Models:
GENIIELD GENIINLD
GENIIELN GENIINLN

Genesis II Digital Direct Controller

Overview

The Innotech Genesis II Digital Controller is a state of the art digital processing system capable of controlling various types of commercial systems. It is the central unit of the Genesis II System hardware, and can be tailored to specific applications with the Genesis II software and a wide range of Remote Expansion Modules (REMS). This combination of hardware and software can be used to monitor plants and equipment, data logging and analysis, data transfer, and troubleshooting.

The Genesis II Controller can operate as a standalone device, while more complex installations can use multiple controllers sharing data between controllers and a computer.

Communication among the Genesis II Controllers is facilitated by a Global Points link bus system, whereas communication with a computer is through a standard RS485 network.

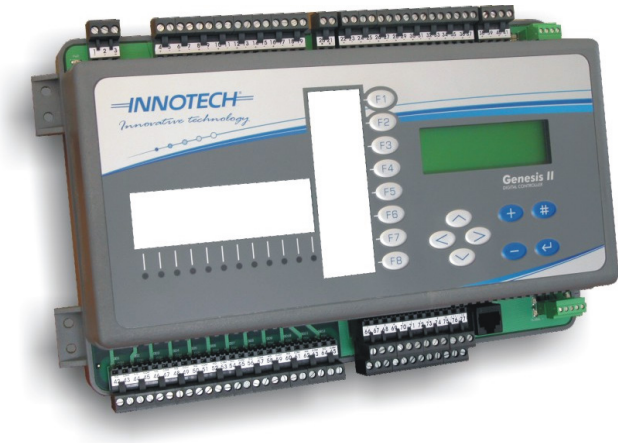
The Genesis II Controller can be configured using the Windows® based Gen2Config software. This graphical configuration utility allows the user to configure the inputs and outputs of the Genesis II Controller by placing various process blocks and interconnecting lines to design the required control algorithm for the controller.

Up to 256 process constants or variables can be accessed using the Human Machine Interface (HMI). Information can be grouped in any combination on the 8 display pages, with the ability to control access to the display pages using a multilevel password system.

The HMI can display a further 32 points or up to 128 alarms via a flash page. A computer allows access for manipulating and interrogating the controller using tools from the Gen2 family of software products.

Features

- Optional Human Machine Interface (HMI) on a backlit Liquid Crystal Display (LCD)
- Status of up to 256 data points displayed on the LCD
- Data logging with up to 1.2 million interval based readings
- LED status lights for Digital Outputs
- Opto isolated Digital Inputs
- Definable Analogue Input Types
- Analogue Outputs selectable for 0-10VDC or PWM for solid state relay control
- Pulse Counter Input
- On board speaker
- 1 second scan rate
- 3 x RS485 network ports - Net, Global and Remote Expansion Module communications
- 1 x RS232 comm port
- Optional Ethernet connection for Net communications
- 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 to monitor and control all types of external plant and equipment.

The Genesis II Controller is ideal for air conditioning and building automation, but yet flexible and powerful enough to suit a wide range of other applications.

The creation of control strategies is made simple with the Gen2Config configuration software. With it's powerful Graphical User Interface (GUI), Gen2Config allows the user to create an entire control strategy in block diagram form.

Typical applications include:

- Air conditioning and heating systems
- Lighting control
- Time clock controller
- Monitoring device
- Distributed I/O points controller
- Cold/Freezer rooms

Specifications

POWER SUPPLY REQUIREMENTS	
AC Power	
Power Input	24VAC ±10% @ 50/60Hz
Power Consumption	15VA
DC Power	
Power Input	24VDC ±10%
Power Consumption	8W

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 in compliance with EN60742 and be designed for 100% duty. It must also be sized and fused in compliance with local safety regulations.

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

ENCLOSURE

Housed in a rectangular case suitable for DIN rail mounting. Housing moulded from flame retardant plastics recognised by UL as UL94-V0.

Colour	Grey
Dimensions (Maximum)	(W)307mm x (H)180mm x (D)69mm

APPROVALS

EN61326:2013 Class A for CE & RCM Labelling

Title 47 CFR, Part 15 Class A for FCC Marking

UL Listed to UL916, File Number E242628

BATTERY

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

- Type: CR-2032 Lithium
- Nominal voltage: 3 Volts
- Shelf life: 5 Years, dependent on ambient temperature

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

INPUTS

Digital Inputs

8 Opto isolated inputs

24V AC/DC ±15% Trigger Signal

Analogue Inputs

8 definable inputs

Analogue inputs require an Analogue Input Signal Controller (AISC) to determine the input type. The AISC must be ordered separately.

Pulse Input

1 pulse input counter

0-10VDC up to 0-24VDC

For pulse frequencies up to 1kHz

OUTPUTS

Digital Outputs

12 normally open relays	2A @ 24VAC

Pilot relays recommended when switching high voltage/inductive loads

Analogue Outputs

16 selectable outputs

0-10VDC or PWM for solid state relay control

Load rating per output	5mA (2kΩ)

COMMUNICATIONS

1 RS232 serial communication port

3 RS485 serial communication ports

- Provide Global and Net comms
- 5 way pluggable screw terminal connector

RJ45 connection for modem and local computer access

MODEL DESIGNATIONS

RJ45	Logging	Display
E	L	D
E	L	N
N	L	D
N	L	N

Remote Expansion REMs (REMS)

REMs provide an array of points which can be connected to a sub system network up to 500 metres in length.

