



# Optimizer Host Program - User Guide

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### INTRODUCTION

Welcome to INCON’s Optimizer Host Program, a PC based data acquisition program that enables utilities to remotely, via phone modems and RS-485 networks, setup and interrogate INCON’s Optimizer Circuit Breaker Monitors installed within multiple substations.

The program facilitates quick and easy setup of individual Optimizer devices. These devices can be manually polled or setup to automatically poll at programmed intervals for breaker data. All breaker information and data is stored in a Microsoft® Access database.

INCON Power Reliability Systems products utilize innovative technology to provide on-line monitoring for hydroelectric plants, transformer load tap changers and power circuit breakers. The INCON PRS product line offers solutions to reduce maintenance costs, optimize equipment performance, and increase productivity.

### PURPOSE

The purpose of this document is to guide users through the program setup steps and then explain the program features so that you can begin using it with your INCON PRS products.

Please read these instructions and the on-screen instructions carefully to ensure best results.

## INCON SUPPORT

### INCON Technical Services

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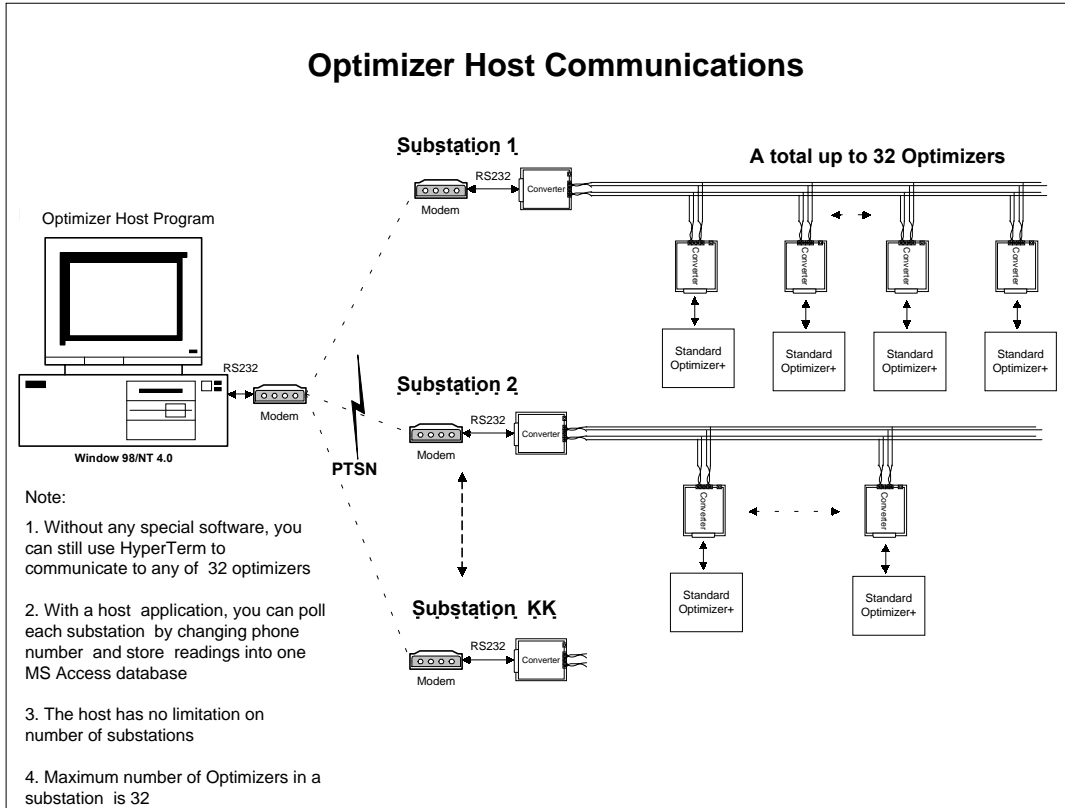
Office Hours: 8 a.m. to 5 p.m. – Eastern Standard Time (EST) – Monday through Friday

Visit our web site at: [www.intelcon.com](http://www.intelcon.com)

## SYSTEM REQUIREMENTS

- Window 98 / Window NT 4.0 SP3 and up
- Minimum disk space: 25 MB
- One free RS232 Port ( COM1 – COM 8 ) or
- 9600 kb Modem installed at port COM1 – COM8
- INCON SC-01 Smart Converters installed at substations
- INCON Optimizers installed at substations

## OPTIMIZER HOST COMMUNICATIONS DIAGRAM



## MAIN SCREEN

The “INCON Optimizer Host” main screen is displayed. Please take a moment to explore the pull-down menus, the “Substation and Devices:” list, the “Values:” display area, the “Status:” box and the “Error:” box.

