



LEIT Link®
2-Way Radio
Remote Control Handset
Instruction Manual



I N S T R U C T I O N M A N U A L

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ABOUT THE LEIT LINK REMOTE CONTROL HANDSET

Thank you for purchasing DIG's LEIT Link Remote Control Handset. This manual is designed to help you get the LEIT Link handset up and running quickly. This manual will describe all you need to know about how to use the LEIT Link handset. After you read this manual and have familiarized yourself with the basic functionality of this device, you can use this manual as reference for less common tasks in the future.

Models Available

- LEIT Link® Master™ operates 99 groups of controllers with up to 99 controllers per each group
- LEIT Link® Multi-Pro™ operates 99 controllers in one group

The LEIT Link Remote Control Handset is a 2-way radio communication device that operates in the ISM band 902-928 MHz (868/869 Europe). The LEIT Link is a practical solution to field communications and the management of any LEIT XRC controller in remote or hard to reach sites.

Using the LEIT Link Remote Control Handset one can review status reports, modify program settings, temporarily interrupt a running program to do a manual run, test a valve or skip to the next valve mode. The current running program and current valve open information is provided when activated. In Check Status Mode the handset also can review time, date, budget, sensor activation (if rain sensor is active), and solenoid integrity. In Uplink History one can review the hourly usage of each valve for all months and annual usage. Manual Run usage per month is also provided. All of these features can be accessed from a distance of up to 800 feet line of site.

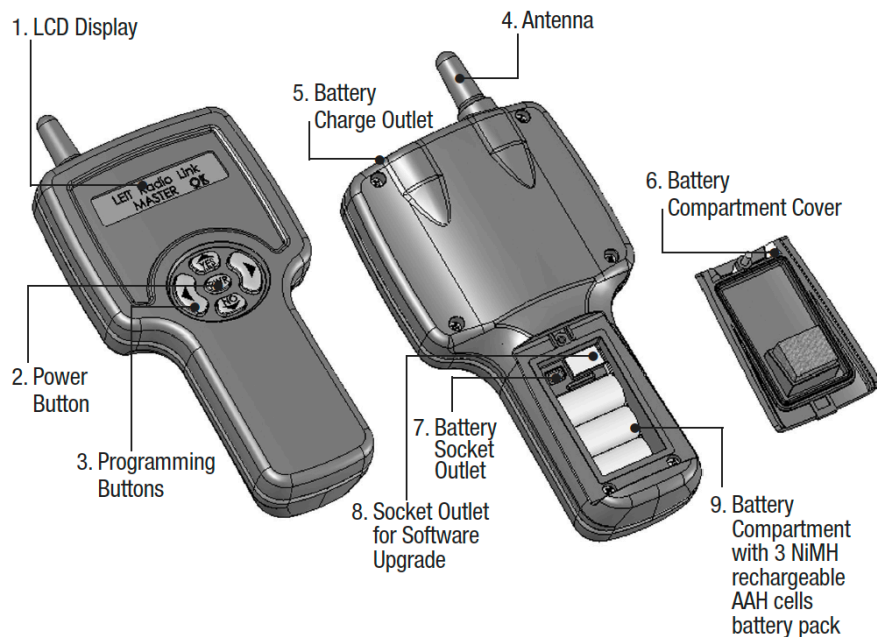
The handset can request or send information and commands to a particular controller. It will also receive confirmation for the information sent or requested.

IMPORTANT: The LEIT XRC requires greater energy for radio communication than is used for operation of the controller alone. In order to retain sufficient energy to maintain valve control, the radio on the controller will automatically turn off in low light conditions.

The LEIT XRC controller requires daily exposure to light levels at a minimum of 15,000 to 20,000 lux, which is equivalent to daylight around 9 AM-10 AM on a cloudy day. On very cloudy days the controller requires more time to charge up and operate with the radio. To maximize the energy available the XRC controller should be installed in an open, un-shaded area.

INTRODUCTION TO YOUR LEIT LINK

LEIT LINK HANDSET COMPONENTS



1. LCD Display


Displays the application stored in your handset.


2. Power Button


Turn your LEIT Link on or off .


3. Programming Buttons

Use these 4 buttons to program, modify, review and communicate with the LEIT XRC controller.

 Use to accept and/or select the desired programming mode and raise (increase) the value of the selected parameter.

 Use to lower (decrease) the value of the selected parameter or de-select a check mark.

 Use to move the cursor to left.

 Use to move the cursor to right.

4. Antenna

See FCC compliance.

5. Battery Charge Outlets

The LEIT Link Remote Control Handset contains a cell battery pack that is rechargeable using the AC/DC wall mounting battery charger 350 MA 12-volts, model 30-721. Plug the battery charger into the LEIT Link handset for approximately 8 hours for an initial charge before using it. Then charge it daily for a few hours as needed.

The charging screen will appear with +++Charging+++ 4.30V within one minute after the DC charger is plugged in. The charging screen disappears when the  button is pressed or the charger is unplugged. A full charge will last for up to 3 hours of continuous use. The Battery Voltage

screen appears when the handset needs to be charged. The Battery Voltage screen will flash at lower voltage and *LOW* will flash at critical voltage shortage. A car charger model 30-722 can be purchased if needed.

6. Battery Compartment Cover

To remove the battery pack, unscrew the Philips screw and remove the cover.

7. Battery Socket Outlet

Used to connect the batteries to the handset. To replace the battery, hold the battery connector and press on the side to remove the connector. Pull out the battery and replace.

8. Socket Outlet for Software Upgrade

The handset can be upgraded to the newest software as it becomes available. The manufacturer (DIG Corp) must perform this software upgrade.

9. Battery Compartment

Battery compartment with 3 NiMH rechargeable AAH cells battery pack (replaceable).

SETTING UP THE LEIT LINK HANDSET AND LEIT XRC CONTROLLER

IMPORTANT: In order to establish 2-way communication between the LEIT Link handset and the LEIT XRC controllers, a simple set up process using Radio Setup in both units must be completed.

