Models:
Genesis I Direct Digital Controller

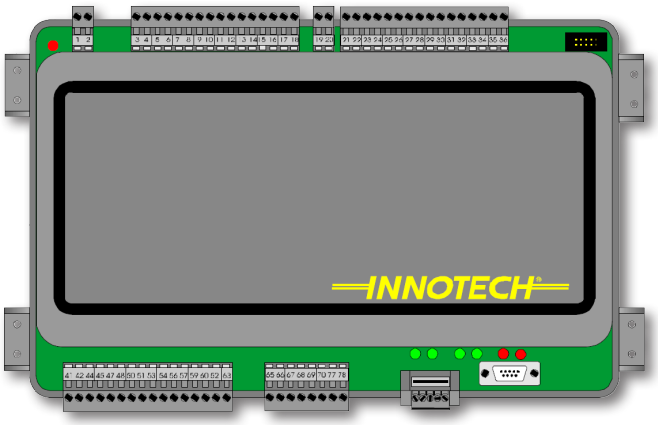
Genesis I
Direct Digital Controller

Overview
The Innotech GENESIS I system is a state-of-the-art processing system that has the capability of controlling various types of industrial systems. Although the GENESIS I 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 I System hardware is the GENESIS I 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 Local Expansion Modules (LEMs). 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 in-designed flexibility, the GENESIS I 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
- Data logging, up to 250,000 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.
- 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 I 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 I Controller where it is permanently stored in FlashRam.

Access to the GENESIS I Controller is via the GENII MMI Man Machine Interface, 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 I Controller via GEN2DDE Dynamic Data Exchange.

Approvals
The GENESIS I Controller conforms to the requirements per European Consortium Standards EN55011:1991 (CISPR 11) Class B, Group I and EN50082-1:1992 (IEC801-2, IEC801-3 and IEC801-4) for CE-Marking as well as the requirements for Australian/New Zealand Standard AS/NZS 2064:1997 for C-Tick Labelling.

Specifications

Power Supply

- 24VAC ± 10% @ 50/60 Hz
  (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

Analogue Inputs

- 8 x Definable Inputs
  The analogue inputs are factory set to customer requirements. The type of inputs that can be configured are: GENII V10, GENII V05, GENII TH1- TH9, GENII I05, GENII I20, GENII D05, GENII AIM AISC.

Outputs

Digital Outputs

- 8 x normally open relays
- 2 amps @ 240VAC

Analogue Outputs

- 6 x Selectable Outputs
- 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.

Temperature Ratings

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

Installation and Wiring

Refer to Installation Guide.

Communications

• RS232

- DB9 connection for modem, GENII MMI and local PC access.

• RS485 Net & Global Comms

- 5 way plug for RS485 Net & Global points.

Data Logging

The GENESIS I Controller is equipped with a powerful Data Logging ability. Data Logging can be assigned to hardware and software points and up to 250,000 time stamped readings are stored on the GENESIS I Controller.
All data is stored in non volatile Flash RAM. When the memory is full new readings replace the oldest readings. The GENESIS I 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 I Controller can be accessed via the GENII MMI using the DB9 RS232 port located on the GENESIS I Controller.
The GENII MMI is a hand held device that is powered by the GENESIS I Controller via the DB9 connector.

The GENII MMI allow access to system variables such as Weekly and Annual Time Schedule/Daylight Savings parameters. The GENII 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 GENII MMI is in English language and standard engineering units. Access to display pages is controlled by a programmable multi-level password system.
The cover of the GENII MMI has an insert which allows the identification of each function page and 8 LEDs to indicate relay status.

Local Expansion Modules (LEMs)

The GENESIS I Controller has the facility for local points expansion using Local Expansion Modules (LEMs). Each LEM provides four extra points and up to eight LEMs can be connected to a GENESIS I Controller giving up to 32 points.
The 8 LEMs can be made up of any mix of the available types :

- GENII AIM V3CE Analogue Input Module
- GENII DIM V3CE Digital Input Module
- GENII DOM V3CE Digital Output Module

The program resides within the GENESIS I Controller and data is transmitted between it and the LEMs on the GENII LEM CABLE. A maximum of 300 mm of GENII LEM CABLE is allowed between modules and the overall cable length must not exceed 1.5 metres.

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.

