STREBEL
BOILERS · RADIATORS

GENERAL DESCRIPTION AND INSTRUCTIONS FOR KFG CONTROL PANELS

JUNE 2000

KFG – AP Boiler Instrument Panel

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General information

The KFG-AP instrument panel has been developed especially for the Ca 6S, Ca 7S, and RU boiler series and satisfies the control requirements of modern heating systems.

In the design, due consideration has been taken to meet the requirements of the user and all relevant standards:

- Easy and quick mounting
- Simple and understandable operation
- Easy extension possibilities
- Programming and service possible via a Data interface
- CE approved.

Modular in design

One of the most important advantages of this digital controller is the ease in which the controls for further heating circuits can be added.

Up to 5 weather compensated GAMMA control modules can be interconnected. This will enable a system of up to a maximum of 10 mixed heating circuits and 5 HWS circuits to be achieved. According to the type of boiler, the Standard instrument panel has space for 2 or 3 pre-wired GAMMA control modules.

Technical data

Type	KFG 2233b GK
Nominal voltage	230V~+6 -10%
Nominal frequency	50 Hz
Nominal elec. Power	6 A, cos. phi≥0.8

Installation options:

Ca 6S	2 GAMMA modules
BCa 6S	2 GAMMA modules
Ca 7S	2 GAMMA modules
BCa 7S	2 GAMMA modules
RU 1S/ 2S/ 3S	3 GAMMA modules
BRU 1S/ 2S	2 GAMMA modules.

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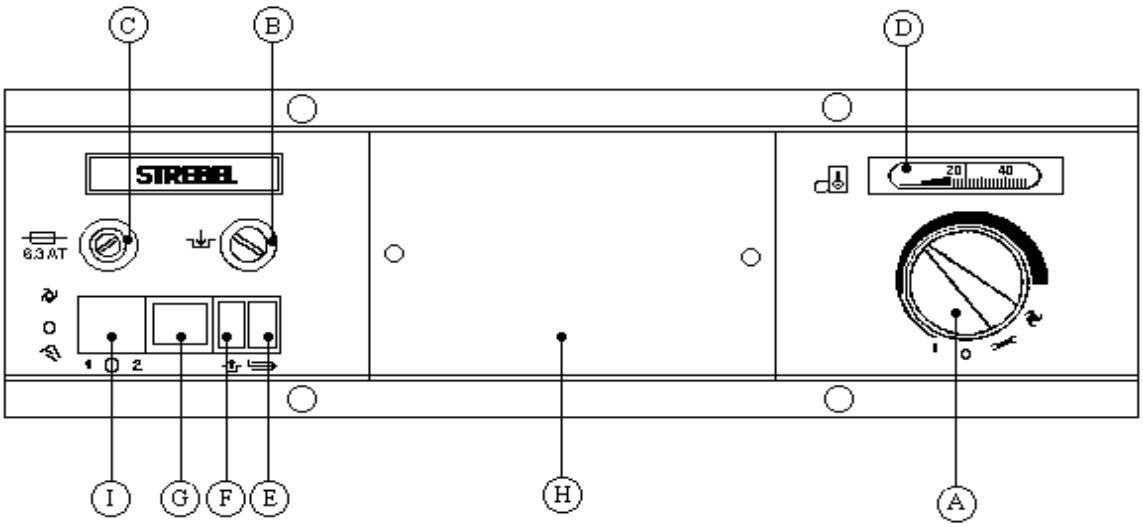

Description of Controls and Operation.

A – On / Off and Operation mode switch

Switch position "0" (off)
With the switch in this position, the operation of the boiler and burner is off.

Switch position "1" (manual)
The instrument panel is in operation. The burner and any boiler control pumps are operated with out any influence of any other built in control modules. The dial controls the boiler operating temperature within the limits of the decreasing arrow. Mixing valves must be manually adjusted. The instrument panel On lamp (G) is illuminated.

Switch position (automatic)
In this position, any built in electronic modules are in operation. The boiler temperature and any other equipment connected back to the boiler i.e. pumps and mixing valves are controlled automatically.

Attention: The switch marked "0" (off) can only be reached by rotating the switch anti-clockwise through the position marked "1".

Switch position (STB)
This function is used to check the boiler safety limit thermostat. This is activated by rotating the dial and holding the switch in position until the boiler safety limit thermostat functions.

B – Boiler safety limit thermostat (STB)

The boiler safety thermostat (STB) turns the boiler off if the boiler water temperature overheats. Once the boiler water has cooled down to about 80ºC, the STB must be manually re-set. This is done by unscrewing the cover cap (B) and pressing the small button.
Once reset refit the cover cap again. If the STB functions repeatedly, check the water circulation through the boiler or call a heating engineer.

C – Fuse (6.3A)

A fuse in the front of the instrument panel protects all the controls and any other equipment connected back to the boiler. A defective fuse must be replaced by an identical one.

Attention: Before the fuse is replaced, the instrument panel must be isolated from the electrical power supply.

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D – Boiler thermometer

It shows the actual boiler water temperature and has no influence on the boiler temperature control.

E – Burner lock out lamp (red)

The red lamp will illuminate when the burner has gone out (burner fault), the red lamp will go off once the burner reset button has been pressed.

F – high limit lamp (orange)

If the boiler safety limit thermostat (STB) is activated, the orange control lamp will be illuminated. The orange lamp will go off once the STB button has been pressed and reset.

G – Instrument panel "On" lamp (green)

This will be illuminated when the instrument panel is switched on, the main On – Off switch (A) turned from "0" to "1".

H – Blank cover

The standard version of the boiler instrument panels are supplied with blank covers. Terminal blocks X3 and X4 connect to dummy connection pins on the rear side to prevent short circuits. When using an additional electronic control module, this blank cover should be removed. Terminal blocks X3 and X4 should then be connected to the replacement module along with X1 and X2 (in the designated positions).

I – Blank cover

When a Gamma 1B control module is used, this blank cover must be removed. A Summer/Winter switch is fitted here.

Safety instructions

Any servicing on the boiler instrument panel (wiring, repairs, changes) should be carried out by a competent person.
If any works are carried out the mains supply to the boiler must be isolated and secured against accidental switching on.
The proper function of the boiler instrument panel is only guaranteed according to our general guarantee conditions and only if the installation and operation is carried out in accordance with these instructions.

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Control module options

Single stage burner operation

Gamma 1B
HWS control, temperature range 20 – 80ºC, HWS priority, pump overrun of calorifier primary pump, boiler control thermostat.
(illustration on page 7)

Gamma 2B
Weather compensated control for one heating circuit and HWS control.

