

COMPENSATING CONTROLLER WITH SEASON SWITCHING

OPTIONAL
C ←BUS

C ←RING



XCS 633 Eng.

- **Control of flow water temperature with season switching**
- **Communication systems :**
 - **C-Ring** for exchanging data between local controllers.
 - **C-Bus** : XCS 633 Telemangement optional;
to enable Telemangement use the "C-Bus Plug-in" type "**C-Bus Plug-in**" type **ACB 468**,
to be ordered separately as accessory.
- **Power supply 230 V AC (or 240 V AC for UK market)**
- **DIN rail mounting**

1. APPLICATION

XCS 633 controller is designed for winter and summer compensated control of flow water in centralised plants with fan coils or underfloor panels in, for example :

- public and commercial buildings;
- schools
- residential complexes

2. FUNCTIONS

The principal functions of XCS 633 are :

- Winter and summer control of flow water temperature in relation to the temperature outside or at fixed point with :
 - winter and summer minimum and maximum temperature limits
 - summer minimum temperature limit variable in relation to dew point
 - correction of origin of heating curve
 - self-adapting
 - winter and summer Eco Off
- Three-wire modulating control or On-Off in two stages
- Control plant pump according to current timed programme with delayed shut-off
- Three-point On-Off control for season switching of primary circuit
- Automatic season switching by dates or by telecontrol (as alternative to the two inputs of status or alarm)
- Winter programs: three 24hour programs, one 7day program, 15 holiday periods, 1 special period with dates
- Summer programs: three 24hour programs, one 7day program, 10 holiday programs, 1 special period with dates.
- Telecontrol for modifying current timed programme
- Two On-Off inputs for signalling status or alarm (as alternative to season control)
- Alarms for short or open detector circuits and for abnormal operation of plant and controller
- C-Ring connection for local exchange of data with other controllers
- Optional C-Bus transmission of data with local PCs or remote Telemangement PC.

To enable data transmission and Telemangement use the "C-Bus Plug-in" type ACB 468

To communicate locally with a PC use the test Plug-in type ACX 232

3. DETECTORS & TELECONTROLS

No.	Description	Type	Sensor t°	Sensor H%	Code	Data sheet
1	Essential :					
	Immersion flow temperature detector	SIH 010	NTC 10 kΩ	–	B1	N 140
1	Outside temperature detector	SAE 001	NTC 1 kΩ	–	B2	N 120
	Optional :					
1	Ambient temperature detector	SAB 010	NTC 10 kΩ	–	B3	N 111
1	Ambient humidity and temperature detector	SAU 914	NTC 10 kΩ	capacitive	B3-B6	N 227
1	Immersion boiler anticondensing temperature detector	SIH 010	NTC 10 kΩ	–	B4	N 140
1	Telecontrol for modifying current programme	CDB 333	–	–	R	N 710
	Accessory for Telemangement					
1	Plug-in for communicating via C-Bus	ACB 468	–	–	–	–

4. 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 ~
maximum switched current	5 (1) A
Construction standards	Italian Electrotech. Comm. (CEI)
Storage data	5 years
Software	Class A

• Mechanical

Case	DIN 6E module
Mounting	DIN 35 rail
Materials:	
base	NYLON
cover	ABS
Ambient temperature:	
operation	0 ... 45°C
storage	- 25 ... + 60°C
Ambient humidity	Class F DIN 40040
Dimensions	105 x 115 x 71,5
Weight	1.0 kg

• Winter programmes & periods

24-hour programmes	1 ... 3
24-hour events	2 ... 6
7-day programmes	1
Holiday periods	0 ... 15
Special period	1

• Summer programmes & periods

24-hour programmes	1 ... 3
24-hour events	2 ... 6
7-day programmes	1
Holiday periods	0 ... 10
Special period	1

• Measurement ranges

Flow temperature	0 ... 99 °C
Outside temperature	- 30 ... + 40 °C
Ambient temperature	0 ... 40 °C
Ambient humidity	20 ... 80 %
Boiler anticondensing temperature	0 ... 99 °C

• Winter temperature setting ranges

Design outside temperature	- 30 ... - 5 ... + 20 °C
Design flow temperature	0 ... 80 ... 99 °C
Correction origin winter curve	20 ... 40 °C
Minimum limit flow temperature	1 ... 99 °C
Maximum limit flow temperature	1 ... 99 °C
Normal ambient temperature	0 ... 20 ... 40 °C
Setback ambient temperature	0 ... 16 ... 40 °C
Frost protection ambient temperature	0 ... 6 ... 40 °C
Fixed flow temperature	0 ... 30 ... 99 °C
Winter ambient authority	0 ... +10 °C
Winter Eco Off outside temperature	0 ... 20 ... 40 °C
Boiler anticondensing temperature	0 ... 50 ... 99 °C

• Summer temperature setting ranges

Design outside temperature	0 ... 35 ... + 40 °C
Design flow temperature	0 ... 10 ... 99 °C
Minimum limit flow temperature	1 ... 99 °C
Maximum limit flow temperature	1 ... 30 °C
Normal ambient temperature	10 ... 25 ... 40 °C
Fixed flow temperature	0 ... 12 ... 99 °C

Summer ambient authority

Summer Eco Off outside temperature	0 ... 24 ... 40 °C
Correction Dew Point	- 9 ... 0 ... + 9 °C

• Control setting ranges & alarms

Three-wire modulating control output :	
valve run time	30 ... 630 ... 3,600 sec.
proportional band	± 0,5 ... 10 ... 30 °C
integral time	0 ... 20 ... 255 min.

On-Off (1 or 2 stages) control output :

stage differential	1 ... 10 ... 30 °C
integral time	0 ... 20 ... 255 min.

Telemangement (setting by PC) :

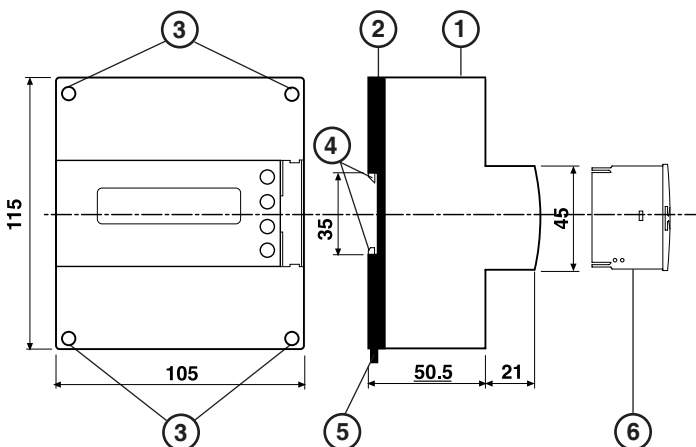
attempts alarm calls	1 ... 5 ... 255
interval between alarm calls	2 ... 10 ... 255 min.

Alarms (setting by PC) :

threshold diff. flow temp. (B1)	0 ... 5 ... 99 °C
delay diff. flow temp.	2 ... 30 ... 255 min.
threshold diff. ambient temp.(B3)	0 ... 1 ... 30°C
delay diff. ambient temp.	2 ... 30 ... 255 min.

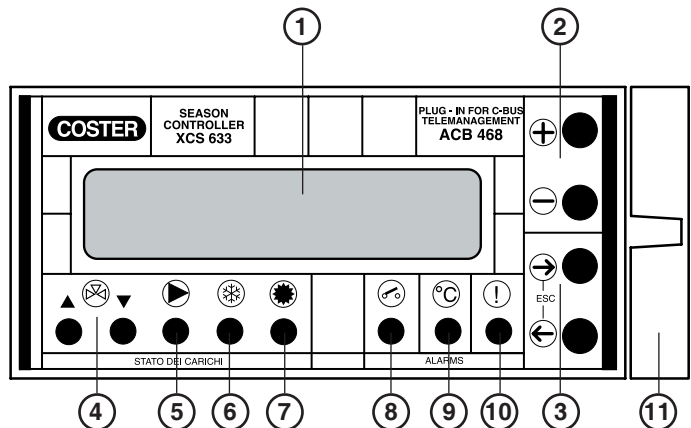
In presence of electrical disturbances the output controls of the controller may change status but this will be automatically restored

5. OVERALL DIMENSIONS



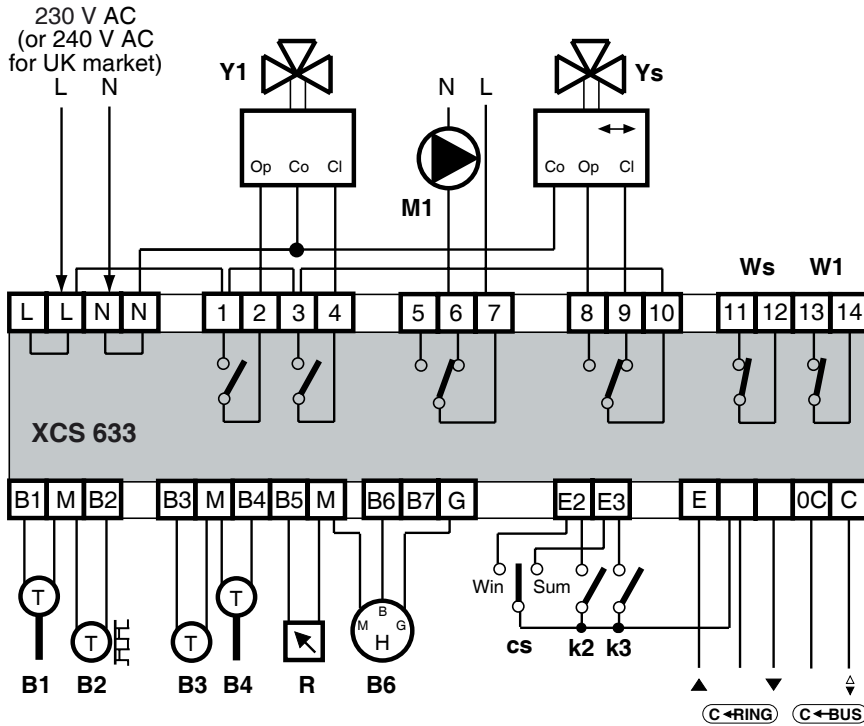
- 1 - Protective cover for electronic components
- 2 - Base with transformer, relay & terminal blocks
- 3 - Screws for fixing cover- base
- 4 - DIN rail securing elements
- 5 - DIN rail release lever
- 6 - Plug-in for C-Bus communication

