B 260
28.12.05 LB

COMPENSATING CONTROLLER

C ◄BUS C ◄RING

DTE 600 Eng. C2

- **Digital controller for boiler house with annual programming :**
  – compensated control of heating zone ;
  – control of DHW temperature with control DHW pump;
- **Communication systems :**
  – C-Bus for telemanagement;
  – C-Ring for sharing data of common interest between local controllers.
- **Power supply 230 V ~ ; DIN rail mounting.**

1. APPLICATION

DTE 600 is designed for the compensated control of central heating zones in :
– commercial and public buildings
– schools;
– residential complexes

2. FUNCTIONS

The principal functions of DTE 600 are :
- Compensated control of heating zone :
  – three-wire control of valve actuator or On-Off in one or two steps ;
  – optimisation of start and stop times of plant ;
  – control plant pump by current programme of timed events with switching off delay ;
  – frost protection;
  – minimum and maximum limits of flow temperature ;
    – correction of heating curve origin;
    – self-adjusting;
    – Eco Off
- Control of stored DHW temperature :
  – control of DHW pump by detector or only by programme of timed events ;
  – priority function and antibacteria ;
- 24-hour or 7-day programming of timed events ;
- Programming with dates : 25 holiday periods ; winter season ; special period.
- Summer plant exercise of valve and pumps.
- Automatic changeover GMT/BST.
- Metering of degree-days.
- Remote control for modifying current programme.
- Four On-Off inputs for signalling status or alarm.
- Alarms for short or open detector circuits and for incorrect operation of plant and controllers.
- C-Ring interface for local sharing of data with other controllers.
- C-Bus interface for data interchange with local PCs or remote telemanagement PC.

3. DETECTORS, REMOTE CONTROL & ACCESSORIES

No.	Description		Type	Sensing element	Code	Data sheet
1	Heating flow temperature detector	contact [1]	**SCH 010**	NTC 10 kΩ	B1	–
1	Outside temperature detector		**SAE 001**	NTC 1kΩ	B2	–
1	DHW temperature detector	immersion [2]	**SIH 010**	NTC 10 kΩ	B5	–
	Accessories					
1	Ambient temperature detector		**SAB 010**	NTC 10 kΩ	B3	–
1	Boiler anticondensing temperature detector	immersion [2]	**SIH 010**	NTC 10 kΩ	B4	–
1	Flue gases temperature detector		**STF 001**	PT 1 kΩ	B6	–
1	Accessory for connecting 4...20 mA active detector		**ASA 420**	–	B7	–
1	Remote control for modifying current programme		**CDB 300**	–	R	–
	Options					
1	1) Immersion temperature detector		**SIH 010**	NTC 10 kΩ	B1	–
1	2) Cable-type temperature detector		**SAF 010**	NTC 10 kΩ	B5	–

4. TECHNICAL DATA

• Electrical

Power supply	230 V~ ± 10%
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 switching voltage	250 V~
maximum switching current	5 (1) A
Construction standards	Italian Electro. Committee (CEI)
Storage data in memory	5 years
Software	Class A

• Mechanical

Case	DIN 6E module
Mounting	DIN 35 rail
Materials:	
base	NYLON
cover	ABS
Ambient temperature:	
operating	0 … 45°C
storage	– 25 … + 60°C
Ambient humidity	Class F DIN 40040
Dimensions	105 x 115 x 71.5
Weight	0.6 kg

• Programmes & periods

24-hour programmes	**1** … 7
24-hour events	**2** … 6
7-day programmes	**0** … 2
Holiday programmes	**0** … 25
Special period	1
Remote extension period	0 ... **3** ... 72 h

• Measurement ranges

Flow temperature	0 … 99 °C
Outside temperature	– 30 … + 40 °C
Ambient temperature	0 … 40 °C
Anticondensing temperature	0 ... 99 °C

• Heating

Flow temperature :	
radiators	40 ... **70** ... 99 °C
fan coils	40 ... **80** ... 99 °C
panels	20 ... **40** ... 50 °C
minimum limit	**1** ... 99 °C
maximum limit	1 ... **99** °C
Design outside temperature	– 30 … **– 5** … + 20 °C
Correction curve origin	**20** … 40 °C
Boiler anticondensing temperature	0 ... **50** ... 99 °C
Valve run time	30 ... **630** ... 3,600 s
Delay switching off pump	2 ... **30** ... 60 minutes
Ambient authority	**0** ... 20 °C/°C
Mode temperatures :	
5 Normal ambient	0 … **19-21** … 30 °C
2 Setback ambient	0 … **14-16** … 30 °C
Frostprot ambient	0 … **6.0** … 30 °C
Remote extension ambient	0 … **21.0** … 30 °C
2 Flows water	0 … **20-30** … 99 °C
Optimisation operating times :	
start inertia	0.00 ... **1.00** ... 7.45 h
“Normal” optimisation limit	0.00 ... **2.00** ... 12.00 h
“Holidays” optimisation limit	0.00 ... **10.00** ... 40.00 h
boosting	0.0 ... **3.0** ... 10.0 °C
reduction ambient temp. on optimum stop	0.00 ... **0.5** ... 3.5 °C
time constant	1 ... **48** ... 255 h

• Control DHW

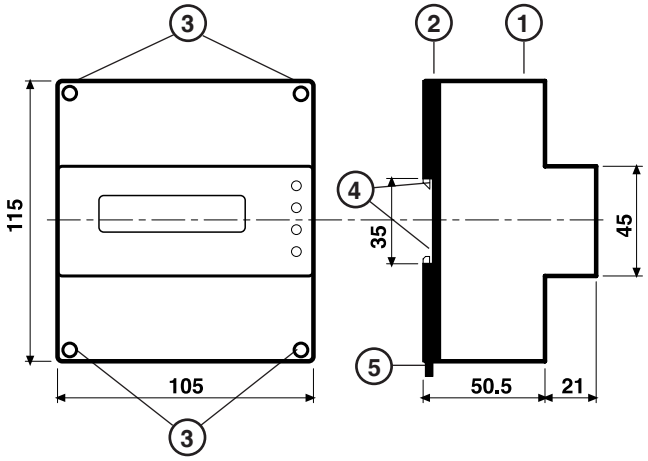
Temperature	0 … **50.0** … 99.0°C
Differential	0.5 … **5.0** … 30.0°C
Increase C-Ring over desired DHW temp.	0 ... **5.0** ... 50.0 °C

• Telemanagement (setting by PC)

Attempts send alarms	1 … **5** … 255
Interval between alarm transmissions	2 … **10** … 255 min.
Alarms (setting by PC):	
threshold diff. flow temp. (B1)	0.5…**5**…99 °C
delay diff. flow temp.	2…**30**…255 min.
threshold diff. DHW temp. (B5)	0.5…**5**…99 °C
delay diff. DHW temp.	2…**30**…255 min.
threshold diff. ambient temp. (B3)	0.5…**1**…30 °C
delay diff. ambient temp.	2…**30**…255 min.
max. temperature flue gases (B6)	1…**500**…510 °C
4 ... 20 mA detector, min. or max. (B7)	4…**12**…20 mA

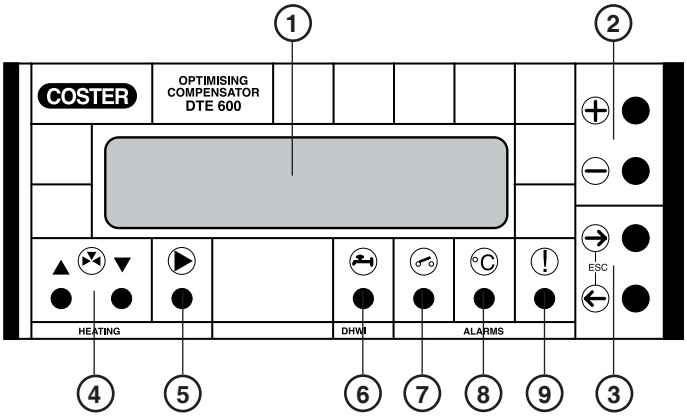
WARNING: In the presence of electrical disturbances the output controls of DTE 600 may change status but this will be restored automatically.

