	

G7	Differential controller Safety circuit at heat source (sensor S1)	95 °C	
G11	External heat controller 2	Not available	
G12	External heat controller 2 Differential controller activated at heat source	30 °C	
G12a	External heat controller 2 Differential controller shutdown at heat source	95 °C	
G12b	External heat controller 2 activated at heat source	55 °C	
G14	External heat controller 2 Circuit 1 (priority circuit) selection differential sensor	Differential sensor S2	
G14a	External heat controller 2 Superelevation of heat source (circuit 1)	10 °C	
G14b	External heat controller 2 Hysteresis (circuit 1)	5 °C	
G14c	External heat controller 2 Shutdown circuit 1	65 °C	
G15	External heat controller 2 Circuit 2 (non-priority circuit) sensor selection	Accumulator sensor - bottom	
G15a	External heat controller 2 Superelevation of heat source (circuit 2)	10 °C	
G15b	External heat controller 2 Hysteresis (circuit 2)	5 °C	
G15c	External heat controller 2 Shutdown circuit 2	65 °C	
G15d	External heat controller 2 Parallel operation circuits 1 + 2	No (without valve)	
G15e	External heat controller 2 Changeover to circuit 2 if difference for circuit 1 is smaller than	4 °C	
G15f	External heat controller 2 Changeover to circuit 2 if circuit 1 is over	60 °C	
G15g	External heat controller 2 Time delay for changeover to circuit 2	1 Min	
G16	External heat controller 2 external heat boiler 2	with return mixer	
G16a	External heat controller 2 mixer runtime	120 Sec	
G16b	External heat controller 2 return temperature set value	60 °C	
G16c	External heat controller 2 info if return temperature is not reached	50 °C	
G16d	External heat controller 2 time for info	60 Min	
G16e	External heat controller 2 external heat boiler sensor selection	Accumulator sensor - bottom	
G16f	External heat controller 2 superelevation of heat source (external heat boiler 2)	10 °C	
G16g	External heat controller 2 switch difference (external heat boiler 2)	5 °C	
G17	External heat controller 2 safety circuit active from heat source	95 °C	
G21	PWM differential controller 3 function	Not available	
G21a	PWM differential controller 3 - pump 1	PWM	
G21a1	PWM differential controller 3 minimum pump 1	25 %	
G21a2	PWM differential controller 3 maximum pump 1	95 %	
G21b	PWM differential controller 3 - pump 2	PWM	
G21b1	PWM differential controller 3 minimum pump 2	25 %	
G21b2	PWM differential controller 3 maximum pump 2	95 %	
G21c	PWM differential controller 3 - pump 3	PWM	
G21c1	PWM differential controller 3 minimum pump 3	25 %	
G21c2	PWM differential controller 3 maximum pump 2	95 %	
G22	PWM differential controller 3 activated at heat source	30 °C	
G22a	PWM differential controller 3 shutdown at heat source	95 °C	
G22b	PWM differential controller 3 activated at heat source	55 °C	
G23	PWM differential controller 3 Parallel operation circuits 1 + 2	No (without valve)	
G23a	PWM differential controller 3 Starting position valve	Circuit 2	
G24	PWM differential controller 3 Circuit 1 (priority circuit) selection differential sensor	X10-104 terminal S3	
G24a	PWM differential controller 3 Superelevation of heat source (circuit 1)	10 K	
G24b	PWM differential controller 3 Hysteresis (circuit 1)	5 K	
G24c	PWM differential controller 3 shutdown circuit 1	65 °C	

G25	PWM differential controller 3 Circuit 2 (non-priority circuit) selection differential sensor	Accumulator sensor Middle	
G25a	PWM differential controller 3 Superelevation of heat source (circuit 2)	10 K	
G25b	PWM differential controller 3 Hysteresis (circuit 2)	5 K	
G25c	PWM differential controller 3 shutdown circuit 2	65 °C	
G25e	PWM differential controller 3 Changeover to circuit 2 if differential for circuit 1 is smaller than	4 K	
G25f	PWM differential controller 3 Changeover to circuit 2 if circuit 1 is over	60 °C	
G25g	PWM differential controller 3 Time delay for changeover to circuit 2	1 Min	
G25h	PWM differential controller 3 Pre-flush duration	8 Sec	
G25i	PWM differential controller 3 Block time for repeated switch-ons	0 Min	
G25j	PWM differential controller 3 Start speed controller	30 %	
G25k	PWM differential controller 3 Differential speed pump 2 (based on pump 1)	-5 %	
G25l	PWM differential controller 3 Differential speed pump 3 (based on pump 1)	-5 %	
G26	PWM differential controller 3 External heat boiler	with return mixer	
G26a	PWM differential controller 3 Mixer runtime	102 Sec	
G26b	PWM differential controller 3 Return temperature - set value	60 °C	
G26c	PWM differential controller 3 Info when return temperature is not reached	50 °C	
G26d	PWM differential controller 3 Time for info	60 Min	
G26e	PWM differential controller 3 External heat boiler - sensor selection	Accumulator sensor Middle	
G26f	PWM differential controller 3 Superelevation of heat source (external heat boiler)	10 °C	
G26g	PWM differential controller 3 Hysteresis (external heat boiler)	5 °C	
G27	PWM differential controller 3 Safety circuit at heat source	95 °C	
G28	PWM differential controller 3 PWM differential controller heat meter	inactive	
G28a	PWM differential controller 3 pump 1 minimum flow	1 l/min	
G28b	PWM differential controller 3 pump 1 maximum flow	25 l/min	
G28c	PWM differential controller 3 pump 2 minimum flow	1 l/min	
G28d	PWM differential controller 3 pump 2 maximum flow	25 l/min	
G28e	PWM differential controller 3 pump 3 minimum flow	1 l/min	
G28f	PWM differential controller 3 pump 3 maximum flow	25 l/min	
G28g	PWM differential controller 3 medium's heat capacity	1.163 Wh/kgK	
T90	PWM differential controller 3 Controller PWM KP	5 °C	
T90a	PWM differential controller 3 Controller PWM TN	30 sec	

3 Parameter list - Service

Menu	Description	Default				
J - GSM		**Eco-PK 70**	**Eco-PK 90**	**Eco-PK 100**	**Eco-PK 110**	**Eco-PK 120**
J1	Waiting time - SMS alert	5 Min				
J2	GSM module - alarm - reset	No				
J3	Time to clear	10 Min				
J4	Auto Reset GSM	Auto Reset YES				
J5	Send notices via SMS	Yes				
K - Boiler		**Eco-PK 70**	**Eco-PK 90**	**Eco-PK 100**	**Eco-PK 110**	**Eco-PK 120**
K1	Combustion - minimum output	30 %				
K2	Combustion exhaust fan controller max. output	100 %				
K3s	Boiler controller exhaust fan speed at 100% output	75 %	85 %	90 %	95 %	100 %
K10	Minimum temperature with bypass	75 °C				
K10a	Minimum temperature	78 °C				
K10a_HT	Minimum temperature	78 °C				
K11	Maximum temperature	85 °C				
K11_HT	Maximum temperature	95 °C				
K12	Temperature - hysteresis	15 °C				
K12_HT	Temperature - hysteresis	5 °C				
K13	Set temperature - superelevation	4 °C				
K13_HT	Set temperature - superelevation	1 °C				
K14	Flue gas temperature - error below	70 °C				
K15	Time - flue gas temperature - error	15 Min				
K20	TMF max. temperature Fuel storage room	60 °C				
K21	TMS Temperature Note Stoker channel	65 °C				
K21a	TMS temperature - error Stoker channel	70 °C				
K21b	TMS temperature OK after notice/error	55 °C				
K29	Max. control board temperature exceeded	60 °C				
K30	Test mode Set temperature	78 °C				
K31	Test mode runtime	120 Min				
K32	Test mode maximum power Full load	100 %				
K32a	Boiler test mode maximum power Partial load	50 %				
K40	Output limit during error	60 %				
K51	PAF set in slumber mode	10 %				
K51a	Exhaust fan set in slumber mode	10 %				
K51b	Set off while lambda is activated	10 %				
K51c	Boiler exhaust fan set off while lambda heating is activated	10 %				
K52	Boiler blocked when slumber mode occurs twice within	30 min				
K52a	Duration - boiler locked at 2x slumber mode	60 Min				
K54	Signal - water pressure at 0 bar	0.0 V				
K55	Signal - water pressure at 10 bar	10.0 V				
K56	Maximum demand HKR	75 °C				
K57	Number of boiler starts within 24h below minimum runtime before info	10x				
K60	Boiler burnout exhaust fan ramp when O2 at least	10 %				

K60a	Boiler burnout exhaust fan ramp duration	5 Min				
K60b	Boiler burnout exhaust after ramp	50 %				
L - Pumps		**Eco-PK 70**	**Eco-PK 90**	**Eco-PK 100**	**Eco-PK 110**	**Eco-PK 120**
L1	District line pump 1 Release temperature	58 °C				
L2	District line pump 2 Release temperature	59 °C				
L2a	Controlled district line pump - release temperature	59 °C				
L3	Heat circuit pump 1 Release temperature	60 °C				
L4	Heat circuit pump 2 Release temperature	61 °C				
L4a	Heat circuit pump 3 Release temperature	62 °C				
L4b	Heat circuit pump 4 Release temperature	63 °C				
L4c	Heat circuit pump 5 Release temperature	62 °C				
L4d	Heat circuit pump 6 Release temperature	63 °C				
L4e	Heat circuit pump A Release temperature	62 °C				
L4f	Heat circuit pump B Release temperature	62 °C				
L4i	Heat circuit pump 1 Release temperature at return mixer with accumulator pump	30 °C				
L4j	Heat circuit pump 2 Release temperature at return mixer with accumulator pump	31 °C				
L4k	Heat circuit pump 3 Release temperature at return mixer with accumulator pump	32 °C				
L4l	Heat circuit pump 4 Release temperature at return mixer with accumulator pump	33 °C				
L4m	Heat circuit pump 5 Release temperature at return mixer with accumulator pump	32 °C				
L4n	Heat circuit pump 6 Release temperature at return mixer with accumulator pump	33 °C				
L4o	Heat circuit pump A Release temperature at return mixer with accumulator pump	32 °C				
L4p	Heat circuit pump B Release temperature at return mixer with accumulator pump	32 °C				
L5	External heat circuits - release temperature	64 °C				
L6	HWT pump 1 release temperature	62 °C				
L7	HWT pump 2 release temperature	63 °C				
L7a	HWT pump 3 release temperature	62 °C				
L7b	HWT pump A release temperature	63 °C				
L7c	HWT pump B release temperature	63 °C				
L9	Minimum pump runtime	1 Min				
L10	Return minimum	58 °C				
L10a	Return - heat differential	16 °C	20 °C	17 °C	18 °C	20 °C
L10b	Return Heat differential - auto setting range	5				
L10c	Return pump - release temperature	52 °C				
L10d	Return minimum heat differential	3 °C				
L10e	Return Info pump setting due to differential Autoadapt after	0 h				
L11	Back-end protection error below	50 °C				
L11e	Open return mixer during first start-up	40 %				
L12	Return Time for error back-end protection	60 Min				
L12a	Return mixer interval	10 sec				

L12b	Return mixer Kp	1 sec				
L12b_PB	Return mixer Kp	1.5 sec				
L12c	Return mixer Tn	20 sec				
L12d	Return minimum mixer runtime	0.5 sec				
L12e	Return maximum mixer runtime per interval	50 %				
L13	Type of BEP-pump	HE-pump				
L23	Return return mixer for STB	Auto				
L30	Return mixer at BTM Kp	3 sec				
L30_PB	Return mixer at BTM Kp	0 sec				
L31	Return mixer at BTM Tn	45 sec				
L40	Output limit at return increase over	0.07 °C/s				
L41	Output limit - controller Kp	2.5				
L42	Output limit - controller Tn	10 sec				
L43	Controller off at BT difference higher than	10 °C				
L51	Controller - accumulator 3F/5F Kp	0.7				
L52	Controller - accumulator 3F/5F Tn	300 sec				
L53	Controller - accumulator 3F/5F Tv	125 sec				
L54	Controller - accumulator 3F/5F T1	125				
L55	Controller - output minimum	30 %				
L60	PHE Diff. temperature for mixers	1 °C				
L61	PHE minimum mixer runtime	0.3 sec.				
L62	PHE Mixers open at first start-up	40 %				
M - Heat circuits		**Eco-PK 70**	**Eco-PK 90**	**Eco-PK 100**	**Eco-PK 110**	**Eco-PK 120**
M1	All heat circuits Heat circuit pumps on above boiler temperature	92 °C				
M1_HT	All heat circuits Heat circuit pumps on above boiler temperature	98 °C				
M1A	All heat circuits Outside temperature for safety circuit	-10 °C				
M2	All heat circuits Residual heat until boiler below	40 °C				
M2a	All heat circuits	Residual heat several times				
M3	All heat circuits Boiler superelevation according to flow temperature	10 °C				
M4	Heat circuit 1 Factor - room influence Remote control	1				
M5	Heat circuit 2 Factor - room influence Remote control	1				
M5a	Heat circuit 3 Factor - room influence Remote control	1				
M5b	Heat circuit 4 Factor - room influence Remote control	1				
M5c	Heat circuit 5 Factor - room influence Remote control	1				
M5d	Heat circuit 6 Factor - room influence Remote control	1				
M5e	Heat circuit A Factor - room influence Remote control	1				
M5f	Heat circuit B Factor - room influence Remote control	1				
M6	All heat circuits Superelevation - room temperature Room controller	1.0 °C				
M6a	All heat circuits Hysteresis - room temperature Room controller	0.0° C				
M7	All heat circuits Reduction delay	15 Min				
M8	Heat circuit 1 Minimum mixer runtime	0.3 sec				
M9	Heat circuit 2 Minimum mixer runtime	0.3 sec				
M9a	Heat circuit 3 Minimum mixer runtime	0.3 sec				

