



LEIT® 4000 Controller Specifications

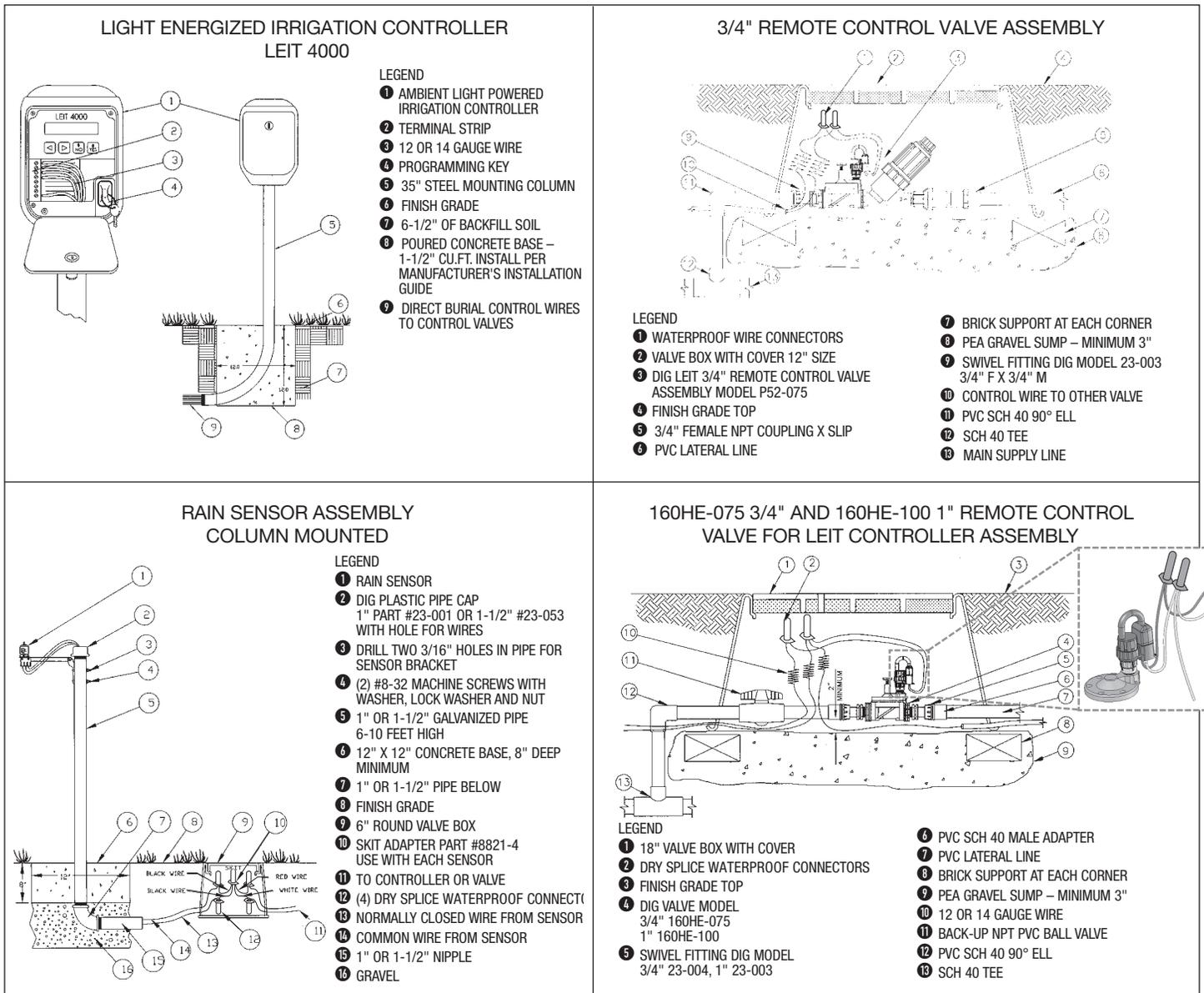
Section 02810

Part 1 Introduction

1.1 The LEIT 4000 series irrigation controller is an advanced water-management irrigation control system. The controller utilizes ambient light as the source of energy to operate up to 8 valves using a low voltage, high efficiency, watertight, 2-way magnetic solenoid actuator that operates at a 5-volt alternating pulse. The LEIT 4000 controller has a menu-based program with straightforward features allowing for a wide range of irrigation applications. The LEIT 4000 controller features include 4 programs with 3 start times per program, run time up to 5 hours and 59 minutes per valve, budget, rain delay, status report and manual run. The controller's power comes from an advanced time-tested photo voltaic module, which harnesses light energy day and night and in any weather conditions. The LEIT 4000 controller is a commercial quality, heavy-duty water management control system used for any type of environment.

Part 2 Typical Installation

2.1 Drawing File no.: LEIT 4000.exe



Part 3 Products

3.1 Automatic Irrigation Controller [Light]

Irrigation controllers shall be single, solid-state independent controllers confirming to the following:

The LEIT automatic irrigation controller shall come with four, six or eight stations, each with master valve or pump start (on the eight station model the master valve replaces station 8 when required) without the need for AC power hookup, batteries or conventional solar panels. The LEIT controller's power shall be provided by an internal, ultrahigh efficiency photo voltaic module and microelectronic energy management system fueled by ambient light. The LEIT controller shall require a LEIT Key to enter, change or modify the controller programming. The LEIT controller shall be programmed using a self-guiding menu and four durable sealed buttons for navigation. To enter the program, a password shall be used to eliminate potential user error. The password can be changed at any time during program setup activation. The LEIT controller shall have a non-volatile memory holding programs indefinitely without needing batteries or AC power. The LEIT controller shall operate in a temperature range of 14-140°F (-10-60°C).