Gamma 23B
Weather compensated control for one heating circuit, one mixing valve and HWS control.

Gamma 233B
Weather compensated control for one heating circuit, two mixing valves and HWS control.

Gamma 233BS
Weather compensated control for one heating circuit, two mixing valves, HWS control, temperature difference control for solar units and combination with solid fuel boilers.

Gamma 33B
Weather compensated control for two heating circuits both with mixing valves. This is an additional control module, suitable only in addition to a basic electronic control module.

Two stage burner operation

G22K
Electronic two stage thermostat for constant temperature boiler operation. (illustration on page 7)

Gamma 22B
Weather compensated control for two stage operation for one heating circuit and HWS control.

Gamma 223B
Weather compensated control for two stage operation for one heating circuit, one mixing valve and HWS control.
(illustration on page 7)

Gamma 2233B
Weather compensated control for two stage operation for one heating circuit, two mixing valves and HWS control.
(illustration on page 7)

Gamma 33B
Weather compensated control for two heating circuits both with mixing valves. This is an additional control module, suitable only in addition to a basic electronic control module.

Mounting and operating instructions are supplied with the electronic controls.

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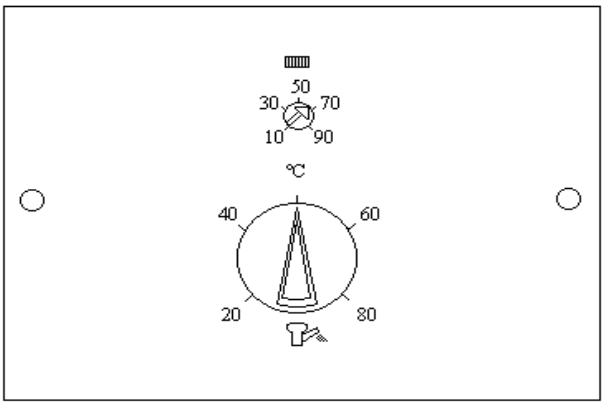
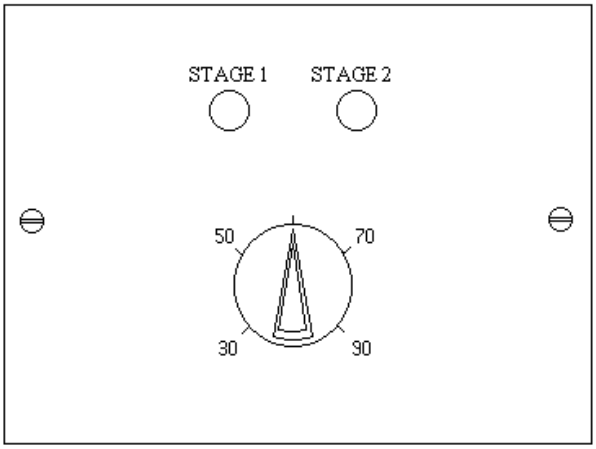
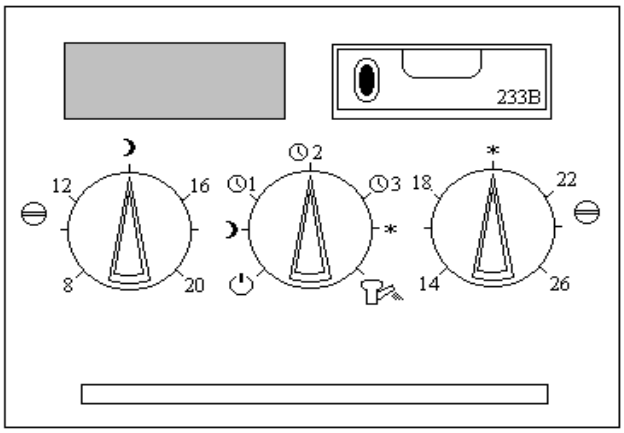


Gamma B1 Control Module.

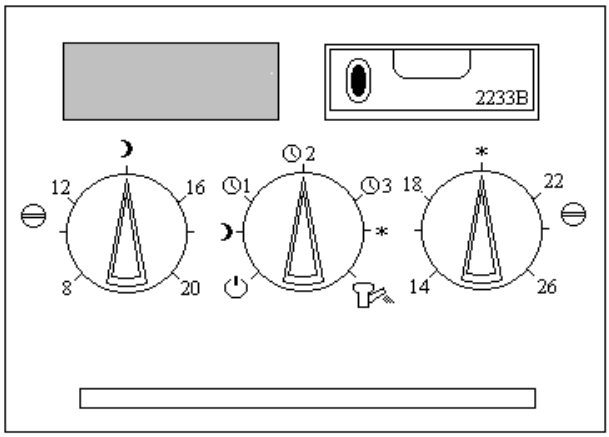
G22K Control Module.





Gamma 223B control module.

Gamma 2233B Control Module.



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Installation of an electronic control module

Gamma B1

First the blank cover on the boiler needs to be removed. Use a screwdriver with light pressure turning anti-clockwise the screws on the left and the right side of the blank cover.
Then remove the blank cover carefully as there is wiring connected to the back.
Remove the plugs X3 and X4 from the back of the blank cover. Connect the plugs X1, X2, X3, and X4 from the boiler instrument panel to the back of the control module. Insert the electronic control module into the opening and fix it by turning the two screws under light pressure clockwise by 90º. The electronic control module unit is now fixed to the boiler instrument panel.

If a further control module is to be added, open the top metal cover of the boiler instrument panel by removing the 6 screws.

Screw the terminal block X11 that is supplied with the additional control module onto the red marked part of the terminal rail inside the boiler instrument panel, and likewise the X12 onto the blue marked part (2.9 x 19mm screws are supplied with the additional control module). Connect the plugs X9.1 and X10.1 that are on the leads to the boiler instrument panel with X9.2 and X10.2 plugs and leads from the additional control module. If a second extension module is used, connect the clips of the second one. Remove the central blank cover and connect the plugs X1, X2, X3 and X4 to the module. Install the module as described above. (Wiring according to the terminal diagram on page 10).

Room devices

RFF 40S

Room sensor with remote operation.

RS 10

Room station.

Installation and operating instructions are supplied with all room devices. Connections should be carried out according to the terminal wiring diagram on page 10.

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Electrical wiring

The electrical wiring, must be carried out by competent persons to current I.E.E and CE regulations, British standards and Local Authority Regulations.

Remove the boiler instrument panel cover for access to the connection terminals. On the back of the cover there is a terminal wiring diagram (see also on page 10).

Isolate the electrical mains supply to the boiler instrument control panel and turn main switch (A) into position "0" before you start to work on the wiring.