M9b	Heat circuit 4 Minimum mixer runtime	0.3 sec				
M9c	Heat circuit 5 Minimum mixer runtime	0.3 sec				
M9d	Heat circuit 6 Minimum mixer runtime	0.3 sec				
M9e	Heat circuit A Minimum mixer runtime	0.3 sec				
M9f	Heat circuit B Minimum mixer runtime	0.3 sec				
M10	External heat circuit	without outside temperature				
M11	All heat circuits Proportional coefficient	100 %				
M12	All heat circuits Differential temperature for mixer	1.0 °C				
M14	Controlled district line Differential temperature for mixer	1.0 °C				
M15	Controlled district line Minimum mixer runtime	0.3 sec				
M16	Sensor recognition mixer/pump	not activated				
M15	Controlled district line Minimum mixer runtime	0.3 sec.				
N - HWT		**Eco-PK 70**	**Eco-PK 90**	**Eco-PK 100**	**Eco-PK 110**	**Eco-PK 120**
N1	All HWTs HWT pump on when boiler temperature above	90 °C				
N1_HT	All HWTs HWT pump on when boiler temperature above	98 °C				
N2	All HWTs Differential temperature for HWT pump	1 °C				
N3	All HWTs HWT priority - factor	1				
N4	All HWTs HWT pump - post-run - residual heat	5 °C				
N5	All HWTs Boiler superelevation Legionella protection	5 °C				
N6	All HWTs	Residual heat several times				
N7	All HWTs Boiler superelevation during HWT loading	10 °C				
N15	All HWTs - info "HWT is not reaching accumulator temperature" after (0 = inactive)	2 h				
O - Accumulator / External heat		**Eco-PK 70**	**Eco-PK 90**	**Eco-PK 100**	**Eco-PK 110**	**Eco-PK 120**
O1-Set	Accumulator Superelevation - heat circuit set temperature	5 °C				
O2	Accumulator Hysteresis - heat circuit set temperature	5 °C				
O3	Accumulator Superelevation - HWT temperature	5 °C				
O4	Accumulator Hysteresis - HWT temperature	1 °C				
O5	Accumulator Base temperature boiler - accumulator	58 °C				
O6-Set	Acc. Acc. loading difference temp.	5 °C				
O6_HT	Acc. Acc. loading difference temp.	1 °C				
O7	Accumulator accumulator pump KT differential	5 °C				
O8	Accumulator reference temperature for fill level of 0%	20 °C				
O9	HWT - differential control	ON				
O10	External heat Switch-on temperature	60 °C				
O11	External heat Heat differential	2 °C				
O12	External heat Lock time	15 Min				
O13	Accumulator Residual heat until boiler temperature below	65 °C				
O14_HT	Accumulator loading until TAT	90 °C				
O30	Outlet temperature - superelevation - shutdown - pump	12 °C				

O31	Outlet temperature - hysteresis	6 °C				
O32-Set	Control - PWM pump - minimum	18 %				
O33	Control - PWM pump - maximum	95 %				
O33a	Control - PWM pump - maximum	90 %				
O33b	Pump-cycle duration at minimum output	55 sec				
O34	Accumulator loading - superelevation - demand FWS	5 °C				
O35-Set	Accumulator loading - hysteresis FWS	5 °C				
O36	Interpolation factor	3				
O36a	Pump starting output scaling	1				
O36b	Pump starting output scaling	0.85				
O43-Set	I_AntiWindUp	2.5				
O43a	I_AntiWindUp	2.5				
O44	D_MaxFilterFrame	8				
O46-Set	FWS primary circulation	No				
O46a	Primary circulation - runtime	10 sec				
O46b	Primary circulation - downtime	30 min				
O46c	FWS primary circulation	ON 06:00 11:00 OFF 08:00 13:00				
O47-Set	FWS primary circulation	No				
O47a	Primary circulation - runtime	10 sec				
O47b	Primary circulation - downtime	30 min				
O47c	FWS primary circulation	ON 06:00 11:00 OFF 08:00 13:00				
O48-Set	FWS primary circulation	No				
O48a	Primary circulation - runtime	10 sec				
O48b	Primary circulation - downtime	30 min				
O48c	FWS primary circulation	ON 06:00 11:00 OFF 08:00 13:00				
O49-Set	FWS primary circulation	No				
O49a	Primary circulation - runtime	10 sec				
O49b	Primary circulation - downtime	30 min				
O49c	FWS primary circulation	ON 06:00 11:00 OFF 08:00 13:00				
P - Ignition		**Eco-PK 70**	**Eco-PK 90**	**Eco-PK 100**	**Eco-PK 110**	**Eco-PK 120**
P1	Ignition timeout	25 Min				
P2s	Firebed-set at ignition pellets	35 °C				
P3	IDF Max. at ignition	75 %				
P4	Negative pressure set for ignition	105 Pa				
P5	Hysteresis firebed level	1°				
P6	Exhaust fan when kindling	90 %				
P6a	Ignition exhaust fan until combustion chamber filling completed	30 %				
P7	Ignition - heat up time	0 sec				
P10	Second ignition after	7 Min				
P11	FBS superelevation	5°				
P12	Negative pressure superelevation	10 Pa				
P14	Number of ignition attempts	4				
P15	Stoker - backwards before reinsertion	2 sec				

P16	Minimum delivery rate from second ignition attempt	40 %				
P20	Ignition connection monitoring for ignition	Yes				
P30	Ignition on at FBS >= 10° and O2 >	20 %				
P31	Delta O2 ignition off	1.00 %				
P40	FGT - transition - combustion	100 °C				
P41	Flue gas temperature increase	20 °C				
P42	O2 maximum for transition to combustion	16 %				
P43	Time O2 maximum for transition to combustion	10 sec				
P44	Primary air at transition to combustion	100 %				
P45	Ramp - transition - combustion	120 sec				
P46	TCC transition combustion	250 °C				
P50	Delivery rate ignition at defective FBS	40 %				
P51	Stoker runtime ignition with defective FBS	180 sec				
P60	max. O2 drop for Primary air flap close	-0.22%				
P61	PAF CLOSED for	10 sec				
P62	Interval for max. O2-decrease	10 sec				
P63	Stoker delay during ignition by	7 sec				
P64	Exhaust fan and PAF delay during ignition by	0 sec				
Q - De-ashing		**Eco-PK 70**	**Eco-PK 90**	**Eco-PK 100**	**Eco-PK 110**	**Eco-PK 120**
Q1	Minimum runtime - combustion	60 Min				
Q2s	Maximum runtime combustion pellets	300 Min				
Q3s	Minimum burnout time pellets	20 Min				
Q3as	Maximum burnout time pellets	60 Min				
Q3b	Average O2 value - burnout finished	20.00 %				
Q3c	Number of burnouts with maximum time until info	0				
Q4s	Exhaust fan - maximum in burnout pellets	90 %				
Q5	Firebed reduction prior to burnout	10°				
Q6	Grate - motor type	SPG				
Q7	Initiator ash impulses forward during ash suction (V2)	6				
Q7a	Initiator ash impulses forward during ash suction (V3)	2				
Q8	Initiator ash impulses return run during ash suction (V2)	3				
Q8a	Break time of ash auger during suction (V3)	2.5 Sec				
Q10s	Initiator ash auger impulses for pellets	14				
Q11	Max. motor current ash auger 3-phase	2.5 A				
Q11a	Max. motor current ash auger 1-phase	3.2 A				
Q12	Nominal motor current - de-ash	1.2 A				
Q12a	Nominal motor current for de-ash - single-phase	2.2 A				
Q12z	AE connection monitoring	Yes				
Q13a	Maximum motor current ash auger system 0.18kW	0.9 A				
Q13aa	Maximum motor current ash auger system 0.25kW	2.5 A				
Q13b	Nominal motor current ash auger system 0.18 kW	0.75 A				
Q13ba	Nominal motor current ash auger system 0.25 kW	1.2 A				
Q13c	De-ash number of revolutions for ash auger system pre-run	5 R				
Q13d	De-ash number of revolutions for ash auger system post-run	5 R				
Q13e	Ash auger system - number of return runs	3x				
Q13f	Number of revolutions for return runs	9 R				

Q13g	Duration overcurrent at motor	1 sec
Q15	Ash motor number - return runs	3x
Q19	Tolerance FBSset - major de-ash	10°
Q20s	Delay - grate turn pellets	20 Sec
Q21s	Grate rounds pellets	1
Q22	Downtime for major de-ash	60 Min
Q23s	Number before forced major de-ash cycle pellets	2
Q24c	Grate motor - runtime 1 revolution	23 sec
Q25	max. motor current rotating grate	160.0mA
Q26	Grate motor - return time	10 sec
Q28	Poke at burnout every	0 sec
Q29	Poke - opening angle	0°
Q30	Grate opening	0°
Q31	Primary air de-ash	0 %
Q32	Controller - tertiary air - burnout	0 %
Q33	Controller - tertiary air - de-ash	0 %
Q35	Repeated grate blockage removal attempts	1x
Q35a	Interval between repeated grate blockage removal attempts	5 Min
Q37	Maximum number of grate blockages during a de-ash	8x
Q49	De-ash during "Ash suction lock time" in ash box	Yes
Q49a	Issue warning after number of de-ash cycles in ash box	25x
Q50	Ash suction - number of de-ash cycles (V1)	1x
Q51s	Time - ash suction pellets (V1)	90 Sec
Q52s	Exhaust fan during de-ash pellets	0 %
Q52a	Pre-/post-run time ash suction turbine	5 Sec
Q53	Number of ash suction cycles per de-ash (V1)	2
Q54	Version - ash suction	Version 3
Q55	Ash auger active after error	No
Q56	Rotate grates sequentially	No
Q56a	SG opening during minor de-ash	10°
Q56b	SG opening during major de-ash	120°
Q57	Angle of grates open for blockage removal without blockage detection	10°
Q58	Attempts to open grates during blockage removal without blockage detection	6
Q68	Holding torque of grates for a blockage	36 Nm
Q69	Torque - rotary grates	55 Nm
Q70	Torque - rotary grates - blockage removal	56 Nm
Q70a	Holding torque rotary grates	20 Nm
Q70b	Tolerance - position - rotary grates	2°
Q76	Minimum speed - grates - regular run	6.0 °/s
Q76a	Minimum speed - grates - blockage removal	0.5 °/s
Q76b	Minimum speed - grates @60Nm	0.2 °/s
Q77	De-ash blockage check tolerance	10°
Q80	De-ash ABS function - boiler	active

Q82 - Q98a	Parameters for boilers with an eCleaner	See the eCleaner operating manual				
R - Stoker		**Eco-PK 70**	**Eco-PK 90**	**Eco-PK 100**	**Eco-PK 110**	**Eco-PK 120**
R0	Stoker - motor	ABM				
R1s	Firebed set value pellets	60°				
R2	Time - info delivery rate	45 Min				
R3	Break for blockage removal	3 pulses				
R4	Ramp firebed set level during combustion transition	15 Min				
R9	Delivery rate [kg/h]	27.9	27.9	41.2	41.2	41.2
R9a	Info when storage level reached	1000 kg				
R9b	Info when storage level reached	15 m³				
R9c	Fuel consumption per hour - runtime FE	0.3 m³				
R10	Max. motor current - stoker	0.8 A				
R10a	Max. motor current - stoker	0.8 A				
R11	Nominal motor current - stoker	0.5 A				
R11a	Nominal motor current - stoker	0.5 A				
R13	Max. return time - stoker	15 Sec				
R15	Rotary valve motor	0.37 kW				
R16	Maximum motor current rotary valve (0.18 kW)	1.1 A				
R16a	Maximum motor current rotary valve (0.25 kW)	1.6 A				
R16b	Maximum motor current rotary valve (0.37 kW)	1.7 A				
R16c	Maximum motor current rotary valve (0.55 kW)	2.5 A				
R16d	Maximum motor current rotary valve (0.75 kW)	3.0 A				
R16e	Maximum motor current rotary valve (special motor)	1.1 A				
R17	Nominal motor current rotary valve (0.18kW)	0.7 A				
R17a	Nominal motor current rotary valve (0.25kW)	1.2 A				
R17d	Nominal motor current rotary valve (0.37kW)	1.4 A				
R17c	Nominal motor current rotary valve (0.55kW)	1.7 A				
R17d	Nominal motor current rotary valve (0.75kW)	2.4 A				
R17e	Nominal motor current rotary valve (special motor)	0.7 A				
R20	Maximum interval duration when trigger time is not reached	30 Sec				
R20s	Stoker cycle pellets	30 Sec				
R21	Automatic filling - min. stoker auger runtime for suction	90 Min				
R22	Fill RAS - max. fill time	25 Min				
R22a	Fill RAD - max. fill time	10 Min				
R22b	RAS filling - maximum filling time Schellinger	45 Min				
R23	Extraction auger delay at suction	5 Sec				
R24	Fill RAS - follow up time vacuum turbine	10 Sec				
R24a	RAS filling - backward running after suction - activation only in combination with freewheel clutch RAS	0.0 Sec				
R24b	RAS filling Schellinger Classic suction turbine follow-up time	10 Sec				
R24c	RAS filling Schellinger E3 suction turbine follow-up time	20 Sec				
R25	Fill RAS - delay indication limiter	5 Sec				

R25a	Fill RAD - follow up time extraction auger	20 Sec
R26	Auto change unit - max. suction time	20 Min
R26a	AUP changeover unit limit for blockage detection	60 %
R27	Auto change unit - min. speed	0.3
R27a	Changeover unit Pos.1 Set	2.5 mm
R27b	Changeover unit Pos.2 Set	67.5 mm
R27c	Changeover unit Pos.3 Set	132.5 mm
R27d	Changeover unit Pos.4 Set	197.5 mm
R27e	Changeover unit Pos.5 Set	262.5 mm
R27f	Changeover unit Pos.6 Set	327.5 mm
R27g	Changeover unit Pos.7 Set	392.5 mm
R27h	Changeover unit Pos.8 Set	457.5 mm
R28a	Changeover unit Pos.1 Set	6
R28b	Changeover unit Pos.2 Set	71
R28c	Changeover unit Pos.3 Set	136
R28d	Changeover unit Pos.4 Set	198
R29a	Changeover unit length of AUP 2 positions	135.0 mm
R29b	Changeover unit length of AUP 3 positions	135.0 mm
R29c	Changeover unit length of AUP 4 positions	200.0 mm
R29d	Changeover unit length of AUP 6 positions	330.0 mm
R29e	Changeover unit length of AUP 8 positions	460.0 mm
R30s	Agitator factor FE-delivery rate pellets	100 %
R31	Auto adapt FE delivery rate Auto adapt FE delivery rate	Available
R32	Fuel extraction Factor FE-delivery rate - Auto setting range	30 %
R33	Fuel extraction Current factor - FE delivery rate	70 %
R35	Fuel extraction Connection monitoring FE	Yes
R35a	Fuel extraction system Connection monitoring FE2	Yes
R40	Fuel extraction system Maximum motor current FE (0.18 kW)	3.2 A
R40a	Fuel extraction system Maximum motor current FE (0.25 kW)	1.6 A
R40b	Fuel extraction system Maximum motor current FE (0.37 kW)	1.7 A
R40c	Fuel extraction system Maximum motor current FE (0.55 kW)	2.5 A
R40c1	Fuel extraction system Maximum motor current FE (0.75 kW)	3.0 A
R40c2	Fuel extraction system Maximum motor current FE (special motor)	3.2 A
R40d	Fuel extraction system Maximum motor current FE-2 (0.18 kW)	3.2 A
R40e	Fuel extraction system Maximum motor current FE-2 (0.25 kW)	1.6 A
R40f	Fuel extraction system Maximum motor current FE-2 (0.37 kW)	1.7 A

