Models:
Genesis II (v4) Direct Digital Controller

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Direct Digital Controller

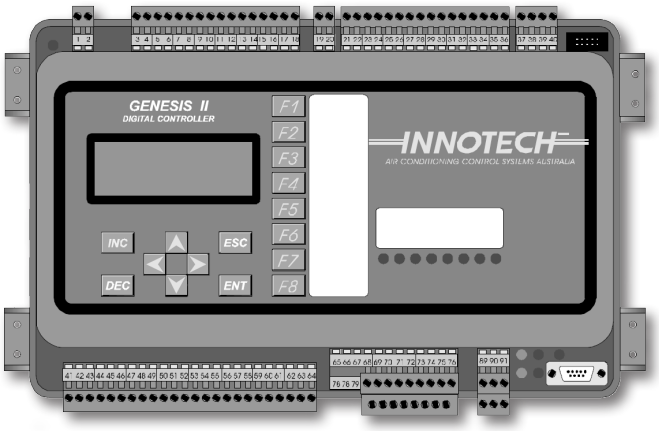
Overview
The Innotech GENESIS II system is a state-of-the-art processing system that has the capability of controlling various types of industrial systems. Although the GENESIS II system is flexible and can be adapted to a variety of applications, it is primarily designed to control large scale heating, ventilation and air conditioning (HVAC) systems.

The main unit of the GENESIS II System hardware is the GENESIS II Controller, which is operationally tailored to the customer's specific application requirements by GEN2 Software applications and several types of hardware modules. These modules are referred to collectively as Remote Expansion Modules (REMs). Several types of software programs are used to configure the hardware to the customer's intended application and to assist in plant-monitoring, data logging and analysis, data exchange and troubleshooting.

Because of its designed-in flexibility, the GENESIS II System can be connected in any of several equipment configurations, based on the system's operational requirements.

In the simplest configuration, a single Digital Controller unit acts as the stand-alone controller for the system. More complex installations use multiple digital controllers sharing data between themselves and/or a computer. In these applications, communication between the digital controllers is facilitated by a Global Points link bus system and communication with the computer is by a standard RS-485 network.

Features
- Man Machine Interface (MMI) allows access to 128 data points
- Backlit LCD Display
- Data logging, up to 300,000 readings
- Led Indication of Digital Output status
- Opto isolated Digital Inputs
- Definable Analogue Input types
- Analogue Outputs selectable for 0-10VDC or high speed pulse for solid state relay control
- High Frequency pulse Input
- On board speaker
- 1 second scan rate
- 2 x RS485 network ports, global and net comms
- 1 x RS232 comm port
- Expandable by 32 points
- All wire connections by removable terminals
- Program resides in non-volatile Flash RAM
- Real Time Clock battery backed for approximately 5 years



Applications
The GENESIS II Controller is designed for mounting inside a control panel and offers a large array of inputs and outputs enabling it to monitor and control all types of external plant and equipment.

The creation of control strategies is made simple by the use of the GEN2Config configuration utility, a PC resident, Windows-based software package. This utility with its powerful Graphical User Interface allows the user to create an entire strategy in block-diagram form before downloading it to the GENESIS II Controller where it is permanently stored in FlashRam.

Access to the GENESIS II Controller is via the Man Machine Interface (MMI), or by a PC, either local or remotely via a modem. Up to 128 process constants or variables can be accessed through the MMI. Information can be grouped in any combination on the 8 display pages. Access to the display pages is controlled by a multi-level password system. From a PC, the user can gain access to manipulate and interrogate the controller using tools from the GEN2 family of software products. Third party software can access the GENESIS II Controller via GEN2DDE Dynamic Data Exchange.

Approvals
The GENESIS II Controller conforms to:
- EN 55011 Class B Group 1& EN 50082-1 for CE Marking
- AS/NZS 2064:1997 for C-Tick Labelling.
- FCC Title 47 CFR, Part 15 Class A for FCC Marking
- UL listed to UL916, File Number E242628

Specifications

Power Supply

- 24VAC ± 10% @ 50/60 Hz,. 30VA
  (Option of 24VDC supply available).

The operating voltage must meet the requirements of Safety Extra Low Voltage (SELV) to EN60730. The transformer used must be a Class 2 safety transformer that has the energy and voltage limiting characteristics as described in the National Electrical Code, ANSI/NFPA70. It must also be sized and fused in compliance with local safety regulations.

Inputs

Digital Inputs

- 8 x Opto Isolated Inputs
  24VAC/DC ± 15% Trigger signal
  (Supplied by Class 2 transformer.)

Analogue Inputs

- 8 x Definable Inputs
  The Analogue Inputs require an Analogue Input Signal Conditioner (AISC) to determine the Input type. The AISC's must be ordered separately.

Pulse Input

- 1 x high speed pulse input
  0-12VDC @ up to 25kHz

Outputs

Digital Outputs

- 8 x change over relays
  2 amps @ 24VAC (Supplied by Class 2 Transformer.)

