

# CONTROLLER FOR 1, 2-STAGE MODULATING BURNERS WITH 0...10 VOLT- INPUT

Sequence controlled by XTC 638

SLAVE of MASTER XTC 638

**XCC 618 Eng.**

**C ←RING**

OPTIONAL

**C ←BUS**



- Control of a 1, 2- stage or modulating burner
- Control of burner/boiler with 0...10 V – input
- Especially suitable for condensation boilers
- Obeys sequence under control of XTC 638
- 0 ...10 V- input for POWER or TEMPERATURE
- 0...10 V- output to control any type of generator
- Power supply 230 V AC (or 240 V AC for UK market)
- Installation on DIN 6 unit rail
- Communication systems :
  - C-Ring for exchange data of common interest between local controllers
  - C-Bus : To Telemanage XCC 618 use accessory "C-Bus Plug-in" type ACB 400 C1 or later, (to be ordered separately)

FOR A RAPID GUIDE TO THIS DATA SHEET GO DIRECTLY TO LAST PAGE



For rapid installation and maintenance all the connections are on the extractible terminal block. By providing each of the boilers on site with an XCC 618, and with only one boiler with an XTC 638, you can achieve a sophisticated sequence between the various 1, 2-stage or modulating BURNERS and so obtain the maximum SEASONAL PERFORMANCE. The whole system has been designed especially for CONDENSATION BOILERS.

## 1. APPLICATION

XCC 618 controller is designed for the total control of a burner/boiler (condensation or not). The 1, 2-stage or modulating burner can be controlled via one of the switches or via the 0...10V Input.

**THIS CONTROLLER CAN BE USED WITH BURNERS/BOILERS WITH INCORPORATED ELECTRONIC MODULE TO PROVIDE IT WITH TELEMAGEMENT**

## 2. FUNCTIONS

- Control of boiler temperature at **fixed point** or in relation to the request of the various users via **C-Ring** (if the controllers are COSTER) or by a **0...10 V- control**.
- Control of a 1- or 2-stage or modulating burner..
- Possibility of sequence under the control of XTC 638.
- Automatic setting of BST.
- Periodic operation of summer plant exercise of valves and pump.
- Metering of degree-days, operating hours of burner and number of times switched on.
- Alarms for short circuits or breaks in sensor circuits and for abnormal operation of site/ or electronic devices.
- **C-Ring** connection for local exchange of data with other COSTER controllers.
- Option of C-Bus connection for exchange data with local PCs or with remote PC via Telemagement.

For data transmission and Telemagement use "C-Bus Plug-in" type ACB 400 C1 or later. For local communication with a PC use test plug-in type ACX 232.

XCC 618 is already provided with a 0...10 V output adaptable to any generator provided with this input. XCC 618 is also provided with a 0...10 V input for controlling IN POWER or IN TEMPERATURE.

## 3. SENSOR & ACCESSORIES

No.	Description	Model	Sensing element t°	Code	Data sheet
1	Outside temperature sensor	<b>SAE 001</b>	NTC 1 kΩ	B2	N 120
1	Boiler temperature sensor:	<b>SCH 010</b>	NTC 10 kΩ	B4	N 130
	surface	<b>SIH 010</b>	NTC 10 kΩ	B4	N 140
	immersion				
	<b>Optional sensors</b>				
1	Anticondensing sensor for boiler :	<b>SCH 010</b>	NTC 10 kΩ	B6	N 130
	surface	<b>SIH 010</b>	NTC 10 kΩ	B6	N 140
	immersion	<b>STF 001</b>	PT 1 kΩ	B3	N 165
1	Flue gases temperature sensor				
	<b>Accessories for Telemagement</b>				
1	Plug-in for communication via C-Bus	<b>ACB400 C1</b>	–	–	–

**4. PRINCIPAL TECHNICAL DATA**

**• Electrical**

Power supply 230 V AC ± 10%  
or 240 V AC for UK market

Frequency 50 ... 60 Hz

Consumption 5 VA

Protection IP40

Radio disturbances VDE0875/0871

Vibration test with 2g (DIN 40 046)

Voltage-free output contacts:  
maximum switched voltage 250 V AC  
maximum switched current 5 (1) A

Construction standards Italian Electrotech. Committee (CEI)

Duration clock battery & data storage in memory practically without limit

**• Mechanical**

Enclosure DIN 6 E module

Materials :  
base NYLON  
cover ABS

Ambient temperature:  
operating 0 ... 45°C  
storage - 25 ... + 60°C

Ambient humidity class F DIN 40040

Dimensions 105x 115 x 71.5

Weight 0.6 kg

**• Measurement ranges**

Outside temperature - 30 ... + 40 °C

Boiler temperature 0 ... 99 °C

Flue gases temperature 0 ... 500 °C

Anticondensing temperature 0 ... 99 °C

**• Control burner**

As POWER or TEMPERATURE

Temperature 0 ... **50.0** ... 99.0 °C

Maximum temperature limit 1 ... **99** °C

Minimum temperature limit 1 ... 99 °C

On-Off control burner 1 independent switch

Raise burner control 1 independent switch

Lower burner control 1 independent switch

Burner modulation time 10 ... **45** ... 540 s

**• Alarms**

Configurable functional alarms 4

Sensors or other configurable alarms 5

**• Telemangement**

Speed C-Bus chosen from 1200, 2400, 4800, 9600 bouds

Data logger of all principal measurements

**• Universal Y output**

This input can be programmed as:

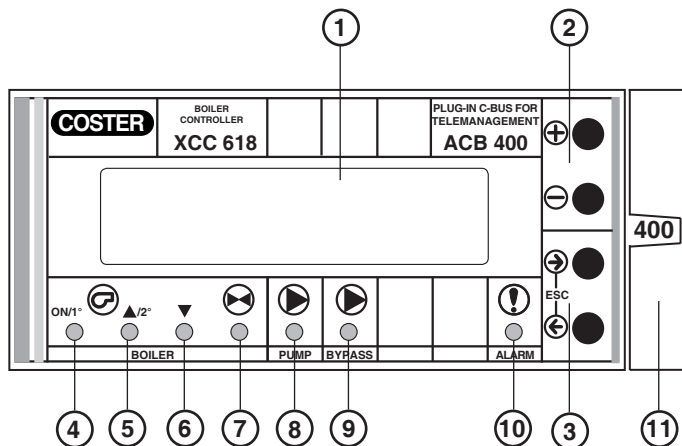
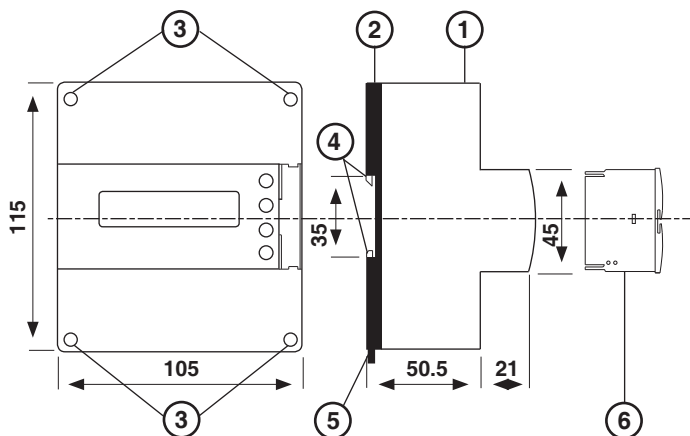
- status boiler off
- status heating off
- 0 ... 10 V output for control of:
  - Burner as power
  - Burner as temperature

**• Input 0...10 Volt –**

This input can be programmed as:

- control desired boiler TEMPERATURE
- control desired boiler POWER
- this input can be calibrated as desired

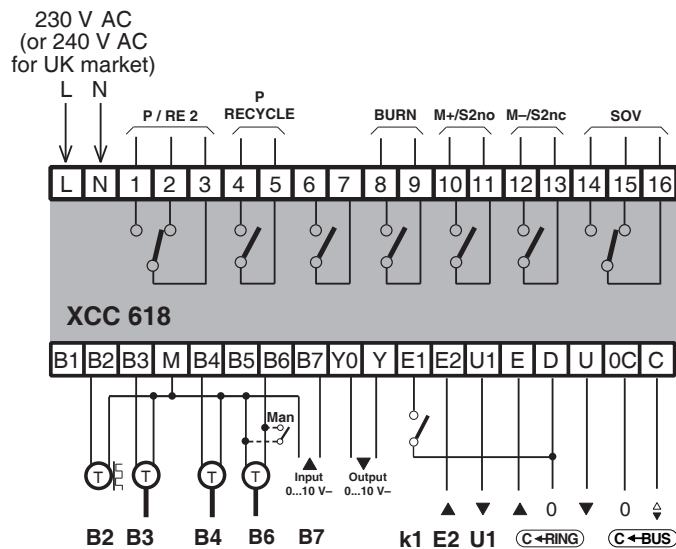
**5. FACIA & OVERALL DIMENSIONS**



- 1 - Protective cover for electronic components
- 2 - Base with transformer, relay and terminal blocks
- 3 - Screws for securing base and cover
- 4 - DIN rail securing elements
- 5 - DIN rail release lever
- 6 - Plug-in for C-Bus communication

- 1 - Two-line illuminated alphanumeric display
- 2 - + and - operating keys
- 3 - ← and → operating keys
- 4 - Switching on burner or first stage
- 5 - Switching on second stage or increase modulation
- 6 - Reduce modulation
- 7 - Boiler shut-off valve
- 8 - Pump for heating or other uses
- 9 - Boiler recycle pump
- 10 - LED for fault inside controller
- 11 - Type ACB 400 C1 plug-in for C-Bus communication

**6. WIRING DIAGRAM**



- B2** – Outside temp. sensor
- B3** – Flue gases sensor
- B4** – Boiler temp. sensor
- B6** – Anticondensing sensor for boiler (as alternative to **Man**)
- Man** – Control for changing boiler to manual for as alternative to anticondensing sensor (B6)
- B7** – 0...10 V optoisolated input for control burner AS POWER or AS TEMPERATURE
- Y0** – Universal optoisolated 0 ... 10 V (0 V) output
- Y** – Universal optoisolated (0 ... 10 V) output
- k1** – Input E1 = alarm switch for burner lockout
- E2** – Input for control relay switches 1,2,3 (for Master shut-off valve)
- U1** – Output (OPEN COLLECTOR) repetition lockout burner for E2 input of Master (XTC 638); communicates burner lockout to Master itself, in the sequences.
- C-Ring** – Transmission data between controllers
- C-Bus** – Transmission data for Telemangement. C-Bus is enabled using Plug-in type ACB 400 C1
- L** – Line 230 Volt AC, (or 240 Volt AC for UK market)
- N** – Neutral
- P/RE 2** – **Single Boiler** = Single Boiler = control site pump (P)  
Pump ON = switch 2,3 ON, switch 1,3 OFF  
Pump OFF = switch 2, 3 OFF, switch 1, 3 ON
- **Secondary Boiler** – control shut-off valve of Master boiler (operation carried out by a single Slave).  
Switch 3 = Common  
Switch 2 = Opening Master shut-off valve  
Switch 1 = Closure Master shut-off valve
- RECY. PU** – Control boiler recycle pump
- BURN** – On-Off control burner
- M+/S2 na** – **1-stage burner** = not used
- **2-stage burner** = switch which CLOSES when intervention second stage requested (S2 NO)
- **Modulating burner** = control RAISES (M+)
- M-/S2 NC** – **1-stage burner** = not used
- **2-stage burner** = switch which OPENS when intervention second stage requested (S2 NC)
- **Modulating burner** = control LOWERS (M-)
- SOV** – **Secondary Boiler** = control own shutoff valve (SOV)  
Switch 16 = Common  
Switch 15 = Control opening shut-off valve  
Switch 14 = Control closure shut-off valve

**7. SITING OF CONTROLLER & ACCESSORIES**

**7.1 Controller**

The controller must be installed in a dry location that respects the ambient conditions specified above. If sited in a location classified as "Hazardous" it must be installed in a cabinet for electrical equipment constructed according to the regulations in force for the class of danger concerned.

**7.2 Outside temperature sensor B2**

This must be installed outside the building on the north or north-west side, at least three meters from the ground; it must be protected from the sun's rays and away from windows, doors, fireplaces and other possible sources of direct thermal disturbances.

