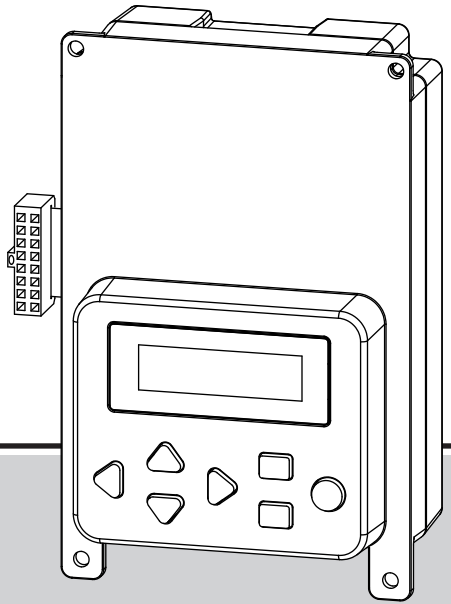
ACC-COM-GPRS

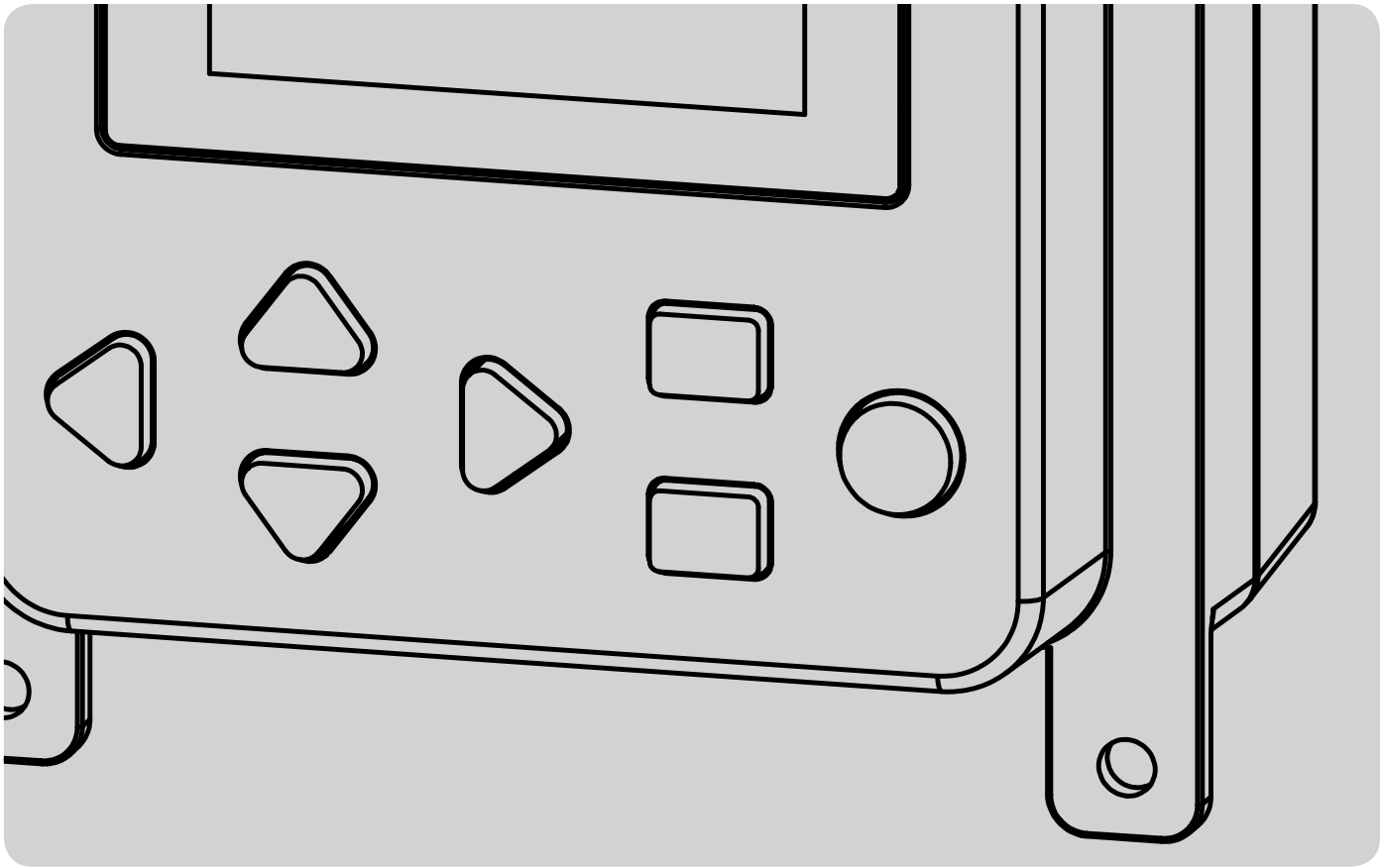
ACC-P2P-GPRS, ACC-COM-GPRS, ACC-COM-GPRS-E
Communications Module (for GPRS mobile connections)



