Models:
IVC4001 Standard Model

IVC4001
Voltage Controller

Specifications

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

Transmitter Supply
- 24 VDC @ 25mA positive supply

Inputs
- 0-10VDC from transmitter
- Reset (0-10V DC)

Outputs
- Transmitter Out (0-10VDC = 0-100%)
- Set point Out (0-10VDC = 0-100%)
- Two 0-10VDC control outputs

Terminal Identification

1	+24VDC supply for detector
2	Transmitter input
3	% of input range i.e. 5VDC = 50%
4	Reset input (0-10VDC)
5	12VDC auxiliary supply
6	Set Point Out as a % of range
7	0-10VDC Direct Acting output
8	0-10VDC Reverse Acting output
9	Common and 0VAC supply
10	24VAC supply

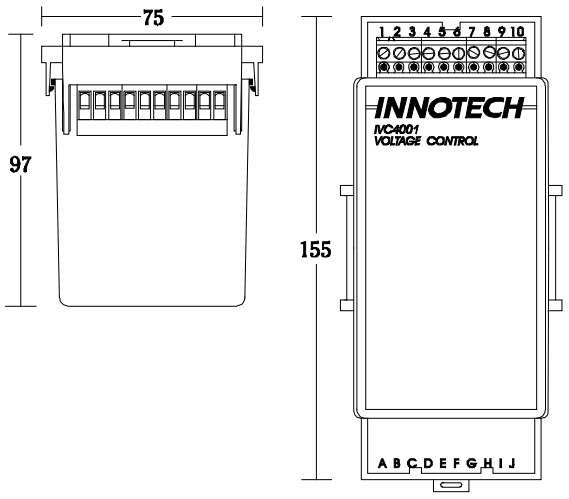
Temperature Ratings
- Storage 0-50°C non-condensing
- Operating 0-40°C non-condensing

Enclosure
The IVC4001 is housed in a rectangular case suitable for DIN Rail mounting. The housing is moulded from flame retardant plastics recognised by UL as UL-94V0.

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.



Applications
The Innotech voltage controller is designed for use with any transmitter which has a 0 to 10VDC output to produce two 0 to 10VDC control signal outputs.

The controller's output can be coupled to auxiliary units such as humidifiers, chilled water valves, damper motors, staging relays and signal selectors which require a 0 to 10VDC control signal.

Features
- Interface to Building Automation Systems
- Time integrated proportional control action for optimum system performance
- Separate Direct and Reverse Acting 0-10VDC outputs
- Separate proportional band adjustment for Direct and Reverse Acting outputs
- Transmitter input value easily read at controller
- Set Point 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 IVC4001 conforms to:
- Requirements according to standards EN55014 (CISPR14) for RCM Labelling

Set Point
The Set Point is adjustable over a range of 0 to 100% via the Set Point pot.

Proportional Band (PB)
The Proportional Bands for the Direct and Reverse Acting outputs are separately adjustable over two ranges:

- Narrow 0.2 to 2.0% PB WIDE Link Open
- Wide 1.0 to 11% PB WIDE Link Closed (factory setting)

Ramp
The ramping rate of both the direct and Reverse Acting 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 or 10 to 0VDC when the operating point is within the proportional bands.

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

The amount of Reset can be determined by measuring terminal 6 as the RESET pot is adjusted.

This function requires a factory link change to be enabled.

Dead Zone
The Dead Zone is variable from 0% to 10% by adjusting the Dead Zone pot. The Dead Zone is centred on the Set Point. A Setting of 2% gives a Dead Zone of 1% above and below the Set Point.

Output Kill
The outputs are forced off when power is lost for 1 second or more. The Direct Acting output is forced off when the detector value is below the Set Point. The Reverse Acting output is forced off when the detector value is 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.