### Substation

**And Devices:** lists the substation and device names

**Values:** displays the polling results

**Status:** displays the results of the last action

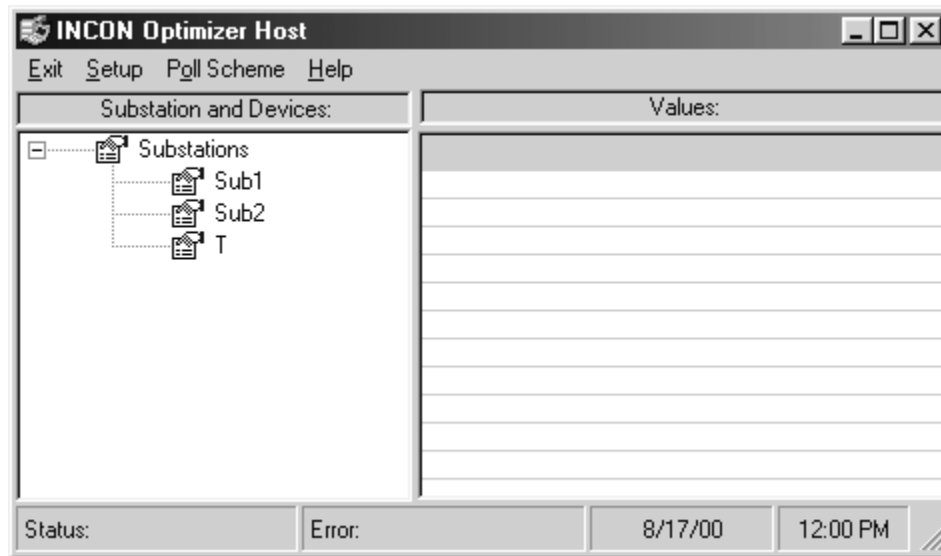
**Error:** displays polling error messages

**Setup** to select Port, Substations and Devices for setup

**Poll Scheme** to select how to begin polling; Auto polling all, Manual or Poll the station

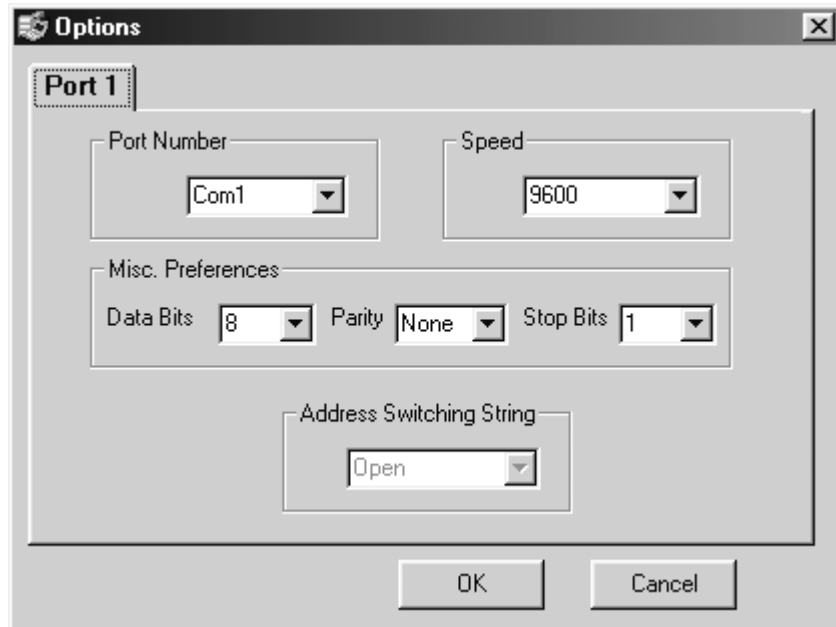
**Exit** to close the program

**Help** to read About for this program (the Contents and Search ... are not yet available)



## SETUP PORTS

1. Click **Setup>Port** from the pull-down menu. The “Options” dialog box is displayed.
2. Use the pull-down menus to view and choose the settings for the “Port Number”.
3. Press the **OK** button when finished.