NEW

ACC-P2P-GPRS, ACC-COM-GPRS, ACC-COM-GPRS-E
Communications Module (for GPRS mobile connections)
Owner's Manual & Installation Instructions

Hunter®



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INTRODUCTION

This Package Includes

(1) ACC-P2P-GPRS or ACC-COM-GPRS module, including internal (pre-installed) SIM card

(1) Antenna

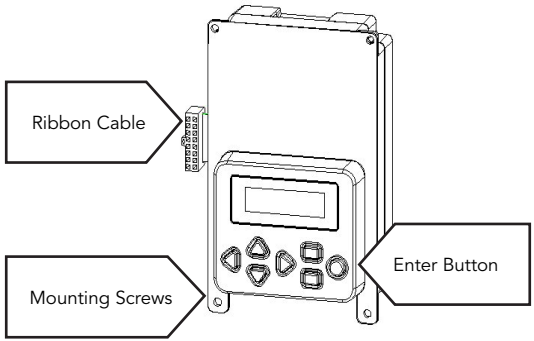
(4) Mounting Screws

(1) Instruction Sheet

(1) GPRS Activation Form

Tools/supplies required* (not included):

- Small Philips screwdriver with magnetic tip
- Small flat-bladed screwdriver
- Additional tools and hardware as required for antenna mounting (radio only)
- **Pedestal Mount requires APPBRKT** (sold separately)



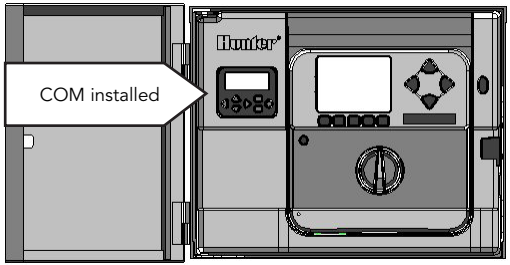
The ACC-COM-GPRS provides cellular mobile communications for ACC/AGC series controllers from a central computer.

This module may be installed in wall mounted or pedestal mounted controllers.

Theory of Operation

The ACC-P2P-GPRS is a single controller, point to point GPRS module that provides an IP data connection for computer control.

The module contains a data-only mobile phone, and requires a Hunter account to operate.



The ACC-COM-GPRS is another version of the module which includes a Site Plan, meaning it can link to other controllers on a site with hardwire or UHF radio communications. This requires a Hunter Site Plan account.

INSTALLATION

Plan Ahead for Antenna Mounting

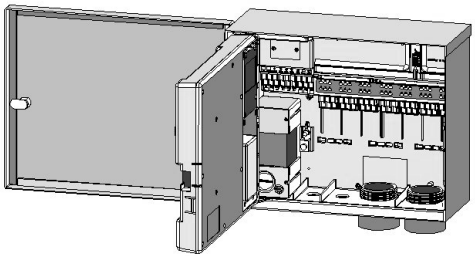
The GPRS cell phone, like any other mobile device, depends on the mobile network for communications. The location of the antenna is the link to the network.

Verify that GPRS coverage exists at the location before installation.

