Models:

GENII MP050 REM
GENII MP140 REM
GENII MP230 REM
GENII MP320 REM

GENII MP REM
Multipoint Remote Expansion Module

Overview

The Innotech GENII MP REM Multipoint Module is a remote expansion device for the GENESIS range of Digital Controllers. The GENII MP REM is designed to be remotely located from the GENESIS Digital Controller and provides 16A relay outputs and 0-10V analogue outputs for distributed control, digital inputs for status detection and a thermistor input for temperature measurement.

The GENII MP REM communicates with the GENESIS Digital Controller via the GENII RMI Remote Module Interface that connects to the Local Expansion Module port of the GENESIS. Local Expansion Modules cannot be connected to a GENESIS Digital Controller that has a GENII RMI connected to it.

The GENII MP REM provides the GENESIS Digital Controller with an RS485 link running at 38.4k baud that communicates with all REM Modules.

Features

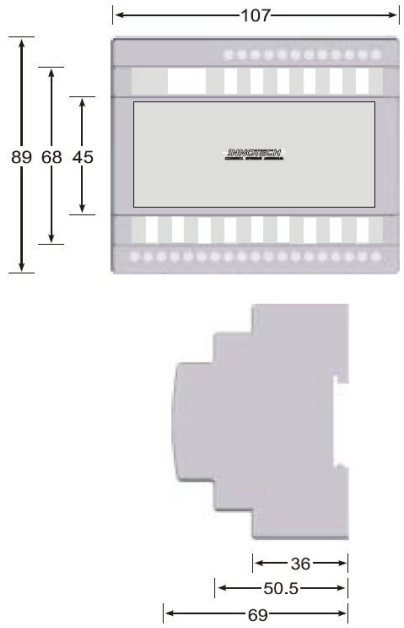
- Remote sensing and control of I/O points up to 500 mtrs from the GENESIS Controller via a single 10kΩ thermistor temperature sensor, four switched contact digital inputs and five outputs consisting of either:
  a. 5 x Relay Outputs (MP050)
  b. 4 x Relay Outputs & 1 x Analog Output (MP140)
  c. 3 x Relay Outputs & 2 x Analog Outputs (MP230)
  d. 2 x Relay Outputs & 3 x Analog Outputs (MP320)
- RS485 interconnection between REM Modules
- 240VAC operation
- JUMPER selectable Address Number (1-8)
- Wiring Diagrams for modules generated by GEN2Config Software
- LED indication of Comms activity to assist in network setup and debugging

Applications

Remote control of Fan Coil units using relay outputs for fan speed, compressor, reversing valve or electric heat; analogue outputs for VAV, economy cycle or chilled/hot water valves, with a thermistor measuring air temperature and DI's used for pressure and HPT monitoring.

Approvals

The GENII MP REM conforms to the requirements per European Consortium Standards EN55011:1991 (CISPR11) Class B and AS/NZS 2064:1997 for C-Tick Labelling.



Application Notes

A GENESIS Controller must have version 4 (or higher) firmware installed to support REM Modules. Version 4 (or higher) Config Software must be used to configure a GENESIS Digital Controller that has standard MP050 Modules connected. MP REM Modules with Analogue Outputs (MP140, MP230 & MP320) require Version 5.00D (or higher) Config Software.
A GENESIS Digital Controller can have up to 8 GENII MP REM Modules* connected to it via the REM comms bus.

One GENESIS Digital Controller can have up to 15 GENII REM Modules attached to it. However, each REM Module has a "Resource Count" value that represents its requirement for GENESIS Digital Controller resources. A GENESIS Digital Controller supports a total resource count of 36. The following shows the Resource Count for each of the currently available REM Modules:

GENII MP REM

Remote Expansion Modules

Remote Module	Description	Resource Count
GENII MP050 REM	Multipoint Module	3
GENII MP140 REM	Multipoint Module	4
GENII MP230 REM	Multipoint Module	5
GENII MP320 REM	Multipoint Module	6
GENII AI REM	Analogue Input Module	6
GENII AO REM	Analogue Output Module	5
GENII DI REM	Dry Contact Digital Input Module	1
GENII DO REM	Digital Output Module	1
GENII IDI REM	Opto Isolated Digital Input Module	1
GENII PI REM	Pulse Input Module	5
GENII CS REM	Control Station Module	4
GENII CSAH REM	Control Station After Hours Module	4
GENII CSFCAH REM	Control Station with 3 Speed Fan	4
GENII MZS REM	Multizone Station Module	5
GENII MZSAH REM	Multizone After Hours Station Module	5

Specifications

Power Supply

Voltage: 240 volts AC ±10% @ 50/60Hz.
Power Consumption: 7VA max.