Fifteen random REMs can be added, with one exception. The MP REM can only be addressed between 1 and 8 only; therefore only 8 MP REMs can be used.

REM Type	Description
GENII AI	Analogue Input REM
GENII AO	Analogue Output REM
GENII CS	Control Station REM
GENII CSAH	Control Station A/H REM
GENII CSFCAH	Control Station with 3 speed fan, A/H REM
GENII DI	Dry Contact Digital Input REM
GENII DO	Digital Output REM
GENII IDI	Opto Isolated Digital Input REM
GENII PI	Pulse Input REM
GENII MP050	Multipoint REM with 5 digital outputs
GENII MP140	Multipoint REM with 1 analogue / 4 digital outputs
GENII MP230	Multipoint REM with 2 analogue / 3 digital outputs
GENII MP320	Multipoint REM with 3 analogue / 2 digital outputs
GENII MP405	Multipoint REM with 5 digital outputs
GENII MP414	Multipoint REM with 1 analog / 4 digital outputs
GENII MP423	Multipoint REM with 2 analog / 3 digital outputs
GENII MP432	Multipoint REM with 3 analog / 2 digital outputs
GENII MZS	Multi Zone Station REM
GENII MZSAH	Zone Control Station A/H
SENR1	Wireless Temperature Sensor REM
SENR2	Wireless Temperature Sensor REM with set point REM
SENR5	Wireless Temperature Sensor REM with A/H REM
SENR6	Wireless Temperature Sensor REM with set point and A/H REM

The Genesis II requires a GENII Wireless Module Interface (WMI) to interface with wireless REMs.

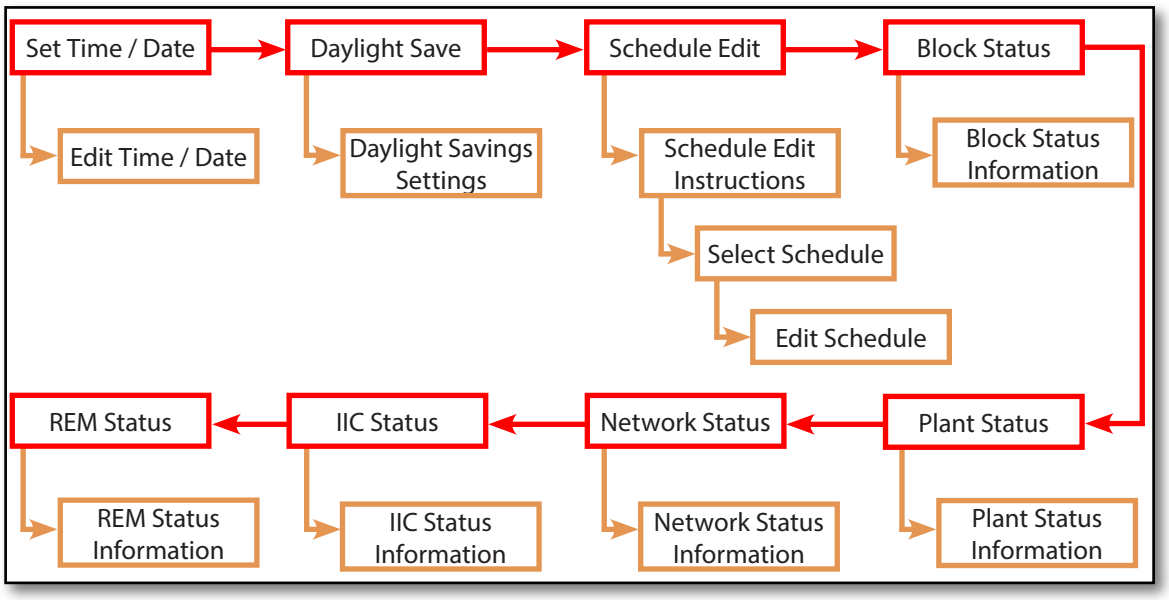
Please refer to DS99.03 for details of the Genesis II v4 REM Resource restrictions.

Data Logging

The Genesis II Controller is equipped with a powerful data logging facility. Data logging can be assigned to hardware and software points, with the ability to store up to 1.2 million interval based readings in non-volatile flash RAM. When the memory becomes full, new readings replace the oldest readings. All logged data points can be extracted using the Gen2Xtract software.

User Interface

For ease of use the Genesis II Controller is equipped with an optional 4-line 20 character backlit LCD. The integrated keypad provides easy navigation through the menu structure of the Genesis II controller as shown below.



The HMI provides access to various system variables and parameters. It supports 8 function pages, each with 32 points of data such as status and set points. Each function page can be configured with user specific information, and labelled for easy identification using the inserts on the Genesis II cover. Access to the HMI is controlled with multilevel password protection. All information is displayed in English with standard engineering units.