The antenna will not work efficiently from inside a steel enclosure. Route the antenna cable out of the enclosure through a low-voltage conduit, and place the antenna in non-metallic conduit to protect it from the elements.

Wall Mount Installation

1. Turn controller AC power off.



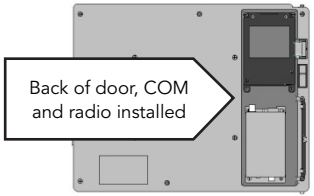
2. Remove the facepack door frame: Disconnect facepack door frame ribbon cable, open and lift up the door frame to compress the top hinge, and tilt out of the lower hinge.
3. Locate the communications compartment cover on the back right side of the frame.
4. Remove the communications compartment cover (6 screws).
5. Remove the ACC logo cover (two screws).

Optional Radio Installation, Additional Steps (ACC-COM-GPRS only)

If the Com module will be used with a RAD3 radio, the radio ribbon cable should be connected to the Com module now, before installing the ACC-COM-GPRS into its compartment.

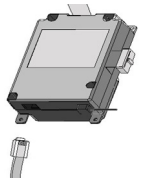
- The radio ribbon cable has a rectangular 14-pin connector on one end for the Com module, and a DB-15 connector on the other end for connection to the radio. The 14-pin connector only plugs one way, and is keyed to assist proper orientation. Align the connector and push into place on the top of the Com module.
- When the Com module is installed in the opening, make sure that the ribbon cable is visible on the back of the unit, for connection to the RAD3 radio module.

INSTALLATION



Wall Mount Com Module Installation, Continued

1. Route the cellular antenna cable into the wiring compartment via the low voltage conduit openings. Connect to the gold mating connection on the bottom of the ACC-COM-GPRS modem, and insert until it clicks positively into place.
2. Route the radio antenna cable (if applicable) through the recessed track next to the radio compartment, and then through the low voltage conduit openings in the cabinet, for connection to external antenna.



3. Leave sufficient slack in the antenna cables to allow the door to open and close without crimping.
4. Insert the Com module into the opening where the logo cover was, with the display and buttons protruding through the opening. Secure with 4 screws (supplied) on each corner. The screws are recessed and a small magnetic tip screwdriver is very helpful for this task.
5. Carefully insert the modular ribbon connector plug from the Com module into the mating receptacle in the door frame. This connector is keyed and has slots which must be aligned correctly, so that the connector can only fit one way. The ribbon cable can be extended or shortened slightly by pushing it back into the com module slot. Press firmly to make sure that the connector is fully seated.

INSTALLATION

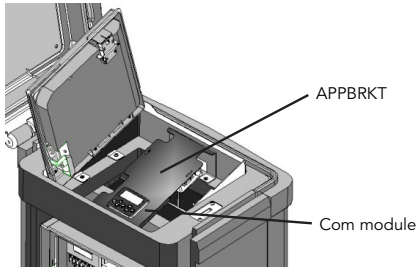
Radio Connections, Additional Steps

- Before installing the RAD3 radio module, connect the DB-15 connector from the ribbon cable to the top of the RAD3 radio and secure with the connector screws (do not overtighten)
- Connect the radio power cable from the RAD3 radio to the radio power connection on the bottom of the Com module
- Connect the male BNC radio antenna connector to the AIM-BNC, before installing the radio into the radio compartment
- Install the radio into the radio compartment (see RAD3 installation instructions for additional information)
- Connect the AIM-BNC to the Antenna cable

Reapply controller power and verify that the Com module display lights up and displays characters.

If there is no display:

1. Double check ribbon cable connection from Com module to facepack door frame receptacle.
2. Double check ribbon cable from facepack door frame to controller cabinet.



