4.10 EDIT SETPOINTS (3 and 4 wire systems)

This *menu* selection permits the user to *change* all of the IQ 200 setpoints and system parameters.

Press *Menu* to display the list of available items.

Position the selection arrow next to Edit Setpoints and press *Enter.*

If the *Password* option has been enabled, the system requests the password via the screen shown in figure 4.17.

To enter the password, press *Enter* to move the underline to the desired digit. Then use the *Scroll* up arrow to increase the digit or the *Scroll* down arrow to decrease the digit. When the desired choice is displayed, press *Enter* to lock in the selection.
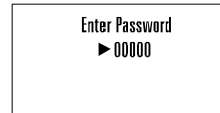
```
    Enter Password
  ▶ 00000
```

Figure 4.17 Password Entry

If an incorrect password is entered, the message *Password Incorrect* displays. Press *Menu* to return to the previous screen showing *Edit Setpoints* selected. Press *Enter* to retry entering the password.

If the correct password is entered, or if the *Password* option is not enabled, the following screens display:

4.10.1 Edit All

This *menu* item displays all of the setpoints described in *sections 4.10.2 through 4.10.10.* To edit only one setpoint, follow the steps under the appropriate section. Selecting the *Edit All menu* item displays the screens shown below as the *Scroll* down arrow is pressed. (Note: the lagging or leading indicator and any signs may be the opposite of that shown in the sample screens.)

Position the selection arrow next to Edit All and press *Enter.*

The following screens display:

4.10.2 Password Setup

Position the selection arrow next to Password Setup and press *Enter.*

This screen, shown in figure 4.18, allows the user to specify if a password is required to change the IQ 200 setpoints or system parameters and what the password is or would be if it were in use.
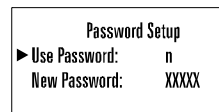
```
       Password Setup
  ▶ Use Password:      n
    New Password:      XXXXX
```

Figure 4.18 Password Setup

The screen initializes with Use Password selected and the current choice displayed. To

specify if a password is required, press either of the *Scroll* arrows to toggle between *y* and *n.* When the desired choice is displayed, press *Enter* to lock in the selection.

The screen changes to show New Password selected and the first digit of the current password underlined. To change any digit of the password, first select it by pressing *Enter* to move the underline to the desired digit. Then use the *Scroll* up arrow to increase the digit or the *Scroll* down arrow to decrease the digit. When the desired choice is displayed, press *Enter* to lock in the selection.

If the procedure completes successfully, Download Accepted appears briefly. The display then returns to the previous screen.

If an error occurs in the New Password selection process, an error message displays. Press *Enter* to return to the previous screen, and repeat the attempt.

4.10.3 INCOM™ Setup

Note: A display is required to configure the INCOM™ address.

To set these values on IQ 200 base modules installed without a permanently connected IQ 200 display module, temporarily connect an IQ 200 display module and follow the procedure below.

Position the selection arrow next to INCOM™ Setup and press *Enter.*

This screen, shown in figure 4.19, displays the baud rate at which the IQ 200 will communicate over the INCOM™ network, and indicates the network address (in hexadecimal) currently assigned to the IQ 200.

The screen initializes with Baud Rate selected and the current value displayed. To select a baud rate at which the IQ 200 will communicate over the INCOM™ network, press either of the *Scroll* arrows to step through the choices 9600 or 1200 baud. When the desired choice is displayed, press *Enter* to lock in the selection.
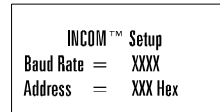
```
      INCOM™ Setup
Baud Rate  =    XXXX
Address    =    XXX Hex
```

Figure 4.19 INCOM™ Setup

The screen changes to show Address selected and the first digit of the current network address (in hexadecimal) assigned to the IQ 200 underlined. To change any digit of the address, first select it by pressing *Enter* to move the underline to the desired digit. Then use the *Scroll* up arrow to increase the digit or the *Scroll* down arrow to decrease the digit. When the desired choice is displayed, press *Enter* to lock in the selection.

