INSTRUCTION MANUAL

LEIT® Series Controllers

Installation, Programming and Operating Instructions

Models X, XR and XRC

- Automatic irrigation without the support of AC power or batteries
- Operates 4 to 28 stations
- Controller functions and operation are 100% tested
- Controller waterproof quality is 100% tested
- Controller is built to high quality control standards (ISO 9002)
- Four independent programs with 3 start times per program

LEIT Control Programing Quick Reference

For technical support call 1-800-322-9146

Insert LEIT Key

CHARGING… PLEASE WAIT

Press Yes When Most Readable

LEIT MODEL XXXX

SW Ver 0.XX
EE Ver 0.XX

MON 01/01/00
12:01 am

QUIT LEIT Control?

Remove LEIT Key

SETUP RADIO?
— Radio ID: AA
— Time: 7:30am On
— Time: 3:30am Off
— Local Mode? ○ Yes ○ No
— Are You Sure? ○ Yes ○ No

These screens available only with Model XRC with Radio

SETUP SYSTEM?
— Password:AAA
— Time: 7:20am
— Date: 01/03/00
— Active 1 2 3 4 Progs: ✔☐☐☐
— Valve# Option ○P/MV ✔Budget
— Sensor in Use? ○ Yes ○ No
— Change Password ○ Yes ○ No

SETUP SCHEDULE?
— Password:AAA
— Program Number ○1 ○2 ○3 ○4
— ○Every…○Even ○MTWTFSS ○Odd
— Every:___Days
— 1st 00:00 am Start:
— NOTE: Repeat for the 2nd & 3rd Start Times
— Valve#___(G) 0:01 Runtime:

CHECK STATUS?
— MON 01/03/00 7:48 am
— Running in Remote Mode
— Last Connect Mon 01/03/00 07:30am
— Sensor is Unused.
— Valve#___ Use This Month: 0:37
— Valve# Use Last Month: 0:37

MONTHLY BUDGET?
— Jan ___ %

RAIN STOP/ RESTART?
— Stop for ___ Days

MANUAL RUN?
— Run Prog ○None ○Stored ○Temp
— Valve#___ 0:01 Runtime:
— Start Manual Run?
— …Skip to next? ○ Yes ○ No

DiG
IRRIGATION PRODUCTS

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Printed in the USA

DiG
IRRIGATION PRODUCTS

TABLE OF CONTENTS

INTRODUCTION

Congratulations on your purchase of DIG's LEIT® X, XR or XRC. The LEIT Controller you selected is the most advanced in the DIG series of "light powered" water-management irrigation controllers.

Built to the highest quality standards (ISO 9002), the LEIT series has an improved menu base with straightforward programming that allows for a wide range of irrigation programs with features such as valve grouping, four programs, three start times, budgeting, radio remote (XRC) and more. An improved design, and our newest most advanced time-tested photovoltaic module which generates 14% more power, harnesses the energy of ambient light, to power the unit day and night in any kind of weather, and offers you the best possible combination of quality and performance in the irrigation industry.

DIG LEIT series irrigation controllers are available in three models: LEIT X without radio, XR upgradeable to radio and LEIT XRC with radio remote control capability

LEIT X SERIES

Models available: LEIT X10, 12, 16, 20, 24 and X28, 28 stations plus MV/Pump

LEIT XR SERIES

Upgradeable to radio (the controller can be sent back to the factory to be loaded with the hardware for radio, software already included). Remote control not included.

Models available: LEIT XR04, 6, 8, 10, 12, 16, 20, 24 and XR28, 28 stations plus MV/Pump

LEIT XRC SERIES

With remote radio (remote control not included)

Models available: LEIT XRC04, 6, 8, 10, 12, 16, 20, 24 and XRC28, 28 stations plus MV/Pump

LEIT X, XR and XRC series controllers are fitted with a wiring connector strip that can handle up to 28 hot wires, 2 MV/P wires and 2 common wires

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INSTALLATION

INTRODUCTION TO YOUR LEIT CONTROLLER

This chapter will explain the components used and the installation of the LEIT Controller. The LEIT X, XR and XRC are ambient light-powered irrigation controllers and they must be installed according to the manufacturer's recommendations. Failure to do so will void the manufacturer's warranty. This brand of controller can replace all SOLATROL and ALTEC 8000 controllers. The X, XR and XRC series controllers can be mounted on the same column by removing the plastic sleeve from the mounting column of the old controller and mounting the new controller. See installation instruction #12 on page 11. The LEIT X, XR and XRC can operate with all of the old SOLATROL and LEIT 8000 solenoids, such as LEMA 1500E, 1500-4 and 1500S. We recommend all new installations to be done with the 150S-xxx and 1500S standard series valves and solenoid only.

1. PARTS IDENTIFICATION

To properly install your new controller, you will need the following:

1.1   Control unit: LEIT X or XR series controllers programmed with bilingual software versions SW Ver 0.XX EE Ver 0.XX (LEIT key not included).
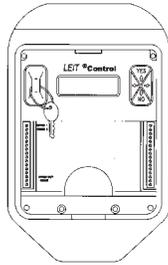
1.2   LEIT Key: Programming tool required to enter and program the controller (uses 1-nine volt alkaline battery)

1.3   Mounting column: model MCOLXS (small) 35" (89 cm) or MCOLXL (large) 50" (127 cm) steel pipe including mounting tool kit (2 screws, 2 spacing bolts, 1 hex-key 3/16")

1.4   Actuators:

Option A: Actuator with valve: each solenoid actuator comes complete with in-line valve (150S-xxx standard series 075 for 3/4", 100 for 1", 150 for 1-1/2" and 200 for 2"),
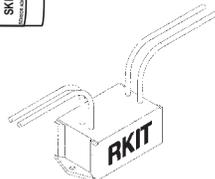
Option B: LEMA actuator (1500S standard series) one for each brand name valve being used (See available models of actuators for other valves on page 5)
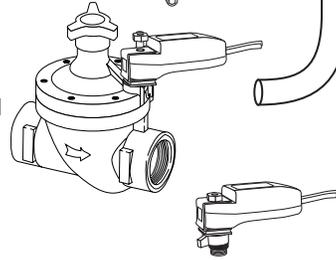
1.5   Optional: Model SKIT 8821-4 connector: if any sensors are used, a SKIT 8821-4 adapter is required

1.6   Optional: Model RKIT 8810S relay: if pumps or any electrical equipment are used, an RKIT 8810S adapter is required.

2. INSTALLATION REQUIREMENTS

2.1   Battery: 9V alkaline battery for the LEIT key

2.2   Standard wire stripper

2.3   Flathead screwdriver (9/64" or smaller)

2.4   Concrete: approximately three 90 lb (40 kg) bags

2.5   Conventional waterproof wire connectors

3. GENERAL INSTALLATION INSTRUCTIONS

Select the right location, the LEIT X, XR and XRC series controllers do not use AC power, you can locate the controller virtually anywhere you want.

* Note: All LEIT controllers work as well in shaded locations (such as beneath trees) as they do in full sun. **Direct sunlight is not required!**

We recommend installing a rain sensor with each controller with the use of adapter model SKIT 8821-4.

4. WIRE INSTALLATION

4.1   Run all direct burial wires along their respective trenches from each valve box to the controller location. Use selection of color coded direct burial wires to connect to each solenoid hot wire and use white wire to connect to the solenoid common wire. Make sure to label each color coded wire inside the irrigation station box with the designated station number. Connect the hot wires from each LEMA solenoid actuator to one of the color coded wires using conventional dry-splice waterproof connectors. Use the single incoming common white wire to connect to the white wire of each LEMA solenoid actuator. Make sure not to exceed the maximum run recommendation of wire distance

MAXIMUM WIRE DISTANCE	
Wire gauge	Maximum run
14 AWG	1,500 feet (300 m)
12 AWG	2,400 feet (700 m)

5. INSTALLATION OF ACTUATOR WITH IN-LINE VALVE SERIES 150S-XXX (2-WAY)

Recommended version is option A, a complete valve assembly including LEMA solenoid actuator with plastic in-line valve (globe), sizes from 3/4" to 2", see Figure 1.

5.1   Shut off main line to the valve.

5.2   Install series 150S-xxx valves with the solenoid actuator according to the valve standard installation specification (See figure 1 and for more detail, see page 12).
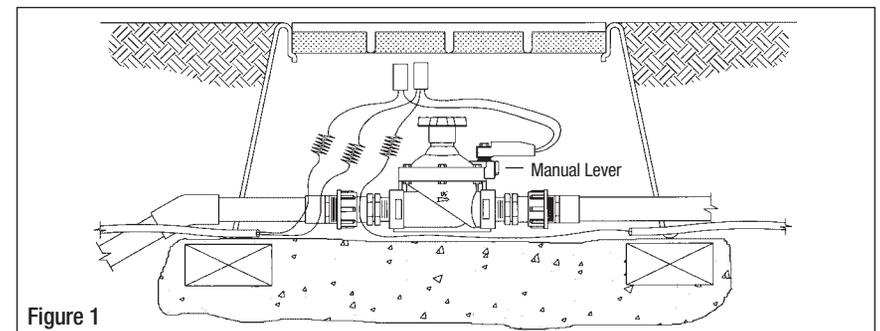

Manual Lever

Figure 1

5.3 Splice the solenoid actuator wires and connect the incoming direct burial color code wire to the red wire from the solenoid actuator using dry-splice waterproof connector. Loop the incoming white common wire to the white wire from the solenoid actuator using conventional dry-splice waterproof wire connectors. Leave the wires slightly loose on each side so that repairs, if needed, can be carried out easily. See Figure 1 on page 3 and detail on page 10.

