ProCon 16, 31, 47, 75, 77 & HT. RVA 46.
Zone Controller Commissioning Data.

The RVA 46 Zone Controller can only be used in conjunction with a RVA47 controlled boiler installation.

The RVA46 controller must be connected to a LPB network utilized by the RVA47 controllers.
Dedicated connections points can be found in the wiring looms supplied within the housing for the RVA 47 and RVA46.
Separate wiring looms are available if the controllers are to be panel mounted.

The RVA 46 controller can control it dedicated heating zone in one of two methods.

Fixed flow temperature controlled by the master RVA47.

> A flow sensor is NOT required. The controller will use the outside air temperature reading obtained by the master RVA47.
> The controller will control the operation of the zone pump.
> The temperature control of the respective area can be enhance by the application of a dedicated room unit. QAA70, QAA50 or QAA10.

Variable flow temperature controlled via a combination of the following.

> A flow sensor positioned on the respective zone's flow pipe after the three port mixing valve and pump. (QAD21 or QAD26)
> The controller can utilize the outside air temperature information obtained by the master RVA47, however if the heating zone is effected by adverse outside temperature that is different from that sensed by the masters RVA47 sensor a dedicated zone sensor can be installed and wired to the RVA46 controller.(QAC32)
> The controller will control the operation of a three port mixing valve (230Volt) (supplied by others.)
> The controller will control the operation of the zone pump.
> The temperature control of the respective area can be enhanced by the application of a dedicated room unit. QAA70, QAA50 or QAA10.

RVA 46 Fault Indication

If the sensors and communication wiring connected to the RVA46 controller fail or are removed from circuit, an error message will be displayed on the left of the LCD screen.

Error Message Notation Er.

Once an error message is present the cause of the error can be traced by accessing function [50].

To access function [50], Open the flap of the controller and press the down Prog button twice. [50] Should appear in the left-hand side of the LCD display.

The figure shown in the center of the screen is the fault identification number.
The display can hold a number of faults but will only display 2 at any one time.
The second error can be accessed by pressing the + or – buttons.
Once a fault has been rectified the error number will disappear or be replaced with another fault number if further attention is required.

The fault identification numbers are detailed below.

Blank	No Fault.
10	Outside Air Temperature Sensor.
30	Flow Temperature Sensor
61	Fault Room unit.
81	Short Circuit on LPB Connection.
100	Two Clock Masters Present.
140	Incorrect Device or Segment Address
145	Wrong Device Connected to PPS Circuit.
150	General Burner Module Fault.

ProCon Fault Indication.

The following codes will be displayed on both the Boiler control panel and the RVA46 Unit.

Boiler Control Panel:

If the Boiler LMU64 Controller or RVA46 Unit detects an operational fault a relevant code is flashed alternately with the Time of Day display.

If the fault prevents the boiler from operating the appears at the lower left corners of the display.

By pressing the INFO button on the display a full screen display will indicate the fault code.

By opening the opening the side-hinged cover / flap on the RVA46 unit and pressing the ▼ PROG button twice Line # 50 will indicate the fault code and give a brief description of the fault.

Faults can only be rest at the boiler by pressing the RESET button.
Prior to pressing the RESET button a note should be made of the fault code for future reference.

