Models:
IG01 Sub System Gateway

Sub System Gateway

Overview
The Innotech® Sub System Gateway is a state-of-the-art communication system, providing the ability to add Sub System Networks of Innotech controllers with a single channel of communications to Innotech Net and Global Networks.

The Sub System Gateway also provides data logging and a battery-backed real time clock for devices on its network. Each device comes pre-configured with a standard configuration containing weekly and yearly schedules, and optimum start routines.

Features
- 1 x Isolated High Speed RS485 serial Sub System Network Interface
- 2 x RS485 serial Primary Network ports
- 1 x Isolated Ethernet (10baseT) Primary Network port (Net)
- User selectable Baud rate on RS485 Primary Network ports
- Hosts up to 62 Sub System devices (daisy chain configuration)
- 8MB flash memory for data logging, shared amongst all Sub System devices
- Efficient data routing
- Reduced wiring cost due to single wire Sub Networks
- Pluggable screw terminals for connecting all wires
- Program resides in non-volatile flash RAM
- Real-Time Clock (battery backed)
- Visual indication of power, system, and communication activity

Approvals
The Innotech Sub System Gateway conforms to:
- EN 61326:2013 for CE Marking and RCM Labelling
- Title 47 CFR, Part 15 Class A for FCC Marking
- UL listed to UL916, File Number E242628

Applications
The Innotech Sub System Gateway is specifically designed to be used in conjunction with Sub System Controllers which have a single channel of communications, such as the MiniMAX (MM02), VAVMax (VM01) or MicroMAX (UM01).

Installation
The Sub System Gateway should be installed in an environment that does not exceed the maximum operating parameters of the device. It should be mounted in a dry, clean and vibration free environment.

Small size allows for installation in space limited environments.

Due to the higher communications speed of the Sub System network, good quality RS485 cable should be utilised and short screen connections maintained when connecting controllers.

This will ensure reliable communication of up to 200m. Repeaters should be used to isolate sections of a network as protection against external dangers damaging the entire network.

Refer to the Installation Manual for Innotech Device Network Cabling DS 99.04 for more information.

Specifications
Power Supply Requirements
- 24VAC ± 10% @ 50/60 Hz
- Power consumption: 4VA
- 24VDC + 20% - 10%
- Power consumption 2.3W
- Recommended transformer rating of 8VA or greater

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.

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: -5 to 60°C non-condensing
Operating: 0 to 50°C non-condensing

Enclosure/Mounting
The Sub System Gateway is housed in a rectangular case suitable for DIN Rail mounting. The housing is moulded from flame retardant plastics recognised by UL as UL 94-V0.

Colour: Grey
Dimensions (max): 71mm(W) x 115mm(H) x 67mm(D)

LED Indication

Power (Red LED)
- Indicates power is supplied to the device

Heartbeat (Green LED)
- Regular flashing indicates device is operational

Comms (3 x Bicolour LEDs)
- Indicate RS485 network activity on each channel. The LEDs for each channel are physically aligned with the appropriate comms connector for that channel
- Transmit (Red), Receive (Green)

Link (Orange LED, RJ45 Socket)
- Indicates connectivity to Ethernet

Activity (Green LED, RJ45 Socket)
- Indicates network activity

Communications

Sub System Comms
RS485 Serial communications channel optimised for fast data transmission to a Sub System network of Innotech controllers. Connectivity is provided through a 5-way pluggable screw terminal connector on the bottom right of the product.

Net and Global Comms
RS485 Serial communications channels for data transmission to an Innotech Controller network. Connectivity is provided through a 5-way pluggable screw terminal connector on the front of the product.

The Sub System Gateway is pre-programmed with the following default comms speed:
Net: 57600 baud
Global: 38400 baud

Ethernet
Ethernet communications channel for dedicated data transmission to a PC. Connectivity is provided through an RJ45 socket on the top right of the product.

The Sub System Gateway is pre-programmed with the following TCP/IP parameters:

Address Type: Static
IP Address: 192.168.2.100
Gateway: 0.0.0.0
Subnet Mask: 255.255.255.0

RS485 Comms Termination

Generally a daisy chain network configuration is recommended for a high speed network such as the one provided from a Sub System Gateway. If the Sub System Gateway is situated at the end of such a network, place the jumper to [EOL] position.

Attention: Without any exceptions, there are always only 2 devices on a properly terminated Sub System network that have the EOL jumper fitted!

All other devices should not have a jumper in position [EOL]. Incorrect use of EOL jumpers can cause unreliable communications or total network failure.

