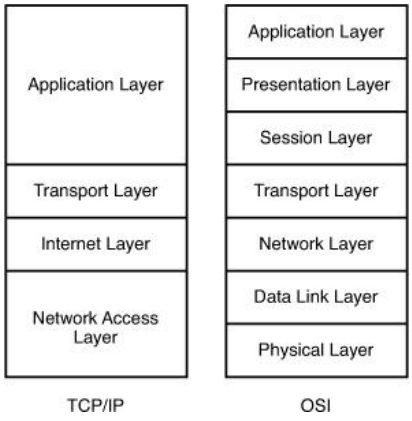
O44 - Ethernet TCP-IP

Communication interface
for automated systems

DESCRIPTION

Ethernet is a family of standardised technologies for local networks that defines the technical specifications at the physical level (connectors, cables, transmission type, etc.) and at the MAC level of the ISO/OSI network architectural model.



More generally, it is used in local area networks (LAN), metropolitan networks (MAN) and geographical networks (WAN).

It was marketed in 1980 and initially standardized in 1983 as IEEE 802.3 and has since maintained a good dose of backward compatibility and has been refined to support higher bit rates and longer connection distances.

Over time, Ethernet has largely replaced competing wired LAN technologies such as Token Ring, FDDI and ARCnet.

The Internet protocol is commonly transmitted over Ethernet and is therefore considered one of the key technologies that make up the Internet.

As with the OSI model, Ethernet provides services up to and including the data link layer.

CRC algorithms are provided for error checking so that damaged frames can be detected and discarded. Superior protocols enable retransmission of lost frames to recover packet integrity.

At the application level, parameters such as IP, Gateway, Subnet mask and TCP port can be set in a static way or it uses a DHCP address provided dynamically.

Systems that communicate over Ethernet divide a data stream into shorter pieces called frames, which include not only the data but also the source and destination addresses so that each transmission is tracked.

The Ethernet frame is used as a transport packet in which the complete message that can be sent or received by the ForTest test units is encapsulated.

The encapsulated weft inside the frame can be the one described in the ForTest communication protocol or the one described in the Modbus RTU. Together with the interface, protocol document, configuration and testing tools are provided.

Two modes are available depending on the paradigm used:

- MASTER / SLAVE: the instrument is slave with respect to a master controller and the requests are regulated by the master according to whether a complete plot is received or if not, there has been a timeout event.
- MASTERLESS: the tool sends an asynchronous plot to the connected TCP socket each time a test run is completed. In this way, the master does not have to adjust the communication but simply waits for frames.

Together with the device mounted directly on the instrument, protocol documents and diagnostic and configuration tools are provided available at the following address:

http://downloads.fortest-leak-testing.it

TECHNICAL CODE

The field defining the Ethernet option is located in position 44 of the technical code.