GSI-2

Gunn Systems, Inc.

What is the GSI-2 system? It is the combination of a flexible hardware controller (GSI-2), matched to the power of very easy-to-use programmable logic controller software (Simple-Rulez®), making this controller ideal for many commercial, residential, or light industrial applications.

The GSI-2 is available directly from Gunn Systems; in addition, *all design files (both hardware and software) are freely available* under *General Public License*.

The GSI-2 can be easily programmed using the front panel to respond to inputs, activate outputs, and log events. The controller can optionally interface to the GSI-2 PC Utility to provide graphing, log management, testing, and configuration from a desktop or laptop.

What can the GSI-2 do? Think of it as a simple PLC (Programmable Logic Controller) with built-in sensors and the X10 interface designed in, and the applications become endless.

The built-in Simple-Rulez® software provides basic programmable logic controller functionality, including:

⇒ A menu system using the LCD display and selector knob.
⇒ Communications through RS-232
⇒ Communications through X10 control
⇒ Event Programming and Scheduling (up to 16 events or schedules)
⇒ Event Logging

Simple-Rulez® provides an environment that allows **very simple "If _____ Then _____" style programming** (with AND, OR, and timers also provided) using only the built-in selector knob and your imagination.

GSI-2 Available Inputs and Outputs

Inputs:	Outputs:
• Time of Day Schedules	• 2 Relays (10 Amps each)
• Date Schedules	• 4 Digital (open collector NPN -up to 500ma)
• X10 Commands Received	• SPI Expansion outputs (to I/O boards)
• Analog or Digital Inputs	• X10 Commands Sent
• Temperature Sensor (up to 2 External temp probes)	• Tones (Variable Frequency, Volume, and Duration)
• Ambient Light Level	• LCD Display (2 lines of text)
• IR Commands	• LEDs (Red/Green, Blue)
• Timers (Minute or Second Intervals)	• Set Internal Flag Variable
• Internal Flag Variable Value	

The GSI-2 is a flexible controller for use in control systems, automation, or product prototypes. It was designed with a variety of I/O (Input/Output) requirements built in, and was developed with the idea of creating a flexible home automation node that can provide for a variety of needs. The GSI-2 is an expandable platform for quickly prototyping products that require a small amount of intelligence and I/O.

All program information is stored in the GSI-2 *Personality Module* (non-volatile EEPROM), so events will remain in the GSI-2, even after extensive periods without power!
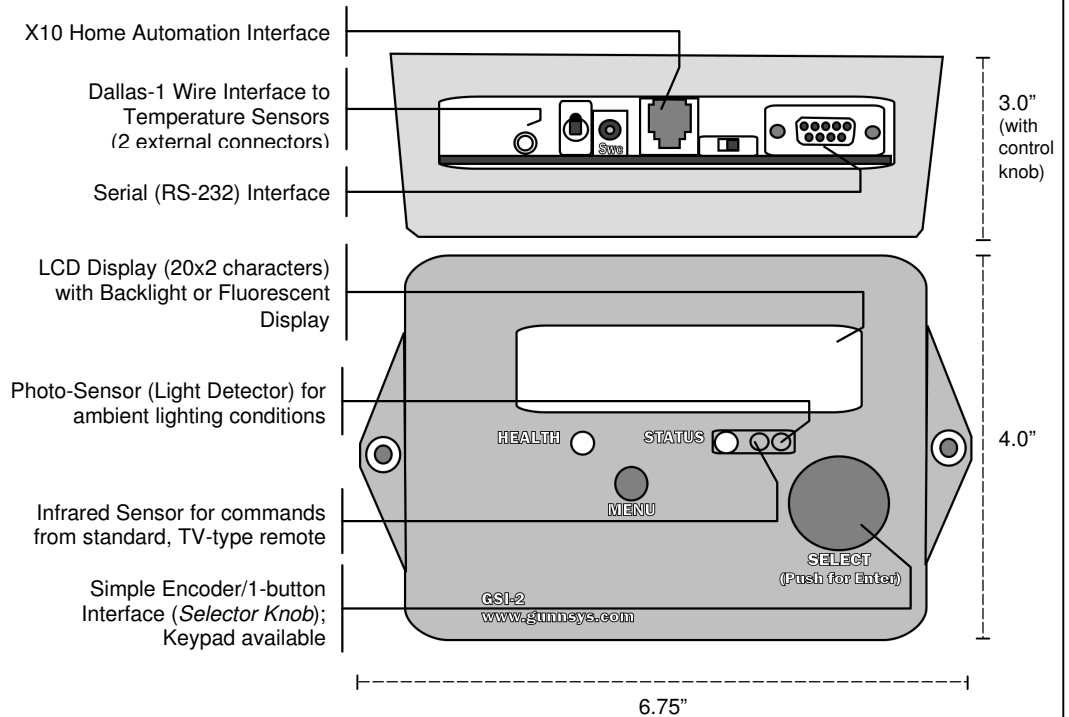
On the GSI-2, both the RS-232 port and LCD/Keypad interface provide full control of the controller. The RS-232 interface provides a menu that can be accessed from a PC or any "dumb terminal" or serial communications program. The GSI-2 is the only product on the market that provides programmable control at the X10 node. Its rich feature set allows for control flexibility.

Software Available for GSI-2

- **Simple-Rulez**®
  Programmable Logic Controller (PLC) style software; comes standard; good for many applications.

- **Simple-Therm**®
  Advanced HVAC Thermostat Control software.

- **Custom**
  Contact Gunn Systems for custom applications to meet your needs.

Standard Hardware Features:

- 10 MHz 68HC08 Microcontroller with 32K Flash ROM, 512 bytes RAM, 8 chan ADC
- Real Time Clock with lengthy power outage backup
- Audio Tone Output (variable tones and levels/durations)
- 2 High Current Switched Outputs (10 Amps AC/DC)
- 4 Analog Inputs (0-5V) or configured for Digital Inputs (8 bit res)
- 4 Digital Outputs (up to 500ma sink outputs with pull-ups)
- EEPROM (1K Words), socketed for easy removal, for event programming and log data (Personality Module)
- SPI Connector for expansion I/O boards
- Easy Terminal Block Connections for I/O

X10 Home Automation Interface

Dallas-1 Wire Interface to Temperature Sensors (2 external connectors)

Serial (RS-232) Interface

3.0" (with control knob)

LCD Display (20x2 characters) with Backlight or Fluorescent Display

Photo-Sensor (Light Detector) for ambient lighting conditions

HEALTH   STATUS

MENU

Infrared Sensor for commands from standard, TV-type remote

SELECT (Push for Enter)

Simple Encoder/1-button Interface (*Selector Knob*); Keypad available

GSI-2
www.gunnsys.com

4.0"

6.75"

The GSI-2 system makes available many potential applications for unique automation devices that do not currently exist, and the flexibility of the platform allows this controller to transform to meet many specific needs through simple programming.

The GSI-2 is available from Gunn Systems for **$249** (Qty 1, LCD, with no options) via the GSI Store (www.gunnsys.com). As a free-source design, all GSI-2 design files are available from Gunn Systems.

Expansion Modules Available for GSI-2

- ♦ 5-Relay Expansion Board ♦
- ♦ 8-Bit I/O Board (8 IN, 8 OUT) ♦
- ♦ Outdoor Rainproof Enclosure ♦
- ♦ Outdoor Rainproof Enclosure with Controllable AC Outlets ♦
- ♦ NEMA-4 Rated Industrial Enclosure ♦

(…and future expansions in development!)