



22kw ELECTRIC BOILER

USER MANUAL

All Seasons Hire Itd Unit 4, Harewood Farm London Road, Andover Down Andover SP11 6LJ

01264 387 370 info@allseasonshire.com

WARNINGS

TALIAN

WHO SHOULD READ THESE INSTRUCTIONS

- These instructions should be read by:
- the specifying engineer
- the installer
- the user
- the service engineer

SYMBOLS



Essential instruction for the correct operation of the installation.



Essential instruction for the safety of persons and the environment.



Danger of electrocution.



Danger of burns

RECOMMENDATIONS



- These instructions are an integral part of the equipment to which they refer and the user must be provided with a copy.
- The product must be installed and serviced by gualified engineers, in compliance with current standards.
- The manufacturer cannot accept liability for any damage resulting from incorrect installation or from the use of components or fittings not specified by the manufacturer.
- Any failure to follow instructions relating to tests and test procedures may result in personal injury or risks of pollution.
- It is important to switch the boiler off before carrying out any work.
- There are no user parts inside the control panel.

APPLICABLE STANDARDS



The Boilers have been manufactured to comply with the following standards BS EN60335-2-35: 2002, BS EN55014-1: 2001 and BS EN55014-2:1997.



The installation must be in accordance with the current standards.

IMPORTANTS NOTES

These instructions are an integral part of the equipment to which they relate and must be handed to the user.

The product must be installed and serviced by qualified engineers in accordance with the regulations in force.

The manufacturer declines all liability for any damage caused as a result of incorrect installation or in the event of the use of appliances or accessories that are not specified by the manufacturer.



The manufacturer reserves the right to change the technical characteristics and specification of its products without notice.



The availability of certain versions and their accessoiries can vary following the market.



Warning : Do not switch ON if there is a possibility that the water in heater is frozen.

INTRODUCTION

DESCRIPTION OF THE SPECIFICATIONS:

- This wall hung electric boiler is available in 5 models:
- \bullet Models O9 and 15 are supplied with 400 Volt triphase + N, convertible to 230 V single phase.

• Models 22, 28 and 36 are only supplied with 400 V triphase + N. The maximum power can be adjusted for all models by acting on the terminals bridges.



ENGLISH

The maximum power can be adjusted for all models by acting on the terminals bridges.

- Model O9: Adjustable power from 4.2 to 8.4 kW
- Model 15: Adjustable power from 7.2 to 14.4 kW
- Model 22: Adjustable power from 14.4 to 21.6 kW
- Model 28: Adjustable power from 21.6 to 28.8 kW
- Model 36: Adjustable power from 30 to 36 kW

LINING

The boiler is protected by a steel lining that first of all undergoes a degreasing and phosphation process before being lacquered and burnt at 220° C.

HEATING BODY

The boiler heat exchanger is constructed from mild steel with welded joints. It is hydraulic tested under a pressure of 4.5 bar (maximum working pressure = 3 bar).

HEATING ELEMENTS

Immersion heaters, constructed from stainless steel Incoloy 800 and mounted in the top of the boiler, provide the power source for the Boiler.

EQUIPMENT

The boiler is equipped with all the necessary components to allow direct connection to a heating system without the need for a feed and expansion cistern.

These components include; primary 10 litre expansion vessel (suitable for a system water content of up to 160 litres), pressure and temperature gauge, safety valve, circulating pump, low water pressure switch, control and high limit thermostats, on/off and power level switches.

CONNECTION

The boiler is suitable for connection to most heating and hot water systems, with a maximum working pressure of 3bar and a maximum temperature of 85°C. It can also be used in multiple boiler installations allowing greater outputs to be achieved.

The boiler, and connection glands for both the main power supply and optional external controls are provided, suitable for single or three phase electrical supply depending upon boiler output required. An internal 3 amp MCB is linked to the incoming electrical supply to provide the internal control circuit, from which optional controls can be compared as a internal on external timescale.

be connected e.g. internal or external timeclock, room thermostat or Honeywell Sundial controls.