Fault Code	Description
E-0	No Error Detected
E-10	Outside Air Sensor Fault / Not Detected
E-20	Flow Water Sensor Fault / Not Detected
E-26	System Flow Sensor Faulty / Not Detected
E-28	Flue Gas Sensor Fault / Not Detected
E-40	Return Water Sensor Fault / Not Detected
E-46	System Return Water Sensor Fault / Not Detected
E-50	HWS Sensor Short Circuit 1
E-52	HWS Sensor Short Circuit 2 (Not Used)
E-58	HWS Volt Free Switch Fault / Not Detected
E-60	Faulty Room Sensor
E-61	Faulty Room Sensor
E-62	Incorrect Room Unit Connected
E-77	Air Pressure Sensor Not Detected (Not Used)
E-78	Water Pressure Sensor Defective (Not Used)
E-81	LPB Short Circuit (Boiler Cascade Wiring)
E-82	LPB Address Conflict (Boiler Cascade Settings)
E-86	Short Circuit on PPS Connection (Not Used in ProCon Configuration)
E-91	EEPROM
E-92	Hardware Malfunction
E-100	Conflict Between Time of Day Master Control (Boiler / QAA73 / RVA47)
E-105	Annual Service Due (QAA73 Service Tool Required to Rest Timer on HT Range)
E-110	Boiler Water Temperature Overheat
E-111	Boiler Temperature Too High (Auto Resetting)
E-113	Flue Gas Temperature overheat (Not Used)
E-117	High System Water Pressure Sensor (Not Used)
E-118	Low System Water Pressure Sensor (Not Used)
E-119	System Water Pressure Switch Activated (Below 0.8 bar)
E-124	Boiler Temperature Too High (Auto Resetting)
E128	Flame Extinguished During Operation (LMU Version D)
E129	Air Supply Error. Fan speed incorrect during operation. (LMU Version D)
E-130	Flue Temperature Too High (Auto Resetting)
E-131	Fault With Burner
E-132	External Safety Interlock Activated (Open Circuit)
E-133	No Flame Detected After Final Ignition Attempt
E-134	Flame Extinguished During Operation LMU Version C)
E-135	Air Supply Error. Fan speed incorrect during operation. (LMU Version C)
E-140	LPB Segment / Address Not Recognized (Boiler Cascade Settings)
E-142	LPB Missing Partner (Boiler Cascade Settings)
E-145	Wrong Device Connected to PPS Circuit (Not Used in ProCon Configuration)
E-146	Unrecognized Plant Configuration
E-147	Burner Modules Not Connected (PPS Circuit Not Used in ProCon Configuration)
E-148	LPB Interface Not Configured (Boiler Cascade Settings)
E-150	General Boiler Fault
E-151	Boiler LMU64 Controller Malfunction
E-152	Boiler LMU64 Controller Parameter Programming Error
E-153	Boiler Control Interlocked
E-154	Boiler Operating Outside of Predefined Parameters. (System Hydraulic Error.)
E-160	Fan Not Reaching Set Point
E-161	Combustion Fan Speed Too High
E-162	Air Pressure Switch Fault (Not Used)
E-164	Flow Switch / Pressure Switch Open (Not Used)
E-166	Air Pressure Switch Fault (Not Used)
E-180	Boiler Operating in Chimney Mode 100% Output
E-181	Boiler Operating in Commissioning Mode
E-183	Boiler Controller / QAA73 Room Unit in Parameter Setting Mode

End User Parameter Setting.

To enter the End User Parameter Program, the door must be opened and one of the UP or DOWN Prog buttons must be depressed.

A number between 1 & 50. Will appear in a bracket on the left of the display window.
These can be paged through by using the UP or DOWN buttons.

To alter or input the required data in the selected program line # use the + or - buttons.

To leave the End User Parameter Setting Menu press the AUTO button.

The defaults indicated below are for standard systems.
If additional control features are required alteration will have to be made.
Please refer to the RVA46 manual for additional details.

#, -, ---	Indicates where an input can be made if required.
--	Indicates where an input can not be made and a sensed / attenuated figure is displayed. 'OFF' will be displayed if the +/- buttons are used.

