

ECM Product Familiarization

The Ethernet Communication Module is a Square D Product that is manufactured by NR&D. This module looks similar to the NR&D PEN module, **but it is not**. The PEN module has different connectors and the behavior of the module is different.

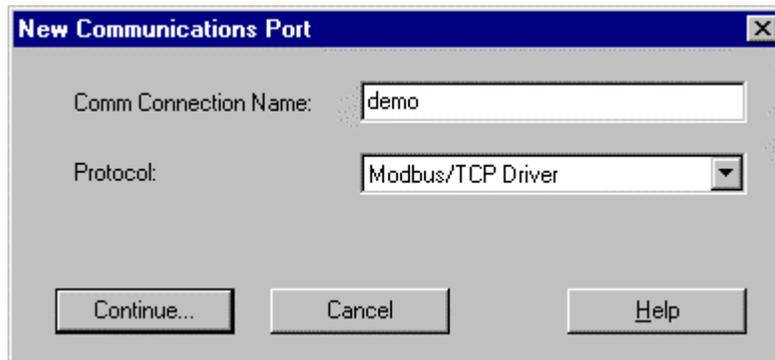
The ECM allows any master device to communicate to a daisy chain of Modbus/Symax/JBUS devices, using Modbus/TCP. Modbus/TCP is an implementation of Modbus that communicates over a standard Ethernet network connection. Square D is currently supporting the SMS3000 with the Modbus/TCP driver installed and the NOE 211 00 in a Quantum PLC. Other master devices have not been tested and verified.

The Modbus/TCP driver for the SMS3000 family of software is a no-charge upgrade. This upgrade is called **Service Update 4**. It is available on the PowerLogic web site. The upgrade allows SMS to communicate to any slave device that supports Modbus/TCP currently the only two hardware products that have been tested and verified are the ECM module and the NOE 211 00 in a Quantum PLC.

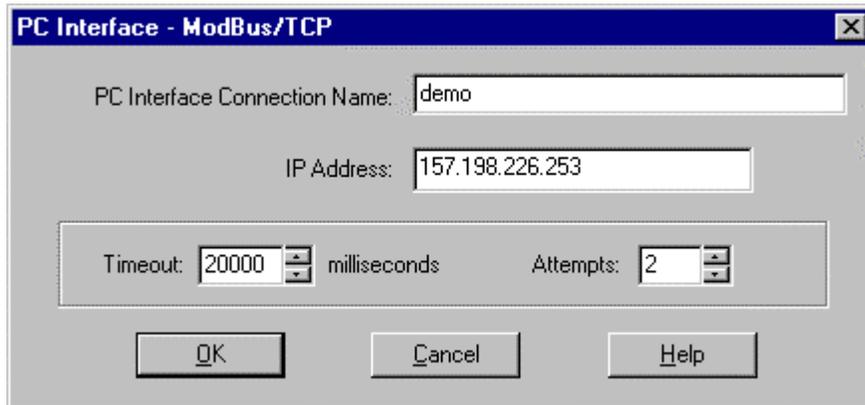
Note: The ECM is a product designed for the U.S. and Canadian Market only. It has UL listing but **no CE** or **NOM**

Using Modbus/TCP with SMS

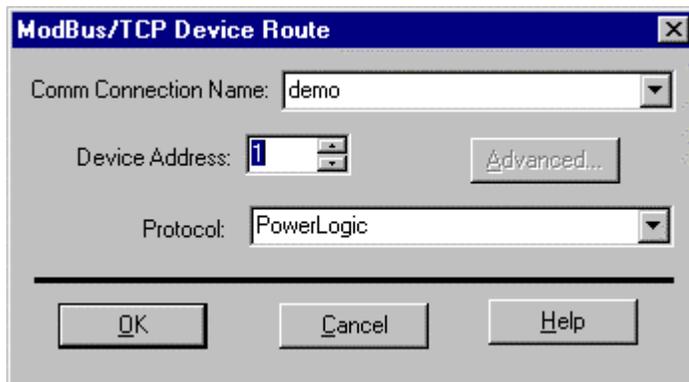
After installing Service Update 4, which requires Service Updates 1a & 2. The Modbus/TCP Driver will be available.



The only configuration required for a Modbus/TCP PC Interface is to define which TCP/IP address the Modbus/TCP device is using.



When adding a Modbus/TCP device the dialogue box is almost the same as adding a device that is connected to an Ethernet Gateway.



Note: An ECM only supports devices with addresses from 1-32.

ECM Hardware

The ECM has only one required parameter that must be set by the user before the ECM can be used. The ECM must have a unique IP Address assigned to it. The two methods of assigning an IP address are to write the values to a CM2000 that is connected to the ECM as device 1; or to use the ECM configuration tool and to write the IP address from a PC.

Example: If the IP address 157.198.226.253 is wanted, the following values must be written into the Circuit Monitor registers.

Register	Value(decimal)
6995	0
6996	157
6997	198
6998	226
6999	253

After these values are stored in the circuit monitor the reset button on the side of the ECM is pressed.

The ECM will automatically detect the baud rate, parity and communication protocol used by the slave devices. (i.e. the ECM detects whether each device is communicating with Symax or Modbus protocol.)

Troubleshooting

1. Ping the IP address and verify that it is an ECM responding.
2. Use telnet to communicate to the ECM and verify that the ECM is detecting the correct devices.

```
Telnet - 157.198.224.136
Connect Edit Terminal Help
SQUARE D COMPANY 9:57
POWERLOGIC ETHERNET COMMUNICATIONS MODULE
Developed by Niobrara Research and Development Corporation
Module ID: ECM2000 13JAN99      MAC Address: 0020-BD06-8FB4
Modbus/TCP Protocol is listening on TCP Port 502

0 active connections out of 16
Serial port is at: 19200 even

P=POWERLOGIC Device
M=Modbus Device
12345678
P
```

3. The NOE module can act as a slave and master on modbus/TCP at the same time. (i.e SMS can read values from the NOE at the same time as the NOE is reading and writing values from other Modbus/TCP devices, ECM or another NOE).
4. All devices on one ECM must have the same baud rate & parity.
5. Modbus/TCP error codes are in the 5xx series.