570E-16 Fiberoptic Transceiver
Fiberoptic Network Solution

H&L instruments

The Fiberoptic Communications Specialists

The Model 570E-16 offers 16 high-speed serial ports to meet the challenging needs of distribution automation, secondary networks, corporate LAN, Ethernet to SCADA master, substation networks and protection relay systems.

Model 570E-16 Features

- **Up to 126 high-speed virtual channels**
- **16 high-speed serial ports**
- **SLIC, INCOM, RS-422/Ardax (options)**
- **Transceiver and controller features available in a single, powerful 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**
- **Supports point-to-point communication**
- **Includes wo 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**
- **Includes FiberPanel™ integrated network management software**

Overview
An H&L Instruments fiberoptic network includes the hardware and software you need to deliver the highest customer service and the most reliable monitoring and control. The Model 570E-16 fiberoptic transceiver combines the capabilities of a transceiver and a controller in a single unit. This means you can perform SCADA master, slave, and point-to-point communications within the same device, making it a highly flexible solution.

Multiple Network Channels
The Model 570E-16 transceiver offers 126 high-speed, independent virtual network communication channels. You can assign a transceiver serial port to any virtual channel, which allows you to group Remote Terminal Units (RTUs) with common protocols, segregate different applications, allocate network bandwidth, and connect backup master stations. The 570E-based network supports multiple RTUs, Intelligent Electronic Devices (IEDs), and Programmable Logic Controllers (PLCs).

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

Self-healing
Model 570E-16 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 if a break in the fiber network occurs.

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 570E transceiver enables it to act as a SCADA master channel on some ports, while simultaneously acting as a slave channel on other ports. The networks can consist of many SCADA master stations in multiple locations, which work optimally if operations are combined for water, electric, and gas utilities.

Paired Point-to-Point
The 570-based network supports pairing any transceiver 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 option E
The Model 570E-16 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 dual LC-style SFP fiberoptic interface offers many options for fiber network configuration. The SFP plug-and-play technology offers optimum flexibility for provisioning your fiber network, reduces transceiver spares inventory requirements, and simplifies maintenance and repair; it was introduced in an Engineering Change Notice in January 2019.

Model 570E-16

Remote Monitoring with FiberPanel Network Software

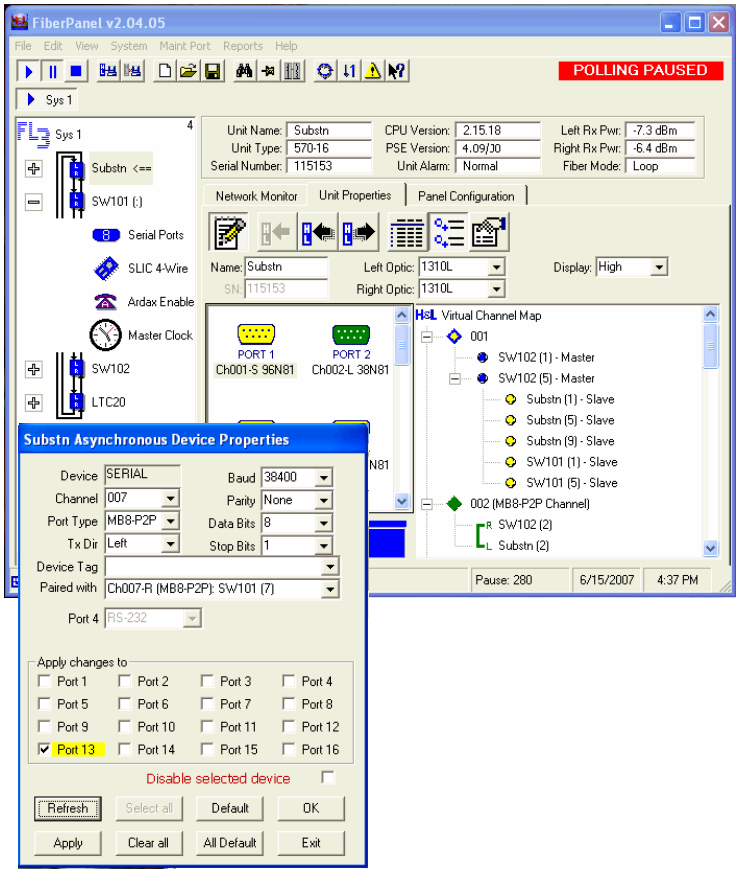
Differentiating itself from competitors, H&L also includes the FiberPanel™ Network Management Software with every system. FiberPanel is specifically designed to work with the model 570E and 570E-16 transceivers. It permits configuring and viewing the system with a graphical, easy-to-use interface that accesses real-time information about transceiver and network conditions.