6. FACIA

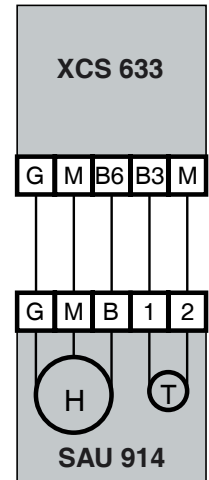


- 1 - Two-line backlighted alphanumeric display
- 2 - + and - operating keys
- 3 - ← and → operating keys
- 4 - LEDs control valve
- 5 - LED control pump
- 6 - Winter LED
- 7 - Summer LED
- 8 - On-Off alarms LED
- 9 - Measurement alarms LED
- 10 - Fault LED
- 11 - Plug-in type ACB 468 for C-Bus communication

7. WIRING DIAGRAM



Connection ambient humidity & temperature detector SAU 914



- B1 – Flow temp. detector
- B2 – Outside temp. detector
- B3 – Ambient temp. detector SAB 010 or SAU 012
- B4 – Anticondensing temp. detector
- B6 – Ambient humidity detector SAU 012
- cs – Season switch (as alternative to k2 and k3)
- M1 – Plant pump
- R – Telecontrol for modifying programmes
- Y1 – Regulating valve
- Ys – Season switching valve :
Winter = 10-9 closed ; 10-8 open
Summer = 10-9 open ; 10-8 closed

- W1 – On-Off contact repetition of current mode :
On = 13-14 closed
Off = 13-14 open
- Ws – On-Off contact repetition of season switch :
Winter = 11-12 closed
Summer = 11-12 open
- k 2-3 – On-Off alarm contacts (as alternative to cs)
- C-Bus – Transmission data via Telemangement; C-Bus is enabled using the Plug-in type ACB 468
- C-Ring – Transmission data between controllers

8. SITING CONTROLLER & DETECTORS

8.1 Controller

The controller must be sited in a dry space, which complies with the ambiantal limits indicated in 4.TECHNICAL DATA. If sited in premises classified as "Dangerous" it must be installed in an enclosure for electrical appliances constructed according to the regulations in force for the danger class involved. It can be installed on a DIN rail or in a DIN modular enclosure.

8.2 Flow temperature detector B1

With plant pump on flow it must be installed downstream of this; with pump on return it must be installed at least 1.5 meters downstream of the regulating valve.

8.3 Outside temperature detector B2

This must be installed outside the building, on the north or north-west side, at least three meters from the ground, sheltered from the direct rays of the sun and as far as possible from windows, doors, chimneys or other possible causes of thermal disturbances.

8.4 Ambient temperature and/or humidity detector B3 or B6

This must be installed at a point which represents the average temperature and / or humidity of a significant space (eg living room), at a height of 1.5 ... 1.6 meters from the floor ; on an internal wall as far as possible from windows, doors and heat sources and avoiding recesses, shelving and curtains.

8.5 Boiler anticondensing temperature detector B4

This can only be used if the boiler is fitted with an anticondensing pump and must be installed on the boiler return pipe between the connection of the anticondensing pump and the boiler itself.

9. WIRING

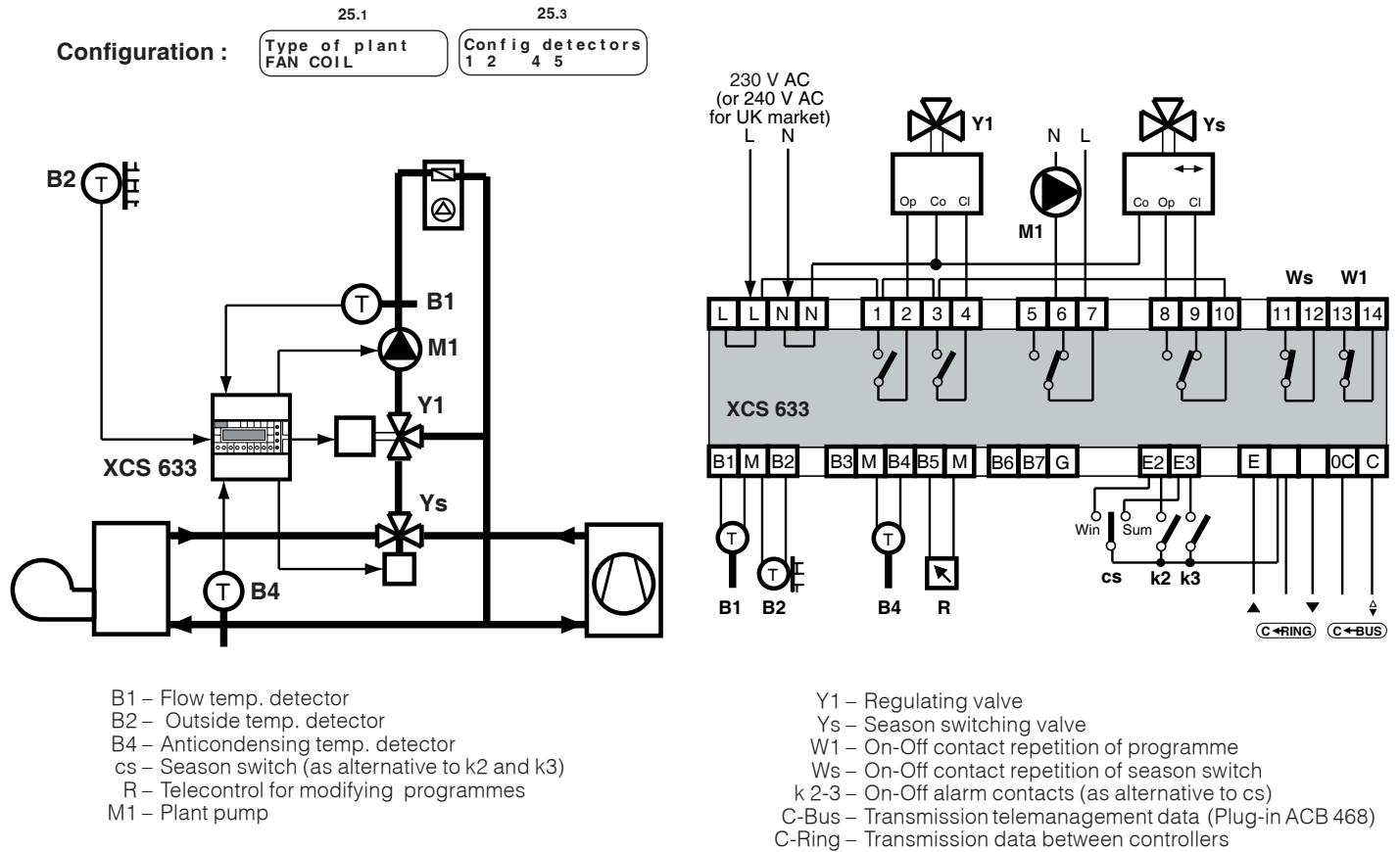
Proceed as follows :

- Separate the base from the cover
- Mount the base on the DIN rail and check that the securing elements (5.4) hold it firmly in place.
- Carry out the wiring as in the diagram above and in accordance with the regulations in force and using the following cable types :
 - 1.5 mm² for power and for the relay controlled outputs.
 - 1 mm² for detectors and telecontrol.
 - 1 mm² for C-Bus and for C-Ring. For limits on length of cables please see technical data sheets T 021 and T 022.
- Switch on power (230 V AC or 240 V AC for UK market) and check voltage across terminals L and N.
- Switch off power, replace cover on base and secure with the four screws supplied.

