Models:
MAX2LN -   with Logging Memory
MAX2LD -   with Logging Memory & Display

MAXIM II Controller

Overview

The Innotech MAXIM II Controller is a state of the art digital processing system that has the capability of controlling various types of commercial systems. The MAXIM II can operate as a standalone device, using its own universal inputs, and analogue and digital outputs to receive information and control external equipment, or as part of a network of Innotech devices that support Global Net Comms.

The MAXIM II's configuration program is developed on a computer using Windows® based software. This allows the user to configure the internal processes of the MAXIM II by using a graphical programming tool. The user places various process blocks and interconnecting lines to design the required control algorithm for the system.

A connector on the bottom right side of the case provides an RS485 serial link to the computer via a 485/232 converter for downloading the configuration program to the controller. This link may also be used to upload logged data or the program from the controller to a PC for modification or debugging purposes.

Features

- 100 millisecond cycle/scan time
- 6 configurable universal inputs
- 6 digital relay outputs
- 4 analogue outputs
- Optional Human Machine Interface (HMI) on a 4 line, 20 character backlit LCD 🛈
- 25 user defined watches
- Data logging capacity of 512 kilobytes, approximately 50,000 readings
- Status of I/O points displayed on the LCD
- 1 x RS485 serial communications port for Net Comms
- 1 x RS485 serial communications port for Global Comms
- User Selectable Baud Rates:
  a. Net 9600 Globals 4800
  b. Net 57600 Globals 38400
- 57600 Baud Rate
- All wire connections by 2.5mm screw terminals
- Program resides in non-volatile flash RAM
- Real Time Clock, battery backed for approximately 5 years

Approvals

The Innotech MAXIM II Controller conforms to:
- EN61326-1:2013 for CE & RCM Labelling
- Title 47 CFR, Part 15 Class A for FCC Marking
- UL listed to UL916, File Number E242628

🛈   Backlit LCD is only available on units manufactured after 2 July 2010

Applications

The Innotech MAXIM II Controllers are designed to be mounted inside a control cubicle. The MAXIM II offers a variety of inputs and outputs enabling it to monitor and control all types of external plants and equipment. Although the MAXIM II is flexible, it is primarily designed for the air conditioning and building automation industry.

The small size of the MAXIM II also gives it the advantage of being installed in small places without taking up valuable switchboard real estate.

The MAXIM II provides all the features of a standalone MAXIM, plus many additional features.

The creation of control strategies is made simple by the use of the MAXIM Configuration Utility called MAXCon. With it's powerful Graphical User Interface, MAXCon 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
- 24VAC ± 10% @ 50/60 Hz
- 24VDC ± 10%

Transformer nominal rating of 5VA.

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.

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

Inputs
6 Universal Inputs, configurable via software to either:
- Dry Digital Inputs
- Voltage Digital Inputs
- 10K Thermistor Inputs
- 0-10VDC
- LUX sensor input (Light sensor ORP12 LDR)
- Dry Duty Cycle Inputs
- Voltage Duty Cycle Inputs
- Dry Pulse Counter Inputs
- Voltage Pulse Counter Inputs

> - Exact Input combinations may be limited by the device
> - Input accuracy is ±0.1 volts
> - Error is less than 0.2% with 15Hz square wave input
> - LUX Sensor Input mode is useful for switching based on ambient light levels, but is not suitable for any operation which requires the accurate measurement or recording of light levels

Specifications

Input / Output Range

Input Type	Input Range	Output Range
0 to 10VDC	0 to 10VDC	0 to 10VDC
Dry Digital	Open or Closed	Off or On
Voltage Digital	0 to 10VDC	Off or On
High Thermistor	100k to 680Ω	-20°C to 100°C
LUX Sensor	1MΩ to 0Ω	3 to 2500 Lux
Low Thermistor	662k to 12kΩ	-50°C to 20°C
Dry Duty Cycle	Open or Closed 1 to 13hz	0 to 100% ±10% accuracy
Voltage Duty Cycle	0 to 10V Square Wave 1 to 13hz	0 to 100% ±10% accuracy
Dry Pulse Counter	Open or Closed 20ms Min. On Time 20ms Min. Off Time	0 to 25 pulse/sec ±1 pulse accuracy
Voltage Pulse Counter	0 to 10V Square Wave 20ms Min. On Time 20ms Min. Off Time	0 to 25 pulse/sec ±1 pulse accuracy

Outputs
6 Digital Outputs:
- 6 x normally open relays (2 amp @ 24VAC)
- Recommended use of pilot relays when switching high voltage/inductive loads

4 Analogue Outputs:
- Analogue Outputs 1 and 2 can be configured individually as either linear 0-10VDC or PWM outputs
- Analogue Outputs 3 and 4 are dedicated linear 0-10VDC outputs
- Output Load > 2k Ohms

> Up to 3 solid state relays can be connected in series, to the analogue outputs when configured as PWM.

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 with an incorrect type.

Enclosure/Mounting
The MAXIM II is housed in rectangular case suitable for DIN Rail mounting. The housing is moulded from flame retardant plastics recognized by UL as UL 94-V0.