1. Settings in Radio Setup on the LEIT XRC should be changed from Local Mode to Remote Mode.
2. Controller ID addresses and Group Number addresses should be assigned to each controller and handset in the system.
3. The radio-receiving module within the controller is automatically turned off at night to conserve power. The start and stop times are selectable, the default is 7 AM to 5 PM.
4. The same Client Code Number must be assigned to all units, handsets and controllers. In addition, a descriptive Controller Address can be assigned with up to 14 characters to uniquely identify each location.

Note: No 2 handsets or controllers in the same group number can have the same ID number.

IMPORTANT: Communication between the LEIT Link and the LEIT XRC controllers is automatically limited to daylight hours when there is sufficient light energy (un-shaded daylight). Bright light will enable the radio to operate automatically, overriding the start/stop times in Radio Setup.

COMMUNICATION SOFTWARE PROTOCOL:

Local Mode: The LEIT XRC controller is not listening to a signal from the LEIT Link Remote Control Handset. (Set in controller Radio Setup.)

Remote Mode: Allows the LEIT XRC controller to scan for a signal from the LEIT Link Remote Control Handset. (Set in controller Radio Setup.)

Client Code Number: Allows a user to have a unique identity code for their LEIT XRC controllers and LEIT Link handset. This is a security feature, which locks out unauthorized users. This is set as a description (AAAAA01_ZZZZZ99). All units should have the same description. (This code is set in the handset and in the controller during Radio Setup.)

ID Address: Used as an individual address for a single controller and handset within a group of controllers. (This ID is set in the handset and in the controller Radio Setup.)

Group Number: Allows for a group of controllers to be isolated from another group. (This number is set in the handset and in the controller Radio Setup.) (MULTI-PRO handsets will communicate with group 1 only.)

CHARGING THE HANDSET

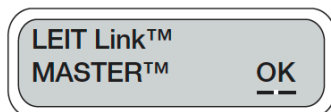
The +++Charging+++ screen appears within one minute after the DC charger is plugged in and the handset becomes inactive. The charging screen disappears when the **PWR** button is pressed or the charger is unplugged.

When the handset is in use, the Battery Voltage screen appears when the handset needs to be charged. The Battery Voltage screen will flash at lower voltage and the word *LOW* will flash at critical voltage shortage.

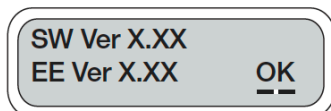
This is the first screen that will appear when **PWR** is pressed.

Press **YES** to continue in English or wait for Spanish to appear and then press **YES**.

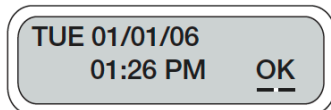
One of these screens will appear identifying the handset model. Press **YES** to continue.



This screen will appear identifying the software versions that are installed in the handset. Press **YES** to continue.



This screen will appear with the date and time. If the handset is being programmed for the first time it will not display the correct time and date. Update this screen in the next few steps, or press **YES** to continue.

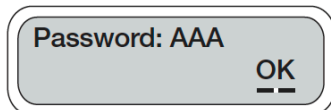


SETTING UP THE HANDSET

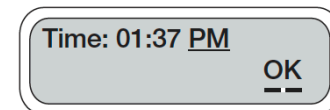
The Setup Handset screen allows the user to program the remote with a password, date, time, Handset ID, and Client ID numbers. This is a one-time setup that can be updated if needed.

To enter Setup Handset press **YES**. To skip Setup Handset and move to the next feature, press **NO** to continue.

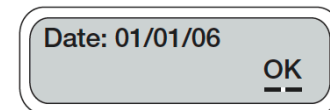
This screen appears with a default password. The password can be kept or changed in the next few screens. Press **YES** to continue.



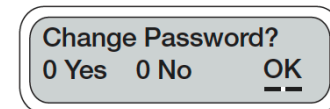
To set the time for the handset, underscore the appropriate digits using **NO** or **YES**. Press **YES** or **NO** to change the digit setting. Repeat the steps until time is set. When finished, press **NO** or **YES** to underscore OK. Press **YES** to continue to set the date.



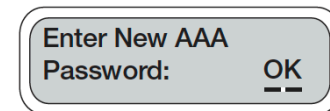
To set the date for the handset, underscore the appropriate digits using **NO** or **YES**. Press **YES** or **NO** to change the digit setting. Repeat the steps until date is set. When finished, press **NO** or **YES** to underscore OK. Press **YES** to continue setting Handset ID.



The Change Password feature allows you to change the default password (AAA) to any 3-digit combination of letters. To change password, press **NO** or **YES** and underscore Yes then, press **YES** to select. Press **NO** or **YES** again to underscore OK. Press **YES** to continue.

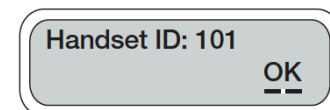


To enter a new password press **NO** or **YES** and underscore the first digit to be changed, then press **YES** or **NO** to change the letter. Repeat the steps for each letter then, press **NO** or **YES** to underscore OK. Press **YES** to continue. When finished, write down the password so as not to forget it.



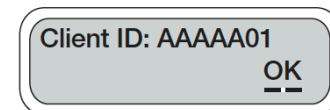
Handset ID is used as an individual address to identify the handset if more than one handset is used (the permissible ID is 100-199.) To give the LEIT Link handset a unique address, the Handset ID displays three characters in which the hundred's (1) cannot be changed. The two characters allow a number from 0-99 to be entered as the Handset Identity address.

Press **NO** or **YES** and underscore one of the characters. Press **YES** or **NO** to select a number. Repeat the steps with the second number. Then press **NO** or **YES** to underscore OK. Press **YES** to confirm and to continue to the next step, selecting a Client ID.

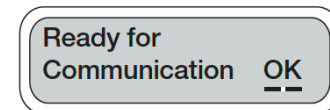


The Client ID number allows a user to have a unique identity code for their field controllers and handsets. This is a security feature, which locks out unauthorized users (the permissible ID is any letter and number combination that follows this format: AAAAA01_ZZZZZZ99).

Press **NO** or **YES** to underscore the first of the characters then press **YES** or **NO** to select the character. Repeat the steps with each of the characters. When finished, press **NO** or **YES** to underscore OK. Press **YES** to confirm the setting. If the setting has been changed, the next step will remind you of the change. Press **YES** to continue.