Warning: During the installation be very careful to note the difference between mains supply and low voltage. Mains terminals are marked red and low voltage terminals blue.

The earth rail is available for all earth connections including for the burner. The connection between the PE (potential earth) and the earth rail is particularly important.

The interconnecting wiring between the boiler instrument panel and the burner is done using the 7 way plug and loom for single stage burners, or 7 and 4 way plug and looms for two stage burners. The number, which is on the wire insulation, is the one that counts for the connection of the burner cable to the terminal strip. It must be made according to the square inscription shown above terminals 27 to 36 on the terminal wiring diagram on page 8.

If the boiler or burner stage need to be controlled remotely, then the appropriate link(s) need to be removed from the terminals 3 to 7 and controls by others connected.
There are also terminals for burner run signals, stage 1 (terminal 10) and stage 2 (terminal 11) with terminal 12 giving a burner lock out signal.

Further details on wiring diagram on page 11.

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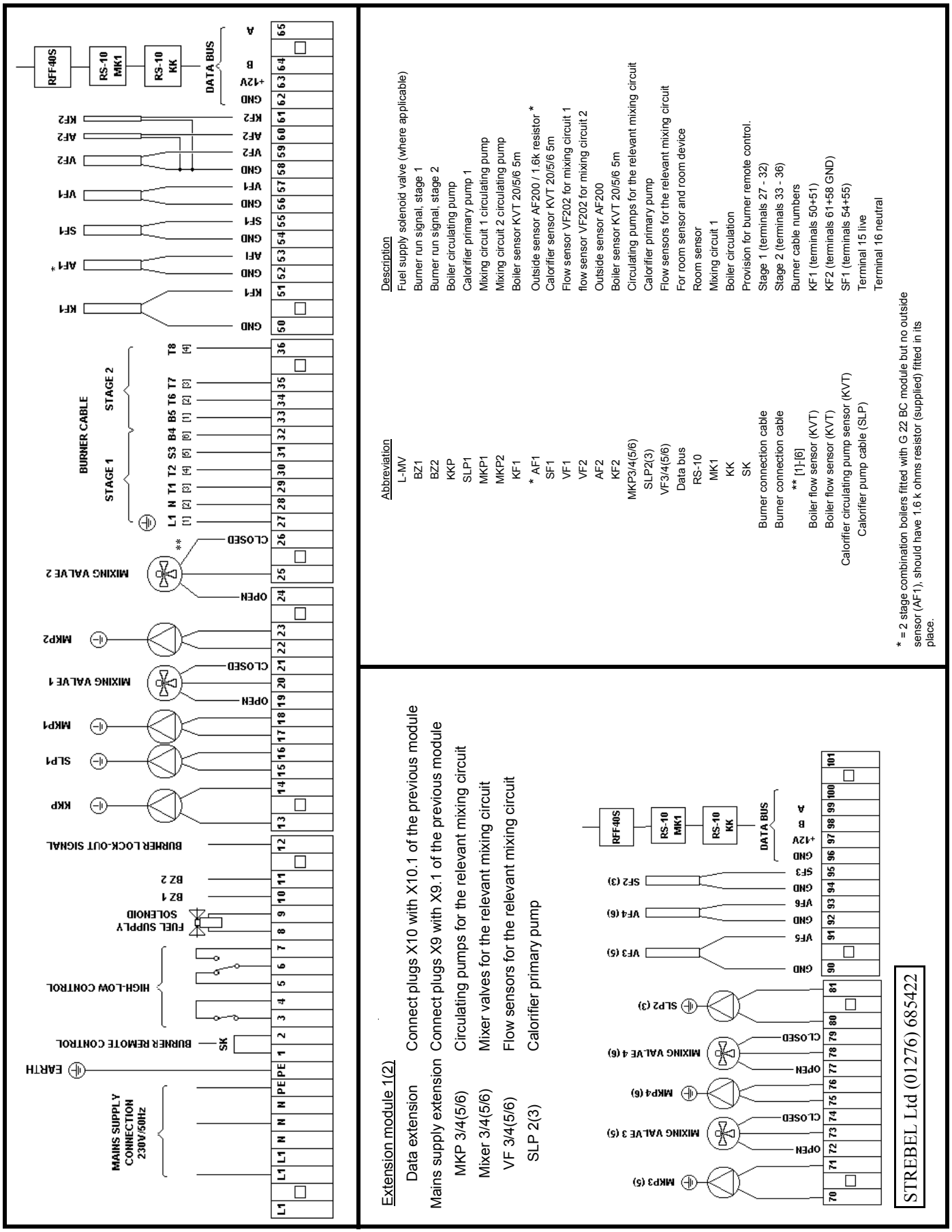
TERMINAL WIRING DIAGRAM



Abbreviation	Description
L-MV	Fuel supply solenoid valve (where applicable)
BZ1	Burner run signal, stage 1
BZ2	Burner run signal, stage 2
KKP	Boiler circulating pump
SLP1	Calorifier primary pump 1
MKP1	Mixing circuit 1 circulating pump
MKP2	Mixing circuit 2 circulating pump
KF1	Boiler sensor KVT 20/5/6 5m
* AF1	Outside sensor AF200 / 1.6k resistor *
SF1	Calorifier sensor KVT 20/5/6 5m
VF1	Flow sensor VF202 for mixing circuit 1
VF2	flow sensor VF202 for mixing circuit 2
AF2	Outside sensor AF200
KF2	Boiler sensor KVT 20/5/6 5m
MKP3/4(5/6)	Circulating pumps for the relevant mixing circuit
SLP2(3)	Calorifier primary pump
VF3/4(5/6)	Flow sensors for the relevant mixing circuit
Data bus	For room sensor and room device
RS-10	Room sensor
MK1	Mixing circuit 1
KK	Boiler circulation
SK	Provision for burner remote control.
Burner connection cable	Stage 1 (terminals 27 - 32)
Burner connection cable	Stage 2 (terminals 33 - 36)
** [1]-[6]	Burner cable numbers
Boiler flow sensor (KVT)	KF1 (terminals 50+51)
Boiler flow sensor (KVT)	KF2 (terminals 61+58 GND)
Calorifier circulating pump sensor (KVT)	SF1 (terminals 54+55)
Calorifier pump cable (SLP)	Terminal 15 live
	Terminal 16 neutral

* = 2 stage combination boilers fitted with G 22 BC module but no outside sensor (AF1), should have 1.6 k ohms resistor (supplied) fitted in its place.

