

Multipoint Troubleshooting Guide

If a problem arises try to isolate the cause by using components known to be working correctly to test other suspect components. (e.g. swap the cable from a motor that is working correctly to one that is not functioning properly to ascertain whether the cause is a faulty cable).

The following table lists some commonly reported fault conditions and suggested corrective action.

Further assistance may be obtained from IAS Service and Support on 1800 354 434 if needed.

Symptom	Suggested Remedial Action
Red Fault LED is lit on motor or touchpad output	Excess current draw on output. Check cables and sockets for short circuit. Check for too many motors on output (see page 4 for motor limits)
Motor drives the wrong way	Cable crimped incorrectly. Re-crimp one end.
Motor drives one way only	Check cable ends to ensure all pins fully crimped. Check cable for broken wire.
Motors wont drive open and only drive closed intermittently	Check 24Vac terminals for proper connection.
No yellow LEDs illuminated on MPM at power up	No power to MPM. Check power supply and connection.
Touchpad LEDs flashing	Check plugs are fully crimped and clipped into sockets at both touchpad and MPM.
Intermittent erratic zone behaviour.	Ensure touchpad cable is shielded and kept well away from EMF sources.



Multipoint Installation Manual

Queensland Sales (Head Office)

Ph: +61 7 3890 8744
Fax: +61 7 3890 8270

New South Wales Sales

Ph: +61 2 9648 1902
Fax: +61 2 9648 1903

Product Support

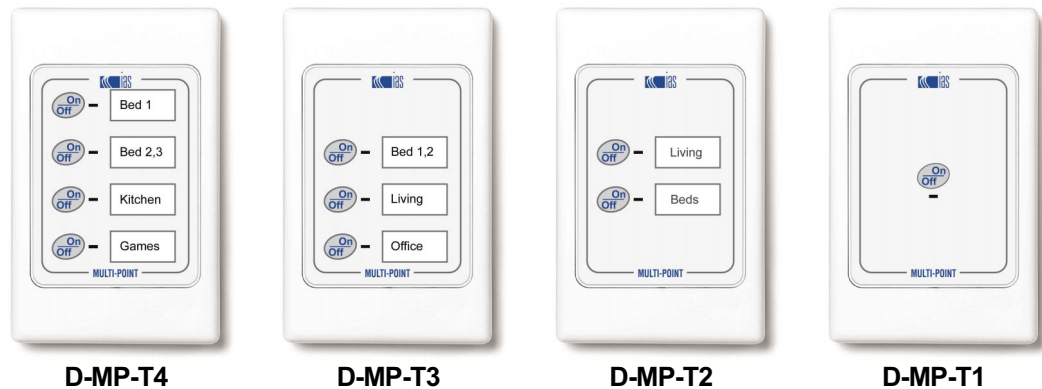
Freecall: 1800 354 434
(Australia Wide)

Proudly Designed and Manufactured in Australia by:

Innovative Air Systems Pty Ltd.
Unit 1 / 49 Miller Street
Murarrie, Queensland, 4172.

Contents

The Multipoint Zoning System.....	3
System Overview	3
Multipoint Main Processor Module	3
Multipoint Touchpads	3
Motorised Dampers	4
Cabling Requirements	4
Component Positioning	4
Commissioning	4
D-MP-MPM Technical specifications:	5
Electrical Requirements	5
Dimensions	5
Environmental Requirements	5
Inputs/Outputs	5
Technical Notes	5
Connection Diagram	6
InnoCAB Cable Crimping Instructions	7
Multipoint Troubleshooting Guide	8

