570E Fiberoptic Transceiver
Fiberoptic Network Solution

The Fiberoptic Communications Specialists

The Model 570E offers high-speed serial communication to meet the challenging needs of distribution automation, secondary networks, corporate LAN, Ethernet to SCADA master, substation networks and protection relay systems.

Model 570E Features

- **Up to 126 high-speed, 115 kbps virtual channels**
- **Large networks with up to 200 transceivers**
- **8 high-speed serial ports with 16 port option**
- **SLIC, INCOM, synchronous RS-422 (options)**
- **Transceiver/Controller features in a single unit**
- **Highly reliable, fault-tolerant, redundant, self-healing ring and radial network designs**
- **Vastly superior noise immunity and electrical isolation**
- **Supports all byte protocols including DNP and UCA**
- **Point-to-Point communication**
- **Two 10/100 802.3 compliant Ethernet ports**
- **LED status indicators, non-volatile flash memory, and optical power meter**
- **8 character alphanumeric LED display for diagnostics and port information**
- **FiberPanel™ integrated network management software**

Overview
The model 570E fiberoptic transceiver combines the capabilities of a transceiver and a controller in a single unit. You can conduct SCADA master, slave, and point-to-point communications within the same device, making it a highly flexible solution. The 570-based fiberoptic network is a total solution that includes both the hardware and software that you need to deliver the highest customer service and the most reliable communications.

Multiple Network Channels
The model 570E transceiver provides126 high-speed (115kbps) independent virtual network communication channels. You can assign any virtual channel to a transceiver serial port, which allows grouping Remote Terminal Units (RTUs) with common protocols, segregating different applications, and interconnecing backup master stations. The H&L Instruments fiberoptic network supports multiple RTUs, Intelligent Electronic Devices (IEDs), and Programmable Logic Controllers (PLCs).

Multiple Network Topologies
Both redundant loop and radial network designs are supported using the same model transceivers, and loop or radial network configurations can be set from a single location on the network.

Self-healing
Model 570E transceivers correct for network failures within 6 ms to reroute SCADA information with no interruption to communications. The network automatically converts from a loop configuration to a radial configuration whether a failure is caused by a severed fiber or due to an internal transceiver failure.

Protocol Transparent
The H&L Instruments fiberoptic network solution transparently carries all byte protocols, such as DNP, UCA, and MODBUS and can group RTUs with common protocols into common virtual communication channels without resorting to hard-coded serial port assignments.

Multiple SCADA Masters
The design of the 570 transceiver enables it to function as a SCADA master channel on some ports, while simultaneously acting as a slave channel on others. The network can include several SCADA master stations in multiple locations, which is optimal for water, electric, and gas utilities.

Paired Point-to-Point
The 570-based network supports pairing any transceiver serial port with another transceiver's port while continuing to use the remaining non-paired channels for conventional master/slave SCADA. The system accommodates up to 126 protective relay pairs, supports the use of SEL Mirrored Bits, and supports RS-422 64K synchronous communications.

Ethernet Ports
The Model 570E now includes two 10/100Mbps ports compliant with 802.3 Ethernet and 802.3u fast Ethernet standards. You can use auto-negotiation to select 10BASE-T or 100BASE-TX in full or half-duplex mode.

Modular SFP Fiberoptic Interface
The 570 dual LC-style SFP fiberoptic interface supports many options for fiber network configuration. The SFP plug-and-play technology offers optimum flexibility for provisioning your fiber network. This plug and play technology reduces transceiver spares inventory requirements, and simplifies maintenance and repair; it was introduced in an Engineering Notice dated January 2019.

Model 570E

Remote Monitoring, Network Management Software

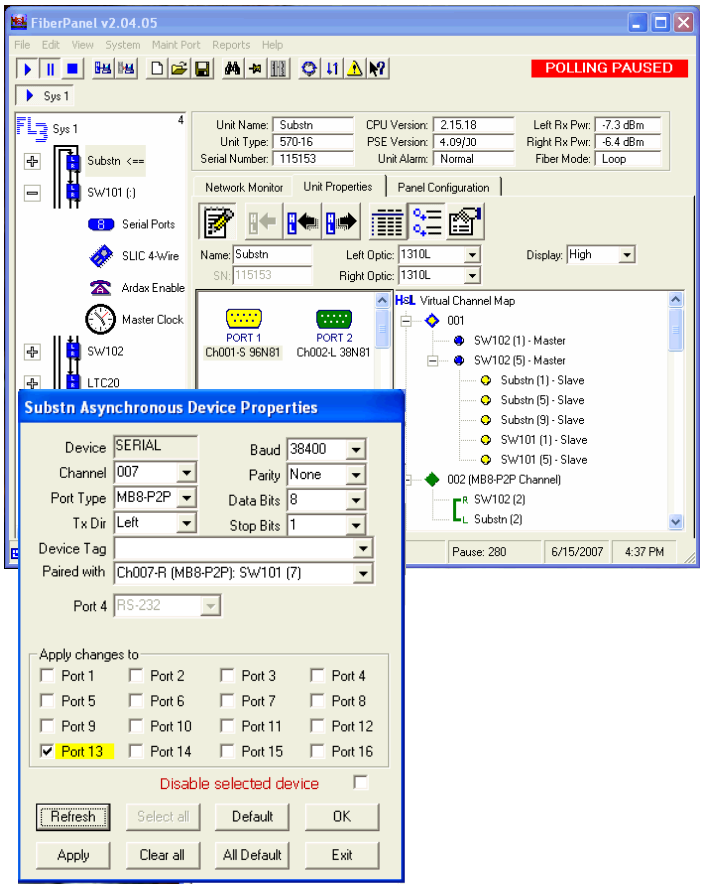
H&L Instruments differentiates itself from competitors, by including the FiberPanel™ Network Management Software with every system. FiberPanel is specifically designed to work with the Model 570E transceivers. Using FiberPanel you configure and view the system with an easy-to-use windows graphical user interface, and access real-time information about the fiber network.