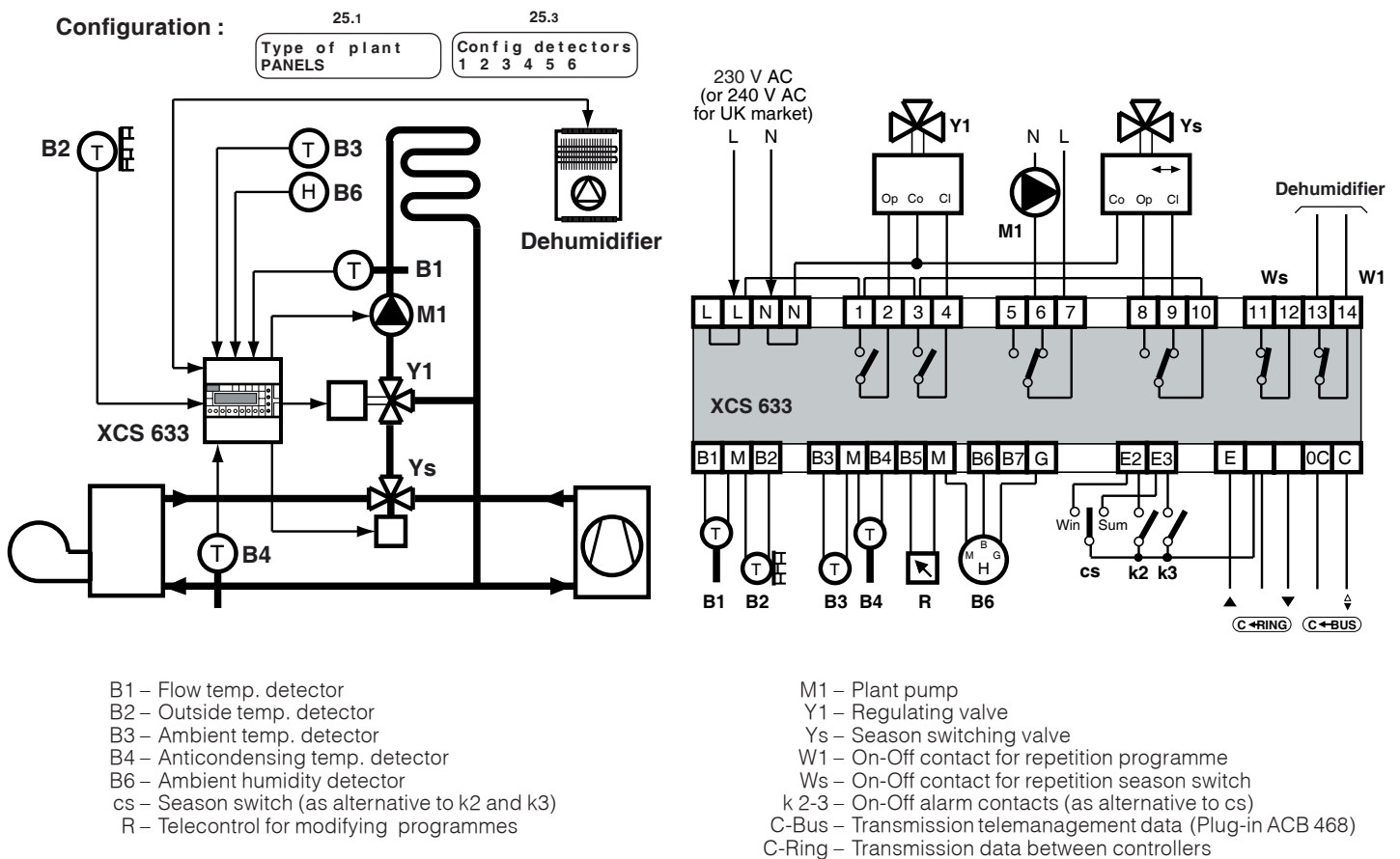
It is recommended not to insert more than two cables in a single terminal of the controller and if necessary to make use of external junction boxes.

10. EXAMPLES OF CONTROL PLANTS

10.1 Winter and summer compensated control of flow water with fan coils



10.2 Winter and summer compensated control of underfloor panels with ambient authority and dew point control



11. COMMUNICATION

11.1 C-Ring : communication between controllers (for detailed information please see technical data sheet T 022)

XCS 633 controller is **always "Primary"** .

In the C-Ring the following signals are transmitted :

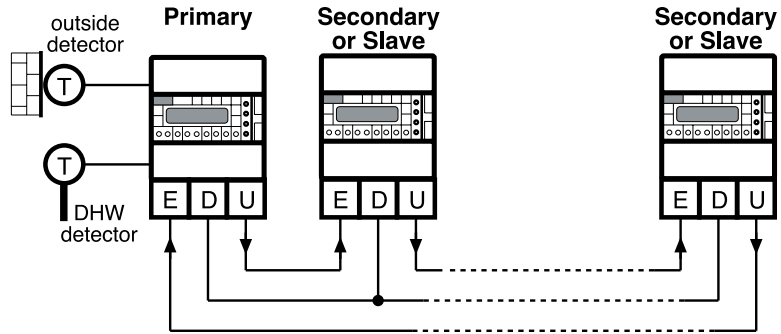
- permission to operate as **Slave** controllers
- value of the **outside temperature** (use of a single detector for several controllers)
- value of **flow temperature** requested by zone controllers; used by "PRIMARY" controller for regulation temperature boilers (if scheduled).
- **DHW priority** and/or **anticondensing** = closure valves heating zones with modulating control action.

NO = connection to C-Ring not scheduled

YES = connection to C-Ring scheduled

28.3
CRing Connection
NO

11.2 C-Ring wiring diagram



11.3 C-Bus communication for telemanagement (for detailed information please see technical data sheet T 021)

XCS 633 provides :

- remote Telemanagement by when enabled by **C-Bus Plug-in type ACB 468**
- local communication (e.g. setting via PC) when enabled with Test Plug-in **ACX 232**

Telemanagement is bidirectional, with one or more local PCs and/or the remote central PC via PSTN.

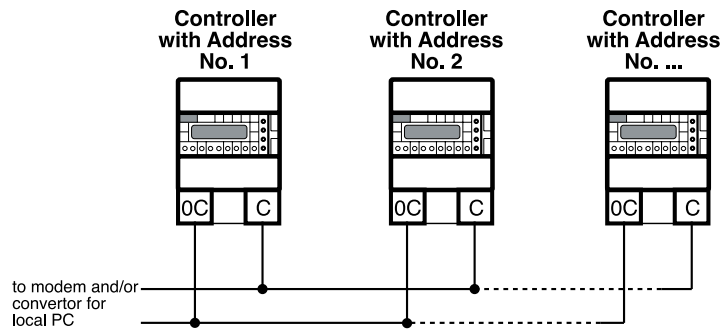
Local communication is direct to a portable PC to be connected directly to the unit.

From PC or PCs it is possible to display and/or change :

- the data and values entered on display pages of the controller and those of configuration dedicated exclusively to telemanagement (see 4. TECHNICAL DATA)
- operational status of plant components (pumps, auxiliaries in general)
- acquire alarms coming from boiler plant
- read the measurements of the detectors (temperatures : outside, flow, boiler, etc)

11.4 C-Bus electrical connection for local or remote Telemanagement

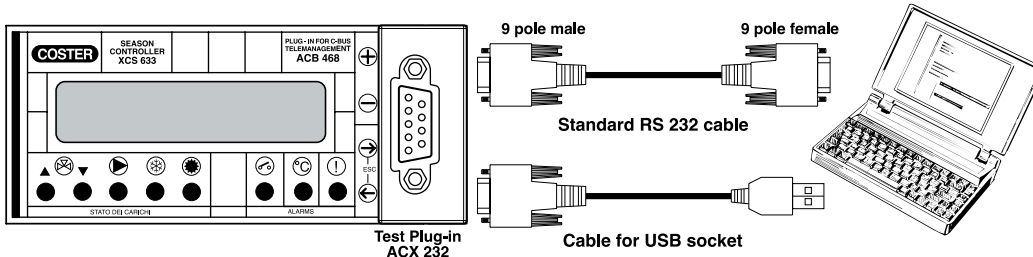
Each controller must be equipped with the C-Bus Plug-in of the required type for the controller in question



11.5 Connection to PC for local communication via test Plug-in ACX 232

Extract the C-Bus Plug-in and insert the test Plug-in ACX 232; use a standard cable to connect the RS232 plug to the PC (the cables are included in the "CONVENIENCE KIT").

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



ACCESSORIES:

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

The "Convenience kit" contains the 2 cables & other useful accessories.

Observations : - Before communicating, ensure that the address entered in the controller is the address with which you wish to communicate via PC.

- It is advisable to use a portable PC powered by battery with the connection to 230 volts unplugged (or 240 volts for UK market), since the earth (0 volts) of the controller is connected to that of the RS 232 and so to that of the PC. By connecting the two earths together you could have dispersed currents, if the earths have not been well made and if the PC has its 0 volt connected directly to the central pole of the plug (as is usual)

12. OPERATION

XCS 633 is a digital controller with microprocessor for the winter and summer compensated control of the flow water temperature.
Controls a modulating 3-wire control valve or an On-Off electrical device with 1 or 2 stages.

25.3
Config detectors
1 2 - - - -

It is indispensable to configure the controller according to the detectors and controls connected.

12.1 Type of plant

25.1
Type of plant
FAN COIL

The controller must be configured according to the type of plant controlled :

- Type of plant : FAN COIL
PANELS

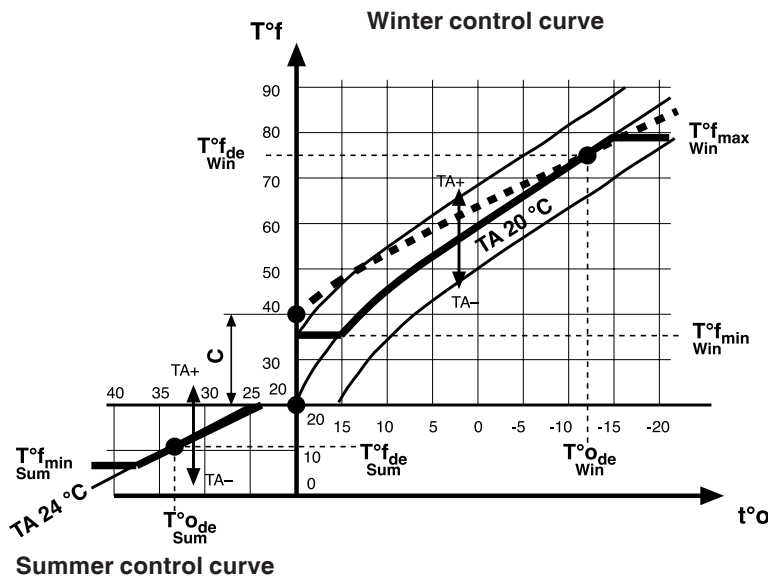
25.2
Control : VALVE
Time : 630sec

of type of control required :

- Control : VALVE = control valve with 3-wire modulating actuator
- ON-OFF = On-Off control in 1 or 2 stages
- Time : seconds = if Control : VALVE, enter complete run time (open/closed) of actuator valve, **useful** for correct functioning of control.