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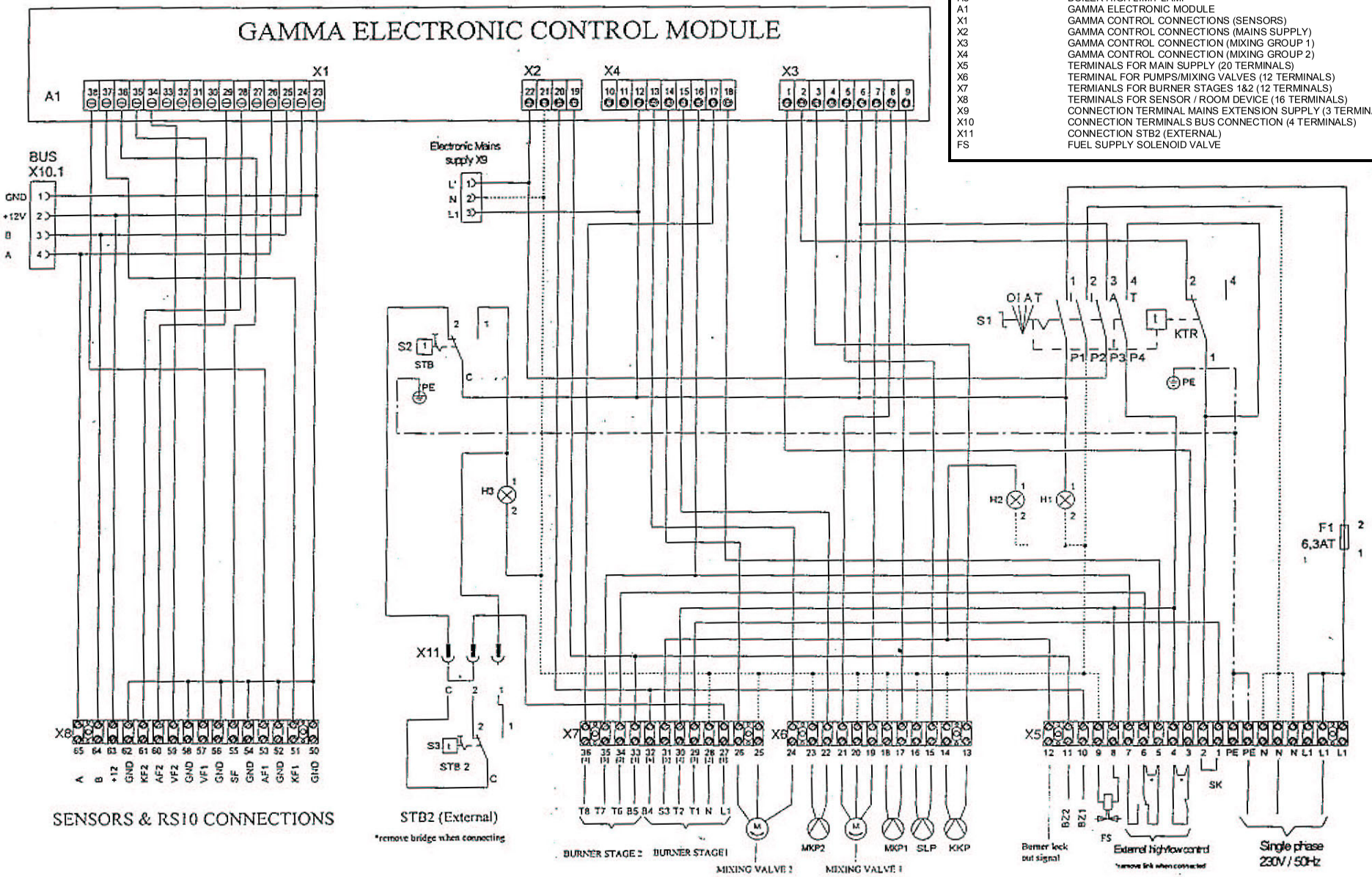
KFG-AP Boiler Instrument Panel
Internal Wiring Diagram

Abbreviation:	Description:
F1	MAINS SUPPLY FUSE (6.3A)
S1	ON/OFF SWITCH/MANUAL/AUTO/STB TEST SWITCH WITH BOILER CONTROL THERMOSTAT.
S2	BOILER SAFETY LIMIT THERMOSTAT 110°C
S3	BOILER SAFETY LIMIT THERMOSTAT (2)
H1	INTRUMENT PANEL "ON" LAMP
H2	BURNER LOCK OUT LAMP
H3	BOILER HIGH LIMIT LAMP
A1	GAMMA ELECTRONIC MODULE
X1	GAMMA CONTROL CONNECTIONS (SENSORS)
X2	GAMMA CONTROL CONNECTIONS (MAINS SUPPLY)
X3	GAMMA CONTROL CONNECTION (MIXING GROUP 1)
X4	GAMMA CONTROL CONNECTION (MIXING GROUP 2)
X5	TERMINALS FOR MAIN SUPPLY (20 TERMINALS)
X6	TERMINAL FOR PUMPS/MIXING VALVES (12 TERMINALS)
X7	TERMIANLS FOR BURNER STAGES 1&2 (12 TERMINALS)
X8	TERMINALS FOR SENSOR / ROOM DEVICE (16 TERMINALS)
X9	CONNECTION TERMINAL MAINS EXTENSION SUPPLY (3 TERMINALS)
X10	CONNECTION TERMINALS BUS CONNECTION (4 TERMINALS)
X11	CONNECTION STB2 (EXTERNAL)
FS	FUEL SUPPLY SOLENOID VALVE



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Appendix of abbreviations used (in alphabetical order)

Abbreviation	Description
1 - 6	Burner cable numbers
A1	Gamma electronic control module
AF1	Outside sensor AF200
AF2	Outside sensor AF200
BZ1	Burner run signal, stage 1
BZ2	Burner run signal, stage 2
Data Bus	For room sensor and room device
F1	Mains supply fuse 6.3A
FS	Fuel supply solenoid valve
H1	Instrument panel "On" lamp
H2	Burner lock out lamp
H3	Boiler high limit lamp
KF1	Boiler sensor KVT20/5/6/ 5m
KF2	Boiler sensor KVT20/5/6/ 5m
KK	Boiler circulation
KKP	Boiler circulation pump
L-MV	Fuel supply solenoid valve (where applicable)
MK1	Mixing circuit 1
MKP1	Mixing circuit 1 circulating pump
MKP2	Mixing circuit 2 circulating pump
MKP 3/4(5/6)	Circulating pumps for the relevant mixing circuit
RS-10	Room sensor
S1	On/Off switch/Manual/Automatic/STB test switch with boiler control thermostat
S2	Boiler safety limit thermostat 110ºC
S3	Boiler safety limit thermostat (2)
SK	Remote burner circuit
SLP1	Calorifier primary pump 1
SLP2(3)	Calorifier primary pump
VF1	Flow sensor VF202 for mixing circuit 1
VF2	Flow sensor VF202 for mixing circuit 2
VF3/4 (5/6)	Flow sensors for the relevant mixing circuits
X1	Gamma control connection (sensors)
X2	Gamma control connection (Mains supply)
X3	Gamma control connection for mixing group 1
X4	Gamma conrol connection for mixing group 2
X5	Terminals for mains supply (20 terminals)
X6	Terminals for pumps/mixing valves (12 terminals)
X7	Terminals for burner stages 1+2 (12 terminals)
X8	Terminals for sensor/room device (16 terminals)
X9	Connection terminals mains extension supply (3 terminals)
X10	Connection terminals bus connection (4 terminals)
X11	Connection STB2 (external)