R40g	Fuel extraction system Maximum motor current FE-2 (0.55 kW)	2.5 A
R40g1	Fuel extraction system Maximum motor current FE-2 (0.75 kW)	3.0 A
R40g2	Fuel extraction system Maximum motor current FE2 (special motor)	3.2 A
R40h	RAS extraction auger Maximum motor current FE (RAS)	3.2 A
R40i	Extrac. auger RAD max. motor current FE (RAD)	1.6 A
R40j	RAS extraction auger Maximum motor current FE (RAS 3~)	2.5 A
R41	Fuel extraction system Nominal motor current FE (0.18 kW)	2.0 A
R41a	Fuel extraction system Nominal motor current FE (0.25 kW)	1.2 A
R41b	Fuel extraction system Nominal motor current FE (0.37 kW)	1.4 A
R41c	Fuel extraction system Nominal motor current FE (0.55 kW)	1.7 A
R41c1	Fuel extraction system Nominal motor current FE (0.75 kW)	2.0 A
R41c2	Fuel extraction system Nominal motor current FE (special motor)	2.0 A
R41d	Fuel extraction system Nominal motor current FE-2 (0.18 kW)	0.7 A
R41e	Fuel extraction system Nominal motor current FE-2 (0.25 kW)	1.2 A
R41f	Fuel extraction system Nominal motor current FE-2 (0.37 kW)	1.4 A
R41g	Fuel extraction system Nominal motor current FE-2 (0.55 kW)	1.7 A
R41g1	Fuel extraction system Nominal motor current FE-2 (0.75 kW)	2.0 A
R41g2	Fuel extraction system Nominal motor current FE-2 (special motor)	0.7 A
R41h	Extrac. auger RAS nominal motor current FE (RAS)	2.0 A
R41i	Extrac. auger RAD nominal motor current FE (RAD)	0.75 A
R41j	Extrac. auger RAS nominal motor current FE (RAS 3~)	1.2 A
R42	Fuel extraction Return time for fuel extraction system	1 Sec
R49	Connection auger Tno.10/11/12 option 1 Motor	0.55 kW
R49a	Connection auger Tno.10/11/12 Connection monitoring VBS	Yes
R50	Connection auger Tno.10/11/12 Maximum motor current Opt1 (0.18 kW)	1.1 A
R50a	Connection auger Tno.10/11/12 Maximum motor current Opt1 (0.25 kW)	1.6 A

R50b	Connection auger Tno.10/11/12 Maximum motor current Opt1 (0.37 kW)	1.7 A
R50c	Connection auger Tno.10/11/12 Maximum motor current Opt1 (0.55 kW)	2.5 A
R50d	Connection auger Tno.10/11/12 Maximum motor current Opt1 (0.75 kW)	3.0 A
R50e	Connection auger cl.10/11/12 maximum motor current opt 1 (special motor)	1.1 A
R51	Connection auger Tno.10/11/12 Nominal motor current Opt1 (0.18 kW)	0.7 A
R51a	Connection auger Tno.10/11/12 Nominal motor current Opt1 (0.25 kW)	1.2 A
R51b	Connection auger Tno.10/11/12 Nominal motor current Opt1 (0.37 kW)	1.4 A
R51c	Connection auger Tno.10/11/12 Nominal motor current Opt1 (0.55 kW)	1.7 A
R51d	Connection auger Tno.10/11/12 Nominal motor current Opt1 (0.75 kW)	2.0 A
R51e	Connection auger Tno.10/11/12 Nominal motor current Opt1 (special motor)	0.7 A
R52	Connection auger Tno.10/11/12 Return time	10 sec
R52a	Connection auger Tno.10/11/12 Minimum runtime motor option 1	1 Sec
R53s	Connection auger Tno.10/11/12 factor delivery rate pellets	100 %
R54	Vertical connection auger CAN address 6 option 2 motor	0.55 kW
R54aa	Vertical connection auger CAN addr.6 Connection monitoring S-VBS	Yes
R54a	Vertical connection auger CAN addr. 6 Maximum motor current Opt2 (0.18 kW)	1.1 A
R54b	Vertical connection auger CAN addr. 6 Maximum motor current Opt2 (0.25 kW)	1.6 A
R54c	Vertical connection auger CAN addr. 6 Maximum motor current Opt2 (0.37 kW)	1.7 A
R54d	Vertical connection auger CAN addr. 6 Maximum motor current Opt2 (0.55 kW)	2.5 A
R54e	Vertical connection auger CAN addr. 6 Maximum motor current Opt2 (0.75 kW)	3.0 A
R54f	Vertical connection auger CAN addr. 6 Maximum motor current Opt2 (special motor)	1.1 A
R55	Vertical connection auger CAN addr. 6 Nominal motor current Opt2 (0.18 kW)	0.7 A
R55a	Vertical connection auger CAN addr. 6 Nominal motor current Opt2 (0.25 kW)	1.2 A
R55b	Vertical connection auger CAN addr. 6 Nominal motor current Opt2 (0.37 kW)	1.4 A
R55c	Vertical connection auger CAN addr. 6 Nominal motor current Opt2 (0.55 kW)	1.7 A

R55d	Vertical connection auger CAN addr. 6 Nominal motor current Opt2 (0.75 kW)	2.0 A
R55e	Vertical connection auger CAN addr. 6 Nominal motor current Opt2 (special motor)	0.7 A
R56	Vertical connection auger CAN addr. 6 Return time	10 Sec
R57s	Vertical connection auger CAN addr. 6 factor delivery rate	100 %
R58	Vertical connection auger CAN addr.6 Maximum duration - overcurrent	1 sec
R58a	Vertical connection auger CAN addr.6 Duration - return at overcurrent	3 sec
R58b	Vertical connection auger CAN addr. 6 Max. number of attempts at overcurrent	3
R60	Stoker Reduction when FBS over set	15°
R60a	Stoker stoker empty run when burnout is off if firebed sensor is smaller	10°
R60b	Stoker delivery rate in case of slumber mode stoker empty run	10 %
R61	Stoker time overfill	30 Sec
R62	Stoker delivery rate at overfill	70 %
R63	Stoker overfill-stop off if below firebed set	0°
R64	Stoker delivery rate reduction after overfill	90 %
R65	Stoker delivery rate at TMS	10 %
R70	Distribution box / common agitator Agitator motor	0.18 kW
R70a	Distribution box / common agitator Maximum motor current agitator (0.18 kW)	1.1 A
R70b	Distribution box / common agitator Maximum motor current agitator (0.25 kW)	1.6 A
R70c	Distribution box / common agitator Maximum motor current agitator (0.37 kW)	1.7 A
R70d	Distribution box / common agitator Maximum motor current agitator (0.55 kW)	2.5 A
R70e	Distribution box / common agitator Maximum motor current agitator (0.75 kW)	3.0 A
R70e1	Distribution box max. motor current agitator (special motor)	1.1 A
R70f	Distribution box / common agitator Nominal motor current agitator (0.18 kW)	0.7 A
R70g	Distribution box / common agitator Nominal motor current agitator (0.25 kW)	1.2 A
R70h	Distribution box / common agitator Nominal motor current agitator (0.37 kW)	1.4 A
R70i	Distribution box / common agitator Nominal motor current agitator (0.55 kW)	1.7 A
R70j	Distribution box / common agitator Nominal motor current agitator (0.75 kW)	2.0 A
R70j1	Distribution box / common agitator nom. motor current agitator (special motor)	0.7 A

R71b	Distribution box / common agitator Motor - duration overcurrent	1.0 sec				
R71c	Distribution box / common agitator Motor - duration - return run at overcurrent	3.0 sec				
R71d	Distribution box / common agitator motor max. number of attempts in case of overcurrent	3				
R71e	Common agitator motor runtime	100 %				
R71f	Distribution box / common agitator Motor pulsing	10 sec				
R71g	Distribution box Motor - runtime - filling	50 %				
R71h	Distribution box Post-run time - agitator - emptying	40 sec				
R71i	Distribution box distribution box initiator at the top, detection time	15 Sec				
R71j	Distribution box distribution box initiator at the bottom, detection time	30 Sec				
R71k	Distribution box distribution box filling time exceeded, info after	2 h				
R71l	Distribution box after one hour at a standstill, rotation for (0 = deactivated)	15 Sec				
R71m	Distribution box Start filling at	400 mm				
R71n	Distribution box Stop filling at	200 mm				
R71o	Distribution box distribution box ini. emergency programme after (0 = deactivated)	2 hrs				
R71p	Distribution box Container depth	55cm				
R71q	Distribution box Info - change in value - ultrasonic sensor	5 sec				
R72a	Distribution box Number of filling cycles before an empty run is performed	10				
R72b	Distribution box duration empty run before filling cycle	5 Min				
R72s	Distribution box motor runtime during agitation pellets	15 %				
R73	Distribution box connection monitoring VTB	Yes				
R73a	Distribution box Measuring range minimum	0 V				
R73b	Distribution box Measuring range minimum	12cm				
R73c	Distribution box Measuring range maximum	10 V				
R73d	Distribution box Measuring range maximum	100cm				
R79	Mole Schellinger Mole Schellinger trigger time Classic	120 Sec				
R79a	Mole Schellinger Mole Schellinger break time Classic	5 Sec				
R79b	Mole Schellinger Schellinger trigger time E3	60 Sec				
R79c	Mole Schellinger break time E3	15 Sec				
S - Lambda		**Eco-PK 70**	**Eco-PK 90**	**Eco-PK 100**	**Eco-PK 110**	**Eco-PK 120**
S1s	O2-set pellets	8.00 %				
S2	Test mode - O2-set Full load	7.00 %				
S3	O2-stop difference	3.00 %				
S4	O2 increase partial load	1.40 %				
S5	TCC max.	650 °C				

S6	Combustion chamber overrun O2 increase Kp	1				
S7	Combustion chamber overrun O2 increase Tn	250 sec				
S9	Exhaust fan during lambda calibration	60 %				
S10	Exhaust fan post-run until O2 over	18 %				
S12	Lambda Default voltage lambda heating	8 W				
S20	Lambda sensor	0.0 mV				
S30	O2 info when set value not reached after	60 Min				
T - Control		**Eco-PK 70**	**Eco-PK 90**	**Eco-PK 100**	**Eco-PK 110**	**Eco-PK 120**
T1	Flue gas temperature - minimum	100 °C				
T2	Flue gas temperature - maximum	200 °C				
T3	Flue gas temperature - limiter Kp	1				
T4	Flue gas temperature - limiter Tn	250 sec				
T5	Correction - flue gas temperature at 150 °C	-10 °C				
T10	Boiler temperature - controller Kp	2				
T10_HT	Boiler temperature - controller Kp	7				
T11	Boiler temperature - controller Tn	600 sec				
T12	Boiler temperature - controller Tv	100 sec				
T13	Boiler temperature - controller T1	100				
T14	Boiler temperature - controller xw_exp	1.5				
T20	Delivery rate - firebed Kp	3				
T21	Delivery rate - firebed Tn	140 sec				
T22	Delivery rate - firebed z	0				
T23	Delivery rate - firebed minimum	0				
T24	Delivery rate - firebed maximum	150				
T25	Delivery rate at defective FBS Kp	4				
T26	Delivery rate at defective FBS Tn	120 sec				
T27	Delivery rate at defective FBS minimum	0				
T28	Delivery rate at defective FBS maximum	105				
T30	Primary air (O2) Kp	4.5				
T31	Primary air (O2) Tn	20				
T32	Primary air (O2) Tv	5				
T33	Primary air - factor - D-filter	2				
T34	Primary air negative boost	1				
T35s	Primary air maximum pellets	100 %				
T36	Primary air - defective lambda sensor	25 %				
T36a	PAF max. Kp (0 = disabled)	1.5				
T36b	PAF maximum Tn	80 sec				
T36c	PAF maximum Tn	5°				
T36d	PAF maximum - controller active after	20 Min				
T40	Negative pressure controller Kp	0.1				
T41	Negative pressure controller Tn	4 sec				
T42	Negative pressure controller Tv	0 sec				
T50	Exhaust fan Kp	30				
T51	Exhaust fan Tn	30 sec				
T59a	Service sensor Minimum value - sensor SG	100				
T59b	Service sensor Maximum value - sensor SG	920				
T59c	Service sensor Minimum value - sensor AG	100				