12.2 Control curve

The flow temperature requested by the controller (detector B1) is adjusted in relation to the outside temperature (detector B2 or value transmitted by C-Ring) and to the heating control curve , for the winter period, or the cooling control curve for the summer period.



- C = correction curve origin
- T°f = desired flow temperature
- T°f_de Win = winter design flow temperature
- T°o_de Win = winter design outside temperature
- T°f_max Win = winter maximum limit flow temperature
- T°f_min Win = winter minimum limit flow temperature
- T°f_de Sum = summer design flow temperature
- T°o_de Sum = summer design outside temperature
- T°f_max Sum = summer maximum limit flow temperature
- T°f_min Sum = summer minimum limit flow temperature
- t°o = outside temperature

The winter heating control curve, with reference to a desired ambient temperature of 20 °C, is defined by :

- winter design outside temperature , used for calculating winter heat losses from building; depends on climatic zone in which building is situated.
- winter design flow temperature, used for designing plant (eg. fan coils = 80 °C, panels = 40 °C); depends on climatic zone in which building is situated
- origin of heating curve = temperature of winter flow with outside temperature of 20 °C.

The summer cooling control curve , with reference to a desired ambient temperature of 24 °C, is defined by :

- summer design outside temperature , used to calculate summer warming effects from building; depends on the climatic zone in which building is situated.
- summer design flow temperature, used for designing the plant (eg : fan coils = 10 °C ; panels = 14 °C).

The winter or summer flow temperature requested by the controller also depends on the value of the desired ambient temperature requested by the winter or summer mode Normal , Setback or Frost Protection (parallel adjustment +/- of the curve).

23.1
Win: Design outside T: - 5.0c

23.2
Win: Design flow temp : 80.0c

24.1
Sum: Design outside T: +35.0c

24.2
Sum: Design flow temp : 10.0c

23.6
Win: PrBand: 10.0c
Integ time : 20m

The controller measures the difference between the actual and requested flow temperature and to cancel this it produces an output signal :

24.6

Sum:PrBand : 10.0c
Integ time : 20m

– three-wire modulating in relation to the proportional bands and to the winter and summer integral times set, if has been chosen

25.2

Control : VALVE
Time : 630sec

23.6

Win:Diff : 10.0c
Integ time : 20m

– On-Off in 2 stages in relation to the temperature differential and to the winter and summer integral times set, if has been chosen

25.2

Control : ON-OFF

24.6

Sum:Diff : 10.0c
Integ time : 20m

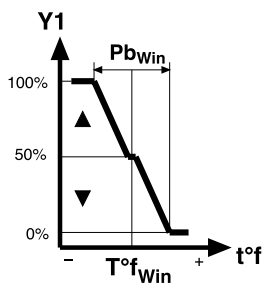
24.6 Bis

TxOn/Off Cooling
on Cring YES

– In summer it is possible to send via C-Ring to the Master controller (DCF 648) the request to start up the refrigeration plant.

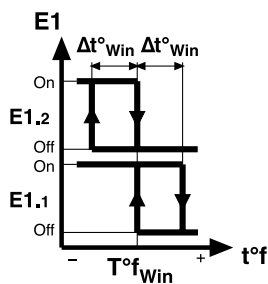
Winter control output

Modulating



Y1 – 3-wire modulating output
E1 – On-Off output in two stages
E1.1 – Control 1st stage
E1.2 – Control 2nd stage

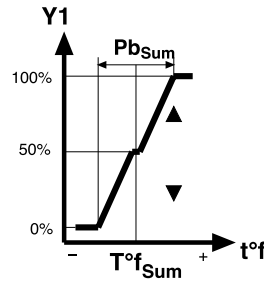
On-Off in 2 stages



Pb_{Win} – Winter prop. band
Pb_{Sum} – Summer prop. band
Δt°_{Win} – Winter stage differential
Δt°_{Sum} – Summer stage differential

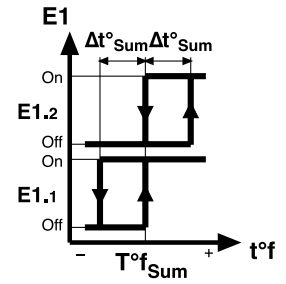
Summer control output

Modulating



t°f – Actual flow temp.
T°f_{Win} – Winter desired flow temperature
T°f_{Sum} – Summer desired flow temperature

On-Off in 2 stages



12.3 Origin of heating curve

23.3

CurveOrigin TO20
Flow T : 20.0c

The conventional point of origin of the heating curve (+ 20 °C flow with +20 °C outside) can be adjusted by an increase in the flow temperature (max. + 20 °C). The adjustment may be necessary in order to avoid possible variations in the output of the heat emitters at high outside temperatures (intermediate seasons).

12.4 Minimum and maximum limit of flow temperature

23.4

Win:Flow limits
Min: 1c Max: 99c

When the desired winter or summer flow temperature exceeds one of the limits set it is kept constant at that value.

24.3

Sum:Flow limits
Min: 1c Max: 30c

Examples : – winter minimum limit to avoid the circulation of cold air in the fan coils.
– winter maximum limit to avoid dangerous overtemperatures in the panels.
– summer minimum limit to avoid condensation on the floors with panel installations.

Warning :

The maximum winter limit temperature does not substitute observance of the safety regulations in force.

12.5 Ambient authority

23.5

Win:AmbientAuth
on flow : - - - - c

When ambient detector B3 is connected, the controller is able to adjust the desired winter and summer flow temperature according to the ambient authority set.

24.5

Sum:AmbientAuth
on flow : - - - - c

– Ambient authority on flow = value in °C of adjustment (increase/decrease) of flow temperature for each degree of difference between the actual ambient temperature and that desired.

12.6 Eco Off

19.7

Win:Eco Off : NO
Outside T : 20.0c

- Win : Eco Off : NO = disabled
YES = enabled for winter heating
- Outside T : 20.0c = value of outside temperature above which the valve is closed and the pump is idle

19.8

Sum:Eco Off : NO
Outside T : 24.0c

- Sum : Eco Off : NO = disabled
YES = enabled for summer cooling
- Outside T : 24.0c = value of outside temperature below which the valve is closed and the pump is idle

12.7 Control of dew point

In underfloor panel installations with summer cooling it is necessary to avoid condensation on the floor by controlling the dew point; this can be done in two ways :

- by the minimum flow temperature limit set at a value to prevent an excessive cooling of the floor.

24.3
Sum: Flow Limits
 Min: 18c Max: 30c

- by the use of the humidity detector and ambient temperature detector B6 and B3 which permits adjusting automatically the minimum flow temperature limit so that the floor never reaches the dew point.

- Dew point : NO = automatic control dew point disabled
 YES = automatic control dew point enabled
- 14.0c = calculated dew point
- Var : + 0.0 c = correction of value of dew point (max. ± 9 °C)

24.4

Dew point : NO
14.0c Var : +0.0c

The control of the dew point is switched on also in the "FLOW" mode.

12.8 Operating programmes

It is possible to programme separately, for the winter season and for the summer season, the operation of the plant according to use requirements :

18.2

Site : -----
Win : 7DAY

Winter (Win) season :

- 7DAY (Win) ; - 24HOUR 1 ...3 (Win) ; - NORMAL (Win) ; - SETBACK (Win) ;
- FLOW (Win) ; - FROSPROT ; - OFF.

When in place of the programme appears :

- HOLIDAY = one of holiday periods is current.
- SPECIAL = special period is current.
- TELENORMAL = telecontrol R is in "NORMAL" position
- TELESETBACK = telecontrol R is in "SETBACK" position.
- TELEFROSPROT = telecontrol R is in "FROSTPROT" position.
- TELEOFF = telecontrol R is in "OFF" position

18.4

Site -----
Sum : 7DAY

Summer (Sum) season

- 7DAY (Sum) ; - 24HOUR 1 ...3 (Sum) ; - NORMAL (Sum) ; - FLOW (Sum7) ;
- OFF.

When in place of programme appears :

- HOLIDAY = one of holiday periods is current.
- SPECIAL = the special period is current
- TELENORMAL = telecontrol R is in "NORMAL" position.
- TELEOFF = telecontrol R is in "OFF" position.

12.9 Mode of operation

The current mode depends on the programme set in 18.2
Site -----
Win : 7DAY or in 18.4
Site -----
Sum : 7DAY

according to the season and is shown on a page of the display :

- Win = winter season
 Sum = summer season
- Current mode : NORMAL ; SETBACK ; FLOW ; FROSPROT ; OFF.
- Td -- . - : Temperature desired by current mode.
- Var + - . - c : Manual adjustment of desired temperature (± 2 °C).

18.3

Win : NORMAL
Td 21.0c Var +0.0c

12.10 Control plant pump

The plant pump can be controlled in two ways

- Pump : MAN = Pump always in operation.
 AUT = Pump controlled by current programme times.
- Delay Off : -- min = Delay time in switching off to allow heat accumulated in plant to dissipate.