If the procedure completes successfully, Download Accepted appears briefly. The display then returns to the previous screen.

4.10.4 System Frequency

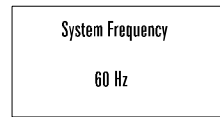Position the selection arrow next to System Frequency and press *Enter.*

This screen, shown in figure 4.20, displays the electrical system frequency in Hz.

```
System Frequency

60 Hz
```

Figure 4.20 System Frequency

This screen initializes with the frequency of the system being monitored selected and displayed. The screen will display either 60 Hz or 50 Hz.

To specify the frequency of the system being monitored, press either of the *Scroll* arrows to toggle between 60 Hz and 50 Hz. When the desired choice is displayed, press *Enter* to lock in the selection.

If the procedure completes successfully, Download Accepted appears briefly. The display then returns to the previous screen.

4.10.5 Wiring Configuration

Position the selection arrow next to Wiring Configuration and press *Enter.*

This screen displays the current wiring configuration of the system being monitored.
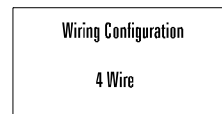
This screen, shown in figure 4.21, initializes with the wiring configuration of the system being monitored selected and displayed. The screen will display *either* 3 Wire or 4 Wire.

```
Wiring Configuration

4 Wire
```

Figure 4.21 Wiring Configuration

To specify the wiring configuration of the system being monitored, press either of the *Scroll* arrows to toggle between 3 Wire and 4 Wire*.* When the desired choice is displayed, press *Enter* to lock in the selection.

4.10.6 CT Ratio

Note: See table 2.4 for data ranges before specifying the CT ratio.

Position the selection arrow next to CT Ratio and press *Enter.*

This screen, shown in figure 4.22, displays the ratios of the current transformers connected to the IQ 200. This screen initializes with the ratio of the current transformers being used with the IQ 200 selected and displayed.
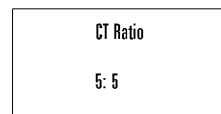
To specify the ratio of the current transformers being

```
CT Ratio

5: 5
```

Figure 4.22 CT Ratio

used with the IQ 200, press either of the *Scroll* arrows repeatedly to step through the choices individually, or press and hold either of the *Scroll* arrows to step through the choices rapidly. There are 256 choices from 5 to 8000, displayed as follows:

- 5 to 110 in increments of 5
- 110 to 1000 in increments of 10
- 1000 to 1250 in increments of 25
- 1250 to 8000 in increments of 50

When the desired choice is displayed, press *Enter* to lock in the selection.

If the procedure completes successfully, Download Accepted appears briefly. The display then returns to the previous screen.

4.10.7 PT Ratio

Note: See table 2.4 for data ranges before specifying the PT ratio.

Position the selection arrow next to PT Ratio and press *Enter.*

This screen, shown in figure 4.23, displays the ratio of the potential transformers connected to the IQ 200.
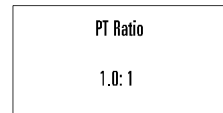
This screen initializes with the ratio of the potential transformers being used with the IQ 200 selected and displayed.

```
PT Ratio

1.0: 1
```

Figure 4.23 PT Ratio

To specify the potential transformer ratio of the potential transformers being used with the IQ 200, press either of the *Scroll* arrows repeatedly to step through the choices individually, or press and hold either of the *Scroll* arrows to step through the choices rapidly. There are 256 choices from 1.0 to 1690, displayed as follows:

- 1.0 to 6 in increments of 0.1
- 6 to 20 in increments of 1
- 20 to 260 in increments of 5
- 260 to 1690 in increments of 10

Note: If no potential transformers are being used, set the PT ratio to 1.0 to 1.

If the procedure completes successfully, Download Accepted appears briefly. The display then returns to the previous screen.

4.10.8 Demand Window

Position the selection arrow next to Demand
Window and press *Enter.*

```
Demand Window

5 Min
```

Figure 4.24 Demand Window

This screen, shown in figure 4.24, displays the
current value of the demand time window.

The screen initializes with the time window over which demand (parameters) are
measured, selected, and displayed.