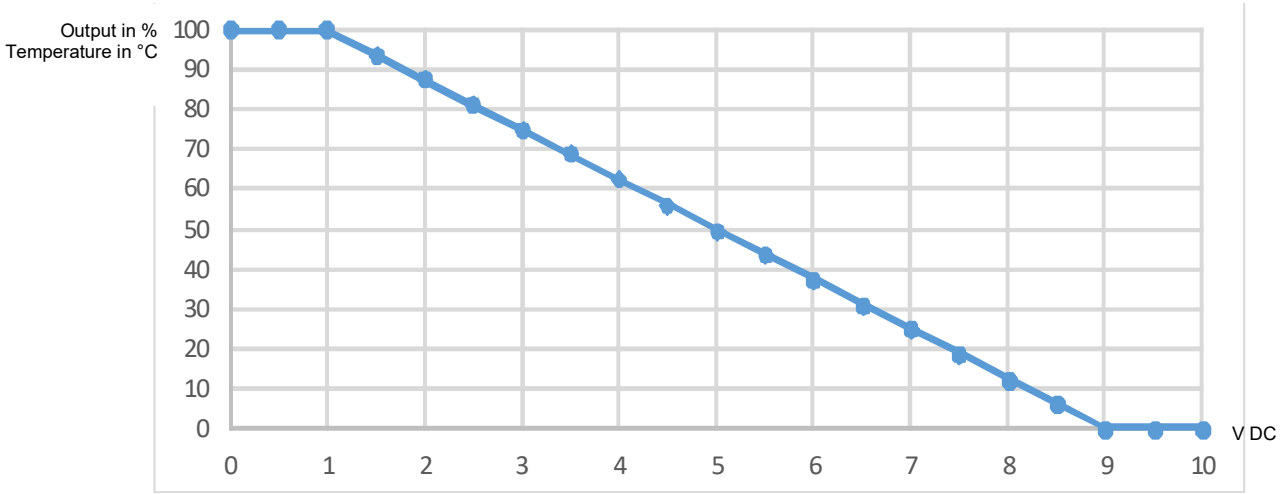
T59d	Service sensor Maximum value - sensor SG	920				
T60	Service sensor stoker grate Offset (L)	-45				
T60a	Service sensor Stoker grate Offset (R)	45				
T60d	Service sensor Step motor stoker grate offset (L)	45°				
T60e	Service sensor Step motor stoker grate offset (R)	-45°				
T61	Service sensor Ash grate Offset (L)	45				
T61a	Service sensor Ash grate Offset (R)	-45				
T61d	Service sensor Step motor ash grate offset (L)	135°				
T61e	Service sensor Step motor ash grate offset (R)	-135°				
T62	Service sensor FBS Offset (L)	190				
T62a	Service sensor FBS Offset (R)	190				
T63	Service sensor 0% TAF set at PAF	100 %				
T64	Service sensor 100% TAF set at PAF	20 %				
T65	Service sensor 0% TAFmax at output	30 %				
T66	Service sensor 100% TAFmax at output	100 %				
T67	Service sensor TAF max. - closing speed	10 %				
T67a	Service sensor TAF max. closing speed in burnout	1.50%				
T70	Service sensor Error - air flap	Enabled				
T80	Power box Controller ventilator - minimum speed	25 %				
T80a	PowerBox Controller - ventilator - maximum speed	100 %				
T80b	Power box Controller ventilator Kp	1.5				
T80c	Power box Controller ventilator Tn	250 Sec				
T80d	Power box Controller ventilator Tv	0 sec				
T81	PowerBox Duration Ramp warm-air module start	200 Sec				
U - Negative pressure		**Eco-PK 70**	**Eco-PK 90**	**Eco-PK 100**	**Eco-PK 110**	**Eco-PK 120**
U1	Negative pressure set at 30% exhaust fan	30 Pa				
U2	Negative pressure set at 80% exhaust fan	150 Pa				
U3	Negative pressure Kp	0.5				
U4	Negative pressure Tn	20				
U9	Filter factor negative pressure sensor	95 %				
U10	Negative pressure limit info/error	50 %				
U11	Negative pressure Time until error	30 sec				
U20	Exhaust fan - motor type	EC motor				
U21	Exhaust fan max. RPM	3400				
U22	Exhaust fan - speed - tolerance	30 %				
W - Service		**Eco-PK 70**	**Eco-PK 90**	**Eco-PK 100**	**Eco-PK 110**	**Eco-PK 120**
W1	Info for service	No				
W3	Info for full-load hours	2000 h				
W4	Info for heating hours	4000 h				
W5	Info from	01.01.2017 01:00				
W7	Service from	01.02.2017 01:00				
W8	Service until	30.11.2017 01:00				
W9	Info for boiler starts	3000x				
X - Service sensors		**Eco-PK 70**	**Eco-PK 90**	**Eco-PK 100**	**Eco-PK 110**	**Eco-PK 120**
X01	Service sensor stoker grate X0	0.5 V				
X02	Service sensor stoker grate X1	4.5 V				
X04	Service sensor ash grate X0	0.5 V				

X05	Service sensor ash grate X1	4.5 V				
X07	Service sensor firebed sensor X0	0.5 V				
X08	Service sensor firebed sensor X1	4.5 V				
X10	Service sensor negative pressure X0	0.5 V				
X11	Service sensor negative pressure X1	4.5 V				
X12	Service sensor primary flap X0	0.5 V				
X13	Service sensor primary flap X1	4.5 V				
X14	Service sensor tertiary flap X0	0.5 V				
X15	Service sensor tertiary flap X1	4.5 V				
Z - Special functions		**Eco-PK 70**	**Eco-PK 90**	**Eco-PK 100**	**Eco-PK 110**	**Eco-PK 120**
Z1j	Ash auger system	Not available				
Z1yes	Ash auger system - motor	0.25 kW				
Z1k	Power converter	Not available				
Z1l	Timeout Loxone	30 sec				
Z1m	IO-X10-104 extension control board 1	Not available				
Z1n	IO-X10-104 extension control board 2 (S3:1)	Not available				
Z1na	DAQ output - sensor board 2	No selection				
Z1o	Distribution box / common agitator	Not available				
Z1p	MBus addressing	Secondary address				
Z1q	MBus baud rate	2400				
Z1s	Bypass pump	Not available				
Z1t	eCleaner	Not available				
Z1u	MWZ03 DAQ channels	Not available				
Z9a	Delete error list	No				
Z9b	Clear infos	No				
Z8	Commission no.	1				
Z10	Error display - grate - sensor	No				

4 Analogue inputs and outputs

4.1 Specified output or temperature

Installer parameter C6 can be used to activate the analogue 0-10V DC input (terminal 80/81) for the specified analogue output or temperature of the external heat circuit (connected to the system).
Generally, the specified output or temperature only takes effect when the external heat circuit is connected and there is an external demand.



<1V DC = a specified heat output of 100% or a specified temperature of 100 °C
>9V DC = a specified heat output of 0% or a specified temperature of 0 °C (system **Off**)

4.2 Operating modes

The system's operating modes are displayed at the analogue 0-10V DC output (terminal 78/79) as follows

☞ The tolerance range of the output voltage is +/- 0.5% of the final value

Status number	Boiler status	Output (in V DC) Terminal 78/79
1	BOILER_OFF	1
2	----------	----------
3	BOILER_IGNITIONTEST	2
4	BOILER_IGNITION	2.5
5	BOILER_COMBUSTION	3
6	BOILER_SLUMBER MODE	3.5
7	BOILER_BURNOUT	4
8	----------	----------
9	BOILER_DEASH	5
10	BOILER_STB	5.5
11	BOILER_MANUAL	6
12	BOILER_WOODLOG_OPERATION	6.5

☞ From 0 to 0.5V DC => Cable break / not connected

☞ From 9.5 to 10V DC => Error

5 List of information and error messages

No.	Information message	Cause / Problem	Solution (press ENTER once the notice has been cleared)
No display	Green lights H7 board do not light	Fuse F13 defective, or L1 missing, or connection from control board to the operating unit defective or missing	Replace fuse F13 (see control board sticker); check power supply L1, or cable from control board to operating unit;
1	Attention: Overtemperature STB triggered	Over temperature on the boiler or STB-supply defective or overheated at manual heating, air in the heating system or pump(s) defective	Allow boiler to cool down below 70°C, remove protective cap (on boiler top) from STB, and press the button in; have an electrician check the STB power supply; check the pumps; contact service department and replace control board;
2	Overcurrent stoker auger	Gagger in auger channel or rotary valve, knife of rotary valve defective or blockage in the auger	Remove debris, use parameter No. 4 in "Manual" mode and drive auger forward or backward, (Check motor current on display); replace eventually worn out auger parts; check electronic motor protection; call service department
3	Overcurrent extraction auger	Gagger in the extraction channel or auger blockage	Remove debris, use parameter No.3 , No. 3a for FE-2 in "Manual" mode and drive auger forward or backward, (Check motor current on display); replace eventually worn out auger parts; check electronic motor protection; call service department
5	Overcurrent connection auger	Gagger in the extraction channel or auger blockage	Remove debris, use parameter No. 5 in "Manual" mode and drive auger forward or backward, (Check motor current on display); replace eventually worn out auger parts; check electronic motor protection; call service department
6	Thermal protection stoker auger	Overload of motor through debris or electronic motor protection set incorrectly	Remove debris, use "Manual" mode and drive auger forward or backward, (Check motor current on display); replace eventually worn out auger parts; check electronic motor protection; check rotary valve for stiffness; call electrician or service department and change control board;
7	Thermo-protec. extraction auger	Overload of motor through debris or electronic motor protection set incorrectly	Remove debris, use parameter No. 3 in "Manual" mode and drive auger forward or backward, (Check motor current on display); replace eventually worn out auger parts; check electronic motor protection; call electrician or service department and change control board;
8	Thermo-protec. ash auger	Overload of motor through debris or electronic motor protection set incorrectly	Remove debris, use parameter No. 2 in "Manual" mode and retract the auger with the forward or reverse button; or replace worn auger parts; check electronic motor protection; this error may also be a result of a sluggish heat exchanger cleaning system or automatic ash extraction; contact an electrician or service department and replace control board;
9	Thermo-protec. connection auger	Overload of motor through debris or electronic motor protection set incorrectly	Remove debris, use parameter No. 5 in "Manual" mode and drive auger forward or backward, (Check motor current on display); replace eventually worn out auger parts; check electronic motor protection; call electrician or service department and change control board;
10	Flue gas temp. sensor connected incorrectly	Sensor connected incorrectly (only at commissioning) or control board defective	Have the sensor's connection polarity checked by an electrician; replace the sensor or the board;
11	Interruption flue gas sensor	Sensor not connected or connection interrupted	Connect sensor; check cable and contacts; replace sensor or board;
12	Boiler sensor short circuit	Short circuit in the sensor or in supply line	Let cables or sensors be checked by an electrician.
13	Interruption boiler sensor	Sensor not connected or connection interrupted	Connect the sensor; check the cable and terminal points; replace the defective sensor with another sensor, if a different error occurs, replace the sensor; if the same error occurs, replace the control board;
14	Short circuit HWT 1 sensor	Short circuit in the sensor or in supply line	Connect the sensor; check the supply line and terminal points and/or check the parameter settings in the installer level; have the sensor or supply line checked by an electrician; Tip: Replace the plug of the sensor displayed as defective with another sensor plug; if another error occurs, the sensor is defective and needs to be replaced; if the same error occurs, replace the extension module HKM0; call the service department;

No.	Information message	Cause / Problem	Solution (press ENTER once the notice has been cleared)
15	Interruption HWT 1 sensor	Sensor not connected or connection interrupted	Connect the sensor; check the supply line and terminal points and/or check the parameter settings in the installer level; have the sensor or supply line checked by an electrician; Tip: Replace the sensor displayed as defective with another sensor; if another error occurs, the sensor is defective and needs to be replaced; if the same error occurs, replace the extension module HKM0; call the service department;
16	Outside sensor short circuit	Short circuit in the sensor or in supply line	
17	Interruption outside temperature sensor	Sensor not connected or connection interrupted	
18	Short circuit flow temp. sensor HC1	Short circuit in the sensor or in supply line	
19	Sensor flow temperature HC1 interruption	Sensor not connected or connection interrupted	
20	Short circuit flow sensor HC2	Short circuit in the sensor or in supply line	
21	Sensor flow temperature HC2 interruption	Sensor not connected or connection interrupted	
22	HC 1 room device sensor short-circuited	Short circuit in the sensor or in supply line of FR25	In the event of a short circuit: check the terminal points; the resistance value of the remote control must be in the "Auto" position between 3340 Ohm and 3626 Ohm (room temperature between 5°C and 25°C); in the event of an interruption: connect the remote control; check the supply line and terminal points or parametrisation No. A6 (or A16, A26, A36, A46, A56 or A66) in the installer settings; otherwise, replace the remote control or the HKM0 extension module; contact service department;
23	Interruption remote control sensor HC1	FR25 sensor not connected or connection interrupted	
24	HC 2 room device sensor short-circuited	Short circuit in the sensor or in supply line of FR25	
25	Interruption remote control sensor HC2	FR25 sensor not connected or connection interrupted	
26	Ignition time exceeded	The flue gas temp. did not rise by the set value (P41) within the ignition attempt time (P1), or the O2 did not drop below the value (P42) for the period set (P43) within the time (P1); no fuel or fuel too wet; too much ash/ clinker in the combustion chamber; flue gas sensor not in the flue pipe; ignition defective	Check the installation of the flue gas sensor and the terminal points; check the fuel; if the desired negative pressure value has not been reached, check that all the maintenance openings are sealed properly and that the exhaust fan is working; test the ignition in manual mode (No. 11); clean the ignition tube; check the ash extraction system in manual mode (No. 2); check the firebed sensor is working (when the boiler is cold, lift the firebed sensor manually by approx. 90° and compare it to the "Boiler info" indicator); have the cables, terminal points and plugs checked by an electrician;
27	Flue gas temperature underrun	During combustion the flue gas temperature drops under the set value (K14) for the set duration of (K15)	Check installation of flue gas sensor; too wet fuel; too much ash or clinker in the combustion chamber; check proper function of the agitator, stoker auger and de-ash in manual mode (No.3, No.4, No.5), clean combustion chamber;
28	Allowed O2-stop time over-run	Contact error of the lambda sensor or lambda sensor defective	Lambda sensor very intensely dirtied (clean), then perform a function check in manual mode No. 13; let check terminal points and plugs by an electrician; replace the lambda sensor; the boiler system can run without lambda sensor with reduced heating output until replacement; disconnect lambda sensor and confirm;
30	Low battery. Please exchange!	Batteries powering date/time memory are close to being empty	Exchange battery of the control unit;
34	Accumulator sensor top - short circuit	Short circuit in the sensor or in supply line	See nos. 0014 to 0021; Position and parametrisation of the sensors on the boiler or on HKM 0 - 2 possible;
35	Interruption accumulator sensor top position	Interruption in the sensor or in supply line	
36	Accumulator sensor bottom - short circuit	Short circuit in the sensor or in supply line	
37	Interruption accumulator sensor bottom position	Interruption in the sensor or in supply line	
38	Accumulator middle sensor short circuit	Short circuit in the sensor or in supply line	
39	Interruption to accumulator middle sensor	Interruption in the sensor or in supply line	
40	Accumulator top middle sensor short circuit	Short circuit in the sensor or in supply line	See Nos. 0014 to 0021; Position and parametrisation of the sensors on the AS additional board (5 accumulator sensors);
41	Interruption to accumulator top middle sensor	Interruption in the sensor or in supply line	
42	Accumulator bottom middle sensor short circuit	Short circuit in the sensor or in supply line	