19.9

Pump : AUT
Delay Off : 60min

12.11 Modifying programmes by telecontrol

The telecontrol R (CDB 333) allows remote modification of a current operating programme :

Winter season :

- 1 - OFF = plant excluded.
- 2 - FROSTPROT = continuous operation at desired Frostprot ambient temperature.
- 3 - SETBACK = continuous operation at desired Setback (Win) ambient temperature.
- 4 - NORMAL = continuous operation at desired Normal (Win) ambient temperature.
- 5 - TAd +2c = increase of 2 °C in desired ambient temp. of current mode.
- 6 - AUTO = operation with chosen programme on controller.

Summer season :

- 1...3 - OFF = plant excluded.
- 4 - NORMAL = continuous operation at desired Normal (Sum) ambient temperature.
- 5 - TAd - 2c = decrease of 2 °C in desired ambient temp. of current mode.
- 6 - AUTO = operation with chosen programme on controller.

12.12 Season switching

25.7

**Inputs E2 - E3 :
SEASON SWITCH**

The controller changes its type of operation (winter heating or summer cooling) and the position of the season switching valve Ys in relation to the position of the season switch **cs** (terminals D-E2-E3) :

- D-E2 closed and D-E3 open = winter control ;
Ys opens heating circuit (10-9 closed; 10-8 open).
- D-E2 open and D-E3 closed = summer control ;
Ys opens cooling circuit (10-9 open ; 10-8 closed).

When **cs** :

- is not connected
- is in position 0 (contacts open)

21.18

**Winter season
Fr 15.10 to 15.04**

22.18

**Summer season
Fr 15.06 to 15.09**

the controller follows the settings of the two seasons

21.18

**Winter season
Fr 15.10 to 15.04**

22.18

**Summer season
Fr 15.06 to 15.09**

In this situation the following conditions can be present :

- seasons cancelled : **Winter season
Fr -.-.- to -.-.-** **Summer season
Fr -.-.- to -.-.-**

Result : = control Off ; Ys : idle in last position assumed

- sequential seasons : **Winter season
Fr 15.10 to 15.04** **Summer season
Fr 16.04 to 14.10**

Result : without intermediate periods

From 15.10 to 15.04 = winter control ; Ys : heating circuit open

From 16.04 to 14.10 = summer control ; Ys : cooling circuit open

- shortened seasons : **Winter season
Fr 15.10 to 15.04** **Summer season
Fr 15.05 to 15.09**

Result : intermediate periods with plant Off

From 15.10 to 15.04 = winter control ; Ys : heating circuit open

From 16.04 to 14.05 = control Off ; Ys : heating circuit open

From 15.05 to 15.09 = summer control ; = Ys : cooling circuit open

From 16.09 to 14.10 = control Off ; = Ys : cooling circuit open

19.7

**Win:Eco Off :YES
Outside T: 20.0c**

19.8

**Sum:Eco Off :YES
Outside T: 24.0c**

The sequential periods are possible only if

- overlapping seasons : **Winter season
Fr 01.09 to 15.05** **Summer season
Fr 15.03 to 01.11**

Result : overlapping periods in relation to outside temperature

From 02.11 to 14.03 = winter control ; Ys : heating circuit open

From 16.05 to 31.08 = summer control ; Ys : cooling circuit open

From 15.03 to 15.05 and from 01.09 to 01.11 :

- with actual outside temperature > WinterEcoOff Outside T and < SummerEco Off Outside T
= control Off; Ys : idle in last position assumed

- with actual outside temperature < WinterEcoOff Outside T
= winter control ; Ys : heating circuit open

- with actual outside temperature > SummerEcoOff Outside T
= summer control ; Ys : cooling circuit open

- coinciding seasons : **Winter season
Fr 01.01 to 31.12** **Summer season
Fr 01.01 to 31.12**

Result : switching only in relation to outside temperature for whole year :

- with actual outside temperature > WinterEcoOff Outside T and < SummerEcoOff Outside T
= control Off ; Ys : idle in last position assumed

- with actual outside temperature < WinterEcoOff Outside T
= winter control ; Ys : heating circuit open

- with actual outside temperature > SummerEcoOff Outside T
= summer control ; Ys : cooling circuit open

12.13 On-Off contact for repetition current mode (W1)

25.7 Bis

**Output W1 13-14
MODE REPETITION**

The output switch W1 (terminals 13-14) can be used in two ways:

- MODE REPETITION (summer & winter): NORMAL= On, switch closed; SETBACK = On, switch closed; FLOW = On, switch closed; FROSPROT = On, switch closed; OFF = Off, switch open

25.7 Bis

**Output W1 13-14
DEHUMIDIFIER**

- DEHUMIDIFIER (summer only). Possible only with B6 and B3 sensors connected. The switch is On when the desired flow temperature is equal to the dew point value measured by the room temperature and humidity. The switch is delayed at start-up (5 minutes) with a minimum operating time (5 minutes); these times can be adjusted only by means of a computer running SWC 701 Telemangement software.

12.14 Control boiler anticondensing temperature

The anticondensing function prevents the formation of condensation in the combustion chamber of the boiler. It sets a decrease of 4 °C in the desired flow temperature for each °C decrease in the actual return to boiler temperature (detector B4) in respect of the value set thereby bringing about the progressive closure of the regulating valve.

19.10

Anticondense : NO
Desired T : 50.0c

- Anticondens : NO = Function disabled
 YES = Function enabled
- Desired T : - - . °C = Value of minimum limit of return to boiler temperature

If there is a C-Ring connection the differential value is transmitted to all the controllers connected which are thus able to carry out the anticondensing function with a single detector. The minimum limit value considered is that set on the controller to which the anticondensing detector is connected. On the other controllers appears Desired T : - - . c.

13. PROGRAMMES & PERIODS WITH DATES

All the programmes with timed events and with dates operate independently in respect of the **winter** and **the summer** season.

13.1 24-hour programmes

21.1

Win : How many
24hour progs ? 1

22.1

Sum: How many
24hour progs ? 1

Enter number of 24-hour programmes you wish to use (from 1 to 3) for the winter season and for the summer season so as to avoid viewing unused display pages.

21.2

P 1WinE v1 06.00
NORMAL 21.0c

21.7

P 1WinE v6 22.00
OFF

In each 24-hour programme for winter (**WinP1 ... WinP3**) and summer (**SumP1 ... SumP3**) you can enter a maximum of six event start times (**Evnt1 ... Evnt6**) assigning to each one of the following modes :

- Winter season :
- NORMAL : compensated control with winter NORMAL ambient temperature
 - SETBACK : compensated control with winter SETBACK ambient temperature
 - FLOW : control with winter fixed FLOW temperature
 - FROSPROT : control with FROSPROT ambient temperature
 - OFF : plant Off, valve closed and pump idle

22.2

P 1SumEv1 06.00
NORMAL 25.0c

22.7

P 1SumEv6 22.00
OFF

- Summer season
- NORMAL : compensated control with summer NORMAL ambient temperature
 - FLOW : control with summer fixed FLOW temperature
 - OFF : plant Off, valve closed and pump idle

The Event start times must be entered in increasing order.
The Events not used are excluded by pressing + and - keys at the same time (- - -).
You must not leave unused times (- - -) between the programmed Events .

13.2 7-day programmes

One 7-day programme is available for the winter season and one for the summer season.

21.8

Win7dayMONDAY
24HOUR 1

21.14

Win7daySUNDAY
24HOUR 1

In each 7-day programme you can assign to each day of the week one of the following programmes :

- Winter season :
- 24HOUR 1 ...3 (Win) ;
 - NORMAL (Win) ;
 - SETBACK (Win);
 - FLOW (Win);
 - FROSPROT ;
 - OFF

22.8

Sum7dayMONDAY
24HOUR 1

22.14

Sum7daySUNDAY
24HOUR 1

- Summer season :
- 24HOUR 1...3 (Sum) ;
 - NORMAL (Sum) ;
 - FLOW (Sum);
 - OFF.

13.3 Holiday periods

21.15

Win:How many hol periods ? 0

22.15

Sum:How many hol periods ? 0

21.16

Win:Holiday prog FROSPROT 6.0c

22.16

Sum:Holiday prog OFF

21.17 - 22.17

Hol 01 Start NO Fr - - - - to - - - -

These impose an operating programme, the same for all the periods, which overrides the one in current use. At the end of each holiday period the controller returns to its normal operation.

Enter the number of holiday periods or bank holidays which you wish to use for the winter season (max 15) and for the summer season (max 15) so as to reduce the number of display pages dedicated to the entering of the dates.

If left at 0 the programming pages do not appear.

Choose the programme to be used during all the holiday periods :

Winter season :

- 7DAY (Win) ; - 24HOUR 1 ...3 (Win) ; - NORMAL (Win) ; - SETBACK (Win) ;
- FLOW (Win) ; - FROSPROT ; - OFF.

Summer season :

- 7DAY (Sum) ; - 24HOUR 1 ...3 (Sum) ; - NORMAL (Sum) ; - FLOW (Sum) ;
- OFF.

Enter the dates of each single period for the winter season and the summer season.

21.15

22.15

- Hol 01 = choice of periods made available by

Win:How many hol periods ? - -

Sum:How many hol periods ? - -

- Start : - NO = holiday period not used
- 00 = start period at 00.00 hours
- 12 = start period at 12.00 noon

- From - - . - - to - - . - - = day and month of start and end of holiday period

For a single day of holiday enter the same date for start and end.