5. OVERALL DIMENSIONS



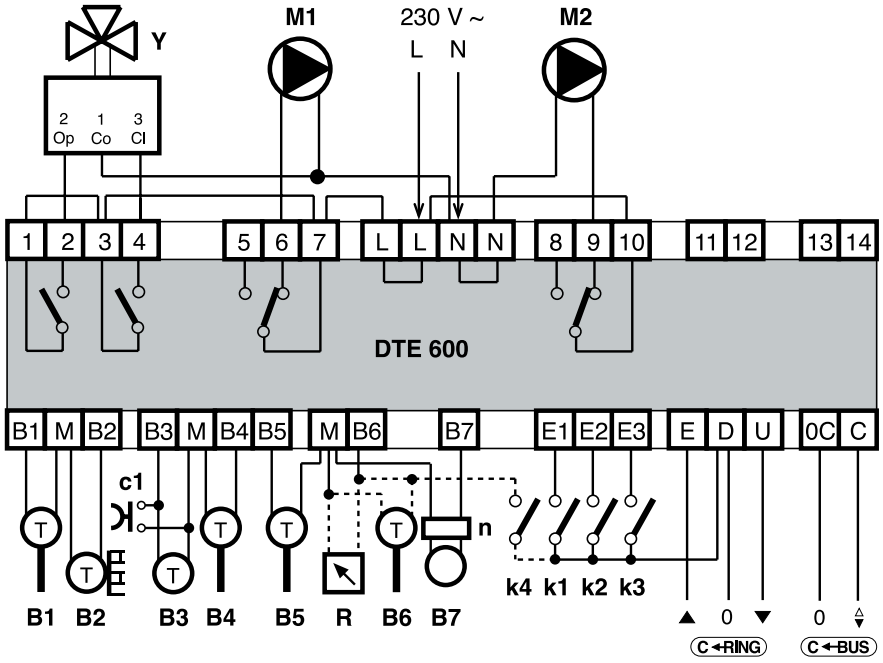
1 – Protective cover for electronic components
2 – Base with transformer, relay and terminal blocks
3 – Screws for securing cover and base
4 – DIN rail securing elements
5 – DIN rail release lever

6. FACIA



1 - Two-line backlighted alphanumeric display
2 - + and – operating keys
3 - ← and → operating keys
4 - Valve control LEDs
5 - Plant pump control LED
6 - DHW pump control LED
7 - On-Off alarms LED
8 - Measurement alarms LED
9 - Controller fault alarm LED

7. SCHEMATIC & WIRING DIAGRAM



B1 – Heating zone flow temp. detector
B2 – Outside temp. detector
B3 – Ambient temp. detector
B4 – Anticondensing temp. detector
B5 – DHW temp. detector
B6 – Flue gases temp. detector (as alternative to "R")
B7 – 4 ... 20 mA active detector
c1 – Remote extension switch
k1...3 – On-Off alarm contacts
k4 – On-Off alarm contact (as alternative to "R")

L – Line 230 V ~
N – Neutral
M1 – Heating pump
M2 – DHW pump
R – Ambient remote control (as alternative to B6 and k4)
Y1 – Heating valve
n – Convertor cable for connection of active detectors (4...20mA)
C-Bus – Telemanagement data transmission
C-Ring – Data transmission between controllers

8. SITING OF CONTROLLER & DETECTORS

8.1 Controller

The controller must be sited in a dry space which meets the permitted ambiental conditions shown under 4.TECHNICAL DATA. If positioned in a space classified as "Dangerous" it must be enclosed in a cabinet for electrical apparatus constructed according to the regulations in force for the class of danger involved.
It can be installed on a DIN rail or in a DIN modular enclosure.

8.2 Plant ow temperature detector B1

With plant pump on flow it must be installed downstream of this ; with pump on return it must be installed at at least 1.5 meters downstream of 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 and protected from direct sunlight, and as far as possible from windows, doors, chimneys or other possible direct thermal disturbances.

8.4 Ambient temperature detectors B3

This must be installed at a point which represents the average temperature of a representative space, at a height of 1.5 ... 1.6 metres from the floor, on an internal wall as far as possible from windows, doors and sources of heat ; corners, shelving and curtains must be avoided.

8.5 Boiler anticondensing detector B4

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

8.6 DHW temperature detector B5

This must be installed on the DHW tank, preferably on the lower part (1/3 height) using cable-type detectors for deep pockets.

9. WIRING

Proceed as follows :
- Separate base and cover
- Mount base on DIN rail and check that securing elements (5.4) hold it firmly in place.
- Carry out wiring according to the diagram and in observance of the relevant regulations in force, and using cables of :
  – 1.5 mm^2 for power and relay control outputs
  – 1 mm^2 for detectors and remote control
  – 1 mm^2 for C-Bus and C-Ring. For wire length limits please see technical data sheets T 021 and T 022
- Switch on power (230 V ~) and check voltage across terminals L and N.
- Switch off power, replace cover on base and secure it with the four screws supplied (5.3).

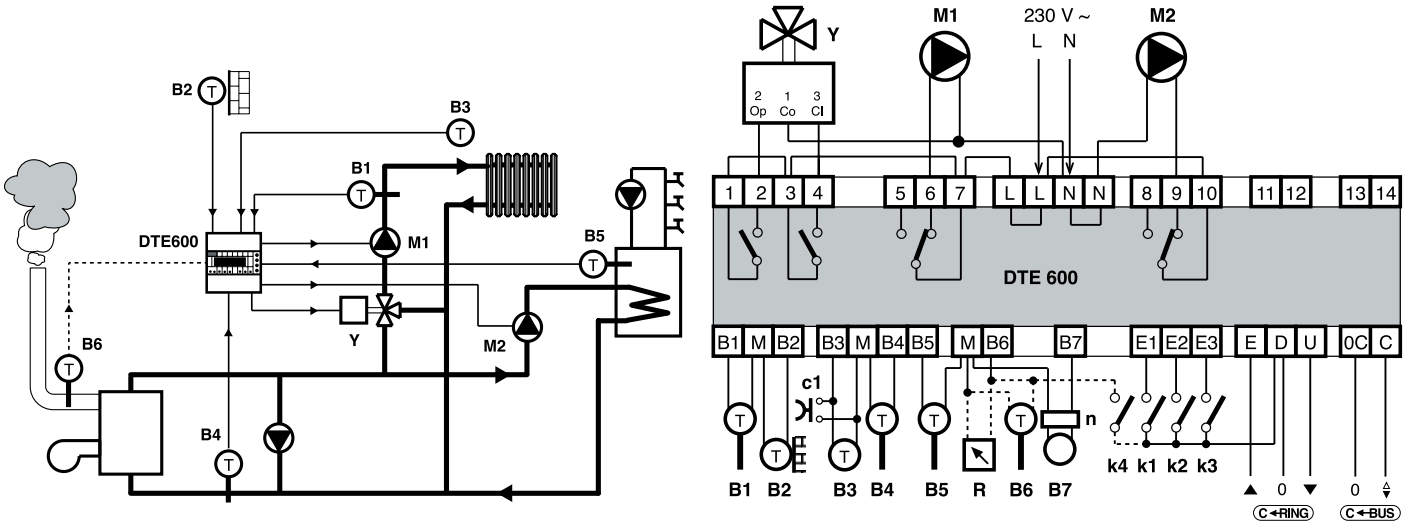
You are advised not to insert more than two cables in a single terminal of the controller and if necessary to use external junction boxes.

