Network Communication Module

With a Model 4329 Network Communication Module (NCM) installed, the Tricon can communicate with other Tricons and with external hosts over Ethernet (802.3) networks. The NCM supports a number of Triconex proprietary protocols and applications as well as user-written applications, including those that use TSAA protocol.

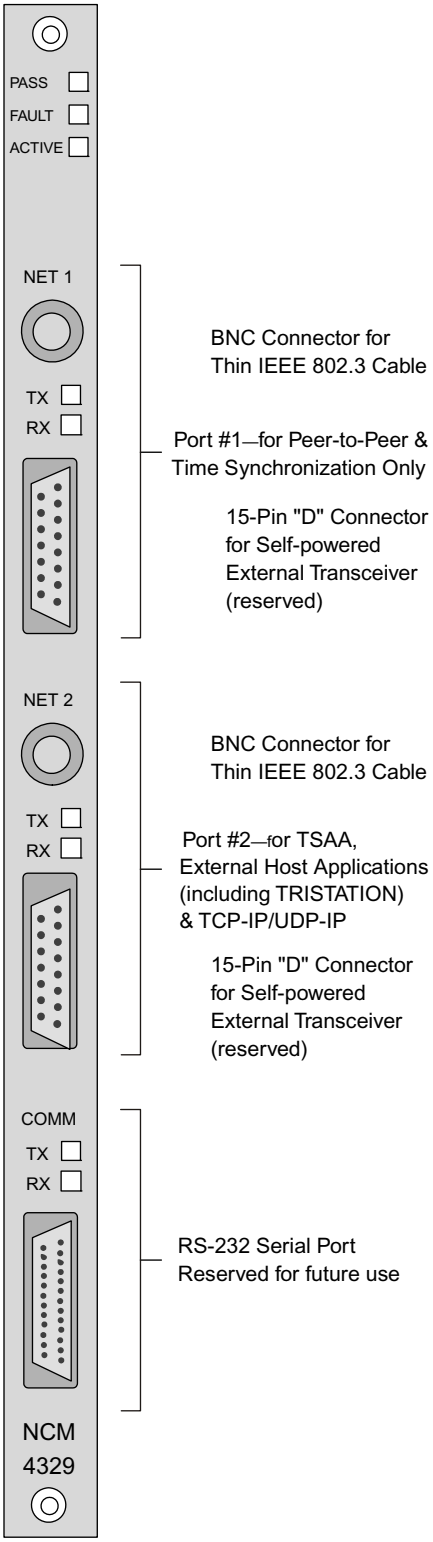
The NCMG module has the same functionality as the NCM, as well as the ability to synchronize time based on a GPS system. For more information, see the *Communication Guide for Tricon Systems*.

The NCM provides two BNC connectors as ports: NET 1 supports Peer-to-Peer and Time Synchronization protocols for safety networks comprised of Tricons only. NET 2 supports open networking to external systems using Triconex applications such as TriStation 1131, SOE, OPC Server, and DDE Server or user-written applications. See "Communication Capabilities" on page 61 for more information about Triconex protocols and applications.

Two NCMs can reside in one logical slot of the Tricon chassis, but they function independently, not as hot- spare modules. External hosts can read or write data only to Tricon variables to which Alias numbers have been assigned. (See "Enhanced Intelligent Communication Module" on page 29 for more information about Aliases.)

The NCM is compatible with Ethernet (IEEE 802.3 electrical interface) and operates at 10 megabits per second. The NCM connects with external host computers by means of coaxial cable (RG58) at typical distances up to 607 feet (185 meters). Distances up to 2.5 miles (4,000 meters) are possible using repeaters and standard (thick-net or fiber-optic) cabling.

The Main Processors typically refresh data on the NCM once per scan.



NCM Specifications

Model Number	4329, 4329G
Ethernet (802.3) ports	2, BNC connectors, RG58 50-ohm thin cable
External Transceiver Ports	2, 15-pin D-connectors
Serial port	1, RS-232 compatible
Port Isolation	500 VDC
Protocol	TSAA (TCP(UDP)/IP/802.3)
Functions supported	TRICON_DATA (Frame Type 1) TRICON_DATA_REQ (Frame Type 2) WRITE_TRICON_DATA (Frame Type 3) WRITE_TRICON_DATA_RSP (Frame Type 4) READ_TRICON_CLOCK (Frame Type 5) READ_TRICON_CLOCK_RSP (Frame Type 6) SET_TRICON_CLOCK (Frame Type 7) SET_TRICON_CLOCK_RSP (Frame Type 8) READ_TRICON_DATA (Frame Type 11) READ_TRICON_RSP (Frame Type 12)
Communication speed	10 megabits per second (for Ethernet ports)
Status indicators	PASS, FAULT, ACTIVE TX (Transmit) — 1 per port RX (Receive) — 1 per port