5.4 After installation is completed, turn the water supply on and pressurize the main line, making sure that all the valves are operating correctly. The valves will open momentarily and then shut off. Test each valve in manual operation by using the manual lever to open and to close the valve, making sure that the valve is operating correctly.

6. INSTALLATION OF ACTUATOR SERIES 1500S (2-WAY)

Match all versions of commercially available brass or plastic AC valves with the appropriate LEMA solenoid actuator (see list of LEMA solenoid actuators available on page 5).

6.1 Shut off main line to the valve.

6.2 Unscrew the conventional solenoids from each of the valves that you are going to use and remove the solenoid, solenoid stem, plunger, spring and "o" ring.

6.3 After selecting the LEMA solenoid actuator with the adapter that is compatible with your valve, separate the actuator from the stem assembly by unscrewing the nut on the top. (See A and A1)

A

A1

6.4 Remove adapter (if assembled) from the LEMA stem assembly and thread adapter to the compatible valve port or screw the LEMA stem assembly into the compatible valve (See B)

B
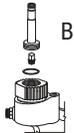
6.5 Screw the LEMA stem assembly into the correct adapter or valve port. Make sure the o-ring and the plunger with spring is inside the adapter or valve port. Firmly tighten the stem with a flat-head screwdriver, but do not over tighten. (See C and C1)

C

C1

6.6 Slip the LEMA solenoid actuator with the magnet over the LEMA stem assembly and secure with the provided nut (see D). The nut should be tightened firmly enough so that it cannot be removed with your hand. Do not over tighten. Make sure to position the LEMA solenoid actuator with the label facing upwards. If you are having a problem with selecting or installing the appropriate LEMA solenoid actuator to your valve, contact:

D

D1

DIG customer service at 1 (800) 322-9146
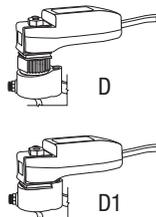
Important: do not over tighten the LEMA solenoid actuator to your valve

Caution: for all brand name valves with a manual bleed lever, make sure the lever is in closed position, and do not move the lever after installing the actuator with the valve adapter. It can damage the adapter and the valve will stay open.

6.6 Splice the solenoid actuator wires and connect the incoming direct burial color code wire to the red wire from the solenoid actuator using a dry-splice waterproof connector. Loop the incoming white common wire to the white wire from the solenoid actuator using conventional dry-splice waterproof wire connectors. Leave the wires slightly loose on each side so that repairs, if needed, can be carried out easily (see #1 on page 10).

6.7 After installation is completed, turn water supply on and pressurize the main line, making sure that all the valves are operating correctly, the valves will open momentarily and shut off. Test each valve in manual operation by using a screwdriver and turning the stem assembly counter clockwise to open and clockwise to close, making sure that the LEMA solenoid actuator selected is operating correctly.

*Note: if the valve remains open in manual operation, you may need to examine if the LEMA solenoid actuator stem and adapter are installed correctly and the nut is firmly secured. (See 6.2 and 6.3)

Note: Please note that the LEMA solenoid actuator operates only with 2-way normally closed valves

Warning: LEMA solenoid actuators must not be tested with any AC valve tester or DC tester over 9V! To do so will cause irreparable damage to the LEMA solenoid actuator and the controller unit and will void the warranty on the products.

7. LIST OF TYPES AND MODELS OF LEMA ACTUATORS

LEMA Actuator Assembly

Nut
Label
LEMA Solenoid Actuator
Magnet
Stem
Plunger
O-Ring
Adapter

Figure 2
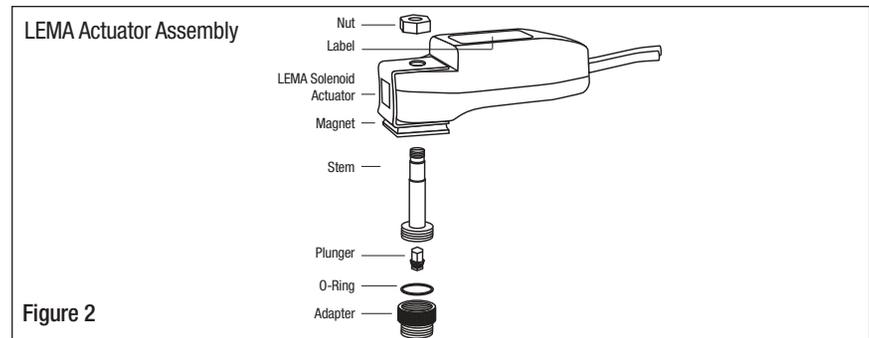
To make sure that you are using the right LEMA actuator for your valve type and model, please refer to the list below

Model	Description
LEMA 1520S	For most Bermad, Buckner VP, (except Imperial), Royal Coach and Toro valve-in-head
LEMA 1521S	For most Rainbird DV, DVF, PGA, PEB, GB, EFB, BPE series, brass or plastic valves
LEMA 1524S	For most Weathermatic valves
LEMA 1526S	For most Toro 252 valves (1-1/2 " and larger)
LEMA 1527S	For most Griswold valves
LEMA 1528S	For most Imperial valves (by Buckner), Superior valves after Oct. 98 and Champion / Superior manual valve adapters except for EA models
LEMA 1529S	For most Richdel & Hardie (IRRITROL) valves
LEMA 1530S	For most Nelson Pro 7900 valves
LEMA 1531S	For most Toro Flo Pro valves

Important: DIG LEMA actuator can operate only on most 2-way normally closed valves with down stream water passage mounted on center, without any interior mechanism.

8. CONTROLLER AND WIRE INSTALLATION

8.1 Install mounting column: set the curved bottom of the mounting column in a 12" x 18" x 12" (30 x 45 x 30 cm) frame and pour in the three 90 lb (40 kg) sacks of cement (See Figure A)

Make sure the column is vertical and the opening in the curved bottom is accessible and unclogged.

All wire will route to the controller through the bottom of the mounting column.

Note: make sure the cement pad is dry before continuing with the installation

8.2 Run the field wires along their respective trenches from the valve box up to the bottom end of the mounting column. Make sure not to exceed the maximum recommendation of wire distance (See chart of maximum wire distance on page 3).

Push the wires up through the column until at least 12" (30 cm) of wire extends from the top of the mounting column. (See Figure B)

8.3 Remove the front door from the LEIT series controller using the key (Key included) and slide the controller into place on top of the mounting column. Make sure that the 12" (30 cm) of wires are now inside the controller and cannot slip back down into the column. (See Figure C)

8.4 Insert the two clamp spacers and the two screws (both included with the mounting column) into the hole located on the lower left and right side of the controller. Tighten the screws with the hex-key (included) until the controller does not turn or twist and cannot be pulled off of the mounting column. (See Figure D)

8.5 Connect the station wires to the controller by using a standard wire stripper. Strip 3/10" of insulation from the tip of each of the station wires and connect the color coded (hot) wires into the connector strip labeled with the station number and tighten the connector screw with a screwdriver. Connect the white (common) wire into either of the two common wire connectors labeled "common" located at the lower part of the connector strip and tighten the connector screw with a screwdriver. If you are using a master valve, you have to connect the hot wire from the Master Valve into the station labeled "MV/P" (See Figure E). For pump or other electrical equipment, see detailed installation on page 8.
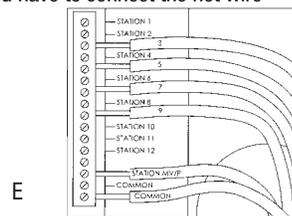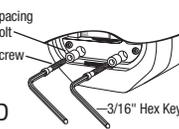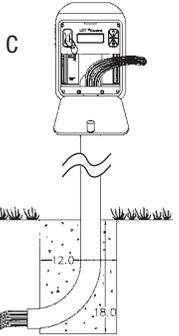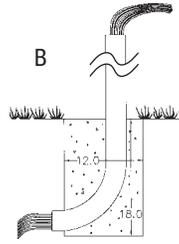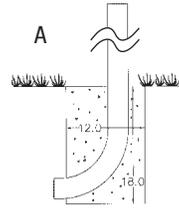
For detailed installation of controller and controller wiring, see page 9.