This screen lets you know the handset is Ready for Communication. Press **YES** to continue to the next step: Communicating with a LEIT XRC controller using the Uplink Radio screen.



Press **YES** to repeat. Press **NO** or **YES** to uplink Radio.

COMMUNICATING WITH A LEIT XRC CONTROLLER

The Uplink Radio screens allow the LEIT Link handset to link to a LEIT XRC controller in just a few steps. In going through these steps you will select the controller Group ID (LEIT Link Master only), and the Controller ID to be used for identification purposes when linking to a LEIT XRC controller.

After linking to the LEIT XRC controller, you can review status information and then select from a wide range of options to communicate with the LEIT XRC controller. Press **YES** to continue. Press **◀** or **▶** to quit or for help.

This option is available on the LEIT Link MASTER only.

The Group # Number allows the handset to link to a controller within a group of controllers, which have the same Group #. This gives the user the flexibility to address an individual controller in a group of controllers by location or area.

Press **◀** or **▶** to underscore one of the two numbers then press **YES** to select a number. Repeat the steps with the second number to select the Group #, then press **◀** or **▶** to underscore OK. Press **YES** to confirm and continue to the next step, selecting the Controller ID.

The Controller ID is an individual identity address that allows you to link to a single controller, which has this ID. On first contact, the Select ID screen displays two numbers that allow for a number from 1-99 to be entered as the controller's identity address. In order to link to a LEIT XRC controller, which has an ID, you must enter the same identity address into the handset.

To set a Controller ID, press **◀** or **▶** to underscore one of the numbers, then press **YES** to select a number. Repeat the steps with the second number. Press **◀** or **▶** to underscore OK. Press **YES** to confirm and connect to a LEIT XRC controller with the same ID. The handset should be establishing a link with this LEIT XRC controller. The word Select changes to Connect while waiting for confirmation. If communication is not established the No Response-Try Again screen will appear with Yes highlighted as the default. Press **YES** again to initiate communication with a LEIT controller that has the same ID.

When initial contact has been established with a controller, the first 10 characters of the controller description will replace the word Controller. Up to 31 most recently accessed addresses are displayed in this way. If no description is entered the screen will show NO_DESCRIP.

The handset power is low; the handset needs to be charged.

The handset has established a link with a LEIT XRC controller. Press **YES** to continue.

The controller has responded and has sent its description (if entered). The screen indicates that a description has been entered into the controller. The handset can be used to modify this description, which is described later in detail in the Uplink System section. Press **YES** to continue.

UPLINK
RADIO?

Group: 01
OK

Select ID: 12
Controller: OK

Select ID: 12
NO_DESCRIP OK

Cont:12 voltage
LOW OK

LEITLINK
Connected OK

1210 ACTI LEFT
ID12 Location OK

These screens show the user the controller's actual status. In these screens you can review how many valves the controller has, if any of the programs are active, if any valve is open, if manual is on, if the controller is being used with the LEIT key and if any other handsets are active. Press **YES** to review each screen and to exit. If the LEIT XRC controller has no activity, the first screen on the right indicates that the controller is ready and available.

Controller: 01-10
Valves Closed OK

Controller:12 is
BUSY-LEITKEY OK

Press **YES** to Uplink Manual Run. Press **◀** or **▶** to move to the next feature.

SETTING UP A MANUAL RUN

The first option available on the main menu is to perform a remote Manual Run, if needed.

Manual Run is useful for checking the proper operation of stations (especially after installation), for applying additional water as required, or repeat testing of any individual valve.

The Manual Run feature allows one to suspend a program or valve watering schedule, test a selected valve, make a temporary program and skip any valve if needed. Note that at the completion of Manual Run any programmed irrigation schedule reverts back to normal operation.

NOTE: A manual run can not be initiated if the key is inserted or if a manual run from another handset is in progress. In this case the Manual Run screen will not be seen.

To review Manual Run, press **YES**. To skip Manual Run and to move to the next feature, press **▶** to continue.

NOTE: Manual Run feature temporarily overrides any Sensor Reading, Rain Stop, or Budgeting.

If a program or valve is running, select Yes or No to continue (this screen will not be shown unless a valve is open). Press **◀** or **▶** and underscore Yes or No, then press **YES** to select. Press **◀** or **▶** again to underscore OK. Press **YES** to continue.

If a valve is open you must select one of the options available, such as, Suspend Program number or Stop Valve number. To continue, press **◀** or **▶** and underscore one of the options, then press **YES** to select. Press **◀** or **▶** again to underscore OK. Press **YES** to continue.

This screen allows the user to select a temporary program, test a valve or exit the program. If Temp is selected, select a run time for each valve and start Manual Run. After manual run start, you can skip to the next valve at any time.

Press **◀** or **▶** and underscore one of the options, then press **YES** to select. Press **◀** or **▶** again to underscore OK. Press **YES** to continue.

UPLINK
MANUAL RUN?

Stop Pro/valve
0Yes 0No OK

0 Suspend Prog:____
0 Stop valve:____ OK

Run Prog: 0 None
0Test 0Temp OK

If Test has been selected, select the valve number to test in the Test Valve number screen. Press or to underscore the valve number. Press or to select the valve number to test. Press or again to underscore OK. Press to continue.

Test duration is 2 minutes, and cannot be changed.

If the valve is turned ON, press to turn the valve OFF.

Test Valve:01
Turn ON? OK

Valve:01
ON OK

Yes is the default. If desired, select Yes to continue or select No to exit. The valve that is ON can be turned OFF, to turn the valve OFF, select Yes. Press or to underscore OK. Press to continue.

Turn
OFF 0Yes 0No OK

You can repeat the steps to turn the valve ON. Press again to turn on the same valve or to select another valve.

Valve:01
Off OK

Press to repeat. Press or to move to the next feature.

SETTING UP TEMPORARY SUSPENSION OF ALL IRRIGATION PROGRAMS

The Uplink Rain Stop option is used to temporarily suspend all irrigation programs. For example, during rainy weather you can stop regularly scheduled programs from watering. The Uplink Rain Stop feature allows you to pause irrigation from 1–99 days. At the end of the designated period, regularly scheduled programming will resume automatically.