To specify Demand Window, press either of the *Scroll* arrows to step through the
choices. There are 8 choices from 5 minutes to 60 minutes, displayed as follows:

- 5 min. to 30 min. in increments of 5 min.
- 45 min.
- 60 min.

When the desired choice is displayed, press *Enter* to lock in the selection.

If the procedure completes successfully, Download Accepted appears briefly. The
display then returns to the previous screen.

The Demand Window is a *fixed* period of time over which average system
parameters are calculated. For example, setting the Demand Window to 15 instructs
the IQ 200 to calculate the average current or power over the past 15 minutes and
to update that calculation every 15 minutes.

If multiple IQ 200 units exist on an IMPACC™ network, all their Demand Windows
can be simultaneously reset and synchronized using INCOM™ communication.

4.10.9 KYZ Setup

Position the selection arrow next to KYZ Setup and
press *Enter.*

```
KYZ Output Setup
Track:    None
Rate:     1
```

Figure 4.25 KYZ Setup

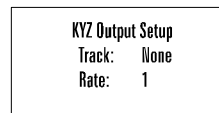This screen, shown in figure 4.25, displays the
system value communicated by the KYZ pulse train.

This screen initializes with the system value which
the IQ 200 will Track selected.

To select a system value (kWh, kvarh, kVAh) which the IQ 200 will Track, press
either of the *Scroll* arrows repeatedly to step through the choices individually, or
press and hold either of the *Scroll* arrows to step through the choices rapidly. There
are 16 choices from 1 to 100 displayed as follows:

- 1 to 10 in increments of 1
- 20, 40, 50, 60, 80, 100

F·A·T·N

When the desired choice is displayed, press *Enter* to lock in the selection.

The screen changes to show the *energy per pulse* Rate selected. To change the rate, press either of the *Scroll* arrows to step through the choices. When the desired choice is displayed, press *Enter* to lock in the selection. See *3.3.4 KYZ Pulse Initiator* for details about choosing Track and Rate.

If the procedure completes successfully, Download Accepted appears briefly. The display then returns to the previous screen.

4.10.10   Exit

Pressing *Enter* when this menu item is selected returns the display to the Main Menu.

4.11   RESET VALUES

This *menu* item allows the user to reset to zero or to default IQ 200 system values and parameters.

Press *Menu* to display the list of available items.

Position the selection arrow next to Reset Values and press *Enter.*

The screen, shown in figure 4.26, displays the Reset Values choices four at once. Every choice can be displayed by using the *Scroll* button arrows. The item currently selected is indicated by an arrow to its left. If Rst All Min/Max is chosen, *all* the Min/Max values (Amps, Volts, Power, Freq, PF) will be

reset.

```
► Reset Energy
  Rst Peak Demands
  Rst All Min/Max
  Rst Amps Min/Max
  Rst Volts Min/Max
  Rst Power Min/Max
  Rst FreqPF Min/Max
  Rst Comm Stats
  Exit
```

Figure 4.26   Reset Values

To select a choice, position the selection arrow next to it and press *Enter.*

For all choices selected, a screen similar to figure 4.27 displays. For other choices, Reset Energy is replaced by the description of the choice. Figure 4.28 is an example.
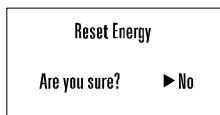
```
Reset Energy

Are you sure?    ► No
```

Figure 4.27   Reset Energy

```
Rst Amps Min/Max

Are you sure?    ► No
```
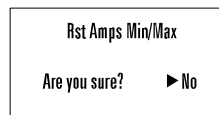
Figure 4.28   Reset Amps Min/Max

Pressing *Enter* while No is selected returns to the Reset Values screen.

To change the selection to Yes, press either of the *Scroll* arrows to toggle between No and Yes. When Yes is displayed as selected, press *Enter* to lock in the selection. If the procedure completes successfully, Download Accepted appears briefly. The display then returns to the previous screen.

4.12   CONTRAST ADJUST

This screen, shown in figure 4.29, allows the user to adjust the appearance of the display for best viewing.