A

B

C

Spacing Bolt
Screw
D 3/16" Hex Key

E

6

9. INSTALLATION OF SENSING APPLICATION WITH THE SKIT 8821-4

The SKIT switch-type sensor adaptor provides a quick, reliable, weatherproof way to connect compatible rain, freeze, moisture and other normally closed switch-type sensors directly to the LEIT series controllers, to the 150S series valve assembly or to 1500S micro-power actuator. In all applications, a SKIT 8821-4 is required to connect any type of sensor to the system. (See Figure F)
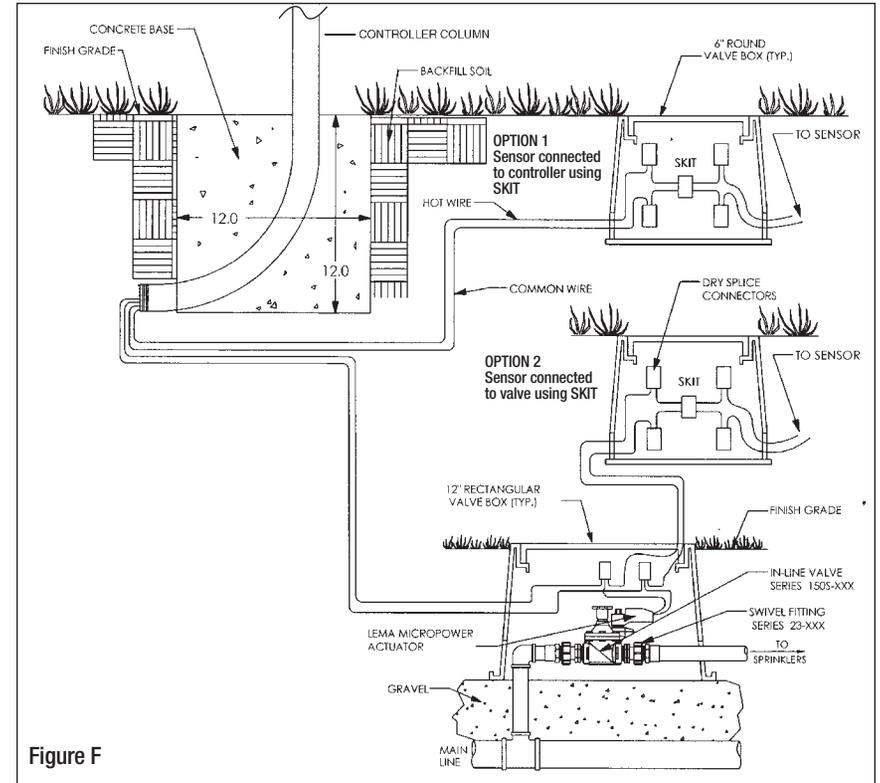
Figure F

9.1 OPTION 1: You can connect a sensor to any station on your LEIT Controller or to the controller MV/P, using a SKIT 8821–4. (See detail of Rain Sensor Installation on page 10)

Procedure: Run a red (hot) wire from the unused station or the MV/P terminal connector on your LEIT controller to the red (hot) wire on the SKIT 8821-4. Then run a white (common) wire from the common terminal connector on the LEIT controller to the white (common) wire on the SKIT. Then splice the two SKIT black wires to the sensor's two normally closed (N/C) wires. (See Figure F, option 1)

9.2 OPTION 2: You can connect a sensor to the 150S-xxx in-line globe valve or 1500S Actuator using SKIT 8821-4. If a station is not available, to minimize excessive wire runs, or if the sensor location is too far from the controller, use the SKIT 8821-4 to connect one of the LEMA series actuators at a valve closest to the desired sensor location.

Procedure: Choose a valve that is closest to your sensor location. Splice the red (hot) wire to the SKIT's red (hot) wire and to your hot field wire, creating a 3-wire connection. Then splice the LEMA's white (common) wire to the SKIT's white (common) wire and make another connection to your common field wire. Then splice the two SKIT black wires to the sensor's two normally closed (N/C) wires. (See Figure F, option 2)

7

Sensors compatible with the LEIT irrigation system:

Recommended rain sensors: Weathermatic 950 and the Hunter Mini-Clik II, Model 502.

Recommended moisture sensors: Irrometer RA and TGA series. Recommended freeze sensor: Hunter Freeze-Clik, Model 401.

10. INSTALLATION OF PUMP OR ANY ELECTRICAL EQUIPMENT USING RKIT 8810S RELAY INTERFACE KIT

The RKIT units are used to switch a 2 amp electrical circuit at a voltage of up to 240V AC/DC.

Note: RKIT 8810S can be used with Series 4000, X, XR and XRC.

10.1 If you are required to switch ON a pump, fertilizer injector, fountain or light using a LEIT series controller, you have two connection options using the RKIT 8810. (See Figure G)

OPTION 1: You can install the RKIT to the MV/Pump terminal, to operate all valves with the unit that you are connecting to (e.g. pump).

OPTION 2: You can install the RKIT to one of your valve station terminal connectors to operate only the valve station number that RKIT has been installed to (e.g. Fountain will turn on/off by only the station that is using the RKIT).

To install the RKIT, run a red (hot) wire from the RKIT to any of your controller station terminals, if you wish to operate only this station. Then run a white (common) wire from the RKIT to the common terminal connector or if not available, splice it into your common field wire using a waterproof connector.

Run the two black wires from the RKIT to your AC/DC equipment and connect them to the corresponding circuit to be switched (e.g. pump start relay).

Make sure to use waterproof dry-splice connectors for all connections.

Note: If the RKIT is connected to any circuit higher than 24 volts, it must be located in its own high voltage junction box in accordance with local electrical code.

RKIT must not be housed in the same box with any low voltage equipment.

Do not connect the RKIT to a circuit higher than 240 volts.

LEGEND
1. FINISH GRADE
2. 6" ROUND VALVE BOX
3. RKIT ADAPTER PART NO. 8810-S, USE WITH EACH SENSOR
4. RED WIRE TO THE MV/PUMP TERMINAL OR ANY STATION TERMINAL
5. WHITE WIRE TO THE COMMON TERMINAL
6. DRY SPLICE CONNECTORS (4)
7. TO AC/DC EQUIPMENT OR PUMP START RELAY

Figure G
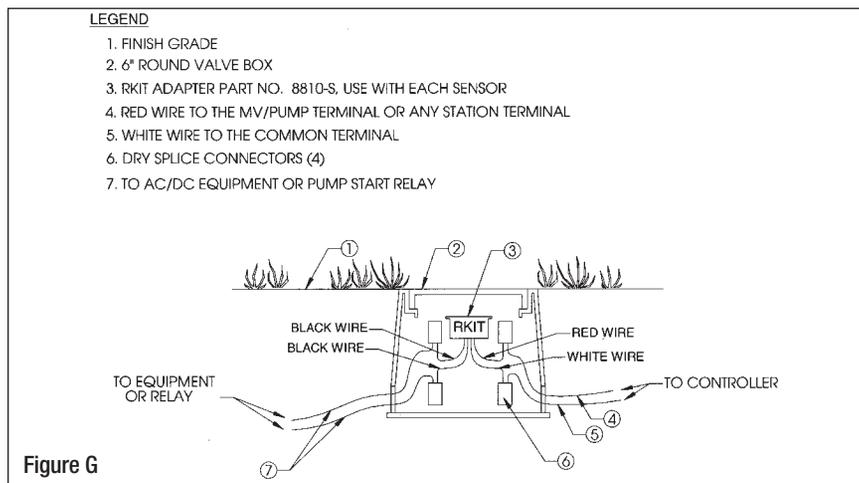
11. MAINTENANCE

None

CONTROLLER INSTALLATION

LEGEND
1. AMBIENT LIGHT POWERED IRRIGATION CONTROLLER. SERIES X, XR, AND XRC. MODEL X 10 TO 28 STATIONS. MODEL XR (WITH OPTIONAL RADIO) 4 TO 28 STATIONS. MODEL XRC WITH RADIO REMOTE 4 TO 28 STATIONS.

2. TERMINAL STRIP.

3. 12 OR 14 GAUGE WIRE.

4. PROGRAMMING KEY. MODEL NUMBER: LEIT KEY

5. 35" STEEL MOUNTING COLUMN. MODEL NUMBER: MCOLXS (SHORT) OR 50" STEEL MOUNTING COLUMN. MODEL NUMBER: MCOLXL (LONG)

6. FINISH GRADE.

7. 6-1/2" OF BACKFILL SOIL.

