

HORSTMANN

DRT1 DIGITAL THERMOSTAT

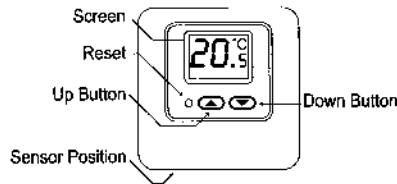
TABLE OF CONTENT

- 1 INTRODUCTION..... 2
- 2 INSTALLATION..... 4
- 3 CONTROL TEMPERATURE..... 13
- 4 LOW BATTERY OPERATION..... 15
- 5 HEATER OPERATION..... 15
- 6 SPECIFICATIONS.....16

1 INTRODUCTION

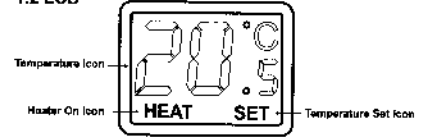
This thermostat can replace most common indoor residential thermostat and is designed to be used with electric, gas or oil heating system.

1.1 Outlook



2

1.2 LCD



1.3 Features

Several useful functions and operating modes have been incorporated to adapt a variety of customer needs.

- LCD shows the "NEED TO KNOW" Information only, which is more easy to understand
- Room Temperature Display
- Simplified Temperature Adjustment

3

- Heater Operation Mode
- 2 x AAA Size Alkaline Batteries (not Included)
- Slim Housing Design

2 INSTALLATION

CAUTION:

1. The appliance can only be mounted on dry indoor places.
2. A suitable fuse with a rating not exceeding 5A, should be in the power line.
3. Observe the national regulation for the wiring.
4. Qualified electrician is recommended for installation and servicing.

This thermostat has been designed for simple and quick installation requiring only a few tools.

4

2.1 Required Material

- Hammer
- Masking tape
- Drill and 3/16" drill bit
- Screwdriver

2.2 Removing your old thermostat

CAUTION: To avoid electric shock, turn off the power of the heating system at the main power box in your home. Read the following instructions carefully before disconnecting the wires.

1. Turn off the old thermostat.
2. Remove the cover from the old thermostat.
3. Unscrew the old thermostat from the wall plate.

5

4. Find and remove the screws attaching the wall plate to the wall. Pull the wall plate a small distance from the wall. Do not disconnect any wire yet, simply locate the wires.

Warning: After removing the wall plate, if you find that it is mounted on a junction box (e.g. a box similar to one behind a light switch or electric outlet), high voltage circuit may be present and there is a danger of electric shock. Please consult a qualified electrician.

2.3 Wire Labeling

1. Disconnect and identify each wire.
2. Tape the wires to the wall to keep them from slipping

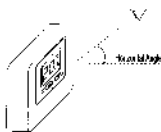
6

through the hole in the wall. If the hole in the wall is larger than necessary, fill it in order to prevent hot or cold air to penetrate the thermostat. In this manner, the thermostat will function perfectly.

2.4 Choosing a Location

For a new installation, choose a mounting location:

1. About 5 feet (1.5 meter) above the floor in an area with good air circulation.
2. Away from:
 - i. Drafts of dead air spots
 - ii. Air ducts
 - iii. Radiant heat from the sun or appliances
 - iv. Concealed pipes and chimneys



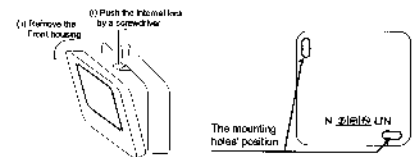
7

3. The best viewing angle is 12 o'clock direction as shown in figure.

2.5 Mounting

1. Mounting the thermostat onto the wall.
2. Remove completely the front housing of the thermostat by using a screwdriver. (see picture)
3. Mark the holes' position and align the wire coming from the wall in the hole beside the connectors. (see picture)
4. Drill two holes and insert the plastic anchors carefully into the holes until they are flush with the wall.
5. Fasten securely the thermostat to the wall with the two screws.

