MODELS:
ITC4001: Standard Model

ITC4001
Temperature Controller

Specifications

Power Supply
- Voltage: 24VAC ±10% @ 50/60 Hz
- Power Consumption: 2 VA max

Inputs
- Two wire current loop temperature detector
- Reset 0-10VDC
- Standby mode via contact closure
- Remote Set Point

Outputs
- Temperature Out: 0.1VDC per °C
- Set Point Out: 0.1VDC per °C
- Two 0-10VDC control outputs heat & cool

Terminal Identification

1 & 2	Detector connection
3	Temperature Out
4	Reset or external Set Point
5	Standby or +12VDC supply for Reset
6	Set Point Out
7	0-10VDC cool output
8	0-10VDC heat output
9	Common and 0VAC supply
10	24VAC supply

Temperature Ratings
- Storage: 0 to 50°C non condensing
- Operating: 0 to 40°C non condensing

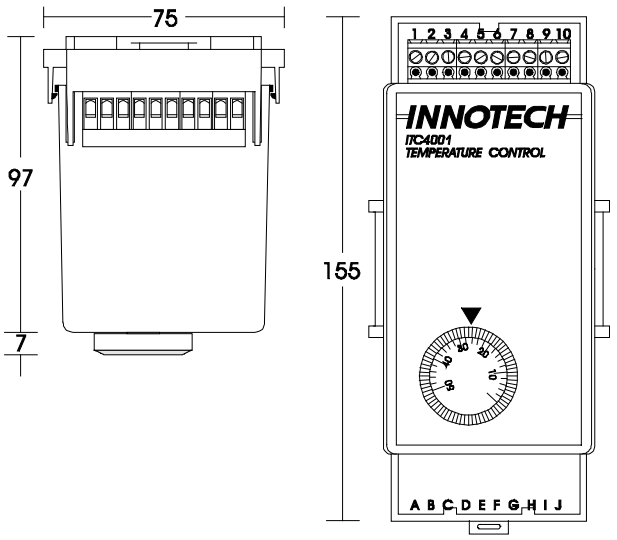
Enclosure
The ITC4001 is housed in a rectangular case suitable for DIN Rail mounting. The housing is moulded from flame retardant plastics recognised by UL as UL 94-V0.

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

Installation
1. Mount controller in a dry and reasonably clean 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.

Precautions
DO NOT interchange Set Point knobs on the controller as they are factory calibrated.



Applications
The Innotech temperature controller is designed for use with a two wire current loop temperature detector to produce two 0-10VDC outputs.

The controller's output can be connected to auxiliary units, such as, chilled water valves, damper motors, staging relays and signal selectors to control the heating and cooling in single and multizone air conditioning systems.

The Innotech ITD, ITI and ITW series of two wire current loop temperature detectors are designed to operate with the ITC temperature controller.

Features
- Interface to Building Automation Systems
- Dual range 0 - 50°C or 0 - 100°C
- Time integrated proportional control action for optimum system performance
- Separate 0-10VDC outputs for heating and cooling
- Separate proportional band adjustment for heating and cooling
- Multiple detector averaging
- Reset up or down of Set Point adjustable from 0 to 10°C
- Standby mode enabled by voltage free contact
- Detector temperature easily read at controller
- Set Point temperature easily read at controller.
- Factory set for most applications resulting in reduced commissioning time
- The Innotech enclosure saves space and reduces installation time
- Wide range of applications

Approvals
The ITC4001 conforms to:
- Requirements according to standards EN55014 (CISPR14) for RCM labelling

Set Point
The Set Point is adjustable via the Set Point pot over two ranges.

The range is selected by the “HIGH RANGE” solder link:
- 0 to 50°C: Link Open (factory setting)
- 0 to 100°C: Link Closed

Proportional Band
The Heating and Cooling Proportional Bands (PB) are separately adjustable over two ranges selected by the PB WIDE links adjacent to their respective PB pots:

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

Ramp
The ramping rate of both the cool and heat outputs are separately adjustable over a range of 25 to 250 seconds. This is the time taken for the output voltage to change from 0 to 10VDC (up) or 10 to 0VDC (down).

Dead Zone
The Dead Zone is variable from 0 to 5°C by adjusting the Dead Zone pot. The Dead Zone is centered on the Set Point. A setting of 2°C gives a Dead Zone of 1°C either side of the Set Point.

Detector Averaging
The standard model is set up for one detector. The ITC can be modified during manufacture to accept the input from 2 to 4 detectors connected in parallel. The output at terminal 3 is the average of the temperatures sensed.

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.

Standby
When enabled, the Standby feature increases the Dead Zone by 2°C. The Dead Zone remains centered on the Set Point. Standby is controlled by a voltage free contact connected between terminals 5 and 9. Standby is enabled when this contact is open.