8. POURED CONCRETE BASE– 1-1/2 CU.FT. INSTALL PER MANUFACTURER'S INSTALLATION GUIDE.

9. DIRECT BURIAL CONTROL WIRES TO CONTROL VALVES.

1 LIGHT ENERGIZED IRRIGATION CONTROLLER LEIT CONTROL X , XR AND XRC

CONTROLLER WIRING

2 WIRE LAYOUT LEIT CONTROL X, XR AND XRC

V A L V E   I N S T A L L A T I O N

1. DRY SPLICE CONNECTORS
2. VALVE BOX WITH COVER 12" SIZE
3. FINISH GRADE TOP
4. DIG REMOTE CONTROL VALVE WITH FLOW CONTROL AND LEIT DC SOLENOID
   MODEL: 150S-150 1-1/2"
   MODEL: 150S-200 2"
5. PVC SCH 40 MALE ADAPTER
6. PVC MAIN LINE
7. BRICK SUPPORT AT EACH CORNER
8. PEA GRAVEL SUMP MINIMUM 3"
9. CONTROL WIRE TO OTHER VALVE
10. SWIVEL FITTING FOR EASY CONNECTION
    MODEL: 23-152 1-1/2"
    MODEL: 23-202 2"
11. PVC SCH 40 45 DEGREE ELL

3 — 150S-150-200 1-1/2" AND 2" REMOTE CONTROL VALVE ASSEMBLY

S E N S O R   I N S T A L L A T I O N
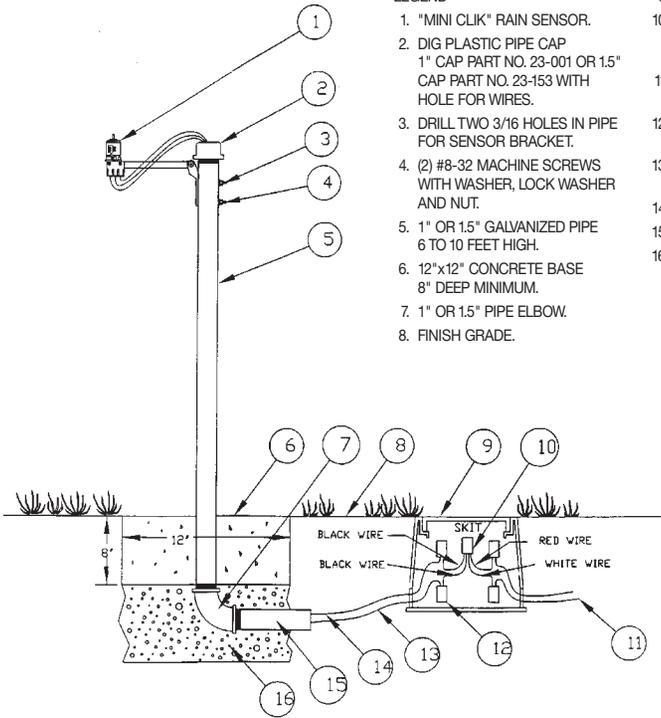
LEGEND

1. "MINI CLIK" RAIN SENSOR.
2. DIG PLASTIC PIPE CAP 1" CAP PART NO. 23-001 OR 1.5" CAP PART NO. 23-153 WITH HOLE FOR WIRES.
3. DRILL TWO 3/16 HOLES IN PIPE FOR SENSOR BRACKET.
4. (2) #8-32 MACHINE SCREWS WITH WASHER, LOCK WASHER AND NUT.
5. 1" OR 1.5" GALVANIZED PIPE 6 TO 10 FEET HIGH.
6. 12"x12" CONCRETE BASE 8" DEEP MINIMUM.
7. 1" OR 1.5" PIPE ELBOW.
8. FINISH GRADE.

9. 6" ROUND VALVE BOX.
10. PART NO. SKIT ADAPTER 8821-4 USE WITH EACH SENSOR.
11. TO CONTROLLER OR VALVE.
12. (4) DRY SPLICE CONNECTORS.
13. NORMALLY CLOSED WIRE FROM SENSOR.
14. COMMON WIRE FROM SENSOR.
15. 1" OR 1.5" NIPPLE.
16. GRAVEL.

4 — RAIN SENSOR ASSEMBLY COLUMN MOUNTED

10

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12. INSTALLATION OF LEIT X, XR AND XRC ON AN EXISTING SOLATROL BLACK CABLE WIRE SYSTEM

12.1 Before removing the black cables from the terminal strip on the old controller, mark the common wire with a piece of tape or white paint. When the door is opened and removed, the flat side of the black cable should be facing out. On each pair of wires, the common wire is the lower wire. (The "hot" wire is on top of the common wire). If there is a wire for a master valve on the system, mark it as well, but with a different mark.

12.2 Using the wire release tool, remove all cables from the terminal strip.

12.3 Remove the controller by loosening the two Phillips (or Allen) head screws on the mounting bracket and then lift the controller up and off of the mounting column.

12.4 Remove the plastic mounting sleeve from the mounting column by striking it from underneath with a hammer (Figure I).

12.5 Excavate a hole from the edge of the concrete base where the cables exit the mounting column to the splice box. If you do not have a splice box, excavate to where the splice box will be installed. Pull all the cables out of the mounting column.

12.6 Excess cable wire can be cut and discarded, but be sure to re-identify the common wires before doing so.

12.7 Install 14 gauge wire from the splice box to the mounting column and bring all cables and 14 gauge leads into an appropriate sized splice box. (12" minimum diameter).

12.8 Using a conventional dry-splice waterproof connector, join each "hot" black cable wire to a length of 14 gauge solid direct burial wire
(we recommend a different color for each station). Leave the cable slightly loose on each side so that repairs, if needed, can be carried out easily.

12.9 All the common black wires need to be spliced into no more than two 14 gauge leads. These leads should be white. Use a conventional dry-splice waterproof connector to join all black cable wires to the white common wire. Use a different color lead for the master valve/pump (if applicable).
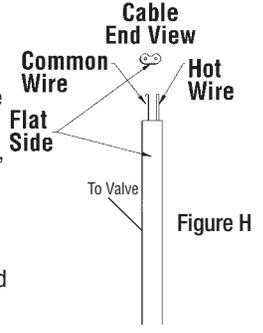
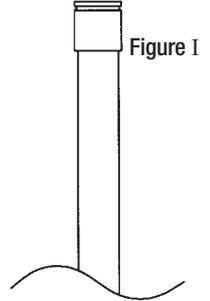For controller installation see details on pages 6 and 9.

Figure H

Figure I

Figure J

11
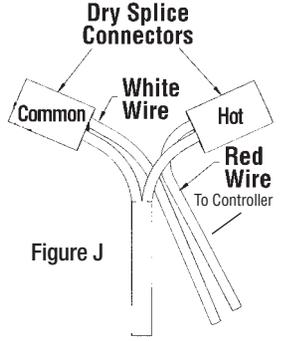
PROGRAMMING

INTRODUCTION

This chapter will explain the use of the program, the features of the buttons and the application flow on your controller.

To program the controller you need to first insert the LEIT KEY, that charges the controller, and allows you to store and review the program. If you need to program the controller with only one program go to Setup Schedule. There you can select a program number, watering calendar, start time, duration and more. For more information, see the back page of this book for a Quick Reference chart of the programming flow. To move between applications (left to right) use the right or left arrow buttons and to enter an application (moving up) use the YES button.

13. LEIT CONTROL PROGRAMMING – SERIES X, XR AND XRC

The controller is programmed with the aid of 4 buttons

⇦ Button: Use to move the cursor left

⇨ Button: Use to move the cursor right

NO Button: Use to lower (decrease) the value of the selected parameter

YES Button: Use to accept, select the desired programming mode and raise (increase) the value of the selected parameter at upper left side

14. INSERT LEIT KEY AT THE UPPER LEFT CORNER

> Charging
> Please wait

> Cargando
> Espera por favor

The above screens will appear only if the controller is not fully charged.

NOTE: If you program the controller for the first time it may well take up to 5 minutes to charge the controller with a LEIT key.

> Press YES when
> most readable

> Cuando lea mejor
> presiona YES

The above alternating screens will appear. Press YES to confirm when the language you wish to use appears on the display and the characters are most readable.

Next this screen will appear. This screen identifies your controller model and number of stations. Press YES to continue.

> Model LEIT 00XX
> OK

This screen identifies the software versions that are installed in your LEIT Controller. Press YES to continue.

> SW Ver 0.XX
> EE Ver 0.XX OK

14. INSERT LEIT KEY…continued

This screen displays the day, date and time. If the LEIT controller is being programmed for the first time, it will not display the correct day, time and date. You can proceed to Setup System on page 26 to set the time and date or you will have the opportunity to do it later.

> MON 01/01/00
> 12:01 am OK

15. MANUAL RUN

The Manual Run feature allows you to override the programmed water schedule and sensor readings, to operate any station for a defined, undefined or stored irrigation period. Note that at the completion of Manual Run, programmed irrigation schedule reverts back to normal operation. Manual Run is useful for checking the proper operation of your stations (especially after installation) and for applying additional water as required.

Note: To skip the Manual Run and move to the next feature, press ⇨ to continue.

> The Manual Run feature overrides any sensor reading or Rain Stop, but not Budgeting.

Press YES to select Manual Run.

> MANUAL
> RUN?