To be connected to the Master controller in the event of several boilers in sequence.

**7.3 Flue gases sensor**

This sensor must be installed in the flue.

**7.4 B4 boiler sensor**

This must be installed on the boiler flow pipe .

**7.5 Anticondensing temperature sensor B6**

This must be installed on the return pipe of the boiler or of the manifold.

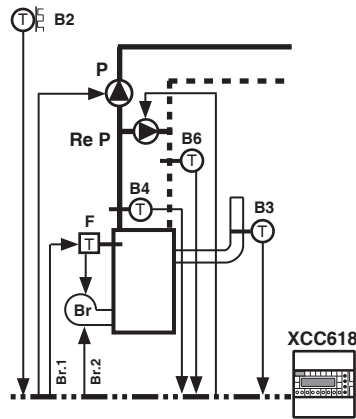
**8. ELECTRICAL CONNECTIONS**

- Make the electrical connections strictly according to the diagram and in respect of the safety regulations in force, using the following cables :
  - 1.5 mm<sup>2</sup> for the power supply and the relay control outputs.
  - 1 mm<sup>2</sup> for sensors and remote controls.
  - 1 mm<sup>2</sup> for C-Bus and C-Ring. For length limits see Technical Data Sheets T 021 and T 022.
- Switch on power (230 V AC, or 240 V AC for UK market) and check its presence at terminals L and N.

It is advisable not to insert more than two cables to a single terminal and, if necessary, to use an external terminal block.

**9. EXAMPLES OF CONTROL OF SITES WITH RELATIVE WIRING DIAGRAMS**

**9.1 Single modulating boiler with 1, 2 stages, which provides heating directly, without production of DHW**



**Main configurations :**

- 4.1.0 CRing: NO SINGLE SITE
- 4.2.0 Use of pump HEATING
- 4.3.0 Boiler recycle pump: USED

- B2** – Outside temp. sensor
- B3** – Flue gases temp. sensor
- B4** – Boiler temp. sensor
- B6** – Anticondensing sensor for boiler (as alternative to **Man** control)

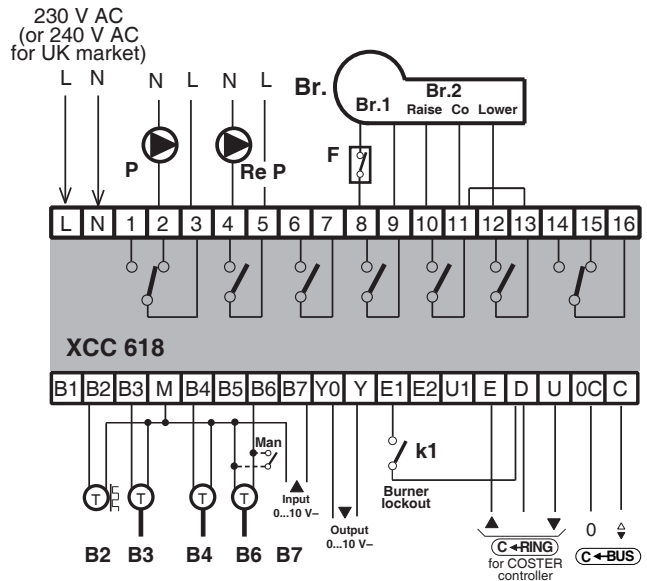
- Man** – Switch for changing whole system to manual; alternative to anticondensing sensor for boiler (**B6**)
- k1** – Switch (voltage-free) for burner lockout

- Y** – Universal programmable optoisolated output
- Y0** – Zero (0) volts of optoisolated Y output.

This output can be programmed to give information to the site for further automation (see section 4.17.0) Inputs for external controls **4.17.0**)

**Inputs for external controls :**

- Input 0...10 V (B7): an input which can be used for control of TEMPERATURE or POWER of the burner
- C-RING : this is the communication Bus which can communicate the desired temperature of the burner on the basis of the demand from the various zones served.



- L** – 230 V AC (or 240 V AC for UK market)
- N** – Neutral
- P** – Pump for heating or other use
- Re P** – Boiler recycle pump
- F** – Boiler thermostats in series with burner control
- Br** – Burner
- Br1** – On-Off control of burner
- Br2** – Modulating control of burner

**Operation :**

There is only one boiler and it can control any downstream hydraulic circuit, at set temperature or under external control, by means of the inputs (0...10V or C-Ring). The temperature can be programmed by: :

- **C-Ring circuit by other COSTER controllers**
- **0...10 volt input which can represent the TEMPERATURE or the POWER desired.**

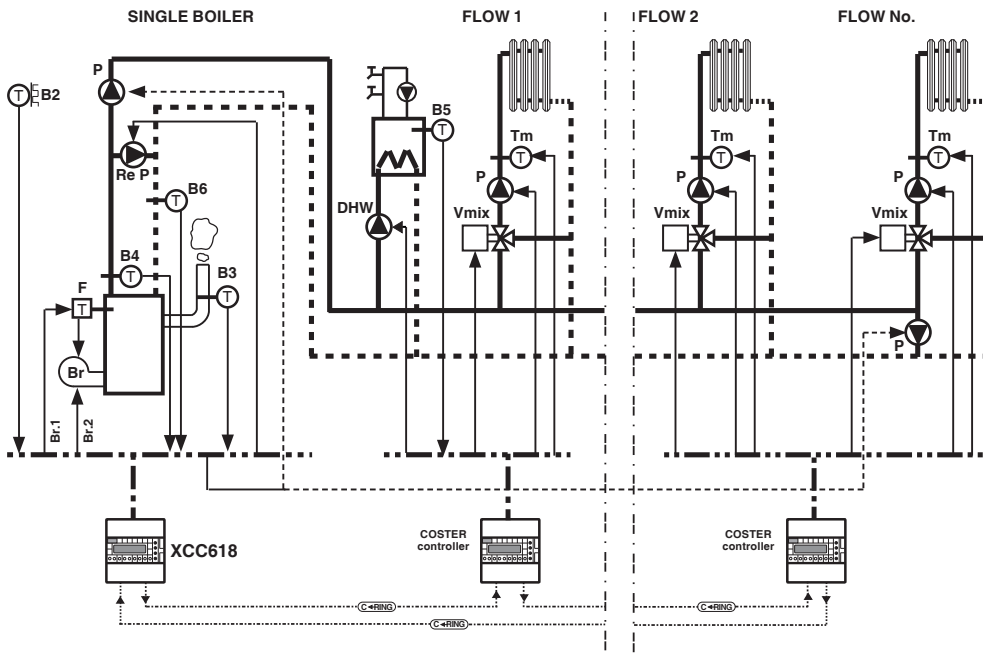
The pump P is programmed to operate only when the boiler is also in operation.

In the example is shown a modulating burner, but the system can also operate with a 1- or 2-stage burner.

**If the burner should have a 0...10 V input you can use the Y output (see section 13, page 8).**

**TELEMANAGEMENT IS POSSIBLE WITH BOILERS & BURNERS HAVING INCORPORATED ELECTRONICS AND 0...10 V INPUT (see section 13.2 on page 8)**

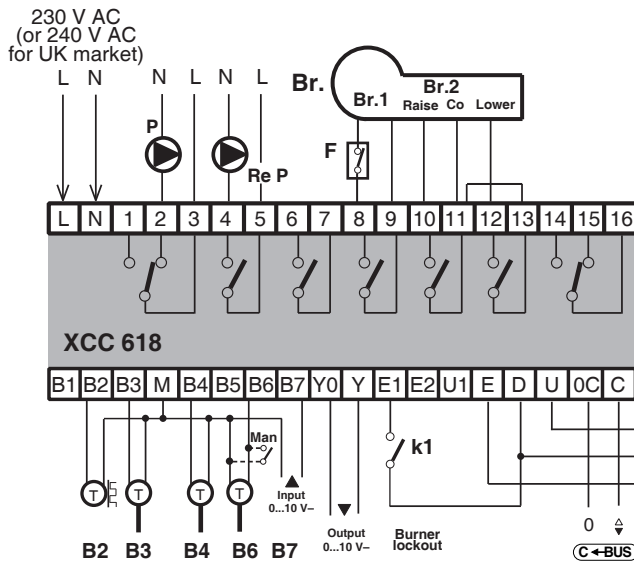
**9.2 Single boiler, which feeds the manifold, with any number of flows & mix of uses.**



**Main configuration**

- 4.1.0
- CRing: PRIMARY SITES
- 4.2.0
- Use of pump BOILER
- 4.3.0
- Boiler recycle pump: USED

- B2** – Outside temp. sensor
- B3** – Flue gases temp. sensor
- B4** – Boiler temp. sensor
- B6** – Anticondensing sensor for boiler (as alternative to Man control)
- Man** – Switch for setting whole system on manual; as alternative to anticondensing sensor for boiler (**B6**)
- k1** – Switch (voltage-free) for burner lockout
- Y** – Universal programmable optoisolated output
- Y0** – Zero (0) volts of optoisolated Y output  
This output can be programmed to give information to site for further automations (see section 4.17.0)
- L** – 230 V AC (or 240 V AC for UK market)
- N** – Neutral
- P** – Pump for heating or other
- Re P** – Boiler recycle pump
- F** – Boiler thermostats in series with burner control
- Br** – Burner
- Br1** – On-Off control burner
- Br2** – Modulating control burner



**XCC 618 can function as MASTER for the C-Ring. Accordingly, the boiler can operate at the temperature required by the zones & at the same time activate the SLAVE controllers.**

**Operation :**

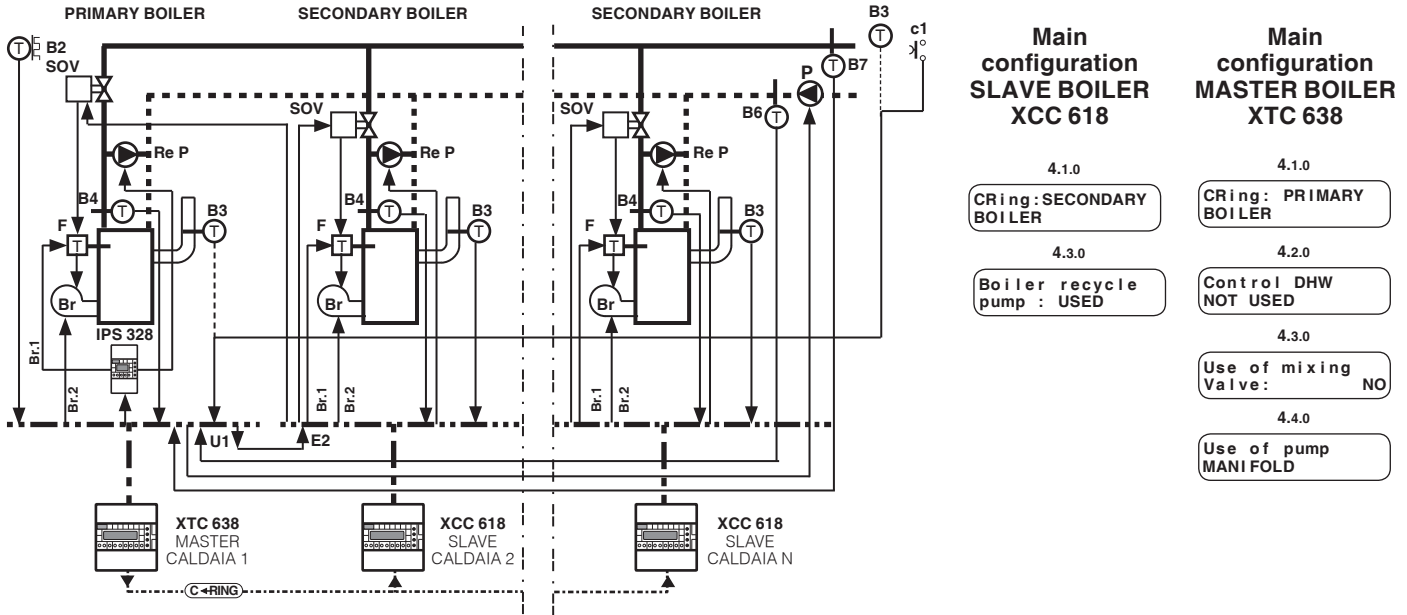
The boiler supplies the manifold from which originate all the flows and the end uses of the site. If the flows and the end uses are controlled by COSTER devices, the boiler is automatically controlled on the basis of the requirements of the whole system, in order to optimize the energy output. The pump (P) is switched on when the boiler is called on to operate and can be selected as:

- RECYCLE MANIFOLD: keeps the manifold warm even when the zones do not require POWER.
- CIRCULATION MANIFOLD: this is the manifold circulation if a direct is required.

