Satchwell

DS 2.751

NETWORKING 07/97

MMC 4601

MULTI-LOOP DISTRICT HEATING CONTROLLER WITH REAL TIME CLOCK

The MMC Micro Management Controller is a Multi-loop Controller for use in district heating schemes.

The MMC incorporates three separate control loops, two compensated and the other a constant temperature loop.

Upto 3 specific points are programmed for the compensation graph. The MMC automatically joins up these points to produce a user defined compensation curve. This adjusts and calculates the required set value of the supply temperature to the compensated system to match the prevailing requirements.

The MMC has a self tuning function that allows each of the 3 control loops to have its proportional band, integral action and derivative action values automatically tuned. Self tuning can be carried out from the MMC keyboard or from optional external momentary switches connected to it. Self tuning maximises the efficiency of control loop operation.

An illuminated digital display shows all settings and measured values. The normal display can be programmed to show the calculated set value, flow temperature or outside temperature of any control loop.

The built-in serial link facility enables all displayed values to be read at a remote computer. The latter can also be used to enter or change any parameter values. Such a computer is entirely optional and can be added at a later date if required.

FEATURES

- **Direct Digital Control**
- **Serial Link for immediate or future networking to a central computer**
- **Completely stand-alone. Can be programmed through its own keyboard**
- **Built-in Digital Display provides comprehensive indications of all current parameter values settings and measurements**
- **Real Time Clock (RTC)**
- **Self tuning for each control loop, maximises efficiency for each loop**
- **Fast response time ensures suitability for tap water control**
- **Compensation curve can have up to three programmable points giving the curve two calculated ratios**
- **Supply high limit**
- **Built-in 'default programme' of typical settings for every parameter operates on initial start-up**
- **Security Code prevents unauthorised access to programmed settings**
- **0–10Vdc Control Outputs**
- **P + I + D Programmable Control Loops**
- **Periodic Pump Cycling**
- **Frost Protection Logic**

DS 2.751A – Wiring, Commissioning & Application Information
MLI 2.00 – Mounting Information
Sensors
DS 1.2/1.201 – DWT/DST
DS 1.26/1.202 – DWT 1801
DS 1.4/1.401 – DOT/DOW
Acutators
DS 3.20/3.401 – ALE
DS 3.21/3.501 – ALES

SIEBE

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SPECIFICATION

Type:
MMC 4601 – 3 Loop District Heating Controller –
Specification no. 563-4-601

Control Range:
–40 to 150°C

Power Supply:
24V~ (±15%), 50 Hz to 60 Hz - supplied from a transformer conforming to EN 60742 - see DS 25.00

Consumption:
8.5 VA

Fuse:
3A (20mm) (output circuit on terminal 3)

Power Failure Reserve:
Rechargeable battery typically preserves memory for 200 days under normal conditions of use. Displays and commands will be off during power failure but memory and RTC will be preserved so that normal control is resumed on restoration of power. Battery is typically fully recharged after 80 hours (from fully discharged).

Ambient Temperature Limits:
Operating: 0 to 50°C, Storage/Transit: –20 to +55°C

Max. Ambient Humidity:
Operating & Storage: 95% rh non condensing.

CONSTRUCTION

Case:
DIN standard 43700 nominal 144 x 72mm for vertical edgewise rear or flush panel mounting.
Kit number 866-1-405 is required for panel mounting.

Protection Class:
IP 40 – when flush mounted

Terminal Block:
Plug-in socket which serves as a mounting base when rear mounting, using either screws or spring clips for DIN rail.
(DIN rail to DIN 46277 Part 3-EN 50022/BS 5584).

Terminals:
Accept 2 x 1.5mm^2 wires (unshrouded, low Voltage only).

INPUTS

Sensors: DOT 2301, DWT 1801, DST 1601

Serial Link: EIA Standard RS 422/485 half duplex
(Satchwell Control Systems' protocol – supported by Satchnet V6.3. Contact Satchwell Control Systems if you have V6.2.

OUTPUTS

Actuators: ALE, ALES

24Vac Switched Outputs:
2 x Digital Outputs

Notes:
1. All 0 to 10 Volt outputs are protected against accidental short circuit to 24Vac and ground.
2. Short circuit current of each 0 to 10V output is ⎓10mA (source resistance is ⎓1000Ω).
3. Load resistance for each 0–10Vdc output must be equal to or greater than 10kΩ.
4. The maximum current that a 0–10Vdc output can source is 1mA.