You have the option to run any of the stored programs (assuming that they have been programmed under "Setup Schedule"), to set up and run a temporary program, or exit by by selecting a None program.

> Run Prog. ○ None
> ○ Stored ● Temp OK

Example: to set up a temporary program: underscore Temp by pressing ⇦ or ⇨ and select Temp by pressing YES. Then press ⇦ or ⇨ again and underscore OK. Press YES to confirm and the next screen will appear.

Schedule Valve Run Time – Press ⇦ or ⇨ to underscore the hour or minute digits, then press YES or NO to adjust the runtime. When finished, press ⇦ or ⇨ to underscore OK and press YES to continue. Repeat the same procedure for the remaining valves. To skip any valve, simply set the runtime to 0 then underscore OK and press YES to confirm. In this option you will need to pass through all the valve numbers.

> Valve #1__ 0:01
> Runtime: ▲▲▲ OK
>   ▼▼▼

Note: All remaining stations will reflect the runtime of the previous stations unless manually changed.

Press (YES) to start Manual Run and the next screen will

appear (or, if you're within the spray area, remove the

LEIT Key, replace and lock the LEIT Control door to protect

the controller and move!)

The LEIT Controller will start the manual run immediately and will run each valve for the programmed duration or see the next screen for Skip to Next.

NOTE: When you press OK to start manual run it may well take up to 30 seconds for the next screen "Station 1 Skip To Next" to appear. Do not press OK again until you see valve #1. If you press again you will skip station number 1 and move to station number 2.

This screen displays station 1 and "Skip to Next?". When station 1 has been visually confirmed to

be operating properly, at your option press (YES) to move to the next station. Follow the same

procedure for station 2 and the remaining stations. When temporary Manual Run has been

completed, screen returns to Manual Run. To prematurely

stop Manual Run, press the ⟶ to underscore NO, then

press ⟵ or ⟶ button to underscore OK and press

(YES) to confirm and the next screen will appear.

> **Start Manual Run?**
> OK __

> **01   Skip to Next?**
> ● Yes ○ No   OK __

Press (YES), the manual cycle will stop and the screen returns to "Manual Run" or press ⟶ to

underscore NO. Then press ⟶ again to underscore OK

and press (YES) to confirm, screen will return back to

"Skip to Next?" screen to continue operation.

> **Stop Manual Run?**
> ● Yes   ○ No   OK __

16. RAINSTOP / RESTART

This option is used to temporarily suspend all irrigation programs.

For example, during rainy weather, you can stop implemented regularly scheduled programs from watering for periods from 1 – 99 days using the Rain Stop feature. At the end of the designated period, regularly scheduled programming will resume watering automatically.

Note: To skip the Rainstop and move to the next feature, press ⟶ to continue.

To enter rainstop, press (YES) to continue.

> **RAIN STOP /**
> **RESTART?**

Underscore the number of days required for rain delay by using ⟵ or ⟶ and press (YES) or

(NO) to enter a rain stop setting from 1 to 99 days. Press ⟶ to underscore OK and press (YES) to

confirm and continue. Rain Stop will cancel itself

automatically at 12 a.m. after the number of days the

program has been suspended have passed.

> **Stop for 00 Days**
> ▲▲
> ▼▼   OK __

You can manually cancel the Rain Stop anytime by re-entering the Rain Stop display. Once there,

just press (YES) to reach the following display:

Yes is selected, press (YES) to cancel rainstop. This will

bring you back to the Rain Stop screen. Press ⟶ to

continue to the next step.

> **Cancel Rain Stop?**
> ● Yes ○ No   OK __

17. MONTHLY BUDGET

Instead of changing duration for each program, you can use the 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% to 200% in 10% increments. The LEIT Controller will automatically adjust the programmed duration for each program according to the entered Budget per month.

Note: To skip the Monthly Budget and move to the next feature, press ⟶ to continue.

To enter Monthly Budget, press (YES) to continue.

> **MONTHLY**
> **BUDGET?**

Press the ⟵ or ⟶ to underscore the percentage digits, press the (YES) or (NO) to increase or

decrease the percentage (in increments of 10%). Then

press the ⟵ or ⟶ to underscore OK and press (YES)

to advance to the next month.

> JAN   100%
> Budget: ▲▲
>   ▼▼   OK __

Repeat this procedure to enter the desired Budgets for the remaining months. To skip a month,

simply press (YES). In this procedure you will need to pass thru the 12 months to return to Monthly

Budget.

Note: You can enable or disable an individual station to be budgeted in the Setup System menu (see page 27).

Press the ⟶ to continue to the next step.

18. CHECK STATUS

This feature allows you to review the time, date and sensor setup. This feature also reports the current month's watering time totals for each station as well as those for the previous month.

Note: To skip the Check Status and move to the next feature, press ⟶ to continue.

To enter Check Status, press (YES) to continue.

> **CHECK**
> **STATUS?**

Review the current date and time of day.

Press (YES) to continue.

> SAT 01/01/00
>   12:04 am OK __

Running In Local Mode. Press ⧨ to continue.

NOTE: This screen is available only with model XRC with radio remote capability. (*XRC option only)

Press ⧨ to continue.

```
RUNNING IN
LOCAL MODE
```

Review the day, date and time the controller was operated from a radio remote control.

NOTE: This screen is available only with model XRC with radio remote capability. (*XRC option only)

Press ⧨ to continue and review.

```
LAST CONNECT MON
01/03/00 07:30 AM
```

Sensor Setup.

Review if sensors currently in use, if any.

Press ⧨ to continue and review.

```
Sensor is
Unused.   OK
```

Current Month Usage.

Review how much time was logged on each of your valves during the current month.

Continue to press ⧨ and review how much time was logged for each valve. Press ⧨ after the last valve report

to continue to last month's usage.

```
Valve #_____ Used This
Month:     0:37  OK
```

Usage Last Month.

Review how much time was logged on each valve during the previous month.

Continue to press ⧨ and review the individual log for each valve. Press ⧨ after the last valve

report to return to the Check Status screen.

Press the ↪ to continue to the next step.

```
Valve #_____ Used Last
Month:     3:50  OK
```

19. SETUP SCHEDULE

This feature allows you to schedule up to four separate programs for each station, each with up to three individual start times per day, and to group stations together if hydraulic limitations are not exceeded.

Note: To skip Setup Schedule and move to the next feature, press ↪.

To enter Set Up Schedule, press ⧨ and password screen appears.

```
SET UP
SCHEDULE?
```

Passwords are provided to give the user security against unauthorized changes being made to the system. If you are programming the controller for the first time the default password is (AAA). If you wish you can customize your password in the System Setup. For now underscore OK and press ⧨ to continue.

For example if the controller has been programmed with new password (ABC), to enter your password, press ↩ or ↪ to underscore the first letter and press ⧨ or ⧨ button to select your new letter. Repeat the step for each letter, then underscore OK by using ↩ or ↪ and press ⧨ to confirm and continue to select a program number.

```
Password: AAA
          ▲▲▲
          ▼▼▼   OK
                __
```

◆ SELECT A PROGRAM NUMBER

This screen displays a choice of four programs. Program # 1 is highlighted by default. Press ⧨ to continue and the next screen appears, or to select additional programs underscore the program number by using ↩ or ↪ and press ⧨, then press ↩ or ↪ to underscore OK and press ⧨ to confirm to continue to the next screen.

```
Program Number:
● 1 ○ 2 ○ 3 ○ 4  OK
                  __
```

Note: Additional programs will not run unless you activated the program number in the Setup System on page 20.

◆ SELECT WATERING CALENDAR

Program type preferred options include:

Every- lets you operate stations from once a day to once every 39 days.
Even- every even-numbered day
Odd- every odd numbered day
MTWTFSS- lets you select specific day(s) of the week

```
○ Every..  ○ Even
● MTWTFSS ○ Odd OK
                 __
```

Select the preferred option by using ↩ or ↪ to highlight, then press ⧨ to confirm. Repeat using ↩ or ↪ and underscore OK and press ⧨ again to continue. If you select MTWTFSS, you'll get the next screen to select the day of the week:

Select the day of the week by underscoring the appropriate box under the preferred day using ↩ or

```
Water M T W T F S S
Days: ☑□□□□□□ OK
                  __
```

↩ and press (YES) to confirm. The selected days will show a checkmark instead of the empty

boxes. Repeat the steps again to select all other days. When all tasks are completed, underscore OK

by using the ⇨ or ↩ and press (YES) to continue to Start time.

◆ SELECT A START TIME

First start time: You can select up to three start times a day (including AM or PM). To select the first

start time underscore the appropriate digit using the ⇨ or ↩ and press (YES) to increase or

(NO) to decrease the the value of the appropriate digit. Repeat the steps again for each digit. Use

⇨ or ↩ to underscore OK and press (YES) to go to

the second start time.

```
1ˢᵗ   12:00 am
Start  ▲▲▲▲ ▲   OK
       ▼▼▼▼ ▼   __
```

If you wish to select a second start time, underscore Yes using ⇨ or ↩ , then repeat the steps

again and underscore OK and press (YES) to continue to third start time set up. You can later cancel

any of the additional start times simply by selecting No

instead of Yes.

```
2ⁿᵈ Start Time?
● Yes  ○ No   OK
              __
```

Third start time:(See second start time instruction) and after

that – if you wish – a third start time, repeat the step above.