[Prog #]	Description of Prog #		Range	Inputs	Preset
Time of Day.					
1	Time of day		0-23:59	Hr/Min	00:00
2	Weekday		1…7	Day	1
Time Switch Program Heating					
5	Every day the same. Every day different.		1-7 1…7	Day Day	-
6	1st	On time.	- 24:00	Hr/Min	06:00
7	1st	Off time.	- 24:00	Hr/Min	22:00
8	2nd	On time	- 24:00	Hr/Min	-
9	2nd	Off time	- 24:00	Hr/Min	-
10	3rd	On time	- 24:00	Hr/Min	-
11	3rd	Off time	- 24:00	Hr/Min	-

Hot Water Service

12	HWS Operating Mode 0 HWS OFF 1 HWS ON	0/1		1
13	Required HWS temperature	40-60	°C	55

Heating Circuit

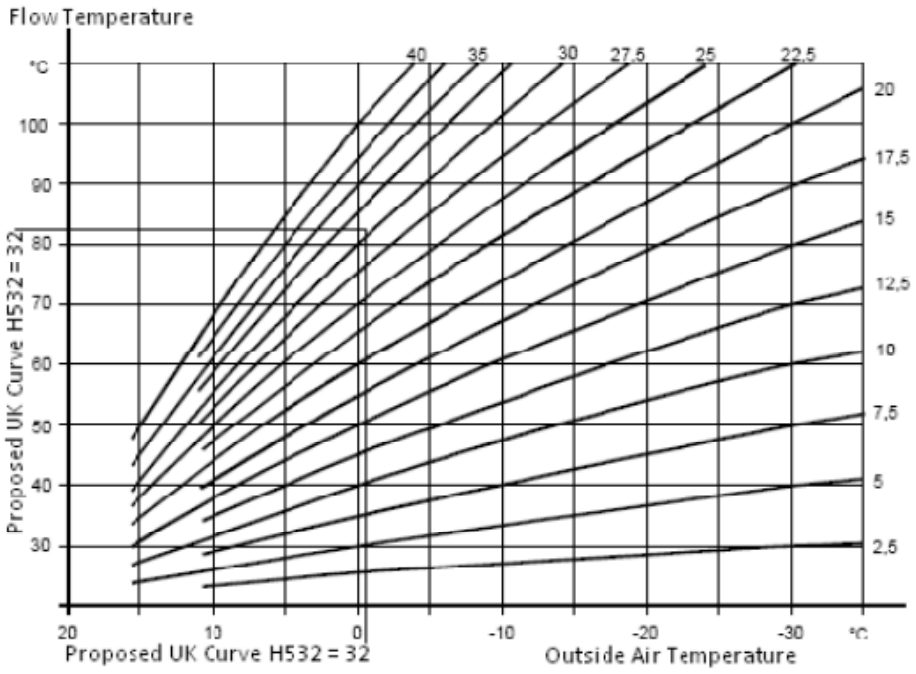
14	Night set back temperature	10-30	°C	16
15	Frost Protection temp	4-15	°C	10
16	Summer/Winter switching	8-30	°C	17
17	Slope of heating curve	-/2.5.40	-	32

Actual Values

18	Actual Room temperature	0-50	°C	--
19	Actual outside temperature	-50. +50	°C	--

Maintenance

23	Restore factory presets Press +&- together for 3 seconds	0/1	-	0
50	Indication of faults	0…255		--



Heating Engineer Parameter Setting.

To enter the Heating Engineer Parameter Program, the door must be opened and the UP & DOWN Prog buttons must be depressed for at least 3 seconds until # 51 appears in the window.

A # between 51 & 95. will appear in a bracket on the left of the display window.
These can be paged through by using the UP or DOWN buttons.

To alter or input the required data in the selected program line # use the + or - buttons.

To leave the Heating Engineer Parameter Setting Menu press the AUTO button.