Press *Menu* to display the list of available items.

Position the selection arrow next to Contrast Adjust and press *Enter.*

Press either of the *Scroll* arrows repeatedly to see the contrast change slowly, or press and hold either of the *Scroll* arrows to see the contrast change rapidly. Press the *Menu* button to exit and return to the *main menu.*

```
┌─────────────────────────────┐
│       Contrast Adjust       │
│  'Up'          to decrease  │
│  'Down'        to increase  │
│  'Menu'        to exit      │
└─────────────────────────────┘
```

Figure 4.29 Contrast Adjust

Alternatively, the contrast of the screen can be adjusted *without* entering the Contrast Adjust menu by holding in the *Enter* button while pressing the S*croll* up arrow button (to decrease contrast) or the *Scroll* down arrow button (to increase contrast).

4.13   DIAGNOSTICS

This *menu* item is reserved for the use of Cutler-Hammer service personnel. There are no user-accessible functions on this screen.

4.14   EXIT MENU

Press *Enter* to return to the previous menu; then pressing *Enter* or *Menu* will return to the System Data menu. (See figure 4.3 in Section 4.6)

SECTION 5: TROUBLESHOOTING AND MAINTENANCE

5.1 GENERAL

5.1.1 Level of Repair

These troubleshooting procedures will determine only if the IQ 200 Display Module or the IQ 200 Base Module is the cause of the malfunction. They will not permit troubleshooting of components within the IQ 200 Modules. If an IQ 200 Module is determined to be at fault, replace it with a spare and return the malfunctioning Module to Cutler-Hammer for repair.

5.1.2 Maintenance and Care

The IQ 200 is designed to be a self-contained and maintenance-free unit. The printed circuit boards are calibrated and conformally coated at the factory. They are intended to be serviced by factory trained personnel only.

Never clean the IQ 200 with system or IQ 200 power on. Clean the IQ 200 using only a clean, dry cloth. Do not use water or solvents of any kind.

Operate the IQ 200 Base Module in an environment within the temperature range of -20°C to 50°C and the display unit within a range of 0°C to 50°C. The environment should also be free of excess humidity.

If you have spare units, store them in the original packing material and container. The base unit storage environment temperature range should be -30°C to 85°C and -20°C to 60°C for the display module.

5.2 REMOVAL AND REPLACEMENT

⚠ WARNING

ALL MAINTENANCE PROCEDURES MUST BE PERFORMED ONLY BY QUALIFIED PERSONNEL WHO ARE FAMILIAR WITH THE IQ 200 AND ITS USES. FAILURE TO OBSERVE THIS WARNING COULD RESULT IN SERIOUS INJURY, DEATH, AND/OR EQUIPMENT DAMAGE.
TROUBLESHOOTING PROCEDURES MAY INVOLVE WORKING ON EQUIPMENT IN AREAS WITH EXPOSED ENERGIZED (LIVE) ELECTRICAL WIRING AND/OR PARTS WHERE THE HAZARD OF FATAL ELECTRIC SHOCK IS PRESENT. PERSONNEL MUST EXERCISE EXTREME CARE TO AVOID INJURY OR DEATH. ALWAYS DISCONNECT, LOCK OUT, AND TAG THE CURRENT AND VOLTAGE SOURCES AND THE CONTROL POWER SUPPLY CIRCUIT BEFORE TOUCHING THE CONNECTIONS OR COMPONENTS ON THE REAR FACE OF THE IQ 200 BASE UNIT.

5.2.1 General Safety Precautions

- Turn off, lock out, and tag all sources of system power to the IQ 200 Base Module.
- Temporarily install a short circuit between the output legs of each current transformer connected to the IQ 200 Base Module, and tag.
- Turn off, lock out, and tag the IQ 200 Base Module power supply circuit.

5.2.2 IQ 200 Display Module

Perform the following steps to replace the IQ 200 Display Module.