Underscore OK and press (YES) to continue.

```
2ⁿᵈ   12:00 am
Start ▲▲▲▲ ▲  OK
      ▼▼▼▼ ▼  __
```
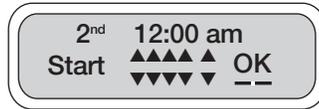
◆ SELECT A WATERING DURATION

To schedule a duration for each valve (You can set a runtime from 1 minute to 5 hours and 59

minutes in 1 minute increments and if you need to, you can operate any number of valves at the

same time if hydraulic limitations are not exceeded using the grouping feature). Underscore the

appropriate digits using the ⇨ or ↩ and press (YES) to increase or (NO) to decrease the hour

or minute digit. Press copy and underscore OK and press

(YES) to continue. The next screen appears and displays

```
Valve #___ 0:01
Runtime: ▲▲▲▲  OK
         ▼▼▼▼  __
```

Valve Runtime for valve # 2. Follow the same procedure for

valve #2 and the remaining valves.
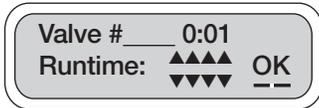
To skip a valve, leave the duration on zero and press (YES) to continue.

> Remember that the duration you select for each valve will be repeated with
>
> each of the three start times if used.

**◆ SELECT A WATERING DURATION
   WITH A VALVE GROUPING**

If you would like to run two or more valves simultaneously, you can use the grouping feature. Set up as many groups as desired if hydraulic limitation is not exceeded.

```
Valve #2   G
Runtime: ▲▲▲▲  OK
         ▼▼▼▼  __
```
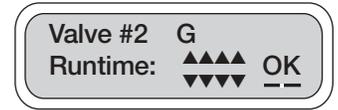
Important: When selecting, creating or changing a grouped program, cycle through all valves of the program to save the changes, before removing the LEIT key.

To set up a group of two valves to operate as one, set valve #1 as the group leader by setting up the

runtime (duration) for valve #1 (See Select a Watering Duration) and attached to it valve #2. While

still in "Valve #2 Runtime" screen, press the ⇨ and underscore the icon to the left of the hour

icon and press (YES) , a (G) will now appear. Press the ⇨ or ↩ and underscore OK and press

(YES) to confirm. The G signifies that station 2 is now slave to station 1.

Station 1 becomes the group leader and its watering time will be applied to all consecutive stations that show the "G" in the Valve Runtime screen.

> **EXAMPLE**
> Valve 1 set for 0:20 minutes …………………Valve 1, 2, 3 and 4 will run for 20 minutes
> Valve 2 set for G0:00
> Valve 3 set for G0:00
> Valve 4 set for G0:00
> Valve 5 set for 0:10 …………………………Valve 5 will run next for 10 minutes
> Valve 6 set for 0:15 …………………………Valve 6 will run next for 15 minutes
> Valve 7 set for 0:20 …………………………Valve 7 and 8 will run next for 20 minutes
> Valve 8 set for G0:00
> Valve 9 set for 0:10 …………………………Valve 9 will run next for 10 minutes

To remove the "G" from a station in the group, press the ⇨ when you are in that station's Valve

Runtime in Setup Schedule screen, underscore the "G" icon located to left of the hour character

by using the ⇨ or ↩ arrow and press the (YES) or

(NO) and the "G" will disappear. Repeat using the ⇨ or

↩ arrow and underscore OK and press (YES) to

```
Valve #2     0:00
Runtime: ▲▲▲▲  OK
         ▼▼▼▼  __
```

continue.
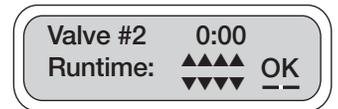
A: If you disable any valve #'s which are assigned to a group leader, by removing the G from the valve, you will have two options:

1. If you leave the unassigned "Valve Runtime" on 0, you will disable and skip the valve within a group. The valve will not operate.

2. You may enter a runtime for this valve and set up the valve as a new group leader or for stand-alone operation.

B: If you disable any of the assigned group leaders by removing the runtime (duration), you will have three options:

1. If you change the setting of the group leader in valve #1 to 0 in ("Valve # Runtime"), there is no preceding valve within the group, a default run time of one minute is used by valve #1 to prevent from disabling the complete group setting.

2. Any other valve assigned as a group leader, when changing the setting to 0, all the valves attached to the disabled group leader, will become part of the preceding group.

3. Any valve other than #1 assigned as a group leader, can be changed to part of a group, by setting "Valve # Runtime" to 0 and adding a G. The valve will now become part of the preceding group.

NOTES:

1. **Valves can be grouped in one program and run separately in another.**

2. **Master valve will be operating for all/any valves in the group that are selected in system setup.**

3. **If a moisture sensor governs the lead valve of a group, this will govern the operation of the entire group, regardless of the individual (sensor governs) selections of the slave valves.**

4. **If operating individually in another program, all valves will follow their own sensor selections.**

Also note that there are a total of four programs and you have just completed programming program #1. To program a second schedule, see "Setup Schedule – Select a Program Number" on page 17.

Press the ⟨→⟩ to continue to…

Be very careful not to duplicate or overlap schedules.

20. SETUP SYSTEM

This part of the menu enables you to set the correct time and date, activate or de-activate programs, budget, MV/P and sensor, change passwords, etc.

Note: To skip the Setup System and move to the next feature, press ⟨→⟩ .
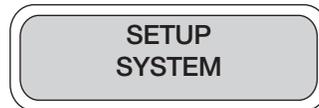
> **SETUP SYSTEM**

To enter Setup System, press (YES) to continue

Press (YES) to continue or enter the correct password if it has been customized. (This screen will NOT be displayed if you have already entered the password in the SETUP SCHEDULE menu.)

* If you have to enter a customized password, press ⟨←⟩ to underscore the first digit then enter the first letter of the password using (YES) or (NO) to scroll through the alphabet. When the correct letter has been selected, press ⟨←⟩ to jump to the next digit and repeat the step for the second and third digit. When your password is shown correctly on the screen press ⟨→⟩ to underscore OK and press (YES) to confirm the new password setup and the next screen will appear.
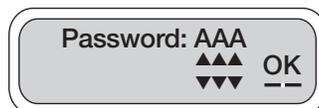
> **Password: AAA**
> ▲▲▲   OK
> ▼▼▼   ‗‗

In setup system if all the information on the screen is correct, you may confirm any of the following screens by pressing (YES) to continue.

To set the time, underscore the appropriate digits using ⟨←⟩ or ⟨→⟩ and press (YES) or (NO) to change the setting. Repeat the steps and when finished underscore OK and press (YES) to continue to set the date.

> **Time: 12:04 am**
> ▲▲▲▲ ▲   OK
> ▼▼▼▼ ▼   ‗‗

To set the date, underscore the appropriate digits using ⟨←⟩ or ⟨→⟩ and press (YES) or (NO) to change the digit setting. Repeat the steps as needed and when finished underscore OK and press (YES) to continue to active program.

> **Date: 01/01/00**
> ▲▲▲▲▲▲   OK
> ▼▼▼▼▼▼   ‗‗
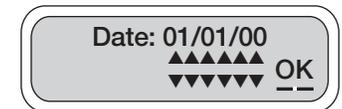
In this step, up to four programs can be activated. Number 1 is always activated (checked), to enable the controller to activate or cancel any of the stored programs simply add or remove the check marks by underscoring the appropriate boxes using ⟨←⟩ or ⟨→⟩ and pressing (YES) . Repeat the steps as needed and underscore OK and press (YES) to continue to Valve Options.

> **Active 1 2 3 4**
> **Progs:** ✔ ☐ ☐ ☐

Note: Scheduled programs will not run unless you have activated the appropriate program number and a check mark appears in the Active Progs box on this screen.

Valve Options Screen has two options for each valve.

Option One MV/P: if checked the valve # will operate with installed master valve or pump. To switch on an installed MV/P use ⟨←⟩ or ⟨→⟩ to underscore MV/P and press (YES) to checkmark the box then underscore OK using ⟨→⟩ and press (YES) to continue to the next screen or…

> **Valve #1 Options:**
> ✔ MV/P ✔ Budget OK
>   ‗‗
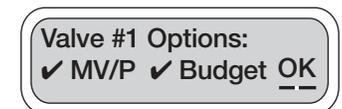
Option Two Budget: is checked by default, the valve # will be affected by the monthly budget setting. All valves are budgeted by default, if you wish to deactivate the budget, uncheck the marks under budget using ⟨←⟩ and press (YES) to confirm. Then underscore OK using ⟨→⟩ and press (YES) to continue. Repeat the same procedure for the remaining valves then underscore OK and press (YES) to continue to Sensor in Use.

