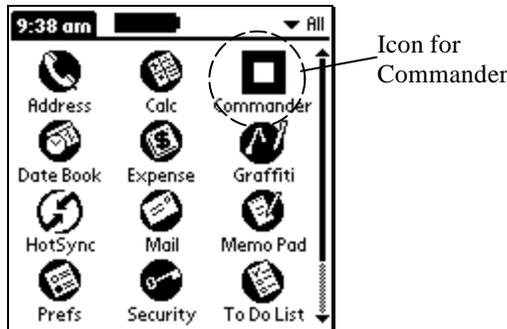




ETI MNPR[®] Commander

Welcome to ETI MNPR[®] Commander. Commander is a portable, self-contained, ETI MNPR[®] programmer and analyzer. It offers several different screens of data that are crucial to ETI relay operation. To open the program, find the Commander program icon on the main menu of the PDA on which the software was installed.



The location of this Icon will change depending upon what other programs you have installed on your PDA. The following sections of this document explain each part of the program and how to use it.

Access Code

After tapping the Commander icon you will be asked to enter an Access Code. Press “Enter” for level 0 or enter the level 1 access code and then press “Enter”. As a security feature, whenever the PDA is turned off or goes to sleep with Commander running, this screen will be displayed when the unit is turned back on.



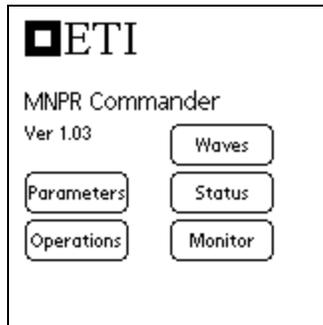
Start Up

After pressing Enter on the Access Code screen the Start Up menu of the approved access level for Commander appears. This Screen’s only function is to serve as a gateway to the other parts of the program.



Level 0

At level 0 there are five (5) buttons on the screen that take you to other areas of the program.



Parameters: This button takes you to a screen that reads and displays the operational parameters of the relay. These parameters can be changed and downloaded to the relay.

Operations: Allows the user to manually trip the relay, block it from closing, and unblock it from closing.

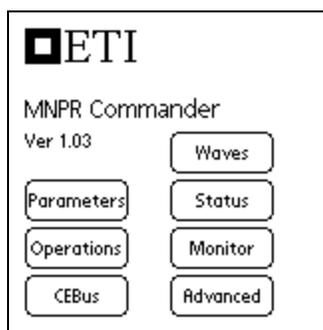
Monitor: Allows the user to view the network voltage, differential voltage, and relay current of all three phases. Also displays the temperature inside the relay can.

Status: The Status Screen displays a series of check boxes that inform the user of the current operating status of the relay.

Waves: This button takes you to a screen that allows the uploading and viewing of relay waveforms. A series of check boxes control what is uploaded and displayed.

Level 1

At level 1 two additional buttons are displayed.



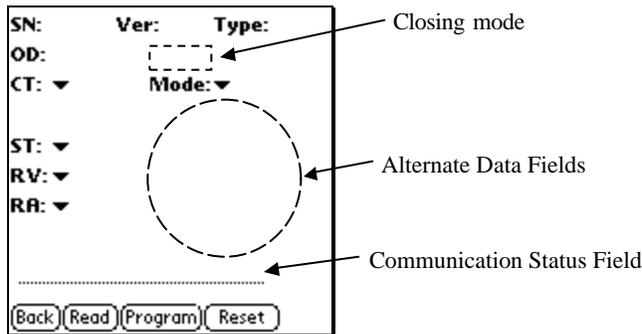
CEBus: This button takes you to a screen that allows the setting, reading and programming of the relay's communication address.

Advanced: This button takes you to a screen of advanced features. The available advanced features are different for level 1



Parameters

The Parameters screen has several fields that display data about the relay as well as several buttons that read or program the various settings of the relay.



Screen shot of the Operating Parameters before a relay is read



Screen shot after a relay is read. Notice the message in the Communication Status Field, the appearance of extra options in the Alternate Data Field, and the appearance of AUTO in Closing Mode

Each item is described below.

Serial #: This field displays the serial number of the relay.

Version: This field displays the software version of the relay.

OD: This is the relay odometer. It displays the number times the relay has tripped and closed.

Type: This field displays the type of relay (General Electric or Westinghouse). It cannot be edited by the user. It is set only after a relay has been read.