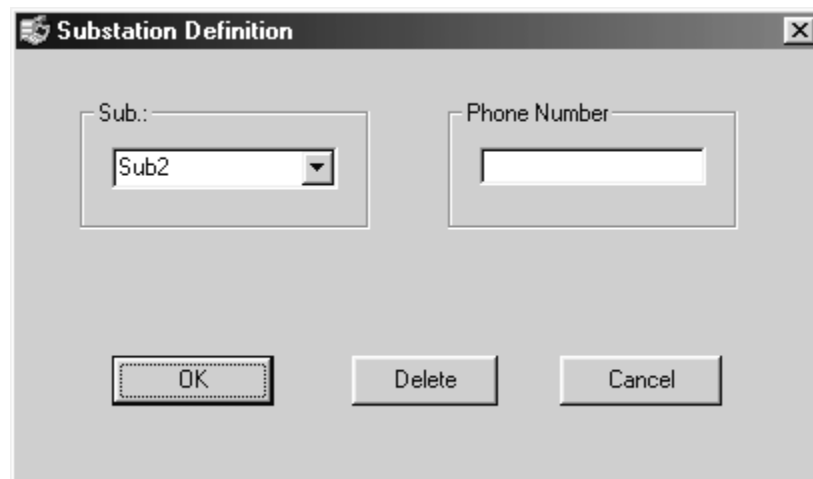
The selections for “Speed” and “Misc. Preferences” are in the default settings. INCON recommends keeping these default settings. These are the default settings for the Optimizer. The program settings and the Optimizer settings must match, in order for the communications to function properly.

## SETUP SUBSTATIONS

1. Click **Setup>Substations** from the pull-down menu. The “Substation Definition” dialog box is displayed.
2. Type in a name for each substation within the “Sub.:" box.
3. Type in the modem phone number within the “Phone Number” box.
4. Press the **OK** button to proceed. Notice the changes to the “Substation and Devices:” list.

NOTE: Use the **Delete** button to remove substations from the list. Select / Highlight a name from the pull-down menu and press the **Delete** button.

NOTE: Leave the “Phone Number” box empty if there is no modem between the computer and the substation. The program can communicate with local devices directly over the RS-485 cable.



## SETUP DEVICES

1. Click **Setup>Devices** from the pull-down menu. The “Devices Definition (1 of 2)” dialog box is displayed.
2. Within the “Sub.:" box use the pull-down menu to Select / Highlight a substation name.
3. Within the “Device Identification” box, type in a unique “Breaker Name” for each device and type in an address letter in the “RS485 ID” box. “Breaker Names” are sorted with the first entry at the top and the last entry at the bottom of the pull-down menu.
4. Within the “Polling Definition” box, type in a “Polling Period” number which represents the number of days the program waits before starting a new polling period. (Enter a “2” to poll every two days.)

NOTE: *The Polling Period specifies whether or not you want to poll the Optimizer (if the period > 0) or not (<= 0). The RS485 ID applies to the ID Address of the SC-01 Smart Converters if installed. The ID does not support broadcasting.*

5. Press the **More ...** button. The “Devices Definition (2 of 2)” dialog box is displayed.

NOTE: *Use the **Delete** button to remove “Breaker Names” from the list. Select / Highlight a name from the pull-down menu and press the **Delete** button.*

The screenshot shows a dialog box titled "Devices Definition (1 of 2)". It contains the following fields and controls:

- Sub.:** A dropdown menu with "Sub4" selected.
- Device Identification:**
  - Breaker Name:** A dropdown menu with "R2D2" selected.
  - RS485 ID:** A text box containing "X".
- Polling Definition:**
  - Polling Period:** A text box containing "5".
  - Reading Trigger:** A text box containing "TriggerName".

At the bottom of the dialog are four buttons: "More ..." (with a dashed border), "Add/Edit... OK", "Delete", and "Cancel".

(Setup Devices *continued*)

**Devices Definition [ 2 of 2 ]**

Sub.: Sub4                      Opti: R2D2

Password     Pri CT Ratio     Pickup CT Ratio

Frequency     Mode     Restrike     Count Limit

Preset level of contact wear

Phases Full Duty (%)			Danger Level	Warning Level
A	B	C	<input type="text" value="45000"/>	<input type="text" value="40000"/>

Aux A asseration level  
When main open, the voltage  
 ON     OFF

Aux B asseration level  
When main open, the voltage  
 ON     OFF

Aux Mode - Continous or Momentary  
 Mode 1     Mode 2     Mode 3

Arc Time Limit     Aux Time Limit     AD Time

6. Fill in the boxes and make changes to the settings as needed.
7. Choose to “Download now” or save the settings and download later:
  - Press the **Download the setting now ...** button to immediately send the settings to a device. After the transmission, press the **OK** button. The “(1 of 2)” dialog box is displayed. Press the **Add/Edit .. OK** button.
  - OR -
  - Press the **OK** button. The “(1 of 2)” dialog box is displayed. Press the **Add/Edit .. OK** button.