Colour: Grey
Dimensions (max):   107 mm(w) x 89 mm(h) x 72.5 mm(d)

Data Logging
The MAXIM II Controller comes with a powerful data logging facility which can be assigned to both hardware and software points. Approximately 50,000 time stamped readings can be stored on the MAXIM II. All data is stored in a 512 kilobytes of non-volatile flash RAM. When the memory becomes full, new readings will replace the oldest readings. All logged data points can be extracted by using the MAXTract software tool.
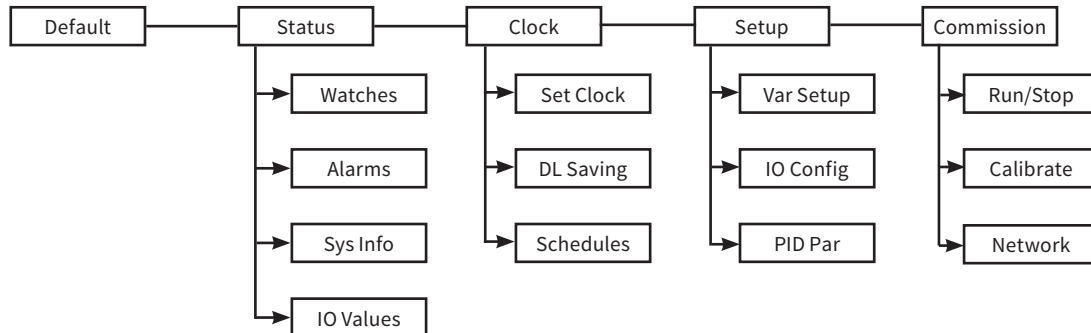
Communications
- RS485: 5 - way plug in connector for local/remote computer access for the purpose of uploading, downloading and monitoring configuration programs, and the extraction of logged data via a 485/232 converter

Maxim II

Model Number Designations

Model	Logging Memory	Display
MAXIILN	✓	✗
MAXIILD	✓	✓

User Interface

For ease of use the MAXIM II Controller is provided with a 4 line, 20 character backlit Liquid Crystal Display and keypad. The keypad consists of six navigational push buttons to provide input into the system. These buttons are "Up", "Down", "Left", "Right", "Enter", and "Escape". By using these buttons, the user can gain access to the menu structure as shown below.

```
Default ──── Status ──────── Clock ──────── Setup ──────── Commission
                │                │               │              │
                ▶ Watches        ▶ Set Clock     ▶ Var Setup    ▶ Run/Stop
                │                │               │              │
                ▶ Alarms         ▶ DL Saving     ▶ IO Config    ▶ Calibrate
                │                │               │              │
                ▶ Sys Info       ▶ Schedules     ▶ PID Par      ▶ Network
                │
                ▶ IO Values
```

The display has up to 5 programmable watch pages, each with it's own user defined description. Each page displays 5 points of information and allows access to the status of all I/O values and system information. The user can set clock/schedules variables and calibrate inputs. All information is displayed in English with standard engineering units.

Associated Software

MAXCon - Innotech MAXIM II Controller Configuration utility, which allows the user to internally configure a MAXIM II with a simple point-and-click approach on a PC running Windows.

MAXMon - The Innotech MAXIM Monitor is a monitoring and debugging utility designed to help with commissioning and troubleshooting a MAXIM II Controller. It displays the configuration from the MAXIM II Controller and allows the user to inspect, trend, or modify the value at any of the points in the configuration while the controller is running.

MAXSim - The Innotech MAXIM Simulator utility is Windows based software which simulates a MAXIM II Controller. The virtual MAXIM II can be powered on, configured, and interrogated in the same way as a physical MAXIM II. Configurations can be downloaded and checked without requiring any hardware installation.

iComm - A communications server used by application software to communicate with Innotech digital controllers. It supports multiple concurrent applications communicating to multiple device networks and serves as the communications hub of any HMI integrated device network.

MAXTract - A data log extraction utility for a range of Innotech digital controllers. It allows extraction of all or part of the history log data residing on the MAXIM II into a specified data format.

InnoGraph - Innotech's data log graphing and analysis tool. While it has been designed to specifically cater for the data log graphing capabilities of the Innotech range, 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 a complete graphing package.

Supervisor - A specialised dynamic monitoring utility for the GENESIS II and MAXIM Series Digital Controllers. It provides all the functionality that is available from the GENESIS II and MAXIM Series Digital Controller display panels with greater ease of use and flexibility.
It is aimed at users who require some feedback or control of the GENESIS II and MAXIM system, but have no desire to be immersed in the technical details of a GENESIS II and MAXIM configurations.