Analogue Outputs

- 16 x Selectable Outputs
  0-10VDC or high speed pulse for solid state relay control.

Any of the Analogue Outputs can be set to operate as a high speed pulse. The total must not exceed eight.

Battery

Contains a Lithium Type Battery, Dispose of Properly.
(In accordance with local regulations)

- Type CR-2032 Lithium Battery
- Nominal voltage 3 Volts
- Shelf life – 5 years, dependent on ambient temperature

Caution: Risk of explosion if battery is replaced by an incorrect type.

Temperature Ratings

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

Installation and Wiring

Refer to Genesis II Installation Manual.

Communications

RS232

- DB9 connection for modem and local PC access.

RS485 Net Comms

- 3 way terminal connection for network interrogation from a central PC.

RS485 Global Comms

- 3 way terminal connection for global data transfer between devices on the network.

FCC Class A Notice

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

- This device may not cause harmful interference.
- 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.

Remote Expansion Modules (REMs)

The GENESIS II Controller has the facility for remote points using Remote Expansion Modules (REMs). Each REM provides an array of points which can be connected to a sub network up to 500 metres in length.

Depending on the types of REMs used, up to 15 remote modules can be connected to the controller. The types of REMs available are:

Remote Expansion REMs (REMS)

Genesis II		
Remote Module	**Description**	**Resource Count**
GENII AI	Analogue Input REM	6
GENII AO	Analogue Output REM	5
GENII CS	Control Station REM	1
GENII CSAH	Control Station A/H REM	1
GENII CSFCAH	Control Station with 3 speed fan, A/H REM	1
GENII DI	Dry Contact Digital Input REM	5
GENII DO	Digital Output REM	4
GENII IDI	Opto Isolated Digital Input REM	4
GENII PI	Pulse Input REM	4
GENII MZS	Multi Zone Station REM	5
GENII MZSAH	Zone Control Station A/H	5

Data Logging

The GENESIS II Controller is equipped with a powerful Data Logging ability. Data Logging can be assigned to hardware and software points and up to 300,000 time stamped readings are stored on the GENESIS II Controller.

All data is stored in non volatile Flash RAM. When the memory is full new readings replace the oldest readings.

The GENESIS II Controller automatically logs User Access via the MMI and Loss and Resumption of its power supply.

Man Machine Interface

For ease of use the GENESIS II Controller is provided with a 4 Line, 20 Character, Backlit LCD Display and Keypad.

The MMI allow access to system variables such as Weekly and Annual Time Schedule/Daylight Savings parameters. The MMI also supports eight function pages, each with 16 points of data e.g. status, setpoints etc. Each function page can be designed with information to suit the application. All information displayed on the MMI is in English language and standard engineering units. Access to display pages is controlled by a programmable multilevel password system. The cover of the GENESIS II Controller has an insert which allows the identification of each function page. facilities, or at a later time through its logging facilities.

Associated Software

Gen2Alert is a utility that reports on alarms generated by GENESIS I Controllers. A GENESIS II MPI (Modem/Printer Interface) is required to capture the alarms and forward the details via modem to a PC running this utility. Once an alarm has been received, Gen2Alert can immediately notify the PC user through its pop-up and sound facilities, or at a later time through its logging facilities.

GEN2Config is the configuration tool for Innotech's GENESIS I Controller. It allows you to internally configure a GENESIS I Controller by using a simple point-and-click approach on a PC running Windows.

EasyBill is an automatic charging utility program for use with Innotech's GENESIS I Controller. Using EasyBill in conjunction with GENESIS I Controllers, a plant administrator is able to analyse plant usage and automatically calculate charges for that usage.

InnoGraph is Innotech's data log graphing and analysis tool. While it has been designed to specifically cater for the data log graphing capabilities of the GENESIS I Controller, it has the flexibility to display data log graphing information from other sources. InnoGraph allows multiple graphs to be displayed in multiple windows simultaneously. Complete with a host of configurable display options, statistical analysis of data points, analogue and digital value support, active cursors, colour printing capability, and comprehensive zooming and panning features, InnoGraph is your complete graphing package.