No.	Information message	Cause / Problem	Solution (press ENTER once the notice has been cleared)
43	Interruption to accumulator bottom middle sensor	Interruption in the sensor or in supply line	See Nos. 0014 to 0021; Position and parametrisation of the sensors on the AS additional board (5 accumulator sensors);
44	Maximum filling time exceeded	No pellet transport	Check fuel storage room, if pellet bridging occurs; check pellet transport from the fuel storage room (see No. 3)
45	Back end protection temperature not reached	Back end protection pump set incorrectly or mixer defective. The first two times, a notice will appear; if this happens a third time, the boiler will shut down. The Error must be rectified.	Check that the return sensor position is correct; set the pump correctly; replace the pump or use a bigger pump; check that the return mixer is working (if available); contact the installer; Attention: This will shorten the length of the boiler's service life!
46	Return sensor - short circuit	Short circuit in the sensor or in supply line	See No. 0014 to No. 0021
47	Interruption return sensor	Interruption sensor or in cable or sensor not available	
49	Overcurrent at power converter	Power converter overloaded; power consumption of drive motors too high	Check all motors are running smoothly; ensure stoker unit, ash extraction system, fuel extraction system, etc. are running smoothly
52	Short circuit external sensor	Short circuit in the sensor or in supply line	See No. 0014 to No. 0021
53	Interruption external sensor	Interruption in the sensor or in supply line	
62	GSM module not connected	No connection between GSM module and control unit	Check data cable; check LED on the GSM module; check on/off switch on GSM module (must not be set to OFF); replace GSM module;
65	GSM module sending error	GSM module was not able to send SMS due to insufficient credit on the SIM ard or no connection to the net provider.	Check credit amount on SIM card and charge if necessary or activate SIM-card; Check GSM signal with mobile phone from the same provider and eventually re-position or extend antenna; (Cable available)
67	Parameter error. Factory settings have been loaded.	Internal error in the parameter memory	Check parameters and make adjustments where necessary; change the boiler control unit if the error persists despite the changes;
70	Pellet storage volume low	Warning limit exceeded (customer settings No.30)	Check storage volume and refill. After the refill, enter the new storage volume on the No. 30 consumption display;
71	Fuel level low	Warning limit exceeded (customer settings No.31)	Check the fuel storage level and, if necessary, top up the fuel. After topping up the fuel, enter the new storage level in No. 31 consumption display
80	Changeover unit interrupted	Control board of the changeover unit defective / not available, bus cable (from BCE-, I/O- board) interrupted / not connected	Visually check bus cable terminals. Set the address selection switch on the board according to the software setting of the control
81	Changeover unit pos.1 not reached	Shown position not reached; minimum speed not reached during positioning; changeover unit is trying to return to starting position. If the set and actual positions of the changeover unit are identical, the error message can be cleared	Check wiring; clean changeover unit (sliding area between base plate and sliding plate). After assembly, check the position of the changeover unit.
82	Changeover unit pos.2 not reached	Shown position not reached; minimum speed not reached during positioning; changeover unit is trying to return to starting position. If the set and actual positions of the changeover unit are identical, the error message can be cleared	Check wiring; clean changeover unit (sliding area between base plate and sliding plate). After assembly, check the position of the changeover unit.
83	Changeover unit pos.3 not reached	Shown position not reached; minimum speed not reached during positioning; changeover unit is trying to return to starting position. If the set and actual positions of the changeover unit are identical, the error message can be cleared	Check wiring; clean changeover unit (sliding area between base plate and sliding plate). After assembly, check the position of the changeover unit.

No.	Information message	Cause / Problem	Solution (press ENTER once the notice has been cleared)
84	Changeover unit pos.4 not reached	Shown position not reached; minimum speed not reached during positioning; changeover unit is trying to return to starting position. If the set and actual positions of the changeover unit are identical, the error message can be cleared	Check wiring; clean changeover unit (sliding area between base plate and sliding plate). After assembly, check the position of the changeover unit.
90	Boiler IO not connected	Bus-cable-connection or board defective	Replace bus cable connections, control unit, main board; contact service department;
91	Max. control board temp. exceeded.	Control board temperature is too high; board is dirty or is no longer cooling down Ambient temperature in the boiler room is too high (must not exceed 40 °C)	Temporarily open the control cabinet cover to cool down the board; remove dust from the board, cool the boiler room down appropriately; call the service department;
94	Attention, boiler is set to **Off**. No frost control	Operation mode "OFF" is being activated and the outside temperature is dropping below the temperature set.	Change the operation mode to **Auto**.
99	Boiler over temperature	Over temperature on the boiler or STB-supply defective or overheated at manual heating, air in the heating system or pump(s) defective	Allow boiler to cool down below 70°C, remove protective cap (on boiler top) from STB, and press the button in; have an electrician check the STB power supply; check the pumps; contact service department and replace control board;
100	Extension module CAN 1 not connected	No connection (CAN1 - blue bus) to extension module 1	Set the extension module's address switch to "1"; check HKM's connection and bus wiring; replace extension module 1;
103	Short circuit HWT 2 sensor	Short circuit in the sensor or in supply line	See nos. 0014 to 0021 on extension module HKM 1
104	Interruption HWT 2 sensor	Interruption in the sensor or in supply line	
107	Short circuit flow sensor HC3	Short circuit in the sensor or in supply line	
108	Sensor flow temperature HC3 interruption	Interruption in the sensor or in supply line	
109	Short circuit flow sensor HC4	Short circuit in the sensor or in supply line	
110	Sensor flow temperature HC4 interruption	Interruption in the sensor or in supply line	
111	HC 3 room device sensor short-circuited	Short circuit in the remote control FR25 or in supply line	See nos. 0022 to 0025 on extension module HKM 1
112	Interruption remote control sensor HC3	Interruption in the remote control FR25 or in supply line	
113	HC 4 room device sensor short-circuited	Short circuit in the remote control FR25 or in supply line	
114	Interruption remote control sensor HC4	Interruption in the remote control FR25 or in supply line	
120	Extension module CAN 2 not connected	No connection (CAN1 - blue bus) to extension module 2	Set the extension module's address switch to "2"; check HKM 2 connection and bus wiring; replace extension module 2;
125	Short circuit HWT 3 sensor	Short circuit in the sensor or in supply line	See nos. 0014 to 0021 on extension module HKM 2
126	Interruption HWT 3 sensor	Interruption in the sensor or in supply line	
127	Short circuit flow sensor HC5	Short circuit in the sensor or in supply line	
128	Sensor flow temperature HC5 interruption	Interruption in the sensor or in supply line	
129	Short circuit flow sensor HC6	Short circuit in the sensor or in supply line	
130	Sensor flow temperature HC6 interruption	Interruption in the sensor or in supply line	
131	HC 5 room device sensor short-circuited	Short circuit in the remote control FR25 or in supply line	See nos. 0022 to 0025 on extension module HKM 2
132	Interruption remote control sensor HC5	Interruption in the remote control FR25 or in supply line	
133	HC 6 room device sensor short-circuited	Short circuit in the remote control FR25 or in supply line	
134	Interruption remote control sensor HC6	Interruption in the remote control FR25 or in supply line	
135	Distr. line board CAN "A" not connected	No connection (CAN1 - blue bus) to I/O 36 board "A“ (installed on boiler or HKM 0-2)	Set the control board address switch to "A"; check connection and bus wiring; replace control board;

No.	Information message	Cause / Problem	Solution (press ENTER once the notice has been cleared)
136	Short circuit flow temp. sensor HCA	Short circuit in the sensor or in supply line	See nos. 0014 to 0021 on heat circuit board A
137	Sensor flow temperature HCA interruption	Interruption in the sensor or in supply line	
138	Short circuit HWT A sensor	Short circuit in the sensor or in supply line	
139	Interruption HWT A sensor	Interruption in the sensor or in supply line	
140	Extension module CAN 0 not connected	no connection (CAN1 - blue bus) to extension module 0	Set the extension module's address switch to "0"; check HKM's connection and bus wiring; replace extension module 0;
141	Sensor flow temperature controlled distr. line short circuit	Short circuit in the sensor or in supply line	See nos. 0014 to 0021 on heat circuit board F
142	Sensor flow temperature controlled distr. line interruption	Interruption in the sensor or in supply line	
143	Distr. line board CAN "F" not connected	No connection to I/O 36 board "F“ (installed on boiler or HKM 0-2)	Set the control board address switch to "F"; check connection and bus wiring; replace control board;
144	Comb. cha. sensor defective or not connected	Short circuit in the sensor or in supply line	See No. 0014 to No. 0021
145	Acc. control board CAN C not connected	No connection to I/O 36 board "C“ (installed on boiler or HKM 0-2)	Set the control board address switch to "C"; check connection and bus wiring; replace control board;
146	Combustion chamber sensor check - implausible signal	Combustion chamber sensor is defective or not connected	Have cables, terminal points and plugs checked by an electrician; replace combustion chamber sensor;
149	No connection to Loxone server	Time-out time Parameter (Z1I) exceeded; no network connection to the Loxone control;	Check network; check configuration of network settings; check Loxone configuration;
150 - 165	No connection to heat circuit controller HKR 0 - 15	CAN2 bus communication (red bus) to HKR interrupted; bus cable defective; HKR defective; supply voltage missing at HKR; main board or control unit defective; internal BUS cable defective; terminating resistors set incorrectly	Check the display on the HKR (fuses); LEDs flash during BUS communication; check the terminating resistors; check the voltage and poles on the CAN-BUS plug (approx. 2 V between L and minus (-), or H and minus (-)) -> the BUS cable short-circuited/was interrupted; check the internal BUS cable and boiler main board (voltage 2 V); replace the control panel or HKR; check the HKR address (only during commissioning); see the HKR operating manual;
169	Screed dry-out programme has been deactivated!	Power failure over longer period	After a longer power cut, the dry-out programme will be deactivated automatically (message on the display); if needed, restart the programme (installer setting No. A9);
170	Sensor temperature plate heat exchanger interruption	Interruption in the sensor or in supply line	See No. 0014 to No. 0021
171	Sensor temperature plate heat exchanger short circuit	Short circuit in the sensor or in supply line	
179	Demand greater than the maximum temperature. Check the parameter settings.	Parameter settings incorrect; a demand is greater than the boiler's maximum temperature.	Check the parameter settings.
180	Check the position of the acc. bottom sensor	Sensor not installed correctly (too low or below the return to the boiler); hydraulic problem;	Check the lower accumulator sensor and fast loading valve; check sensor's position against hydraulic schematic and install it correctly; call installer; call service department;
181 - 188	Pellet refill via positions 1 - 8 not possible	Displayed position not reached; changeover unit tries to return to starting position. If the set and actual positions of the changeover unit are identical, the error message can be cleared	Check wiring, clean changeover unit (sliding area between base plate and sliding plate);
190	Check combustion - set O2 level not reached	Set O2 level was not reached after the preset time (parameter S30); not enough fuel; grate clogged by clinker; too much ash in the combustion chamber	Calibrate firebed sensor; reduce number of minor de-ashes until major de-ash in parameter Q23; check grate; contact service department.
195	Check system configuration urgently	Incorrect parameters and/or incorrect pump settings	Check system configuration urgently (parameters, pump settings, frequent boiler starts with short runtimes, etc.).
196	Burnout was not completed several times, O2 level not reached!	Number of burnouts (parameter Q3c) required by the set burnout time (Q3a) (O2 content is lower than the level set in parameter Q3b) was reached. Fuel is still burning in the combustion chamber; grate clogged by clinker, etc.	Check grate

No.	Information message	Cause / Problem	Solution (press ENTER once the notice has been cleared)
197	Check pump setting on the boiler	Incorrect parameters; incorrect pump settings; mixer defective; pump defective	Check system configuration urgently (parameters, pump settings, frequent boiler starts with short runtimes, etc.); check hydraulic components behind the boiler.
200	Ignition Time Exceeded! Check Fuel Storage	The firebed was not reached after 15 minutes + the number of minutes set in parameter P1	Check stoker and the amount of fuel available
201 - 206	Control - wiring- external contact heat circuits 1 - 6	Demand is changing 20 times in 2 minutes	Check the external circuitry
210 - 217	Room device FR35 not connected (HC A - HC B)	No connection to digital remote control FR35	Check parameter A6 (or A16, A26, A36, A46, A56 or A66); check the bus wiring; replace the digital remote control; see the FR35 operating manual;
220 - 227	Room device FR40 not connected (HC A - HC B)	No connection to digital remote control FR40	Check parameter A6 (or A16, A26, A36, A46, A56 or A66); check the bus wiring; replace the digital remote control; see the FR40 operating manual;
229	Please clean/check pellet level indication sensor	Pellet level indicator is polluted or defective	Clean or replace pellet level indicator
230	Communication error to master boiler (during cascade only)	No connection to master boiler (boiler A)	Check parameter F1: must be set to "Cascade available" at each other boiler; Check parameter F2: each boiler has to have a unique IP-address (no duplicated addresses); Check BUS-wiring; check internal BUS cable between control unit and control board;
231	Slave boiler failed (during cascade only)	No connection to one of the slave boilers (boilers B-F)	Check parameter F6: correct number of slave boilers set; see No. 0230
232	Slave boiler error (during cascade only)	An error has occurred on the following slave boiler	This message will only be shown on the leading boiler (Boiler A). The master boiler and the other slave boilers continue as normal. Confirm message on the leading boiler and rectify the error on the slave boiler.
240 - 247	Connected remote control does not match set parameters (HC A - HC B)	Remote control parametrisation does not match with parametrisation heat circuit remote control	Check the parameter settings for the remote control and heat circuits; see the operating manual for the respective remote control;
248	Control Wiring External Demand	The external demand signal is changing very frequently; external circuitry (switches, thermostat) faulty	Have an electrician check that the external circuitry is working properly. Terminals 80 and 81
250	Motor contr. board AUP not connected	Control board of the changeover unit defective / not available, bus cable (from BCE-, I/O- board) interrupted / not connected	Check cable connections; check software settings; contact service department.
251	Motor switch over unit not connected	AUP motor not connected; Interruption; motor or motor board defective;	Connect the motor correctly and check the connections are secure; check wiring; replace motor or motor board; call an electrician or the service department;
252	Switch over unit does not reach position	The shown position can not be reached. The changeover unit tries to return to the start position. If the set and actual positions of the changeover unit are identical, the error message can be cleared;	Check wiring; measure voltages on control board and connection terminals of plugs; check wiring of plugs; clean changeover unit (sliding surface between base plate and sliding plate); after assembly, check changeover unit's positions.
253	Motor AUP short circuit	Short circuit AUP motor	Clear short circuit; check wiring and connection plugs; exchange motor board; call service department
254	Motor contr. board AUP over temperature	Max. board temperature exceeded	Reduce ambient temperature
255	Motor contr. board AUP low voltage 24V	Min. supply voltage not reached	Check plugs and wiring; if multiple clients are connected to the "blue CAN", a different connection must be provided to the AUP; plug No. 94 / 95
256	Switch over unit not in position	AUP does not reach new position; unit returns to starting position. If the Set - Is position of the changeover unit is identi-cally, the error message can be cleared.	Check wiring; clean changeover unit; check the position of the changeover unit after cleaning.
275	ATTENTION! To continue operation, clear the notice. Reason for stop: STB!	STB was triggered	Check the STB.
276	ATTENTION! To continue operation, clear the notice. Reason for stop: Emergency stop!	Emergency stop was triggered	Check the emergency stop.