The software supports remote connections to the fiber network including connection via a standard modem. Additionally, through TCP/IP connectivity, you can monitor and configure the system via your Intranet or the Internet. Up to 16 networks, each with up to 200 transceivers, can be monitored by a single FiberPanel session, and up to four users can monitor an active session.

Other fiberoptic solutions only allow you to catch problems after there is a break in the system. FiberPanel displays alarms and records a history of all network events in a log file. If problems with the fibers occur, you can quickly identify and correct any issues. This complete software solution helps you proactively maintain control over your fiber SCADA network and streamline your maintenance tasks.

Using FiberPanel, from the convenience of your desk, you can:

* View a System Map of your entire system.
* Check fibers, locations, unit names, and serial numbers.
* Assign unit names and location tags.
* Configure parameters for your each transceiver.
* Allocate channels and configure channel speed.
* Selectively turn on ports to communicate with remote devices, such as relay maintenance ports (which do not have SCADA addresses) to download event data or upload new settings.
* Measure optical power.
* Isolate faults, turn off serial ports, and re-route signals.
* Print reports on system activity, including diagnostic reports to show mis-wired fibers, list telemetry of unit voltages and temperatures, and identify malfunctioning units.



Model 570E Specifications

Model 570E:
8 high speed RS-232 serial ports

Ethernet PORTS (2):
Two 10/100 802.3 compliant RJ-45 Ethernet ports

Maintenance PORT:
RS-232 via PC-AT DB-9F port

Virtual Channels:
Supports 126 virtual channels. Any port can be assigned to any channel.

RS-485:
Opto-isolated transient-protected port

Data Rates:
600, 1200, 2400, 4800, 9600, 19.2kb/s, 38.4kb/s, 57.6 kb/s,115.2 kb/s

Alarm Output:
Form 1A (N.O.) opto-isolated solid state relay

Fiberoptic Connectors:
Modular SFP with dual LC connectors

Optical Receiver Sensitivity:
-28dBm

Optical Budget:
20dB singlemode

Optical Output (class 1, eye safe devices):
20 km transmission distance:
Laser -8 to -15 dBm @ 1310nm singlemode
Laser -8 to -15dBm @ 1550nm singlemode
80 km transmission distance:
Laser –5 to 0 dBm @ 1550nm singlemode
120 km transmission distance:
Laser –2 to +3 dBm @ 1550nm singlemode

Environmental/Mechanical Specs:
Operating Temperature: -40°C to +85°C
5% to 95% RH Net Weight: 3.25lbs
9"L X 6"W X 3.3"H

Power Options (10.4 watts max):
9-36Vdc, 18-75Vdc, 125Vdc/120Vac 50-60 Hz, 250Vdc/230Vac 50-60 Hz

SLIC, INCOM, Synchronous RS-422 (Option)
1 SLIC, 1 INCOM, 2 synchronous RS-422 ports

IntelliTEAM II™ (Option)
9-36 Volt power supply with short-case chassis for operation with S&C 5804 Controller

Additional Options:

Model 570E-16
16-DB-9F RS-232 connectors one port per connector

System Requirements for FiberPanel:
Microsoft® Windows 10/8/7, XP, Vista, WIN2k, NT4

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The Fiberoptic
Communications

Model 570E-16 Option

The model 570E-16 provides maximum flexibility for SCADA master/slave operation, paired point-to-point communication, connecting backup master stations, and grouping RTUs that communicate via a common protocol. The 570E-16 can also be supplied with other options including SLIC, INCOM, and synchronous RS-422.

Model 570E and 570E-16 Common Features

Ethernet Support

All 570E transceivers are equipped with two 10/100 Mbps ports compliant with the 802.3 Ethernet and 802.3u Fast Ethernet protocols. You can configure these transceivers to auto-negotiate 10BASE-T or 100BASE-TX operation in full or half-duplex modes. The 570E-8 configuration does not include the Ethernet interface if supplied with the IntelliTEAM short-case option.