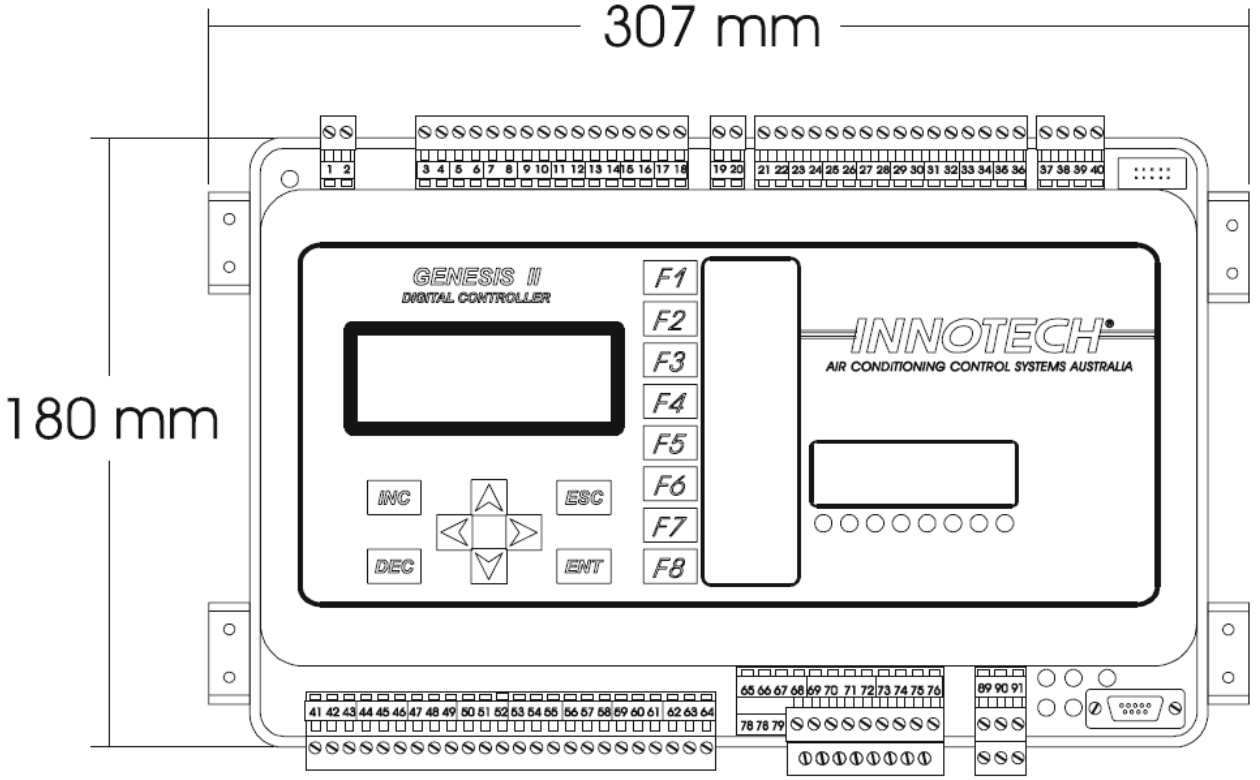
GEN2Mon is a monitoring and debugging utility designed to help with commissioning and trouble-shooting a GENESIS I Controller. It displays the configuration which resides on a GENESIS I Controller and allows the user to inspect or trend the value at any of the points in the configuration while the controller is running.

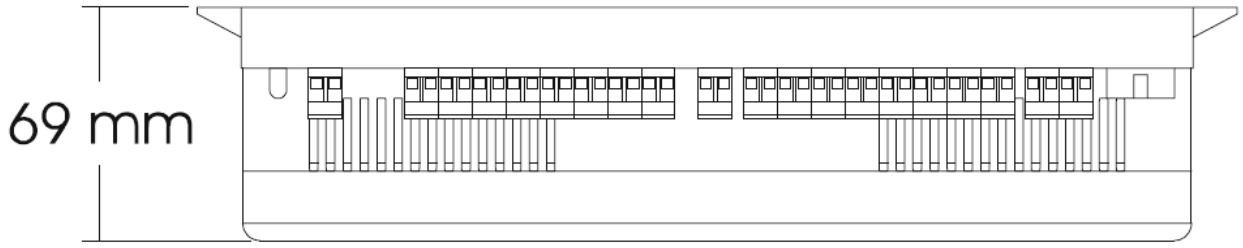
Gen2Simulator is a Windows-based software program that simulates an Innotech GENESIS I Controller. The Virtual GENESIS I Controller can be powered on, configured and interrogated in the same way as a physical GENESIS I Controller. Configurations can be downloaded and checked without requiring any hardware installation. You can even simulate a GENESIS I Controller network in order to test global points processing. Gen2Simulator can be used in conjunction with any product from the Gen2 Software range.

Gen2Supervisor is a specialised dynamic monitoring utility for the GENESIS I Controller. It provides all the functionality that is available from the GENESIS I Controller display panel with greater ease-of-use and flexibility. It is aimed at those users who require some feedback or control of the GENESIS I system, but have no desire to be immersed in the technical details of a GENESIS I configuration. Gen2Supervisor is a user-oriented product: no specialised knowledge of the GENESIS I Controller is required for its use. It allows the user to view the values of points of interest on a GENESIS I Controller, change its schedule information, or modify values accessible to the user.

GENXtract is the data log extraction utility for Innotech's GENESIS I Controller. It allows extraction of all or part of the history log data residing on a GENESIS I Controller into a specified data format.

Genesis II v4 Dimensions





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