Description of
G22K MODULE
for a
Two Stage (high/low)
Boiler Only, Operation

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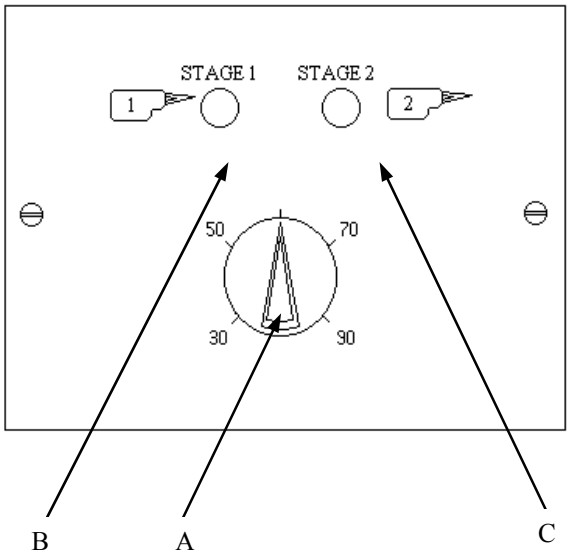
Gamma G22K Control Module
Boiler Temperature Control

Operation Instructions

General:
The G22K module is an electronic 2 stage thermostat for use in KFG – AP instrument panels for Ca6S, 7S and RU boilers.
It allows a constant, load dependant operation with separately adjustable control of ON – OFF respectively STAGE 1 – STAGE 2.

Nominal range (set at the factory) :
SD1 (on – off) ±2K
SD2 (1st stage – 2nd stage) ±4K
KEY:

Gamma G22K Control



A – Boiler temperature control
(allows setting of required boiler temperature)
B – Operation Mode Stage 1
C – Operation Mode Stage 2

Installation

Wiring

When wiring the unit, it is very important to allow separate connecting of cables, low voltage cables and mains voltage cables.

Common cable conduits or cable tubes are not allowed and can cause disturbance by induction.

Ambience temperature

The Ambience temperature near the unit must not exceed 50ºC.

Technical data

Connection voltage: 230V +6% / -10%

Nominal frequency:	50 – 60 Hz
Protection fuse max:	6.3 A/inert
Relay exits:	Max contact load 8A
(±0.8)	

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Function and additional function

The adjustment of the required boiler temperature is made by the power meter (A) of the G22K. For 2 stage operation the operation mode switch on instrument panel must be in position "automatic". In switch position 1 (manual operation), the burner operates at one stage only.

1. Power meter SD1

Serves to set the internal switching difference (modulating 2 point operation)

Adjustment range: 1 – 5K.

ATTENTION:
The adjusted value refers to ±K, i.e. the value 3 refers to a switching difference of 6K.

2. Power meter SD2

Serves to set the external switching difference (connection or disconnection of stages)

Adjustment range: 2 – 10K.

ATTENTION:
The adjusted value refers to ±K, i.e the value 3 refers to a switching difference of 6K.

3. Power meter Tvz II

Delay for the second stage can be adjusted between 0 and 20 minutes.
(works only of start with both stages)

4. External nominal value setter for the boiler temperature

If an external nominal value setter is used, the terminal X5 must be connected to the right (seen from behind).
See wiring diagram for its connection.
With external operation the internal power meter is out of operation.

The external nominal value setter is available as an accessory in a built-in and a built-up version (power meter 2.2kΩ.)

5. External switching clock

If a room thermostat or an external switching clock is to be connected, the terminal X6 must be connected downside (seen from behind)
See the wiring diagram for the connection of an external switching clock.

ATTENTION:
Connect volt free.
Contact open – boiler turned off
Contact closed – night mode
Boiler starts – day mode

6. Digital boiler temperature reading through measured value converter.

The integrated measured value converter for the digital indication of the boiler temperature supplies a control tension of 1-10.7V. This corresponds to a boiler temperature of 10-107ºC.
(0.1V = 1ºC)
Excedding temperatures may differ. See wiring diagram for the connection.

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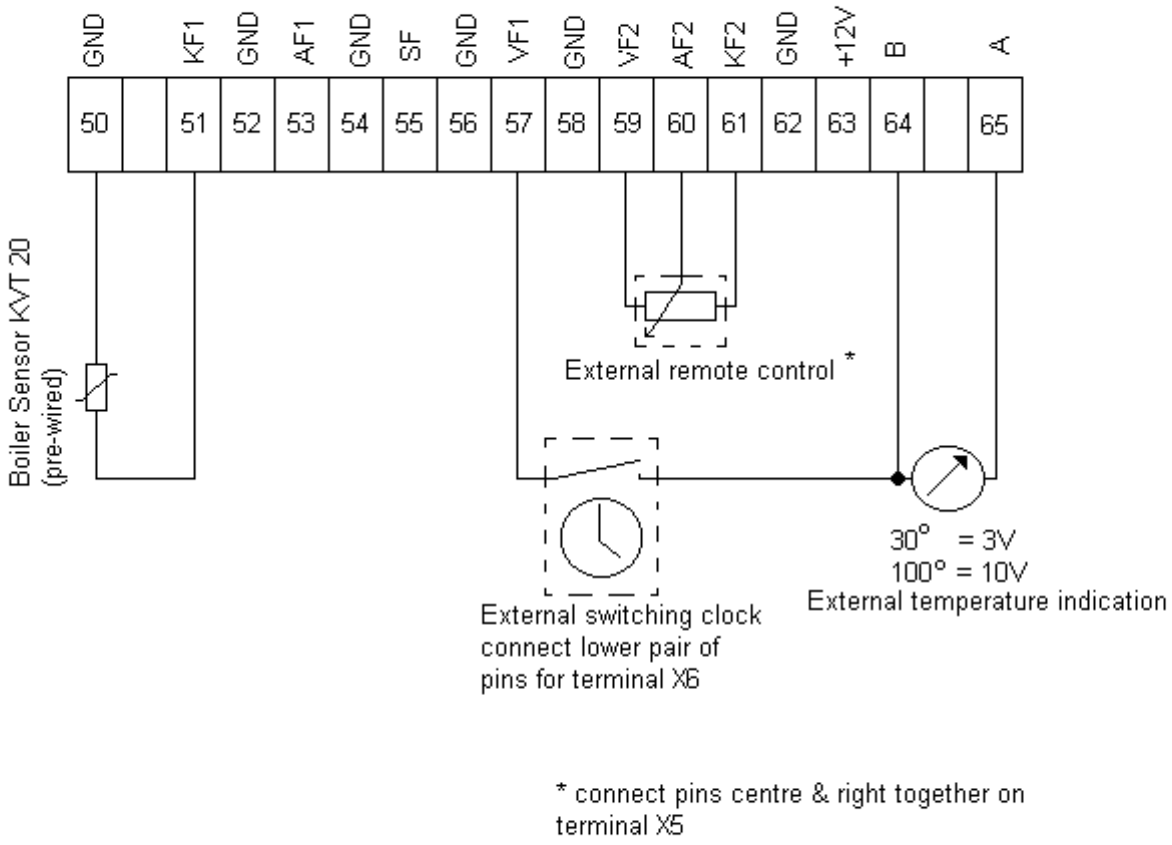
Installation and electrical connections

