



Sennet® Field Network & Transponders

Reliable communications path and data collection

DESCRIPTION – The Sennet® field network provides a reliable communications path for connecting perimeter intrusion detection sensors and general-purpose Input / Output (I/O) transponders to a central Security Management System. Senstar's range of Sennet-compatible I/O transponders includes a single-board Transponder Unit (TU) for smaller I/O requirements and a Large Transponder Unit (LTU) system capable of scaling to thousands of I/O points.

APPLICATION – For each application, the system integrator chooses the specific modules that best match the requirements. Depending on the requirements, Sennet input / output transponders can be installed in a user-supplied enclosure, in a Senstar-provided wall-mount enclosure, or rack-mounted. Field wiring can be done via RS-485 or multi-mode fiber.

Features

- Modular design suitable for a few to a few thousand input and / or output points
- Supported by StarNeT™ 1000 Security Management System (SMS) and Sennet Network Manager software
- Field proven in a wide range of applications around the globe
- Supports transponder units and Perimitrax®, Intelli-FLEX™ and IntelliFIBER™ sensors
- Linear, tree and star network configurations can be implemented

Benefits

- Compatibility with Senstar® security equipment reduces system integration time and risk
- Input / Output (I/O) points and perimeter sensors can be managed on the same field network
- Cost-effective for any size of system
- Support for tree and star configurations minimizes wire-run lengths

Markets

- Airports
- Government agencies and laboratories
- Correctional facilities
- Power generation sites
- Equipment and storage yards
- Electric and gas distribution

Markets (continued)

- Military bases
- Private estates / VIP residences
- Communications sites
- Petrochemical
- Sensitive government sites

How it works

Sennet uses a polled protocol over either an RS-485 multi-drop communications cable or daisy-chained fiber-optic links that emulate a multi-drop connection. It features dual physical data paths (fiber optic or RS-485) for reliability, and bi-directional communications for remote sensor diagnostics and secure tamper detection. Redundant data paths help ensure that alarms and system events are always reported and control is always available. Powerful data error detection algorithms prevent the transmission of erroneous data in the presence of noisy or intermittent data paths. The source of each network message is verified and any sabotage or tampering with messages is detected and reported.

A Sennet network can include up to 62 devices including input / output transponders. A complete Sennet field network is composed of the following:

- A Sennet network controller to interface the Sennet field network to the central control computer, which is a Windows® PC running either StarNeT™ 1000 or Sennet Network Manager software
- Input / output transponders
- Perimitrax®, Intelli-FLEX™ or IntelliFIBER™ sensor processors
- Network repeaters
- Enclosures
- Power supplies
- Field network wiring (typically customer supplied)
- Network management software, either Senstar's StarNeT™ 1000 or Sennet Network Manager software packages

Technical Specifications

SENNET NETWORK CONTROLLER

Each network requires a Sennet network controller to interface the network to the host computer. A choice of RS-232 or RS-422 host interfaces is provided. The network interface is inherently RS-485 but can be upgraded to fiber-optic with the addition of a fiber-optic interface module (sold separately) in which case the fiber optic I/O is 820 nm multi-mode on ST type connectors that can accommodate 50/125, 62.5/125, or 100/140 um fiber. The controls provided are a DIP switch for baud rate setting, a reset switch, and a diagnostic test switch. LED indicators are provided for network receive and transmit, host receive and transmit, and self-test status. The Sennet network controller is an indoor-rated circuit card assembly that requires a separately-purchased enclosure and power supply.

TRANSPONDER UNITS

Two Transponder Unit (TU) options are available. One TU provides 16 inputs, another TU provides 16 inputs and 8 relay outputs. The network interface is inherently RS-485 but can be upgraded to fiber-optic with the addition of a fiber-optic interface module (sold separately) in which case the fiber optic I/O is 820 nm multi-mode on ST type connectors that can accommodate 50/125, 62.5/125, or 100/140 um fiber. The controls provided are a DIP switch for network node address, reset switch, and diagnostic test switch. LED indicators are provided for network receive and transmit, input point state, output point state, and self-test status. Sennet TUs are indoor-rated circuit board assemblies that require a separately-purchased enclosure and power supply.