> **Valve #1 Options:**
> ☐ MV/P ✔ Budget OK
>   ‗‗
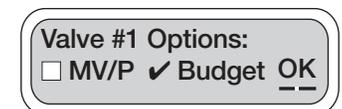
Sensor In Use setup indicates whether or not a sensor is activated and in use: if you install a sensor, use ⇦ or ⇨ to underscore Yes and press the YES to confirm, then press ⇦ or ⇨ to underscore OK and press YES to continue to sensor location.

> **Sensor in Use?**
> ● Yes ○ No   OK

Sensor Location setup indicates the sensor location.

If you selected YES in the "sensor in use" screen, you must indicate which location (controller MV/P or any of the valves used) will have the installation of the SKIT 8821-4 adapter and sensor(s) connected to it. Press ⇦ or ⇨ to underscore MV/P or other, press YES to confirm, then use ⇦ or ⇨ to underscore OK and press YES to continue to the next screen if other has been selected specify which station # the sensor(s) is/are connected with.

> **Sensor Location:**
> ○ MV/P ● Other OK

* If you use MV/P terminal, sensor must connect to the master valve, if "Other" selected, the sensor must be connected to one of the station's terminal.

If you selected "Other" you must now specify which station number the sensor(s) is/are connected to. Press ⇦ or ⇨ to underscore the digit number and press YES or NO to enter the correct station #. Then press ⇦ or ⇨ to underscore OK and press YES to continue to sensor governing.

> **Sensor   01**
> **Location:** ▲▲   OK
>   ▼▼

At Sensor Governs screen you can set up any or all of the installed valves to be switched off when the sensor is triggered. Checkmark the boxes next to the station numbers that you wish to be governed by the sensor by using ⇦ or ⇨ and underscore the appropriate box, by pressing YES to checkmark the box then underscore OK using ⇦ or ⇨ and press YES to continue to change password screen.

> **Sensor   ✔1 ☐2**
> **Governs:** ☐ 3   OK

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

TO CHANGE A PASSWORD

You may change the default password (AAA) to any three-digit combination of letters. Just underscore Yes, using ⇦ or ⇨, then press the YES to confirm, underscore OK using ⇦ or ⇨ and press YES to continue to new password screen.

> **Change Password?**
> ● Yes ○ No   OK

Enter your new password: Press ⇦ or ⇨ to underscore the digits you want to change, use YES or NO to change each digit. When finished, write down the password so as not to forget it.

> **Enter NEW   AAA**
> **Password:** ▲▲▲ OK
>   ▼▼▼

Underscore OK using ⇦ or ⇨ and press YES to exit. This will bring you back to the Setup System screen. Press ⇨ to move to next.

Remember that any person who makes changes to the watering schedule or the setup, needs to enter the new password.

21. SETUP RADIO

*Radio setup available only on model XRC.

After the controller has been installed and programmed, the radio control handset allows you to change some of the controller features from a distance of up to 5000'. To use this option you will need to set the controller in Setup Radio mode as to be recognized by the radio control handset. This setup provides the LEIT controller with a radio ID address. After completion of this setup feature, it will allow the radio control handset to communicate with up to 256 LEIT controllers at the same time any time through the day hours. In this concept of using ambient light as a power source on your LEIT controller, you will need to limit the use of the radio control handset to daylight hours to prevent power drainage of the controller.

Program the controller to operate in a window of early mornings to late afternoon. You can use the radio control handset to modify the date and time, manually open and close any number of valves, test run any individual valve, budget adjustment, adjust number of days for rain delay and more.

NOTE: You can use the handset radio control to operate up to 256 controllers by providing ID numbers for each XRC controller.

NOTE: To skip Setup Radio and move on to Quit LEIT Control? Press ⇨ and remove the LEIT key. To enter Setup Radio, press YES to continue and radio ID will appear.

> **Setup**
> **Radio?**

Radio ID screen displays Radio ID and two characters. To give the LEIT XRC unit a unique address, press the ⇦ or ⇨ and underscore one of the characters and press the YES or NO arrow to select an alpha letter, repeat the steps with the second character; then press the ⇨ to underscore OK and press YES to continue to the Time On Radio screen.

> **Radio ID   AA**
>   ▲▲   OK
>   ▼▼

To schedule the LEIT XRC to start communication with the radio control, you need to provide scheduled time (morning) to communicate.

This screen displays Time On, the hour, minutes and AM/PM characters. The Time ON schedule should be during morning daylight hours. To setup the time on press the ⇦ or ⇨ and underscore the hour characters, press the YES or NO arrows until the desired hour is displayed.

Repeat the process to select minutes, and AM/PM. When all tasks are completed, press the ⬀ or ⬐ and underscore OK then press ⬇ to continue to time off screen.

Note: To schedule the XRC to stop communications with the radio control you need to provide scheduled time (afternoon) to stop communication.

```
Time: 12:00 am
ON   ▲▲▲▲ ▲    OK
     ▼▼▼▼ ▼    __
```

This screen displays Time Off, the hour, minutes and AM/PM characters. The Time Off schedule should be set for afternoon daylight hours. To setup the time off press the ⬀ or ⬐ and underscore the hour characters, use ⬇ or ⬆ until the desired hour is displayed. Repeat the process to select tens of minutes, minutes and AM/PM.

When all tasks are completed, press the ⬀ or ⬐ and underscore OK then press ⬇ to continue to local mode screen.

```
Time: 12:00 am
OFF  ▲▲▲▲ ▲    OK
     ▼▼▼▼ ▼    __
```

Local Mode screen provides you with the option of "No" to operate the controller or "Yes" to block the controller from a radio remote control. The controller would typically be in Remote Mode.

To change mode press the ⬀ or ⬐ and highlight Yes, press the ⬇ to confirm it then press the ⬀ or ⬐ and underscore OK, press ⬇ to confirm and continue.

```
Local Mode?
● Yes ○ No      OK
                __
```
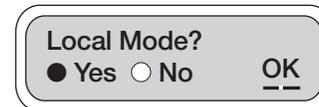
Are you sure screen confirms the option that has been selected.

Are You Sure screen? Present you an option of yes or no. Press the ⬀ or ⬐ and highlight "Yes", press ⬇ then press ⬀ or ⬐ and underscore OK and press ⬇ to confirm and continue.

```
Are you Sure?
● Yes ○ No      OK
                __
```
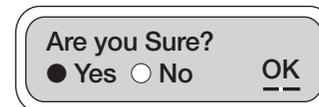
To move on to Quit LEIT Control? Press the ⬐.

NOTE: To skip the Quit LEIT Control? and move to a previous feature press the ⬀ or ⬐.

If you're ready to quit programming, press ⬇ and remove the LEIT KEY.

```
QUIT
LEIT CONTROL
```

If the above screens have been completed successfully, your controller is now fully operational 24 hours a day!

```
Remove
LEIT-Key
```

Make sure static main water pressure at the valve is below 150 PSI

Make sure you are using the proper LEMA actuator with your valve and controller

Make sure the valve opens and closes using the manual operation

22.1. CHECK THE LEIT CONTROLLER

To verify that the controller is operating correctly, insert the LEIT key and scroll to

Check Status mode. Verify if the controller accumulates the time correctly for past and current month, if the controller accumulates correctly go to #22.2.

22.2. CHECK THE LEMA ACTUATOR

Program the controller in Manual Run mode for 2 to 4 minutes, remove the LEIT Key and check if all the valves are operating. If you have a problem with a valve, troubleshoot as follows:

If the valve does not open, go to #22.3 (common information) or,

If the valve does not open (but you have the sense of hearing the actuator plunger latched) go to #22.4 (how to deal with a valve when the plunger is latched and the valve stays closed)

If the valve opens and stays open, go to #22.5 (how to deal with valves that stay open)

22.3. PROBLEMS WITH VALVES THAT DO NOT OPEN (COMMON INFORMATION)

Verify the LEMA actuator operates correctly by removing the actuator from the valve; make sure that the installation steps were followed correctly. Make sure that the correct actuator model is used with the correct adaptor.