To cancel the holiday period keep pressed + and - keys at the same time.

13.4 Special period

18.5

Win:Special prog 24HOUR 1

18.7

Sum:Special prog 24HOUR 1

18.6

Win:Spec period Fr - - - - to - - - -

18.8

Sum:Spec period Fr - - - - to - - - -

A period, one for the winter season and one for the summer season, for which is set an operating programme which temporarily overrides the programme in current use in order to meet particular requirements :

Winter season :

- 7DAY (Win) ; - 24HOUR 1 ...3 (Win) ; - NORMAL (Win) ; - SETBACK (Win) ;
- FLOW (Win) ; - FROSPROT ; - OFF.

Summer season :

- 7DAY (Sum) ; - 24HOUR 1 ...3 (Sum) ; - NORMAL (Sum) ; - FLOW (Sum) ;
- OFF.

Enter the day and month of start and end of the special periods for the winter season and the summer season.

13.5 Seasons

21.18

Winter season Fr 15.10 to 15.04

22.18

Summer season Fr 15.06 to 15.09

Establish the winter and summer seasons.

Enter the day and month of start and end of winter season, period in which the controller is in the heating stage.

Enter the day and month of start and end of summer season, period in which the controller is in the cooling stage.

To cancel the seasons, keep + and - keys pressed at the same time.

For the use of the seasons see section 12.12 Season switch

13.6 Summer time

21.19 - 22.19

Summer time Fr 29.03 to 26.10

The controller is able to change automatically the current time in relation to the summer time period.

- From - - - - = the night of the last Saturday of March the clock is put forward automatically one hour.
- to - - - - = the night of the last Saturday of October the clock is put back automatically one hour.

14. COMPLEMENTARY FUNCTIONS

14.1 Access keynumber

25.11

Choice keynumber

Access keynumber

Choice and enabling of the access keynumber which prevents the use of + and – keys thereby preventing any tampering with the data. Enter the number (1900 ... 1999) using + and – keys.

To cancel the keynumber, press + and – keys at the same time until the dashes re-appear.

When the keynumber is enabled, if you press + and – keys there will appear on the display the request to introduce the access keynumber. Only after having entered the correct keynumber is it possible to use + and – keys.

If for 15 minutes no key is pressed the keynumber is re-enabled automatically.

14.2 Site (Plant) name

25.12

Site (Plant) name

Composition of site (plant) name which appears on the first page of display.

Using + and – keys, each dash can be replaced by a letter of the alphabet (A ... Z) or by a number (0 ... 9). The → key serves to position the cursor.

14.3 Display measurements

20.1

Des amb T : 21.0c
Act amb T : 21.0c

The controller displays all the measurements made by the detectors and other data useful for monitoring the operational status of the plant.

Appears only if detector **B3** is connected and configured.

- ambient temperature desired by current mode.
- actual temperature measured by detector **B3**.

20.2

Des flow T : 80.0c
Act flow T : 80.0c

- flow temperature desired by current mode.
- actual temperature measured by detector **B1**.

20.3

Outside temp
actual : - 2.0c

- actual outside temperature. If detector **B2** is not connected to the controller, in place of actual appears C-Ring and the value is that coming via C-Ring.

20.4

DesAnticon : 50.0c
ActAnticon : 58.0c

- desired anticondensing temperature.
- actual anticondensing temperature. If detector **B4** is not connected to the controller in place of "actual" appears "C-Ring" and in place of the measurement appears --.- C.

20.5

Humidity : 60.0%
Dew point : 14.0c

Appears only if detector **B6** is connected and configured.

- ambient humidity measured by detector **B6**.
- dew point calculated by controller

15. ALARMS

The alarms processed by the controller are of three types :
 – alarms for abnormal functioning of the controller (LED 6.10) and of the HVAC zones controlled (LED 6.9)
 – alarms for short or open circuits in respect of the detectors connected (LED 6.9)
 – alarms by external contacts (LED 6.8)

The alarm status is indicated by the LEDs on the controller facia and by the appearance of the word ALARM on the display when the alarm is sent to the PC and is identified, on the configuration page, by the letter “A” alternating with the number of the alarm concerned.

By means of the C- Bus connection the alarms can be sent to a local PC and / or to the central telemanagement PC.

15.1 Functional alarms

25.8

Functional Alarms
 - - 8

The functional alarms are triggered in the presence of prolonged differences between actual measured values and those desired .
 These alarms, with the exception of the real time clock alarm (8), do not affect the operation of the controller.

Factory setting : all disabled except that of the real time clock alarm (8)
 Using + and – keys enable the alarms which are of interest by replacing the dashes with the numbers.

When the number blinks = alarm triggered.
 The limit values and the delay times for sending the alarms can only be modified by PC.

Type and cause of alarm :

- 1** = difference flow temperature (B1)
 – enabled with pump M1 in operation
 – triggered when actual temperature below or above that desired.
- 3** = difference ambient temperature (B3)
 – enabled when pump M1 in operation
 – triggered when actual temperature less or greater than that desired.
- 8** = internal real time clock; cannot be disabled
 – triggered when clock assumes meaningless values.

15.2 Detector alarms

25.9

Detector alarms
 - - - - -

The detector alarms are triggered in the event of **breaks** or **shorts** in the circuits of the detectors connected.

The effect of the alarm status is delayed by one minute.

Factory setting : all disabled.
 Using + and – keys enable the alarms which are of interest by replacing the dashes with the numbers.

Type and effect of alarm :

- 1** = Flow detector (B1) : valve stops where it is and pump M1 operated by timed programme.
- 2** = Outside detector (B2) : valve stops where it is and pump M1 operated by timed programme. In C-Ring last value measured continues to be transmitted
- 3** = Ambient detector (B3) : ambient authority is excluded.
- 4** = Anticondensing detector (B4) : anticondensing function cancelled also in C-Ring.
- 8** = C-Ring : break in electrical connection or fault in a controller in ring.

15.3 Alarms or status of external contacts (k)

25.10

K alarms
 - -

25.7

Inputs E2-E3:
ALARMS

Only if configured

Alarms triggered by closure of voltage-free contacts **k2** or **k3** by plant components (pumps, burners, etc).

The presence of the alarm is signalled after about 60 seconds.

Factory setting : all disabled.
 Using + and – keys enable the alarms which are of interest by replacing the dashes with the numbers.
 If not used for alarm they can be used for signalling status.

16. COMMISSIONING PLANT

Testing to be carried out when installation completed and wiring and configuration concluded and tested.

16.1 Testing C-Ring

25.6

CRing connection
PRIMARY
CRing connection
SECONDARY

The page of C-Ring testing appears only if configured in

Ensure that all the other controllers connected in C-Ring are :

26.1

CRing : ??

– correctly mains powered (230 V AC, or 240 V AC for UK market).

– Slave controllers or those configured as SECONDARY in

CRing connection
SECONDARY

– chosen on testing page

CRing : ??

The "PRIMARY" controller sends via C-Ring a signal every 10 seconds: on all the displays appears "??". If the connection is positive the word "YES" replaces "??". If on one or more displays "YES" does not appear, this means that there is a break between the last controller with "YES" and the first with "??".

Examples of testing a C-Ring with four controllers :

- Cont.1 "YES" – Cont.2 "YES" – Cont.3 "YES" – Reg.4 "YES" : Wiring positive
- Cont.1 "??" – Cont.2 "YES" – Cont.3 "YES" – Reg.4 "YES" : Break between 4 & 1
- Cont.1 "??" – Cont.2 "YES" – Cont.3 "??" – Reg.4 "??" : Break between 2 & 3
- Cont.1 "??" – Cont.2 "??" – Cont.3 "??" – Reg.4 "??" : Break between 1 & 2