In the example is shown a modulating burner, but the system can also control a 1- or 2-stage burner. **If the burner should have a 0...10 V input you can use the Y output (see section 13, page 12).** **Using this scheme, the single, or all, the follows one or all the flows can exploit the “SLAVE” controllers, with all the 24hour, 7day or annual programs with which these controllers are provided.**

**9.3 Use of XCC 618 as controller of a "secondary" boiler, under control of the sequence with XTC 638**

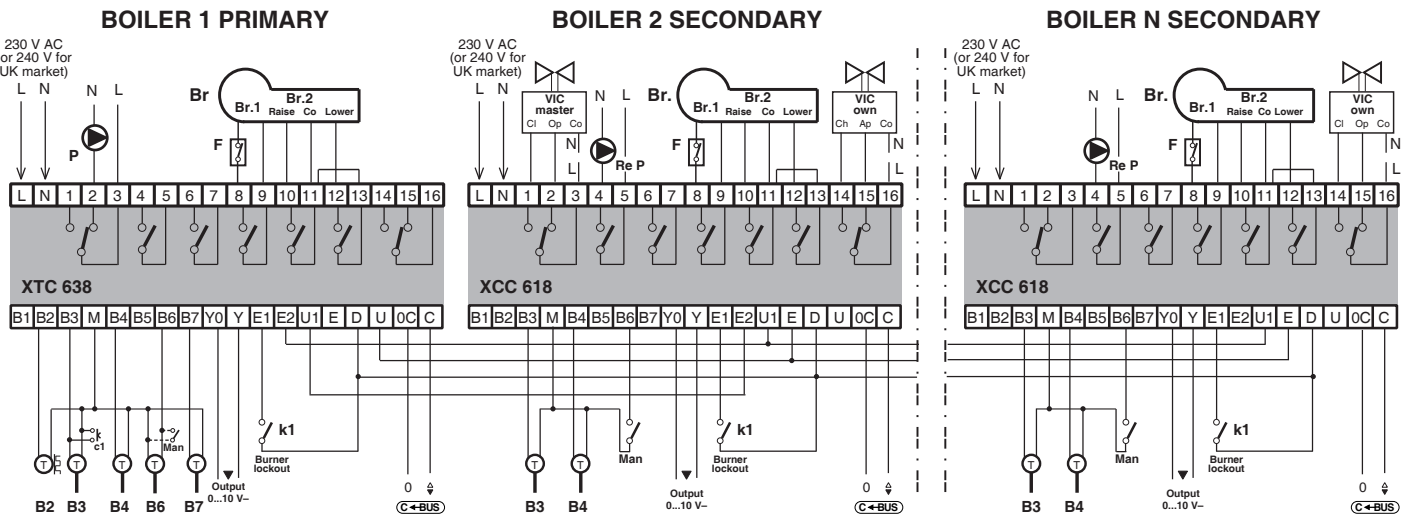
This example shows XCC 618 used to control a secondary boiler under the control of the XTC 638 sequencer. For more details and for other examples you are referred to XTC 638 Technical Data Sheet.



Main configuration SLAVE BOILER XCC 618	Main configuration MASTER BOILER XTC 638
4.1.0 CRing: SECONDARY BOILER	4.1.0 CRing: PRIMARY BOILER
4.3.0 Boiler recycle pump : USED	4.2.0 Control DHW NOT USED
	4.3.0 Use of mixing Valve: NO
	4.4.0 Use of pump MANI FOLD

- B2** – Outside temp. sensor
- B3** – Flue gases temp. sensors or (only for Master boiler) room temp. sensor
- c1** – Remote Extension switch
- B4** – Boiler temp. sensors
- B6** – Anticondensing sensor for manifold (as alternative to **Man** control) to anticondensing sensor for manifold (**B6**)
- Man** – Switch for changing whole system to manual, as alternative to anticondensing sensor for manifold (**B6**)
- B7** – Manifold temp. sensor
- k1** – Switch (voltage-free) for burner lockout
- Y** – Universal programmable optoisolated output
- Y0** – Zero (0) volt of optoisolated Y output.  
This output can be programmed to give Information to site for further automation (see page 4.17.0)

- L** – 230 V AC (or 240 V AC for UK market)
- N** – Neutral
- P** – Manifold pump
- Re P** – Boiler recycle pump
- SOV own** – Shut-off valve own boiler
- SOV master** – Shut-off valve Master boiler
- F** – Boiler thermostats in series with control burner
- Br** – Burner
- Br.1** – On-Off control burner
- Br.2** – Modulating control burner



**Operation :**

The n boilers are connected to the manifold and controlled in SEQUENCE. The heating site is directly connected. This is the simplest system for a site with several boilers in SEQUENCE, where the consumer outputs can be of any type, but are able to communicated with the heat generating system. In the example are shown modulating burners, but the system can also run with 1- or 2-stage burners. If the burners should have 0 ... 10 V inputs you can use the Y output (see section 13 on page 8).

**WARNING: in all layouts similar to this (XCC 618 used as "Slave" for a sequence of several boilers) you have to use an XTC 638 as "Master" of the sequence.**

**If you want to control the recycle pump also for the boiler served by XTC 638 it is necessary to use the accessory IPS 318, which operates as follows:**

- INPUT = On-Off control of the burner coming from XTC 638
- BURNER CONTROL OUTPUT = the same input simply repeated with a relay.
- RECYCLE PUMP CONTROL OUTPUT = control recycle pump using logic already described



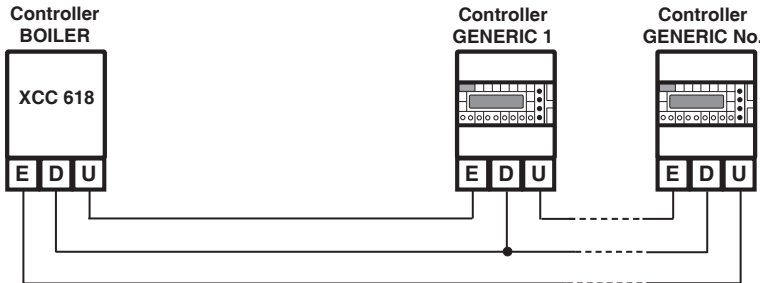
**10. COMMUNICATION VIA C-RING**

**10.2 Communication between XCC 618 and other COSTER controllers provided with C-Ring**

In this instance the XCC 618 controller receives, from the C-Ring with the other controllers, the data necessary for the operation of the boiler.

- gives permission for the operation for the **Slave** controllers to operate
- receive and transmits the measurement of the **outside temperature**, using a single sensor for the whole site
- receives the value of the **maximum flow temperature requested** by the consumer outlets.

**10.3 Electrical connection C-Ring**



**WARNING:** if XCC 618 should be used as “Slave” in a sequence of several boilers controlled by XTC 638, the C-Ring connections are to be made following the diagram shown in section 10.3 on page 11 of the XTC 638 Technical Data Sheet.

The XCC 618 controller of the boiler controls, via C-Ring, the other COSTER controllers, so as to have all the information regarding the uses. With this information it decides on the best strategy for the system.

**WARNING:** XCC 618 is provided with C-Ring compatible with all COSTER controllers provided with C-Ring and manufactured not before the end of June 2004 (series number 426 onwards).

**Compatibility with the older controllers is possible: contact COSTER for information on how to do this.**

The document which explains in detail the C-Ring system is: SYSTEM OF COMMUNICATION BETWEEN CONTROLLERS (T 022).

**11. C-BUS COMMUNICATION (LOCAL OR REMOTE TELEMAGEMENT)**

Each controller must be supplied with the C-Bus Plug-in of the appropriate type for the controller concerned

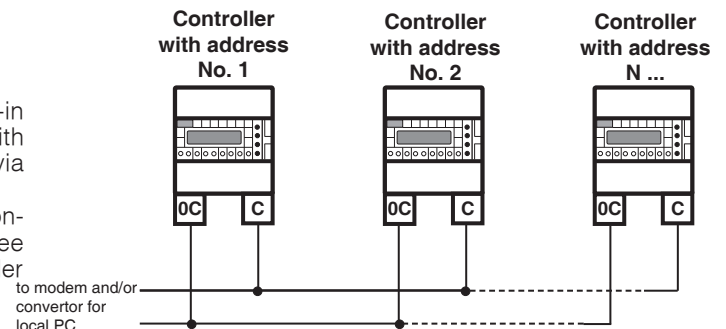
XCC 618 can provide the following:

- remote Telemagement by means of the C-Bus Plug-in type ACB 400 C1 Telemagement is bi-directional, with one or more local PCs and/or a remote central site via telephone or other networks.

The local communication is to a portable PC to be connected directly to the unit. From the Pc(s) you can see displayed and/or adjust all the parameters on the controller & readout all the data.

**XCC 618 can communicate at various speeds (see page 21, display 4.24.0).**

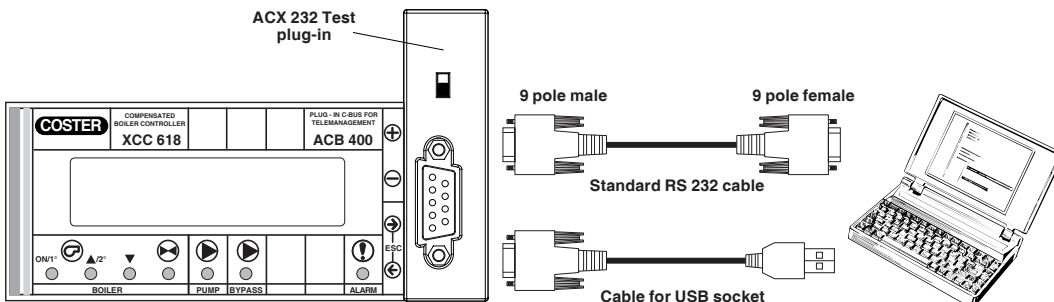
**If, on the site are connected in C-Bus other devices with different speeds, it is necessary to make uniform the speeds of all the units and of the modem.**



**12. CONNECTION TO THE PC FOR LOCAL COMMUNICATION BY MEANS OF ACX 232 TEST PLUG-IN**

Withdraw the C-Bus Plug-in and insert the test Plug-in ACX 232; use a standard cable to connect the RS 232 plug to the PC (the cables are to be found in the “HANDY KIT”).

If the PC has only USB inputs use a standard RS232 to USB conversion cable.



**ACCESSORIES :**

- Test Plug-in = **ACX 232**
- Handy kit = **KIT RS 232**

The Handy Kit contains the two cables & other accessories useful for servicing.

**Notes :** - Before communicating ensure that the address entered in the controller is the address with which you want to communicate via PC.

- it is recommended to use a battery-powered portable PC with the connection to 230 V AC removed (or 240 V AC for UK market) , since the earth (0 V) of the device is connected to that of RS232 and so to that of the PC. By connecting the two earths together you can create a situation of dispersed currents, if the earths are not well-made and if the PC has its 0 V connected directly to the central pole of the plug (as is usual).

## 13. CONTROL OF BURNERS AND OF SYSTEMS WITH 0...10 V INPUT & TELEMAGEMENT

### 13.1 Control of burners and of systems with 0...10 V input

XCC 618, besides controlling any type of 1, 2-stage or modulating burner, can control burners with 0...10 V input.

These burners already have an incorporated, inseparable, controller; two situations can be distinguished:

– **Input 0...10 V as temperature:** the value of the voltage applied at the input is proportional to the value of the temperature at which you want the boiler to run. This input is generally configured with a correspondence between input voltage and temperature, with a scale already pre-established and set.

XCC 618 can adapt its output to any type of scale.

The controller incorporated in the burner is provided with its own sensor and so the boiler sensor for XCC 618 is not strictly necessary, even if very useful for reading the boiler temperature locally and remotely via Telemagement.

– **Input 0...10 V as power:** the most complete burners also offer the possibility of configuring the 0...10 V input as power instead of temperature. The burner goes to a power proportional to the value in volts at the input.

Generally 0 volts corresponds to 0 power and 10 volts corresponds to 100%.