No.	Information message	Cause / Problem	Solution (press ENTER once the notice has been cleared)
280	Diff. Contr. CAN D not connected	No connection to I/O 36 board "D"	Set the control board address switch to "D"; check board's connection and bus wiring; replace board;
281	Sensor Heat source (S1) short circuit	Short circuit in the sensor or in supply line	See nos. 0014 to 0021 on differential controller board
282	Sensor Heat source (S1) not connected	Interruption in the sensor or in supply line	
283	Difference sensor (S2) short circuit	Short circuit in the sensor or in supply line	
284	Difference sensor (S2) not connected	Interruption in the sensor or in supply line	
285	Return sensor external heat short circuit	Short circuit in the sensor or in supply line	
286	Return sensor external heat not connected	Interruption in the sensor or in supply line	
287	Return temperature external heat not reached	Error on external heat boiler; sensor positioned incorrectly;	Check external heat boiler; check sensor's position against hydraulic diagram and install it correctly;
290	Difference Control 2 CAN 9 not connected	No connection to I/O 36 board 9	Set the control board's selector switch to 9; check the board's bus wiring and mains connection; replace control board;
291	Sensor Heatsource (S3) Short Circuit	Boiler sensor short-circuited	Check boiler sensor and replace it if necessary
292	Sensor Heatsource (S3) not connected	Interruption in the boiler sensor or in the supply line	Connect boiler sensor
293	Differential Sensor (S4) Short Circuit	Differential sensor short-circuited	Check differential sensor and replace it if necessary
294	Differential Sensor (S4) not connected	Interruption in the differential sensor or in the supply line	Connect differential sensor
295	Return Flow Sensor Ext. Boiler 2 Short Circuit	Return sensor short-circuited	Check return sensor and replace it if necessary
296	Return Flow Sensor Ext. Boiler 2 not connected	Interruption in the return sensor or in the supply line	Connect return sensor
297	Return Flow Temperature Ext. Boiler 2 not reached	Error on external heat boiler 2; sensor positioned incorrectly	Check external heat boiler 2; check sensor's position against hydraulic diagram and install it correctly;
300	Boiler conducts separate grate test	Grate does not reach end position; debris in grate area	Clean grate; remove debris.
301	Grate check	Debris in grate area	Clean grate; remove debris.
305	Boiler ID-Card wrong	Wrong boiler ID-Card	Replace boiler ID-Card; system will run for 30 days with incorrect boiler ID-Card;
306	Boiler ID-Card missing	Boiler ID-Card or connection defective	Check boiler ID-Card and connection and replace one or both if necessary; system will run for 30 days with incorrect boiler ID card;
307	Boiler ID-Card does not match to Software	Incorrect software installed on the system; incorrect microSD card inserted	Check software and microSD card and replace one or both if necessary
309	Ash box full!	Ash box full or stiffness of the ash auger	Empty ash box; heating is continued; control unit tries to drive the ash auger every 10 minutes; if this does not work until next de-ash, an error will follow;
310	Initiator Cleaning and deash Endposition not reached	Cleaning rod and ash extraction do not return to original position after cleaning	Check thermal discharge safety device; check cleaning device and fly ash damper are running smoothly (in manual mode no. 2b, the initiator function is shown), check rubber pads and rod; check the initiator (behind the cover next to the control board) is working; (heating can be continued temporarily);
311	Initiator cleaning device and deash stroke not reached	Cleaning rod and ash extraction do not reach the necessary stroke length during cleaning.	Check thermal discharge safety device; check cleaning device and fly ash damper are running smoothly (in manual mode no. 2b, the initiator function is shown), check rubber pads and rod; check the initiator (behind the cover next to the control board) is working; (heating can be continued temporarily);
312	IDF Error	The required exhaust fan speed was not reached	Test exhaust fan in manual mode (No.1); check if green and black plug are connected correctly on the fan; Clean casing and fan impeller, the motor must be smooth running; let check plugs and clamp ports through an electrician; replace motor;
313	Ash box not positioned	The ash box or the cover is not placed correctly and close enough to the safety switch.	Fix ash box tight on boiler; ash box cover must be closed; let safety switch, cables, clamp points and plugs be checked by an electrician; (heating operation to be continued, de-ash and ash suction is blocked)

No.	Information message	Cause / Problem	Solution (press ENTER once the notice has been cleared)
314	Ash box full!	Ash box full or stiffness of the ash auger	Empty ash box, check ash auger for smooth operation (Manual mode No.2); disassemble ash ejector flange, pull blockage rod (behind the cover, below the stoker) and pull out ash auger in front; overfill in the ash room below the grates or fly ash overfill or debris in the ash auger; remove blockages; call service department:
315	Position switch FE-cover open	Lid of the extraction auger not completely closed, cable defective or material jam in the FE	Heating operation to be continued; Control tries 4 times to empty the auger; if not possible Error 366;
316	Safety switch FE-Cover open	Lid of the extraction auger open or switch not connected	Stop screw was removed and the cover opened; safety switch connected (switch position displayed in the Info window); have, cables, clamp points and plugs checked by an electrician.
317	Position switch Connection-auger-cover open	Lid of the connection extraction auger not completely closed, cable defective or material jam in the auger;	Heating operation to be continued; Control tries 4 times to empty the auger; if not possible Error 368;
318	Safety switch connection auger cover open	Connection extraction auger cover open or switch not connected	Stop screw was removed and the cover opened; safety switch connected (switch position displayed on the Info window); have safety switch, cables, clamp points and plugs checked by an electrician;
319	Position switch FE-lid 1 open	Lid of the extraction auger 1 open or switch not connected	
320	Position switch RA-lid 2 open	Lid of the extraction auger 2 open or switch not connected	
321	Stoker grate - position not reached	The stoker grate can not reach the set position (0° position)	Release stoker grate in manual mode (No.6/6a); remove debris from the grate ash space; check grate motor and drive; check position sensor and magnetic transmitter; (heating operation can be continued temporarily with a defective grate; to do this unplug grate motor, set grate manually into horizontal position and confirm error);
322	Ash grate - Position not reached	The ash grate cannot reach the set position (0° position)	Empty ash grate in manual position (No.7); remove debris from the grate ash room; check grate motor; check position sensor and magnetic transmitter; (Heating operation to be temporary continued at defective grate, unplug grate motor, set grate manually into horizontal position and confirm error)
323	Stoker grate sensor - invalid signal	Signal outside the preset voltage range (0.8-4.5V)	Have cables, terminal points and plugs checked by an electrician; replace sensor;
324	Ash grate sensor - invalid signal	Signal outside the preset voltage range (0.8-4.5V)	have cables, terminal points and plugs checked by an electrician; replace sensor;
325	Position switch RA-cover open	The primary air flap can not reach the set position or does not move	Test primary air flap in manual mode (No.12); Through pressing the release, the primary air flap can be moved manually and may be checked to smooth operation. (behind the covers, below the stoker); (Heating operation may be temporary continued at defective primary flap with less power output, therefore set manually to 30%); cables, clamp points and plugs to be checked by an electrician; replace flap motor
326	Primary air flap defective or not connected	Primary air flap is not connected or defective	(Heating operation may be temporary continued at defective primary flap, therefore set manually to 30%); cables, clamp points and plugs to be checked by an electrician; replace flap motor;
327	Firebed sensor wrong signal	Position sensor ash grate is not connected or defective	(Heating can be continued temporarily at a reduced level; to enable this, unplug the sensor and clear the error); have the cables, terminal points and plugs checked by an electrician; replace sensor;
328	Emergency-Stop triggered	Emergency stop operated or plug with bridge removed	Unlock emergency stop or re-insert plug with bridge - terminal (76/77)
329	Negative pressure sensor not connected or defective	The negative pressure sensor is not connected or defective	(Heating can be continued temporarily at a reduced level; to enable this, unplug the sensor and clear the error); have the cables, terminal points and plugs checked by an electrician; replace sensor;
330	Safety bridge relay defective	Board defective	Replace board and call service department.
331	Safety switch storage room open	Emergency stop operated or plug with bridge removed	Unlock emergency lock or re-insert plug with bridge;

No.	Information message	Cause / Problem	Solution (press ENTER once the notice has been cleared)
332	ATTENTION! To continue operation, clear the notice. Reason for stop: fuel storage room switch activated!	Fuel storage room switch activated	Check the fuel storage room.
333	De-ash carried out in ash box. Empty ash box	Automatic de-ash has been carried out. Empty ash box	Empty ash box
335	Fuel storage room 2 - Temperature too high	Fuel storage room 2 - Temperature too high	If the warning device is triggered, the fuel storage room must be checked for various temperature increases and, if necessary, further measures must be taken (call the fire brigade); if the error is due to a defective main board, heating mode can be continued temporarily without TMF; (set parameter D21/D21a to "Not available" => Attention: No message if an overtemperature occurs in the fuel storage room!);
336	Temp. in fuel storage exceeded	Temperature in fuel storage room exceeded	
337	Temp. in stoker auger exceeded	The temperature on the stoker auger is high, because the flue connection is minimised or a burn back occurred	Check boiler, flue pipe and exhaust fan for dust or ash and clean; if burn back, check the tightness of the rotary valve; remove the tube from the negative pressure box and blow in direction of the boiler.
338	Interruption TMFR 2 sensor	Interruption or short circuit in the sensor or in supply line	See Nos. 0014 to 0021 Heating mode can be continued temporarily without TMF; (Set parameter D21/D21a to "Not available" => Attention: No warning if an overtemperature occurs in the fuel storage room!);
339	Short circuit TMFR 2 sensor		
340	Sensor TMFR interruption		
341	Sensor TMFR short circuit		
342	Sensor TMS interruption		
343	Sensor TMS short circuit		
344	Neg. press. to low	The speed-controlled exhaust fan does not reach the desired negative pressure in the boiler	All boiler openings must be closed (maintenance openings, combustion door); check negative pressure box, exhaust fan and flue pipe; blow through negative pressure tube and boiler tube; Check terminal points, cables and plugs;
349	Lambda sensor not connected or defective	Contact error of the lambda sensor or lambda sensor defective	Lambda sensor very intensely dirtied (clean), then perform a function check in manual mode No. 13; let check terminal points and plugs by an electrician; replace the lambda sensor; the boiler system can run without lambda sensor with reduced heating output until replacement; disconnect lambda sensor and confirm;
350	Ash bin full	The sensor in the ash bin reports "Full" or not connected	Empty ash bin; clean sensor; if no sensor is available, set parameter **D5a** to "Without ash bin"; have an electrician check the cables, terminal points and plugs;
351	Switch off ash suction	Manual switch-off during ash suction	Message disappears after ash suction process has finished;
352	Delivery rate too low! Check amount of fuel	The fuel delivery rate is too low	Fuel storage low, refill; Check spring blades on agitator; bridging of fuel; wrong fuel set (parameter 19)
353	Refill fuel!	Fuel storage room is empty or firebed sensor is no longer moving	Fuel storage is empty, refill; Check extraction system and stoker auger in manual mode (No.3 and No.4); check fuel level sensor's ease of movement; remove debris; check correct installation of sensor, magnet and connection shaft of tongue;
354	Calibrate combustion sensor	Wrong boiler type (L/R) set or sensor defective;	Check parameter Z1a; recalibrate firebed sensor with parameter MANUAL No. 9; replace sensor;
355	Tertiary air flap doesn't work	The tertiary air flap can not reach the set position or does not move	Test tertiary air flap in manual mode (No. 12a); by pressing the release the tertiary air flap can be moved manually and checked to see if it is operating smoothly; (heating can be continued temporarily at a reduced level with a defective tertiary air flap; to do this, manually set the flap to approx. 100%); have the cables, terminal points and plugs checked by an electrician; replace flap motor;
356	Tertiary air flap not connected or defective	Tertiary air flap is not connected or defective	Heating operation may be continued temporarily with a defective tertiary air flap, to do this manually set the flap to 100%; have the cables, clamp points and plugs checked by an electrician; replace flap motor;
357	Ash bin full	The sensor in the ash bin reports "Full" or not connected	Empty ash bin; clean sensor; cables, clamp points and plugs to be checked by an electrician;
358	Ash box open too long	Ash box open for longer than 2 minutes	Check the ash box
360	Over current agitator auger 1	Parameter **No. 19a Fuel extraction type** is set to "Equal emptying"; bulky object in the auger channel	See No. 003; heating can be continued; set parameter **No. 19a** to the functioning fuel extraction system (only FE1 or only FE2);
361	Over current agitator auger 2		