8

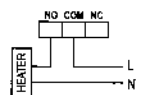


2.6 Connecting the Wires

1. Connect the system wires to the terminals according to the wiring diagram shown in the section 2.7 "WIRING DIAGRAM".

2.7 Wiring Diagram

The 098A thermostat can be used with single stage heating system. Inside the thermostat, three terminals which



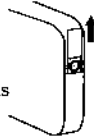
9

label COM, NC and NO would be found. Connect the heater to the terminal COM and NO (or NC depends on the type of heater), in most case, COM and NO are used.

2.8 Battery Installation

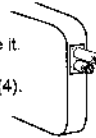
The 098A is operated by two AAA 1.5V batteries. Please follow the installation instruction

1. Find out the battery door at the side of the case.
2. Slide the door upward to open it.
3. Two old batteries would "jump out".
4. Take out the old batteries.
5. Insert two batteries in right position as shown. Ensure the polarity of the



10

batteries are in right position.
6. Push and slide the door down to close it.



If first use, skips the instruction (3) and (4).

2.9 Temperature Span

Span is the temperature difference between the turn ON and OFF temperature. The factory pre-set span is 1°C. For example, control temperature setting is 20°C. The heater will be operated when the room temperature drops to 19.5°C and will be turned off when the temperature rises to 20.5°C.

2.10 Temperature Measurement

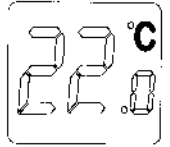
'H' will be shown when temperature is above 40°C

11

and 'LO' will be shown when temperature falls below 0°C.

2.11 Power Installation

The thermostat is operated by two AAA 1.5V batteries.



To power-up the unit, install the batteries as shown in above section "Battery Installation".

When power is supplied for the first time or reset button is pressed, the display will show as follows:

TEMPERATURE	22°C
CONTROL TEMPERATURE	20°C
OUTPUT	OFF

12

If the display is different as shown, use a fine probe such as straightened paper clip to gently push the reset button.

3 CONTROL TEMPERATURE

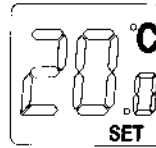
At the normal operation mode, the temperature could be set.

1. Press ▲ or ▼ button to view the setting temperature which was set last time.
2. When power up or reset, the factory preset control temperature 20°C is shown.
3. Hold ▲ or ▼ button about 3 seconds and the temperature indicator will flash one time.
4. Press ▲ or ▼ button to increase or decrease the

13

temperature setting.

5. Hold ▲ or ▼ button to fast advances the adjustment rate.



6. The unit will be back to normal operation mode automatically when no button is pressed about 10 seconds.

7. Program temperature can only be set in the control temperature range from 5°C to 35°C, not wrap around at two ends.

8. When pressing the ▲ button to increase the temperature to 35°C, it is no further increment. Likewise, when pressing ▼ button to decrease the temperature to 5°C, it is no further decrement.

14

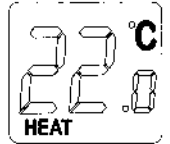
4 LOW BATTERY OPERATION

When the voltage of the battery decrease to certain level, the LCD will be blank. In this case, the batteries should be changed as soon as possible to avoid any data loss.

5 HEATER OPERATION

5.1 Heater On Operation

The heater will be turned on when the room temperature is lower than the programmed temperature and the Heater On Icon will be displayed as shown.



15

5.2 Output-On Delay

For safety purposes, the thermostat has an auto 20 seconds' delay for heater to restart.

6 SPECIFICATIONS

6.1 Physical Characteristics

Size: 73.5(W)X(28.0(L))X(73.5(H)) mm
Material: Polycarbonate (PC)
Weight: 90g (battery not included)

16

6.2 Electrical Characteristics

Power Source: AAA 1.5V battery x 2
Switching Relay:
Resistive load: 5A at 250VAC
Inductive load: 3.5A at 250VAC
Temperature Measurement: 0 - 40°C
Temperature Accuracy: ±1.0°C
Temperature Control: 5 - 35°C
Temperature Control Span: 1°C
Output On Delay: 20 seconds
Operating Temperature: -10°C to 50°C
(non-condensing)
Storage Temperature: -30°C to 60°C

17

Horstmann Controls Limited
Bristol
BS4 1UP

Email: sales@horstmann.co.uk
Website: www.horstmann.co.uk

