INNOTECH®
Innovative technology

DS 26.01
OCTOBER 2007

MODELS:
IG01: Sub System Gateway

Sub System Gateway

Overview

The Sub System Gateway (SSG) 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 SSG also provides logging and a battery-backed real time clock for devices on its network.
Each Device comes preconfigured with a standard SSG configuration containing weekly and yearly schedules 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
- Efficient data routing
- Reduces wiring cost due to single wire Sub Networks
- All wires connected by pluggable screw terminals
- Program resides in non-volatile Flash RAM
- Real-Time Clock (battery backed)
- Visual indication of power, system and communication activity

Approvals

The SSG conforms to:

- EN 61326:1998 for CE Marking and C-Tick Labelling
- Title 47 CFR, Part 15 Class A for FCC Marking
- UL listed to UL916, File Number E242628

Applications

The *SSG* is specifically designed to be used in conjunction with Sub System Controllers which have a single channel of communications, such as the MiniMax (MM02) and VAVMax (VM01).

Installation

The SSG 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.
The small size of the *SSG* also gives it the advantage of being installed in space reduced environments.
The SSG can directly host up to 62 Sub Net devices wired in daisy chain configuration.
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.

Installation cont.

This will ensure reliable communication of up to 200m. Repeaters should be used to isolate sections of a network as a protection against external dangers damaging the entire network.
The Innotech network cabling manual DS99.04 contains more valuable information on how to setup your network.

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 Safe 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.

Battery

Contains a Lithium Battery, dispose of properly
Type CR-2032 Lithium Battery
Nominal voltage 3 Volts
Shelf life - 5 Years dependant 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

Encloure/Mounting

The *SSG* 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 x 115mm x 67mm

Optical Indicators

LED 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. (Red = Transmit, Green = Receive)

RJ45 LEDs:

- Indicates connectivity to Ethernet (Orange) and network activity (Green)

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
- 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

Configuration

The SSG is loaded with a predefined configuration containing weekly and yearly schedules, and optimum start block and global points to provide common schedules to all controllers on the Sub System network.
The blocks in the configuration are editable via the HMI which can be accessed via a Miniport, Software, Viewport or Softport. The software applications Maxmon, Supervisor and Magellan also provide access to the internal config.

RS485 Comms Termination

Generally a daisy chain network configuration is recommended for a high speed network such as the one provided from an SSG. If the SSG is situated at the end of such a network, place the jumper to [EOL] position. The Innotech Cabling Network Manual DS99.04 contains valuable information and examples on how to correctly setup your network wiring.
Attention:
Without any exceptions, there are always only 2 devices on a proper terminated Sub System network that have this 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.

Networks and Addressing

The SSG is designed for use with a Sub System network of controllers such as VAVMax (VM01) or MiniMax (MM02) and with a standard Innotech Network.
The SSG is managing the resources of all devices that are connected to it. 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) and VAVMax (VM01), do not provide:
- Logging
- Battery backed time clock
- Global points
- Alarms

The SSG however does, and provides this service to all devices.

The SSG is fully transparent, meaning:
Software applications can access all devices on the Sub Sytem 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.

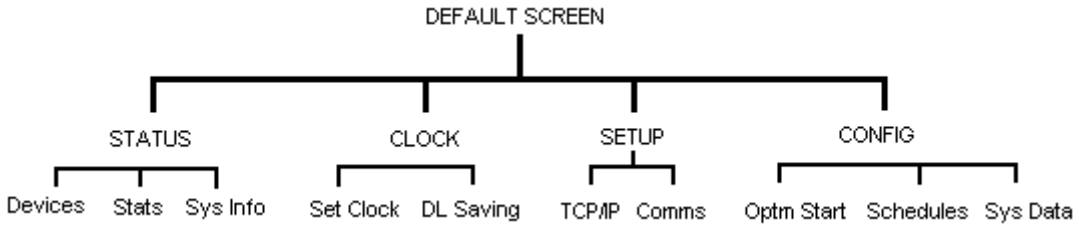
Addressing:
Two addressing schemes are available depending on the user requirements. The two schemes are:

- Automatic:
  Devices on the Sub System Network are each assigned an address by the SSG 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 communication server, iComm

User Interface

For ease of use the SSG provides remote access to a virtual 4 line, 20 character Human Machine Interface (HMI). Access can be gained by using tools, such as, Soft Port, Miniport and Viewport (V3.0A and above). Navigation through the menu is achieved by using the 6 virtual keypads 'Up', 'Down', 'Left', 'Right', 'Enter' and 'Escape'. The HMI provides menus to access and modify the internal SSG configuration, device setup and device status as shown below.

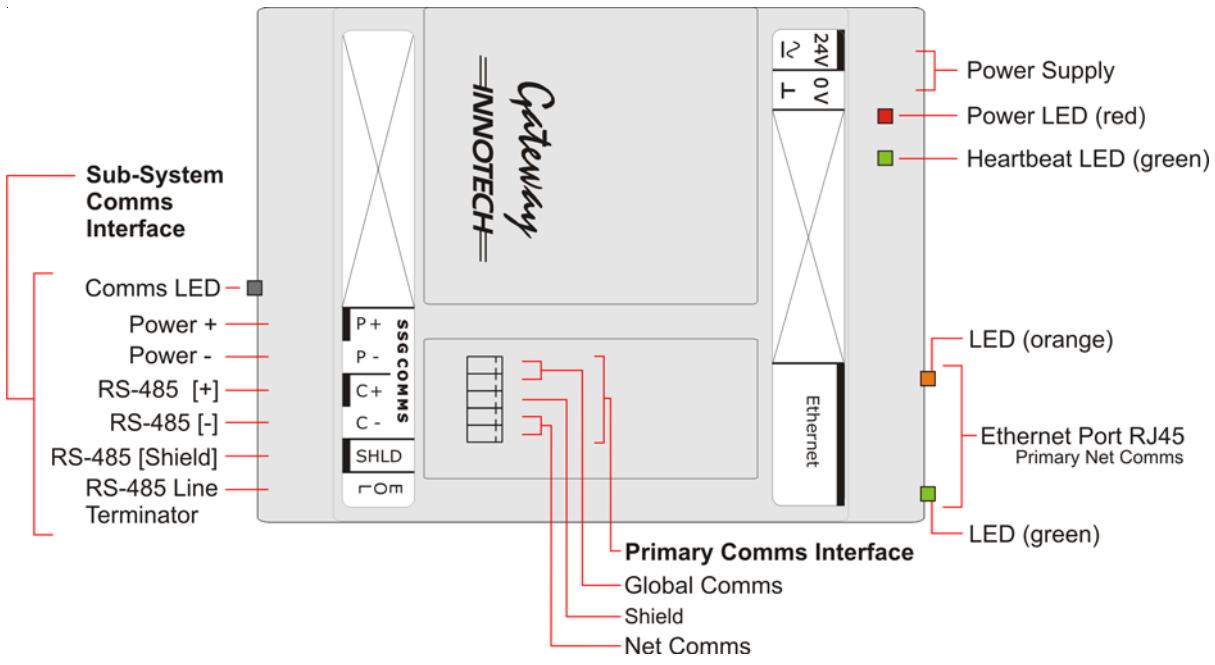


All information displayed on the HMI is in English and standard engineering units.

FCC Class A Notice

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
1. This device may not cause harmful interference.
2. 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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