Initial Ethernet Port Configuration

The Ethernet port on Genesis II Controllers is configured at the factory to automatically acquire an IP address from a DHCP server. Therefore a static IP address must be configured during the commissioning process. This can be accomplished by using the *Ethermate* software.

- The Ethernet port will require an IP address. The factory settings enable the device to acquire an IP address automatically from a DHCP server. If there is no DHCP server on the network, the controller must be assigned a static IP address using *Ethermate*. Please read the *Ethermate* online help instructions for more information on IP address assignment.
- The serial port will need to be configured to match the RS485 network settings. The default is 9600bps, no parity, 8 data bits and 1 stop bit.
- The Port number used for the Ethernet connection will need to be configured to match the iComm settings. The default is 20000.

Please refer to DS99.05 Ethernet Setup Manual for Device Communications, or the *Ethermate* online help for more information.

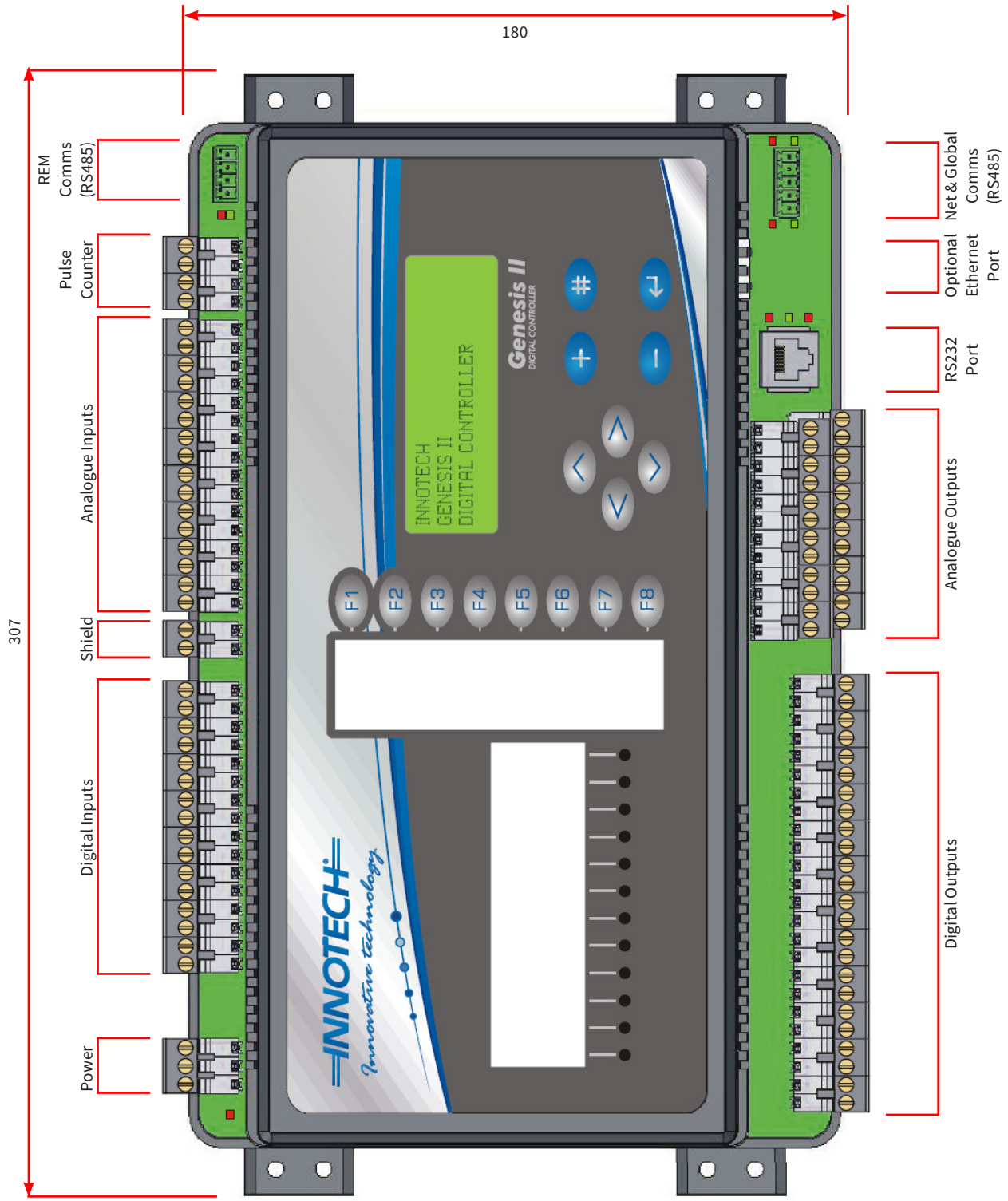
FCC Class A Notice

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.

Genesis II Controller: Connection Diagram



INNOTECH®

Australian Owned, Designed & Manufactured
by Mass Electronics Brisbane

Phone: +61 7 3421 9100 **Fax:** +61 7 3421 9101
Email: sales@innotech.com.au www.innotech.com.au

YOUR DISTRIBUTOR