To skip Uplink Rain Stop and to move to the next feature, press or to continue. To review Rain Stop press .

UPLINK
RAIN STOP?

If the password appears with the default (AAA), press to continue. If the password has been changed on the controller, enter the new controller password to continue. To enter the password press or and underscore the digit to be changed then press or to select the appropriate letter. Repeat the steps for each letter. When finished, press or to underscore OK. Press to continue.

Password: AAA OK

To activate Uplink Rain Stop, press or and underscore the number of days you wish to suspend watering. Then, press or to highlight the number of days you want to suspend irrigation (from 1-99 days). Press or to underscore OK. Press to continue.

Stop for 00 Days OK

Rain Stop will cancel itself automatically at 12 AM on the last day of the Rain Stop program setting.

If Rain Stop is active you can manually cancel the Rain Stop anytime by re-entering the Uplink Rain Stop screen. Once there, press or to underscore Yes, then press to select. Press or again to underscore OK. Press to continue. This will bring you back to the Uplink Rain Stop screen.

Press to repeat, or press or to move to the next feature.

Cancel Rainstop?
0Yes 0No OK

SETTING UP A MONTHLY BUDGET FOR ALL PROGRAMS

Instead of changing the duration for each program, you can use the Uplink Monthly Budget feature to increase or decrease the amount of water used during seasonally dry or wet periods on a monthly basis. Budget adjustments can range from 10-200% in 10% increments. The LEIT controller will automatically adjust the previously programmed duration for each program according to the specified budget.

To skip Uplink Budget and to move to the next feature, press to continue.

UPLINK
BUDGET?

To enter Monthly Budget, press to continue.

If the password appears with the default (AAA), press to continue. If the password has been changed on the controller, enter the new controller password to continue. To enter the password press or and underscore the digit to be changed then press or to select the appropriate letter. Repeat the steps for each letter. When finished, press or to underscore OK. Press to continue.

Password: AAA OK

After selecting Controller ID the handset will establish a link with a LEIT controller. While the word Connect is blinking, wait for a confirmation. After communication is established, the following information screens will provide you with 12 months of budget information. You can adjust any month as needed. If communication is not established the No Response-Try Again screen will appear with Yes highlighted as the default. Press again to re-initiate communication with a LEIT controller that has the same ID.

Connect ID: 12
Controller:

Budget information for the previous 12 months will appear with January first and 100% as the default. Press the or to underscore the percentage digits. Press to increase or to decrease the percentage (in increments of 10%). Press the or to underscore OK. Press to advance to the next month and repeat the steps for each of the months as needed. If any of the months have been changed, the new information will need to be uploaded by establishing a link with the LEIT controller with same ID address. Press to continue.

JAN 100%
Budget: OK

Communication has been established and the newly revised setting has been accepted. Press to continue.

Revised
BUDGET

Press to repeat. Press or to move to the next feature.

REVIEW A CONTROLLER STATUS

This feature allows you to review the current controller status for the time, date, sensor activation, active program or valve, manual run, rain stop progress, month off if any, short or open circuit in valve wiring or valve open. It also provides information on the controller's power range and availability for communication.

To review Check Status press . To skip Check Status and move to the next feature, press or to continue.

After selecting Controller ID address, the handset will establish a link with a LEIT controller that has this same address. While the word Connect is blinking, wait for a confirmation. After communication is established, the following information screens will provide a status report on the controller. If communication is not established the No Response-Try Again screen will appear with Yes highlighted as the default. Press again to re-initiate communication with a LEIT controller that has the same ID.

This screen appears if the controller is low on power. Press to continue.

This screen appears if any program or valve is active. Press to continue.

This screen appears if any program or group of valves is active. Press to continue.

This screen appears if the Manual Run is in progress. Press to continue.

This screen appears if Rain Stop is active. Press to continue.

This screen appears if irrigation has stopped for a full month. Press to continue.

This screen appears if the valve wiring is open. Press to continue.

UPLINK
STATUS?

Connect ID: 12
Controller:

Cont:12 voltage
LOW

Prog:X Active
Valve xx Open

Prog:X Active
GRPxx:yy Open

Manrun Active
Valve:XX Open

Rainstop Active
xx More Days

Irrigation Stop
for Month XXX

Station xx O/C
Wiring Fault

This screen appears if there is a short in the wiring. Press to continue.

This screen appears with time and the date of the controller. Press to continue.

This screen appears when the sensor allows watering. Press to continue.

This screen appears if no sensor is used. Press to continue.

Press to repeat. Press or to move to the next feature.

Station xx S/C
Wiring Fault

FRI 1/26/05
01:37 PM

Sensor allows
Watering

Sensor is
Unused

REVIEW THE CONTROLLER HISTORY REPORTS

This feature allows you to review the controller History Reports for total watering time for each valve with overall total and manual run total. This information is available for the current month and the previous 11 months. Also available on the report is the total usage and overall usage per valve for the current and previous year.

To review History Report press . To skip History Report and move to the next feature, press or to continue.

After selecting Controller ID, the handset will establish a link with a LEIT controller that has this same identity address. While the word Connect is blinking, wait for a confirmation. After communication is established, the following information screens would provide you with a history report on the controller. If communication is not established the No Response-Try Again screen will appear with Yes highlighted as the default. Press again to initiate communication with a LEIT controller that has the same ID.

This screen shows total time usage for each valve this month. Press to continue.

This screen shows total time usage for the current month. Press to continue.

This screen shows total manual usage for the current month. Press to continue.

UPLINK
HISTORY?

Connect ID: 12
Controller:

Valve01 Use This
Month: 2:34

JAN06 TOTAL This
Month: 12:34

JAN06 MAN This
Month: 0:30

These screens review information on specific month. To review this information, select Yes for the selected month or No to skip to the next month. Press **◀** or **▶** and underscore Yes or No, then press **YES** to select. Press **◀** or **▶** again to underscore OK. Press **YES** to continue.