10. EXAMPLES OF INSTALLATIONS

10.1 Compensated control of heating zone by control valve, with DHW at constant value.

Configuration: 25.6

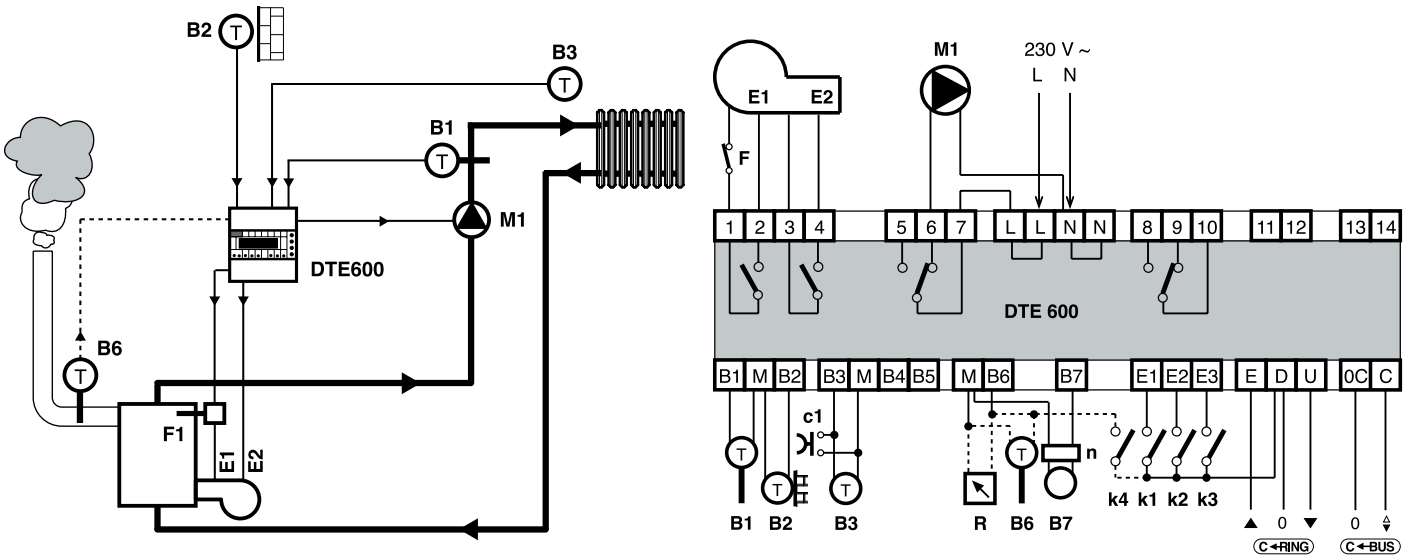
```
Control:VALVE
Time :  630 sec
```



10.2 Compensated control of heating zone by control two-stage burner.

Configuration: 25.6

```
Control:ON-OFF
Different :10.0c
```



B1 – Zone flow temp. detector
B2 – Outside temp. detector
B3 – Ambient temp. detector
B4 – Anticondensing temp. detector
B5 – DHW temp. detector
B6 – Flue gases temp. detector (as alternative to "R")
B7 – Active detector 4 ... 20 mA
c1 – Remote extension switch
E1 – 1st stage burner
E2 – 2nd stage burner
F – Boiler thermostat

k1...3 – On-Off alarm contacts
k4 – On-Off alarm contact (as alternative to "R")
L – Line 230 V~
N – Neutral
M1 – Heating pump
M2 – DHW pump
R – Ambient remote control (as alternative to B6 and k4)
Y1 – Heating control valve
n – Convertor cable for connection of active detectors (4...20mA)
C-Bus – Transmission telemanagement data
C-Ring – Exchange data between controllers

11. COMMUNICATION

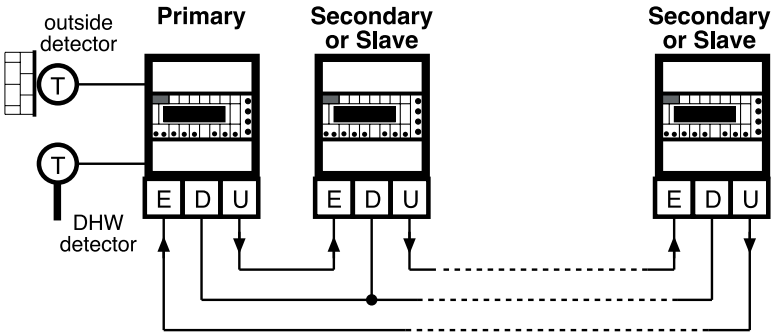
11.1 C-Ring : communication between controllers (for detailed information please see technical data sheet T 022)

DTE 600 controller can only be **"Primary"** or **"Secondary"**.
In C-Ring the following signals are transmitted :
- permission for **Slave** controllers to operate.
- value of the **outside temperature** (use of a single detector for several controllers)
- value of **ow temperature** requested by controllers; used by "PRIMARY" controller for control of temperature boilers (if foreseen).
- **DHW priority** and / or **anticondensing** = closure valves heating zones by modulating control action.

26.3
CRing connection
NO

- NO = no connection to C-Ring
- PRIMARY = connection to C-Ring as primary controller
- SECONDARY = connection to C-Ring as secondary controller

11.2 C-Ring wiring diagram



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

By means of C-Bus interface, DTE 600 can be telemanaged : two-way communication of data with one or more local PCs and/or remote central PC via telephone network.
From PC or PCs it is possible to display and / or change :
- the data and values entered on display pages of controller and configuration data dedicated exclusively to telemanagment (see 4.TECHNICAL DATA)
- operational status of plant components (pumps, auxiliaries in general)
- acquire alarms coming from heating zone + DHW circuit
- read the detector measurements (temperatures : outside, flow, boiler, etc)

11.4 Address for telemanagement

With telemanagement setup, in order to be identified by the central PC and / or by the local PCs, the controllers must have a progressive address number.
If required, it is also possible to subdivide the controllers in groups.

26.2
Address : 1
Group : –

When telemanagement is not scheduled leave address in memory (–).
To cancel the values keep + and – keys pressed at the same time.

11.5 Sending alarms

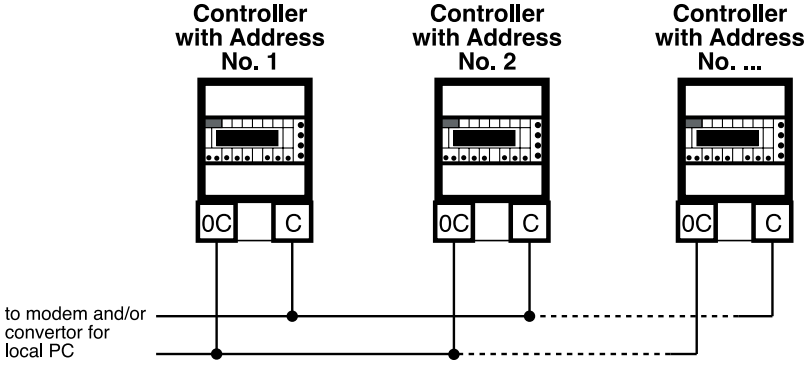
26.1
Send alarms : NO
PassWTeleman : NO

- **Send alarms** : NO = alarms not sent
  YES = alarms are sent to central PC and indicated by blinking LEDs on controller.
- **PassWTeleman** : NO = keynumber not enabled
  YES = keynumber enabled

11.6 Recording data

The controller can memorise 32 series of all the operational data of the heating zone and DHW circuit controlled.
The last recording brings about the cancellation of the oldest one.
The recordings take place automatically at a change of mode both when the timed events programme in use and by the intervention of the operator.

11.7 C-Bus wiring diagram



12. OPERATION

DTE 600 is a digital controller with microprocessor for :
– compensated control, with or without ambient authority, of a heating zone. Three-wire control of motorised valve or On-Off of single- or two-stage burners and On-Off of circulation pump.
– control of a temperature at fixed point (or a timed events programme) of a secondary circuit (eg DHW). On-Off control of a plant component.
– the acquistion of status and / or alarms regarding plant components

To configure the controller, please see sections “Sequence of display pages”

13. HEATING ZONE

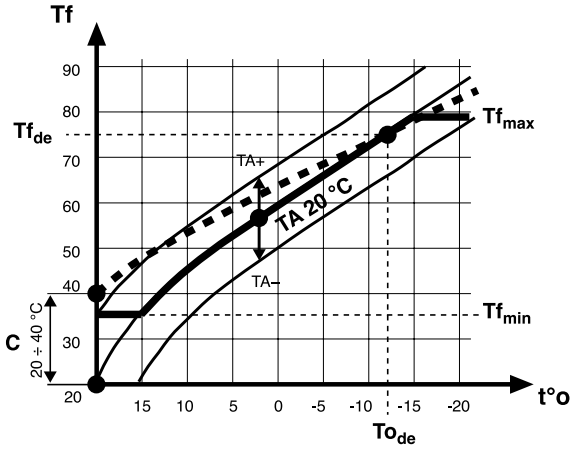
13.1 Type of heat emitters

25.1
Heat emitters
RADIATORS

The controller must be configured according to type of heat emitters used :
- Type heat emitters : RADIATORS
  PANELS
  FAN COILS

13.2 Heating curve

The flow temperature requested by the controller (detector B1) is modified in relation to the outside temperature (detector B2 or value transmitted via C-Ring) and by the heating control curve .
The controller compares the actual value of the flow temperature with that corresponding to the curve, and, in the event of a difference, regulates with PI control action (pre-set proportional band Pb and integral time It), the motorised valve to eliminate it.
The heating control curve, having reference to a desired ambient temperatue of 20 °C, is established by :



C = correction curve origin
T°f = desired flow temperature
T°fde = design winter flow temperature
T°ode = design winter outside temperature
T°fmax = maximum limit winter flow
T°fmin = minimum limit winter flow
t°o = outside temperature

25.2
Design outside
temp :– 5.0c

25.3
Design flow
temp : 70.0c

- design outside temperature : used for calculation of winter heat losses from building, depends on the climatic zone in which building is situated.
- design flow temperature : used for determining thermal requirements of heating zone (eg: radiators = 70 °C ; fan coils = 80 °C ; panels = 40 °C).
- heating curve origin : winter flow temperature with outside temperature of 20 °C

The flow temperature required by controller depends also on value of ambient temperature required by operating mode: Normal , Setback , Frostprot (parallel ± adjustment of curve).