It does not matter if the burner has different scales, since the 0...10 volts output of XCC 618 can, as for the temperature, be calibrated as you wish.

With this input the boiler sensor is indispensable, since the real controller of the boiler becomes the one incorporated in XTC 638, and this clearly has to know the boiler temperature in order to control it.

The use of the 0...10 volt output of XCC 618 is universal and so can control any type of heat generator, such as for example, a co-generator, a heat exchanger, a boiler running on solid fuel, etc.

**The universal 0...10 volt output of XCC 618 can also be used to control a variable-speed pump with a 0...10 volt input. You can adjust the site flow according to the temperature or to the power absorbed in order to generate a return-to-boiler temperature which is lower and more adapted to the condensation boilers.**

### 13.2 TELEMAGEMENT of boilers or burners with incorporated electronics & 0...10 volts Input.

XCC 618 permits setting up TELEMAGEMENT of burners/boilers already provided with the required electronics. These burners are nearly always provided with a 0...10 V input which represents the desired temperature for the boiler.

They are almost always fitted with a voltage-free switch to indicate a burner lockout and with a switch for the On-Off control of the burner must inserted in series with the safety thermostat.

By connecting these signals to XCC 618 you can control the burner completely and you can exploit all the capacity of controlling the temperature and the reception of alarms and measurements via TELEMAGEMENT.

## 14. FUNCTIONS OF CONFIGURATION, SETTING & TESTING OF THE SYSTEM

In this section are described, without entering into detail, all the functions of XCC 638, since the subject will be dealt with in depth when the programming pages are examined.

**The order in which you have to operate on the controllers at the moment of installation is the same as that in which the sub-paragraphs are presented.**

### 14.1 Configuration site (CONFIGURATION menu) (under CONFIGURATION KEY)

By CONFIGURATION SITE is meant the adaptation of XCC 638 to the site it has to serve.

As we have seen in the examples of sites, it is necessary to provide XCC 638 with all the details of the site itself so that it can perform its functions correctly.

**Without a correct SITE CONFIGURATION, XCC 618 will be unable to carry out its functions.**

The principal items of information required for configuration are:

- SINGLE BOILER OR SEVERAL BOILERS IN SEQUENCE
- TYPE OF HEATING INSTALLATION (SINGLE- OR MULTIFLOW)
- USE OF PUMP
- TYPE OF BURNER
- CHOICE OF ACCESS KEYS
- FEATURES OF TELEMAGEMENT
- OTHER SPECIAL FUNCTIONS



**14.2 Setting burner + boiler (menu BURNER + BOILER) (under SETTING KEY)**

The functions which the burner control has to carry out are the most important because on the accuracy of these functions depends the energy output of the whole system with a single burner or with several burners in SEQUENCE. For more details on the theoretical criteria on which the system of sequence is based you are referred to the following document: "CONTROL IN SEQUENCE OF SEVERAL NORMAL OR CONDENSATION BOILERS, WITH MODULATING OR NORMAL BURNERS" (Definitions for SF 4-070: document available from COSTER).

The main settings are :

- TYPE OF CONTROL: POWER (recommended for normal boilers) or TEMPERATURE (recommended for condensation boilers).
- POINT FOR SWITCHING OFF BURNER: this function and the preceding one give rise to various operating criteria when there are several boilers in SEQUENCE..
  - NORMAL :the burner is switched off as soon as possible
  - OPTIMISED : the burner takes into account the type of boiler and burner which precede it in SEQUENCE, before switching off. For example: it allows the second stage of the burner which precedes it to modulate instead of switching itself off completely. This subject is discussed in detail in the document referred to above.
- BOILER RECYCLE PUMP. XCC 618 can control any boiler recycle pump in order to resolve the problem of the excessive temperature when the site circulation stops for any reason.

There are two possible functions:

- TEMPORARY SWITCHING ON: the pump is switched on only when the boiler is heating itself up. This function is indispensable to avoid raising the return-to-boiler temperature, when the boiler is of the condensation type and at the same time the circulation is ensured by the site. In this last situation the recycle pump is switched off
- SET SWITCHING ON: the pump is switched on always when the burner is switched on. This is useful when the boilers are not condensation types
- MANY OTHER PARAMETERS to optimize the energy output

**14.3 Testing (TESTING menu)(under SETTING KEY)**

XCC618 is provided with a sophisticated system for testing all the connections towards the outside.

**It is absolutely essential to test the whole electrical system connected to these controllers before assuming that the whole system is functioning correctly.**

**14.4 Programmable optoisolated output (Y, Y0)**

XCC 618 is provided with an optoisolated output which can be programmed for many uses.

- indication of Off status of heating
- indication of Off status of boiler
- output 0...10 V: used to control :
  - a burner provided with a 0...10 V input as power or temperature with any scale
  - a group of boilers (e.g. modulating boilers) with 0...10 V input as power or temperature with any scale.

**IMPORTANT: There is no point in discussing the practical use of the controllers - site system without having completed all the operations summarized in this section: in other words, it is useless to operate as described in the next section (USE FUNCTIONS) without having completed all the operations of CONFIGURATION, SETTING & TESTING just described.**

**15. USE FUNCTIONS**

These functions comprise those operations which the user can carry out to employ the controller as best he thinks fit.

The use functions can be classified in four groups:

**15.1 Use with rapid access (under USER KEY)**

With the RAPID ACCESS pages you can adjust the desired temperature for the boiler, if it is not already controlled by an external input of the 0...10 V type, C-Ring, or by the sequence controller (XTC 638).

**15.2 Normal use (under USER KEY)**

A group of pages by means of which you can set the heating season and enter other parameters such as the clock and the desired temperature for the boiler, when not set by external controls.

**15.3 Alarms & measurements (free access except for any data requiring USER KEY)**

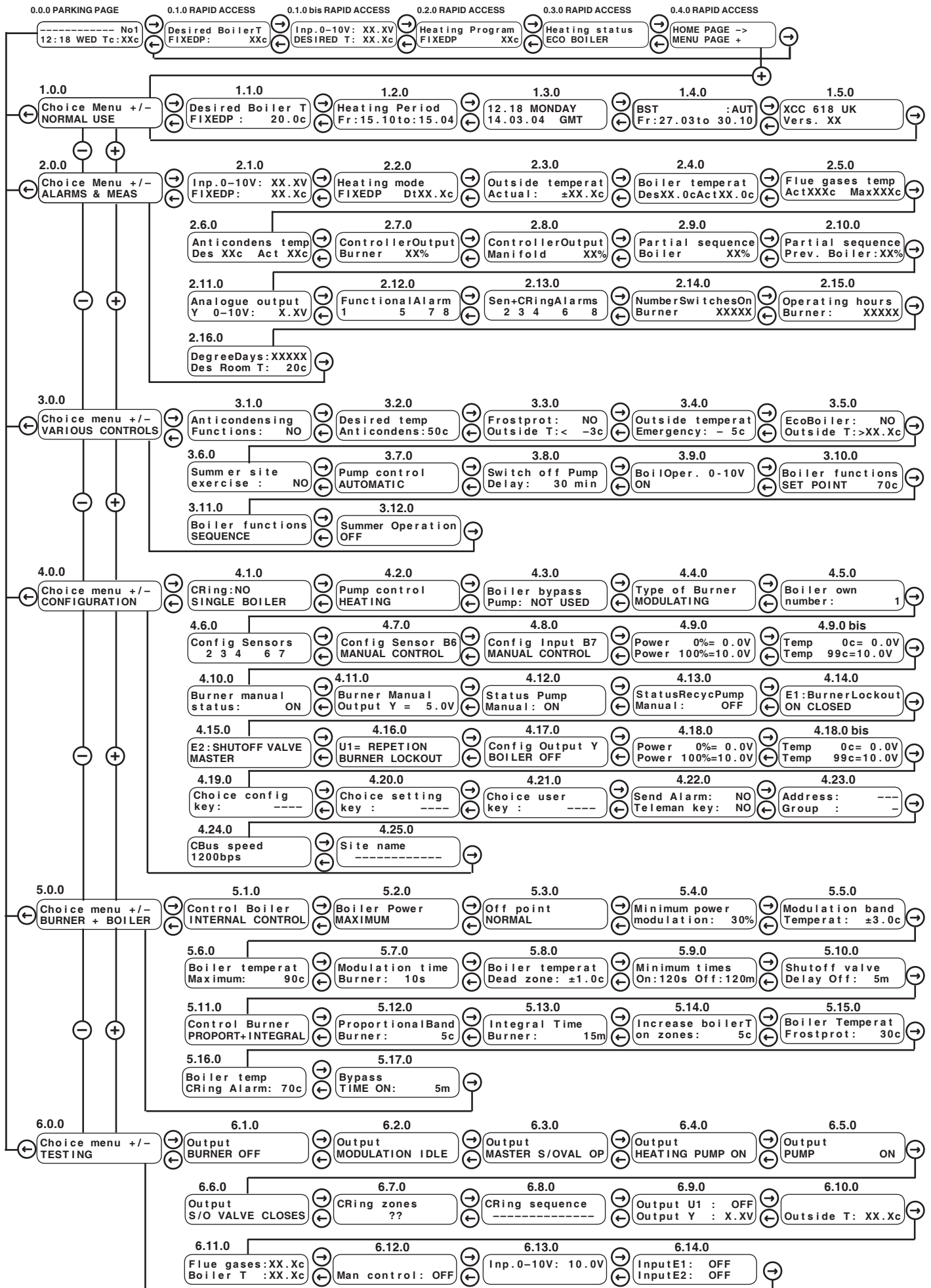
This group of pages includes all the measurements, alarms and counts which illustrate the operation of the system. They are all pages with free access except those relating to the choice of desired alarms (SETTING KEY) and those regarding counts, the cancelling of which is protected by the CONFIGURATION KEY, this is in order to permit the cancellation of these data only to operators of the highest level.

**15.4 Various controls (under SETTING KEY)**

In this group are included all the parameters which define the operation of the system according to the requirements for the good management of the site: for example: priority functions, Frosprot, Eco Off, summer plant exercise, choice of the sequence and accessory boiler functions.

They are, in general, functions which, once established, are practically never changed.

**16. SEQUENCE OF DISPLAY PAGES (the data are those in memory at consignment)**



**NUMBERING OF THE PAGES**

The pages are numbered with three digits. For greater clarity we give three examples:

- page 5.6.0 = 5 represents the menu (BURNER + BOILER), 6 represents the page number in the menu (Maximum boiler temperature) and 0 which represents any sub-page of the previous page .  
The sub-pages are pages which are opened by a certain page, which in this instance functions also as a sub-menu.
- in this particular controller there are no sub-pages or sub-menus and so the third digit will always be "0".
- special pages: 0.0.0 = parking page: this is the page to which the system automatically returns if the keys have not been used for a certain period (about 15 minutes). The parking protects the system from involuntary tampering.
- 0.1.0 ... 0.4.0 = pages for rapid access: these are pages for immediate use, very easily and rapidly accessible

**N.B.:** Some pages may appear differently or even not appear at all; this depends on the configuration of the controller in relation to the site where it is to be used.

**N.B. In the following text the menus, any sub-menus and the pages are shown in the order with which they are displayed by the controller.**

**WARNING: before using these pages read the last section (section 26).  
The values of the parameters shown in the pages are those of the factory (DEFAULT):  
they can be left as they are except for those regarding the type of hydraulic installation.  
All the parameters adjustable using the + and – keys are highlighted thus**

Many pages or entire menus may not be shown or appear differently, depending on the configuration which has been made to adapt XCC 618 to the site.