DUAL STAGE THERMOSTAT

The temperature of the boiler is controlled by a dual stage thermostat which is set by the user to give the desired boiler temperature. When the boiler has heated up to within 7°C of the set temperature, the thermostat switches off one power stage and therefore reduces the heat input. Thanks to this simple but effective form of modulation, the boiler has longer working cycles and requires less stops and starts, thus resulting in a more even temperature across the boiler. It also means less wear and tear on components and, importantly it uses less power once it has reached working temperature.

CERTIFICATION

The boilers have been manufactured to comply with the following standards BS EN60335-2-35: 1998, BS EN55014-2:1997 and BS EN50081-1-1: 1992.

LEGEND

- 1. Base for relay of DWL priority
- 2. Control circuit
- 3. Relay
- 4. Timer
- 5. Control terminals 6. Power terminals



INTRODUCTION



IRDNCAI

EDERLANDS

INSTRUCTIONS

USER DATA

All user controls are situated on the front panel of the boiler, there are no user controls inside the boiler casing.

The following instructions assume that the boiler has been commissioned, and that the system is filled with water and has been fully vented.

SETTING UP

- Before switching on any electrical supplies to the boiler ensure that the combined temperature and pressure gauge reads at least 1 bar and the control thermostat is set to the desired temperature.
- If an internal time clock is fitted ensure that this is switched on (see "Optional Internal Time Clock") and if any other auxiliary controls are fitted e.g. programmer, room thermostats, cylinder thermostats etc, consult appropriate manufacturers' instructions to switch these on.
- Switch on any local means of isolation to boiler.
- Switch the boiler on using the ON/OFF switch (the neon light on the switch should now glow).
- Turn on both power level switches after a short period of time the boiler temperature should start to rise, indicated by the combined temperature and pressure gauge. If the boiler fails to operate, the overheat safety thermostat should be checked.

Access to the thermostat reset button is obtained by unscrewing (anti-clockwise) the domed button cover on the front panel (a screwdriver is not required). The reset button can then be seen - press the button, a click should be heard and the button is reset. If no click was heard the device is not at fault and further investigation is required by a suitably qualified engineer.

• The internal clock or external programmer can now be set to allow on/off periods as desired. The ON/OFF switch and 2 power level switches should be left in the ON position during normal use.

The power level switches will automatically switch on and off during normal boiler operation, depending on boiler temperature.

• If the boiler is not in regular daily use during cold periods, it is recommended that it be fitted with a frost sensing thermostat to override the timeclock and prevent the system from freezing.

• As with most boilers and heating appliances the casing and pipework can get hot during normal running so the boiler must not be covered and the surrounding area must be kept clear.

OPTIONAL INTERNAL TIMECLOCK

• This operates on a 24-hour sequence. Around- the outside of the clock there are a number of white tabs - these allow 15 minute switching times. To set a boiler cycle simply push outwards the number of tabs required for your heating period.

Remember : tab OUT = BOILER ON tab IN = BOILER OFF

The time of day is marked by an arrow on the inner part of the clock - set the outer time to coincide with this arrow.

On the centre part of the clock there is a switch.

This has three positions :

- Switch down timeclock off
- Switch middle timeclock timed (normal position)
- Switch up timeclock on constant.

PRESSURE IN THE HEATING SYSTEM

The CH pressure must be a minimum of 1 bar and must be checked by the end user on a regular basis. If the pressure drops under 0.5 bar, the integrated water pressure switch blocks the appliance until the pressure in the system returns to a level above 0.8 bar.

The installer fits the system with a separate fill valve underneath the appliance. Make sure that the appliance is powered off when filling the system. To do this, turn the on/off switch.

For more information, please ask your installer when the system is delivered.

A safety valve is provided underneath the appliance. If the system pressure exceeds 3 bars, this valve opens and drains the water from the system. In this case, please contact your installer.