13.3 Origin of heating curve

25.4
CurveOrigin TO20
Flow T : 20.0c

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

13.4 Operating temperatures

22.1-22.5
```
Desired temp
NORMAL 1    20.0c
```
22.6–22.7
```
Desired temp
SETBACK 1   16.0c
```
22.8
```
Desired temp
FROSTPROT   6.0c
```
22.9–22.10
```
Desired temp
FLOW 1      30.0c
```

DTE 600 permits configuring, with different desired temperature values, the various operating modes available, in particular :

– 5 NORMAL =operation with compensated control to provide comfortable ambient temperatures (daytime or when building occupied)
– 2 SETBACK =operation with compensated control to provide economical ambient temperatures (at night or when building unoccupied)
– FROSTPROT=operation with control providing safety temperature (holidays or when building unoccupied)
– 2 FLOW =operation with control providing flow temperature at constant value (heating curve not taken into consideration)
– OFF = valve closed and pump idle

13.5 Minimum and maximum ow temperature limits

25.5
```
Flow T limits
Min: 1c  Max:99c
```

When the desired flow temperature reaches one of its limit values it is kept constant at that value.
eg : - minimum limit to avoid circulation of cold air in fan coils
- maximum limit to avoid dangerous overtemperatures in panels
Warning : The maximum limit temperature does not substitute the requirements of the safety regulations in force.

13.6 Actuator run time

25.6
```
Control:VALVE
Time :      630sec
```

Choice of type of control for heating zone :

• Control : VALVE = control valve by three-wire actuator.
Time : .... sec = time taken for a complete run (open/close) of valve actuator **necessary** for correct operation of controller.

or:

• Control : ON - OFF = ON-OFF = On-Off control in two stages.
Different : .... c = On-Off temperature differential for each stage.

13.7 Minimum start and stop times

25.7
```
Minimum start
time    : 60sec
```
25.8
```
Minimum stop
time    : 60sec
```

Appear only if in 23.6 appears: 25.6
```
Control:ON-OFF
Different :10.0c
```

• Minimum start time : 60 sec = minimum duration On control ;

• Minimum stop time : 60 sec = minimum duration Off control.

13.8 Ambient authority

25.9
```
Ambient Authority
on flow    :----c
```

When ambient detector B3 is connected, the controller is able to adjust the desired flow temperature in accordance with the ambient authority set.
When detector B3 is not connected, the adjustment is made only in the Setback / Frostprot modes using the value of the ambient temperature calculated in relation to the time constant.

• Ambient authority on ow = value in °C of adjustment (increase/decrease) of flow temperature for each degree of difference in ambient temperature.

13.9 Eco Off

22.15
```
Eco Off
NO
```

Permits excluding heating when weather conditions do not require it :
– NO = disabled
– YES = enabled.

Functions only in Normal /Setback modes for :
Tf_{cal} - Ta_a ≤ 2°C = Eco Off : On
Tf_{cal} - Ta_a ≥ 4°C = Eco Off : Off
where: Tf_{cal} = calculated flow temperature
Ta_a = actual or calculated ambient temperature

13.10 Operating programmes

21.2
```
Htg:------------
24HOUR       1
```

Choice of operating programme for heating zone according to requirements :
– 24HOUR 1...7; – 7DAY 1 - 2, – NORMAL 1...5; – SETBACK 1 - 2; FROSTPROT;
– FLOW 1 - 2; OFF

In place of programme the following may appear :
– SUMMER = controller is in summer period;
– HOLIDAY = controller is in holiday period;
– SPECIAL = controller is in special period;
– REMOTE EXTENSION = “Remote Extension” period has been activated (contact c1 and / or c2 closed). To cancel this function, on first page press <- and -> keys at same time;
– REMOTE NORMAL = external remote control “R” is in “Normal” position;
– REMOTE SETBACK = external remote control “R” is in “Setback” position;
– REMOTE FROSTPROT = external remote control “R” is in “Frostprot” position;
– REMOTE OFF = external remote control “R” is in “Off” position;
– REMOTE+2c = external remote control “R” is in “TAd + 2°C” position.

13.11 Operating mode and adjustment of temperature

21.3
```
Mode   : NORMA L
Td20.0c Var+0.0c
```

21.2
```
Htg:------------
24HOUR        1
```

The current modes depend on the programmes set in and can be seen on the two pages of the display :

- NORMAL Td - -.- c
  SETBACK Td - -.- c
  FLOW Td - -.- c
  FROSTPROT Td - -.- c
  BOOSTING
  OPTIMSTOP
  OFF
  ECO OFF

In NORMAL / SETBACK operating modes it is possible to adjust the value of the desired temperature :

- Var + = variation of ± 3°C

13.12 Modifying programmes by remote control

26.3
```
Input      B6
REMOTE CONTROL
```

The remote control "R"(CDB300) can be used as an alternative to flue gases detector B6 (see 17. "Complementary functions"). Permits modifying current programme :

- OFF = plant excluded
- FROSTPROT = continuous operation at desired Frostprot ambient temp.
- NORMAL = continuous operation at desired Normal 1 ambient temp.
- SETBACK = continuous operation at desired Setback 1 ambient temperature
- TAd +2c = increase of 2 °C in temp. desired by current mode.
- AUTOMATIC = operation with programme chosen for controller

13.13 Control heating zone pump

25.17
```
Heating pump:AUT
Delay Off:30min
```

The heating zone pump can be controlled in two ways :

- MAN = Pump in continuous operation
  AUT = Pump controlled according to current modes :
  - Off : pump always Off
  - Eco Off : pump always Off
  - Remote extension : pump always On
  - Normal : pump always On
  - Setback, Frostprot & Optimstop:
    pump Off after switching off delay.
    pump On when actual or calculated ambient temperature is below calculated flow temperature
  - Boosting : pump always On
  - Flow : pump always On

- Delay Off : 30 min = delay time in switching off to dissipate heat accumulated in plant (minimum two minutes).

13.14 Metering degree-days

24.7
```
Degree-Days
20:xxxx Amb:xxxx
```

DTE 600 meters degree-days in two ways :

- 20 = metering of degree-days with reference to conventional ambient temperature of 20 °C

- Amb = metering of degree-days with reference to actual ambient temperature (with detector B3) or to that calculated (without B3)

14. OPTIMISATION

Start and stop of plant at variable times so as to obtain desired ambient temperatures in coincidence with times of start and end of occupancy.
Useful for buildings with discontinuous occupancy such as schools and commercial and public offices.
The method of establishing the time of optimised start depends on the presence or not of the ambient detector.

14.1 Optimisation with ambient detector

The start time is established by the meeting point of the descending curve of the actual ambient temperature with plant OFF or in SETBACK/FROSTPROT mode, and the required temp. curve defined by the parameter "Start inertia".
With "Start inertia " on AUTOMATIC : if the desired ambient temperature is reached too soon or too late in respect of the time desired, the controller adjusts the start time of the following day by ± 15 minutes until the optimum time is obtained.

14.2 Optimisation without ambient detector

With "Start inertia " set on MANUAL (not permitted on automatic) the start time is established by the controller on the basis of the "Cooling time constant " (25.14).

14.3 Enabling of the function

22.16
```
OptimumStart :NO
Optimum stop :NO
```

- Optimum start = automatic adjustment of start time of plant after night stop / setback or after holidays.
  - NO = optimum start function disabled
  - YES = optimum start function enabled

- Optimum stop = stop before end of NORMAL (day) mode.
  - NO = optimum stop function disabled
  - YES= optimum stop function enabled

- The functions are not enabled in FLOW 1 and 2 modes and are operative only at first and last event of programme.

14.4 Start inertia

25.10
```
Start inertia
MANUAL 1.00h/c
```

Time necessary (hours / °C) for plant to increase ambient temperature by 1 °C.
- MANUAL = value can be adjusted only manually
- AUTOMATIC = (only with ambient detector) automatic daily adjustment of ± 15 minutes.

14.5 Duration of normal optimisation

25.11
```
Opt start normal
Max durat: 2.00h
```

Maximum time in advance for first startup of plant when controller uses one of 7-day and / or 24-hour programmes available; in practice, start after being switched off for a night.

14.6 Duration of optimisation after holidays

25.12
```
OptStart holiday
Max durat:10.00h
```

Maximum time in advance for first startup of plant after a holiday period.