17. MENU' NO. 0		RAPID-ACCESS PAGES (ACCESS WITH USER KEY, IF ENTERED)	
Page No.	Display	Description	Sect.
0.0.0	----- No1 12:18 WED Bt:XXc	<p><b>This is called: PARKING PAGE = the page to which the controller returns automatically (after a quarter of an hour).</b></p> <p>The first line shows the name of the site, written on page <b>4.25.0</b> : No.1 : Number of boiler, only if there are several boilers (SEQUENCE) 12:18 WED Time &amp; day of week XXc Actual temperature of boiler</p> <p>The time and day of the week can be alternated with one of the following: – ALARM = one or more alarms in progress (see pages <b>2.12.0</b> and <b>2.13.0</b>) – MANUAL = The whole system has been controlled on MANUAL (control B6 enabled) – SUMMER = summer period</p> <p>The pages which appear after this depend on the configuration which has been given to the controller.</p>	15.1
0.1.0	Desired BoilerT FIXEDP. : 70c	<p>This page appears only if there is a single boiler and the desired temperature is SETPOINT (chosen as required). – FIXEDPOINT = you can choose the temperature you require for the boiler</p>	
0.1.0 bis	Inp. 0 - 10V: XX.XV DESIRED T: XX.Xc	<p>This page appears only if there is a single boiler and the desired temperature comes from the 0...10 V input &amp; not from SETPOINT. – DESIRED T = desired temperature controlled by 0...10 V input as TEMPERATURE – POWER = desired power controlled by 0...10 V input as POWER "BOILER OFF" appears if on page 3.9.0 "OFF" is ordered.</p> <p><b>WARNING: if the desired temperature for the boiler comes from C-Ring (PRIMARY SITES or SECONDARY BOILERS) these pages do not exist because the desired boiler temperature is controlled by other devices via C-Ring</b></p>	
0.2.0	Heating Program FIXEDP. 70c	<p>This page appears only when there is a single boiler, with desired temperature at SETPOINT: – FIXEDPOINT = XX c you leave the desired temperature at a set figure. – OFF = you switch off the whole heating system, including burner and pump.</p>	
0.3.0	Heating status ECO BOILER	<p>This page appears if the heating status is in some way different from the normal. One of the following indications appears: ECO BOILER (the boiler has switched to economy, see page <b>3.5.0</b>), FROST PROT (antifreezing function, see page <b>3.3.0</b>).</p>	
0.4.0	HOME PAGE -> MENU PAGE +	<p>This page serves to separate the menu of rapid access pages from all the other menus which have a different or higher technical content. By pressing -&gt; key = you return to the parking page By pressing + key = you go to the next menu</p>	
X.X.X	Enter key -----	<p><b>ENTERING ACCESS KEYS, IF SET</b></p> <p>The key is written by entering the characters with + and – keys and moving the cursor with the &lt;- and -&gt; keys. Once the correct key has been entered you return to the page from which you began and you can start to operate. The access key, once entered, remains active for 15 minutes after any key has been pressed; in practice, if, for 15 minutes after having entered the key, no key is been pressed, the key itself is again requested. The key to be entered is that requested by the menu you are using, or a key for a more senior hierarchy (see display page <b>4.20.0</b>, section 20, page 26).</p>	

18. MENU' N. 1 NORMAL USE (ACCESS WITH USER KEY, IF ENTERED)			
Page No	Display	Description	Sect.
1.0.0	Choice Menu +/- NORMAL USE	This is menu selected. The whole of this menu is protected by USER KEY.  The pages which appear after this depend on how the controller has been configured.	15.2
1.1.0	Desired Boiler T FIXEDP.: 70c	This page appears only if there is a single boiler and the desired temperature is SETPOINT (chosen as required) - SETPOINT = you can choose the temperature you require for the boiler. For convenience, this is a repetition of page 0.1.0	
1.2.0	Heating Period Fr: 15.10 to: 15.04	Set the period during which you require heating. The system automatically sets heating for the "summer" period. On page 3.12.0 you can set the type of operation you require during the summer period.	
1.3.0	12.18 MONDAY 14.03.04 GMT	Set the system clock and calendar. The internal clock is a high-precision instrument and has a battery life (when the controller is switched off) of more than 10 years	
1.4.0	BST : AUT Fr: 27.03 to: 30.10	The clock can change automatically (AUT) from GMT to BST and vice versa in accordance with the dates established by the European Community. If on manual (MAN) you can set other dates if you are not following those of the European Community or if, in the future, the latter should change.	
1.5.0	XCC 618 UK Vers. XX	The identity card of the controller. Version XX = the software version which corresponds to the technical features.	
1.0.0	Choice Menu +/- NORMAL USE	Continuing, you return to the first page of the menu. If you want to select another menu, use + and - keys; if you want to return for a check on the menu just used, use the -> key. For ease of use, when you reach any page with a choice of menu, there is a delay of a few seconds to give the user the possibility of deciding whether to remain on the current menu or exit definitely. <b>This holds good for all the other menus.</b>	

18. MENU' NO. 2		ALARMS, MEASUREMENTS & COUNTS (FREE ACCESS EXCEPT 5 PAGES)	
Page No.	Display	Description	Sect.
2.0.0	Choice Menu +/- ALARMS & MEAS	This is the chosen menu. The whole of this menu, except for a few pages, has FREE ACCESS. The pages requiring KEY are indicated. In this menu are included all the alarms, measurements & counts: this menu is of special interest to the site engineer who needs to be aware of how the whole system is functioning. <b>Usually the measurements not contemplated by the configuration are either without the relative pages or are indicated by dashes.</b>	15.3
2.1.0	Inp. 0-10V: XX.XV DESIRED T: XX.Xc	This and the next page appear if the 0...10 V input has been configured (page 4.6.0) and if the boiler is controlled from this input (page 5.1.0). - Inp 0-10 V = value of input received in volts - DESIRED T = temperature desired for boiler controlled by 0...10 volt input	
2.1.0 bis	Inp. 0-10V: XX.XV POWER : XX.X%	A page similar to the previous one but regarding the POWER you want from the boiler. In this case, only when the boiler exceeds the maximum desired temperature (page 5.6.0) does the internal controller take over control in order to avoid exceeding this maximum.	
2.2.0	Heating mode FIXEDP Dt70.0c	On this page you can readout the heating temperature mode in operation at that moment.	
2.3.0	Outside temperat Actual: ±XX.Xc	This is the outside temperature measured by the relative sensor (if connected to the controller). If the outside temperature arrives via C-Ring (see section 10.2), in place of Actual will appear C-Ring.	
2.4.0	Boiler temperat Des70.0cAct70.0c	Des = desired temperature (SETPOINT) If the boiler is in SEQUENCE with others, and controlled IN POWER, "Des"(Desired) does not appear Act = actual temperature. If everything is functioning correctly the desired temperature should be almost equal to the actual temperature (taking into account the transitory variations). This rule holds good also for all the successive measurements.	
2.5.0	Flue gases temp ActXXXc MaxXXXc	This page is dedicated to the temperature of the boiler flue gases. Act = Actual temperature at that moment Max = Maximum temperature reached by the flue gases from last zeroing of the memory; to cancel the memory press at the same time + and - for a few seconds.	
2.6.0	Anticondens temp Des XXc Rea XXc	This measurement only appears, of course, when the anticondensing sensor is configured ( as we have seen for non-condensing boiler).	
2.7.0	ControllerOutput Burner XX%	This is the thermal power (expressed as a percentage of maximum) demanded from the burner at that moment. Following the transitory phases it must be quite close to the figure which may be shown on the burner ( <b>Burner power</b> )	
2.8.0	ControllerOutput Manifold: XX%	This is the thermal power (expressed as a percentage of the maximum) demanded at that moment from the total system of boilers, when they are in SEQUENCE. In practice, it is the power which the manifold should supply ( <b>Manifold power</b> )	
2.9.0	Partial sequence Boiler XX%	This is the part of the total power which the boiler, when in SEQUENCE, should provide. This value depends above all on the boiler position in the sequence.	
2.10.0	Partial sequence Prev. Boiler: XX%	Has the same significance as the previous page but relating to the boiler preceding it in the SEQUENCE. It is useful to know this measurement in order to have information on the OPTIMUM POINT FOR SWITCHING OFF (see section 14.2 and the document referred to in that section)).	
2.11.0	Analogue output Y 0-10V: 0.0V	On this page you can read the value in volts of the 0...10 V analogue output, if this has been configured on page 4.20.0 of the CONFIGURATION menu.	



18. MENU NO. 2		ALARMS, MEASUREMENTS & COUNTS (FREE ACCESS EXCEPT 5 PAGES)	
N. Pag.	Display	Description	Cap.
2.12.0	<p><b>Functional Alarm</b>  <span style="border: 1px solid black; padding: 2px;">1      5      7 8</span></p>	<p>This page is protected by the SETTING ACCESS KEY.                      On this page you can choose and see displayed the functional alarms of the system.                      Each alarm can be:                      – CONFIGURED but not triggered = the fixed number appears                      – CONFIGURED and triggered = the number alternating with the letter A appears                      – ALARM NOT CONFIGURED (not required) = in place of number appears a dash.                      Each alarm can be selected using the cursor: For each position of the cursor there appears, in clear, the type of functional alarm:                       Each alarm can be selected using the cursor:                      For each position of the cursor there appears, in clear, the type of functional alarm :                      – ALARM 1 = TEMPERATURE BOILER                      – ALARM 5 = TEMPERATURE FLUE GASES                      – ALARM 7 = BURNER LOCKOUT                      – ALARM 8 = TIME CLOCK                      Each alarm can be programmed as difference between desired temperature and actual temperature, or as a limit (Max) for the flue gases temperature. The delays can be programmed                      This programming is carried out via local or remote Telemangement</p>	15.3
2.13.0	<p><b>Sens+CRingAlarms</b>  <span style="border: 1px solid black; padding: 2px;">2 3 4      6      8</span></p>	<p>This page is protected by the SETTING ACCESS KEY.                      The modality of these alarms is exactly the same as described above.                      These alarms are for disconnected or short-circuited sensors.  <b>The alarms for the obligatory sensors are already set.</b>                      Each alarm can be selected with the cursor:                      For each position of the cursor there appears the type of functional alarm:                      – ALARM 2 = OUTSIDE SENSOR                      – ALARM 3 = FLUE GASES SENSOR                      – ALARM 4 = BOILER SENSOR                      – ALARM 6 = MANUAL CONTROL or ANTICONDENSING SENSOR                      – ALARM 8 = CRING NOT WORKING</p>	
2.14.0	<p><b>Number Switches On                      Burner:      XXXXX</b></p>	<p>In view of the importance of the measurement, this page is protected by the CONFIGURATION ACCESS KEY.                      It totals the number of starts of the burner (if 2-stage, those of the first stage).                      This data is useful for optimizing the sequence so as to have the maximum seasonal output.                      To erase the count from memory, press at the same time + and – keys for at least 9 seconds: the cancellation is protected by the CONFIGURATION KEY, if entered.</p>	
2.15.0	<p><b>Operating hours                      Burner:      XXXXX</b></p>	<p>In view of the importance of the measurement, this page is protected by the CONFIGURATION ACCESS KEY.                      It totals the number of operating hours of the burner; if the burner is in lockout the metering stops.                      This data, too, is useful for optimizing the sequence and for obtaining the maximum seasonal output.                      To erase the count from the memory, press at the same time + and – keys for at least 9 seconds: the cancellation is protected by the CONFIGURATION KEY, if entered.</p>	
2.16.0	<p><b>DegreeDays:      0                      DesRoomT:      20c</b></p>	<p>In view of the importance of the measurement, this page is protected by the CONFIGURATION ACCESS KEY.                      It totals the number of Degree-Days starting from the last reset.                      20c = the reference room temperature for the calculation of the Degree-Days, officially 20°C.                      To erase the count from the memory, press at the same time + and – keys for at least 5 seconds: the cancellation is protected by the CONFIGURATION KEY, if entered.                      The change of the reference temperature is also protected by the key.   <b>These last three counts, together with the fuel consumption data, are fundamental for assessing the saving in energy consumption which can be achieved by means of a correct configuration and management of the site.</b></p>	

