

MODELS:

GENIIMP405 REM
GENIIMP414 REM
GENIIMP423 REM
GENIIMP432 REM

GENII MP REM 24V 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 Controller via the REM Comms port. The remote link uses RS-485 at a baud rate of 38400.

For pre-Version 5 controllers, a Gen II RMI Remote Module Interface is required. Please refer to DS15.01 for further information.

Features

- Remote sensing and control of I/O points up to 500 mtrs from the GENESIS Controller via a single RS485 network.
- The I/O comprises of a single 10k Ω thermistor temperature input, four switched contact digital inputs and five outputs consisting of either:
 - i. 5 x Relay Outputs (MP405)
 - ii. 4 x Relay Outputs & 1 x Analog Output (MP414)
 - iii. 3 x Relay Outputs & 2 x Analog Outputs (MP423)
 - iv. 2 x Relay Outputs & 3 x Analog Outputs (MP432)
- RS485 interconnection between REM Modules.
- Power Supply 24V AC/DC
- 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.

Enclosure

The *GENII MP REM* products are 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: 107(w) x 89(h) x 69(d)

Approvals

The Innotech *GENII MP REM* conforms to:

- EN 61326:1998 for CE Marking and C-Tick Labelling
- Title 47 CFR, Part 15 Class A for FCC Marking
- UL listed to UL916, File Number E242628



Applications

Innotech MP REMs are designed specifically for mounting remotely and distributing the points to the controlled device via an RS485 network. Although the MP REM is flexible enough to accommodate control of any equipment, it is primarily designed to suit the air conditioning and building automation industry.

The compact size of the MP REM also gives it the advantage of being able to fit in small enclosures without taking up valuable space. The control strategy for the remote expansion module resides in the primary device. Regardless of whether the control strategy is for simple single zone air conditioning or complex lead lag interaction, the graphical block programming allows for easy programming.

Typical applications for Air Conditioning and Heating Systems include:

- Air Handler Unit (AHU's) Control
- Fan Coil Unit (FCU's) Control
- Variable Air Volume (VAV's) Box control
- Lighting Control
- Time Clock Controller
- Monitoring Device
- Cold room control

A GENESIS Digital Controller can have up to 8 GENII MP REM Modules connected to it via the REM comms bus. For detailed connection information refer to the Innotech Network Cabling Manual DS 99.04.

Specifications

Part Number	Voltage	# D/O's	# A/O's	# D/I's	# A/I's
GENII MP405 REM	24V AC or DC	5	0	4	1
GENII MP414 REM	24V AC or DC	4	1	4	1
GENII MP423 REM	24V AC or DC	3	2	4	1
GENII MP432 REM	24V AC or DC	2	3	4	1

Power Supply

- 24 VAC \pm 10% @ 50/60Hz.
- 24 VDC \pm 15%
- Power consumption: 4VA

The operating voltage must meet the requirements of Safe Extra Low Voltage (SELV) to EN60730. The transformer used must be a Class 2 safety transformer in compliance with EN60742 and be designed for 100% duty. It must also be sized and fused in compliance with local safety regulations.

Inputs

- 10k Ω thermistor temperature sensor.
- 4 x Isolated switched contact digital inputs.

Outputs

MP405:

- 5 x 16A, **24V relays**, Normally Open contacts.

MP414:

- 4 x 16A, **24V relays**, Normally Open contacts.
- 1 x Analogue Output, 0-10VDC \pm 0.05V into >2k Ω load.

MP423:

- 3 x 16A, **24V relays**, Normally Open contacts.
- 2 x Analogue Outputs, 0-10VDC \pm 0.05V into >2k Ω load.

MP432:

- 2 x 16A, **24V relays**, Normally Open contacts.
- 3 x Analogue Outputs, 0-10VDC \pm 0.05V into >2k Ω load.

Terminal Identification

Power Supply

24V	=	24V AC/DC Supply.
0V	=	0V AC/DC Supply
E	=	Earth.

Comms Connection

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

Temperature Ratings

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

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.
NO	=	Normally Open relay contact.
Com	=	Common relay contact.

Installation

- The Cable run between the *GENII MP REM* and the GENII V5 Controller overall, should not exceed 500 mtrs. The Comms wiring requires cable *especially* suited for RS485. Other shielded cable is not suitable and may cause spasmodic Comms failures.
- The GENII MP 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 EOL [End Of Line]) is the comms termination jumper and should only be used as described in the Innotech Network Manual DS 99.04.

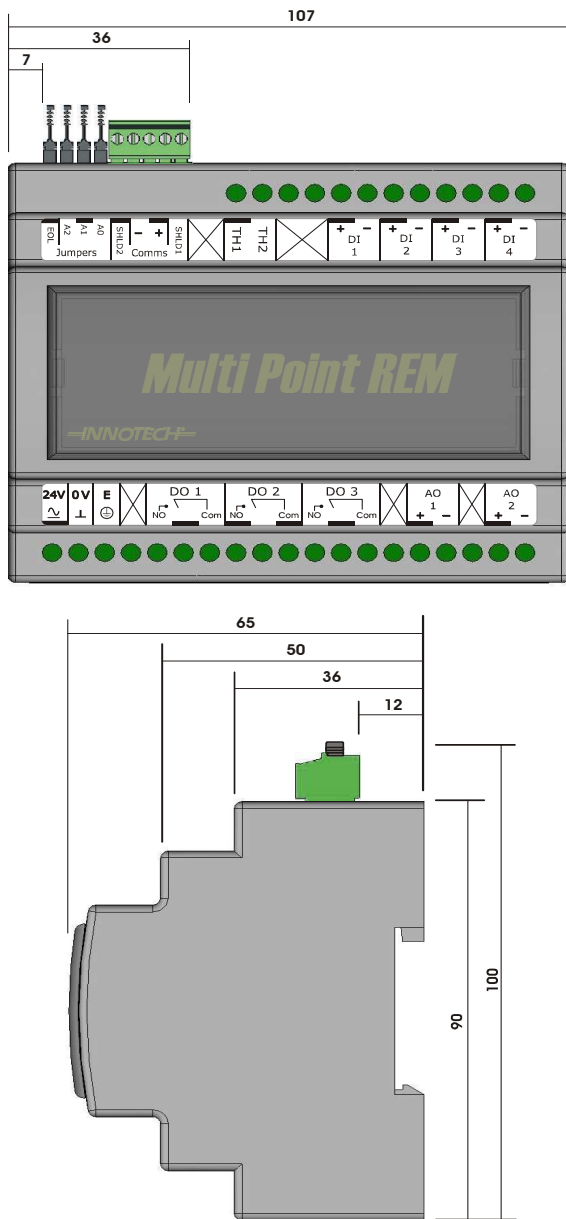
*Note:

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, 120 Ω characteristic impedance, 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 Innotech Network Installation Manual DS 99.04 for more information.

Dimensional Drawing



FCC Class A Notice

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

Note – This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Modifications to this device, may void the authority granted to the user by the FCC to operate this equipment.



Australian Owned, Designed & Manufactured
 by Mass Electronics Brisbane

Phone: + 61 7 3841 1388 Fax: + 61 7 3841 1644
 Email: sales@innotech.com.au www.innotech.com.au