DEC05 Tot/Valve?
0Yes 0No **OK**

NOV05 Tot/Valve?
0Yes 0No **OK**

If a specific month was selected in the previous screen, the handset will try to establish a link with the LEIT controller with the same Controller ID to retrieve this information. While the word Connect is blinking, wait for a confirmation. After communication is established, the following screens will provide you the information on the specific month you selected. If communication is not established the No Response-Try Again screen will appear with Yes highlighted as the default. Press **YES** again to re-initiate communication with a LEIT controller that has the same ID.

Connect ID: 12
Controller: **OK**

These example screens provide the monthly watering totals as requested in the previous step. This information is available by month for the previous 11 months. Press **YES** to continue.

Valve1 Use NOV
Month: 9.55 **OK**

NOV05 TOTAL This
Month: 22:34 **OK**

OCT 05 MAN This
Month: 2:30 **OK**

To review a total usage report for each year, select Yes for the selected year or No to skip to the last year. Press **◀** or **▶** and underscore Yes or No, then press **YES** to select. Press **◀** or **▶** again to underscore OK. Press **YES** to continue.

YR:06 TOT/Valve?
0Yes 0No **OK**

These two screens show current year usage for a valve and for all the valves. Press **YES** to continue.

Valve01 Use This
YR:06: 1682:34 **OK**

Total Use This
Yr:06: 9010:86 **OK**

To review information on total usage for last year, select Yes for the selected year or No to exit. Press **◀** or **▶** and underscore Yes or No, then press **YES** to select. Press **◀** or **▶** again to underscore OK. Press **YES** to continue.

YR:05 TOT/Valve?
0Yes 0No **OK**

These two screens show last year usage for a valve and for all the valves. Press **YES** to continue.

Valve01 Use last
YR:05: 1040:66 **OK**

Total Use Last
YR:05: 3010:86 **OK**

Press **YES** to repeat. Press **◀** or **▶** to move to the next feature.

REVIEW OR CHANGE THE PROGRAMMING SCHEDULE

This feature allows you to review, change or set a schedule with up to four separate programs for each station, each with up to three individual start times per day. It will also allow you to group stations together (if hydraulic limitations are not exceeded).

To enter Uplink Schedule press **YES**. To skip Uplink Schedule and move to the next feature, press **◀** or **▶** to continue.

UPLINK
SCHEDULE?

If the password appears with the default (AAA), press **YES** to continue. If the password has been changed on the controller, enter the new controller password to continue. To enter the password press **◀** or **▶** and underscore the digit to be changed then press **YES** or **NO** to select the appropriate letter. Repeat the steps for each letter. When finished, press **◀** or **▶** to underscore OK. Press **YES** to continue.

Password: AAA **OK**

This screen displays a choice of 4 programs. The first active program is highlighted by default. Press **YES** to continue programming Program #01. To select another program, underscore the program number using **◀** or **▶** and press **YES** to highlight the program number. Press the **◀** or **▶** to underscore OK. Press **YES** to confirm and to continue to the next screen.

Program Number:
01 02 03 04 **OK**

Note: Additional programs will not run unless you have activated the program number. If a program is selected which is not active the opportunity is provided at this point to activate it. See Uplink Setup System page 17.

Next, the handset will try to establish a link with a LEIT controller. While the word Connect is blinking, wait for a confirmation. If communication is established, the Password screen appears. If communication is not established the No Response-Try Again screen will appear with Yes highlighted as the default. Press **YES** again to re-initiate communication with a LEIT controller that has the same ID.

Connect ID: 09
Controller: **OK**

If communication is not established the No Response-Try Again screen will appear with Yes highlighted as the default. Press **YES** again to re-initiate communication with a LEIT controller that has the same ID.

0Every . . 0Even
0MTWTFSS 0Odd **OK**

If communication is established, the following screen provides watering frequency options. To select the preferred option, press **◀** or **▶** and underscore one of the 4 options. Press **YES** to select. Press **◀** or **▶** again to underscore OK. Press **YES** to confirm and continue to the next step.

If you select MTWTFSS, you'll get the next screen selecting the day of the week:

WATERING CALENDAR OPTION

Every: operates stations from once a day to once every 39 days

Even: every even-numbered day

Odd: every odd-numbered day

MTWTFSS: select specific day(s) of the week

To select or change the day of the week, underscore the appropriate box under the preferred day using ◀ or ▶ and press YES to confirm. The selected days will show a checkmark instead of the empty boxes. Repeat the steps again to select other days. When all tasks are completed, press ◀ or ▶ to underscore OK. Press YES to confirm and continue to the Start Time screen.

Water MTWTHSS
Days: ✓ ✓ ✓ OK

SETTING START TIME

From this screen select up to 3 start times a day (including AM or PM). To select the first start time underscore the appropriate digit using the ◀ or ▶. Then, press YES to increase or NO to decrease the value of the appropriate digit. Repeat the steps again for each digit. When finished, press ◀ or ▶ to underscore OK. Press YES to continue and set the second start time.

1st 02:00AM
Start: OK

If a second start time is needed, underscore and highlight Yes using ◀ or ▶. Press YES to select. Repeat the steps from the first start time to set the second start time. When complete press ◀ or ▶ to underscore OK. Press YES to continue to third start time set up. For a third start time repeat the steps again. Press ◀ or ▶ to underscore OK and press YES to continue. You can later cancel any of the additional start times simply by selecting No instead of Yes within each start time.

2nd Start time?
0Yes 0No OK

SETTING UP DURATION

When scheduling or changing a duration time for each valve, note that a runtime from 1 minute to 5 hours and 59 minutes in 1-minute increments can be set. If needed any number of valves can operate at the same time (if hydraulic limitations are not exceeded).

To set the valve duration, underscore the appropriate digits using the ◀ or ▶. Press YES to increase or NO to decrease the hour or minute digit. Press ◀ or ▶ and underscore OK. Press YES to continue to the second valve. Follow the same procedure as before for the second and remaining valves. To skip a valve, leave the duration on zero and press YES to continue. Note that the duration selected for each valve will be repeated with each of the three start times (if used).