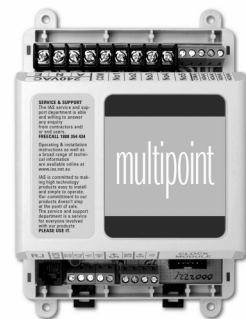


D-MP-T4

D-MP-T3

D-MP-T2

D-MP-T1



D-MP-MPM

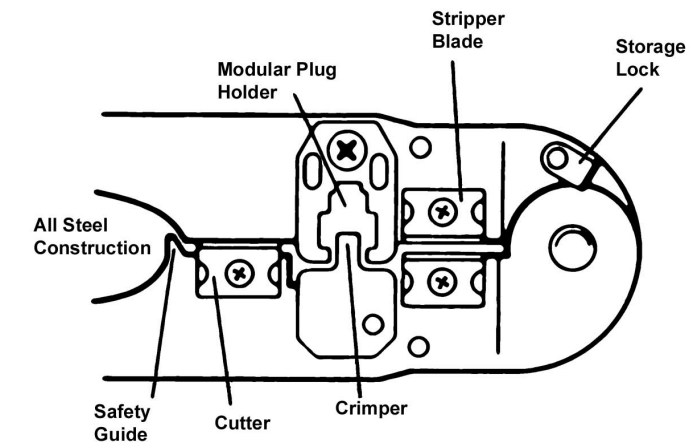


E-TFORM/24

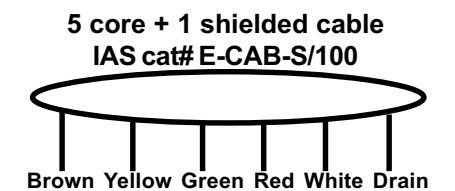
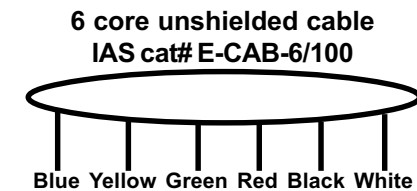


D-MD2-250-IC

InnoCAB Cable Crimping Instructions



The InnoCAB cabling system has been developed to dramatically reduce cabling time. The heart of the system is the InnoCAB cable. It is available with or without shielding.



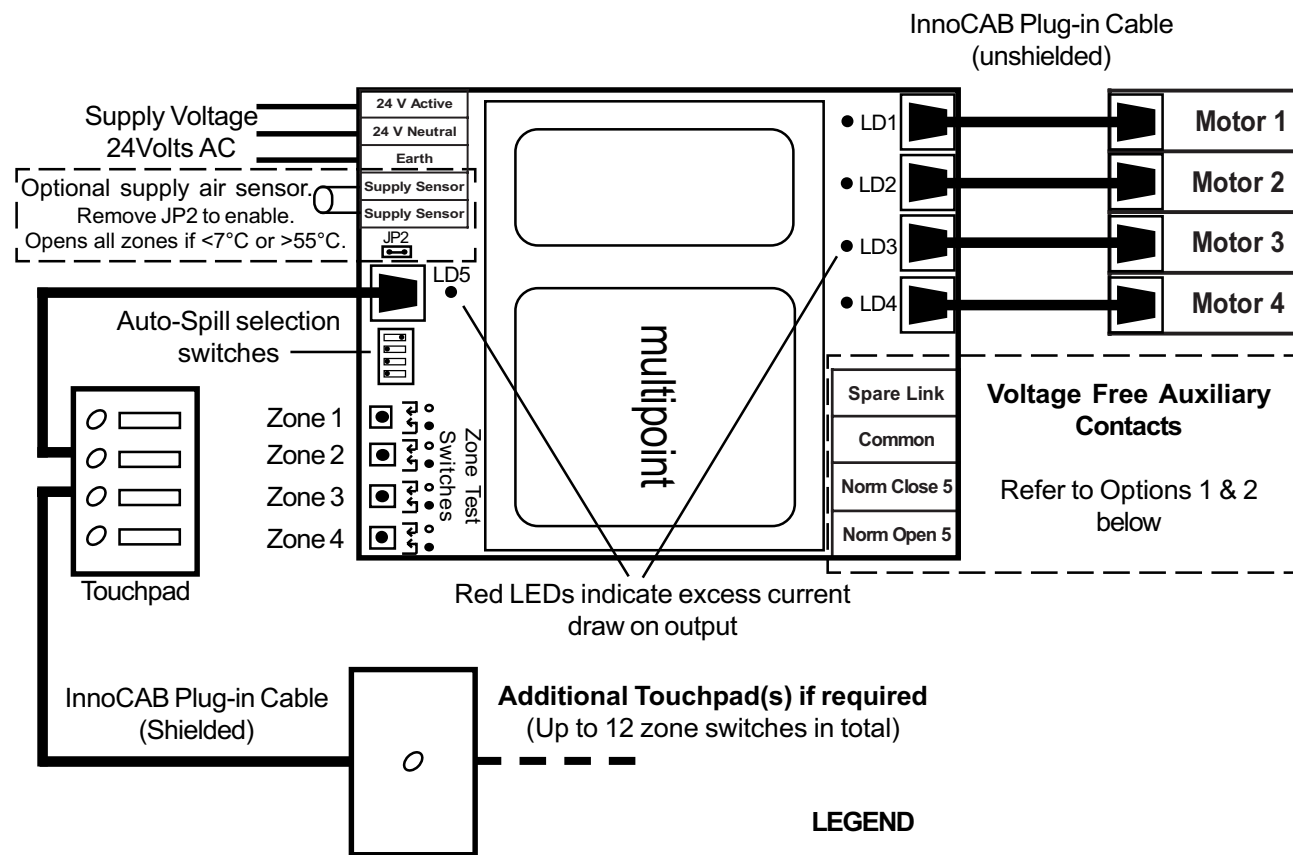
IMPORTANT NOTE:

Never insert uncrimped plugs into the sockets as this may cause damage to the socket contacts. Crimped plugs should insert easily into sockets until the locking tab clicks into place. Plugs that have been incorrectly crimped may be difficult to insert and may also cause damage to the socket contacts if forced into place.







CRIMPING PROCEDURE:

- 1: Cut the InnoCAB cable to the desired length. Take care to ensure the ends are cut square.
- 2: Insert the cable between the stripper blades so that it touches the metal stop. Squeeze the handles and pull the tool to remove the cables outer sheath and expose the insulated inner conductors. Ensure the insulation on the inner conductors is not damaged.
- 3: Place an InnoCAB plug in the plug holder so that the front of the plug is against the stop and the gold contacts face the crimper.
- 4: Insert the prepared cable end into the plug with the ***white conductor closer to the handle***. Take care to ensure the inner conductors are in the correct order and they finish flush with the tip of the gold contacts.
- 5: Squeeze the handles **firmly** (see important note above) to set the contacts and secure the cable, thus completing the operation.
- 6: Both ends of the cable should appear identical if held side by side.

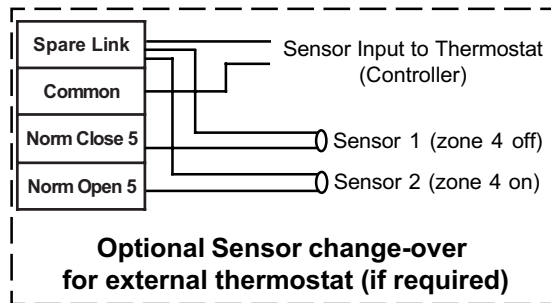
Connection Diagram



LEGEND

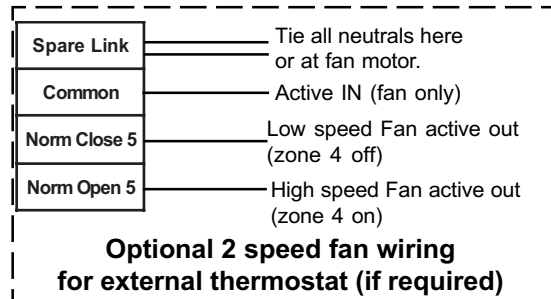
-  **InnoCAB Socket**
-  **Dipswitches** - To set spill air zone, move the appropriate dipswitch to ON
-  **LDx Red Fault LED** - When lit indicates excess current draw - possible cable short circuit.
-  **JP2** Short circuit JP2 to bypass supply air sensor
-  **Zone Test Switch** - Turn zones On or Off without accessing Touchpad.
-  **Damper Status LED** - When lit indicates damper position.
Yellow = Closed : Green = Open

Option 1



Optional Sensor change-over for external thermostat (if required)

Option 2



Optional 2 speed fan wiring for external thermostat (if required)

Table 1

Touchpad Address Data

Touchpad Code	Zones addressed
D-MP-T1	Any zone (Jumper Selectable)
D-MP-T2	Zones 2 & 3
D-MP-T3	Zones 2, 3 & 4
D-MP-T4	Zones 1, 2, 3 & 4

The Multipoint Zoning System

The Multipoint Zoning System operates independently of the air conditioning plant to provide On/Off zoning control for up to four zones per main processor module.

Features include:

- **24 Volt A/C power supply**
Offers substantial savings in installation costs compared to 240V systems
- **Support for multiple touchpads**
Connect up to 12 zone switches in total - e.g. 2 x 4 zone and 4 x 1 zone touchpads
- **InnoCAB quick connect cabling**
Plug in connections to touchpads and zone motors
- **Over current indication and protection for touchpad and motor outputs**
May indicate cable short circuit, or too many motors connected to output
- **On-board zone test switches for easy commissioning**
- **Selectable auto spill safety function**
Forces the designated zone(s) to open if all zones are switched off
- **Voltage free auxiliary contacts**
Connected in parallel to zone 4 for optional sensor, or fan speed, change-over
- **Optional supply air safety system** (sensor not included)
Opens all dampers if the supply air temperature is less than 7°C or more than 55°C

System Overview

The Multipoint Zoning System comprises of at least one of each of the following components.