CT: Displays/enters the CT Ratio for the relay.

PC: Displays/enters the Phase Compensation for GE relays only, only if “Special CT” has been selected from the Options menu.

RV: Displays/enters the Reclose Volts of the relay. This parameter is settable from 0.0 to 9.9 volts in 0.1 volt increments.

RA: Displays/enters the Reclose Angle of the relay. This parameter is settable from -25 to +10 degrees in 1 degree increments.

ST: Displays/enters the Sensitive Trip current setting. This parameter is settable from 1.0 to 100.0 mA in 0.1 mA increments, and 100mA to 1000mA in 1mA increments.

Closing mode: The display will be either “AUTO” or “BLOCKED” after a Read command. AUTO means the relay will trip or close in accordance with the settings programmed into the relay. BLOCKED means that the relay is blocked from closing.

Mode: Displays/enters the trip method that the relay is set for. Options are Sensitive, Time Delay, Insensitive, and Watt Var.



Alternate Data Field: This area of the screen is used to display other data related to the mode. Labels appear that describe the setting. Items that can appear in this window include:

IC:	Instantaneous Current Setting	0.0 to 10.0 amps in 0.1 amp increments
TD:	Time Delay Setting	0 to 2000 seconds in 10 second increments
XD:	Extended Delay Setting	0 to 255 seconds in 1 second increments
IT:	Insensitive Trip Setting	0.0 to 10.0 amps in 0.1 amp increments
WC:	Watt-Var Current Setting	0.0 to 10.0 amps in 0.1 amp increments
WA:	Watt-Var Angle Settings	-90 to +90 Degrees in 5 degree increments

Note: To scroll through a long list of values quickly, the up and down scroll hardware keys on the PDA may be pressed and held.

Communication Status Field: This line is where messages appear that allow the user to follow the success and failure of the communications with the relay. It tells the user when data is received, if there was an error, and when the PDA is trying to connect with the relay.

Read: This button retrieves the data from the relay and displays it in the appropriate field. If an error occurs an error message will appear in the Communication Status Field.

Program: This button programs the reclose voltage, reclose angle, sensitive trip current, mode and any parameters associated with the mode. In order to program these parameters you must first read the relay or load the data from a profile. Two default profiles are available, one (1) GE and one (1) Westinghouse. These profiles are located in the menu bar. Tap the menu icon on the PDA to make them appear.

Reset: After a relay has been read, pressing the Reset button will set all of the parameters to their default settings. The correct profile will be automatically selected based on the relay's type and version number.

Back: This button takes the user back to the start up menu.



Parameters Screen Menu Options

If the menu button is tapped while in the Parameters screen, four pull down menus are available at the top of the screen:

Profiles: **Load Profile** allows the user to Load and Save relay profiles, or to view stored profiles. See the next section of this document for more information.

Options: There are currently three available options in this menu:

Toggle XD enables the reading and programming of the extended delay parameter. If this option is selected the XD parameter will appear at the appropriate time in the extra parameter window. The extended delay parameter will automatically be displayed with version 3 relays.

Toggle debug enables an extra set of messages in the Communication Status Field. Using this option gives the user a more detailed look at what Commander is doing.

Special CT allows the entry of special CT ratings and/or Phase compensation angles.

Units: This menu allows the user to work in percent, relay units or protector units for all parameters.

Help: This gives access to program information and a help menu that explains the basic parameters.

The following screen shots show the menu layout:



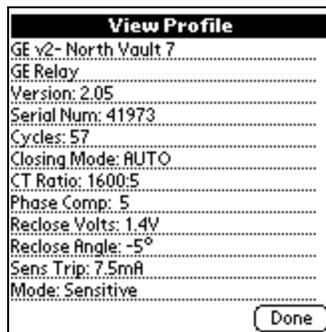
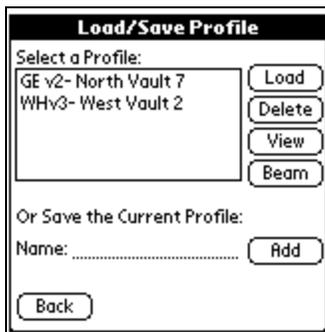


Profiles Screen

Selecting “Load Profile” from the Profile menu brings up the screen shown below. A listing of stored profiles is displayed with the relay type and version followed by the user given name for each profile. Stored profiles can be selected by tapping on the list and then a function button to the right can be pressed. The Load button will cause the Parameters screen to reappear with the data stored in the profile selected. It is required that a relay of the same type (GE or Westinghouse) and version have been read in the Parameters page before opening the Profiles screen to ensure the selected profile is compatible with the selected relay. If there was no relay read, the profile will be displayed, but you will not be able to program a relay with it until a relay is read. If a relay has been read and it is not a compatible version, an error message will appear. Relay Profiles can also be deleted from the list, or the parameters stored can be viewed. The View button will open another screen with all the parameters printed out without changing any values in the parameters screen.