Valve 01 0:02
Start: OK

GROUPING VALVES TO OPERATE AT THE SAME TIME

Use the Valve Runtime screen to program more than one valve to open or close together in a group as opposed to the normal operation mode. To select valves, which are to be grouped and operate at the same time, set the duration for the first valve and add the letter G to the rest of the valves in this group. The first valve and the remaining valves are linked together.

Valve 1 0:12
Runtime: OK

Valve 2 G0:00
Runtime: OK

Example: Linking Valve #2 to Valve #1

Set a time for Valve #1. While in the Valve #2 Runtime screen, press ◀ or ▶ and underscore the icon left of the hour position. Press YES and the letter G will appear. Press ◀ or ▶ and underscore OK. Press YES to confirm.

The letter G signifies that Valve #2 is now grouped to Valve #1, with Valve #1 being the group leader. The watering time for this group leader will be applied to all consecutive valves that show the letter G in the Valve Runtime screen.

To remove the letter G from a valve in the group: In the Valve Runtime screen press the ◀ or ▶ to underscore the letter G icon located to left of the hour position. Press NO and the letter G will disappear. Repeat with the other valves as needed. To exit press ◀ or ▶ to underscore OK. Press YES to continue.

The following examples are of groups (G or 0 can be set for intermediate valves in a group)

Valve #1 set for 0:20 minutes
Valve #2 set for G0:00 or 0:00
Valve #3 set for G0:00 or 0:00
Valve #4 set for G0:00
Valves #1-4 grouped with runtime of 20 minutes
Valve #5 set for 0:10 minutes
Valve #5 with runtime of 10 minutes
Valve #6 set for 0:15 minutes
Valve #6 with runtime of 15 minutes
Valve #7 set for 0:25 minutes
Valve #8 set for G0:00 or 0:00
Valve #9 set for G0:00 or 0:00
Valve #10 set for G0:00
Valves #7-10 grouped with runtime of 25 minutes

It is possible to set more than one group.

NOTE: When selecting or changing a grouped program, cycle through all the valves on the program to save the changes before you exit.

If a program is uploaded or changed and an error was made, you will see the errors in one or more of these 3 screens. If no errors were made, none of these 3 screens will appear.

Prog1 Time More
than 24 Hours OK

Prog1 Start2
Before Start1 OK

Prog1 Overlaps
Start 2 OK

If any changes have been made, the handset will establish a link with a LEIT controller, which has the same Controller ID number. While the word Connect is blinking, wait for a confirmation. After communication is established, the new settings (if revised) are uploaded. The following screens will confirm the changes on the controller. If communication is not established the No Response-Try Again screen will appear with Yes highlighted as the default. Press YES again to re-initiate communication with a LEIT controller that has the same ID.

Connect ID: 12
Controller: OK

Program Number #1 is the default program. This screen confirms that controller ID #09 has selected an additional program.

Changed Ctrl:09
Active Progs. OK

This screen confirms that controller ID #09 has accepted a schedule, run time or duration changes in the program.

Changed Ctrl:09
Prog.1 Schedule OK

This screen provides information on the next irrigation schedule.

Prog1 Strt2 next
Sched 12:50pm OK

Press to repeat. Press or to move to the next feature.

SETTING THE CONTROLLER SYSTEM

This Uplink System menu allows you to set the current controller date and time, activate or deactivate programs, activate or deactivate budgeting, enter or change master valve or pump settings and activate monthly irrigation suspension. In this menu you may also set or change controller radio on/off times, assign an address or description to the controller, activate a sensor, assign a sensor to one, all valves or a MV/P and change the passwords. After any changes to the system have been made, a confirmation will appear on the display.

To enter Uplink Setup System press .

UPLINK
SETUP SYSTEM?

To enter Uplink System press to skip Uplink System and move to the next feature, press or and continue.

If the password appears with the default (AAA), press to continue. If the password has been changed on the controller, enter the new controller password to continue. To enter the password press or and underscore the digit to be changed then press or to select the appropriate letter. Repeat the steps for each letter. When finished, press or to underscore OK. Press to continue.

Password: AAA OK

Next, the handset will try to establish a link with a LEIT controller. While the word Connect is blinking, wait for a conformation. If communication is established, the Password screen appears. If communication is not established the No Response-Try Again screen will appear with Yes highlighted as the default. Press again to re-initiate communication with a LEIT controller that has the same ID.

Connect ID: 09
Controller: OK

SETTING THE TIME

In this screen the time is displayed. You may review or change any of the information if the time displayed is incorrect. Press to continue. To set the time, underscore the hour digits using or and press to change the setting. Repeat the steps for changing the minute digit and AM/PM and when finished press or again to underscore OK. Press to continue.

Time: 01:37 PM OK

SETTING DATE

To set the date, underscore the appropriate digits using or and press or to change the setting. Repeat the steps as needed for changing the calendar and when finished press or again to underscore OK. Press to continue.

Date: 01/25/05 OK

SETTING THE RADIO OPERATION

Radio Setup available only on model XRC Controllers.

In these screens the handset allows you to limit the controller radio operation time. You will need to limit the use of the radio controller to daylight hours to prevent power drainage of the controller. Our suggestion is 8 AM-5 PM. This will allow the controller to operate within the window between early morning and late afternoon. The LEIT XRC requires greater energy for radio communication than is used for operation of the controller alone. In order to retain sufficient energy to maintain valve control the radio on the controllers will automatically turn off in low light conditions.

Radio: 07:00am
On OK

Radio: 05:00pm
Off OK

To set the time, underscore the hour digits using or and press or to change the setting. Repeat the steps for changing the minute digit and AM/PM. When complete press or again to underscore OK. Press to continue.

SETTING LOCATION ADDRESS

For your convenience, 14 characters are available to set up location addresses, or any other descriptive text, to remind you of the controller location (the text available is A-Z, 0-9 and _).

When setting the address, OK should be blinking.

Underscore the first digit using or and press or to select a letter or number. Press or and the next digit will blink. Repeat the steps for changing each of the digits and when finished press or to underscore OK (this is the only screen that OK is blinking). Press to continue.

NO_DESCRIPTION
ID09 Location OK

ACTIVATING PROGRAMS

Note: Scheduled programs will not run unless the appropriate program number is activated and a checkmark appears in the Active Program box.