14.7 Boosting

25.13
```
Optimum start
Boosting : 3.0c
```

Increase in desired ambient temperature, and consequently in flow temperature, during optimum start period, so as to reduce time for heating zone to reach required temperature.
With ambient detector, if desired ambient temperature is reached before desired time, controller switches to compensated control according to programme.

14.8 Time constant

25.14
```
Cooling Time
Constant: 48 hrs
```

Time taken by ambient temperature, with heating zone excluded, to decrease by 2/3 its initial value. It is used by controller to calculate ambient temperature (in SETBACK / FROSTPROT modes) when plant is without ambient detector.

14.9 Reduction of temperature for optimum stop

25.15
```
Optimum stop
DecreaseTA: 0.5c
```

Maximum decrease in ambient temperature permitted at time of end of occupancy in respect of desired ambient temperature.

14.10 Maximum optimum stop

25.16
```
Optimum stop
Max durat: 1.00h
```

Maximum time in advance permitted for stopping plant in respect of time of end of occupancy.

The time is calculated in relation to temperature decrease set in 25.15 `Optimum stop DecreaseTA 0.5c` with ambient detector and to “Cooling time constant” without ambient detector.
With ambient detector : if ambient temperature decreases, by reduction value set, before time of end occupancy, the controller returns to operating according to programme.

15. CONTROL DHW

26.5
```
Detector alarms
– – – – 5 – – –
```

When detector B5 is connected and “Detector alarms” is enabled, the controller controls DHW pump M2 according to operating programme selected and desired temperature set.

15.1 Desired temperature

22.11
```
Desired temp
DHW 50.0c
```

Value of temperature desired for DHW storage.When DHW control switches on the M2 pump the controller sends in C-Ring the desired DHW temperature increased by the value set in

26.21
```
IncreasTCRing on
Des DHW T : 5.0c
```

15.2 Differential and antibacteria

25.19
```
DHW diff : 3.0c
Antibacteria: NO
```

- DHW Diff = temperature difference for control of DHW pump M2.
- Antibacteria = increase in DHW temperature to 70°C for 90 minutes every Wednesday at 12 noon so as to avoid formation of bacteria inside storage tank.
  - NO = function not enabled
  - YES = function enabled

15.3 Operating programmes

22.12
```
DHW summ er    :YES
ALWAYS ON
```

- Operation of DHW calorifier during summer period :
  - YES = DHW calorifier in operation
  - NO = DHW calorifier Off
- Choice of operating programme :
  - 24HOUR 1...7; – 7DAY 1 - 2, – FOLLOWS HEATING;
  - ALWAYS ON; – ALWAYS OFF;

NB: if "FOLLOWS HEATING" is entered and "DHW summer : YES", DHW in summer period is, however, Off.

15.4 Operating modes

DHW control uses one of the programmes available on controller.
However, when preparing a 24-hour programme specially for DHW, note that the available modes have the following meanings :

- NORMAL 1...7; SETBACK 1 - 2 = ON (On) = Desired DHW T

22.11
```
Desired temp
DHW          50.0c
```

- FLOW 1 - 2; FROSTPROT; OFF =OFF (Off) = Desired DHW T

22.8
```
Desired temp
FROSTPROT 6.0c
```

The same applies even when the DHW programme is "FOLLOWS HEATING".

15.5 Delay switching off pump

25.18
```
DHW pump
Delay Off:NO
```

Delay in switching off DHW pump when desired DHW temperature reached :
- NO = no delay
- YES = delay of 5 minutes (fixed) in switching off.

15.6 DHW priority

25.20
```
DHW priority
      NO
```

DHW priority over heating
- NO = function excluded
- YES = when DHW temperature, measured by detector B5, falls below desired value the controller, if pump is switched on, closes heating valve by modulating action.

15.7 Timed control

26.5
```
Detector alarms
– – – – 5 – – –
```

When it is desired to use the DHW output as timeswitch for timed events it is essential to disable in "Detector alarms " the detector B5 (replace number 5 by a dash) ; in this situation detector B5 can be used only for monitoring temperature.
Ensure that, in this situation, the On control of the DHW output does not also switch on the boiler.

16. PROGRAMMES & PERIODS WITH DATES

All programmes with timed events are available both for compensated control and for the control of DHW.
The periods with dates refer to compensated control and are followed by DHW control only if this is programmed as "FOLLOWS HEATING".

16.1 24-hour programmes

23.1
```
How many 24hour
programm es? 1
```

Enter number of 24-hour programmes you wish to use (from 1 to 7).
In each 24-hour programme (**P1 ... P7**) you can set a maximum of 6 event start times (**Event 1 ... Event 6**) assigning to each one of following modes :

23.2
```
P1 Event 1 06.00
NORMA L  3  21.0c
```
⇓
⇓
23.7
```
P1 Event 6 22.00
SETBACK 1  16.0c
```

- NORMAL 1...5 = compensated control with NORMAL ambient temperature
- SETBACK 1 - 2 = compensated control with SETBACK ambient temperature
- FLOW 1 - 2 = control with fixed FLOW temperature
- FROSTPROT = compensated control with FROSTPROT ambient temperature
- OFF = plant Off, valve closed and pump idle

The event start times must be entered in increasing order.
Events not used must be excluded by pressing + and – keys at the same time.
Unused times must not be left between programmed events.

16.2 7-day programmes

23.8
```
How many 7day
programm es  ? 0
```

Enter number of programmes you wish to use (max 2)

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

23.9
```
7day 1 MONDAY
24HOUR       1
```
⇓
⇓
23.15
```
7day 1 SUNDAY
24HOUR       1
```

- 24HOUR 1 ...7;
- NORMAL 1...5;
- SETBACK 1 - 2;
- FLOW 1 - 2;
- FROSTPROT ;
- OFF.

16.3 Holiday periods

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

23.16
How many holiday
periods ? 0

To reduce the number of display pages dedicated to entering the dates, enter number of holiday periods or of bank holidays you wish to use (max. 25).
If left at 0 the programming pages do not appear.
Choose programme to be used during **all the holiday periods** :

23.17
Holiday program
FROSTPROT 6.0c

– 7DAY 1 - 2; – 24HOUR 1 ...7; – NORMAL 1 ... 5; – SETBACK 1 - 2;
– FLOW 1 - 2; – FROSTPROT ; – OFF.

Enter the dates for each single holiday period :

23.18
Hol 01 start NO
Fr --.--to --.--

- Hol 01 = choice of periods made available by 23.16 How many holiday periods ? 0
- Htg : – NO = unused holiday period
  – 00 = start period at 00.00 hours
  – 12 = start period at 12.00 hours
- Fr - - . - - 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 holiday period keep + and - keys pressed at the same time.

16.4 Special period

21.5
Special program
24HOUR 1

Period in which compensated control is obliged to use an operating programme to meet particular requirements and which overrides temporarily the one in use :

– 7DAY 1 - 2; – 24HOUR 1 ...7; – NORMAL 1 ... 5; – SETBACK1 - 2;
– FLOW 1 - 2; – FROSTPROT ; – OFF.

21.6
Special period
Fr --.--to --.--

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

16.5 Remote extension period

The remote extension period overrides all programmes and modes in use, obliging the heating zone to operate for the time and at the temperature set . To activate the extension function, close switch **c1** for at least five seconds. At the end of the duration set the controller will resume its automatic operation.

22.13
Remote Ext 21.0c
for hours 3

- Extension 21.0c = setting of ambient temperature required during extension period.
- for hours : 3 = setting duration of extension period.

To interrupt extension period before expiry of time set press + and – keys together.

16.6 Heating season

Establishes the winter heating season.
Enter day and month of start and end of **heating season.**

23.19
Heating season
Fr --.--to --.--

Applies also to DHW if “Summer DHW : NO” entered in 22.12 DHW summer: YES ALWAYS ON

To cancel press + and – keys together.

16.7 BST period

The controller changes automatically the time of day according to GMT / BST period.

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

23.20
BST period
Fr29.03 to 26.10

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

17. COMPLEMENTARY FUNCTIONS

17.1 Anticondensing function

22.14
```
Anticondens : NO
Desired T: 50.0c
```

Choice of enabling or not anticondensing function :
- NO = function excluded
- YES = when return to boiler temperature (measured by detector B4) falls below desired anticondensing temperature the controller closes heating zone valve with modulating action.

• Desired T. : - -. - c = value of anticondensing temperature.

17.2 Input B6

26.3
```
Input  B6
FLUGAS + ALARM
```

Configuration of detector B6 input :
- FLUGAS + ALARM = if Pt 1000 flue gases detector and/or an alarm contact connected.
- REMOTE CONTROL = if remote control CDB300 connected.