The relay profile currently displayed in the Parameters screen can be stored as a Profile by entering a short profile description in the “Name” field and tapping the Add button. The new profile will be displayed in the list.

Profiles can also be transferred from PDA to PDA with the Beam feature. It is important for each PDA to be loaded with the same version of Commander. Selecting a Profile from the list and tapping the Beam button will cause the PDA to start looking for a device to send the profile via the built in IR port. Point this port in the direction of another PDA’s IR port and the transfer will begin automatically. If the transfer was successful, the user of the receiving PDA will be prompted to accept the new Profile and it will be available in their Profile’s screen.



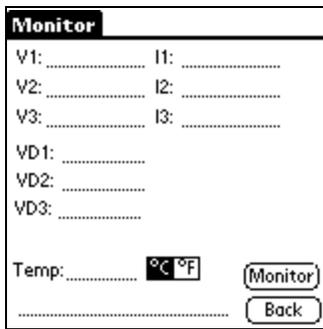


Monitor Screen

The Monitor Screen displays the network voltages (V1, V2, V3), differential voltages (VD1, VD2, VD3), and relay currents (I1, I2, I3) of all three phases as well as the temperature inside the relay. Once the Monitor button is pressed the label changes to “stop” and the back button disappears. The message “Mon rx’d” will begin to flash in the feedback field as the data is updated (about every two (2) seconds). This screen cannot be left until the “stop” button is pressed at which time the “Back” button will reappear. The Relay Temperature can be viewed in either Celsius or Fahrenheit by tapping on the boxes labeled “C” or “F”. The temperature selection boxes can be changed while the device is retrieving data from the relay.

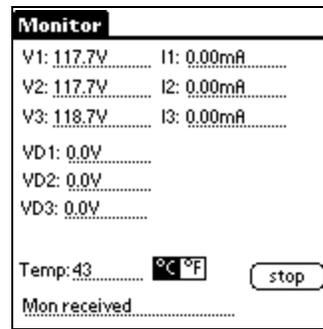
Note: Due to the way in which the Palm OS operates, pushing buttons or changing the temperature display while monitor is running will only be recognized while a message appears in the Communication Status Field. If the Stop Button is tapped it may take a few seconds before the PDA recognizes the command.

If the menu button is tapped while in the Monitor screen, a pull down menu is available at the top of the screen. The Units pull down menu allows the user to display data in relay units or protector units.



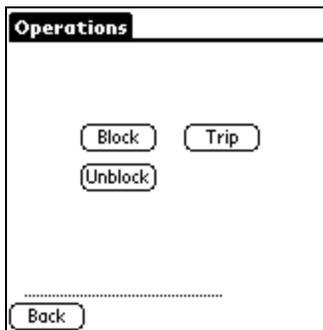
This screen shot is before the monitor button was pushed. Notice the back button is present.

After the Monitor button is depressed, the Back button disappears and the label on the Monitor button changes to stop. Note the message in the Communication Status field.



Operations Screen

The operations Screen provides buttons to Trip the relay, Block the relay from closing, and Unblock the relay from closing. After an operation is selected, a confirmation box appears and asks the user if they really want to exercise the current operation. Messages appear in the Communication Status Field to alert the user of failed attempts and successful attempts. The Back button returns the user to the start up menu.



Operations screen before an action is selected

Confirmation Box when Trip is selected.