In this screen, up to 4-programs can be activated or deactivated. Program #01 is active (checked) by default. To enable the controller to activate or cancel any of the stored programs simply add or remove the checkmark. Press or to underscore the program number press to activate (checked). Repeat the steps to activate or deactivate additional programs as needed. Press or again to underscore OK. Press to continue.

Active 1234
Progs: ☒ ☐ ☐ ☐ OK

This screen allows a complete shut off of the system for any month of the year. By default all months are active. To activate any month select ◀ or ▶ and underscore Yes, then press to select. Press ◀ or ▶ again to underscore OK. Press to continue.

Turn Month OFF?
0 Yes 0 No

In this screen, the 12 months can be activated or deactivated. By default all the months are active (checked). To enable the controller to activate or cancel any month of the year, simply add or remove the checkmark. To deactivate any month, press ◀ or ▶ to underscore the appropriate month and press to deactivate (remove the checkmark). Repeat the steps to activate or deactivate additional months. Press ◀ or ▶ again to underscore OK. Press to continue.

Active JFMAMJ
Months: ✓✓✓✓✓

This screen activates the solenoid for a test of shorts or open wires. In this screen, the short and open valve test is deactivated by default (not checked). To enable the controller to activate one or both of the two Short or Open features, simply add or remove the checkmark.

Press ◀ or ▶ to underscore the appropriate box and press to activate (checked). Repeat the steps to activate or deactivate the other option. Press ◀ or ▶ again to underscore OK. Press to continue.

Active CCT Test
0Short 0Open

Note: The test of the valve takes place when the valve is operated. Fault status will appear in Check Status menu.

ACTIVATING MV/P

This screen has two options for each valve. All valves in budget are activated by default and MV/P is deactivated by default.

Option One MV/P: if checked, the valve number will operate with master valve or pump.

Option Two Budget: is checked by default, the valve number is affected by the monthly budget setting (default is 100%).

To enable the controller to use any or both of the two features, simply add or remove the checkmark from each valve. Press ◀ or ▶ to checkmark the appropriate box. Press to activate (checkmark) or deactivate (remove the checkmark). Repeat the steps to activate or deactivate the other option. Press ◀ or ▶ again to underscore OK. Press to continue.

Valve01 Options:
0MV/P ✓Budget

ACTIVATING SENSORS

The Sensor In Use feature indicates whether or not a sensor is activated and in use: if sensor is installed, select Yes.

Sensor In Use?
0 Yes 0 No

To enable the controller to use a sensor, the first step is to indicate that a sensor is being used. Press ◀ or ▶ and underscore Yes or No, then press to select. Press ◀ or ▶ again to underscore OK. Press to continue.

Sensor Location:
0 MV/P 0Other

This screen, Sensor Location, indicates the location of the sensor. If MV/P or other is selected, this is the location in which the sensor is connected via the SKIT 8821-4 adapter.

To select sensor location, press ◀ or ▶ and underscore MV/P or other, then press to select. Press ◀ or ▶ again to underscore OK. Press to continue. If other was selected, in the next screen specify which station number the sensor(s) is/are governed by.

NOTE: If MV/P is selected on the screen, sensor must connect to the master valve wire or terminal. If other is selected, the sensor must be connected to one of the station's numbered terminals.

This screen, Sensor Governs, allows you to designate, which of the installed valves will be governed by the sensor. To designate the valves that the sensor will control, press ◀ or ▶ and underscore the valve numbers to be governed by the sensor, then press to select. Press ◀ or ▶ again to underscore OK. Press to continue.

Sensor 01 02
Governs: 03 04

NOTE: If an installed switch type sensor is triggered, any valve that is check marked and is currently ON will complete its programmed run time. All further valve operations will be prevented until the sensor deactivates and allows watering again.

The handset is trying to establish a link with a LEIT controller. While the word Controller is blinking, wait for a confirmation. If communication is established, the following screens will confirm the changes. If communication is not established the No Response-Try Again screen will appear with Yes highlighted as the default. Press again to re-initiate communication with a LEIT controller that has the same ID, which uploads the new setting (if revised).

Connect ID: 09
Controller:

If communication is established and only one screen has changed, only one of these screens will show. If any other changes have been made, all the changes will show in the following screens. Press to review the changes and to exit.

Changed Ctrl:09
Time/Date

Press to repeat. Press ◀ or ▶ to move to the next feature.

UPLINK RADIO STATUS

The Uplink Radio Status is used for testing the range between the remote control handset and the controller. The screen also provides the voltage information of the controller. The Rx and Tx figures give an approximate indication of radio signal strength received at the controller (Rx) and handset (Tx). The quality of the signal at that range is identified with a number between 0-3, with 3 being the best, strongest signal. The V signal is an indication of the voltage level at the controller. The fully charged controller will show 2.13 V on the display.

To enter Uplink Setup System press . To skip Uplink Radio Status and move to the next feature press ◀ or ▶ to continue.

UPLINK
RADIO STATUS?

The word Test will flash while attempting to establish a link with a LEIT controller. If communication is not established the No Response-Try Again screen will appear with Yes highlighted as the default. Press again to re-initiate communication with a LEIT controller that has the same controller ID.




Rx Tx V x5
Test? 0Yes 0No

If a link is established with a LEIT controller the quality of the radio signal and the controller power strength can be checked.

Rx = Receive signal strength at controller from handset with a minimum of 0 and maximum 3.

Tx = Transfer signal strength at handset from controller with a minimum of 0 and maximum 3.

2.13 V = Controller voltage where 2.13 indicates that the controller is fully charged.

Press  to repeat. Press  or  to move to the next feature.