- Multipoint Main Processor Module (D-MP-MPM)
- Multipoint Touchpad(s) (D-MP-TX) *X = the number of zones the touchpad can address.*
- Motorised Damper (D-MDY-ZZZ-IC) *Y = the torque rating and ZZZ = the size of the damper.*
- Transformer

Multipoint Main Processor Module

The Multipoint main processor module (D-MP-MPM) is the core component of the Multipoint Zoning System. All zone motors and touchpad(s) connect to and receive power from the D-MP-MPM. All touchpad and motor connections are made with the InnoCAB cable system. Terminal connections are provided for the 24V power supply, the voltage free auxiliary contacts and the optional supply air sensor. Physically and electronically designed to offer simple installation and operation, the D-MP-MPM may be either DIN-Rail or surface mount.

Multipoint Touchpads

Multipoint touchpad(s) are available in 1, 2, 3 and 4 zone configurations, and connect to the main processor module via a synchronous data bus (refer to Table 1 on page 6 for zone addressing data). Each touchpad has 2 sockets connected in parallel to allow for easy

expansion. Simply connect the D-MP-MPM to the first touchpad via one socket on the rear of the touchpad then loop from the second socket to the next touchpad and so on as required. The number of touchpads that can be connected to a single system is limited to a total of 12 *zone switches* (e.g. 2 x 4 zone and 4 x 1 zone touchpads).

Motorised Dampers

Motorised dampers connect to the D-MP-MPM via the zone output sockets.

D-MD2-ZZZ-IC motorised dampers may be connected in parallel with a maximum of two motors per zone output.

D-MD1-ZZZ-IC motorised dampers **MUST NOT** be connected in parallel and are limited to one motor per zone output.

Cabling Requirements

All touchpad and sensor cables should be shielded, and kept the maximum practical distance from any power cables \geq 240 volts (minimum = 300mm). The mechanical connection of the earth terminal on the Main Processor Module to a suitable point allows this shielded cable to function as intended.

All motor cables should be standard 6 core flat cable.

For cable termination instructions refer to page 7.

Component Positioning

The Main Processor Module can be positioned on or near the systems air handling unit, or in the mechanical services switchboard.

The Touchpad(s) should be mounted in a central position within the air conditioned space. Designed to be flush mounted to a cavity wall, the touchpad(s) can be surface mounted through the use of a 15mm mounting block if necessary.

The Motorised Dampers can be mounted at the takeoff point of the rigid duct or mounted in-line in the flexible duct.

Commissioning

Prior to applying power to the system, double check all wiring connections.

Before connecting the touchpad(s), apply power to the system and use the zone test switches to check that each motor is driving to the correct position.

Connect the touchpad and repeat check to ensure all components in the system are operating correctly including the spill zone if one is set.

D-MP-MPM Technical specifications:

Electrical Requirements

Power input to Controller 24 volt AC \pm 10%

Line frequency 50 Hz

Dimensions

Unit Dimensions (mm) 173(L) x 116(W) x 76(H)

Weight 356g

Environmental Requirements

Operating temperature 0°C to 50°C

Altitude 0 to 2000 meters

Operating Relative Humidity 10% to 80%

Avoid static electricity hazards

Avoid electromagnetic radiation sources

Avoid dust contamination

Avoid highly corrosive environments

Inputs/Outputs

5 x relay outputs

4 x InnoCAB socket - zone motor outputs

1 x Set of 4 Terminal connections - voltage free auxiliary contacts connected in parallel to Zone 4

1 x touchpad I/O

1 x InnoCAB socket - synchronous data bus

1 x sensor input

1 x Set of 2 Terminal connections - for optional supply air sensor

Technical Notes

The spill zone(s), when set, ensure airflow across the coil is maintained at acceptable levels. If the user turns all zones off, the designated spill zone(s) is forced to open. More than one spill zone may be set. Refer to A/C unit specifications to determine the minimum airflow required.

The optional supply air sensor opens all zones if the supply air temperature is $<7^{\circ}\text{C}$ or $>55^{\circ}\text{C}$. The short across JP2 must be removed and a sensor connected to the terminals provided to enable this option.

In the event of power loss and restore to the controller (i.e. blackout), all zones return to the closed position, except the spill zone(s) which will open automatically.