Page No.	19. MENU' NO. 3 Display	VARIOUS CONTROLS (ACCESS WITH SETTING KEY, IF ENTERED) Description	Sect.
3.0.0	Choice menu +/- VARIOUS CONTROLS	This is the menu which has been chosen. The whole of this menu is protected by SETTING KEY. In this menu are included all the parameters for defining the operation of the system according to the requirements for good management of the site. These are functions which, once established,	15.4
3.1.0	Anticondensing Function : NO	You can decide if or not you want to give priority to anticondensing. The page appears only if the configuration is PRIMARY SITES	
3.2.0	Desired temp Anticondens : 50c	On this page you can set the minimum temperature necessary for avoiding acid condensation in the boiler, when the boiler is a normal gas or gasoil type (not condensation). Obviously, the above holds good only if the boiler is not a condensation type: in this type of boiler you have to keep the return temperature as low as possible in order to increase the combustion output and so the condensation is requested .	
3.3.0	Frostprot : NO Outside T : < -3c	You can decide if or not you want the "Frostprot" function (against the danger of the site freezing), and below which outside temperature this function has to be activated. The temperature is chosen as + or - the desired value. This function protects the boiler even when the system is programmed OFF.	
3.4.0	Outside temperat Emergency : -5c	The whole system is controlled on the basis of the outside temperature measured by the relevant sensor or received from other controllers via C-Ring. If for any reason (e.g. short circuit or cable break) information on the outside temperature should no longer arrive, you can choose a set emergency value so that the site will operate under acceptable emergency conditions (it is a sort of spare wheel). In this event an alarm is obviously triggered.	
3.5.0	Eco Boiler : NO Outside T : > 18.0c	You can decide if or not to program the "ECONOMY" function for the boiler. The economy function for the boiler permits the total exclusion of the boiler whether alone or in SEQUENCE, when the outside temperature rises above a pre-set value. In this way the least efficient boilers from the energy point of view can be excluded even if the SEQUENCE calls on them, under conditions in which the site is not demanding a great deal of heat. This function is particularly useful in the morning after the night switching off, in the intermediate seasons. Entering the "Boiler econom" function triggers the switching off of the heating pump	
3.6.0	Summer site exercise : NO	You can decide if or not you want the "Summer site exercise" function. During the summer period (heating switched off) all the devices connected to the controller (valves, pumps) are controlled separately so as to put them in motion at least once a week. This operation takes place on Sundays, around midday, a time at which any noise is unlikely to cause annoyance.	
3.7.0	Pump Control AUTOMATIC	You can decide when and how the pump is to be used. AUTOMATIC: the pump is switched on only when required, ALWAYS ON: the pump is always switched on.	
3.8.0	Switch Off Pump Delay : 30 min	You can set a delay for switching off the pump when it is controlled in the automatic mode: this delay serves to recover the thermal energy present on the site. The factory setting is 30 minutes but you can adjust this delay from 0 to 150 minutes.	

Page No.	19. MENU NO. 3 Display	VARIOUS CONTROLS (ACCESS WITH SETTING KEY, IF ENTERED) Description	Sect.
3.9.0	BoilerOper . 0 - 10V ON	<p>On this page you can decide whether to switch off the boiler independently by the 0...10 V signal received (obviously when the boiler is controlled by this means).</p> <ul style="list-style-type: none"> <li>- ON = the boiler obeys the 0...10 V signal received</li> <li>- OFF = the boiler is switched off in spite of the control signal received</li> </ul>	15.4
3.10.0	Boiler functions FIXED POINT 70c	<p>This page exists if there is a single boiler and if the C-Ring is PRIMARY SITES (see page 4.1.0, CONFIGURATION menu, section 20).</p> <p>On this page you can establish the functions of the boiler (there is only one on the site), above all bearing in mind the best energy performance.</p> <p>These program settings are valid only for the winter period.</p> <p>The choices are:</p> <ul style="list-style-type: none"> <li>- FIXED POINT 70c: the boiler is programmed with a set temperature. This is possible, obviously, if the heating site is provided with its own mixing valve and pump.</li> <li>- ZONES: the boiler follows the temperature requested by the heating zone(s). All the other zones which communicate with this boiler via C-Ring (COSTER controllers) follow.</li> <li>- ZONES + MIN. 30c: exactly the same function as the previous one, with a minimum temperature for the boiler itself. This function is useful when it is necessary to ensure that the boiler provides a minimum temperature, since, besides the consumer outlets controlled by COSTER controllers, there exist other consumer outlets with or without any controllers and which cannot communicate with XCC 618.</li> <li>- OFF : you want the boiler always switched off.</li> </ul>	
3.11.0	Boiler functions SEQUENCE	<p>This page exists only if the boiler forms part of a sequence of several boilers and is, accordingly, an alternative to page 3.10.0.</p> <ul style="list-style-type: none"> <li>- SEQUENCE : the boiler normally follows the SEQUENCE</li> <li>- OFF : the boiler is excluded from the SEQUENCE.</li> </ul> <p><b>These programs are always valid in summer and winter</b></p>	
3.12.0	Summer operation OFF	<p>This represents the programming of the system outside the heating period (SUMMER).</p> <ul style="list-style-type: none"> <li>- OFF: the system is completely switched OFF during the summer.</li> <li>- ZONES + MIN 40°C: the system follows the request of the sites connected in C-Ring, with a minimum temperature, which can be pre-set, (e.g. post-heating of air conditioning sites).</li> <li>- ZONES: the system follows the demand of the sites, if the controllers concerned are of COSTER manufacture (provided with C-Ring). Programming which is useful, for example, in the post-heating of zones with air conditioning.</li> <li>- FIXED POINT: 40°C : the whole system is kept at a pre-set temperature.</li> </ul>	

**WARNING: the next menu (No. 4) is the most important of the whole system since it configures XCC 618 on an actual HVAC site; if this menu is not correctly configured there is no point in using the controller, since it may display or request parameters unsuitable for the actual site.**

Page No.	20. MENU' NO. 4 Display	CONFIGURATION (ACCESS WITH CONFIGURATION KEY, IF ENTERED) Description	Sect.
4.0.0	Choice menu +/- CONFIGURATION	This is the selected menu.. The whole of this menu is protected by CONFIGURATIO KEY.YOU ARE STRONGLY ADVISED TO ENTER THE KEY IN ORDER TO PROTECT THIS MENU.  <b>WARNING: access to this menu has to be protected, because an erroneous entry or tampering, besides preventing the control from functioning correctly, can upset the operation of the whole site.</b> <b>Press -&gt; key: there will appear the page :</b>	14.1
	TECHNICAL PAGES! PRESS + KEY	PRESS + KEY: there will appear the message PRESS -> KEY. As soon as you press -> key you enter CONFIGURATION.This procedure is necessary to ensure that inexpert users cannot make configuration errors: This concept has been repeated several times to stress its importance.	
4.1.0	CRing : SECONDARY BOILER	<b>This is the most important page of the whole system, since it communicates the actual HVAC site to the XCC 618 controller which responds accordingly.</b> The choice is between: - <b>NO</b> <b>SINGLE BOILER</b> : on the site there is a single boiler and XCC 618 is not connected to other flows with COSTER controllers.Examples of this type of site are given in section <b>9.7</b> . These sites are the most common: they have one boiler, with or without production of DHW and are with or without the mixing valve for the single heating flow. C-Ring is not used since there are no other flows with COSTER controllers. This choice is valid even if there are other flows with or without other types of controllers (non-COSTER). - <b>PRIMARY ZONES</b> : on site there is a single boiler and XCC 618 is connected to other flows with COSTER controllers. An example of this type of site is given in section 9.2. These are sites with a single boiler, with or without the production of DHW with and several flows controlled by mixing valves, controlled by COSTER controllers. C-Ring, communication between XCC 618 and other COSTER controllers, is used; since there is only one boiler C-Ring is not used. - <b>SECONDARY BOILER</b> : this is the choice necessary for putting a boiler in SEQUENCE, in a group of boilers where one boiler has been declared PRIMARY (provided with an XTC 638 sequencer). <b>In this event the controller associated with the boiler is used as a "SLAVE" only.</b>  <b>WARNING: it is pointless to go ahead and configure other pages if you are not absolutely certain that the settings on the previous page are correct.</b> <b>The choice of the previous configuration also prepares for practically the whole system on the other pages, removing those which do not serve or modifying others.</b>	
4.2.0	Pump control HEATING	This page does not exist if the configuration is SECONDARY BOILER, since the relative output can be used to control the shut-off valve of the PRIMARY boiler. This output actually duplicates the E2 input at the E2 terminal, and can be used for any purpose. You can choose between: - NOT USED: the pump control is not used - HEATING: the pump is dedicated to the heating circuit with or without mixing valves, and so is switched on only when heating is called for. - BOILER: the pump is brought into action when the boiler is called into action by any control signal (see diagram in section 9.2).	
4.3.0	Boiler bypass Pump: NOT USED	This page always exists and concerns the control of the boiler recycle pump which can be used in various ways. This pump solves the problem of recycling water in the condensation boilers with low water content , when the site circulation is not switched on (e.g. all the thermostatic valves of the radiators are closed). You can choose between: - NOT USED: the recycle pump control is not used - USED: the recycle pump control is used..	
4.4.0	Type of burner MODULATING	The use mode can be programmed in the menu for burner/boiler.On this page you choose the type of burner: - MODULATING - ONE STAGE - TWO STAGES	

20. MENU NO. 4		CONFIGURATION (ACCESS WITH CONFIGURATION KEY IF ENTERED)	
Page No.	Display	Description	Sect.
4.5.0	Boiler own number : 1	This page exists only if on the site there are several boilers in SEQUENCE: you assign to each boiler a number starting from 1, in order to construct this SEQUENCE.	14.1
4.6.0	Config Sensors 2 3 4 6 7	On this page you can configure the presence or not of the sensors, bearing in mind that those indispensable on the basis of the CONFIGURATION made on the previous pages, are automatically inserted and cannot be removed: whilst the unnecessary ones are automatically excluded. When the cursor is on the number of the sensor, this is shown clearly on the page for convenience. – 2: OUTSIDE SENSOR: configured automatically, except when the boiler is SECONDARY. – 3: FLUE GASES SENSOR: this sensor is always optional. – 4: BOILER SENSOR: this sensor is always obligatory. – 6: CONTROL CHANGE SYSTEM TO MANUAL: rather than a sensor this is an On-Off input (On = input closed), to change the whole system to a status (chosen at will) which completely excludes every site activity on the part of XCC 618. Instead of MANUAL CONTROL this input can be configured as ANTICONDENSING SENSOR (page 4.7.0). It can be used in an emergency, with an external switch, by non-experts, to ensure some kind of operation, even if a completely manual one. – 7: INPUT 0...10 V: this input is configured when you want the controller to accept 0...10 V control as POWER or TEMPERATURE. This input can be configured only if the C-Ring is NO – SINGLE SITE, since only in this situation does this type of input serve.	
4.7.0	Config Sensor B6 MANUAL CONTROL	On this page you can choose the type of sensor or control for B6 input: – MANUAL CONTROL: CONTROL FOR CHANGING SYSTEM TO MANUAL: rather than a sensor this is an On-Off input (On = input closed), to change the whole system to a state (chosen at will) which completely excludes every activity on the site by XCC 618. – ANTICOND SENSOR: this input is used to measure the boiler return temperature. The anticondensing sensor serves to prevent the return to boiler from falling below a dangerous level at which acid condensation could be formed.  <b>Clearly, if the boiler is a condensation type, the anticondensing function must not be programmed</b>	
4.8.0	Config Input B7 TEMPERATURE	This page appears when, on page 4.1.0, is programmed: C-RING = NO, SINGLE SITE (only with this programming does the 0...10 V input serve) and if input B7 has been configured. On this page you can choose the type of input for B7: – TEMPERATURE: you want the 0...10 V input to control the desired boiler temperature. – POWER: you want the 0...10 V input to control the desired power for the boiler	
4.9.0	Power 0%= 0.0V Power 100%=10.0V	This page appears if POWER has been chosen for B7 input. You can program two points on the scale to set the input as you require and make it compatible with the characteristics of the control output it has to receive. e.g.: Power 5% = 2.0 V Power 90% =9.5 V With this setting you send 2 V when you want the burner to go to a power of 5 % and 9.5 V when you require a power of 90%; for intermediate values the scale is linear. The scale is factory-set very simply: 0 V = 0% power      10 V = 100% power	
4.9.0 bis	Temp 0c= 0.0V Temp 99c= 10.0V	This page appears if TEMPERATURE has been chosen for input B7. You can program two points on the scale to set the input as required and make it compatible with the characteristics of the control signal it has to receive. e.g.: Temperature 10 °C = 2.0 V Temperature 90 °C = 9.5 V With this setting you send 2 V when you want a temperature of 10 °C and 9.5 V when you want a temperature of 90 °C; for intermediate values the scale is linear. The scale is factory-set very simply: 0 V = 0°C temperature      10 V = 99°C temperature	
4.10.0	Burner manual status : ON	On this and the next four pages you can choose the status to give to the various outputs of XCC 618 when the CHANGE TO MANUAL CONTROL OF THE SYSTEM (page 4.6.0 and page 4.7.0) is switched on. You can choose between: – ON: the burner control is activated and the shut-off valve is open – OFF: the burner control is deactivated and the shut-off valve is closed If the burner has two stages, the first and second stages are switched on if the burner is modulating, it is switched on and adjusted to the maximum modulation (POWER or TEMPERATURE) <b>Clearly, under these conditions the burner will be controlled by other devices (e.g. thermostats)</b>	