Refer to the Installation Manual for Innotech Device Network Cabling DS 99.04 for more information.

Networks and Addressing

The Sub System Gateway is designed for use with a Sub System network of controllers such as VAVMax (VM01), MiniMAX (MM02) or MicroMAX (UM01), and with a standard Innotech Network.

The Sub System Gateway manages the resources for all connected devices. It reduces the load on master controllers in a large network and reduces network traffic.

Example:
The small Innotech controllers, such as the MiniMAX (MM02), VAVMax (VM01) and MicroMAX (UM01) do not provide:
- Logging
- Battery backed time clock
- Global points
- Alarms

The Sub System Gateway provides these services to all connected devices.

The Sub System Gateway is fully transparent, meaning:
- Software applications can access all devices on the Sub System network for monitoring and configuration purposes
- Devices on the Innotech Global comms network will have access to global points to and from the devices on the Sub System network

Addressing:
Two addressing schemes are available depending on the user requirements. They are as follows:

Automatic:
Devices on the Sub System Network are each assigned an address by the Sub System Gateway automatically after startup, or when added to the network. This is the factory default setting.

Manual:
Device addresses are manually allocated by the user with Innotech's iComm communication server.

Configuration and User Interface

The Sub System Gateway is loaded with a predefined configuration containing weekly and yearly schedules, optimum start block, and global points to provide common schedules to all controllers on the Sub System network.

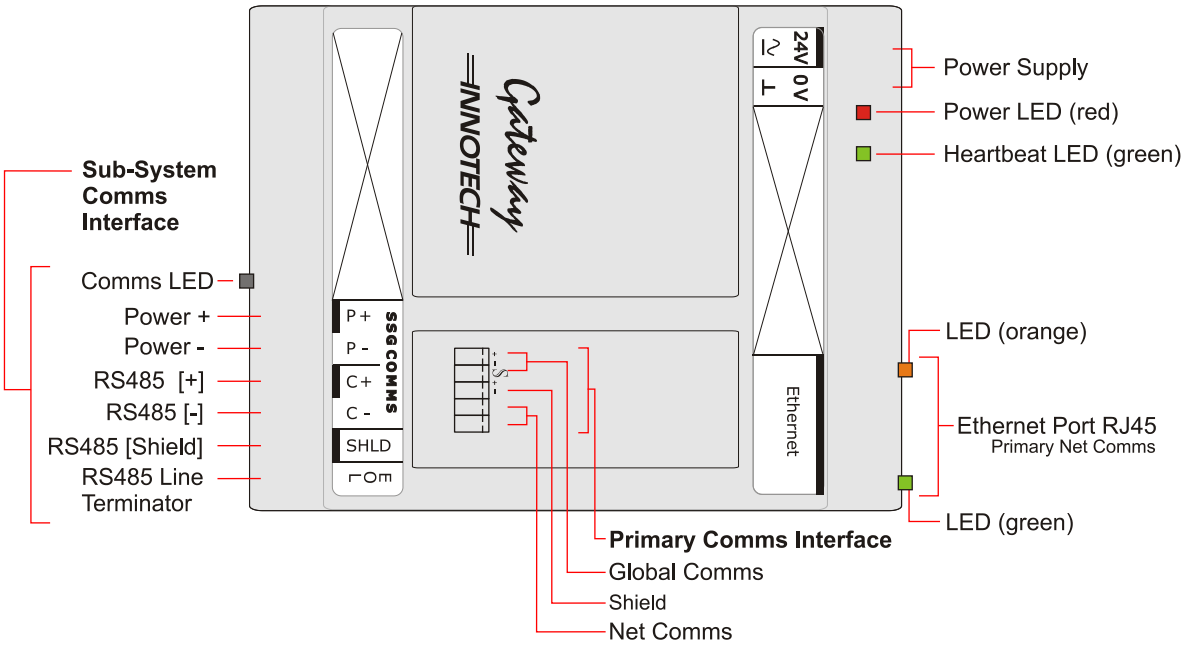
Innotech's MAXMon, Supervisor, and Magellan software applications provide access to the internal configuration.

The user interface for the Sub System Gateway is through an embedded web page stored on the controller. This is accessible with Microsoft® Internet Explorer 7 or greater.

The Web Page Interface allows for viewing and modifying the internal configuration and other device information.

JavaTM Runtime Environment version 6.1 or greater must also be installed on the computer accessing the embedded web page.

For PC's configured to use a proxy server, an exception rule must be set for the embedded web page to load correctly. For further information refer to the Ethernet Setup Manual for Innotech Device Communications DS99.05 V1.0 or later.



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.

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