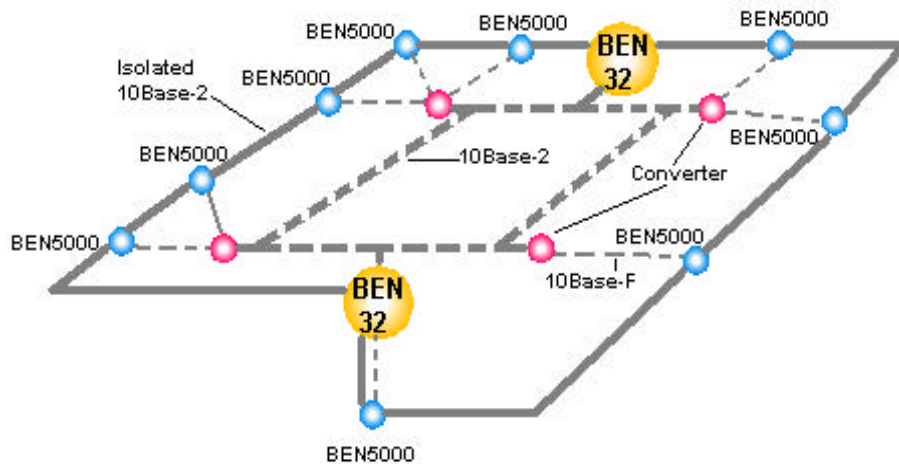


Ethernet connection for the BEN5000

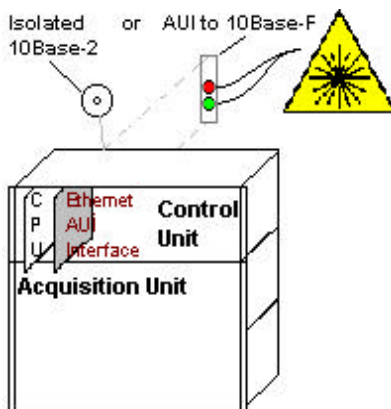
(by B. Trémérie)

Purpose: LAN or WAN your BEN5000



Physical architecture:

The Ethernet interface is made of a 3U-controller card sled into the CPU rack. The controller acts as an AUI communication port. The link to the outside network is made through a fully isolated 10Base-2 (BNC) interface. The BEN may also support optical 10Base-F link through a FOIRL connection (ST connectors for 62.5/125µ Multimode fibers).



The Ethernet Controller (SENS 559) is powered out of the +5 VDC (± 100 mA) and communicates with the CPU through the system backplane.

At the time of system configuration, the Ben receives a unique IP (*Internet Protocol*) logical address (e.g.: 192.9.200.10) by means of BENCFG.

Several BEN DFR's can be daisy chained to the Master Station(s) running the BEN 32 software. The Ethernet network may also be used for other purposes.

The 10Base-F Ethernet is a point-to-point connection.

Several Ben recorders may be connected through a star shaped network using the optical connections. A daisy-chain like network can be developed using

10Base-F to 10Base-2 converters.

The communication is controlled based on the following ISO/OSI structure:

Application & Services:	BEN32 and Windows (<i>PC side</i>), Ben Firmware and OS9 (<i>Ben side</i>)
Transport:	TCP (<i>Transmission Control Protocol</i>)
Network:	IP (<i>Internet Protocol</i>)
Datalink:	IEEE 802.3
Physical:	Isolated 10Base-2 (BNC) or optional FOIRL (10Base-F)

Characteristics:

The Ethernet controller handles a 10 Mbits/s connection allowing record transfer rates up to 40 kbytes/s (*when reading records from memory and using the SENS 557 CPU*).

The Ethernet controller requires:

- one slot in the Control Unit processor rack
(*not available on BEN500C*)
- BEN32 Software version V1.4
- BEN5000 Firmware version V2.5
- Multi-I/O (SENS558)
- CPU (SENS 557)

The compression algorithm available for the serial communication through slower media is not available under the Ethernet connection as the compression overhead time would be detrimental to the overall communication speed. All other functionalities, such as AutoCall, AutoPoll, change of settings and parameters through BEN32 or BENCFG are possible through the Ethernet interface (*A restriction may apply to the initial setting of the IP address that can only be given through the serial port*).