20. MENU NO. 4		CONFIGURATION (ACCESS CONFIGURATION KEY IF ENTERED )	
No. Page	Display	Description	Sect.
4.11.0	<b>Burner Manual Output Y = 10.0V</b>	Value of output Y is set when in MANUAL CONTROL. It appears if : <b>4.10.0</b> is "ON" and <b>4.7.0</b> is "MANUAL CONTROL" and <b>4.17.0</b> is "0 - 10 V BURNER POW" or "0 - 10 V BURNER T"	14.1
4.12.0	<b>Pump manual Status : ON</b>	You can choose between: - ON : the pump is always switched ON - OFF: the pump is always switched OFF	
4.13.0	<b>StatusRecycPump Manual : OFF</b>	You can choose between: - OFF: the recycle pump is always switched OFF - ON: the recycle pump is always switched ON	
4.14.0	<b>E1 : Burner Lockout ON CLOSED</b>	On this page you can decide if, and how, to communicate the burner lockout to XCC 618. The burner must have a voltage-free switch to connect to the k1 input, terminal E1. The choice is between: - ON CLOSED = the burner switch closes in the event of a lockout. - ON OPEN = the burner switch opens in the event of a lockout.	
4.15.0	<b>E2 : SHUTOFF VALVE MASTER</b>	This page is not a choice but merely information to assist the engineer. - WITH SECONDARY BOILER: this input is available to the primary boiler to control the shutoff valve of the primary itself (VALVE SHUTOFF MASTER). WARNING: the control of the shutoff valve of the primary boiler is carried out by a single XCC 618 of a secondary boiler chosen at will, since there is only one primary shutoff valve. All the other XCC 618 controllers have this function available, and so can be used for other applications. By means of Telemangement (SWC 701 program) you can see further information, such as, for example, when the function is not used	
4.16.0	<b>U1=REPETITION BURNER LOCKOUT</b>	This page is not a choice but simply information for the guidance of the engineer. - WITH SECONDARY BOILER: this is the output (REPETITION BURNER LOCKOUT) to be connected to the E2 input of the primary boiler. On this page and on the related page <b>4.15.0</b> the engineer is informed of these two functions which are very useful for correct energy management of the system.	
4.17.0	<b>Config Output Y BOILER OFF</b>	Output Y can be programmed in a very extensive way so as to control other functions related to the heating site. It is a further means of communication between XCC 618 and other parts of the site so as to obtain automations which are very useful for the operation of the system. This output is optoisolated and can be converted, using accessory ACR 328, into a relay output (Common, Normally Open, Normally Closed), or used directly as a 0...10 V output - HEATING OFF = switched on (at 4.5 V- fixed) when the heating is, in any mode, switched off. It can serve to synchronise the OFF heating function with other external functions. - BOILER OFF = the same function as the previous one tied to the switching off of the boiler. - 0 - 10V BURNER POW = the output generates a 0 ... 10 V signal proportional to the power asked from the burner. - 0 - 10 V BURNER TEM = the output generates a 0 ... 10 V signal proportional to the temperature asked from the burner	
4.18.0	<b>Power 0%= 0.0V Power 100%=10.0V</b>	This page appears if, on the previous page, the 0...10 V output as power has been chosen. You can program two points on the scale to set the output as you require and make it compatible with the characteristics of the input of the system you want to pilot. E.g. Power 5% = 2.0 V Power 90% = 9.5 V With this setting you send 2 V when you want to control a power of 5% and 9.5 V when you want to control a power of 90%; for the intermediate values the scale is linear. The scale is factory-set very simply: 0 V = 0 °C power 10 V = 100 °C power.	
4.18.0 bis	<b>Temp 0c= 0.0V Temp 99c=10.0V</b>	This page appears if, on page 4.17.0 has been chosen the 0...10 V in temperature. You can program two points on the scale in order to set the output you require and make it compatible with the characteristics of the input of the system you want to pilot. E.g.: Temp. 5 c = 1.0 V Temp. 85 c =9.0 V With this setting you send 1 V when you want to control a temperature of 5°C and 9 V when you want to control a temperature of 85°C; for intermediate values the scale is linear. The scale is factory-set very simply: 0 V = 0 °C temperature 10 V = 100 °C temperature – even if 100 °C will never be used because the safety thermostat will intervene first.	



20. MENU' NO. 4		CONFIGURATION (CONFIGURATION KEY IF ENTERED)	
Page No.	Display	Description	Sect.
4.19.0	Choice config key : <input type="text" value="----"/>	<p><b>In view of the importance of the data configured in this menu, it is vital to avoid errors or tampering, so you are strongly advised to enter at least the CONFIGURATION KEY, which prevents access to non-authorized persons .</b></p> <p>The CONFIGURATION, SETTING &amp; USER keys have a decreasing hierarchy:                      – entering the CONFIGURATION KEY permits entering the other two keys.                      – entering the SETTING KEY permits entering the USER KEY.</p> <p><b>It is very important not to forget the access keys since, once entered, they prevent any change to the respective parameters.</b></p> <p>– the CONFIGURATION KEY permits operations of SETTING and of USER USE, even without knowing these last two keys. The same holds good for SETTING KEY in relation to USER KEY.                      ---- : no key has been entered. A four-character ALPHANUMERIC key can be entered, using + and – keys to select the characters and &lt;- and -&gt; to position the cursor. Once the key has been chosen and the page quitted, you have 15 minutes from the last depression of a key before the access key will again be requested.                      ****: there exists an access key which has already been entered.                      Only if you know this key is it possible to operate: once the key has been entered using the above procedure it can be cancelled by pressing + and – keys at the same time for a few seconds.</p>	14.1
4.20.0	Choice setting key : <input type="text" value="----"/>	<p>On this page you can choose the SETTING KEY which permits access to the setting menu and related pages.                      The SETTING KEY comes second in the hierarchy: knowing this key it is possible to operate even in the parts protected by the USER KEY.                      The whole procedure of entering, changing or cancelling is the same as that of the previous page.</p>	
4.21.0	Choice user key : <input type="text" value="----"/>	<p>On this page you can choose the USER KEY which permits access to the menus and related pages,                      The USER KEY is the lowest in the hierarchy and permits a normal user to access the whole system.                      The pages accessible with this key are straightforward and within the capabilities of a non-expert.</p>	
4.22.0	Send Alarms: <input type="checkbox"/> NO Teleman key: <input type="checkbox"/> NO	<p>This and the next two pages concern local and remote Telemangement, achieved via “C-Bus Plug-in” type ACB 400 C1.                      – SEND ALARMS: you can enable the automatic transmission of alarms to a local or remote computer.                      – TELEMAGEMENT KEY: you can enable a key (which has nothing to do with the previous ones) which makes possible local or remote Telemangement.                      This key can be entered only via PC since it serves only the PC.</p>	
4.23.0	Address: <input type="text" value="----"/> Group : <input type="text" value="--"/>	<p>Address: enter the address of the controller (from 1 to 239).                      Group: enter the group to which this controller belongs.                      Address and Group are data necessary for Telemangement in order to be able to identify precisely the controller with which you want to connect.</p>	
4.24.0	Cbus speed 1200bps	<p>The speed of the communication Bus (C-Bus) can be chosen from:                      1200, 2400, 4800, 9600 bauds.                      The speed has to be chosen above all on the basis of the other devices existing on the site, and on the type of modem</p>	
4.25.0	Site name -----	<p>On this page you can enter the name of the site to which XCC 638 refers.                      This same name will appear on the parking page 0.0.0.</p>	

21. MENU NO. 5 BURNER + BOILER (ACCESS KEY SETTING IF ENTERED)		
Page No.	Display	Description
5.0.0	Choice menu +/- BURNER + BOILER	This is the menu chosen. The whole of this menu is under SETTING KEY. In this menu are included all the parameters for defining the operation of the burner. <b>This menu, too, is of strategic importance for the correct operation of the whole system.</b>
5.1.0	Control Boiler INTERNAL CONTROL	This page exists if the desired boiler temperature can come from 0...10 V input (B7). You can decide whether to use this path or to set the desired temperature directly on the controller. – INTERNAL CONTROL = the temperature is pre-set by means of the controller's own signals. – EXTERNAL 0-10 V = the temperature is controlled by means of the external 0...10 V signal.
5.2.0	Boiler Power MAXIMUM	This page exists only if there are several boilers which are, of course, in SEQUENCE. If there is a single boiler the burner can be controlled only for TEMPERATURE. – MAXIMUM (POWER): the burner (in SEQUENCE) is adjusted in order to provide a certain amount of power independently of the temperature at which it provides heat. It is the SEQUENCE which tells each burner what power to emit at each instant. The boiler has a maximum temperature limit which cannot be exceeded for safety reasons; this limit must be slightly below that of the boiler's own thermostats. With control on MAXIMUM (POWER): the SEQUENCE, before calling in the next boiler, waits until the preceding boiler has provided the maximum of its power. These concepts are discussed more fully in the document referred to in section 14.2: – SHARED (TEMPERATURE): the burner in SEQUENCE receives a temperature setpoint to maintain at the boiler output. Each of the boilers called on to operate by the SEQUENCE provides a power equal to that of the others when controlled as SHARED (TEMPERATURE). These concepts are discussed more fully in the document referred to in section 14.2. The choice of this parameter and of the parameter on the following page represents the best tool for optimizing the seasonal output of the SEQUENCE.
5.2.0 bis	Type of control POWER	
5.2.0 bis	Off point Burner : 15%	This page exists if the burner is modulating and if in 4.1.0 it is SINGLE SITE or PRIMARY SITES, or, in case of BOILER SEQUENCE, if 5.2.0 is NORMAL. Determines the point at which burner goes from minimum modulation (5.3.0) to Off.
5.3.0	Off point NORMAL	This page, too, is of strategic importance for optimizing the SEQUENCE. The "Off" point is the moment at which is switched off the burner of the boiler called on to operate in SEQUENCE. The criteria for switching off a burner, once switched on, can influence the output for the burner itself, since it is the switching on itself which is the least advantageous moment from the energy point of view: frequent stops and starts, besides wearing out the burner, reduce its seasonal output. These concepts, too, are illustrated more fully in the document referred to in section 14.2. – NORMAL: the burner is switched on when the preceding burners can no longer provide the necessary heat and is switched off as soon as possible: the switching on time is reduced but not the number of start times. – OPTIMISED: the burner is switched off first allowing it to modulate the power of the preceding burner, diminishing the number of stops and starts, particularly if the preceding boiler is two-stage or modulating. For condensation boilers, particularly those with gas modulating burners, the best test is certainly: Type control = TEMPERATURE and Off point = OPTIMISED Clearly, other criteria are applicable, to be decided on from time to time on the basis of the type of site and the data received from the counts referred to on pages 2.14.0, 2.15.0 and 2.16.0 and of fuel consumption.
5.4.0	Minimum power modulation : 30%	You establish the maximum temperature for the boiler, however it is controlled. This temperature has to be below the temperature of the boiler thermostats, otherwise these come into action too soon, thereby changing the SEQUENCE
5.5.0	Modulation band Temperat. : ± 3.0c	This page exists if the burner is controlled for TEMPERATURE: It is the modulation you give to the temperature setpoint in order to stabilize the whole SEQUENCE system. The factory setting of +/- 3.0°C is a value which is generally satisfactory. Increase this value only in the event that the system is unstable (boilers very different from each other as regards power). The instability of the system shows itself by the excessive switching on and off of the boilers.
5.6.0	Boiler temperat Maximum: 90c	You establish the maximum temperature for the boiler, however it is controlled. This temperature has to be below the temperature of the boiler thermostats, otherwise these come into action too soon, thereby changing the SEQUENCE.
5.7.0	Modulation time Burner : 45s	This page exists only if the burner is modulating. You establish the time that the burner takes to go from minimum to maximum POWER. A difference of +/- 5 seconds in respect of the speed of the modulation motor has no influence on the operation of the burner.
5.8.0	Boiler temperat Dead Zone : ± 1.0c	This is the temperature interval between desired and actual, in which the control is considered satisfactory. It is suggested to set this at +/- 1°C; this stabilises the system and avoids overworking the modulation.