TECHNICAL CHARACTERISTICS

			*		
Model	09	15	22	28	36
Power	4.2 to 8.4 kW	7.2 to 14.4 kW	14.4 to 21.6 kW	21.6 to 28.8 kW	30 to 36 kW
Nominal supply voltage	1 x 230 V or 3 x 400 V + N	1 x 230 V or 3 x 400 V + N	3 x 400 V + N	3 x 400 V + N	3 x 400 V + N
Heating element type	2 x 1.4 kW	2 x 2.4 kW	2 x 2.4 kW	2 x 2.4 kW	3 x 2 kW
Number of elements	3	3	5	6	6
Water capacity (Litres)	13	13	13	13	13
Expansion vessel capacity (Litres)	10	10	10	10	10
Max. working pressure (bars)	3	3	3	3	3
Min. working pressure (bars)	0.8	0.8	0.8	0.8	0.8
Max. working temperature (°C)	85	85	85	85	85
Hydraulic pressure drop (mbar)	10	20	45	85	125
Heating connection	3/4"	3/4"	3/4"	3/4"	3/4"
Height (mm)	763	763	763	763	763
Width (mm)	442	442	442	442	442
Depth (mm)	332	332	332	332	332
Weight empty (kg)	45	45	45	45	45

ENGLISH

664Y2700.D

TECHNICAL CHARACTERISTICS

		STAGE 1	STAGE 2	TOTAL	POWER TERMINALS
Tri phase 21.6 kW (*) Terminals 3 and 4 shunted Terminals 5 and 6 shunted Relay K4 activated	Terminal 2L1(A)Terminal 3L2(A)Terminal 5L3(A)Terminal 1N(A)Power(kM)	20.8 20.8 20.8 0 ') 14.4	10.4 10.4 10.4 0 7.2	31.2 31.2 31.2 0 21.6	O O
Tri phase 19.2 kW Terminals 3 and 4 shunted Relay K4 activated	Terminal 2L1(A)Terminal 3L2(A)Terminal 5L3(A)Terminal 1N(A)Power(kW)	20.8 20.8 10.4 10.4 7) 12	10.4 10.4 10.4 0 7.2	31.2 31.2 20.8 10.4 19.2	O O
Tri phase 16.8 kW Relay K4 activated	Terminal 2L1(A)Terminal 3L2(A)Terminal 5L3(A)Terminal 1N(A)Power(kW)	20.8 10.4 10.4 10.4 ') 9.6	10.4 10.4 10.4 0 7.2	31.2 20.8 20.8 10.4 16.8	O O
Tri phase 14.4 kW Terminals 3 and 4 shunted Terminals 5 and 6 shunted Relay K4 disactivated (**)	Terminal 2L1(A)Terminal 3L2(A)Terminal 5L3(A)Terminal 1N(A)Power(kW)	10.4 10.4 10.4 0 7) 7.2	10.4 10.4 10.4 0 7.2	20.8 20.8 20.8 0 14.4	O O

Electrical data of model 22

This values are based on standard supply voltage in Europe, that is 1 x 230V for single phase and 3 x 400V + N for tri phase.

(*) Factory configuration / (**) Remove the shunt 21 and 22 in order to deactivate the relay.

INSTALLATION



TALIANO

ENGLISH

FRANCAI

EDERLANDS

Ż

ESPANO

EUTSCH

82 80

60 - 85°C

INSTALLATION



SIZING OF SUPPLY WIRES

The supply wires are sized depending of the type and current of the MCB. This last firstly sized depending of the nominal current of the boiler. The admissible current of the supply xires depends of the ambient temperature, the section and length of the wires, the wires insulation, the wires canalisation, the mounting and the environment.

The following values are given for information for an ambient temperature of 30°C and a maximal length of 5 meters. In all the cases, the installation must be in accordance with the current IEE Wiring Regulations.

Nominal section (mm)	Nominal current of the MCB (A)
1.5	16
2.5	25
4	32
6	40
10	63
16	80

ERANCA

EDERLAND

ESPANO









INSTALLATION

664Y2700.D

INSTALLATION

0 • 0 - z

21 22

21 22

kW

14.4

16.8 kW

19.2 kW

21.6 kW



ESPAÑOI

TALIANO

EUTSO



COMMISSIONING - WATER

- The system must be thoroughly cleansed prior to connection of the boiler. The system water should be treated to prevent general corrosion and deposition of scale or sludge in the boiler, please refer to BS7593. If installing the boiler onto an existing system, HOTMOBIL recommend that an approved system cleaner is used.
- 2. Fill and pressurise the boiler and system to 1.5 bar, making sure to vent the boiler via the automatic air vent on top of the boiler. Note that the black dust cap on the air vent should be left loose to allow the auto vent to function.