Plastic Pedestal Installation

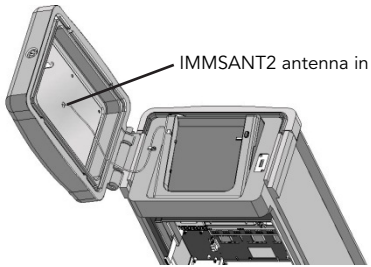
(requires APPBRKT communications bracket, sold separately)

1. **Turn controller AC power off with the AC power switch in the pedestal.**
2. Open the facepack frame in the top of the pedestal, to expose the communications module mounting area.
3. Install the Com module into the APPBRKT mounting bracket. Secure the Com module with screws on each of the 4 corners.

INSTALLATION

4. Install the APPBRKT communications bracket beneath the facepack. This bracket is designed to hold the Com module and a RAD3 radio module (if radio is required). If the controller is already permanently installed, it is not necessary to screw down the APPBRKT. Screws are supplied only to secure the bracket if additional shipping or movement of the controller is necessary.

Radio Installation, Additional Steps



- If radio communications will be used, connect the RAD3 radio module cables to the Com module with its ribbon cable and power connector first
- Install the Com module into the bracket, and then install the RAD3 on the APPBRKT with supplied hardware
- Install IMMS-ANT-2 in pedestal lid
- Route antenna cable from the IMMS-ANT-2 through the slot in the metal frame for the facepack, down into the controller to the radio location
- Connect the cable connector to the radio module (be sure to turn the BNC connector until it locks into place)
- Install the plastic cable guide (P-) with self tapping screw as shown. Adjust cable before tightening to insure that there is only enough slack to allow the lid to open and close, without causing the cable to be pinched

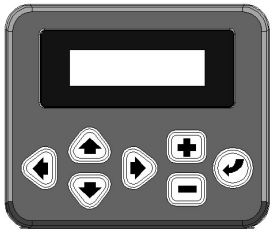
5. Connect the Com module ribbon cable extension to the controller facepack connection on the underside of the facepack frame. This is the keyed 14-pin connector, top left, above the main facepack ribbon connection.
6. Place the Cellular connector in a suitable location that provides adequate coverage. It may be possible to locate the antenna within a plastic enclosure successfully. If coverage cannot be obtained, it may be necessary to add a pole or other external mounting hardware to achieve coverage.
7. Reapply controller power and verify that all devices power up and have displays. Proceed to Setup and Addressing of the Com module, in the next section.

SETUP AND ADDRESSING OF THE COM MODULE

When powered up, the Com module display will show the version number, and will automatically check to see what other communications devices are installed.

Note the version number and include it whenever seeking technical assistance from Hunter Industries via phone or email.

After a few moments, the display will show “ACC-COM-GPRS” or ACC-COM-GPRS-E. The single controller version will show “ACC-P2P-GPRS”.



When the device has connected to the cellular carrier, a flashing block will appear in the upper right corner of the Com module display.

When the device has detected GPRS service, the flashing block will show a letter “G”.

The device is ready for central communications when the flashing G block appears.

Com Module controls: The Com module controls use the up and down arrow buttons to make selections, a + and – button to change individual settings, and an Enter key (far right) to save settings.

To set the Controller Address: The controller ID, or address, is required before any communications can take place. An address may be any number between 1 and 999.

Press the Up arrow once. The display will show Controller Address. The Address will be 000 if the module is new.

Press Enter to enter the Address edit mode. The address number will blink. You can use the left and right arrow buttons to move through each of the three number fields.

Use the + or – buttons to change the Address to the desired setting. If you hold the + or – button for more than a second, the numbers will change faster. You can go forward or backward with the + and – buttons to set the exact number.

Press the Enter button to enter the Address when all 3 digits are correct. The controller will now be addressed.

SETUP AND ADDRESSING OF THE COM MODULE

The controller Address is assigned to a Com module, not to the controller itself, nor to the ACC facepack. The controller Address can be reprogrammed at any time with the buttons.

The Addresses can only be set and changed at the Com module itself.

To Set Up GPRS Service

Complete all required information on the enclosed GPRS activation form.

Call Hunter Industries Technical Support to activate the user account:

North America 1-800-733-2823

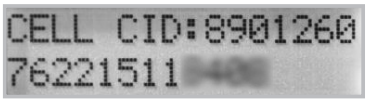
International 001-760-591-7383

This requires the CID# of the GPRS module, and user account information (see attached form).