The software also supports remote connections to the fiberoptic network via a standard modem or through TCP/IP connectivity. You can monitor and configure the 570-based system via your Intranet or the Internet. 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. The complete H&L Instruments fiberoptic solution helps you proactively maintain control over your network and streamline your maintenance tasks.

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

* View a System Map of your entire set-up.
* Check fibers, locations, unit names, and serial numbers.
* Assign unit names and location tags.
* Configure each transceiver on the network.
* Allocate channels and decide 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 showing mis-wired fibers, telemetry of transceiver voltages and temperatures, and identify malfunctioning units.



Model 570E-16 Specifications

Model 570E-16:
16-DB-9F RS-232 serial ports, one port per connector

SLIC, INCOM, RS-422 (options):
1 SLIC, 1 INCOM, 2 RS-422/Ardax ports

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

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

Virtual Channels:
Model 570s support 126 virtual channels. Any port can be assigned to any channel. Point-to-Point channels available.

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

Power Options (10.4 watts max):
12Vdc, 24Vdc, 48Vdc, 125Vdc/120Vac 50-60 Hz, 250Vdc/230Vac 50-60 Hz

Push-to-Talk:
Form 1A (N.O.) opto-isolated solid-state relay; PTT contacts on pins 1 & 9 of DB-9 Serial 3 (option)

Environmental/Mechanical Specs:
Operating Temperature: -40°C to +85°C
5% to 95% RH
Net Weight: 3.25lbs
9.5"L X 12"W X 3.3"H

Fiberoptic Connectors:
Modular SFP with dual LC connectors

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

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

Optical Receiver Sensitivity:
> -28dBm

Optical Budget:
20dB singlemode

System Requirements for FiberPanel:
Microsoft® Windows 10, Windows 7, Windows XP, Windows 2000, Windows NT4

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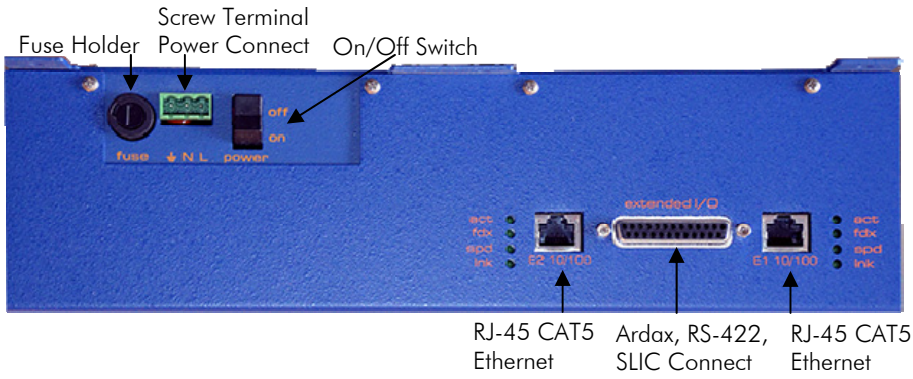