All electrical connections of the G22k are already pre-wired in the control box.

External operation and information elements must be connected as shown in the following wiring diagram.

Terminals disposition on X8
Sensor connection block of terminals marked BLUE



Description of
GAMMA 1B MODULE
for
Single Stage (Off/On)
Combination (Bicalor) Boilers

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Mounting and operating instructions for Gamma 1B module (for heating and domestic water)

General

The gamma 1B module is for domestic hot water temperature control for storage calorifiers and for control of the heating circuit (constant or with room thermostat).

Mounting

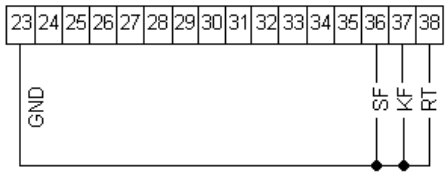
The module is connected (see electrical connection) and then introduced from the front into its opening on the instrument panel. It is fixed under slight pressure with a quarter turn to the right with two fast clip devices (1) on both sides. Dismounting is made the other way round.

Electrical connection

It is made with the help of the connections X1, X2 and X3 in the instrument panel. Make sure that the number of terminals correspond exactly with those of the connection pins.

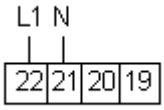
Attention:
The blue block of terminals X1 is for low voltage and must never be in touch with tension from the mains. If this is not observed, the unit is destroyed.

X1 block of terminals (blue)



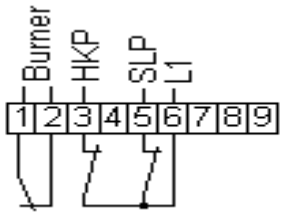
KEY :
23 – GND
common connection for the boiler and calorifier sensors and the room thermostat.
36 – SF Calorifier sensor KVT 20/5/6
37 – KF Boiler sensor KVT 20/2/6
38 – RT Room thermostat (optional)

X2 block of terminals (red)



KEY:
22 – L1 (phase) 230V – Mains connection
23 – N (zero) 230V - Mains connection

X3 block of terminals (red)



KEY:
1 – Burner relay, volt free entrance
2 – Burner relay, volt free exit
3 – HKP Heating circuit pump 230V
5 – SLP Calorifier loading pump 230V
6 – L1 (phase) 230V feed for heating circuit pump and calorifier loading pump.

The electrical connection to the units of the installation is made on the main connection rail in the boiler.

For EG, EC boiler series:

Connection with the numbered counter plug supplied

Calorifier sensor……..counter plug 11
Calorifier loading pump…..counter plug 7
Room thermostat…….counter plug 14

For boiler series with KSPG:
Connection directly to the following terminals:

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Calorifier sensor	X8-54/55 block of terminals
Calorifier loading pump	X6-15/16 block of terminals
Room thermostat	X8-52/53 block of terminals

Summer / Winter Switch

Heating can be stopped or released with this switch.

Application:
Interruption of heating in summer.

Mounting and electrical connection

- Remove left switch cover (1 2) in the instrument panel
- Lead the connection cables (S/W) of the Gamma 1B through the switch opening and stick it to the switch optionally on the left or right side.
- Click switch into place

ATTENTION:
Rocker switch mark downward!

Resulting function:

Switch position: **Winter operation**
Heating and HWS ready for operation

Switch position: **Summer operation**
HWS ready for use, heating interrupted.

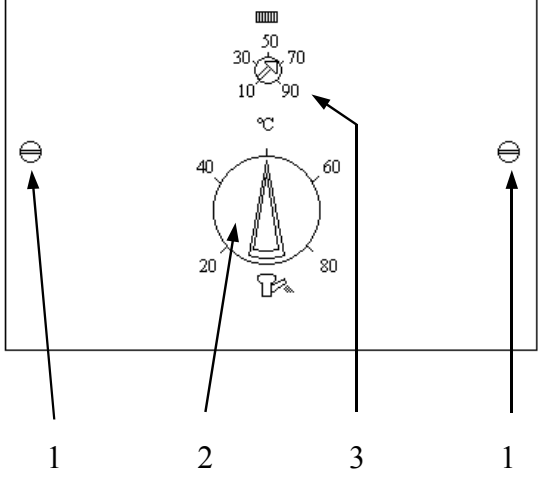
Operating start

Automatic mode
Put the mechanical boiler temperature control on the right hand side of the instrument panel into position (Automatic operation – max. value = 95ºC)

Manual mode
In case of disturbance, manual mode may be used. Adjust the mechanical boiler temperature control switch within the range of the curved arrow (left 8ºC, right 95ºC). The heating circuit pump and the calorifier loading pump are constantly in operation. The temperature in the calorifiers goes up to the adjusted boiler temperature.

In this position the control module has no function.