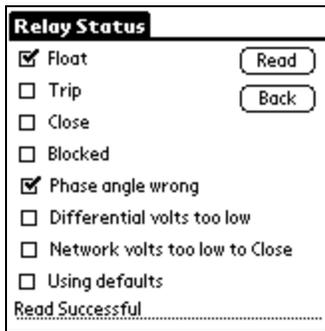




Status Screen

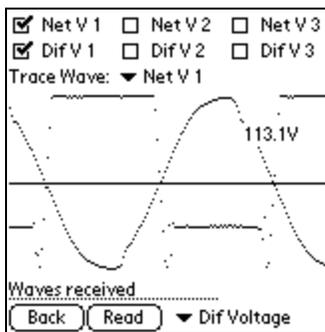
The Status Screen provides several check boxes that inform the user of the current state of the relay. If a Box is checked, then that statement is true about the relay. Tapping the Back button returns the program to the main screen. As on most of the screens, the Status Screen contains a Communication Status Field that informs the user of what the program is doing.

If the menu button is tapped while in the Parameters screen, a pull down menu is available at the top of the screen. The Toggle debug enables an extra set of messages that appear in the Communication Status Field. Using this option gives the user a more detailed look at what Commander is doing.



Waves Screen

The Waves Screen allows the user to load and display the network voltages (V1, V2, V3), differential voltages (VD1, VD2, VD3), and network protector currents (I1, I2, I3) of all three phases in graphical format. Check boxes and pull down list control what information is loaded and displayed. Tapping on a wave will displace the voltage or current at that point for the wave selected in the “Trace Wave” popup menu. Values will be displayed for a few seconds.



Back: This button takes the user back to the start up menu.

Read: Reads the waveforms from relay.



CEBus Screen (Level 1)

The CEBus Screen allows the user to set parameters relating to the communication configuration of the relay.

A screenshot of a terminal window titled "ETI CEBus Address". The window shows a status bar at the top with "Data rxd". Below this, there are two fields: "HC: 3" and "DC: 4". Underneath these fields are four buttons: "Read", "Clear", "Prog", and "Custom". At the bottom left of the window is a "Back" button.

- HC:** Displays/enters the House Code address for the relay.
- DC:** Displays/enters the Device Code address for the relay.
- Read:** Retrieves the communication addresses from the relay and displays it in the appropriate field.
- Program:** Programs the communication addresses into the relay.
- Clear:** Clears the communication addresses in the relay.
- Custom:** Allows the displaying and programming of custom logo strings.
- Back:** Returns to the start up menu.



Advanced Screen (Level 1)

The Advanced Screen allows the user to special features of the relay.

Level 1

At level 1 two parameters and two check boxes are available.

The screenshot shows a rectangular display area with a black border. At the top left, it displays "STD: 2" followed by a dotted line, and at the top right, "RTD: 5" followed by a dotted line. Below this, there are two check boxes: the first is unchecked and labeled "Diff volts too low", and the second is checked and labeled "Phase angle wrong". Underneath the check boxes, the text "Read successful" is displayed above a dotted line. At the bottom of the screen, there are three buttons labeled "Back", "Read", and "Prog" in a row.

STD: Displays/enters the Sensitive Trip Delay of the relay (0 to 255 cycles).

RTD: Displays/enters the Reclose Time Delay of the relay (0 to 255 cycles).

Two check boxes indicate the reason the relay is not calling for close.

? Differential volts to low

? Phase angle wrong

Back: Returns to the start up menu.

Read: Read and displays parameters.

Program: Programs parameters.



Troubleshooting

Problem: Whenever I try to perform a command I get 'Read Error--Try Again' in the Communication Status Field.

Explanation: This error message, and others that appear if Toggle debug is selected, is a result of broken communications between Commander and the MNPR®.

Try this: There are several possible solutions.

1. Check the battery inside the optical cable. If it is low or dead than no communications will occur. When the PDA is talking though the cable, the LED on the head will remain lit.
2. Check that the relay is powered up. If the MNPR® is powered then messages will scroll in the window located on the lower left corner of the relay's face.
3. Check the optical head of the cable. If the optics are not lined up correctly then communications will fail.
4. Check to be sure that the optical head is orientated correctly on the MNPR®.
5. Check the window covering the optics on the relay. If it is dirty, oily, scratched, chipped, or compromised in any way communications could be severed. Try wiping it off with a clean cloth. Any glass cleaner can also be applied to the window. Also check the optics in the head of the cable for similar problems.
6. Be sure the optical cable is firmly plugged into the PDA as well as the pressed completely onto the mounts on the MNPR®.

Problem: It seems like it takes a long time to read information from the relay.

Explanation: Just be patient and let Commander do its work. As long as error messages are not appearing things are operating normally.