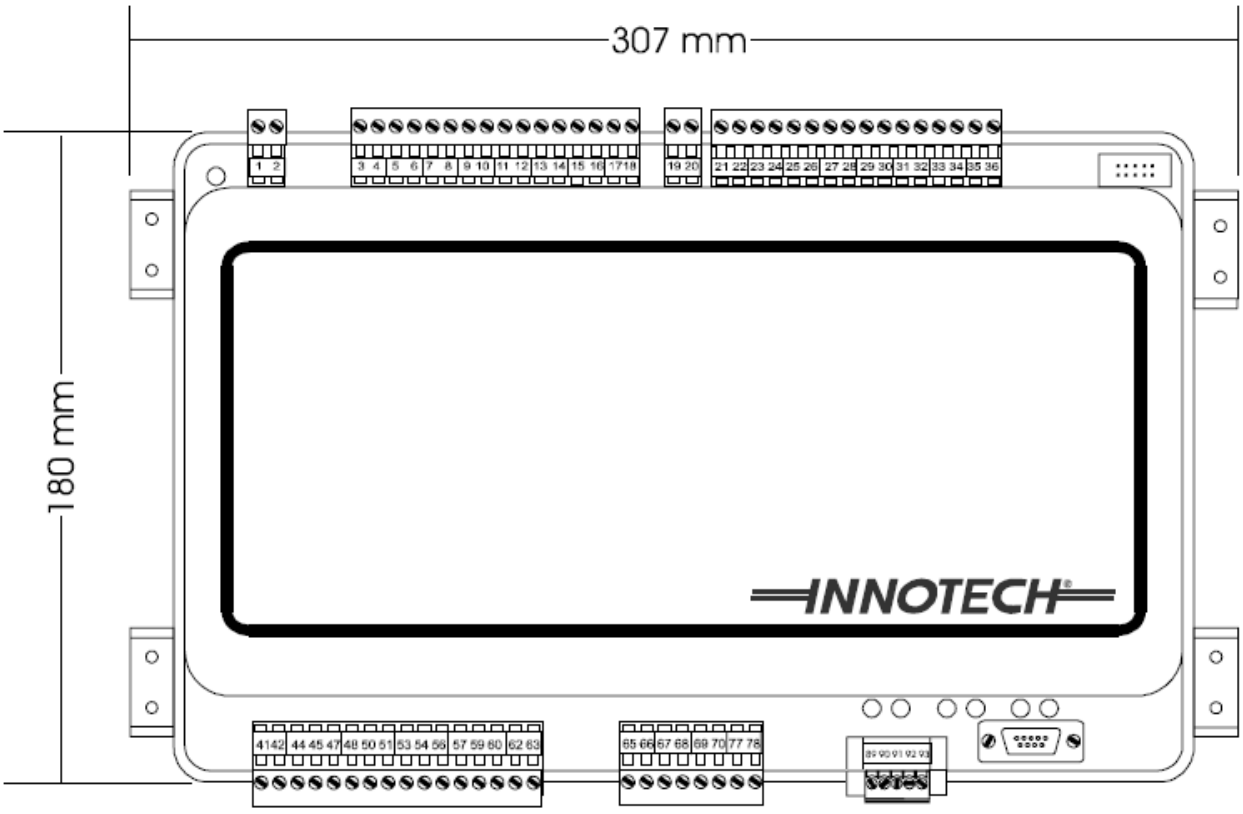
GEN2Mon is a monitoring and debugging utility designed to help with commissioning and trouble-shooting a GENESIS I Controller. It displays the configuration which resides on a GENESIS I Controller and allows the user to inspect or trend the value at any of the points in the configuration while the controller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

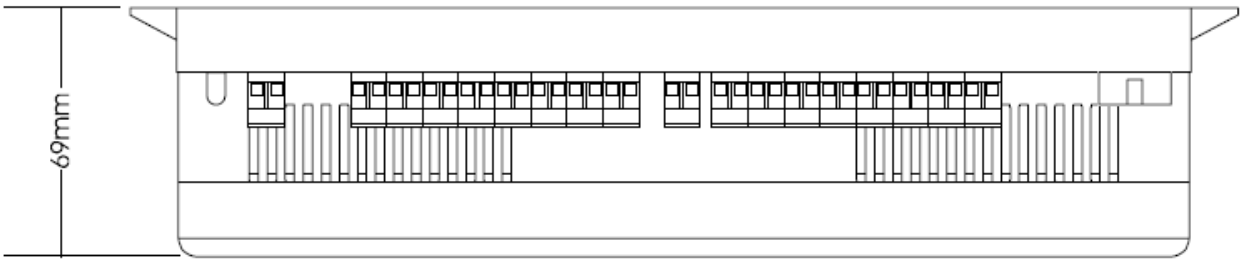
Gen2Simulator is a Windows-based software program that simulates an Innotech GENESIS I Controller. The Virtual GENESIS I Controller can be powered on, configured and interrogated in the same way as a physical GENESIS I Controller. Configurations can be downloaded and checked without requiring any hardware 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 I Dimensions





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