Operation elements
(front side)



KEY:
1 – Fast clip devices
2 – Domestic hot water temperature required
3 – Heating circuit temperature

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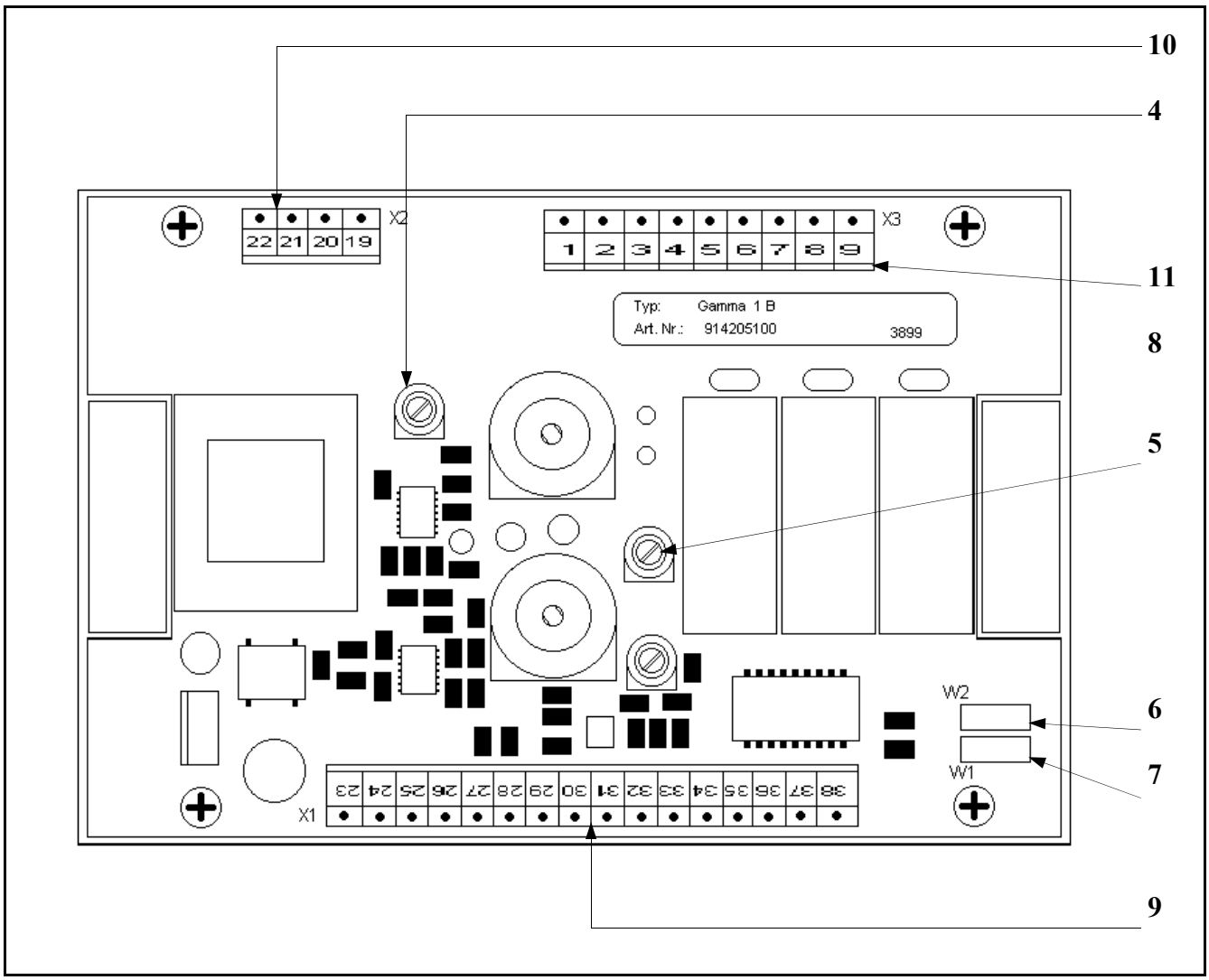
Operation elements
(rear)



KEY:

4 – Calorifier temperature limit
5 – After-running of calorifier loading pump
6 – Bridge switch W2
Position 1: Calorifier priority
Position 2: Calorifier parallel operation
7 – Bridge switch W1
Position 1: without room thermostat
Position 2: with room thermostat
8 – Connection flex for Summer / Winter switch
9 – Connection terminal X1 (sensor)
10 – Connection terminal X2 (mains)
11 – Connection terminal X3 (burner/pumps)

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Function (only in automatic mode)

A – Hot water demand

The unit measures the temperature in the calorifier and boiler with the two sensors KVT20. The burner will start as soon as the temperature in the calorifier drops below the required temperature set. The calorifier loading pump will only start when the boiler temperature reaches the required calorifier temperature (calorifier discharging protection).

As long as the required calorifier temperature is not reached, the boiler temperature will go up until it reaches the calorifier loading temperature limitation (4) which can be adjusted on the rear side of the module between 70ºC and 90ºC and is only operational in case of HWS demand.
The burner is off when this set value is reached and will start again if the temperature drops by about 4K.
As soon as the required HWS temperature is reached, the loading calorifier stops. The calorifier loading pump will stop a certain time afterwards only in order to avoid a safety stop if the boiler temperature still goes up somewhat (calofifier loading pump after-running). The time of the after-running can be adjusted on the rear side of the module (5) between 10 seconds and about 10 minutes.

Calorfier priority / parallel operation

The unit is set for calorifier priority. During the heating of the calorifier, the boiler circulating pump is stopped.
If the heating is to continue during the loaing of the calorifier (parallel operation), the bridge plug W2 (6) on the rear of the module must be turned right into position 2. Watch the room temperature which might go up too much, if the calorifier temperature is set at a high value and there is no thermostat valves on the radiators.

Constant boiler temperature

As long as there is no demand from the calorifier and the after-running of the clorifier pump is finished, the heating mode is released. The boiler temperature will be controlled acording to the value set for the heating circuit temperature (3) on the front of the module. It can be adjusted between 10ºC and 90ºC and is only operational in the heating mode.

Control by means of a room thermostat

The control module offers the possiblity of connection to a room thermostat or a clock thermostat with reduced night temperature.

Therefore the bridge plug W1 (7) on the rear side of the module must be switched to position 2 (right). The electrical connection of the room thermostat must be made to the terminals for the outside sensors on the main conection rail of the boiler.

Important remark:

In case of control by a room thermostat, the boiler temperature in automatic mode will be limited to the set value of the heating circuit (3). If with cold weather the required room temperature is not reached, higher values should be set.

Furthermore there is no integrated minimum temperature limit. In case of need this must be made on site. It will have to be connected in parallel with the room thermostat.

B – Heating mode

Description of
GAMMA 22BC MODULE
for
Two Stage (high/low)
Combination (Bicalor)
Boiler Operation

KFG – AP Boiler Instrument Panel

General

The G22BC Module is used with the KFG-AP instrument panel, for operation with 2 stage burners and hot water control at constant boiler temperature.

