

CoPilot EXT

PDA BASED SOFTWARE

Installation & Operation Manual Revision 1.02

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“The Leader in Web Accessed Power Monitoring and Control”

Customer Service and Support

Customer support is available 9:00 am to 4:30 pm, eastern standard time, Monday through Friday. Please have the model, serial number and a detailed problem description available. If the problem concerns a particular reading, please have all meter readings available. When returning any merchandise to EIG, a return authorization number is required. For customer or technical assistance, repair or calibration, phone 516-334-0870 or fax 516-338-4741.

Product Warranty

Electro Industries/GaugeTech warrants all products to be free from defects in material and workmanship for a period of four years from the date of shipment. During the warranty period, we will, at our option, either repair or replace any product that proves to be defective.

To exercise this warranty, fax or call our customer-service department. You will receive prompt assistance and return instructions. Send the instrument, transportation prepaid, to EIG at 1800 Shames Drive, Westbury, NY 11590. Repairs will be made and the instrument will be returned.

Limitation of Warranty

This warranty does not apply to defects resulting from unauthorized modification, misuse, or use for any reason other than electrical power monitoring.

Our products are not to be used for Primary Over-Current Protection. Any protection feature in our products is to be used for Alarm or Secondary Protection only.

THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. ELECTRO INDUSTRIES/GAUGETECH SHALL NOT BE LIABLE FOR ANY INDIRECT, SPECIAL OR CONSEQUENTIAL DAMAGES ARISING FROM ANY AUTHORIZED OR UNAUTHORIZED USE OF ANY ELECTRO INDUSTRIES/GAUGETECH PRODUCT. LIABILITY SHALL BE LIMITED TO THE ORIGINAL COST OF THE PRODUCT SOLD.

Statement of Calibration

Our instruments are inspected and tested in accordance with specifications published by Electro Industries/GaugeTech. The accuracy and a calibration of our instruments are traceable to the National Institute of Standards and Technology through equipment that is calibrated at planned intervals by comparison to certified standards.

Disclaimer

The information presented in this publication has been carefully checked for reliability; however, no responsibility is assumed for inaccuracies. The information contained in this document is subject to change without notice.

About Electro Industries/GaugeTech

History

Founded in 1973 by engineer and inventor Dr. Samuel Kagan, Electro Industries/GaugeTech changed the face of power monitoring forever with its first breakthrough innovation: an affordable, easy-to-use AC power meter. A few of our many **Technology Firsts** include:

1978: First microprocessor-based power monitor

1986: First PC-based power monitoring software for plant-wide power distribution analysis

1994: First 1 Meg Memory high performance power monitor for data analysis and recording

1999: Nexus® Series generation power monitoring with industry-leading accuracy

2000: First low profile socket meter with advanced features for utility deregulation

2002: Innovative 100BaseT Total Web Solutions

Today

Over thirty years later, Electro Industries/GaugeTech, the leader in Web-Accessed Power Monitoring, continues to revolutionize the industry with the highest quality, cutting edge power monitoring and control technology on the market today. An ISO 9001:2000 certified company, EIG sets the standard for web-accessed power monitoring, advanced power quality, revenue metering, artificial intelligence reporting, industrial submetering and substation data acquisition and control. EIG's products can be found on site at virtually all of today's leading manufacturers, industrial giants and utilities.

World Leader

In fact, EIG products are used globally and EIG is accepted as the world leader in power monitoring and metering technology. With direct offices in the United States, Turkey, Brazil, Mexico, Guatemala, Croatia and the Phillipines, EIG support is available in most regions around the world. Our worldwide support, advanced technology and quality manufacturing standards make EIG the superior choice when dependable, reliable service is paramount.

Table of Contents

EIG Warranty	ii
Chapter 1: Installing CoPilot for Pocket PC	
1.1: System Requirements	1-1
1.2: CoPilot Installation Downloads	1-1
1.3: Connections	1-2
1.3.1: Connect to Shark® 100 meter with IrDA	1-2
1.3.2: Connect to Shark® 100 meter with RS485	1-3
1.3.3: Connect to Nexus® meter with RS485	1-3
Chapter 2: Configuring with CoPilot	
2.1: Configuring Shark® 100 meter with CoPilot	2-1
Chapter 3: Viewing Data	
3.1: Viewing Shark® 100 meter Data with CoPilot	3-1
3.2: Viewing Nexus® meter Data with CoPilot	3-2

Chapter 2

Configuring with CoPilot

2.1: Configuring Shark 100 with CoPilot

The Device Profile screens for the CoPilot - Shark 100 Interface are very easy to use. Follow the directions in Chapter 1 to establish a connection.

