

**MODELS:**  
ITC4801: For Heating Applications

## ITC4801 Single Term Temperature Controller for Heating Applications

### Specifications

#### Power Supply

- Voltage: 24 VAC  $\pm 10\%$  @ 50/60 Hz
- Power Consumption: 2VA max

#### Inputs

- Two wire current loop temperature detector
- Reset or external Set Point (0-10VDC)

#### Outputs

- Temperature out 0.1VDC per  $^{\circ}\text{C}$
- Set Point out 0.1VDC per  $^{\circ}\text{C}$
- One 0-10VDC control output for heating

#### Terminal Identification

1 & 2	Detector connection
3	Temperature Out
4	Reset or Remote Set Point
5	12VDC aux. supply
6	Set Point Out
7	No connection
8	0-10VDC heat output
9	Common and 0VAC supply
10	24VAC supply

### Temperature Ratings

- Storage: 0-50  $^{\circ}\text{C}$  non condensing
- Operating: 0-40  $^{\circ}\text{C}$  non condensing

### Enclosure

The ITC4801 is housed in a rectangular case suitable for DIN Rail mounting. The housing is moulded from flame retardant plastics recognised by UL as UL 94-V0.

**Colour:** Grey.

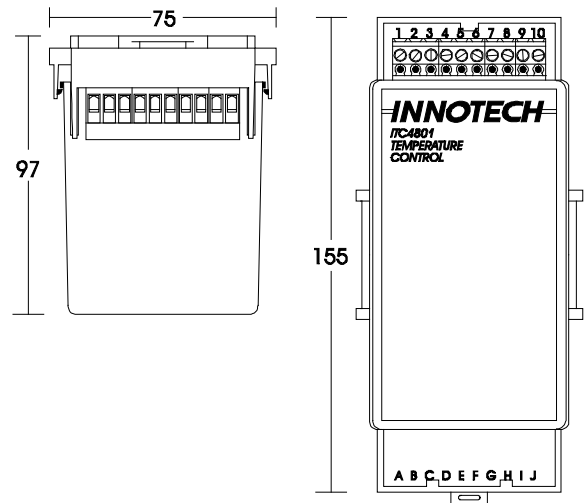
**Dimensions** (max): 75 mm(w) x 155 mm(h) x 97 mm (d).

### Installation

1. Mount controller in a reasonably clean and dry location free of excessive vibration.
2. Fit to DIN rail.
3. Wire in accordance with Innotech connection diagrams and local bylaws or refer to your local distributor.

### Wiring

1. Earth one side of the 24VAC at the transformer.
2. Connect the EARTHED side of 24VAC to terminal 9.
3. DO NOT connect 24VAC to terminals 1 through 8.



### Applications

The Innotech ITC4801 temperature controller is designed for use with a two wire current loop temperature detector to produce a 0-10VDC output to control heating applications.

The Innotech ITI two wire current loop immersion temperature detectors are designed to operate with the ITC4801 temperature controller. The ITI4101 or ITI4102 detectors fitted with 105 $^{\circ}\text{C}$  rated cable should be specified for use with an ITC4801 set for 0 -100 $^{\circ}\text{C}$  Set Point range.

### Features

- Interface to Building Automation Systems
- Dual Set Point range 0 - 50 $^{\circ}\text{C}$  and 0 - 100 $^{\circ}\text{C}$
- 0-10V time integrated proportional control signal output
- Proportional band adjustable from 0.2 to 11 $^{\circ}\text{C}$
- Reset of 0 to 10 $^{\circ}\text{C}$  up or down of Set Point
- Adjustable Dead Zone above Set Point to activate Output Kill
- Detector temperature easily read at controller
- Set Point temperature easily read at controller
- Time integrated proportional control action to ensure optimum performance
- Factory set for most applications resulting in reduced commissioning time
- The Innotech enclosure saves space and reduces installation time
- Internal tamper proof Set Point adjustment

### Approvals

The ITC4801 conforms to:

- Requirements according to standards EN55014 (CISPR14) for RCM Labelling

### Set Point

The Set Point (SP) is adjustable via the internal Set Point pot over two ranges via the "HI RANGE" link:

- 0 to 50°C            - link Open.
- 0 to 100°C        - link Closed (factory setting).

### Proportional Band

The Proportional Band (PB) is adjustable over two ranges selected by the PB WIDE link adjacent to the PB pot:

- narrow**    0.2 to 2.0°C PB WIDE Link Open.
- wide**      1.0 to 11°C PB WIDE Link Closed (factory setting).

### Ramp Up and Ramp Down

The "UP" and "DOWN" ramping rates of the Heat output are separately adjustable. The "UP RAMP" time can be adjusted over a range of 1.5 to 12 minutes. This is the time taken for the output voltage to rise from 0 to 10VDC. The "DOWN RAMP" time can be adjusted over a range of 20 seconds to 1.5 minutes. This is the time taken for the output voltage to fall from 10 to 0VDC with the difference between the Set Point and Temperature Out no greater than the PB setting.