TWO COMPENSATION LOOPS AND ONE DHWS LOOP

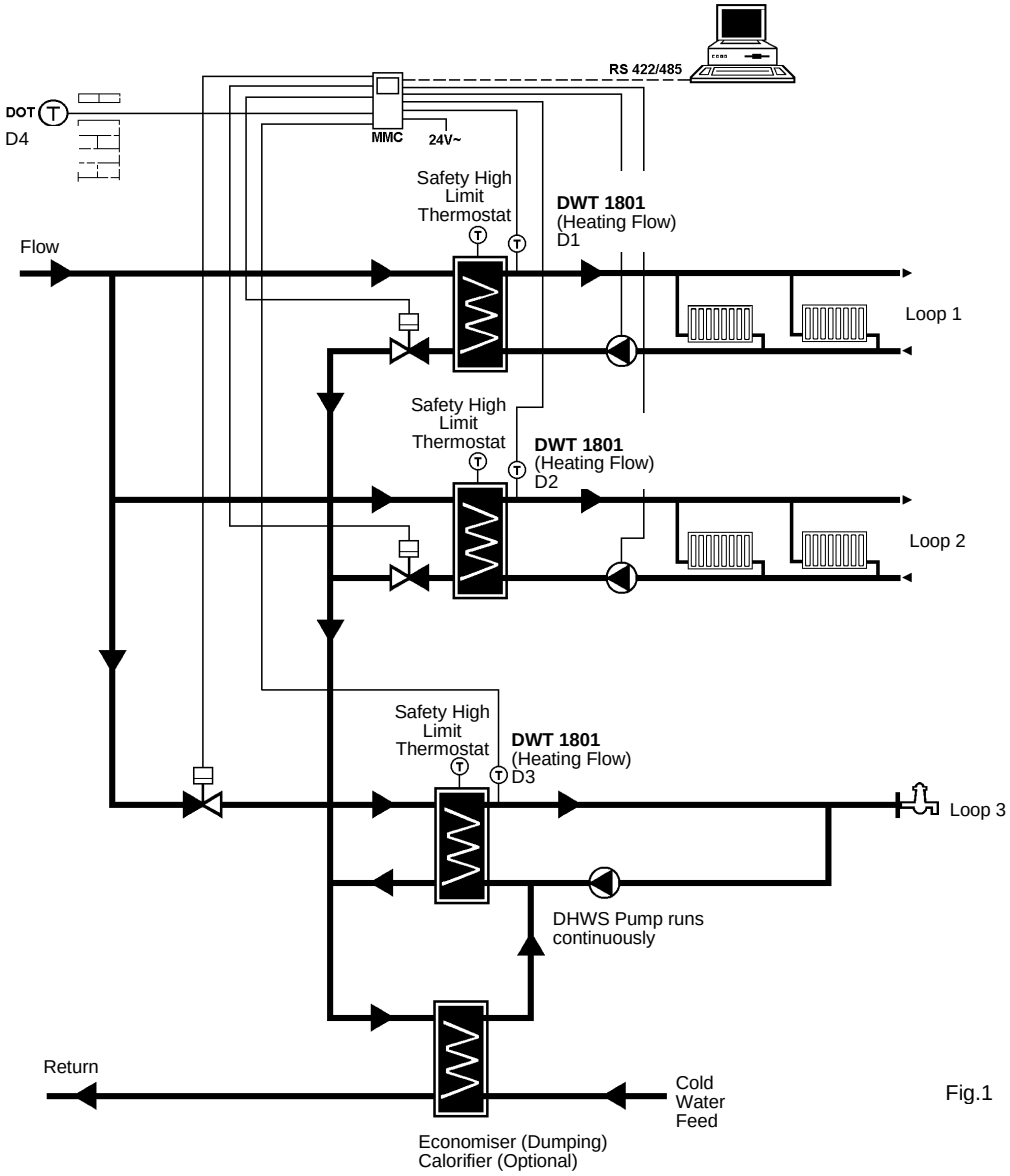


Fig.1

CONNECTION DIAGRAMS

BASIC WIRING DIAGRAM

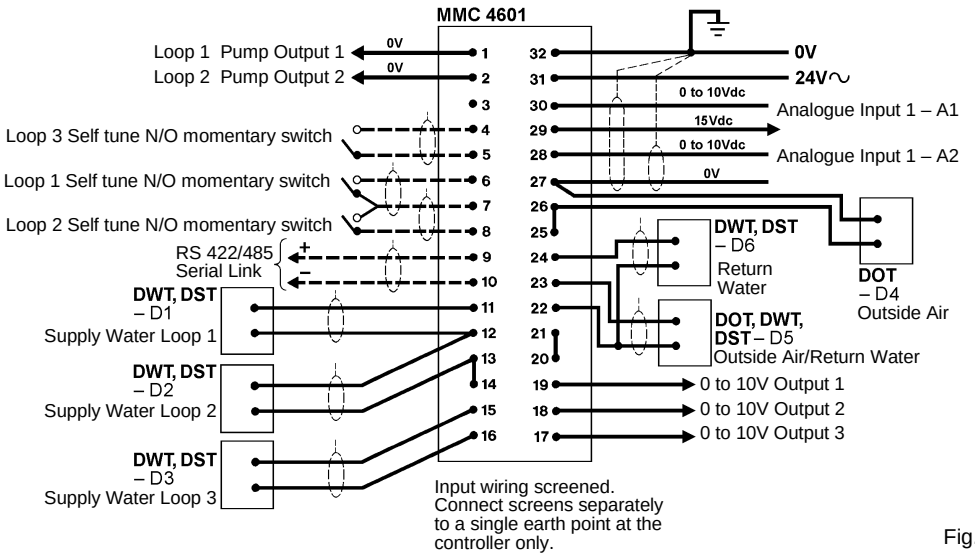
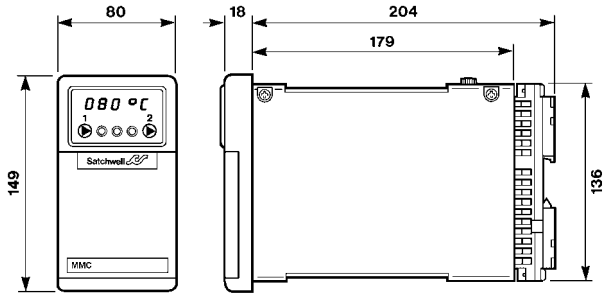


Fig.2

DIMENSION DRAWINGS



Dimensions in mm

PANEL CUT-OUT
(DIN 43700)
138mm x 68mm

Weight: nett 0.78 Kg
packed 1.18 Kg

Satchwell

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CAUTION

- **For full wiring information refer to DS 2.751A.**
- Design and performance of Satchwell equipment are subject to continual improvement and therefore liable to alteration without notice.
- Information is given for guidance only and Satchwell do not accept responsibility for the selection or installation of its products unless information has been given to the Company in writing relating to a specific application.

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