To get the CID # of the unit:

Press the up arrow to access the "Cell Configure" menu, press the enter key.

Press the up arrow to access the "Cell CID" menu. You will need this 20 digit number to activate your account with Hunter.

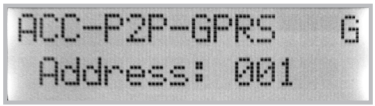


Sample CID Number
(use the unique number from your module)

Hunter Tech Support will confirm the information, and activate the account.

The connection will become active within a few minutes, and may take up to 30 minutes, depending on the cellular system.

A flashing "G" will appear in the upper right corner of the Com module display when it has been registered on the wireless GPRS system. When the "G" appears, the unit is ready to communicate.



SETUP AND ADDRESSING OF THE COM MODULE

Troubleshooting

If the flashing "G" block does not appear after the account is activated, or the letter "G" does not appear after several minutes, turn the entire controller's power off.

Check antenna connections and placement.

Turn the controller power back on, and observe the start up display. Wait several minutes for the start-up sequence to complete, and for wireless service to be established.

- If the flashing block and letter "G" still do not appear, proceed to the Cell Configure menu
- Check the Telephone, IP, Model Select, APN setting, and especially the RSSI (signal strength) explained in the following list, before contacting Hunter Technical Support

Cell Configure

This menu only appears in GPRS-enabled com modules. Please do not change settings in this menu without assistance from Hunter Technical Support. Most of the menus are informational only.

Press the Enter button to view cell configuration information.

CELL IP

The Internet Protocol (IP) address cannot be changed in the field, but if an IP is present, it indicates that the modem has been assigned a data address by the wireless GPRS carrier. The IP must be displayed for the system to work.

CELL CID: The Cell Identification Number cannot be changed, but is vital to activate the communications account. This is the number required by Hunter Technical Support for activation, and questions about operations after installation.

Model Select: This can be used to change the nationality of the wireless device from North American to International (adds -E to the model number in the display). The unit should be shipped with the correct setting for the receiving address, but it is incorrect, it can be changed at this location (use the + and – buttons to change to the desired setting, and press Enter). Once changed, the Com module will automatically reset.

Cell Telephone #: Not used; left blank until future.

APN: This is normally set to Auto Detect. It must not be changed unless directed by Hunter Technical Support. There are other settings available at this menu item but they are not used at this time.

SETUP AND ADDRESSING OF THE COM MODULE

RSSI: The Relative Signal Strength Indicator (RSSI) shows the signal strength at the controller location and can be an important diagnostic clue. If the controller is in a weak signal area, it can cause communications failures or interrupts.

An RSSI of 8 or less is very weak. If signal strength is too low for reliable data communications, relocate the antenna (or the entire controller) to a better location.

IMEI: This shows the electronic identifier of the wireless device and cannot be changed.

SIM: This shows whether the Subscriber Identity Module (SIM card) has been detected in the device. It should always display "Yes". If it is set to "No", the device cannot see the internal SIM card. Contact Hunter Technical Support to see if the card needs to be re-seated internally, or replaced.

Cell Ping: This function allows a ping test to an IP address to test the connection via the GPRS system. It will already have a test IP to the Hunter server. The IP may also be changed to test with another location. The test will make 5 attempts to contact the IP address. Note, it is common for the first one or two attempts to fail, but the device should make contact after 5 attempts.

Exit: Exits the Cell Configure sub menu.

This completes the field setup of the GPRS module. The rest of the setup is performed in your control software. Consult the software documentation or Hunter Technical Support to enable this device in your central control system.

Other Com Setup Functions

ACC-COM-GPRS detects other communications connections and displays information about them. It also allows operator control of some settings and functions.

Use the Up or Down arrow to navigate through main topics.

Controller Address: Shows current address setting. Press Enter to set the address. Use the arrow buttons to move left and right to each digit, and + or – to change to the desired number. The address can be any number from 1 to 999. Press Enter when the correct number is shown.