21. MENU' NO. 5 BURNER + BOILER (ACCESS SETTING KEY IF ENTERED)			Sect.
Page No.	Display	Description	
5.9.0	Minimum times On:120s Off:120s	On = the minimum start time corresponding to time of burner control cycle. You are advised to set this time equal to, or slightly above, that of the cycle; you avoid switching off the burner before the switching on cycle has finished. Off = the minimum off time for the burner. You avoid switching off the burner immediately after having switched it on. You should set this time equal to, or slightly above, that of any "post-washing" in order to avoid interrupting it. Factory setting: 120 seconds	14.2
5.10.0	Shutoff valve Delay Off: 5m	This page exists only if boiler shutoff valve is used and so there are several boilers on site. The shutoff valve opens when the burner is switched on and closes, with a certain delay, when the burner is completely switched off, so as to recover the residual energy accumulated in the hot boiler. Recommended value: 5 minutes.	
5.11.0	Burner lockout ONLY ALARM	This page exists only if there are several boilers and so they are in SEQUENCE. - ALARM ONLY: the burner lockout triggers an alarm - AL.+VAL CLOSED: besides triggering an alarm, the burner lockout causes the shutoff valve to close; this is to ensure that the boiler without burner becomes a dead weight on the site.	
5.12.0	Control Burner PROPORT+INTEGRAL	This is the type of controller applied to the burner. PROPORT + INTEGRAL: the controller is proportional + integral (PI); for the burner this programming is usually the best. INTEGRAL: the controller is purely integral (I); this type of control dampens the use of the burner.	
5.13.0	Proportional Band Burner: 5c	This is the proportional band of the burner controller, if controlled for TEMPERATURE and of the maximum controller if controlled for POWER. Suggested value is 5°C, but the ideal value should be found by observing how the system is operating. By examining the accumulated data via Telemangement it is easy to understand if note if there are any oscillations and accordingly to increase the value.	
5.14.0	Integral Time Burner: 15m	A page analogous to the previous one. Suggested value:: 15 minutes.	
5.15.0	Increase boiler T on zones: 5c	This page exists if the C-Ring is PRIMARY SITES (see page 4.1.0 CONFIGURATION menu, section 20). On this page you can set the temperature increase for the burner in respect of the maximum temperature requested by all the other flows on the site (equipped with COSTER controllers), a request that arrives via C-Ring. Factory setting: 5°C	
5.16.0	Boiler Temperat Frostprot: 30c	This page exists if there is only one boiler. You set the minimum desired temperature for the boiler in the event that frost protection is used (see page 3.3.0 of VARIOUS CONTROLS).	
5.17.0	Boiler temp with CRing Alarm: 70c	This page exists if C-Ring is PRIMARY SITES or SECONDARY BOILER (see page 4.1.0, menu CONFIGURATION, section 20). Set the temperature you want for the boiler, when the value it should receive via C-Ring no longer arrives (short or open circuit in cables). The boiler operates at this set temperature, ensuring the emergency. Obviously, the lack of C-Ring triggers an alarm.	
5.18.0	Bypass pump TIME ON: 5m	This page exists if the boiler recycle pump is used (CONFIGURATION menu). - TIME ON = the pump is switched on every time the burner is switched on and remains switched on for this minimum time. If, after this time period, the burner remains switched on, this means that the thermal load (site circulation) is sufficiently high not to cause the boiler to boil. In practice, this pump functions only when the boiler has to heat up only itself, since the zones do not request heat: you ensure not increasing the return temperature of the condensation boilers, at the same time preventing them from boiling. - DELAY OFF = the recycle pump is always left switched on when the burner is switched on. When the burner is switched off, it is switched off with this delay, to avoid condensation. Clearly, this function is used only with normal boilers (not condensation), with the aim of preventing damage from acid condensation	

24. MENU' NO. 6 TESTING (ACCESS KEY SETTING IF ENTERED)		
Page No.	Display	Description
		<p>This menu serves to test all the electrical connections between XCC 618 and: burner, pump (s), valve (s), measurement sensors, service inputs &amp; outputs: It also serves to simulate the outputs of controllers for checking the operation of the whole system. This is the menu selected.</p>
6.0.0	<p>Choice menu +/- TESTING</p>	<p>This is the menu selected. The whole of this menu is protected by SETTING KEY All these functions concern the testing of the electrical plant. <b>Once again you are advised to carry out complete testing before using the system.</b></p> <p><b>WARNING: access to this menu is especially protected since incorrect use of TESTING can subject certain site devices to voltages at inopportune moments.</b></p> <p>Press -&gt; key: there will appear the page:</p>
	<p>TECHNICAL PAGES! PRESS + KEY</p>	<p>PRESS + KEY: the message PRESS -&gt; KEY will appear. As soon as you have pressed -&gt; key you enter TESTING menu. This procedure is necessary in order to ensure that non-experts cannot switch on or off essential controls. <b>The testing is made when manual switching on and off does not cause damage to persons or things.</b></p>
6.1.0	<p>Output BURNER OFF</p>	<p>With + and – keys you can switch on or off the control output of the 1, 2-stage or modulating burner.</p>
6.2.0	<p>Output MODULATION IDLE</p>	<p>This page varies depending on whether the burner is 1, 2-stage modulating. – If it is 1-stage appears: second STAGE NOT USED – If it is 2 stages appears: 2 STAGE ON with + and – keys you can control On or Off the control output of the second stage of the burner. – If the burner is modulating appears: MODULATION LOWER; with + and – keys you can choose LOWER, RAISE, IDLE.</p>
6.3.0	<p>Output MASTER S/OVAL OP</p>	<p>This page appears only if XCC 618 is configured to control a secondary boiler in sequence (SECONDARY BOILER page 4.1.0). This is not a page for controlling the Master shutoff valve but only an indication of whether this valve is controlled to open or close. To control this valve it is necessary to operate on XTC 638 Master on page 10.7.0 bis. For convenience, operate at the same time on page 10.7.0 bis of the Master and check the operation on this page of the Slave: in this way you check the connection between Master and Slave and, at the same time, between Slave and valve.</p>
6.4.0	<p>Output HEATING PUMP ON</p>	<p>On this page you test the connection to the pump. The message which appears relates to the choice made for the pump in the CONFIGURATION menu (page 4.2.0 of section 20). With + and – keys you switch On-Off.</p>
6.5.0	<p>Output PUMP ON</p>	<p>On this page you test the connection to the recycle pump. With + and – keys you switch On-Off. If pump not used there will appear: RECY PUMP UNUSED.</p>
6.6.0	<p>Output S/O VALVE CLOSES</p>	<p>This page appears only if XCC 618 is configured to control a secondary boiler in sequence (SECONDARY BOILER page 4.1.0). On this page you test the connection to boiler shutoff valve – obviously if there are several boilers in SEQUENCE. With + and – keys you can choose: OPENS, CLOSES.</p>
		14.3

25. MENU' NO. 6 TESTING (ACCESS SETTING KEY IS ENTERED)			
Page No.	Display	Description	Sect
6.7.0	CRing zones ??	This page exists if the C-Ring (Communication Bus between controllers, page 4.1.0 of the configuration menu in section 20) has been configured as PRIMARY SITES). Test the correct connection between XTC 618 (primary) and all the other COSTER controllers on the site. If all the connections are correct, after a few seconds, in place of the interrogation marks will appear "YES". If all the connection is incorrect or some device does not respond because incorrectly configured, the interrogation marks (??) remain".	14.3
6.8.0	CRing sequence -----	This page exists if there are several boilers in SEQUENCE. - C-Ring = SECONDARY BOILER There will appear the message AWAITING TXT MSG (awaiting reception message) as soon as the message which the primary boiler has sent is received, there will appear MSG RECEIVED (message received). This information serves for checking if the secondary boilers receive the message or not.	
6.9.0	Output U1 : OFF Output Y : 0.0V	On this page you can simulate the U1 and Y outputs (configured on pages 4.16.0 and 4.17.0), CONFIGURATION menu, section 20). Output U1: you can simulate the On-Off status (remember that this output is an OPEN COLLECTOR). Output Y: you can simulate from 0 to 10 the value in volts, if it has been configured. If this output is configured as 0...10 V (page 4.17.0) the value can be simulated from 0 to 10 Volts using + and - keys. If this output has not been configured as 0...10 V (page 4.17.0) the choice is between On and Off (On = 4.5 V, Off = 0V)	
6.10.0	Outside T: XX.Xc	This and the following pages are pages of data readouts, included with testing for convenience. If the measurements are correct, with acceptable values, this means that the connection with the sensors is also correct.	
6.11.0	Flue gases:XX.Xc Boiler T : 70.0c	.	
6.12.0	Man control: OFF	You can check if the outside switch connected to the manual control input is connected correctly. In place of "Manual switch: ON/OFF" will appear "Anticon T : XX.Xc" if the B6 input has been configured as anticondensing sensor..	
6.13.0	Inp. 0 - 10V: XX.XV	You can check the value in volts of the control input (B7), if it exists and if it has been configured.	
6.14.0	Input E1: OFF input E2: OFF	Input E1 = Burner lockout: you read if the connection to burner is correct or not. OFF = burner not in lockout ON = burner lockout Input E2 = You can see the status of this input. SLAVE BOILER: the input for the relay control switches 1,2,3 for control of the shutoff valve of the Master. Here, this input is connected to output U1 of the Master in order to serve as shutoff valve, as already explained elsewhere.	







## 26. QUICK GUIDE TO THE CONTENTS OF DATA SHEET

### – A : FOR THE NON-EXPERT USER (XCC 618 MUST ALREADY HAVE BEEN CONFIGURED AND SETTINGS MADE):

Read only menu No. 0 (zero), section 17, page 12.  
From the parking page :

PRESS ->: with + and – keys adjust the boiler temperature;  
PRESS ->: with + and – keys select the desired heating program .

If you cannot find these pages this means: these services are provided by another XCC 618, because on the site there is more than one boiler and, consequently, more than one XCC 618; identify the correct one.

When you have finished it does not matter how you leave the pages.

If the USER KEY exists you have to enter it.

### – B : FOR THE RATHER MORE EXPERT USER (XCC 618 MUST HAVE ALREADY BEEN CONFIGURED & SETTINGS MADE):

Read menus No. 0 (zero), section 17 page 12, and No. 1, section 18 on page 13.

With these menus you can set up timed programs and other commonly-used functions.

### – C : FOR THE SITE ENGINEER (XCC 618 MUST ALREADY HAVE BEEN CONFIGURED & SETTINGS MADE):

Read menus No. 0 (zero), No. 1, No. 2 and No.3.

With these menus you can understand how the whole system operates and decide on the most common type of operations.

### – D : FOR THE EXPERIENCED ENGINEER (XCC 618 HAS STILL TO BE CONFIGURED AND SETTINGS MADE):

Read all the menus and proceed as follows in order to set up each XCC 618 correctly, in the following order:

- MENU NUMBER 4
- MENU NUMBER 5
- MENU NUMBER 6 : this is the testing of the whole site and is the responsibility of this engineer.
- MENU NUMBER 3
- MENU NUMBER 2 : for checking the measurements
- MENU NUMBER 1 and 0 (zero) : to explain the operation to the users

### – E : FOR THE MANAGER WHO WANTS TO REDUCE ENERGY WASTE :

Read the whole document carefully and read also the document “Definitions for SF 4-070”, referred to in section 14.2 on page 12.

This document can be obtained on request from COSTER who will be happy to give advice on running the sites with the maximum energy efficiency.

#### Amendments to data sheet

Data	Revision No.	Page	Section	Amendment description	Firmware Version	Software Version
25.06.08 VM	<b>01</b>	4 - 5	9. Examples control sites 9.1 e 9.2	In functional diagrams: B6 sensor moved to recycle pump branch		≥ 0.98.2295
15.06.09 VM	<b>02</b>	22	21.MENU 5	Added screen shot 5.2.0 bis (Off point burner)	≥ 07	> 0.99.2502
10.11.09 dz	<b>03</b>	various	various	Update Plug-in version	≥ 07	> 0.99.2502
15.12.09 VM	<b>04</b>	various	20. MENU 4; 21. MENU 5,	Manual burner setting menu changed (output Y)		