1. Open CoPilot software. The Main screen appears.
2. Click on the Profile icon.



b **Scaling**

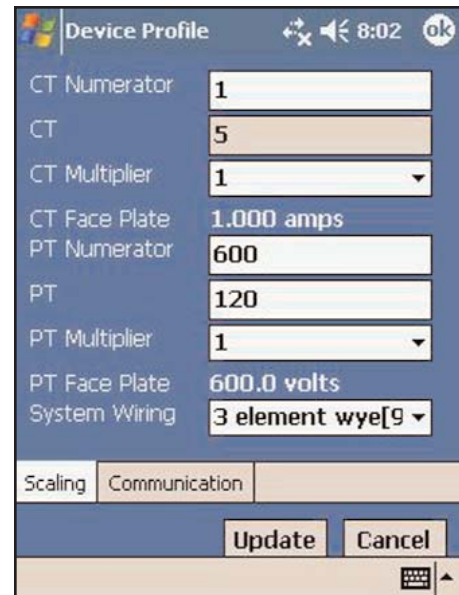
Use pull-down windows to make the following selections:

CT Multiplier: 1, 10 or 100

PT Multiplier: 1, 10 or 100

System Wiring: 3 Element Wye, Delta 2 CTs or 2.5 Element Wye

For CT Numerator, PT Numerator and PT Denominator, use the Keyboard in the lower right hand corner of the screen. Click on Keyboard icon. Enter settings. Click OK.



b **Communications**

Use pull-down windows to make the following selections:

Response Delay (COM 1 and COM 2): 0 - 750 ms
(increments of 50ms)

Protocol: Modbus RTU or Modbus ASCII

Baud Rate: 9600 - 115,200

For Address, use the Keyboard in the lower right hand corner of the screen. Click on Keyboard icon. Enter settings. Click OK.

b **Buttons**

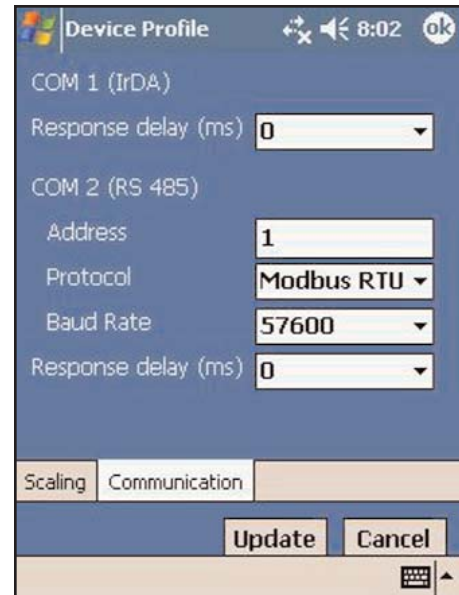
Click **Update** to update the Device Profile.
Click **Communication** to view the Communication screen.
Click **OK** to return to Main screen.

b **Updating the Device Profile**

Click **Update** when changes are made. This will program the Device Profile of the Shark 100. The Shark 100 will then Reset. After Reset is completed, CoPilot will attempt to reconnect.

When Programming Complete appears, click **OK**.

NOTE: If Comm Settings were changed, you must exit the program from the **Connect** screen and **reconnect with the new settings**.



Chapter 3 Viewing Data

3.1: Viewing Shark 100 Data with CoPilot

Once a connection has been established and any configuration is done, you are ready to View Data.

1. Open CoPilot software. The Main screen appears.
2. Click on the View Data icon.
The following screen appears.
 - a **Select Data to View**
3. Click on the Icon for the type of data you want to view.

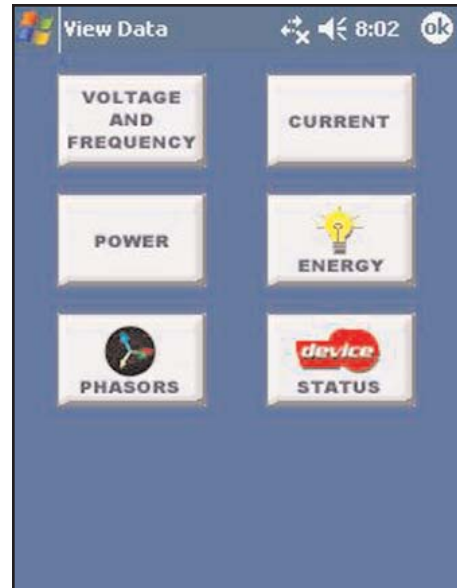
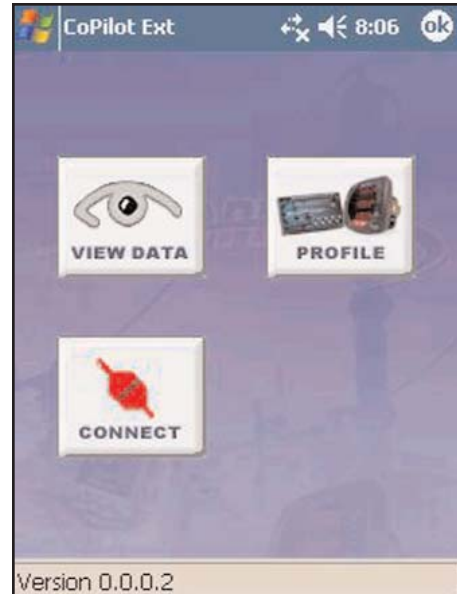
Real Time Data appears for the type of data selected.
The meter is polling continuously.