The Standby feature cannot be used with a remote Set Point if the ITC voltage output from terminal 5 is used to supply power to the remote Set Point adjuster.

Output "Kill"
The cool and heat outputs are forced to zero volts when power is lost for 1 second or more. The cool output is forced off when the temperature falls below the Set Point. The heat output is forced off when the temperature rises above the Set Point.

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.

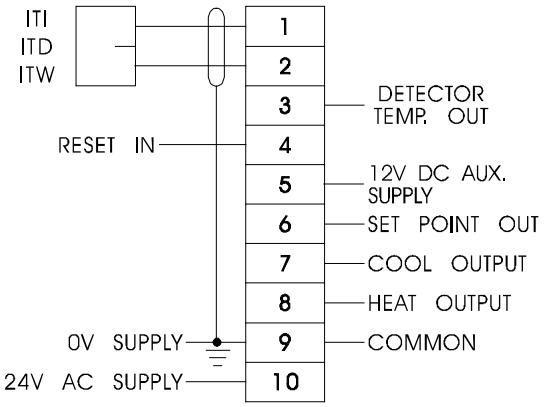
Time Integrated Proportional Output
The ITC controller is a proportional controller with its heat and cool outputs time integrated. The rate of change of the output voltages is derived from the difference between the measured and Set Point temperatures.

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

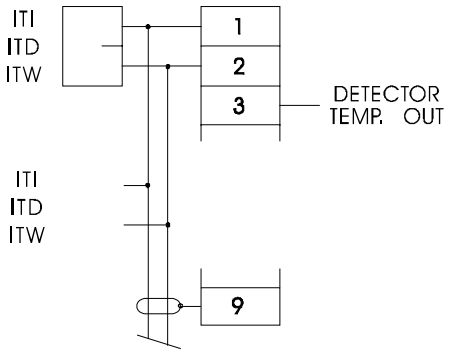
As the system recovers from a disturbance, the difference between the measured and Set Point temperatures will decrease and thus reduce the rate of change of the output voltage. This occurs when the difference between the measured and Set Point temperatures is 50% of the PB setting.

STANDARD CONNECTION

ITC4001

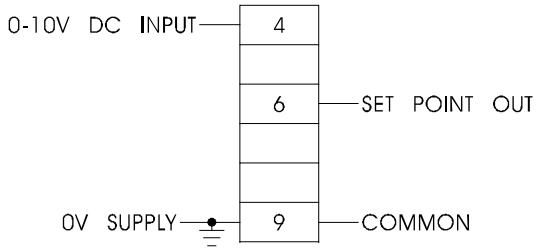


* DETECTOR AVERAGING



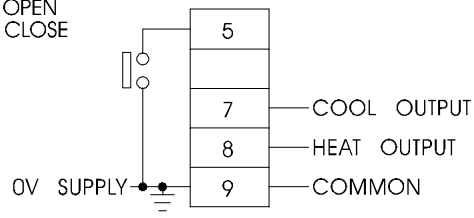
UP TO A MAXIMUM OF 4 DETECTORS

* EXTERNAL RESET AND SET POINT



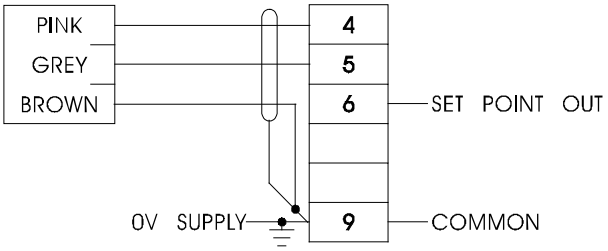
* STAND-BY

STAND-BY = OPEN
NORMAL = CLOSE

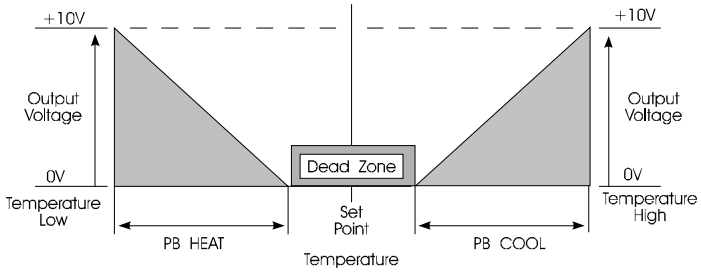


* RESET AND SET POINT FROM INTERNAL SUPPLY

IRA4001



Screened Cable should be used to reduce EMI.



Operation & Control Function

* Requires link changes before this option is used

This page has been left intentionally blank.

INNOTECH®

Australian Owned, Designed & Manufactured
by Mass Electronics Brisbane
Phone: +61 7 3421 9100 **Fax:** +61 7 3421 9101
Email: sales@innotech.com.au www.innotech.com.au

YOUR DISTRIBUTOR