Shark® 100T Quickstart Guide

Mechanical Installation

**Release clip**

**DIN Rail with black rubber stoppers**

**DIN Installation**

**Installation Steps:** Slide top of groove of meter onto DIN Rail. Press gently until the meter clicks into place. If mounting with DIN Rail provided, use Black Rubber Stoppers (also provided) shown above.

To remove meter, pull down on Release clip. **Electrical Installation:** Select diagram for your application.

**100T Dimensions**

WYE direct, 3 phase, 4 wire

WYE with PTs, 3 phase, 4 wire

Delta direct, 3 phase, 3 wire

Delta with PTs, 3 phase, 3 wire

**NOTE:** Other wiring configurations are available. See the full Manual on the enclosed CD.
RS485 Programming (for Ethernet see page QS-3)

Communication Wiring: The Shark® 100T meter’s RS485 port uses standard 2-wire, half duplex architecture.

Factory Initial Default Settings: When the Shark 100T is powered up, for 10 seconds you can connect to the meter using the Factory Default Settings (even if the Device Profile has been changed). After 10 seconds the Device Profile reverts to the actual Device Profile in use. This is one way you can always connect to the meter. The Factory Initial Default Settings are:

Device Address: 1
Baud Rate: 9600
Protocol: Modbus RTU

Connection Steps:
1. Open Communicator EXT (download from product CD).
2. Click Connect on the tool bar. The Connect screen opens. Make sure your settings match these (use pull-down windows).
3. Click Connect. The Device Status screen confirms the connection.
4. Click OK. Communicator EXT’s Main screen opens.

Configuration Steps:
5. Click the Profile button on the tool bar. The Device Profile screen opens.
6. Click the Communication tab and select settings based on your application - RS485 ONLY, not INP10.
7. Click the Scaling tab and select settings based on your application.

Communications Settings (RS485 ONLY, not INP10):

NOTE: The IrDA settings do not apply to the 100T.

COM2 (RS485): Enter the following settings:
- Address (1-247)
- Protocol (Modbus RTU, ASCII or DNP)
- Baud Rate (9600 to 57600)
- Response Delay (0-750 msec)

Scaling Settings (CT, PT Ratios and System Wiring):
Enter the following settings:
- CT Numerator (enter value you want), Denominator (display only), Multiplier (1, 10, or 100), CT Fullscale (Calculated automatically)
- PT Numerator (enter value you want), Denominator (enter value you want), Multiplier (1, 10, 100, or 10000), PT Fullscale (Calculated automatically)
System Wiring: select from 3 Element Wye, 2.5 Element Wye, or 2 CT Delta.
Phases Displayed: select from A, AB, or ABC.

**NOTE:** Voltage Full Scale = PT Numerator x PT Multiplier
Current Full Scale = CT Numerator x CT Multiplier

**IMPORTANT!** Specify Primary and Secondary Voltage in Full Scale (NOT Ratios).

**Example CT Settings:**
- 200/5 Amps: Set Ct-n value as 200, Ct-S value as 1.
- 800/5 Amps: Set Ct-n value as 800, Ct-S value as 1.
- 2,000/5 Amps: Set Ct-n value as 2000, Ct-S value as 1.
- 10,000/5 Amps: Set Ct-n value as 1000, Ct-S value as 10.

**Example PT Settings:**
- 14,400/120 Volts: Set Pt-n value as 1440, Pt-d value as 120, Pt-S value as 10.
- 138,000/69 Volts: Set Pt-n value as 1380, Pt-d value as 69, Pt-S value as 100.
- 345,000/115 Volts: Set Pt-n value as 3450, Pt-d value as 115, Pt-S value as 100.
- 345,000/69 Volts: Set Pt-n value as 345, Pt-d value as 69, Pt-S value as 1000.

**Update Device:**
8. When changes are complete, click the Update button to send a new profile to the Shark 100T meter.
9. Click Cancel to Exit the profile (or) click other tabs to update other screens.
10. Use Communicator EXT to communicate with the device and perform required tasks.

**NOTE:** For further details and additional programming screens (Password, Limits, Energy and Display), refer to the Shark User’s Manual & Communicator EXT 3.0 Software Manual on the enclosed CD.

**Ethernet Programming (INP10 Option)**
Communication Wiring: The meter with Ethernet communication has an RJ45 port on its backplate. Use an Ethernet cable to connect the meter to your PC.
Factory Default Settings: The Factory Default IP parameters programmed in the INP10 card are:
- IP Address: 10.0.0.1
- Subnet Mask: 255.255.255.0

**Set up the PC’s Ethernet Adapter:** The PC’s Ethernet Adapter must be set up for point-to-point communication.
1. Select Start>Control Panel>Network Connections. Right-click on the Local Area Connection you will use to communicate with the meter and select Properties.
2. Select Internet Protocol [TCP/IP] and click the Properties button.
3. Click Use the Following IP Address radio button and enter: IP Address:10.0.0.2; Subnet Mask: 255.255.255.0.
4. Click the OK button.
Set up the Ethernet Card (INP10): Establish a Telnet connection on port 9999.

(NOTE: Windows 7® users must enable Telnet Client. Select Control Panel>Programs and Features>Turn windows features on or off. Check the Telnet Client box and click OK. Telnet Client is now active.)

1. From the Windows® Start menu, click Run and type ‘cmd’.

2. Click the OK button to bring up the Windows’ Command Prompt window. In the Command Prompt window, type: “telnet 10.0.0.1 9999” and press the Enter key.

   NOTE: Make sure there is a space between the IP address and 9999.

3. When the Telnet connection is established you will see a message similar to the example shown on the right.

4. To proceed to Setup Mode press Enter again.
   You will see a screen similar to the one shown on the right.

5. Change ONLY the parameters in group 1. To do so, type number "1."

6. Once group 1 is selected, the individual parameters display for editing. Either: Enter a new parameter if a change is required, OR press Enter to proceed to the next parameter without changing the current setting.

   IMPORTANT! Settings 2, 3, and 4 must have the default values shown here.

   Example: Setting device with static IP Address.
   IP Address <010> 192.<000> 168.<000> .<000> .<001>
   Set Gateway IP Address <N>? Y
   Gateway IP Address: <192> .<168> .<000> .<001>
   Set Netmask <N for default> <Y>? Y

7. Continue setting up parameters as needed. After you finish your modifications, press the "S" key on the keyboard. This saves the new values and causes a Reset in the Ethernet card.

   CAUTION! DO NOT PRESS ‘D’ as it will overwrite any changes and save the default values.

Connection Steps:
1. Open Communicator EXT software and click Connect.
   You will see the Connect screen shown on the right.
2. Enter the meter’s IP address in the Host field and click Connect. The Device Status screen confirms the connection.
3. Click OK. Communicator EXT’s Main screen opens.
   Continue from step 5 on page QS-2.

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