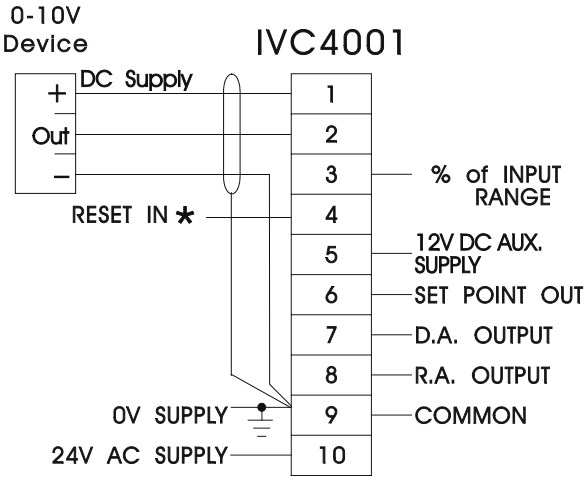
Lugs on each side of the base ensure that correct spacing is maintained between units on the same DIN rail.

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

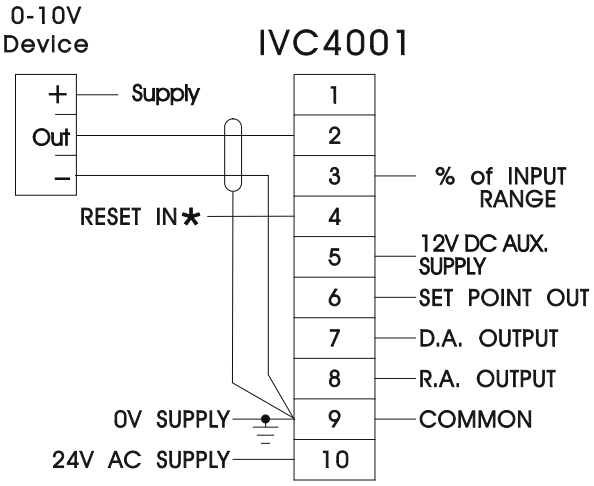
The steady state voltage of the 0-10VDC outputs is proportional to the difference between the measured value and the Set Point. When a disturbance occurs in the system, time integration causes the 0-10VDC output to change at a rate proportional to the difference between the measured value and the Set Point. 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 value and Set Point will decrease and thus reduce the rate of change of the output voltage. This occurs when the difference between the measured value and the Set Point is half of the PB setting.

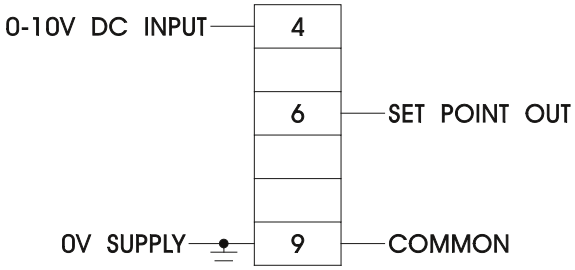
STANDARD CONNECTION



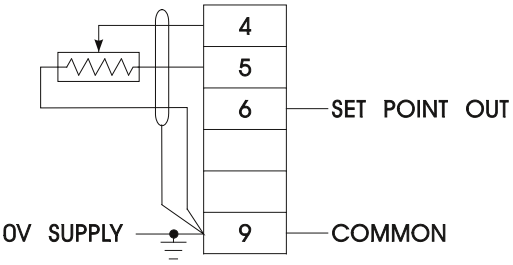
SEPARATE SUPPLY CONNECTION



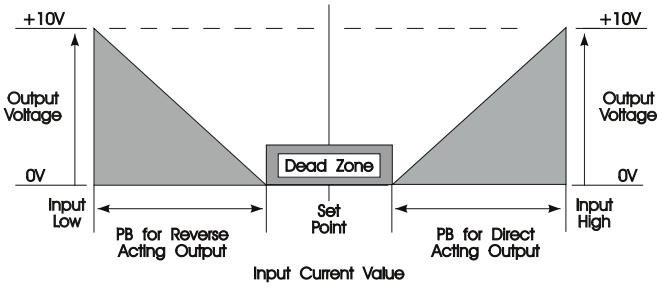
* RESET



* RESET FROM INTERNAL SUPPLY



Screened Cable should be used to reduce EMI.



Operation & Control Function

* Requires link changes before this option is used

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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

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