RS-485 Interface

The RS-485 interface is included as standard on all 570 transceivers and is accessed via the *serial 3,* DB-9F connector.

Remote Monitoring Network Management Software

All H&L Instruments transceivers include the FiberPanel™ Network Management Software to implement the H&L Instruments fiberoptic network. The software is specifically designed to work with all H&L Instruments transceivers. FiberPanel monitors the fiber network, logs network events, issues alerts and alarms, generates reports, and aids with fast identification and correction of network issues.

Protocol Transparent

A 570-based network transparently carries all byte protocols, such as DNP, UCA, and MODBUS and can group RTUs with common protocols onto common virtual communication channels without resorting to hard-coded serial port assignments.

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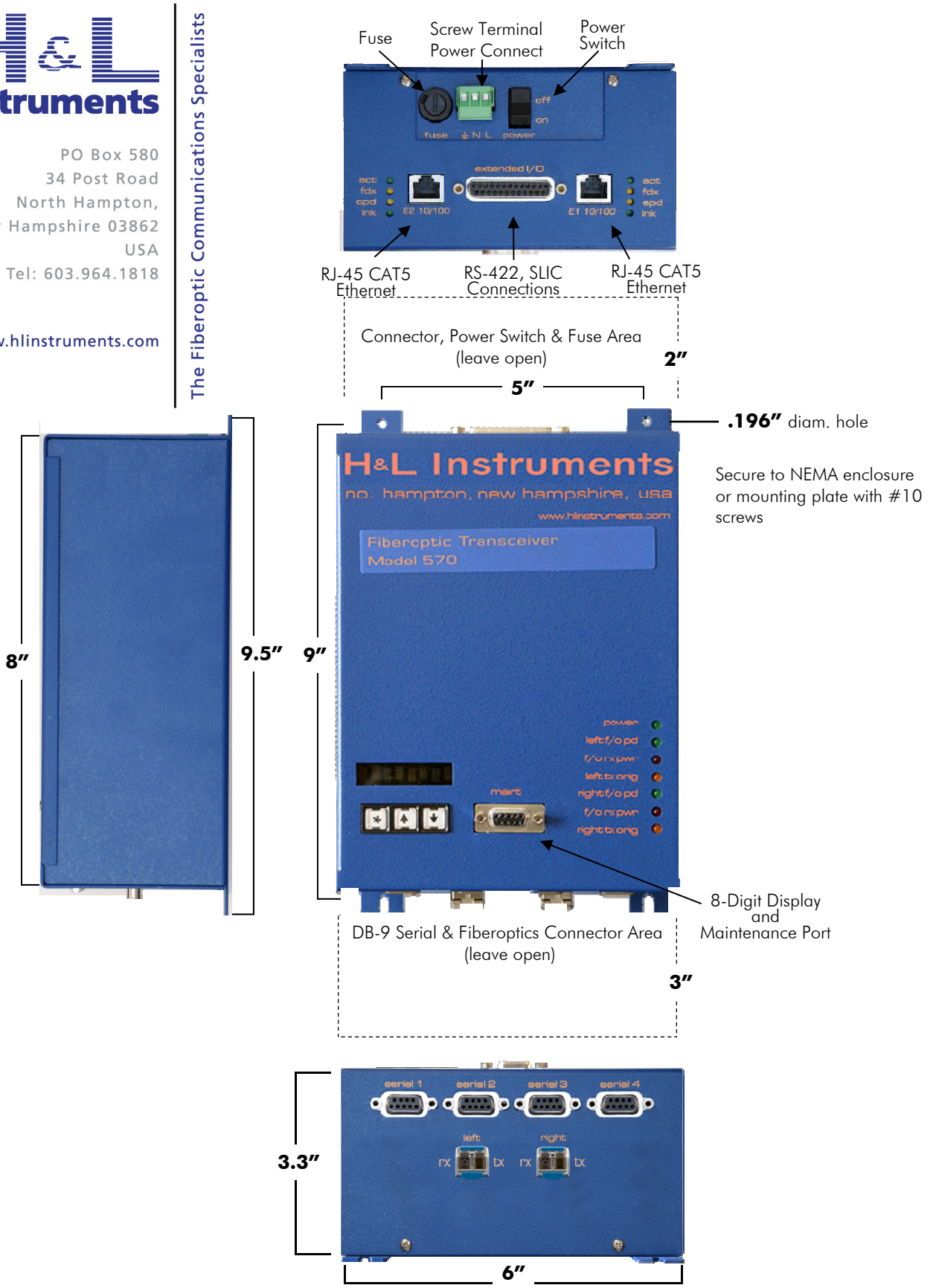

Model 570E/570E-8 Fiberoptic Transceiver Dimensions—Standard Case