No.	Information message	Cause / Problem	Solution (press ENTER once the notice has been cleared)
362	Thermal protection agitator auger 1	Parameter **No. 19a Fuel extraction type** is set to "Equal emptying"; motor possibly overloaded due to debris or electric motor protection set incorrectly	See No. 007; heating can be continued; set parameter **No. 19a** to the functioning fuel extraction system (only FE1 or only FE2);
363	Thermal protection agitator auger 2		
364	Position switch RA1-lid partly opened	Lid of the extraction auger 1 not completely closed, cable defective or material jam in the FE-1	Heating will continue; the control panel will try four times to drive the auger; if notice remains, error 367 will follow;
365	Position switch RA2-lid partly opened	Lid of the extraction auger 2 not completely closed, cable defective or material jam in the FE-2	Heating will continue; the control panel will try four times to drive the auger; if notice remains, error 368 will follow;
366	Fuel jam FE-lid	Lid of the extraction auger not completely closed, cable defective or material jam in the FE	Fuel jam, remove debris; lid of extraction auger must be completely closed; safety switch, cables, clamp points and plug to be checked by an electrician;
367	Material jam RA-lid 1	Lid of the extraction auger 1 not completely closed, cable defective or material jam in the FE-1	Fuel jam, remove debris; lid of extraction auger must be completely closed; safety switch, cables, clamp points and plug to be checked by an electrician;
368	Material jam RA-lid 2	Lid of the extraction auger 2 not completely closed, cable defective or material jam in the FE-2	
369	Material jam FE 1 - lid	Lid of the extraction auger 1 not completely closed, cable defective or material jam in the FE-1	Fuel jam, remove debris; lid of extraction auger must be completely closed; safety switch, cables, clamp points and plug to be checked by an electrician;
370	Material jam FE 2 - lid	Lid of the extraction auger 2 not completely closed, cable defective or material jam in the FE-2	
371	Over current agitator auger 1	Parameter **No. 19a Fuel extraction type** is set to "Only FE 1/2"; bulky object in the auger channel	See No. 003; heating can be continued; set parameter **No. 19a** to the functioning fuel extraction system (only FE1 or only FE2);
372	Over current agitator auger 2		
373	Thermal protection agitator auger 1	Parameter **No. 19a Fuel extraction type** is set to "Only FE 1/2"; motor possibly overloaded due to debris or electric motor protection set incorrectly	See No. 007; heating can be continued; set parameter **No. 19a** to the functioning fuel extraction system (only FE1 or only FE2);
374	Thermal protection agitator auger 2		
375	Both fuel extraction systems defective (see notices for details)	Both fuel extraction systems overloaded or on thermal protection;	See No. 003 or No. 007; if the problem cannot be rectified, switch parameter **No. 19** to wood log emergency operation; call service department;
380	Maintenance due! According factory specifications!	Number of full-load hours, heating hours and boiler starts reached for the maintenance required according to factory specifications	Perform maintenance; reset maintenance counter once maintenance is complete;
381	Suction turbine runtime 0h. Replace the carbon brushes at 500h and reset the meter.	Suction turbine runtime exceeded	Replace the carbon brushes and reset the meter.
390	Sensor Heatsource (S4) Short Circuit	Boiler sensor short-circuited	Check boiler sensor and replace it if necessary
391	Sensor Heatsource (S4) not connected	Interruption in the boiler sensor or in the supply line	Connect boiler sensor
392	Differential Sensor (S3) Short Circuit	Differential sensor short-circuited	Check differential sensor and replace it if necessary
393	Differential Sensor (S3) not connected	Interruption in the differential sensor or in the supply line	Connect differential sensor
394	Return Flow Sensor Ext. Boiler 3 Short Circuit	Return sensor short-circuited	Check return sensor and replace it if necessary
395	Return Flow Sensor Ext. Boiler 3 not connected	Interruption in the return sensor or in the supply line	Connect return sensor
396	Return Flow Temperature Ext. Boiler 3 not reached	Error on external heat boiler 3; sensor positioned incorrectly	Check external heat boiler 3; check sensor's position against hydraulic schematic and install it correctly
401	Ensure that the safety bridge has been removed	Manual bypass of safety devices for maintenance purposes has not been removed	Please remove bridge (Clamp 64/65) after service. Attention: Safety functions are not activated otherwise;
410	No fuel in FE-1 Extraction currently from FE-2	Fuel empty at FE-1;	Refill fuel on FE-1; control switches to fuel supply via FE-2;
411	No fuel in FE-2 Extraction currently from FE-1	Fuel empty at FE-2;	Refill fuel on FE-2; control switches to fuel supply via FE-1;

No.	Information message	Cause / Problem	Solution (press ENTER once the notice has been cleared)
412	No fuel	Fuel empty at FE1 & FE2;	Refill fuel;
413	No fuel in FE-1 Extraction switched to FE-2	Fuel empty at FE-1;	Refill fuel on FE-1; control switches to fuel supply via FE-2;
414	No fuel in FE-2 Extraction switched to FE-1	Fuel empty at FE-2;	Refill fuel on FE-2; control switches to fuel supply via FE-1;
415	No fuel in FE-1	Fuel empty at FE-1;	Refill fuel at FE-1;
416	No fuel in FE-2	Fuel empty at FE-2;	Refill fuel at FE-2;
420	Therm. prot. rotary valve	Overload of motor through debris or motor protection set incorrectly	See No. 007
421	Overcurrent rotary valve	Debris in the rotary valve	See No. 003
440	Heat circuit board CAN B not connected	No connection to heat circuit board B	Check the board's bus wiring and mains connection; replace control board.
441	HCB flow temperature sensor short-circuited	HCB flow sensor short-circuited	Check temperature sensor and replace it if necessary
442	HCB flow temperature sensor inter-ruption	Cable break in line to HCB sensor; HCB sensor not connected	Check HCB sensor and replace it if necessary
443	Hot-water tank B sensor short-circuited	HWT B temperature sensor short-circuited	Check temperature sensor and replace it if necessary
444	Hot-water tank B interruption	Cable break in line to HWT B sensor; HWT sensor B not connected	Check hot-water tank B sensor and replace it if necessary
480 - 483	Accumulator temperature for domestic hot water 1 - 4 below required temperature	Boiler not in operation or not ready for operation	Check boiler is working properly
488	Sensor Flow FWS Short Circuit	Fresh-water station flow sensor short-circuited	Check FWS flow sensor and replace it if necessary
489	Sensor Flow FWS Interruption	Cable break in line to fresh-water station flow sensor; fresh-water station sensor not connected	Check FWS flow sensor and replace it if necessary
490	FWS 1 Temperature Sensor Interruption	Cable break in line to fresh-water station 1 temperature sensor; fresh-water station sensor not connected	Check FWS temperature sensor and replace it if necessary
492	FWS 1 Temperature Sensor Short Circuit	FWS 1 temperature sensor short-circuited	Check temperature sensor and replace it if necessary
493	FWS 2 Temperature Sensor Interruption	Cable break in line to fresh-water station 2 temperature sensor; fresh-water station sensor not connected	Check FWS temperature sensor and replace it if necessary
494	FWS 2 Temperature Sensor Short Circuit	FWS 2 temperature sensor short-circuited	Check temperature sensor and replace it if necessary
495	FWS 3 Temperature Sensor Interruption	Cable break in line to fresh-water station 1 temperature sensor; fresh-water station sensor not connected	Check FWS temperature sensor and replace it if necessary
496	FWS 3 Temperature Sensor Short Circuit	FWS 3 temperature sensor short-circuited	Check temperature sensor and replace it if necessary
497	FWS 4 Temperature Sensor Interruption	Cable break in line to fresh-water station 1 temperature sensor; fresh-water station sensor not connected	Check FWS temperature sensor and replace it if necessary
498	FWS 4 Temperature Sensor Short Circuit	FWS 4 temperature sensor short-circuited	Check temperature sensor and replace it if necessary
500	Stoker auger locked, empty rotary valve / stoker channel	Gagger in the auger channel or auger blockage (Error No. 2 - Occurred 3-times within a time limit)	Control blocks the boiler for 15 min.; remove debris, free auger in manual mode (No.4); If the error (No. 2) occurs again - within 2 minutes - the boiler is blocked permanently (Error No. 501)
501	Stoker auger locked, empty rotary valve / stoker channel; call service department	Gagger in the auger channel or auger blockage (Error No. 500 occurred, rectified and again error No. 2 - within 2 minutes)	Control blocks the boiler permanently; remove debris and call service department;

No.	Information message	Cause / Problem	Solution (press ENTER once the notice has been cleared)
502	Overcurrent ash auger system (AFS)	Gagger in the extraction channel or auger blockage	Remove debris, use parameter No. 2a in "Manual" mode and drive auger forward or backward, (Check motor current on display); call electrician or service department and change control board;
503	Ash auger system (AFS) thermal protection	Overload of motor through debris or electronic motor protection set incorrectly	
504	Ash auger system motor not connected or fuse three-phase AC module defective	Motor cable supply or fuse F1 ,F2 or F3 on three-phase module defective	Check the fuses and replace them if necessary; check the motor cable; connect the motor shown as defective to another slot on the main board; if the same error occurs, replace the DRM board; if another error occurs, change the motor or the supply line (depending on the slot on the I/O board); call the service department;
505	Ash suction in customer level deactivated	Ash suction has been deactivated during suctioning	After rectifying the error that led to the manual switch-off, reset parameter **No. 18 Ash suction** to activated.
535	Interruption water pressure sensor	Sensor not connected or connection interrupted	Connect sensor; check cable and contacts; replace sensor or board;
536	Short circuit water pressure sensor	Short circuit in the sensor or in supply line	Let cables or sensors be checked by an electrician.
537	Water-Pressure under level	Water pressure is below the set minimum; heating system is leaking; heating system not bled correctly	Check heating system for leaks; bleed heating system correctly and top it up; call installer;
538	Water-Pressure above level	Water pressure has exceeded max. water pressure level; pressure too high during filling; water filling level exceeded; expansion vessel defective	Check filling device; drain water; check expansion vessel;
540	IO-X10-104 extension board 0 not connected	No connection to sensor board 0	Check the board's bus wiring and mains connection; replace control board.
541	IO-X10-104 extension board 1 not connected	No connection to the sensor board 1	Set the control board address switch to "0"; check connection and bus wiring; replace control board;
542	IO-X10-104 Control Board 2 not connected	No connection to the sensor board 2	Set the control board address switch to "1"; check connection and bus wiring; replace control board;
543	IO-X10-104 extension board 3 not connected	No connection to the sensor board 3	Set the control board address switch to "2"; check connection and bus wiring; replace control board;
544	IO-X10-104 extension board 4 not connected	No connection to the sensor board 4	Set the control board address switch to "3"; check connection and bus wiring; replace control board;
545	IO-X10-104 extension board 5 not connected	No connection to the sensor board 5	Set the control board address switch to "4"; check connection and bus wiring; replace control board;
546	IO-X10-104 extension board 6 not connected	No connection to the sensor board 6	Set the control board address switch to "5"; check connection and bus wiring; replace control board;
547	IO-X10-104 extension board 7 not connected	No connection to the sensor board 7	Set the control board address switch to "6"; check connection and bus wiring; replace control board;
550	Sensor Air Temp Short Circuit	Short circuit in the sensor or in supply line	Let cables or sensors be checked by an electrician.
551	Sensor - air temperature - interruption	Sensor not connected or connection interrupted	Connect sensor; check cable and terminal points, check sensor and replace it if necessary
552	Sensor Exhaust Short Circuit	Short circuit in the sensor or in supply line	Let cables or sensors be checked by an electrician.
553	Sensor - exhaust air temperature - interruption	Sensor not connected or connection interrupted	Connect sensor; check cable and terminal points, check sensor and replace it if necessary
560	Fan failure	External error (fan failure)	Restart the boiler; if the same error occurs, call the service department.
600	I/O eCleaner 0 not connected	No connection to driver board; driver board defective	Check the BUS cable connection; set the address selection switch to 0; replace defective driver board
610	eCleaner emergency stop activated	Safety switch contact opened	Check the top cover is fitted securely; check the safety switch for defects
611	Check the eCleaner. High voltage not reached	During combustion: the high-voltage increase is too small. During the manual-mode test: the residual temperature of the flue gas is too high.	During combustion: contact the customer service team. During the manual-mode test: allow the boiler to cool down.
612	Check the high-voltage cable and the electrode	Connection between the voltage multiplier and the electrode interrupted	Check the high-voltage cable is connected to the voltage multiplier and the electrode

No.	Information message	Cause / Problem	Solution (press ENTER once the notice has been cleared)
613	eCleaner board overtemperature	Maximum board temperature exceeded; board is dirty or is no longer cooling down	Temporarily remove the control cabinet cover to cool down the board (ambient temperature up to 40 °C); remove any dust from the board; contact the service team
615	eCleaner - overcurrent - mains adaptor	High-voltage cable defective; electrode bent - earth fault	Check the cable and replace it if necessary; check the electrode
616	eCleaner mains adaptor not connected / defective	Mains adaptor or driver board defective	Replace the mains adaptor or driver board
617	Clean the eCleaner	Too many flashovers in a short space of time	Clean the particle filter
618	Early flashover: Clean the eCleaner and/or check the electrode	Particle filter dirty; electrode bent	Clean the particle filter; check the electrode
619	Check the eCleaner drive	Specified number of initialisations is not being reached	Check the drive unit
902	Fault memory initialised	No problem; this is for documentation purposes only	No action required; if this message appears frequently, call the electrician (lots of power failures, poor terminal points in the power supply; check connections between control unit and control boards; check all cable connections as well);
903	Restart (Power ON)		
910	Writing to the dongle failed	Data can no longer be written to the microSD card - defective	Replace the microSD card.
5210	Stoker auger - Hardware-check failed	Stoker auger neutral line not connected	Connect the neutral cable to the motor star point or to the control board (only use a 5-wire cable!); change the plug of the motor shown as defective (on the control board) with another motor plug; if another error occurs, replace the motor or the cable; if the same error occurs, replace the board and/or call the service department (temporary emergency operation possible; see "No hardware test" at the end of troubleshooting);
5220	Extraction system - Hardware-check failed	Fuel extraction system FE-1 neutral line not connected	
5230	Ash auger - Hardware-check failed	Ash auger neutral line not connected	
5240	Hardware test connection auger failed	Connection auger - neutral line not connected	
5250	Hardware test agitator FE2 failed	Fuel extraction system FE2 neutral line not connected	
5260	Double rotary valve - hardware test failed	Double rotary valve - neutral line not connected	
5310	Stoker auger motor not connected or fuse F4, F5 or F6 defective	Motor cable supply or fuse F4,F5 or F6 defective	Check the relevant fuses and, if necessary, replace them (see labels) or check the motor cable; replace the plug of the motor shown as defective with another plug; if another error occurs, replace the motor or the supply line; if the same error occurs, replace the control board; call the service department;
5320	Motor fuel extraction not connected or fuse F1, F2, F3 defective	Parameter **No. 19a Fuel extraction type** is set to "Equal emptying"; motor cable or fuse F1, F2 or F3 defective	
5321	Motor fuel extraction not connected or fuse F1, F2, F3 defective	Parameter **No. 19a Fuel extraction type** is set to "Only FE 1/2"; motor cable or fuse F1, F2 or F3 defective	
5330	Motor connection auger not connected or fuse F7, F8, F9 defective	Motor cable supply or fuse F7,F8 or F9 defective	
5335	Motor connection auger 2 not connected or fuse F7, F8, F9 defective	Motor cable supply or fuse F7,F8 or F9 defective	
5340	Motor ash auger not connected or fuse F10, F11, F12 defective	Motor cable supply or fuse F10,F11 or F12 defective	
5350	Motor agitator FE-2 not connected or fuse F7,F8,F9 defective	If parameter **No. 19a Room extraction type** is set to "equal emptying"; motor cable or fuse F7, F8 or F9 defective	
5351	Motor agitator FE-2 not connected or fuse F7,F8,F9 defective	"Only FE 1/2" when setting parameter **No. 19a Room extraction type**; motor cable or fuse F7, F8 or F9 defective	
5360	Motor double rotary valve not connected, or fuse F7,F8,F9 defective	Motor cable supply or fuse F7,F8 or F9 defective	Check the relevant fuses and, if necessary, replace them (see labels) or check the motor cable; replace the plug of the motor shown as defective with another plug; if another error occurs, replace the motor or the supply line; if the same error occurs, replace the control board; call the service department;
5410	Exhaust fan not connected (only on pulse package control)	Cables, plugs or exhaust fan defective	Connect exhaust fan correctly (113/PE/N); Check plug for proper fit; call service department (temporary emergency operation possible, see "no hardware test" at the end of trouble-shooting);