17.3 Summer plant exercise

22.17
```
Summer plant
exercise: NO
```

This function, which is applicable to both heating and DHW, prevents lockouts of valves and pumps when plant is not used for prolonged periods.
- NO = function excluded
- YES = every Sunday at 11.00 the valves are opened for 15 minutes and at 12.00 the pumps are run for 5 minutes.

17.4 Access keynumber

26.7
```
Choice keynumber
    ----
```

Choice and enabling of access keynumber which prevents use of + and – keys for modification of data. Enter the number (1900 ... 1999) using + and – keys.
To cancel keynumber, press + and – at the same time until dashes reappear.

```
Access keynumber
    ----
```

When keynumber is enabled, if + or – keys are pressed on the display appears the request to enter keynumber. Only after having entered the correct keynumber can + and – keys be used.
If for 15 minutes no key is pressed the keynumber is automatically re-enabled.

17.5 Denomination of heating zone/DHW circuit

26.8
```
NameHeatingZone
----------
```

Entering name of heating zone/ DHW circuit.
Each dash can be replaced, using + and – keys, by a letter of the alphabet (A ...Z) or by a number (0 ... 9). The → key serves to position the cursor.

17.6 Display of measurements

24.1
```
Des Amb T :21.0c
Act Amb T :21.0c
```

The controller displays all the values measured by the detectors and the data necessary to monitor the operational status of the plant :

• **ambient temperature** desired by current mode and **actual** measured by detector B3.
If detectors are not connected, in place of **Act Amb T** appears **Cal Amb T** .

24.2
```
Des Flow T:65.0c
Act Flow T:64.0c
```

• **ow temperature** desired by current mode and **actual** measured by detector B1.

24.3
```
Outside temp
Actual   :– 2.0c
```

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

24.4
```
Des AnticT:50.0c
Act AnticT:58.0c
```

• **anticondensing temperature** desired by current mode and **actual** measured by detector B4.
If detector B4 is not connected there appears **Act AnticT: - - .-.**

24.5
```
Des DHW  T:50.0c
Act DHW  T:52.0c
```

• **DHW temperature** desired by current mode and **actual** measured by detector B5.
If detector B5 is not connected there appears **Act DHW: - - .-.**

24.6
```
Flugas Max  185c
B7          :2.0mA
```

• **temperature max. ue gases and active detector**
– if input B6 is configured as "REMOTE CONTROL" there will appear "B6: REMOTE" instead of **Flugas Max.**

17.7 Data recording

The controller, at each change of mode and every hour, records a series of data indicating the operational status of the heating zone/DHW circuit controlled :

- Actual time of day, day and type of recording (change of mode or expiry of hour period) ; current mode, actual outside temp., compensated flow temp., desired and actual flow temp., desired and actual ambient temp., anticondensing temp.
- relay outputs status

The controller can memorise 28 complete recordings and the last recording brings about the cancellation of the oldest one.
If the display does not show the first page, the controller makes the recording at the expiry of the hour period, but not that at change of mode because it presumes changes to the setting data are in progress.
The recordings can be displayed only by the telemanagement PC.

18. ALARMS

The alarms processed by the controller are of three types :
- alarms for the faulty operation of the controller and of the heating zone/DHW circuit controlled;
- alarms for short or open circuits detectors connected
- alarms from external contacts

The alarm state is indicated by the LEDs on the controller facia and by the word “ALARM” appearing on the display and is identified, on the configuration page, by the letter “A” alternating with the number of the alarm concerned.

With C-Bus setup the alarms can be sent to a local PC and/or to the telemanagement central PC.

18.1 Functional alarms

The functional alarms are triggered in the presence of prolonged differences between actual and desired values.
With the exception of the real time clock alarm (8) they do not affect the correct operation of the controller

Factory setting : all disabled except for real time clock alarm (8).
Using + and – keys enable the alarms of interest by replacing dashes with numbers.
When number blinks = alarm triggered.

The limit values and the delay times for sending alarms can only be modified by PC.

26.4
```
FunctionalAlarms
–  –  – – – 8
```

Type of alarm and causes :
1 = temperature difference heating ow 1 (B1)
- enabled with pump M1 in operation
- triggered when actual temperature below that desired.

3 = temperature difference ambient (B3)
- enabled with NORMAL modes and with outside temperature below desired ambient temperature.
- triggered when actual temperature below or above that desired.

5 = temperature difference DHW (B5)
- enabled when pump M2 in operation
- triggered when actual temperature below that desired

6 = overtemperature ue gases (B6)
- enabled if input B6 is configured as “FLUGAS + ALARM”
- triggered if actual temperature above maximum limit.

7 = active 4 ... 20 mA detector (B7)
- triggered if actual value 4 ... 20 mA exceeds for at least one minute minimum or maximum thresholds set.

8 = internal real time clock : cannot be disabled
- triggered when clock assumes meaningless values.

18.2 Detector alarms

The detector alarms are triggered in the event of **open** or **short** detector circuits.

Using + and – keys disable alarms not of interest by substituting dashes for numbers.

Type of alarm and effect at moment of triggering :
1 = ow 1 detector (B1) : valve Y1 stops in position it happens to be in and pump M1 maintains its status (idle or in operation).
2 = outside detector (B2) :valve stops in position it happens to be in and pump maintains its status (idle or in operation); in C-Ring last value measured continues to be tranmsitted.
3 = ambient detector (B3) : actual ambient temp. is calculated by controller.
4 = anticondensing detector (B4) : anticondensing function disabled.
5 = DHW detector (B5) : pump M2 idle.
6 = ugas detector (B6) : alarm.
8 = C-Ring : open electric circuit or fault in one of controllers in ring.

26.5
```
Detector alarms
1 2 3 4 5 6   8
```

The triggering of the alarms is delayed by one minute only provided the relative alarms are enabled.
Factory setting : all enabled

18.3 Alarms or status from external contacts (k)

Alarms triggered by closure of voltage-free contacts **k1 ... k4** regarding plant components (pumps, burners, etc).
Using + and – keys enable alarms of interest by replacing dashes with numbers.

26.6
```
K alarms
– – – – –
```

The presence of the alarm is indicated after about 60 seconds.
Factory setting : all disabled.

When number blinks = alarm triggered.
If not used as alarms they can be used as status indicators .

19. TESTING AFTER COMMISSIONING

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

19.1 Testing C-Ring

Before testing C-Ring ensure that all the other controllers connected are :

27.1

CRing:??

– correctly powered by 230 V ~

– all selected on testing page CRing:??

The "PRIMARY" controller sends a signal every 5 seconds via C-Ring. On all the displays appears "??". If the wiring is correct, "OK" replaces "??" on all the displays. If on one or more displays "OK" does not appear, this means that there is a wiring or controller fault between the last controller with "OK" and the first with "??".
Examples of testing a C-Ring setup with four controllers :
– Cont.1 "OK" – Cont.2 "OK" – Cont.3 "OK" – Cont.4 "OK" : C-Ring OK
– Cont.1 "??" – Cont.2 "OK" – Cont.3 "OK" – Cont.4 "OK" : Fault between 4 and 1
– Cont.1 "??" – Cont.2 "OK" – Cont.3 "??" – Cont.4 "??" : Fault between 2 and 3
– Cont.1 "??" – Cont.2 "??" – Cont.3 "??" – Cont.4 "??" : Fault between 1 and 2

19.2 Testing outputs

With + and – keys choose :