3.1.1 Controller Features Description

- a. Controllers shall operate 4, 6 or 8 stations and/or a master valve.
- b. The 4, 6 or 8 station controllers shall operate and use a standard series micro-power solenoid actuation with globe valve or a micro-power solenoid actuation with the correct adapter to be mounted on other manufacturer's valves.
- c. Controller shall have bilingual software in English and Spanish.
- d. Controller shall have 4 independent programs with 3 start times per station.
- e. Ability to program in one minute increments up to 5 hours and 59 minutes with separate setting for hours and minutes.
- f. A programmable watering calendar choice of a 1-39 day interval, odd/even days or any day(s) of the week.
- g. A feature that shall include password protection for added security.
- h. Rain stop from 1-99 days with automatic restart.
- i. A 12 month budget adjustment from 10% to 200% in 10% increments.
- j. A manual feature that allows a single desired station to cycle start for any preset, preferred duration.
- k. The controller shall have the option to operate automatic, semi-automatic and manual cycle via the controller.
- l. Status Report to review amount of watering time applied during current and previous month.
- m. The controller shall have the option to assign any switch type rain sensor, moisture sensor or freeze sensor to an individual valve or to the entire system using a SKIT adapter. (Rain sensor is recommended.)
- n. The controller shall activate the LEMA HE micro-power solenoid actuator at 5-volts to a distance of up to 7500' (2270m) (LEMA HE only) using NFPA 70 copper conductor 12-gauge (1.6 mm) irrigation wire type UF.
- o. The controller shall be capable of operating pump start replay or a master valve using RKIT 8801S relay interface module.
- p. The controller shall have lightning protection to fully isolate the controller from electrical ground, and offer virtual immunity to ground currents from overhead power lines and/or close proximity lightning strikes.
- q. The controller shall have a full 3-year repair or replacement warranty.
- r. The controller and its components shall be manufactured by DIG Corporation, Vista, CA.