No.	Information message	Cause / Problem	Solution (press ENTER once the notice has been cleared)
5420	Ignition heaters not connected	Cables, plugs or ignition defective	Connect ignitions correctly (Main board 118/PE/N/119); Check plug for proper fit; call service department;
5430	Inlet grate not connected	Cables, plugs or grate motor defective	Connect grate motor correctly; check plugs for proper fit; check cables and terminal points; call service department;
5440	Ash grate not connected	Cables, plugs or grate motor defective	
5630 - 5634	Fuses F15 - F 18 defective	Fuse defective	check fuses and replace if needed (see stickers)
6100	Supply phase sequence incorrectly Restart required	The phases L1, L2 and L3 are in the wrong order	Call electrician and connect phase sequence correctly; then check correct rotation of stoker, extraction and ash auger(s) in manual mode!
6200	Supply phase sequence incorrectly Restart required	Low voltage or failure L2/L3; fuse in meter box defective.	Supply and fuses to be checked by professional electrician; call service department, change control board.
6301	STB triggered or not connected	After restart of the control, hardware test was not performed; sensor or switch not connected;	Restart required; see No.001
6313	Ash box not positioned		Restart required; see No.313
6316	FE-cover open		Restart required; see No.316
6318	Connection auger - lid open		Restart required; see No.318
6320	FE2-lid open		Restart required; see No.320
6328	Emergency-Stop triggered		Restart required; see No.328
6329	External error	External device is reporting an error	Check external device
6330	External notice	External device is sending a notice to the control unit (terminal no. 66/67);	Check external device;
6331	Safety switch storage room open	Not able to perform hardware test; Restart required	Restart required; see No.331
7003	Eco extension board not connected or defective	No connection to Eco extension board or Eco extension board defective	Check BUS-wiring and power supply; replace Eco extension board; call service department
7005	Rotary grate shaft sensor - stoker grate 1 not available	Line interruption, sensor not connected or defective	Connect the sensor; have the plugs and wiring checked by an electrician; replace the sensor or board; call the service department;
7006	Turnable Crate Sensor Ash-Crate not available	Line interruption, sensor not connected or defective	Connect the sensor; have the plugs and wiring checked by an electrician; replace the sensor or board; call the service department;
7008	Rotary grate shaft sensor stoker grate 1 short circuit	Short circuit in rotary grate shaft sensor - stoker grate 1	Check sensor and replace it if necessary
7009	Rotary grate shaft sensor ash grate short circuit	Short circuit in rotary grate shaft sensor - ash grate 1	Check sensor and replace it if necessary
7010	Board agitator over current	Motor blocked or debris;	Remove debris, check electronic motor protection; call electrician or service department;
7011	Agitator motor not connected or fuse 3-phase module defective	Motor cable supply or fuse F1 ,F2 or F3 on three-phase module defective	Check the fuses and replace them if necessary; check the motor cable; connect the motor shown as defective to another slot on the main board; if the same error occurs, replace the DRM board; if another error occurs, change the motor or the supply line (depending on the slot on the I/O board); call the service department;
7012	DRM agitator board CAN 0 not connected	No connection to DRM board	Set the DRM board address switch to "0"; check mains connection and bus wiring; replace DRM board;
7013	DRM agitator board CAN 0 supply phase sequence wrong or neutral line defective	Phases L1, L2 and L3 are in the wrong order;	Call an electrician; put phase sequence in the right order, then make sure you check the motor's direction of rotation in manual mode;
7014	Failure Control External Demand	External device is reporting an error to the control unit (terminal no. 72/73);	Check external device;
7015	Thermal protection agitator	Motor overloaded due to a foreign body or the electronic motor protection being set incorrectly;	Remove debris; check electronic motor protection; call electrician or service department;
7020	DRM AHF board CAN 2 not connected	No connection (CAN1-EXT) to DRM-board	Set the DRM board address switch to "2"; check mains connection and bus wiring; replace DRM board;
7021	DRM AHF board CAN 2 power supply phase sequence wrong or neutral line defective	The phases L1, L2 and L3 are in the wrong order	Call electrician and connect phase sequence correctly; then check correct rotation of stoker, extraction and ash auger(s) in manual mode!

No.	Information message	Cause / Problem	Solution (press ENTER once the notice has been cleared)
7030 - 7037	Check HC A - B mixers and pumps are working correctly, or heat circuit blocked off	The heat circuit's preset temperature has not been reached for more than 60 min;	Check mixers and pumps are working correctly in manual mode; "open" manually blocked off heat circuits; call installer or service department;
7040 - 7047	Check HC A - B mixers are working correctly, or heat circuit blocked off	HC set temperature is constantly exceeded over a period of 60 min;	Check mixers are working correctly in manual mode; "open" manually blocked off heat circuits; call installer or service department;
7050 - 7057	HC A - B overheating - check mixers and sensors	Maximum HC flow temperature exceeded;	Switch off HC pump until flow temp. drops below MAX; check mixers and sensors are working correctly; call installer or service department;
7060	Board distribution box overcurrent	Bulky object in distribution box or distribution box blockage	Remove debris, empty distribution box in manual mode and check electronic motor protection; call an electrician or the department.
7061	Motor distribution box not connected or fuse DRM CAN 1 defective	Motor cable supply or fuses on three-phase current board defective	Check the fuses and replace them if necessary; check the motor cable; plug the motor shown as defective into another slot on the main board; if the same error occurs, the DRM board has to be replaced; if another error occurs, (depending on the slot on the main board), the motor or the cable has to be replaced; contact the service team;
7062	DRM board for distribution box CAN 1 not connected	No connection to DRM board	Check the board's bus wiring and mains connection; replace control board.
7063	DRM board for distribution box CAN 1, power supply phase sequence wrong or neutral line defective	phases L1/L2/L3 are interchanged	Call an electrician; put phase sequence in the right order and then make sure you check the distribution box's direction of rotation in manual mode!
7065	Thermal protection distribution box	Overload of motor through debris or electronic motor protection set incorrectly	Remove debris; empty distribution box in manual mode by pressing the forward or backward button; check electronic motor protection; call an electrician or the service department and replace control board.
7066	No material in distribution box; check transport	Not enough extraction output to the distribution box	Check extraction to the distribution box; remove any blockages and rectify any malfunctions or drive faults
7067	Failure Control External Demand	Motor circuit breaker or safety functions were connected to the terminals and have tripped	Reactivate the motor circuit breaker; establish an emergency operation cable jumper (bridge) at terminal 304/305
7068	Check sensor distribution box	Sensor dirty or malfunctioning	Clean or replace sensor; call service department.
7100 - 7104	Max. HWT loading time exceeded, HWT loading slow! Check sensor position; check flow; contact a plumber.	HWT pump exceeds the maximum runtime set in parameter B9a, 19a, 29a, 39a or 49a. The sensor is not measuring the temperature or the pump flow is insufficient.	Call a plumber; check sensor position; check flow
7109	HWT is not reaching accumulator temperature	HWT temperature is not reaching the temperature at the top of the accumulator	Check the sensor position
7150	DRM-module CAN 6 not connected	No connection to DRM board	Check bus wiring and mains connection; replace DRM board;
7151	Vertical connection auger not connected or fuse DRM CAN 6 defective	Motor cable or fuse defective	Check the relevant fuse and, if necessary, replace it (see labels) or check the motor cable; replace the plug of the motor shown as defective with another motor plug; if another error occurs, replace the motor or the supply line; if the same error occurs, replace the control board; call the service department;
7152	Vertical motor connection auger 2 not connected or fuse DRM CAN 6 defective	Motor cable or fuse defective	
7153	Vertical connection auger overcurrent DRM CAN 6	Bulky object in the connection auger or auger blockage	Remove the foreign object, drive the auger forwards or backwards in manual mode; check the electronic motor protection; call an electrician or the service department;
7154	Firmware update DRM CAN 6 required	An application that is controlled via the DRM board requires an update.	Perform firmware update
7155	Three-phase current module CAN 6 supply phase sequence wrong or neutral line defective	The phases L1, L2 and L3 are in the wrong order	Call electrician and connect phase sequence correctly; then check correct rotation of stoker, extraction and ash auger(s) in manual mode!
7156	Thermal protection vertical connection auger	Motor overloaded, possibly due to debris or electric motor protection set incorrectly	Remove debris; drive auger forward or backward in manual mode (No. 5) by pressing the forward or backward button; replace any worn-out auger parts; check electronic motor protection; call an electrician or the service department and change control board;

No.	Information message	Cause / Problem	Solution (press ENTER once the notice has been cleared)
7157	Position switch vertical connection auger cover open (notice)	Connection extraction auger cover not completely closed, cable defective or material jam in the auger	Heating operation to be continued; control tries 4 times to empty the auger; if not possible, Error 7158 is displayed
7158	Safety switch vertical connection auger cover open	Connection extraction auger cover open or switch not connected	Stop screw was removed and the cover opened; safety switch connected (switch position displayed in the Info window); have, cables, clamp points and plugs checked by an electrician.
9000 / 9001	Firmware I/O board	After software update the control identified an obsolete firmware of I/O board	Update of firmware through service department;
9005	Wrong sensor signal at rotary grate	Sensor dirty or malfunctioning	Clean or replace sensor; call service department.
9998	Please check all the set motor currents	Issued after a software update	Check the motor currents to the motors for which parameters have been set (FE, ST,...)
9999	Check boiler type	Preset boiler type does not correspond with ID card;	Check boiler type setting; call service department

notes

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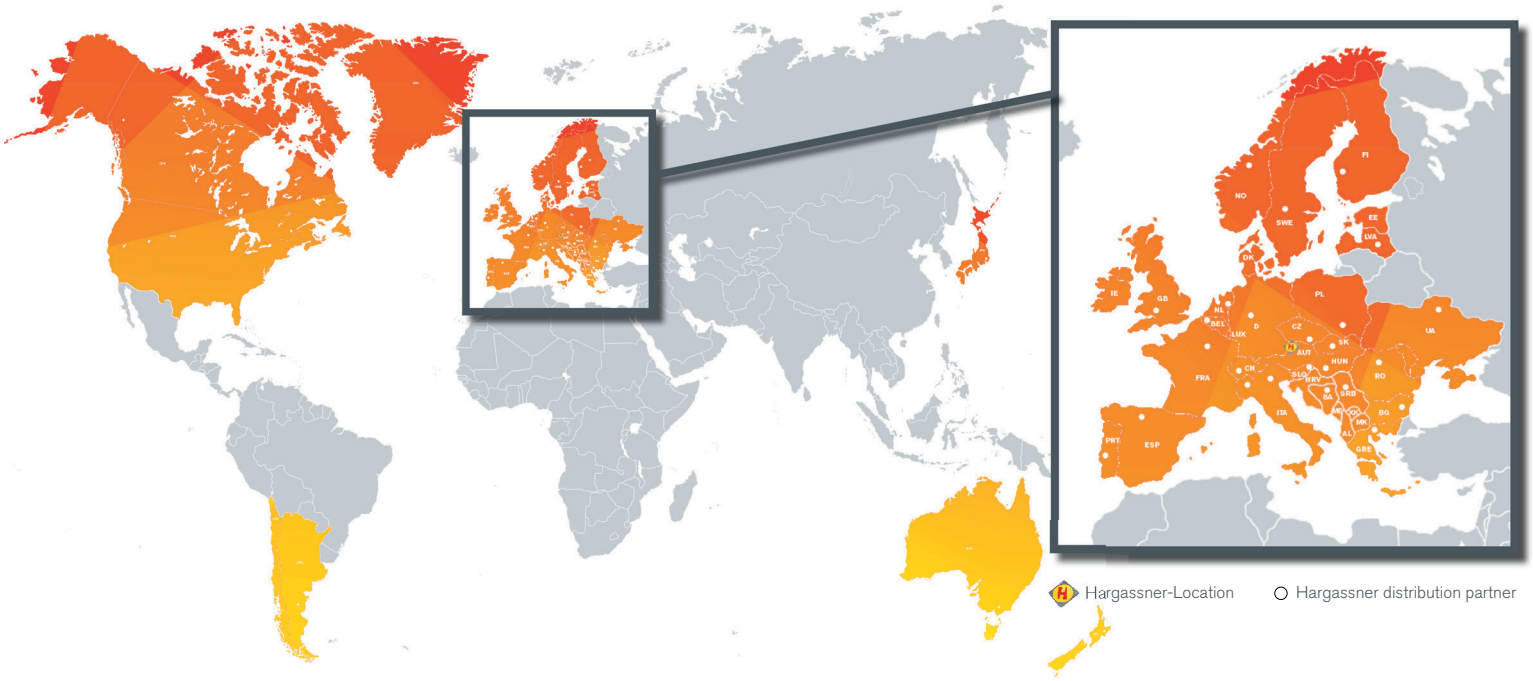

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