16.2 Testing outputs

26.2

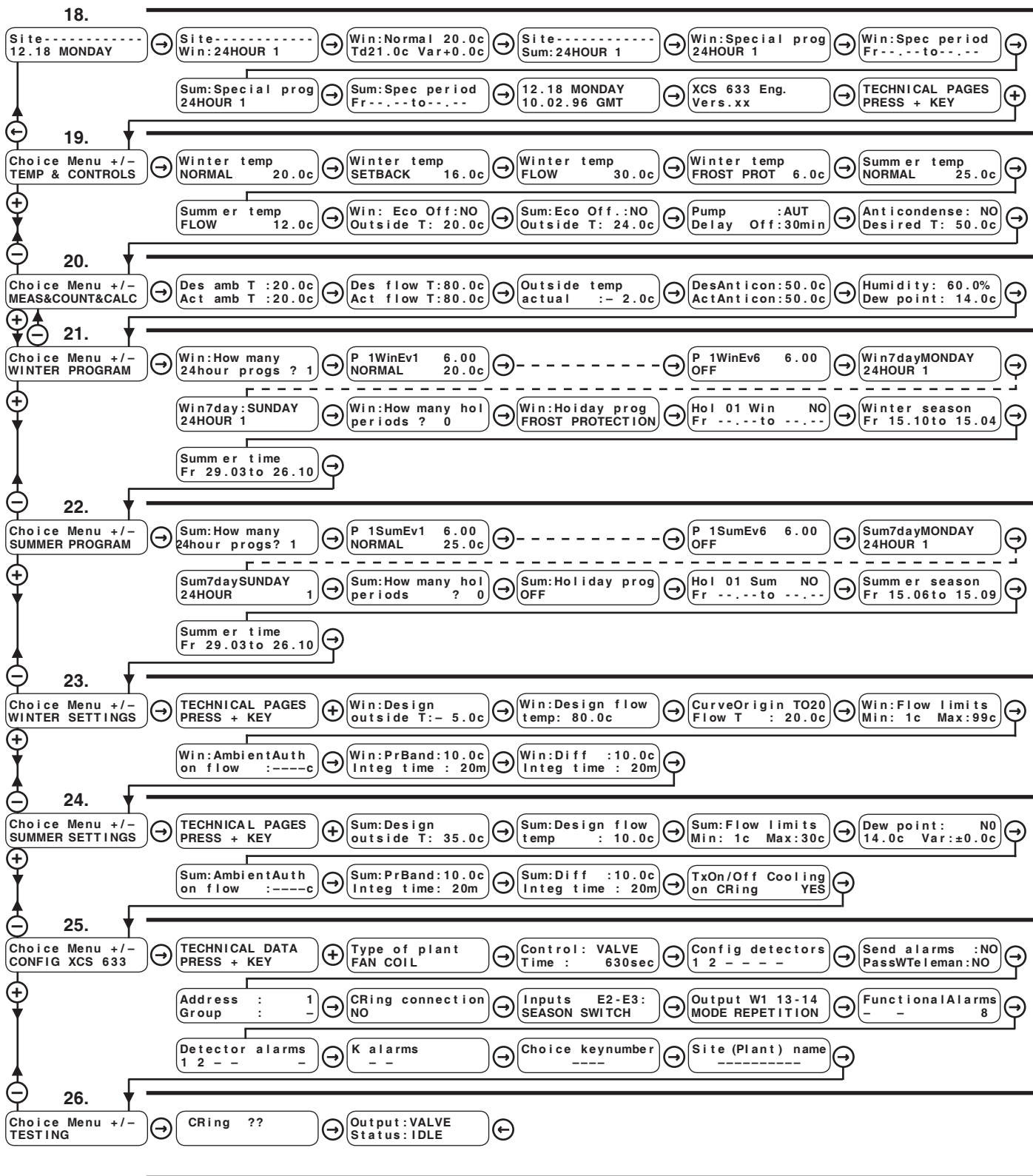
Output : VALVE
Status : CLOSE

With + and – keys choose :

- Output to test :
 - VALVE ;
 - PUMP ;
 - Ys ;
 - Ws ;
 - W1.
- Status :
 - with VALVE : IDLE ; CLOSES ; OPENS
 - PUMP , Ys , Ws , W1 : ON ; OFF.

Check the result.

17. SEQUENCE DISPLAY PAGES (the data and the functions are those set by the factory)



⬅ ➡ Keys for scrolling the pages on the display and positioning the cursor **⊠** on data which can be adjusted on the pages.
Adjustable data, in the following descriptive list of display pages, are highlighted thus
By pressing these keys at the same time, or in any event after 15 minutes, the first page returns to the display Site: 12.18 MONDAY

⊖ ⊕ Keys for:
 - adjusting the values indicated by the cursor **⊠**
 - viewing the possibility of configuring a function, for example: Type of plant FAN COIL or Type of plant PANELS
 - passing directly from one menu (series of pages) to another.

18. NORMAL USE				
Ref.	Display	Description	Notes	Sect.
18.1	Site----- 12.18 MONDAY	Site (Plant) name. Current time and day	Entered in 25.12 Entered in 18.9	
18.2	Site----- Win:7DAY 1	Choice winter programme : 7DAY; 24HOUR 1...3; NORMAL; SETBACK; FLOW; FROSPROT; OFF.	In winter season page is in position 18.4 . Instead of programme can appear : HOLIDAY; SPECIAL; TELENORMAL; Tad + 2c; SEASON OFF; TELESETBACK; TELEFROSPROT; TELEOFF.	12.8
18.3	Win:NORMAL 20.0c Td20.0c Var+0.0c	Winter (Win) or Summer (Sum) mode in use. Td: Temperature desired by mode + telecontrol R. Var : Variation of desired temp. (max ± 2 °C)	Winter modes : NORMAL; SETBACK; FLOW; FROSPROT; OFF. Summer modes : NORMAL; FLOW; OFF.	12.9
18.4	Site----- Sum:24HOUR 1	Choice summer programme : 7DAY; 24HOUR 1...3; NORMAL ; FLOW ; OFF.	In summer season the page is in position 18.2 . Instead of programme can appear: HOLIDAY; SPECIAL; TELENORMAL; Tad – 2C; SEASON OFF; TELEOFF.	12.8
18.5	Win:Special prog 24 HOUR 1	Choice programme for special winter period: 7DAY; 24HOUR 1...3; NORMAL; SETBACK; FLOW; FROSPROT; OFF.	Programmes set are for winter	13.4
18.6	Win:Spec period Fr --- to ---	Dates of start and end of winter Special period Choice programme for summer Special period: 7DAY; 24HOUR 1...3 ; NORMAL; FLOW; OFF.	Press + and – together to cancel	13.4
18.7	Sum:Special prog 24HOUR 1	Choice programme for special summer period: 7DAY; 24HOUR 1...3; NORMAL; SETBACK; FLOW; FROSPROT; OFF.	Programmes set are for summer	13.4
18.8	Sum Spec period Fr --- to ---	Dates of start and end of summer Special period	Press + and – together to cancel	13.4
18.9	12.18 MONDAY 10.02.96 GMT	Settings : Time, day of week and date Current time period : GMT or Summer	Dates summer time set in 21.19 or 22.19	
18.10	XCS 633 Eng. Vers.xx	Identifying data of controller		

19. TEMPERATURES & CONTROLS				
Ref.	Display	Description	Notes	Sect.
19.1	Winter temp NORMAL 20.0c	Value of desired NORMAL ambient temperature for winter season.		13.1
19.2	Winter temp SETBACK 16.0c	Value of desired SETBACK ambient temperature for winter season		13.1
19.3	Winter temp FLOW 30.0c	Value of desired FLOW temp. for winter season		13.1
19.4	Winter temp FROST PROT 6.0c	Value of desired FROSPROT ambient temperature for winter season.		13.1
19.5	Summer temp NORMAL 25.0c	Value of desired NORMAL ambient temperature for summer season		13.1
19.6	Summer temp FLOW 12.0c	Value of desired FLOW temperature for summer season	If in 24.4 is YES the control of the dew point is switched on.	13.1
19.7	Win Eco Off: NO Outside T: 20.0c	Winter Eco Off: YES ; NO Value for Eco Off outside temperature	With higher outside temperatures = valve closed and pump idle	12.6
19.8	Sum Eco Off: NO Outside T: 24.0c	Summer Eco Off: YES ; NO Value of Eco Off outside temperature	With lower outside temperatures = valve closed and pump idle	12.6
19.9	Pump :AUT Delay Off :30min	Control of plant pump : MAN ; AUT. Delay in switching off pump	MAN : always On ; AUT : On with current programme events.	12.10
19.10	Anticondense: NO Desired T: 50.0c	Anticondensing function: YES ; NO Value of desired boiler anticondensing temp.	With lower temperatures = progressive closure valve. If B4 not configured & if value comes from C-Ring appears -- . -.	12.14

20. MEAS&COUNT&CALC				
Ref.	Display	Description	Notes	Sect.
20.1	Des amb T : 20.0c Act amb T : 20.0c	Ambient temp. desired by current mode. Temp. measured by ambient detector B3.		14.3
20.2	Des flow T: 80.0c Act flow T: 80.0c	Flow temperature desired by current mode Temp. measured by flow detector B1		14.3
20.3	Outside temp actual : - 2.0c	Actual outside temp. measured by B2 or coming from C-Ring	If outside detector B2 not connected & value comes from C-Ring, Actual is replaced by C-Ring & -- . - appears.	14.3
20.4	DesAnticon: 50.0c ActAnticon: 58.0c	Desired anticondensing temp. Temp. measured by anticondensing detector B4	If outside detector B2 not connected & value comes from C-Ring, Actual is replaced by C-Ring & -- . - appears.	14.3
20.5	Humidity: 60.0% Dew point: 60.0%	Ambient humidity measured by B6	Page appears only if detector B6 is configured in 25.3 .	14.3