COMMISSIONING - ELECTRICAL

The Electrical installation supplying this boiler must conform to the current IEE Regulations.

- 1. Remove the front panel and check all electrical connections for tightness.
- 2. Ensure all internal relays, contactors etc are secure on the DIN rails.
- 3. Set all panel control switches to off.
- 4. Check the power stage delay timer settings Adjuster (A) is factory set to the 1 to 10 minute position which is the optimum setting for the boiler and should be verified during commissioning.
 Adjuster (B) is used to set the DELAY ON time of the following stage contactors, the available settings are in 1 minute increments if A is set to 1 to 10 minutes.

This function is particularly useful in areas where gradual switching of electrical load is required and the resulting maximum demand kept to a minimum. The timers add to the flexibility of the installation but must be optimised by a qualified engineer. The normal setting is 1.

- 5. Set internal MCB to off position.
- 6. Set the control thermostat to desired temperature.



STARTING THE BOILER

- 1. Switch on the internal or external timeclock (if fitted)
- 2. Switch on internal MCB
- 3. Switch on local isolator to boiler
- 4. Turn the boiler on using the ON/OFF switch
- 5. Switch on the power levels switch stage 1, the first stage contactors will energise
- 6. Switch on the power levels switch stage 2, after a short delay the second stage contactors will energise. Note: the power stage delay timer settings should be verified as shown in item 4 under Commissioning - Electrical
- 7. The boiler temperature will now rise as indicated by the combined temperature and pressure gauge
- 8. The temperature will continue to rise until the control thermostat temperature setting is reached then the boiler will switch off.

Once these procedures have been followed the system can be left to operate normally by the following method.

- 1. Ensure that boiler thermostat is set to the desired temperature
- 2. Turn the boiler on using the ON/OFF switch
- 3. Turn on power level switch 1
- 4. Turn on power level switch 2
- 5. Set timeclock (if fitted) and/or external controls to desired boiler operating on/off times.

After one week of operation all electrical connections should be re-checked for tightness and the boiler water system checked for leaks and air and rectified if necessary.

MAINTENANCE

For safety reasons it is recommended that the boiler is serviced annually and that servicing is carried out by a qualified service engineer.

Before carrying out any work on the system ensure that the boiler is cool and all electrical supplies are isolated.

- After removing front cover undo the four screws retaining the front control panel and gently let the panel suspend on the wiring to the rear of the panel. Undertake a visual inspection of the boiler looking out for signs of water leakage from joints, expansion vessel, and the area around the elements on top of the boiler.
- 2. Undertake a visual inspection of all cabling in the boiler casing checking for signs of overheating or burning.
- 3. Check all push-on electrical connectors for tightness and good connection to the relative components.
- 4. Using a correct fitting screwdriver check all electrical terminals on DIN rails and on all components for tightness.
- 5. Check the settings on the internal timers in accordance with the "Commissioning Electrical" section.
- 6. Replace the control panel and the boiler front cover and refit screws.
- 7. Reinstate the electrical supply and follow the procedures set out in the commissioning section.