Each input provides single and dual-resistor line supervision options and reports status over the Sennet network as secure, alarm, or tamper. Each input can be programmed to be Normally Open (NO), Normally Closed (NC), supervised or non-supervised.

Each output is a dry-contact relay that can be programmed to be NO, NC, flashing or steady-state. Output switching – 250 mA maximum, up to 100 VDC to a maximum of 8 VA.

LARGE TRANSPONDER UNITS

Large Transponder Units (LTUs) are made up of base units into which LTU I/O cards are installed. The network interface is RS-485 (no fiber-optic option). Two sizes of LTU base units are available – one that accepts two LTU I/O cards and one that accepts four LTU I/O cards. LTU base units are indoor-rated units that can be 19 in. rack-mounted or wall mounted and are powered from 115 / 230 VAC.

Three LTU I/O cards are available, as follows:

- 64 inputs, 64 open collector outputs
- 64 inputs, 32 dry contact closure outputs
- 64 inputs, 64 dry contact closure outputs

Each input provides single and dual-resistor line supervision options and reports status over the Sennet network as secure, alarm, or tamper. Each input can be programmed to be NO, NC, supervised or non-supervised.

Each output is a dry-contact relay that can be programmed to be NO, NC, flashing or steady-state. Output switching – dry contacts, up to 24 VDC, 1 A resistive; open collector outputs, up to 12 mA, 12 VDC maximum voltage.

SENNET NETWORK REPEATERS

A variety of repeater options are available to extend the Sennet network and to convert between RS-485 electrical signaling and multi-mode fiber optic as required. Repeaters are outdoor-rated circuit card assemblies that can be mounted on standoffs in any suitable enclosure and can run off of either 12 VDC or 16 VAC. When supplied with 16 VAC power, an optional backup battery can be charged. Four repeater options are available:

MOKT1201 – A 2-port RS-485 to RS-485 repeater. Each unit handles a single RS-485 line.

MOKT1202 – A 3-port RS-485 to RS-485 repeater which provides two repeated outputs so that star or tree network topologies can be created. Each unit handles a single RS-485 line.

MOKT1203 – Multi-function fiber-optic repeater that can function in 3-ways: 1) as a fiber-to-fiber repeater, 2) as a RS-485 to fiber optic converter, and 3) as an RS-485 to RS-485 repeater. Fiber optic I/O is 820 nm. multi-mode on ST type connectors that can accommodate 50/125, 62.5/125, or 100/140 um fiber. Each unit handles one data path (fiber / fiber, fiber / 485, 485 / 485).

MOKT1204 – A kit consisting of two multi-function fiber-optic repeaters that can be used in a Sennet fiber-optic ring configuration to provide a dual-redundant RS-485 interface to devices which don't have a fiber-optic interface option (such as Perimitrax® sensor modules or Sennet LTU).

ENCLOSURE OPTIONS

Senstar offers a lockable, indoor-rated enclosure for mounting of Sennet network components. The enclosure can accommodate a transponder, a network controller or up to two repeaters.

For customers using their own enclosures, Senstar provides a mounting plate suitable for mounting a transponder, a network controller, or up to two repeaters. The plate includes provisions for the Sennet AC power supply, battery shelf and terminal strip for power connections.

POWERING OPTIONS

The Sennet AC supply is a selectable 115 / 230 V supply that provides 16 VAC to provide operating power and battery charging power for a transponder, a network controller or up to 2 repeaters.

GENERAL ACCESSORIES

Senstar provides general accessories for Sennet networks including spare circuit boards, lightning protection devices, batteries and data-grade cable for RS-485 links.

ENVIRONMENTAL SPECIFICATIONS

Sennet network controller operating temperature range: 0° to 55° C (32° to 131° F), operating humidity 5 - 95%, non-condensing.

Sennet transponders operating temperature range: 0° to 55° C (-40° to 158° F), operating humidity 5 - 95%, non-condensing.

Sennet LTU and I / O cards operating temperature range: 0° to 55° C (32° to 131° F), operating humidity 5 - 95%, non-condensing.

Sennet network repeaters operating temperature range: -40° to 70° C (-40° to 158° F), operating humidity 5 - 95%, non-condensing.

Specifications are subject to change without prior notice.

Senstar is represented by dealers in over 80 countries.



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