Master Control: (not shown on ACC-P2P-GPRS): Set to Yes or No with +/- buttons. This indicates that other controllers are connected to the IP controller.

Contrast: Default = 50. Adjusts display visibility for varying conditions. Press Enter to adjust, + or – to change, and press Enter when done. The display contrast may be adjusted for daylight conditions where reflection makes the display difficult to read.

SETUP AND ADDRESSING OF THE COM MODULE

Radio Type (not shown on ACC-P2P-GPRS models): Shows a type of radio module, if one is found by the Com module.

Radio communications can be used in 2 distinct ways:

To connect a controller to additional controllers within the same Site.

To use UHF Maintenance Radio (Hunter Model TRNR) as a remote control for the controller.

Last MR Cmd (Radio Only): Not in ACC-P2P-GPRS models, displays the characters in the last-received UHF Maintenance Radio command, for diagnostic purposes. This setting is not shown if there is no radio. This setting only applies to UHF Maintenance Radio and will not show ICR remote commands.

DTMF Wait (Radio Only, not shown in ACC-P2P-GPRS models): Sets amount of time allowed between characters in a Maintenance Radio command, 1 – 5 seconds. The purpose of this setting (default = 2 seconds) is to tell the Com module how long to wait after hearing DTMF Maintenance Radio commands, before assuming the command is complete.

Maintenance Radio commands are sent from a UHF portable radio by pressing buttons which send DTMF (Dual Tone Multi-Frequency, also known as Touch-Tones) tones to the Com module. When a command has been started, the Com module assumes it is finished when the DTMF Wait period has elapsed or the radio carrier signal stops, with no more tones.

A longer DTMF wait allows slower typing speeds of the command on the radio. The trade-off is that the longer wait means that it will take longer for the action to be carried out (in other words, if the Wait is 5 seconds, it will be 5 full seconds after the command has been sent before the sprinkler turns on).

This setting is not shown if there is no radio. This setting does not affect ICR remote commands.

MR Default Run Time (Radio Only, not shown in ACC-P2P-GPRS models): Default = 30 Minutes. This sets the automatic run time for any station or SSG that is started by a Maintenance Radio command, if no run time has been specified in the On command. It is possible to turn a station or SSG on without specifying a run time, and this setting will automatically them off after the specified time if they are not turned off by an Off command. The Default Run Time can be changed in 1 minute increments up to a maximum of 60 minutes. This setting is not shown if there is no radio and does not affect ICR remote commands.

HWIM (not shown in ACC-P2P-GPRS models): Indicates presence of a Hardwire Interface Module (ACC-HWIM) installed in the controller. “None” indicates no HWIM has been found, “Installed” indicates that the HWIM is installed and has been detected. This display is informational and cannot be changed from the Com module.

SETUP AND ADDRESSING OF THE COM MODULE

Enter Diagnostics: To use the built-in communications diagnostics, press the Enter button at this display.

This will allow you to select from the following diagnostic functions (use the up or down arrow buttons to move through the choices).

Communications Status display [MOD RAD HW]: Pressing the left arrow button at any time will show a status display for communications, showing transmit and receive activity for each communications type. The display shows: MOD RAD HW #, indicating Modem, Radio, Hardwire, and number of data packets sent.

Under each item MOD, RAD, and HW, the letter T shows transmit activity and R shows receiving data for that communications component. The symbol * shows other radio traffic ("carrier detect"). This is a useful diagnostic tool.

MOD: Shows cellular modem activity.

RAD: Shows T when the controller radio is transmitting, and R when it is receiving data from another radio.

HW: Shows T when the controller is transmitting over GCBL cable, and R when receiving data via GCBL.

#: Shows the count of individual packets of data as they are exchanged. This number continues to increase as events are counted until it reaches 255, and then begins again at 1.

Digital communications are divided into packets of data, and sent in pieces called "packets". After each packet is sent, a confirming response is expected. This counter tracks all communications in the module via radio, hardwire, and modem.

The * may indicate other radio traffic (from other sources). Communications problems that cannot be explained by hardware issues are sometimes caused by interference from other sources. If * is frequently present when no ACC communications are taking place, it may indicate that the frequency is very busy.