Inputs

- 10kΩ thermistor temperature sensor
- 4 x Isolated switched contact digital inputs

Outputs

MP050:

- 5 x 16A, 240V relays, Normally Open contacts

MP140:

- 4 x 16A, 24V relays, Normally Open contacts
- 1 x Analogue Output, 0-10VDC ± 0.05V into >2kΩ load

MP230:

- 3 x 16A, 24V relays, Normally Open contacts
- 2 x Analogue Outputs, 0-10VDC ± 0.05V into >2kΩ load

MP320:

- 2 x 16A, 24V relays, Normally Open contacts
- 3 x Analogue Outputs, 0-10VDC ± 0.05V into >2kΩ load

Terminal Identification

240V	240VAC Supply
N	Neutral
E	Earth

I/O Terminal Connections

DI#n+	Digital Input positive
DI#n-	Digital Input negative
TH1	Temperature Sensor input
TH2	Temperature Sensor input
AO#n+	Analogue Output positive
AO#n-	Analogue Output negative
+12V	AUX DC Power for Digital Inputs
Gnd	AUX DC Power for Digital Inputs
NO	Normally Open relay contact
Com	Common relay contact

Comms Connection

SHLD 1	Shield 1 from incoming Comms Cable.
C+	RS 485 (+) signal.
C-	RS 485 (-) signal.
SHLD 2	Shield 2 from incoming Comms Cable.

Enclosure

The GENII MP REM Modules are housed in a rectangular case made from flame resistant Astrene M650 IR plastic in accordance with IEC695-2-1 (HD444-2-1) as of EN6335-1, A2 and IEC707 (AS/NZS2420).

Colour:	Grey
Mounting:	DIN Rail mounted
Dimensions:	107mm X 89mm X 69mm

Temperature Ratings

Storage	0 to 50°C non-condensing.
Operating	0 to 40°C non-condensing.

Installation

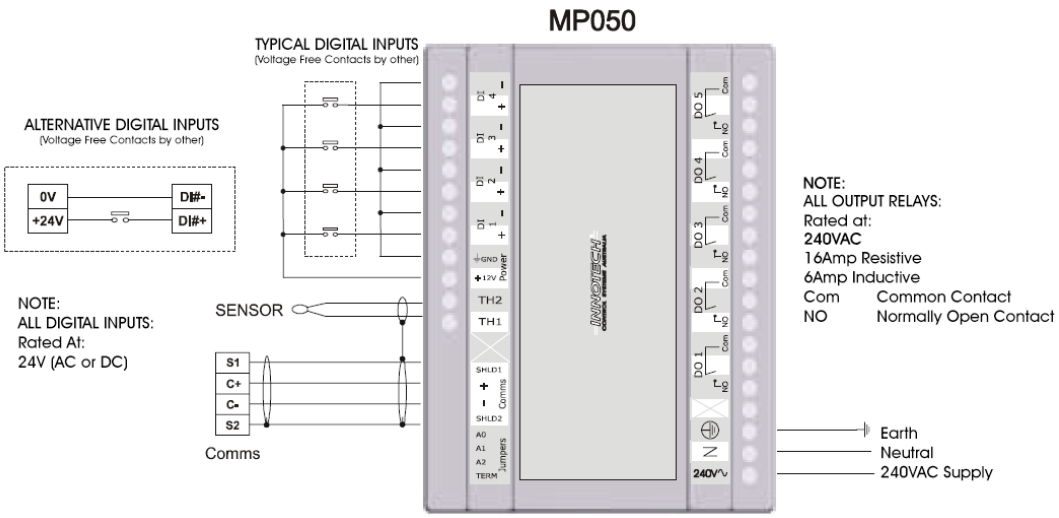
- The Cable run between the GENII MP REM and the GENII RMI overall, should not exceed 500 metres. The Comms wiring requires cable especially suited for RS485. Other shielded cable is not suitable and may cause spasmodic Comms failures.
- The GENII REM Modules should be mounted in cabinets / housings approved for switchgear or industrial control equipment.
- Strictly follow the guidelines when installing the Comms wiring as outlined in the Genesis Network Installation Guide.
- Mount the GENII MP REM in a dry and clean location free of excess vibration.
- There are four jumpers located in a row on the GENII MP REM Module. The three labelled A0, A1 and A2 are used to set the network address of the GENII MP REM Module. Directions for setting the address are shown in the wiring diagram generated by the GEN2 Config software. The final jumper (labelled TERM) is the comms termination jumper and should only be used as described in the Genesis Network Installation Instructions.