- Disconnect the Category 5 cable from the IQ 200 Display Module, and mark it for later reconnecting.
- If the IQ 200 Base Module is attached to the IQ 200 Display Module, remove it by disengaging its DIN clip from the DIN rail mounted on the IQ 200 Display Module.
- Remove the thumbscrew from each of the 4 retainers on the sides of the IQ 200 Display Module.
- Slide out 3 of the 4 retainers.
- Grasp the IQ 200 Display Module to prevent it from falling, and remove the last retainer.
- Withdraw the IQ 200 Display Module and gasket (if in use).
- To reinstall or to replace the IQ 200 Display Module, reverse the above steps.

5.2.3 IQ 200 Base Module

Perform the following steps to replace the IQ 200 Base Module.

- Disconnect the Category 5 cable from the IQ 200 Base Module, and mark it for later reconnecting.
- Disconnect the INCOM™ cable, if used, and mark it for later reconnecting.
- Disconnect all system voltage and current leads, and mark them for reconnecting. Making a simple sketch of the connections may be helpful during reinstallation.
- Remove the ground connection and mark it for reconnecting.
- If the IQ 200 Base Module is attached to the IQ 200 Display Module, remove it by disengaging its DIN clip from the DIN rail mounted on the IQ 200 Display Module.
- If the IQ 200 Base Module is mounted using a DIN rail/DIN clip, remove it by disengaging the DIN clip mounted on the IQ 200 Base Module from the DIN rail on the mounting surface.
- If the IQ 200 Base Module is mounted using an L-bracket or other device, remove any attachments between the IQ 200 Base Module and the mounting device. Identify and retain all attachments for reinstallation.
- To reinstall the IQ 200 Base Module, reverse the above steps.

5.3 GENERAL TROUBLESHOOTING PROCEDURES

These procedures cover the IQ 200 only, and can only indicate or eliminate the IQ 200 as a cause of the malfunction. Because these procedures are not exhaustive, the user must be aware that other system components may be causing or contributing to system malfunctions.

To use the following troubleshooting guide, first identify the *symptom* of the malfunction in the first column. Then note the corresponding *probable cause* listed in the second column. Attempt one or more of the corresponding *possible solutions* in the third column. If following this general troubleshooting guide fails to correct the malfunction, contact the plant maintenance department or contact Cutler-Hammer Power Management Applications Support at 1-800-809-2772, option 1.

IQ 200 Troubleshooting Guide		
Symptom	**Probable Cause**	**Possible Solution**
One or more voltage phases read incorrectly	Incorrect PT ratio	Check PT ratio using the View Setpoints screen of the display module. Adjust if incorrect using the edit setpoints screen.
Incorrect or zero current readings	Incorrect CT ratio	Check CT ratio using the View Setpoints screen of the display module. Adjust if incorrect using the edit setpoints screen.
Incorrect Power readings	Incorrect phasing of voltage and (or) currents	Check phasing and verify connections with wiring diagrams.
Unit fails to communicate over IMPACC network	Wrong or conflicting address set for IQ 200	Check the address of the IQ 200 base unit via a display module and verify that the software is addressing the proper unit.
	Incorrect baud rate set for the IQ 200	Check the baud rate set for the base unit via a display module and verify that it is the same as the system rate.
	Communication wiring error	Verify that wiring conforms to IMPACC wiring base rules. (see TD 17513)
Display module LCD screen is blank	Contrast is set too low	Press and hold the ENTER button the press and hold the "down" scroll button to adjust the contrast.
	Power to display module is absent	Check Category 5 cable connection to display module and base unit. Check control power fuses, wiring connections, and voltage level.

5.4 TECHNICAL ASSISTANCE

For information, technical assistance, or referral to an authorized distributor, contact Cutler-Hammer Power Management Applications Support at 1-800-809-2772, option 1, or connect to our website at www.cutlerhammer.eaton.com.

5.5 RETURN PROCEDURE

This troubleshooting guide is intended to help service personnel determine if an observed malfunction is caused by the IQ 200 or by other external circumstances. If the malfunction is determined to be within the IQ 200, return the IQ 200 to Cutler-Hammer for repair or replacement. To return the IQ 200, contact the local authorized Cutler-Hammer distributor for specific instructions.

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