Radio Tone Test (not shown in ACC-P2P-GPRS models): The radio test is only active when a UHF radio module is installed. Press the left arrow button twice to display the Radio Tone Test, and press Enter to start the test. The radio module will transmit a 5-second burst of data, to confirm whether the radio is working. The burst can be heard with another radio or scanner tuned to the same frequency.

For this test to be effective, you will need a two-way radio or scanner on the same frequency as the radio module.

When the radio test is started, a burst of data indicates a working radio module in the controller.

SETUP AND ADDRESSING OF THE COM MODULE

If nothing is heard, either the radio is inoperative or the wrong frequency has been selected for receiving.

If a broken, rough-sounding, or very faint signal is heard, there may be a problem in the antenna, antenna cable, or connectors. This may also indicate a problem in the radio module, although antenna/cable/connectors are the more likely cause. The easiest way to check this is to swap the radio module with a known good unit, connect to the same antenna and cable, and repeat the test. If the sound cleans up, the problem was the module. If the sound is still poor, it is probably the antenna/cable/connector setup.

Ping Test (not shown in ACC-P2P-GPRS models): The ping test allows any controller to exchange communications with another controller for test purposes. To do this, select a Target controller from the Source controller. When the test is started, the Source controller will "ping" the Target controller repeatedly and show success or failure of the communications. Any other controllers which can hear the test will also show the results, while the test is taking place.

Soft Reset: This "reboots" the communications module if it is temporarily confused. If the display or controls appear to be locked up, soft reset will restart the module without erasing data.

Total Reset: This completely resets all data in the Com module. It will erase any settings including the address! If the com module is unresponsive and a soft reset does not solve the problem, Total reset allows you to start over with a clean installation. This is also useful when moving a Com module from one installation to another, or when you are uncertain what previous operators may have programmed into the module.

Operating the Com Module: With the Com module installed and operational (with the flashing block and "G" display), verify that the controller address is correct.

The software documentation provides information on configuring Sites and the connections for each Site.

Once an ACC-COM-GPRS Site controller is connected via GPRS, it can share the communications connection with other controllers via radio and hardwire. ACC-P2P-GPRS modules do not share connections.

The following considerations apply to these optional outbound connections.

UHF Radio: The ACC-COM-GPRS module may also be used with a Hunter UHF radio, which must be ordered separately.

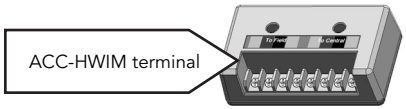
In steel enclosures, the antenna must be installed externally (signals will not communicate from inside a metal box).

SETUP AND ADDRESSING OF THE COM MODULE

Plan ahead for mounting an external antenna. It will be necessary to route the antenna cable from the radio module inside the enclosure, to the antenna outside of the enclosure. A site survey with comparable radios is required before a final decision can be made about antenna types and placement.

In the plastic pedestal enclosure, the Hunter IMMS-ANT-2 antenna is designed to be mounted in the pedestal lid and may be adequate for communications (to be determined in advance by site survey).

In North America and most other countries, **a license is required** before operating any UHF radio transmission equipment. Verify your local regulations and make sure that you have obtained the proper licensing before operating radio equipment.



Hardwired cable: THIS MODULE DOES NOT CONTAIN A HARDWIRE CONNECTION TERMINAL

Any controller needing hardwired communications must be equipped with an ACC-HWIM, in addition to the ACC-COM-GPRS communications module. The HWIM is installed in the controller cabinet, on the ACC Master Module (see ACC-HWIM instructions).

Hardwired communications also requires Hunter GCBL cable. This special cable uses 4 color-coded twisted conductors, shielded with foil, and grounded with an additional bare wire, in direct burial jacket. The cable is also ordered separately.

See the ACC-HWIM instructions for wiring connections.

NOTES

NOTES

Hunter Industries Incorporated • The Irrigation Innovators
1940 Diamond Street • San Marcos, California 92078 USA
www.hunterindustries.com

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