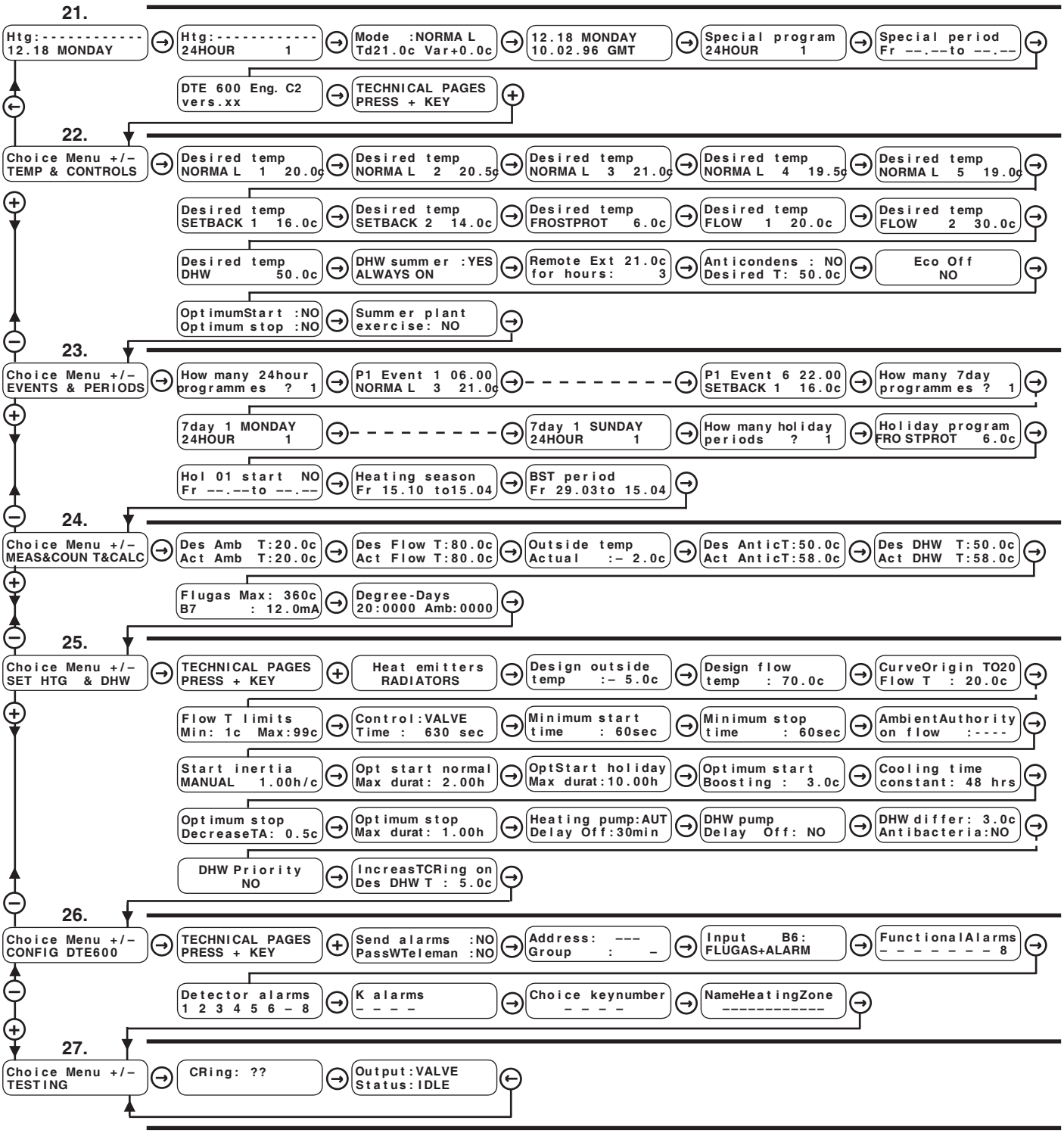
27.2

Output:VALVE
Status:IDLE

- output to be tested :
  – VALVE;
  – PUMP;
  – DHW;
- status :
  – with VALVE : IDLE ; CLOSED ; OPEN
  – with PUMP and DHW : ON or OFF

Check the result

20. SEQUENCE OF DISPLAY PAGES (the data and functions are those in memory at time of delivery)



Keys for scrolling pages on the display and positioning cursor ▮ on the data which can be changed.
The data which can be changed, 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 appears on the display.

Htg:----------
12.18 MONDAY

Keys for : – changing the values highlighted by the cursor ▮
– viewing the configuration options of a function, for example :
– passing directly from one menu (series of pages) to another.

Type of plant
FAN-COIL

or

Heat emitters
PANELS

21. NORMAL USE

Ref.	Display	Description	Notes	Sect
21.1	Htg:- - - - - - - - - - - - 12.18 MONDAY	Name heating zone Current time and day	Set in **26.8** Set in **21.4**	
21.2	Htg:- - - - - - - - - - - - 24HOUR 1	Choice current programme : 7DAY 1-2 ; 24HOUR 1…7; NORMAL 1…5; SETBACK 1-2; FLOW 1-2; FROSTPROT; OFF.	Instead of programme may appear : SUMMER; HOLIDAY; SPECIAL; REMOTE EXTENSION; REMOTE NORMAL1; REMOTE SETBACK 1; REMOTE FROSTPROT; REMOTE OFF; REMOTE+2C.	**13.10**
21.3	Mode:NORMA L Td21.0c Var+0.0c	Current mode. **Td** : Mode desired temperature **Var** : Variation of desired temp. (max ± 3 °C)	Current modes : NORMAL ; SETBACK ; FLOW; FROSTPROT; OFF; ECO OFF; BOOSTING;OPTIMSTOP;REMOTE EXTENSION.	**13.11**
21.4	12.18 MONDAY 10.02.96 GMT	Setting : Time, day of week and date. Current time period : BSTor GMT	Dates BST period set in **23.20.**	
21.5	Special program 24HOUR 1	Choice programme special period: 7DAY 1-2; 24HOUR 1…7; NORMAL 1…5; SETBACK 1-2; FLOW 1-2; FROSTPROT; OFF.		**16.4**
21.6	Special period Fr --.--- to --.---	Dates of start and end of special period	Press + and – together to cancel.	**16.4**
21.7	DTE 600 Eng. C2 Vers.xx	Identifying data of controller		

22. TEMP & CONTROLS

Ref.	Display	Description	Notes	Sect.
22.1 22.5	Desired temp NORMA L 1 20.0c	Value of desired ambient temp. NORMAL 1 ... 5 to be used in 24-hour programmes in **23.2.**		**13.4**
22.6 22.7	Desired temp SETBACK 1 16.0c	Value of desired ambient temp. SETBACK 1-2 to be used in 24-hour programmes in **23.2.**		**13.4**
22.8	Desired temp FROSTPROT 6.0c	Value of desired ambient temp. FROSTPROT to be used in 24-hour programmes in **23.2.**		**13.4**
22.9 22.10	Desired temp FLOW 1 20.0c	Value of desired temp. FLOW 1-2 to be used in 24-hour programmes in **23.2.**		**13.4**
22.11	Desired temp DHW 50.0c	Value of desired DHW temperature.		**15.1**
22.12	DHW summer :YES ALWAYS ON	Use of DHW during summer period. Choice of programme to be used : 7DAY 1-2; 24HOUR 1…7; FOLLOWS HEATING; ALWAYS ON; ALWAYS OFF.	SUMMER = period not included in heating season set in **23.19**	**15.3**
22.13	Remote Ext 21.0c for hours: 3	Desired temp. during EXTENSION period. Duration of EXTENSION period.	To activate EXTENSION period keep closed switch c1 for at least 5 seconds (see wiring diagram).To disactivate EXTENSION period keep pressed together ← and → keys from first page display.	**16.5**
22.14	Anticondens : NO Desired T: 50.0c	Enabling of anticondensing function : NO ; YES. Setting value anticondensing temperature.	NO: function excluded YES: When return-to-boiler temp. (B4) < desired anticondensing temp. controller closes heating valve with modulating control action.	**17.1**
22.15	Eco Off NO	Eco Off function : NO; YES.	In Normal or Setback modes with : • Calculated flow temp. - measured or calculated ambient temp. ≤ 2 °C = Eco Off : On, valve closed & heating pump Off and if scheduled boiler Off. • Tfd - Ta meas. or calc. ≥ 4 °C = Eco Off : Off	**13.9**
22.16	OptimumStart :NO Optimum stop :NO	Functions of Optimum Start and Optimum Stop : NO ; YES.		**14.3**
22.17	Summer plant exercise: NO	Summer plant exercise function : NO ; YES.	During summer period, to prevent lockouts, controller switches on periodically valves & pumps.	**17.3**

23. EVENTS & PERIODS

Ref.	Display	Description	Notes	Sect.
23.1	How many 24hour programmes ? 1	Choice of number of 24-hour programmes to be used (1…7).	Avoids scrolling unnecessary display pages	**16.1**
23.2 ⇓⇓ 23.7	P1 Event 1 6.00 NORMA L 3 21.0c P1 Event 6 22.00 SETBACK 1 16.0c	Number of programme, number of event & time of start event in programme. Choice type of mode to assign to event : NORMAL 1…5; SETBACK 1- 2; FROSTPROT; FLOW 1 - 2; OFF. **Further groups of 6 pages according choice in 23.1**	Max. 6 periods. To eliminate unused period press + and – together : dashes appear. The events must be in increasing order. Do not leave dashes between programmed events. Modes set are winter ones.	**16.1**