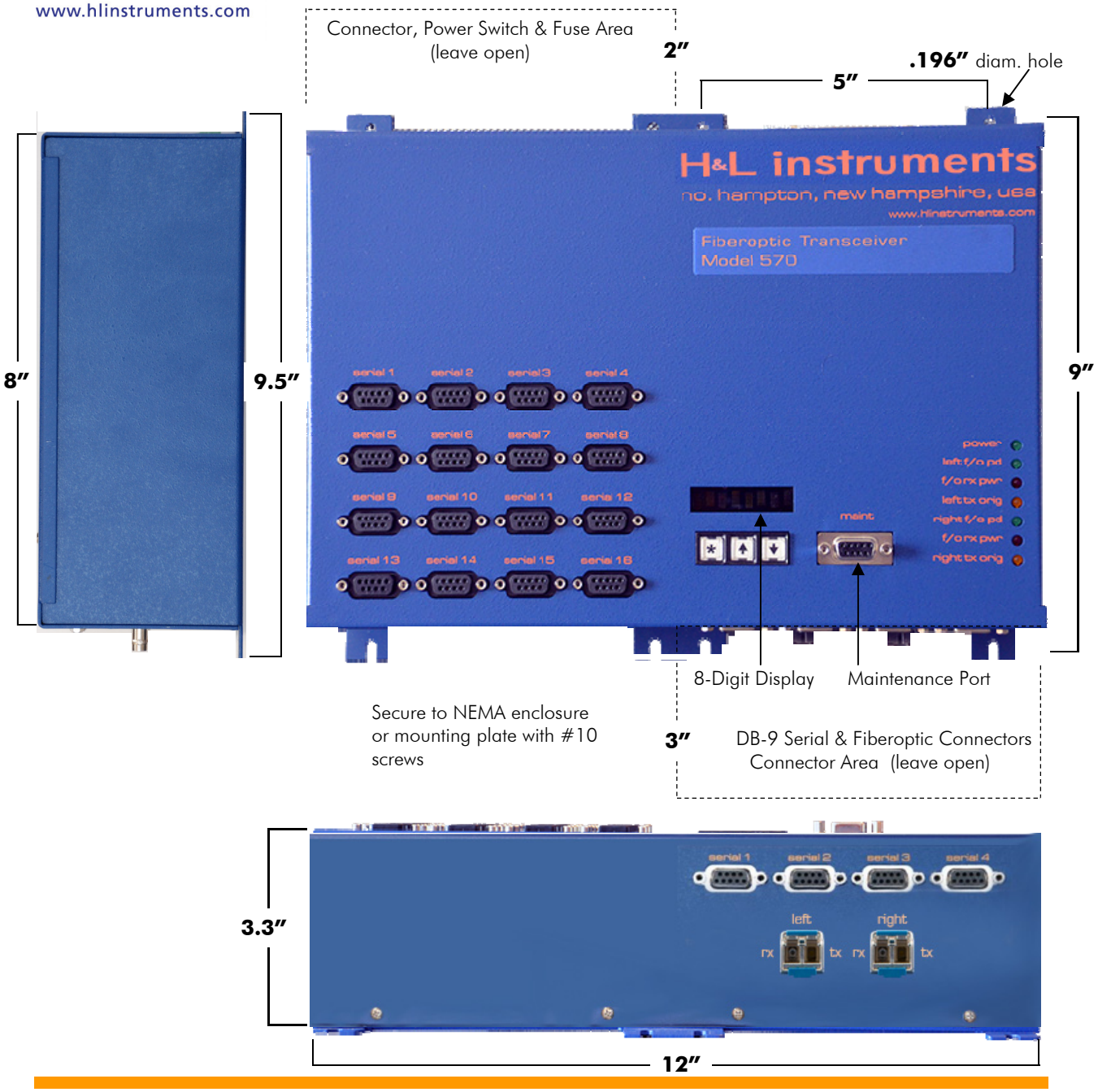

Model 570E-16 Fiberoptic Transceiver Dimensions

9200-5103 08/01/07/2020