REMOVAL THE HEATING ELEMENTS





	54428195	EN: Base for relay FR: Base pour relais NL: Relaisvoet	ES: Basa para relé IT: Base per relè DE: Relais-Sockel
	54766015	EN: Control circuit "Siemens" FR: Disjoncteur "Siemens" NL: ON/OFF-schakelaar "Siemens"	ES: Disyuntor "Siemens" IT: Interruttore ON/OFF "Siemens" DE: Siemens- Schutzschalter
	54452082	EN: Relay "Siemens" [3TG] FR: Relais "Siemens" [3TG] NL: Relais [3TG] "Siemens"	ES: Relé "Siemens" [3TG] IT: Relè "Siemens" [3TG] DE: Siemens-Relais [3TG]
	54428192	EN: Timer "Crouzet" FR: Temporisateur "Crouzet" NL: Timer "Crouzet"	ES: Temporizador "Crouzet" IT: Temporizzatore "Crouzet" DE: Crouzet-Zeitrelais
ALLE ALLE	54452092	EN: Blocking FR: Butée de blocage NL: Bevestigingsklem	ES: Tope de bloqueo IT: Blocco di arresto DE: Sperranschlag
	54767014	EN: Terminal WKN 16/U blue FR: Borne WKN 16/U bleu NL: Klem WKN 16/U blauw	ES: Borne WKN 16/U azul IT: Morsetto WKN 16/U blue DE: Klemme WKN 16/U bleu
	54428179	EN: Terminal 16 mm ² WKN 16/U FR: Borne 16 mm ² WKN 16/U NL: Klem 16 mm ² WKN 16/U	ES: Borne 16 mm ² WKN 16/U IT: Morsetto 16 mm ² WKN 16/U DE: Klemme 16 mm ² WKN 16/U
	54428091	EN: Terminal end APN 16 mm ² FR: Cache borne APN 16 mm ² NL: Klemafdekplaatje APN 16 mm ²	ES: Cubrebornes APN 16 mm ² IT: Coprimorsetto APN 16 mm ² DE: Klemmenabdeckung APN 16 mm ²
	54428155	EN: Terminal WKN10 sl/u FR: Borne WKN10 sl/u NL: Klem WKN10 sl/u	ES: Borne WKN10 sl/u IT: Morsetto WKN10 sl/u DE: Klemme WKN10 sl/u
89 8888 8888	54428278 [2] 54428279 [3] 54428280 [4]	EN: Shunt IVBWKN FR: Pontage IVBWKN NL: Overbrugging IVBWKN	ES: Derivación IVBWKN IT: Ponticello IVBWKN DE: Überbrückung IVBWKN



annum.	54767015	EN: Control terminal block	ES: Repleta de 28 bornes
		FR: Bornier 28 pöles complet NL: Klemmenblok 28-polig, compleet	IT: Morsettiera 28 poli completa DE: Klemmenleiste, 28-polig, komplett
	54300040	EN: Green switch	ES: Interruptor verde
	54766016	FR: Interrupteur vert	DE: Schalter grün
1		EN: Yellow switch	ES: Interruptor amarillo
	54766017	FR: Interrupteur jaune	IT: Interruttore giallo
		NL: Schakelaar geel	DE: Schalter gelb
		EN: Combined T° and pressure gauge Ø 40 mm	ES: Termomanómetro Ø 40 mm
	54763012	FR: Thermonanomètre Ø 40 mm	IT: Termomanometro Ø 40 mm
		NL: Manothermometer Ø 40 mm	DE: Thermomanometer Ø 40 mm
		EN: Red alarm indicator Ø 10 mm / 240 V	ES: Luz indicadora roja de Ø 10 mm / 240 V
	54766001	FR: Lampe témoin rouge Ø 10 mm / 240 V	IT: Spia rossa Ø 10 mm / 240 V
		NL: Controlelampje rood Ø 10 mm / 240 V	DE: Kontollleuchte rot Ø 10 mm / 240 V
		EN: Control themostat 2 stages	ES: Termostato de ajuste de 2 niveles
· 26:	54764017	FR: Thermostat de réglage 2 étages	IT: Termostato di regolazione 2 stadi
12-		NL: Regelthermostaat, 2-traps	DE: Einstellthermostat 2 Stufen
		EN: Button thermostat	ES: Botón del termostato
	54764021	FR: Bouton thermostat	IT: Manopola termostato
		NL: Thermostaatknop	DE: Thermostatknopf
C a B		EN: Manual reset high limit thermostat 103°C	ES: Termostato de rearme manual 103°C
	54764009	FR: Thermostat réarmement manuel 103°C	IT: Termostato a riarmo manuale 103°C
		NL: Thermostaat met handmatige herinschakeling 103°C	DE: Manuell entriegelbarer Sicherheitsthermostat 103°C
		EN: Cable gland [PG29]	ES: Prensaestopa [PG29]
	54428113	FR: Presse-étoupe [PG29]	IT: Pressacavi [PG29]
		NL: Kabelfitting [PG29]	DE: Stopfbuchse [PG29]
		EN: Brass pocket	ES: Vaina
No	63438003	FR: Doigt de gant	IT: Pozzetto portasonda
O Martin		NL: Voelerhuls	DE: Tauchhülse