23. EVENTS & PERIODS

Ref.	Display	Description	Notes	Sect.
23.8	How many 7day programm es ? 0	Choice number of 7-day programmes to be used (1- 2).	Avoids scrolling unnecessary display pages	16.2
23.9 ⇓ ⇓ 23.15	7day 1 MONDAY 24HOUR 1 ... 7day 1 SUNDAY 24HOUR 1	Choice of programme for each day of week : 24HOUR1…7 ; NORMAL 1...5; SETBACK 1 - 2; FROSTPROT ; FLOW1 - 2; OFF.		16.2
23.16	How many holiday periods ? 0	Choice of number of holiday periods to be used (0...25)	Avoids scrolling unnecessary display pages	16.3
23.17	Holiday program FROSTPROT 6.0c	Choice of programme for all holiday periods : 7DAY1-2; 24HOUR1…7; NORMAL 1 ... 5; SETBACK1 ... 2; FROSTPROT; FLOW 1 - 2; OFF.	Appears only if in **23.16** number entered is greater than 0	16.3
23.18	Hol 01 start NO Fr --.-- to--.--	NO = period not used; 00 = start 00 hours; 12 = start 12 hours Dates of start and end of holiday period.	Appears only if in **23.16** number entered is greater than 0	16.3
23.19	Heating season Fr:15.10 to:15.04	Dates of start and end of heating season.		16.6
23.20	BST period Fr:29.03 to:26.10	Dates of start and end of BST period.		16.7

24. MEAS&COUNT&CALC

Ref.	Display	Description	Notes	Sect.
24.1	Des Amb T:20.0c Act Amb T:20.5c	Ambient temperature desired by current mode. Temperature measured by ambient detector B3.		17.6
24.2	Des Flow T:80.0c Act Flow T:80.0c	Flow temp. desired by current mode Temp. measured by flow detector B1		17.6
24.3	Outside temp Actual :– 2.0c	Actual outside temp. measured by B2 or coming via **C- Ring** .	If outside detector B2 not connected & value comes via C- Ring, **Acual** is replaced by **C- Ring** .	17.6
24.4	Des AnticT:50.0c Act AnticT:58.0c	Desired anticondensing temp. Temp. measured by anticondensing detector B4.		17.6
24.5	Des DHW T:50.0c Act DHW T:52.0c	Desired DHW temp. in On mode Value measured by DHW detector B7.		17.6
24.6	Flugas Max 185c B7 : 2.0mA	Maximum temp. measured by B6. Value measured by active detector B7.	If in **26.3** B6 is REMOTE CONTROL there will appear : B6 REMOTE	17.6
24.7	Degree-Days 20:0000 Amb:0000	20: referred to fixed ambient temp. of 20 °C Amb: referred to actual or calculated ambient temp.	Press + and – for 5 seconds to cancel value.	13.14

25. SET HEATING & DHW

Ref.	Display	Description	Notes	Sect.
25.1	Heat emitters RADIATORS	Choice type heat emittters : RADIATORS ; PANELS ; FAN COILS		13.1
25.2	Design outside temp :– 5.0c	Value design outside temp. for compensated control		13.2
25.3	Design flow temp : 70.0c	Value design flow temp. for compensated control		13.2
25.4	CurveOrigin TO20 Flow T : 20.0c	Correction heating curve origin		13.3
25.5	Flow T limits Min: 1c Max:99c	Minimum and maximum limits flow temperature		13.5
25.6	Control: VALVE Time: 630sec	Type of control : VALVE; ON-OFF. • Speed of actuator if VALVE or • On-Off differential if ON-OFF.		13.6
25.7	Minimum start time : 60sec	Minimum duration start period of each stage.	Appears only if in **25.6** ON-OFF is entered.	13.7
25.8	Minimum stop time : 60sec	Minimum duration stop period of each stage.	Appears only if in **25.6** ON-OFF is entered.	13.7
25.9	AmbientAuthority on flow :----c	Ambient authority. Variation in ± °C flow temp. with ± 1 °C difference in ambient temp.	Appears only if ambient detector B3 connected and configured	13.8

25. SET HTG & DHW

Ref.	Display	Description	Notes	Sect.
25.10	Start inertia MANUAL 1.00h/c	Optimising inertia at start	MANUAL= correction of value manually AUTOMAT = correction of value automatically	14.4
25.11	Opt start normal Max durat: 2.00h	Maximum duration period optimum start after period of 24-hour or 7-day operation		14.5
25.12	OptStart holiday Max durat:10.00h	Maximum duration period optimum start after a holiday period		14.6
25.13	Optimum start Boosting : 3.0c	Increase in desired ambient temp. during optimum start period		14.7
25.14	Cooling Time Constant: 48 ore	Used when ambient detector B3 not installed to calculate decrease in ambient temp.		14.8
25.15	Optimum stop DecreaseTA: 0.5c	Value of reduction in desired ambient temp. at last event end occupancy		14.9
25.16	Optimum stop Max durat: 1.00h	Maximum duration period optimum stop		14.10
25.17	Heating pump:AUT Delay Off:30min	Control plant pump: MAN; AUT. Delay switching off pump	MAN: always On **AUT:** On with event times of current programme	13.13
25.18	DHW pump Delay Off: NO	Delay switching off pump.	NO: without delay; **YES:** 5 minutes delay.	15.5
25.19	DHW differ: 3.0c Antibacteria:NO	Value of differential control pump. Enabling of antibacteria function: NO; YES.	NO: antibacteria function excluded YES: every Wednesday at 12 noon DHW temperature increased to 70 °C.	15.2
25.20	DHW priority NO	Enabling of DHW priority function : YES; NO.	NO: function excluded **YES:** when M2 On, modulating closure valve when measured DHW temp. < desired temp.	15.6
25.20	IncreasTCRing on Des DHW T : 5.0c	Increase in desired DHW temperature to obtain the temperature sent in C-Ring when in operation the DHW pump M2 (range: 0…50 C°, resolution 0.5 C°).	Appears if in **27.3** is not NO	15.6

26. CONFIG DTE 600

Ref.	Display	Description	Notes	Sect.
26.1	Send alarms :NO PassWTeleman:NO	Enabling alarms to send to telemanagement PC Enabling telemanagement keynumber	Only if connected in C-Bus	11.5
26.2	Address : --- Group : -	Telemanagement address of controller Group to which controller assigned	Only if connected in C-Bus	11.4
26.3	CRing connection NO	NO = not connected in C - Ring PRIMARY = connected as Primary SECONDARY = connected as Secondary		11.1
26.4	Input B6 FLUGAS + ALARM	Configuration of input detector B6 : FLUGAS+ALARM; REMOTE CONTROL.	FLUGAS+ALARM: flue gas detector + alarm input REMOTE CONTROL: remote control R	17.2 13.12
26.5	FunctionalAlarms 1 3 5 6 7 8	Disabling functional alarms Factory setting : only 8 enabled (cannot be disabled)	1 : Alarm flow temp. **B1**. 3 : Alarm ambient temp. **B3**. 5 : Alarm DHW temp. **B5**. 6 : Alarm flugas temp. **B6**. 7 : Alarm active detector **B7**. 8 : Alarm internal real time clock	18.1
26.6	Detector alarms 1 2 3 4 5 6 8	Enabling alarms detector short or open circuits. Factory setting : all enabled.	1 : Flow detector **B1**. 2 : Outside detector **B2**. 3 : Ambient detector **B3**. 4 : Anticondensing detector **B4**. 5 : DHW detector **B5**. 6 : Flugas detector **B6**.	18.2
26.7	K alarms - - - -	Enabling On-Off alarms. Factory setting : all disabled.	8 : C- Ring alarm	18.3
26.8	Choice keynumber ----	Choice keynumber for preventing use + and – keys. A number between : 1901 ... 1999	To eliminate keynumber press + and – together.	17.4
26.9	NameHeatingZone ----------	Entering name heating zone + DHW	Use + and – to enter letters or numbers. Use ← and → to move cursor.	17.5

27. TESTING

Ref.	Display	Description	Notes	Sect.
27.1	CRing:??	Page of testing C- Ring connections. ?? = C-Ring test in progress or test failed YES= test OK		19.1
27.2	Output: VALVE Status: IDLE	Choice outputs to be tested Choice status of output.	Choice output : VALVE ; PUMP ; DHW; Choice status: With VALVE : IDLE ; CLOSED; OPEN. With PUMP, DHW: ON; OFF.	19.2

Amendments to data sheet

from version	to version	Page	Section	Details of amendments
09.04.99 LB	13.12.05 LB	13 8	25. SET HTG & DHW 15.1 Desired DHW temperature	Added page Display 25.20 for setting increase desired DHW temp. to send to C-Ring.. DHW temperature increase in C-Ring.
13.12.05 LB	28.12.05 LB	2	4. TECHNICAL DATA	Added item: "Increase C-Ring over desired DHW temperature"

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