### Reset

The Set Point can be reset UP or DOWN by a maximum of 10°C by a 10VDC external signal applied to terminal 4. The effect of the Reset input is adjustable from 0 to 10°C by varying the RESET pot.

The amount of Reset can be read as the change in Set Point temperature (terminal 6) as the RESET pot is adjusted.

### Dead Zone and Output Kill

The Dead Zone pot adjusts the point where the Output Kill feature is activated. The range of adjustment is from 0 to 1°C above the Set Point. While the temperature measured at Temperature Out is within the Dead Zone setting, the output at terminal 8 is allowed to ramp down at the rate set by the Down Ramp. When the temperature rises above the Dead Zone setting, the output is rapidly reduced to zero.

### Output Voltage Range

The controlled range is from 0 to 10VDC but to ensure proper operation of units connected to the outputs, the output voltage goes 0.3VDC negative to ensure the OFF condition and 10.5VDC to ensure the ON condition.

### Din Rail Mounted Enclosure

The Innotech enclosure is designed to provide tight positive locking to varying thicknesses of DIN rail. When fitting to thick DIN rail, it may be necessary to remove the packing tabs on the back of the base.

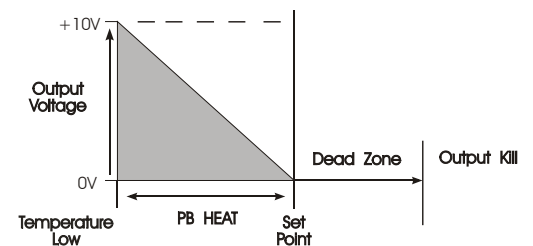
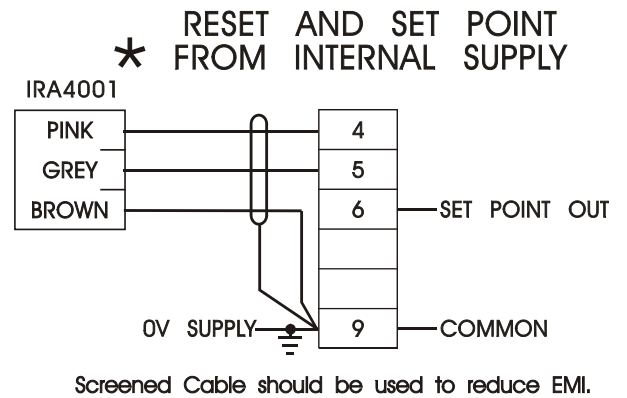
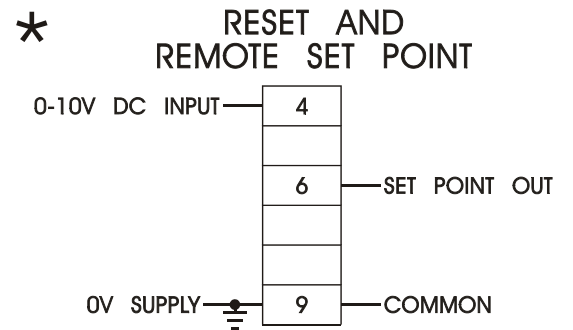
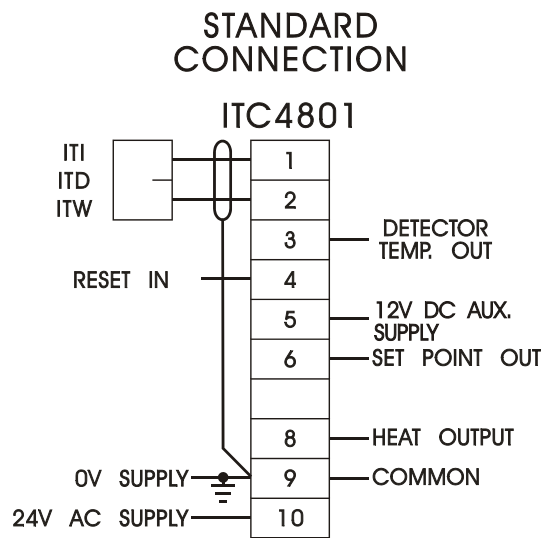
Lugs on each side of the base ensure that correct spacing is maintained between units on the same DIN rail.

### Time Integrated Proportional Control

The ITC4801 is a proportional controller with its Heat output "time integrated". The rate of change of the output voltage is derived from the difference between the measured and Set Point temperatures.

The steady state magnitude of the 0-10VDC control signal output is proportional to the difference between the measured temperature and the Set Point temperature. When a disturbance occurs in the system, time integration causes the 0-10VDC control signal output to change at a rate proportional to the difference between the measured temperature and the Set Point temperature. Thus a large disturbance will cause the output voltage to change at a faster rate than a small disturbance.

As the system recovers from a disturbance, the difference between the measured and Set Point temperatures will decrease and thus reduce the rate of change of the output voltage. This occurs when the difference between the measured and Set Point temperatures is 50% of the PB setting.



**Operation & Control Function  
for the ITC4801**

**\* Requires link changes before this option is used**

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