**NOTE:** *The program cannot remotely download program settings to an Optimizer. This must be done with the Optimizer connected locally to the computer’s Comm port. You can use HyperTerminal to dial into a remote Optimizer and send programming commands. The “Open (Address)” command must be sent to establish communication with each remote Optimizer before programming.*

NOTE: *The data on this screen, "(2 of 2)" will be:*

- *Default values if the device has not been defined before.*
- OR -
- *Defined values from the program database.*
- *The values may NOT be the values in the Optimizer currently being setup.*

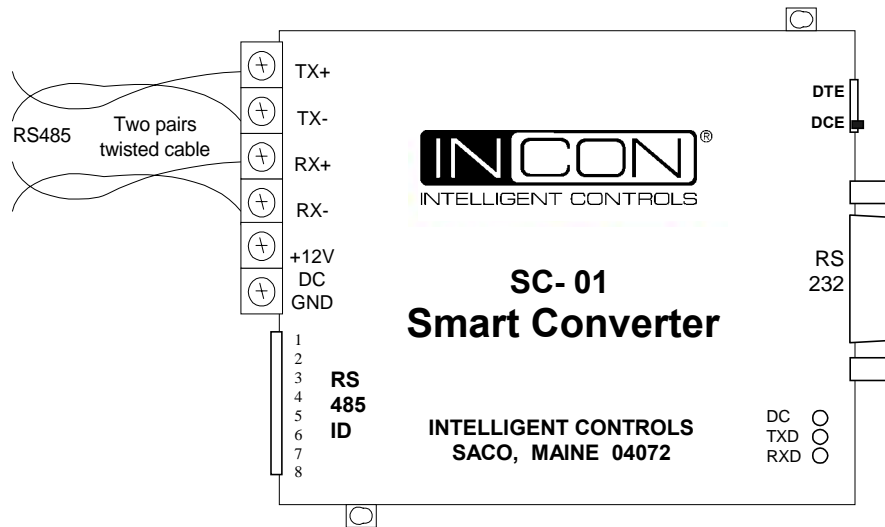
## **POLLING SCHEME**

Polling is acquiring data from all the devices within one substation and storing this data in the database. There are two methods to start the polling activity, called "Polling Schemes". One is "Automatic" and the other is "Manual". All devices within a substation will be polled using either method. The two methods are described below:

- Click **Polling Scheme>Auto polling all** from the pull-down menu to execute polling for all of the substations, one by one, according to their "Polling Periods". The results will be displayed in the "Views:" area.
- OR -
- Click **Polling Scheme>Manual** from the pull-down menu, to poll only one substation:
  1. Select / Highlight one substation from the list.
  2. Click **Polling Scheme>Poll the station** from the pull-down menu. This will immediately execute polling for the selected substation. The results will be displayed in the "Views:" area.

NOTE: *After you change the port settings or cancel a polling, you should wait about 30 seconds before you poll again. Or simply restart the Host PC.*

## THE SMART CONVERTER



## MODEM SETUP

(Refer to the SC-01 Smart Converter User Guide)

To configure modems to be installed on the Optimizer side of the network:

Be sure to use the Type 1 Cable supplied with the SC-01 Smart Converter between the converter and modem.

Be sure to plug the phone line into the Modem's "Line" jack, **not** the "Phone" jack.

Each modem must be configured before installing it into the network. Configure modems using HyperTerminal. Issue the following AT commands to the modem so that it can establish the connection via the phone line. The Optimizer Host Program **cannot** issues these commands.

<b>AT&amp;F</b>	'Restore the default
<b>ATS0=1</b>	'Pick up phone after 1 ring
<b>AT&amp;C0</b>	'DCD always ON
<b>AT&amp;S0</b>	'DSR always ON
<b>AT&amp;R1</b>	'Ignore RTS
<b>AT&amp;D0</b>	'Ignore DTR checking
<b>AT&amp;W0</b>	'Save the setting so it will be effective after power off
<b>ATQ1</b>	'Disable return character display