10		EN: Heating element 2 x 1,4 kW	ES: Elemento calefactor 2 x 1,4 kW	
a theory	54428183	FR: Elément chauffant 2 x 1,4 kW	IT: Resistenza elettrica 2 x 1,4 kW	
- Call		NL: Verwarmingselement 2 x 1,4 kW	DE: Heizelement 2 x 1,4 kW	
		EN: Heating element 2 x 2,4 kW	ES: Elemento calefactor 2 x 2,4 kW	
	54428182	FR: Elément chauffant 2 x 2,4 kW	IT: Resistenza elettrica 2 x 2,4 kW	
40		NL: Verwarmingselement 2 x 2,4 kW	DE: Heizelement 2 x 2,4 kW	
		EN: Heating element 3 x 2 kW	ES: Elemento celefactor 3 x 2 kW	
	54428204	FR: Elément chauffant 3 x 2 kW	IT: Resistenza elettrica 3 x 2 kW	
and the second s		NL: Verwarmingselement 3 x 2 kW	DE: Heizelement 3 x 2 kW	
		EN: Water pressure switch	ES: Presostato de seguridad en caso de falta de agua	
	557D3011	FR: Pressostat de sécurité manque d'eau	IT: Pressostato di sicurezza mancanza acqua	
U		NL: Waterdrukschakelaar	DE: Wassermangel-Sicherheitsdruckschalter	
-			F0. Circle late	
			ES: Circulador	
0	557A4009	FR: Circulateur	IT: Circolatore	
		NL: Circulatiepomp	DE: Pumpe	
		EN: Pressure safety valve 3 bars Ø 1/2"	ES: Válvula de seguridad 3 bares Ø 1/2"	
	55426017	FR: Soupape de sécurité 3 bars Ø 1/2"	IT: Valvola di sicurezza 3 bar Ø 1/2"	
		NL: Veiligheidsklep 3 bar Ø 1/2"	DE: Sicherheitsventil 3 bar Ø 1/2"	
		EN: Automatic air vent	ES: Purgador automático	
S Con	55445007	FR: Purgeur automatique	IT: Valvola di spurgo aria automatica	
		NL: Automatische ontluchter	DE: Automatische Entlüftung	
		EN: Flexible tube	ES: Tubo flexible hidráulico	
	557A2012	FR: Flexible hydraulique	IT: Flessibile di collegamento idraulico	
		EN: Expansion vessel 10 litres	ES: Vaso de espansión de 10 litros	
- Annual	557A7006	FR: Vase d'expansion 10 litres	IT: Vaso di espansione 10 litri	
		NL: Expansievat 10 liter	DE: Ausdehnungsgefäß 10 Liter	
AANO			FO. Dead de mendes complete	
			ES: Panel de mandos completo	
	24614142	FH: Tableau de commande complet	II: Pannello di comando completo	
		NL: Volledig bedieningspaneel	DE: Schaltfeld komplett	



N°	EN	FR	NL	ES	IT	DE
A01	Side panel	Latérale	Zijkanten	Lateral	Pannello laterale	Seitenteil
A02	Front panel	Face avant	Frontstuk	Parte delantera	Mantello anteriore	Vorderteil
A03	Top cover	Couvercle supérieur	Bovenkap	Tapa superior	Mantello superiore	Obere Abdeckung
A04	Rear panel	Panneau arrière	Achterpaneel	Panel posterior	Pannello posteriore	Hintere Blende
A05	Control panel [ABS]	Tableau [ABS]	Paneel [ABS]	Panel [ABS]	Pannello [ABS]	ABS-Tafel
A06	Wall mounting	Fixation murale	Wandbevestiging	Fijación mural	Staffa murale	Wandhalterung
A07	Body heating	Corps de chauffe	Ketellichaam	Cuerpo de calefacción	Corpo caldaia	Kesselkörper
A08	Control panel	Tableau de commande	Bedieningspaneel	Panel de mandos	Pannello di comando	Schaltfeld
A09	Electric support	Support électrique	Verwarmings- compartiment	Soporte elétrico	Supporto componenti elettrici	Sockel für die Elektrik