Rx2Tx2 2.13V x 5
Test? 0Yes 0No OK

SERVICE CALL (INSTALLATION TROUBLESHOOTING)

CHECK THE LEIT CONTROLLER AND HANDSET

1. The LEIT XRC controller functions exactly the same as the LEIT X and LEIT XR controller except for the addition of radio setup. The handset and XRC radios **MUST** be set up prior to operation with Client Code, ID and Group address using the key for the XRC.
2. The XRC controller must be situated in a position of adequate light. The radio cannot maintain proper functionality in a shaded position such as adjacent to a wall, unless it is on the "sunny" side of the wall. If light levels drop too low the radio will turn itself off to guarantee correct controller operation. When the radio is off, less power is used as the controller is charging. The radio's internal circuitry will turn itself on again when sufficient light has charged the controller to the appropriate power level. At low light levels the radio will periodically turn on and off. For best results schedule Time on as late as possible and Time off as early as possible in UPLINK SYSTEM.
3. The radio will function better if it is located at a higher elevation. If there is a choice do not situate it in a hollow.
4. To communicate, the controllers and handsets **MUST** have the same Client Code. This is the user's unique identification code, which prevents interference from other users in the area.
5. For LEIT Link Multi-Pro handsets, only one group, is permissible therefore all controllers must be set to group 1 (default).
6. For LEIT Link Master handsets, the handset can communicate with controllers, which have been arranged in functional groups and setup accordingly.
7. If two controllers in the same group are set to the same ID, communication may be disrupted if both controllers are in range of the handset. The same occurs if two handsets are set to the same ID and are in use at the same time. All controllers and handsets in the same group must have a unique ID.
8. The handset needs to be kept in a charged state. After 500 – 1000 charge cycles the internal batteries may need replacement.
9. To verify that the controller is operating correctly, insert the LEIT key and scroll to Check Status mode. Verify if the controller accumulated the time correctly for past and current month.

TROUBLESHOOTING YOUR CONTROLLER

ELECTRICAL PROBLEMS:

With the LEIT Key plugged into the controller, if after 2 minutes there is no visible display check the following:

1. Check the battery in the LEIT Key and replace if necessary.
2. Make sure the LEIT Key is plugged in all the way.

Some or all valves fail to operate when using "Manual Run". (Systems **NOT** USING a master Valve/Pump)

Check the following:

1. Make sure that the red (hot) wires of the actuators are spliced to the hot field wires leading to the controller.
2. Make sure all the white (common) wires of the actuators are connected to the common field wire leading back to the controller.
3. Insert all field wires (with 3/10" of insulation stripped from the end of the wires) firmly into the controller connector and tighten the appropriate screws so as to ensure good connection.
4. Make sure that the wires are corrosion free, the joints are tight and made waterproof.
5. Make sure that there is adequate water pressure.

6. Make sure that the water pressure is not too high (over 150 PSI). Use a pressure regulator if necessary.

PROGRAMMING PROBLEMS:

The valves will come on using the “Manual Run” feature but will not water automatically.

Check the following:

1. The Rain Stop is active. To reactivate the program schedule, go into the Main Menu-Rain Stop/Restart and cancel the Rain Stop (see Rain Stop, page 8-9).
2. No programming schedules have been entered yet. Go into Main Menu Setup Schedule and enter a program (see Programming Schedule, page 13-15).
3. You programmed the controller, but did not ACTIVATE the programs. Go into Main Menu Setup System and activate the desired programs (see Activating Programs, page 17).
4. The programmed runtime of the stations is set to “0” duration. Go into Main Menu Setup Schedule and alter runtime (see Selecting a Watering Duration, page 14).
5. You are not using a sensor, but you programmed the system for sensor operation. Go into Main Menu and then Uplink System to check that sensors are unused (see programming, page 18).
6. A sensor is hooked up to the system and is in a state that inhibits watering.
7. If some valves will not operate in a manual run, enter Uplink System and set the Open checkmark in the Active CCT test screen. Then repeat the manual run and then check the status. If there is an open circuit (wire break) it will be reported. Repeat with the short checkmark set, to look for short circuits (wires touching).
8. If the valves operate correctly in a manual run but not in a scheduled program check that the following settings are correct:
 - Active Programs screen.
 - Sensor – Sensor in Use, Sensor Location and Sensor Governs screens.
 - Month stop – Turn Month off and Month Selection screens
 - Schedule start times, runtimes per program set correctly
9. If a program runs but starts unexpectedly check the schedule settings. If a new program starts before the old program has completed it will be stacked to commence later. The handset gives warnings if runtimes and starts overlap but the LEIT X or XRC controller does not.
10. Make sure there is enough time between the programs and/or start times to meet your watering time in budget (up to 200% possible) (see Monthly Budgets, page 9).
11. The password has been changed or forgotten: Please call DIG Customer Service with the Serial Number of your controller.

GROUPING

Considerations when setting up and making changes to grouped programs:

1. If a valve that was grouped is reset to 0:00, the valve will be skipped.
2. If the lead valve of a group is set to 0:00, the next valve must be given a run time to lead the group. (If not, the orphaned group will attach to the preceding valve.)
3. If Valve #1 is a group leader and is set to 0:00, since there is no preceding valve, the group would remain orphaned. A default run time of 0:01 is returned to Valve #1 to prevent this occurrence.

If the provided solutions have not solved your problems, please call DIG 800-322-9146 for technical support.

Please note that tampering with the controller, or even attempting to take it apart, will VOID any warranty your product might be eligible for.

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FCC compliance

Important Note: To comply with FCC RF exposure compliance requirements, the antenna used for this transmitter is installed to provide a separation distance of at least 8 inches (20 cm) from all persons (not including hands, wrist, feet and ankles) and must not be co-located or operating in conjunction with any other antenna or transmitter.

This device is required to comply with FCC RF exposure requirements for mobile and fixed transmitting devices. This model transceiver generates and uses radio frequency energy. If not installed and used in accordance with the manufacturer's instruction, it may cause interference to radio and television reception. The transceiver has been tested and found to comply with the specification in part 15 of FCC rules for spread spectrum intentional radiators and FCC part 15 Subpart C, specification.

CAUTION: The user should make no field changes or modifications to the LEIT Link Remote Control Handset or the LEIT Controller.

All adjustments and changes must be made at DIG's facility under the specific guidelines set forth in our manufacturing processes. Any change or modification to the equipment could void the users authority to operate the unit, and render the equipment in violation of FCC part 15 subpart C, 15.247. Any tampering with this product will void the warranty.

RECORD / CHART			
	Controller ID	Group ID	Location
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			
21			
22			
23			
24			
25			
26			
27			
28			



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