[Prog #]	Description of Prog #	Range	Preferred Setting
Service Values			
51	Output Test 0 Automatic control 1 All outputs off 2 Circulating pump on 3 Mixing Valve Open 4 Mixing Valve Closed	0…4	0
52	Input Test 0 Flow temperature value 1 Outside temperature value 2 Room temperature value	0….2	0
53	Plant Type # refer to drawings at rear of manual (System Specific)	1…16	--
54	Display of nominal room temp set point.	1..12/0255	--
Actual Values			
55	Actual value of flow temperature	1..4/0..140	--
56	Actual value of HWS temperature	0…140	--
57	Actual value of boiler flow temperature. (Not always available.)	0…140	--
60	Display of boiler error codes	1…255	--

62	Display of PPS communication 0000 PPS Short Circuit --- No communication 0…15 Address Display on Left 0…255 Device Identification Display on Right	0…15 0…255	--

Space Heating

63	Room Unit Type 0 Analog 1 Digital (RE3231 [QAA70] or QAA50)	0 / 1	1
63	Parallel displacement of heating curve	-4.5- +4.5	0
65	Room temperature Influence 0 Inactive 1 Active	0 / 1	1
67	Room temperature pump switching differential Higher = Less stable temperature Lower = More stable temperature ----- Inactive.	---/0.5..4	1
68	Minimum limitation of flow temperature.	8…95	8
69	Maximum limitation of flow temperature.	8…95	82
70	Type of build construction 0 Heavy 1 Light	0/1	1
71	Automatic adaptation of heating curve. 0 Inactive 1 Active	0/1	0

HWS

80	Reduced HWS temperature set point	8..70	40
81	HWS time control 0. 24 hours per day. 1. As local heating times. 2. As local heating times with 1 hour shift. 3. As system heating times with 1 hour shift	0..3	1

LPB Communication Setting

85	LPB control device address 0. Standalone single RVA46 1. Master RVA47 cascade manager with sensors attached. 2…16 Slave RVA46s operating from master RVA47.(House Number.) (Each subsequent RVA46 should be given consecutive numbers.)	0..16	2
86	LPB control segment address 0. Heat generator. (Street Name.) 1….14 Heat consumer.	0..14	1
87	Clock mode. 1 System time, 2 System time with adjustment.	1..2	2
88	Summer / Winter change over function. 0. Inactive. 1. Central change over of all heating circuits	0..1	0
92	LPB Bus power supply. 0. Off. 1. On.	0..1	1
93	Operation of LPB power supply.	On / Off	--
94	Display of LPB communication.	On / Off	--
95	Source of Outside air temperature --. -- No Signal. 00.01..14.16. Address	00.01..14.16	--

OEM Parameter Setting.

To enter the OEM Parameter Program, the door must be opened and the UP & DOWN Prog buttons must be depressed for at least 10 seconds until 00000 appears in the window.

The 00000 display must be changed to 11111 by inputting a password.
The password for the RVA 46 is DOWN, DOWN, PLUS, MINUS, UP.
(Older units DOWN, UP, PLUS, MINUS, PLUS.)

A # between 22 & 91. will appear in a bracket on the left of the display window.
These can be paged through by using the UP or DOWN buttons.

To alter or input the required data in the selected program line # use the + or - buttons.

To leave the OEM Parameter Setting Menu press the AUTO button.

[Prog #]	Description of Prog #	Range.	Preferred Setting
Space Heating OEM			
22	Room influence gain factor.	0..20	4
23	Quick setback constant. (Room sensor dependant) Increase. Setback will become longer Decrease. Setback time will become shorter	0..20	8
24	Boost of room temperature set point. (Room sensor dependant) Increase. Heat up time reduced. Decreased. Heat up time increased.	0..20	5
25	Frost protection program 0. Frost protection program switched. Off 1. Frost protection program switched. On	0..1	1
26	Boost of boiler temperature Set point	0…50	10
HWS			
31	Maximum HWS set point	8…80	60

35	HWS Priority. 0 Absolute 1 Shifting 2 None (Parallel operation with heating.)	0..2	1

General

41	Display default 0. Day # Time of Day. 1. VT Circuit flow temperature.	0..1	0
42	Heat gains Increase. If gains are high. Decrease If gains are low.	-2…+4	0
43	Curve Adaptation 1 sensitivity Outside air range between 4-12^{0}C	1…15	15
44	Curve Adaptation 2 sensitivity Outside air range below 4^{0}C	1…15	15
91	Software Version	00.0…99.9	--