It is supplied with the following nominal switching values:

P6 (on/off)	4K
P7 (1st and 2nd stage)	8K
Boiler temperature	70ºC

(see parameters of the operators control level)

The G22BC is a modified temperature control unit supplied with a resistance simulating an outside temperature of 0ºC and therefore operating under frost protection conditions. It is exclusively influenced by the maximum and minimum boiler temperature.

Installation:

Wiring
Sensors and other low voltage conduits must be fully separated from wires from the mains.

Ambient temperature
It may not exceed 50ºC.

Technical data

Connection tension	230V+6%/-10%
Nominal frequency	50 – 60 Hz
Fuse	6.3A inert
Relay exits	Max. contact load 8A (cos Φ≥0.8)

Installation of the module

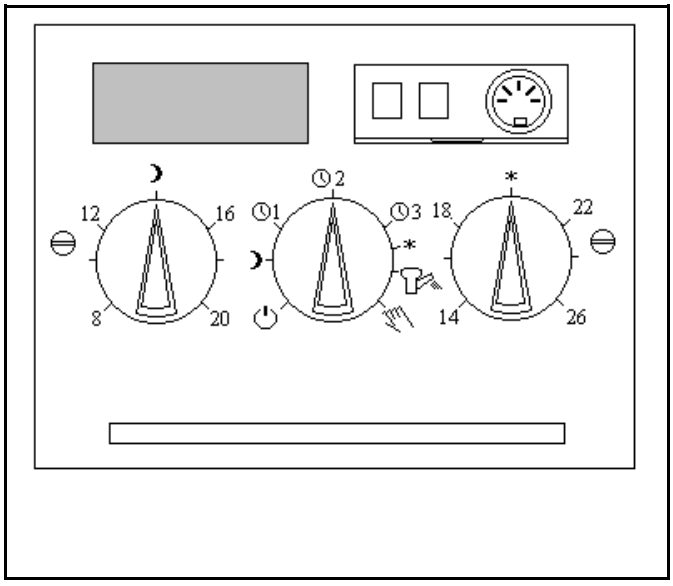
Fix it to the KFG panel as described on page 8 of this manual.
The resistance (R=1.6kΩ) must be connected to the terminals 52 and 53 of the KFG panel.

The calorifier sensor must be connected to the terminals 54 and 55. The sensor goes into the sensor sleeve of the calorifier.

The burner cable of the 2nd stage is connected to the terminals 32-35 according to the terminal diagram (page 10)

The mode switch of the KFG panel must be in automatic position when the G22BC is used.

Description:



(KEY over page).

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KEY:

1. Day temperature (not to be used)
2. Night temperature (not to be used)
3. Mode switch: must always be in one of the following positions:

   constant requirement of heat and hot water control. Hot water priority daily from 4:30 am until 22:00pm

   Hot water tap – Summer operation:

   Only hot water at the above mentioned day time.

   Manual operation: Circulation pump and hot water pump are constantly in operation and the boiler temperature is set at 95ºC which is the maximum from the thermostat.
4. LCD Information
5. Cover
6. Yellow program button
7. Blue program button
8. Connection for data bus

Temperature setting

Calorifier temperature required:
Press the blue program button for about 5 seconds to reach the operators control level.

Press the yellow button briefly to reach any following parameter.

If the parameter value shown is to be increased (gradual reduction is impossible) briefly press the blue button . If you wish to set the counters back, press the blue button for about 5 seconds.

Parameters at the operators control level:

1. Heating curve (nominal value: 1.50)
2. Reduced operation (nominal value: ECO)
3. Nominal value HWS (supplied with 50ºC)
4. Protection against legionella (supplied with OFF)
5. 0:CL The above mentioned parameters can be set back to the supplied values mentioned. Next parameter: Yellow button.
6. Operating hours counter, stage 1
7. Burner starts counter, stage 1
8. Operating hours counter, stage 2
9. Burner starts counter, stage 2

Exit from the operators control level by briefly pressing the Yellow button. If during one minute none of the buttons on the module is pressed it will automatically jump into automatic mode.

Setting of the required boiler temperature:

Minimum and maximum boiler temperature must be set at the required value, as described below:

Setting of the minimum boiler temperature:
Switch off the electrical mains supply and press the Yellow button of the module. Switch the mains supply on, holding the Yellow button down until the boiler minimum temperature shows. (supplied from factory with 70ºC)

Set the minimum temperature required with the help of the Blue button. (if less than 70ºC is required, go beyond the maximum temperature to scroll round to start again at the minimum).

Switch off again with the main switch and then back on without pressing any button.

Setting of the maximum boiler temperature:
Press the Yellow button and at the same time the

KFG – AP Boiler Instrument Panel

Blue button for about 5 seconds to get into the installers level , where the relative parameters will show.

Briefly press the Yellow button to get to the following parameter. Change the value shown with the help of the Blue button, bearing in mind that changes are only allowed upwards.

Parameters of the installers level:

1. Frost protection limit (nominal value 3ºC)
2. Summer switch off (nominal value 20ºC)
3. Boiler start relief (always on)
4. Boiler minimum temperature (adjustments as described before, supplied with 70ºC)
5. Boiler maximum temperature (adjustments with the Blue button, as described before, supplied with 70ºC)
6. Difference 1st and 2nd stage of burner (supplied with 4K)
7. Burner ON/OFF difference (supplied with 8K)
8. Retarding of 2nd burner stage (supplied with 0 min.)
9. Burner minimum running time (supplied with 2 mins.)
10. Calorifier priority (ON) or parallel operation (OFF).
11. Calorifier start relief (supplied with 5 mins)
12. After–running for shunt pump and HWS loading pump (supplied with 5 mins)
13. Bus address (always : 1)
14. Automatic Summer / Winter time change (supplied : ON)

Exit from installers level by pressing twice the Yellow button. If during one minute no button is pressed, the module will jump back into automatic mode.

Adjustments of time:

The time is shown if the yellow button is pressed. Pressing it for about 5 seconds, you reach the time switching level.

The Yellow button is always for the next step and the Blue one for the change for the indicated or blinking values.

1. Minutes adjustment
2. Hours adjustment
3. Week day setting
4. Calendar setting
5. Calendar day
6. Calendar month
7. Calendar year

Pressing once more, the display shows the tap.

Press the Blue button to reach the time switching level. Now the 1st time for switching on the HWS demand is shown.

Next switching time: Yellow button

Change: Blue button

For each day, 2 times settings for switching ON and OFF are possible.

For exit, press the Yellow button twice or more (according to the parameter you are in), or wait for about 1 minute.

KFG – AP Boiler Instrument Panel

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