b **Screen Data**

- **VOLTAGE AND FREQUENCY Screen**
A-N, B-N, C-N, A-B, B-C, C-A
- **POWER Screen**
Totals for W, VAR, VA and PF
- **PHASORS**
Phasor Diagram, VAN, VBN, VCN, IA, IB, IC
- **CURRENT Screen**
Instantaneous Current Readings A, B, C
- **ENERGY Screen**
Instantaneous Energy Readings for Delivered Wh, Received Wh, Delivered VARh, Received VARh, VAh
- **DEVICE STATUS**
Device ID & Type, Boot, Run-Time, DSP Boot, Run-Time

b **Exit**

Click **OK** to Exit this screen and return to the Main screen.



3.2: Viewing Nexus Data with CoPilot

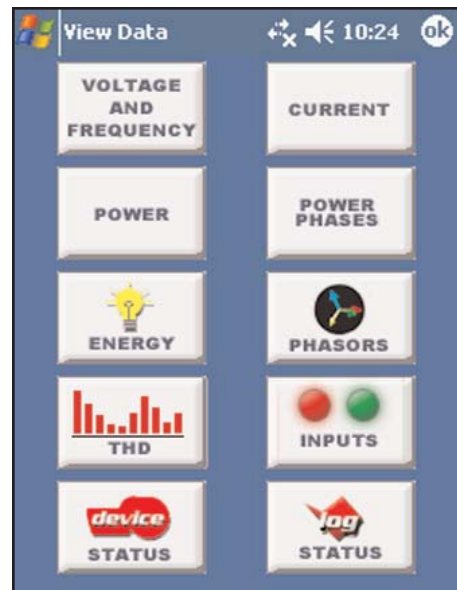
Once a connection has been established, you are ready to View Data.

1. Open CoPilot software. The Main screen appears.
2. Click on the **View Data** or the **Retrieve Logs** icon. One of the following screens appears.
 - a. **Retrieve Logs**
 - b. **View Data**
3. Click on the Icon for the type of data you want to view.

Real Time Data appears for the type of data selected. The meter is polling continuously.

b. Screen Data

- **VOLTAGE AND FREQUENCY**
Select 1 sec or .1 sec readings
A-N, B-N, C-N, A-B, B-C, C-A, AUX, FREQ
- **POWER Screen**
Select 1 sec or .1 sec readings
Totals for W, VAR, VA and PF
- **ENERGY**
Instantaneous Energy Readings for Delivered Wh, Received Wh, Delivered VARh, Received VARh, VAh
- **THD**
Channel Selection: VAN, VBN, VCN, IA, IB, IC
Harmonics Spectrum, % THD Factor, K Factor, Zoom
- **DEVICE STATUS**
Device ID, Device Type, Boot, Run-Time, DSP Boot and Run-Time, Protection (Password)
- **CURRENT**
Select 1 sec or .1 sec readings
A, B, C, NC, Nm
- **POWER PHASES Screen**
A, B, C for W, VAR, VA and PF



- **PHASORS**
Phasor Diagram, VAN, VBN, VCN, IA, IB, IC
- **INPUTS**
8 Labeled High Speed Inputs with Status for each
- **LOG STATUS**
Number of Records and Memory Used for the following logs:
Historical Logs 1 & 2
Limit Triggers
Digital Inputs
Digital Outputs
Waveform / PQ
System Events

b **Retrieve Logs**

1. Click on the Retrieve Logs Icon. The Retrieve Logs screen for the connected device appears. The screen lists the available logs for that device with a check box in front of each log.
2. Select the Log(s) you want to retrieve from the screen.
3. Click OK. The software retrieves the Programmable Settings for the connected device and then retrieves the selected logs. The software downloads the logs to a file named after the meter .db.