Make sure wires are connected correctly to the controller and to the valve

Verify water proof connectors are installed correctly; if needed, remove and check water proof connectors, when testing for contact between the controller and the LEMA actuator

Test the wires from the controller to the actuator to verify connectivity. Remove the hot and common wires from the controller and use a 9-volt battery to see that the LEMA actuator plunger is latched and stays latched. If the plunger stays latched, the controller and the LEMA actuator are operating correctly, if not go to #22.4

22.4. PROBLEMS WITH A LEMA ACTUATOR PLUNGER

a. Remove the LEMA actuator from the valve and turn the actuator so you can see the plunger

b. Program the controller in manual mode for 2 to 4 minutes, remove the key and move to the valve with the problem and see if the actuator plunger is latched, if the actuator plunger is latched and stays latched for the program duration, then the actuator is working correctly, if it is unlatched go to c

c. If the plunger latches and then pops out of the actuator before the end of the pre-programmed duration, you have a problem with the plunger spring. Remove the plunger and insert a new plunger. Repeat the test and make sure the plunger stays latched for the pre-programmed duration and that it pops out at the end of the cycle.

d. After changing the plunger, install the LEMA actuator and perform another test to verify that the LEMA actuator is working correctly

22.5. PROBLEMS WITH VALVES THAT STAY OPEN

Normal 2-way valve operation is normally closed, if water is running when the controller is off, the problems are either the plunger rubber sleeve is worn out or the adapter is not threaded all the way to the valve port and is allowing water to pass between the inlet passage of the solenoid housing and the adaptor. Confirm the following:

If the valve stays open, verify that the adapter in use is the correct adapter, make sure the

"0" rings are in the proper place and verify that the lower tip of the adapter that is in contact with the valve port is not damaged and that no water leaks between the adapter and the valve port.

If the valve still stays open, use a tool to turn and tighten the adapter until the valve will close and water will stop flowing.

23.   TROUBLESHOOTING YOUR CONTROLLER

23.1 MECHANICAL PROBLEMS:

The LEIT does not lock firmly to the mounting column.

Check the following:

1) Are you using the required MCOL?

2) Are you using the correct locking spacer and mounting screw assembly?

3) Have you tightened the mounting screws firmly enough with the hex key?

The LEMA actuator assembly will not correctly attach to valve or, when attached, leaks water from stem or adapter.

Check the following:

1) Check if the actuator model # is correct for valves being used (see page 5).

2) Make sure stem and/or adapter are firmly assembled together with o-rings in place and firmly screwed into the valve.

23.2 ELECTRICAL PROBLEMS:

With the LEIT Key plugged into the controller 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 your controller.

2) Make sure all the white (common) wires of the actuators are connected to the common field wire leading back to your 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) Are you using the correct actuators for your valves? (see page 5)

6) Make sure that the wire length has not exceeded the maximum wire run for the gauge of wire being used (see distance, page 3).

7) Make sure that there is adequate water pressure.

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

9) Make sure that the water piping system is not clogged or plugged.

Some or all valves fail to operate when using "Manual Run". (Systems USING a Master

Valve/Pump)

Check the following:

1) All of the above reasons for failure may apply as well.

2) Check the functionality of the master valve. If the master valve does not operate, there will be no water pressure for the other valves.

3) Make sure the red (hot) wire coming from the master valve is plugged into the "Master Valve/P" position on your LEIT controller.

One valve will come on together with a second valve but not independently (systems NOT USING a Master Valve/Pump)

Check the following:

1) Check if the red (hot) wires are plugged into the designated valve slots (labeled with the Valve Number). If one of the wires is connected to the designated Master Valve/Pump position, it will not operate independently, but will come on when any other valve operates.

Valves switch on but not off.

Check the following:

1) Check that the label on top of each of the actuator bodies is facing upwards.

2) Make sure that the nut on the actuator assembly is tightened firmly. Finger tight is unacceptable. Do not over tighten.

3) Make sure that the field hot and common wire connections are not reversed.

23.3 PROGRAMMING PROBLEMS:

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

Check the following:

1) "Rain Stop" is active. To reactivate the program schedule, go into the Main Menu "Rain Stop/Restart" and cancel the Rain Stop (see Programming, page 14)

2) No programming schedules have been entered yet. Go into Main Menu "Setup Schedule" and enter a program (see Programming, page 16)

3) You programmed the controller, but did not ACTIVATE the programs. Go into Main Menu "Setup System" and activate the desired programs (see Programming, page 20)

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 18)

5) You are not using a sensor, but you programmed the system for sensor operation. Go into Main Menu "Setup System" and check that sensors are unused (see Programming, page 21)

6) A sensor is hooked up to the system and is in a state that inhibits watering.

A programmed schedule does not complete a watering cycle.

Check the following:

1) Make sure the different programs are not overlapping each other. If any of the programs will not be finished by the start time of the following program, the previous program will be terminated.

2) 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 Programming, page 15)

The password has been changed or forgotten:

Please call DIG Customer Service with the Serial Number of your controller.

23.4 GROUPING

Considerations when setting up and making changes to grouped programs:

If a valve that was grouped is reset to 0:00, the valve will be skipped.

If the lead valve of a group is set to 0:00, the next valve must be given a run time to control the group. (If not, the orphaned group will attach to the preceeding valve.)

If valve #1 is a group leader and is set to 0:00, since there is no preceeding 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 Customer Service (800-322-9146) for further 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.

24. WARRANTY

DIG Corp. warrants to its customers who have purchased LEIT products, from an authorized DIG distributor, that its products will be free from original defects in material and workmanship for a period of two (2) years, from the date of original purchase except as to product described in subsection (A).

If any apparent defect arises under normal use and service in the LEIT product within the warranty period, DIG at its sole discretion, shall have the option to repair or replace part or all of the original product free of charge after return of such product at user expense, authorized in writing by DIG Corp. If a product is replaced, the replacement product will be covered for the remainder of the warranty period dating from the original purchase

(A). LEIT Controllers with LEIT stainless steel enclosures warranted to be free from original defects in material and workmanship for a period of two (2) years, from the date of original purchase, except for stainless steel enclosures purchased prior to 1/8/ 2001, these units will be warranted to 12/31/2004

This warranty applies only to the DIG LEIT product line, which are installed as specified and used for irrigation purposes. This warranty applies only to products, which have not been altered, modified, damaged, misused or misapplied. This warranty does not cover products adversely affected by the system into which the products are incorporated, including improperly designed, installed, operated, or maintained systems. This warranty does not apply to blockage of solenoids due to use of water containing corrosive chemicals, electrolytes, sand, dirt, silt, rust, scale, algae, bacterial slime or other organic contaminants.

Tampering with a product (including, but not limited to attempting to disassembly) will void any warranty the product might otherwise be eligible for. In no event shall DIG's liability exceed the selling price of the product. DIG is not liable for consequential, incidental, indirect or special damages, including but not limited to the labor to inspect, remove or replace products, vegetation loss, loss of energy or water, cost of substitute equipment or services, property damage, loss of use or loss of profits; nor is DIG liable for economic losses, consequential damages or damage to property arising out of installer's negligence or based on strict liability in tort. The user and/ or trade customer agrees to the limitations and exclusions of liability of this warranty by purchase or use of DIG products. . No representative, agent, distributor or other person has the authority to waive, alter, or add to the printed provisions of this warranty, or to make any representation of warranty not contained here.

Some states do not permit the exclusion or limitation of incidental or consequential damages or of implied warranties. Therefore, some of the above exclusions or limitations may not apply to you.

This warranty on LEIT products is given expressly and in place of all other expressed or implied warranties of merchantability and fitness for particular purpose, and this warranty is the only warranty on LEIT products line made by DIG Corp

For more information or For LEIT 3 Years Extended Warranty see your DIG Corp distributor or call 1800-322-9146

1-800-822-9146   FAX 760-727-0282

SAVE FOR YOUR RECORDS

Valve No.	Valve Location	Irrigation Program Weekly	Irrigation Program Cyclical	Irrigation Duration (minutes, hours)	Program 1	Program 2	Program 3	Program 4	Daily Start Times 1	Daily Start Times 2	Daily Start Times 3
1		M, Tu, W, Th, F, Sa, Su									
2		M, Tu, W, Th, F, Sa, Su									
3		M, Tu, W, Th, F, Sa, Su									
4		M, Tu, W, Th, F, Sa, Su									
5		M, Tu, W, Th, F, Sa, Su									
6		M, Tu, W, Th, F, Sa, Su									
7		M, Tu, W, Th, F, Sa, Su									
8		M, Tu, W, Th, F, Sa, Su									
9		M, Tu, W, Th, F, Sa, Su									
10		M, Tu, W, Th, F, Sa, Su									
11		M, Tu, W, Th, F, Sa, Su									
12		M, Tu, W, Th, F, Sa, Su									
13		M, Tu, W, Th, F, Sa, Su									
14		M, Tu, W, Th, F, Sa, Su									
15		M, Tu, W, Th, F, Sa, Su									
16		M, Tu, W, Th, F, Sa, Su									
17		M, Tu, W, Th, F, Sa, Su									
18		M, Tu, W, Th, F, Sa, Su									
19		M, Tu, W, Th, F, Sa, Su									
20		M, Tu, W, Th, F, Sa, Su									
21		M, Tu, W, Th, F, Sa, Su									
22		M, Tu, W, Th, F, Sa, Su									
23		M, Tu, W, Th, F, Sa, Su									
24		M, Tu, W, Th, F, Sa, Su									
25		M, Tu, W, Th, F, Sa, Su									
26		M, Tu, W, Th, F, Sa, Su									
27		M, Tu, W, Th, F, Sa, Su									
28		M, Tu, W, Th, F, Sa, Su									