Magellan - An event-driven, object oriented real time Supervisory Control and Data Acquisition package. It provides a simple, intuitive mechanism to effortlessly design either trivial or sophisticated supervisory or control programs using a drag and drop approach.
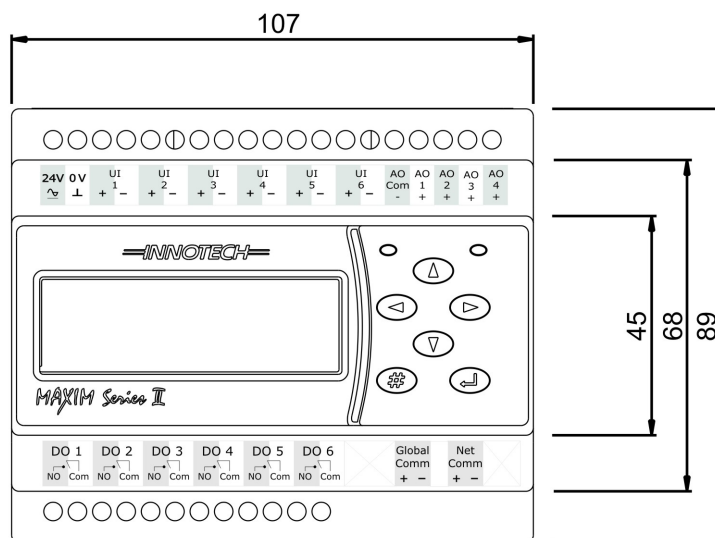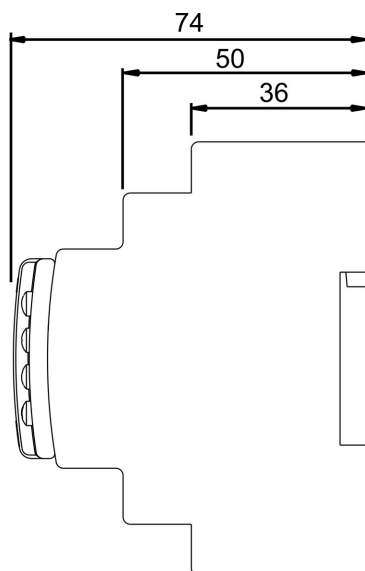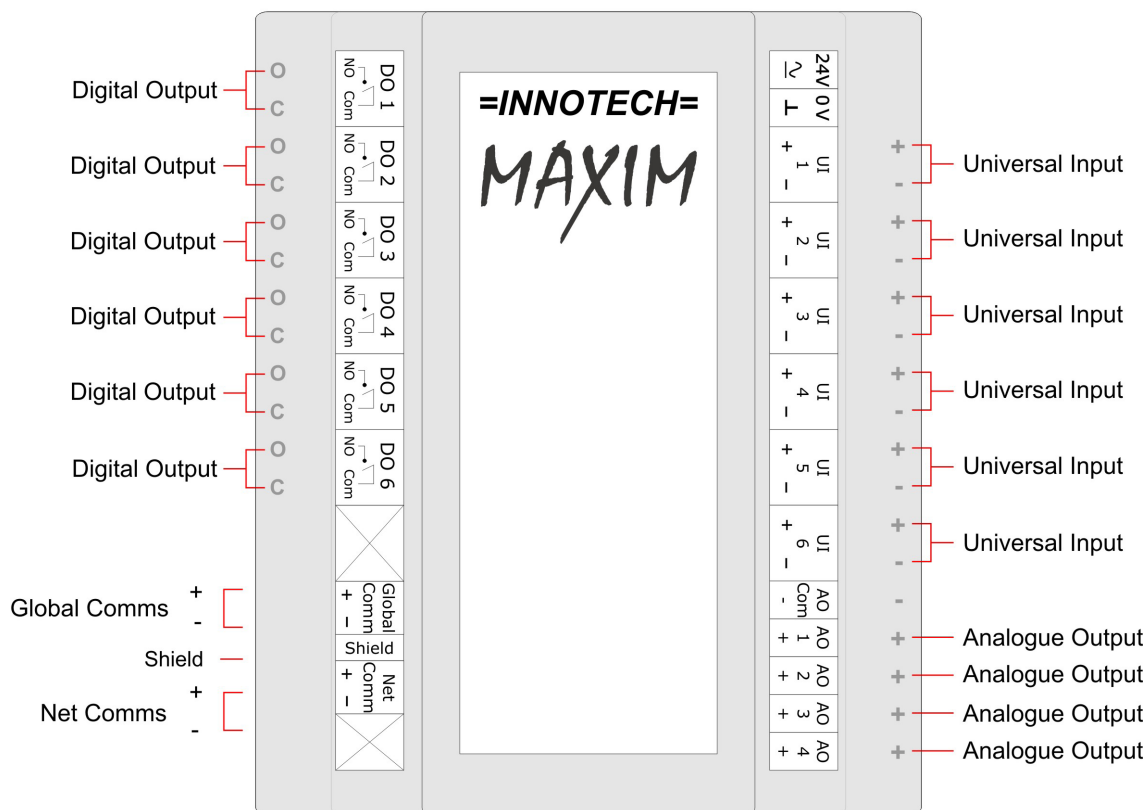
MAXIM II Controller Connection & Dimensions

Dimensions: 74, 50, 36, 107, 45, 68, 89