21. WINTER PROGRAMMES				
Ref.	Display	Description	Notes	Sect.
21.1	Win:How many 24hour progs? 1	Choice of number of 24-hour programmes to be used (1...3) in winter season	Eliminate unused display pages	13.1
21.2	P 1WinEv1 6.00 NORMAL 21.0c	Number of programme, number of event & time of start period in programming.	Max. 6 periods. To eliminate an unused period press + and - keys together : there will appear - - - - The events must be increasing order. You must not leave - - - - between programmed events. The modes set are for winter.	13.1
21.7	P 1W inEv6 22.00 OFF	Choice type of mode to assign to period : NORMAL ; SETBACK ; FROSPROT ; FLOW ; OFF. Other groups of 6 pages according number in 21.1		
21.8	Win7dayMONDAY 24HOUR 1	Choice of winter programme for each day of week: 24HOUR 1...3 ; NORMAL ; SETBACK ; FROSPROT ; FLOW ; OFF.		
21.14	Win7daySUNDAY 24HOUR 1			
21.15	Win:How many hol periods ? 0	Choice number of holiday periods to be used (0...15) in winter season	Eliminate unused display pages	13.3
21.16	Win:Holiday prog FROST PROTECTION	Choice programme for all holiday periods : 7DAY ; 24HOUR 1...3 ; NORMAL ; SETBACK ; FROSPROT ; FLOW ; OFF.	Appears only if in 21.15 number is greater than 0. The programmes set are for winter.	13.3
21.17	Hol 01 Win NO Fr - - - - to - - - -	NO=unused period; 00=start at 00 hrs; 12=start at 12 noon; Dates of start and end holiday period. Other pages according to number in 21.15	Appears only if in 21.15 number is greater than 0.	13.3
21.18	Winter season Fr 15.10to 15.04	Dates of start & end winter season		13.5
21.19	Summer time Fr 29.03to 26.10	Dates of start & end summer time period		13.6
22. SUMMER PROGRAMMES				
Ref.	Display	Description	Notes	Sect.
22.1	Sum: How many 24hour progs ? 1	Choice of number of 24-hour programmes (1...3) to be used in summer season	Eliminate the unused display pages	13.1
22.2	P 1Sum Ev1 6.00 NORMAL 25.0c	Number of programme, number and start time of event.	Max. 6 periods. To cancel an unused period press + and - keys together : there will appear - - - - The events must be increasing order. You must not leave - - - - between programmed events The modes set are for summer.	13.1
22.7	P 1Sum Ev6 22.00 OFF	Choice of mode to assign to period:NORMAL; FLOW; OFF. Other groups of 6 pages according to number in 22.1		
22.8	Sum7dayMONDAY 24HOUR 1	Choice of summer programme for each day of the week 24HOUR 1...3 ; NORMAL ; FLOW ; OFF.		
22.14	Sum7daySUNDAY 24HOUR 1			
22.15	Sum:How many hol periods ? 0	Choice of number of holiday periods to be used (0...10) in summer season.	Eliminate the unused display pages.	13.3
22.16	Sum:Holiday prog OFF	Choice of programme for all the holiday periods. 7DAY ; 24HOUR 1...3 ; NORMAL ; FLOW ; OFF.	Appears only if in 22.15 number is greater than 0. The programmes set are for summer	13.3
22.17	Hol.01 Sum NO Fr - - - - to - - - -	NO=unused period; 00=start at 00 hours; 12=start at 12 noon; Dates of start and end of holiday period. Further pages according to choice made in 22.15	Appear only if in 22.15 number is greater than 0.	13.3
22.18	Summer season Fr 15.06to 15.09	Dates of start and end of summer season		13.5
22.19	Summer time Fr 29.03to 26.10	Dates of start and end of summer time period		13.6

23. WINTER SETTINGS

Ref.	Display	Description	Notes	Sect.
23.1	Win: Design outside T: - 5.0c	Value of design outside temp. for winter compensated control		12.2
23.2	Win: Design flow temp : 80.0c	Value of design flow temperature for winter compensated control	If in 25.1 choice is PANELS 40.0 c will appear.	12.2
23.3	CurveOriginT020 Flow T : 20.0c	Correction of origin of heating curve		12.3
23.4	Win: Flow limits Min: 1c Max: 99c	Value of minimum & maximum limits of flow temperature		12.4
23.5	Win: Ambient Auth on flow : ----c	Ambient authority. Variation in ± °C of flow temp. with ± 1 °C difference ambient T.	Appears only if in 25.3 ambient detector B3 is configured.	12.5
23.6	Win: PrBand : 10.0c Integ time : 20m	Proportional band & Integral time for winter control	Appears if in 25.2 choice is VALVE. To cancel Integral time press + and – together	12.2
23.7	Win: Diff : 10.0c Integ time : 20m	Stage differential & Integral time for winter control	Appears if in 25.2 choice is ON-OFF. To cancel Integral time press + and – together	

24. SUMMER SETTINGS

Ref.	Display	Description	Notes	Sect.
24.1	Sum: Design outside T: 35.0c	Value of design outside temp. for summer compensated control.		12.2
24.2	Sum: Design flow temp : 10.0c	Value of design flow temp. for summer compensated control		12.2
24.3	Sum: Flow limits Min: 1c Max: 30c	Value of minimum & maximum limits of summer flow temperature	Min:xx c = minimum limit which can be set at fixed or variable value in relation to ambient humidity (only if B6 configured).	12.3
24.4	Dew point : NO 14.0c Var: ±0.0c	Enabling control dew point : YES ; NO. Value calculated. Correction of desired value	Appears only if detector B6 configured. Maximum correction of ± 9 °C.	12.7
24.5	Sum: Ambient Auth on flow : ----c	Ambient authority. Variation in ± °C of flow temp. with 1 °C difference ambient T.	Appears only if ambient detector B3 connected & configured.	12.5
24.6	Sum: PrBand : 10.0c Integ time : 20m	Proportional band & integral time for summer control.	Appears if in 25.2 choice is VALVE. To cancel Integral time press + and – together.	12.2
24.7	Sum: Diff. : 10.0c Integ time : 20m	Stage differential & Integral time for summer control.	Appears if in 25.2 choice is ON-OFF. To cancel Integral time press + and – together.	
24.7 Bis	S	Send request cooling via C-Ring.	Activated only for summer season	

25. CONFIGURATION CONTROLLER

Ref.	Display	Description	Notes	Sect.
25.1	Type of plant FAN COIL	Choice type of plant : FAN COIL ; PANELS.		12.1
25.2	Control : VALVE Time : 630sec	Choice type of control : VALVE ; ON-OFF. Run time of valve (only if VALVE).	VALVE = 3-wire modulating control ON-OFF = On-Off control in 1 or 2 stages	12.1
25.3	Config detectors 1 2 - - - -	Configuration detectors connected (inputs B-M). - = detector not connected; number = detector connected. Factory setting : configured only B1 & B2.	1 : Flow temperature detector B1 . 2 : Outside temperature detector B2 . 3 : Ambient temperature detector B3 . 4 : Boiler anticondens. temperature detector B4 . 5 : Telecontrol variation programmes R . 6 : Ambient humidity detector B6 .	12.
25.4	Send alarms : NO PassWTeleman : NO	Enabling alarms to send to telemanagement PC Enabling telemanagement access keynumber	Only if connected in C-Bus	11.5
25.5	Address : - Group : -	Telematic address of controller Group to which controller belongs	Only if connected in C-Bus.	11.4
25.6	CRing connection NO	NO : Not connected C-Ring. PRIMARY : Connected as Primary SECONDARY : Connected as Secondary		11.1
25.7	Inputs E2-E3 : SEASON SWITCH	Configuration inputs E2 -E3 : SEASON SWITCH ; ALARMS.	SEASON SWITCH = when cs is connected ALARMS = when k1 and/or k2 connected.	12.12 15.3
25.7 Bis	Output W1 13-14 MODE REPETITION	Configuration W1 switch : MODE REPETITION: repeats current mode DEHUMIDIFIER: permission to devices to dehumidify room	DEHUMIDIFIER: In summer, only with B3 & B6 connected	12.12 15.3

25. CONFIGURATION CONTROLLER				
Ref.	Display	Description	Notes	Sect.
25.8	Functional Alarms - - 8	Enabling functional alarms Factory setting : only 8 enabled (cannot be disabled)	1 : Flow temperature alarm B1 . 3 : Ambient temperature alarm B3 . 8 : Internal real time clock alarm	15.1
25.9	Detector alarms 1 2 - - -	Enabling alarms for short or open detector circuits Factory setting : all disabled	1 : Flow detector B1 . 2 : Outside detector B2 . 3 : Ambient detector B3 . 4 : Anticondensing detector B4 . 8 : C-Ring alarm.	15.2
25.10	K alarms - -	Enabling On-Off alarms. Factory setting : all disabled	Appears only if in 25.7 choice is ALARMS 2 : Input E2, alarm with k2 closed. 3 : Input E3, alarm with k3 closed.	15.3
25.11	Choice keynumber - - - -	Choice keynumber to prevent use + and - keys. - 1901 ... 1999	To cancel keynumber press + and - together.	14.1
25.12	Site (Plant) name - - - - - - - -	Entering site (plant) name	Use + and - to enter letters or numbers. Use ← and → to position cursor.	14.2
26. TESTING				
Ref.	Display	Description	Notes	Sect.
26.1	CRing : ??	Page of testing C-Ring connections. ?? = C-Ring test in progress or test result negative YES = test positive	Appears only if in 25.6 choice PRIMARY or SECONDARY.	16.1
26.2	Output : VALVE Status : CLOSE	Choice output to test. Choice status of output.	Choice output : VALVE ; PUMP ; Ys ; Ws ; W1. Choice status: With VALVE : IDLE ; CLOSE ; OPEN. With PUMP, Ys , Ws , W1 : ON ; OFF.	16.2

Amendments to data sheet

Date	Revision No.	Page	Section	Details of amendemnts	Firmware version	Software version
24.04.06 DA 05.10.06 LB	01	3-4 3-4	WIRING DIAGRAMS WIRING DIAGRAMS	Amendments on wiring diagrams Amendments on terminal blocs of wiring diagrams		
18.04.07 LB		3-4	WIRING DIAGRAMS	Amendments wiring diagrams for connections SAU 914 sensor		
01.02.08 LB	02	18	WIRING DIAGRAMS CONFIGURATION CONTROLLER	The numbers of the terminals shown in the actuators have been eliminated Updtae display page "25.9 Detector alarms"		
07.01.09 VM	03	8	12.7 Control of dew point	Additional explanation	15	≥ 0.952185
23.04.09 VM	04	4, 6, 9	12.2 - 12.13	Added functions: "Request cooling on C-Ring" and dehumidifier control	16	> 0.99.2502
15.07.09 VM	05	3-4	WIRING DIAGRAMS	Amendments on wiring diagrams	16	> 0.99.2502

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