High Capacity Net2 Network Card

Product Overview

The **Pertronic F220 High Capacity Net2 Network Card (NET2CARD)** is the central building block for the Pertronic Net2 Network System.

A Net2 Network Card may be configured to interface one of the following devices to a Pertronic Net2 Network.

- F220 fire alarm control panel (FACP)
- Modbus master device
- FireMap work-station

Each Net2 Network Card provides a Network Peripheral Bus for communicating with Net2 peripherals, including up to eight Net2 NCUs or Net2 Mini-Mimics.

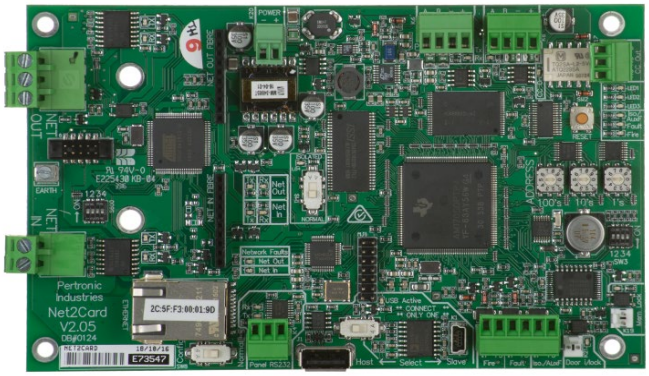
Modbus

When configured as a Modbus interface, the Net2 Network Card provides a supervised bi-directional interface between a Net2 Network System and a Modbus master device such as a building management system.

The network card provides 3,000 Boolean Nodal Mapping Objects (NMO). NMOs may be configured as Modbus coils, discrete inputs, holding registers, or input registers. (A Modbus register can hold up to 16 NMOs). Any F220 fire panel object or event within the Net2 Network may be mapped to any NMO.

Pertronic FireMap® Interface

When configured as a FireMap interface, the Net2 Network Card interfaces the entire Net2 Network with a FireMap workstation, over a TCP/IP Ethernet connection.



Pertronic F220 High Capacity Net2 Network Card

Architecture

The Net2 Network Card connects with the Net2 Ring Circuit via two bi-directional ports: **Net In** and **Net Out**. The standard ports are electrically-isolated half-duplex RS-485 connections. The ports may be configured as single-mode or multi-mode fibre-optic ports by installing Pertronic Net2 Fibre-Optic Converter (FIBNET) modules.

Please refer to the “Net2 Network” datasheet for more information about the Pertronic Net2 Network.

Features

- Up to 133 Net2 Network Cards may be connected in a single Net2 Network System
- Interfaces an F220 fire panel, Modbus device, or FireMap workstation to the Net2 Network
- Two half-duplex RS-485 network ports (Net In, Net Out) with built-in terminating resistors
- Optional dual fibre-optic full-duplex network ports (single-mode or multi-mode versions)
- Isolates any faulty ring segment
- Bi-directional Modbus interface provides:
  - 3,000 Boolean Nodal Mapping Objects (NMOs)
  - Ability to map up to 8 timers from any panels on the network to Modbus registers. (Multiple timers may be mapped to a single register. The total number of mapped timers must not exceed 8.)
  - Mappable I/O watchdog
- Three rotary switches for configuring the network node address
- Communicates with an F220 fire panel via the F220 Internal High-Speed RS-485 Bus
- The Net2Card’s Network Peripheral Bus provides an RS-485 data circuit and a 24 Vdc power circuit.
  - Bus data circuit communicates with up to 8 Net2 NCUs or Net2 mini-mimics
  - Bus power circuit powers 1 or 2 Net2 NCUs or Net2 mini-mimics, depending on brightness settings
  - Additional Net2 NCUs or Net2 mini-mimics require suitable power supplies (for example, the main power supply of a fire indicator panel).
- On-board clock with super-capacitor backup power maintains system time for at least 24 hours without system power
- Automatically creates a complete configuration backup of all network card and networked panels whenever a USB stick is plugged in
- Earth fault detection on the Net Out port
- USB host port
- RJ45 10/100 Ethernet port for FireMap or Modbus

Specifications

Network Connections: Fibre-Optic	ST or SC	Ethernet Connection	RJ45 10/100
Network Connections: RS-485	Screw Terminals	Ethernet/Modbus Data Rate	100 Mb/s (max.)
Network Data Rate (Copper & Fibre)	230.4 kbit/s	Modbus Protocol	Modbus/TCP
Network Peripheral Bus Data Rate (RS-485)	115.2 kbit/s	Modbus Objects	Any combination of coils, discrete inputs, holding registers, and input registers, up to a total of 3000 bits (each register can hold up to 16 NMOs)
Supply Voltage	18 to 30 Vdc		
Standby Current, excl. Peripheral Bus	45 mA		
Operating Current (2 Copper Ports)	75 mA		
Operating Current (1 Copper, 1 Fibre)	90 mA		
Operating Current (2 Fibre Ports)	105 mA	Nodal Mapping Objects (Boolean)	3000
		Modbus/FireMap IP Address	Configurable
Peripheral Bus Current Capacity	175 mA (max.)	IP Port	Configurable
Dimensions (W x H x D)	167 x 101 x 23 mm	Weight	124 g
Operating Temperature	-10 °C to +50 °C	Relative Humidity	≤ 95 % non-condensing

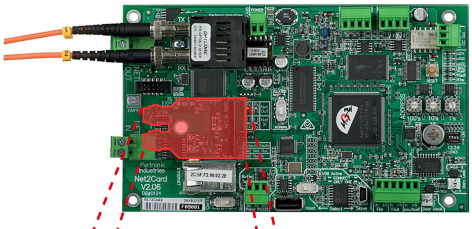
Configuration Options for Network Ports

The Net2 Network Card connects with the Net2 Ring Circuit via two bi-directional ports: Net In and Net Out.

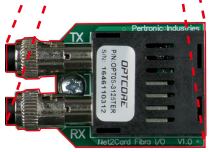
Data arriving at either port is regenerated and transmitted from the other port. The standard ports are electrically-isolated half-duplex RS-485 connections with built-in terminating resistors.

The ports may be configured as single-mode or multi-mode fibre-optic ports by installing Net2 Fibre-Optic (FIBNET) converters.

The FIBNET converter may be fitted to either or both of the Network Ports (Net In, Net Out). The converter plugs in to a connector on the port and is retained by a mounting screw and stand-off.



NET2CARD



FIBNET fibre-optic converter module

Examples:

Net In, Net Out Copper

Net In, Net Out Fibre-Optic

Net In Copper Net Out Fibre-Optic

Please refer to the "Net2 Fibre-Optic Converter" datasheet for full details of the fibre-optic converter modules.

Ordering Information

Product Code	Description
NET2CARD	Net2 Network Card
FIBNET-MMF	Multi-mode Fibre Converter for NET2CARD (2 km), ST Connector
FIBNET-MMF-SC	Multi-mode Fibre Converter for NET2CARD (2 km), SC Connector
FIBNET-SMF	Single-mode Fibre Converter for NET2CARD (20 km), ST Connector
FIBNET-SMF-SC	Single-mode Fibre Converter for NET2CARD (20 km), SC Connector

1. To satisfy Australian regulatory requirements, the network card should be co-located with an AS 7240.4-compliant power supply.
2. On Net2 Network Cards configured as Pertronic FireMap® or Modbus interfaces, the Network Peripheral Bus can not be used.
3. Please refer to the "Net2 Network" and "Net2 Fibre-Optic Converter" datasheets for more information about the Pertronic Net2 System.