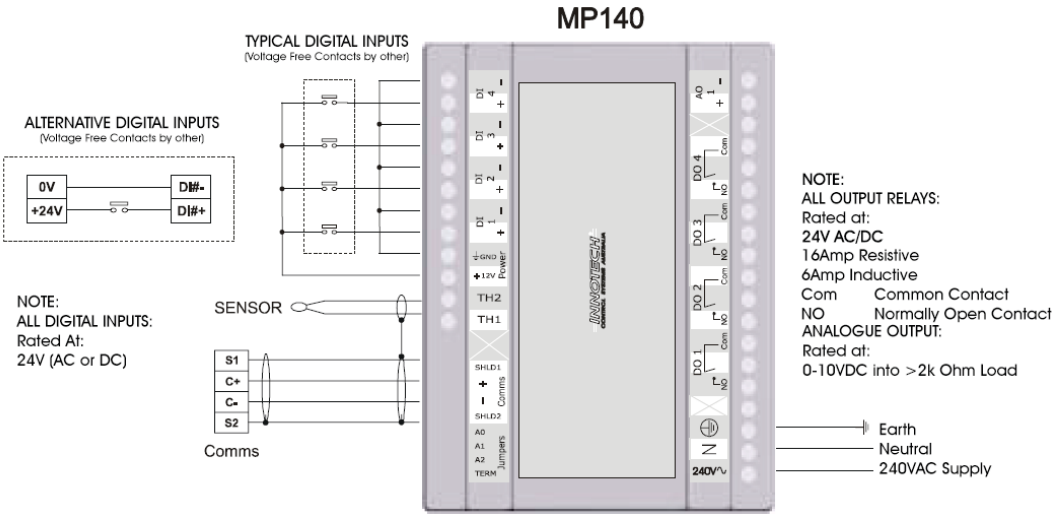
The unit must be powered down before jumpers are altered. Anti-static precautions should be taken when changing addresses or adding or removing cabling from the terminals.

Wiring

- The cable used for RS485 Comms must be shielded single twisted pair, 120Ω characteristic impedence, 36 to 45pF per metre capacitance between conductors.
- The Comms cable must be organised as a bus topology. That is, starting at one end, devices are connected to it until the other end of the cable is reached. No “stubs” are allowed. To connect a device to the cable, a cut is made in the cable at the point where the device is to be situated. Then, the two new ends of the cable are wired into the device. The shields from the two new ends are then terminated into the terminals marked SHLD 1 and SHLD 2.
- Refer to the Genesis Network Installation Instructions for more information.

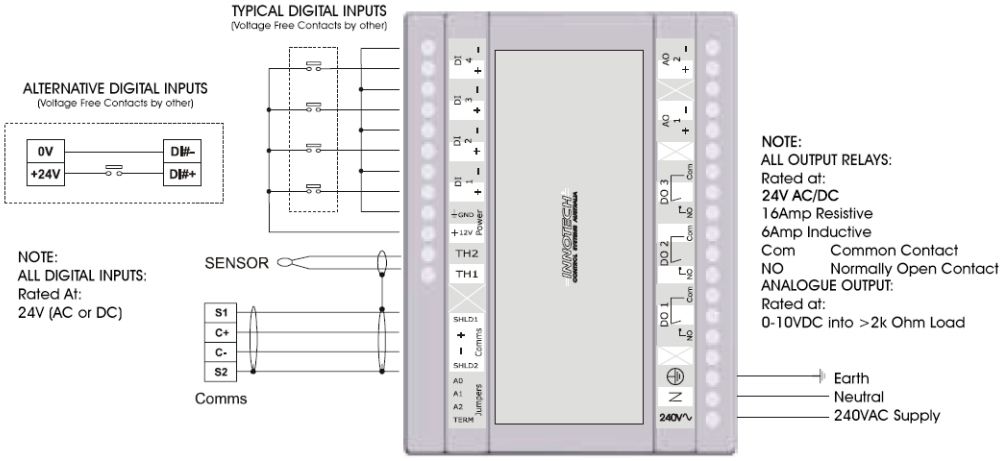
Standard Connection



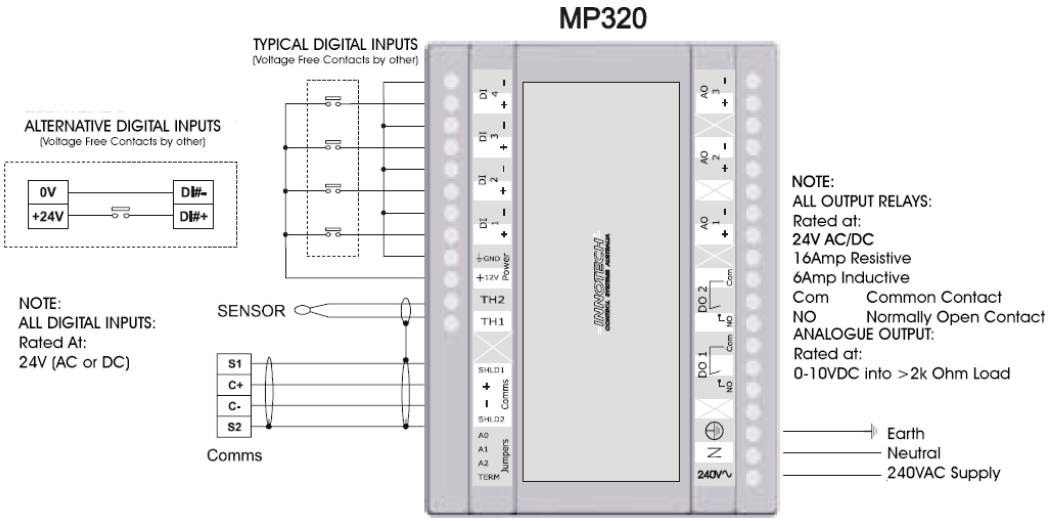


Standard Connection

MP230



MP320



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