3.1.2 Controller Components Description

- a. Mounting Column – The LEIT controller shall be mounted on a galvanized mounting column with a length of either 32" or 48" with curved sweep at the bottom to permit ease of wire pull.
- b. Micro-Powered Solenoid Actuator
 - b1. Micro-Powered Solenoid Actuator with Globe Valve – The remote control valve shall be a globe type, normally closed using 5-volts alternating pulse micro-powered solenoid actuator with electronic control built in. The valve shall be pressure rated up to 150 PSI and have balanced opening and closing. The valve's body shall be constructed of weather resistant, high impact glass-reinforced nylon and a stainless steel spring (303). The valve's one-piece diaphragm shall be nylon fabric reinforced natural rubber (NR). The valve shall have a flow control and internal manual bleed within the solenoid and allow for manual operation by turning the manual bleed handle a ¼ turn. The valve shall provide easy access for removing all parts from the top of the valve without disturbing normal valve installation. The remote control valve shall have a 3/4" FNPT inlet and outlet connection and shall be manufactured by DIG.
 - b2. Micro-Powered Solenoid Actuator only – The LEIT controller shall use a micro-powered solenoid actuator with electronic control built in. The micro-powered actuator shall use a bipolar pulse and operate at 5-volts alternating pulse. The plunger and spring shall be encapsulated for reliable operation. The micro-powered solenoid actuator shall have an 11/16"-12 UN thread connection and connect to any globe valve via one of the solenoid adapters. The micro-powered solenoid shall use 1 of the 7 DIG valve adapters compatible with the following valves:
 - a. Model 30-920 use with BERMAD series 200, HIT series 500, DOROT series 80, GRISWOLD series 2000, DW and BUCKNER series VB valves
 - b. Model 30-921 use with RAIN BIRD DV, DVF, PGA, PEB (3/4" and 1" only), GB, EFB-CP, BPE, PESB (3/4" and 1" only) and ASVF valves
 - c. Model 30-922 use with HUNTER series ASV, HPV, ICV, PGV, SRV, IBV and ASVF valves
 - d. Model 30-923 use with WEATHERMATIC series 12000, 21000 valves
 - e. Model 30-924 use with IRRITROL series 100, 200B, 205, 217B, 700, 2400, 2500, 2600 and TORO series 220, P220 valves
 - f. Model 30-925 use with SUPERIOR series 950, HUNTER HBV and TORO series 252 valves (1.5" and larger)
 - g. Model 30-926 use with RAIN BIRD series PEB and PESB (1 1/2" and 2" only) valves
- c. LEIT Key – The controller shall be activated using a special LEIT Key powered by a 9-volt alkaline battery to provide access and security to a simple 4-button programming pad and an LCD that shall display all the scheduled information.

3.1.3 Controller System Accessories Descriptions

- a. Stainless Steel Enclosure – The LEIT controller shall use a (304) stainless steel vandal resistant enclosure with strip perforations on top, allowing light to enter the controller, plus a lockable-hinged door (lock included) for added protection.
- b. Sensor Adapter – The LEIT controller or the micro-powered solenoid actuator shall have an option to connect to all types of switch type sensors via the SKIT sensor adapter. The SKIT adapter shall be used as an interface between the controller and a compatible rain, moisture or freeze protection sensor.
- c. MV/P Relay Interface Adapter – The LEIT controller shall have an option to switch on/off an AC or DC circuit via the RKIT relay interface adapter. The RKIT adapter shall be used as an interface between the controller and AC switch device.
- d. Swivel Fittings Connection – The globe valve shall use two swivel fittings, on each side as a union to allow, in case of repair, the valve to be brought to the surface to be serviced without removing the irrigation box or cutting the pipe. The swivel fitting shall be constructed of injected molded polypropylene, UV resistant. The swivel fitting shall feature high impact strength plastic and be highly chemical resistant. The swivel fitting shall have a large swivel (FNPT) with an encapsulated nitric rubber O-ring to allow quick and easy tightening to a PVC male adapter without tools or Teflon tape. The swivel fitting operating pressure shall not exceed 150 PSI.

Part 4 Submittals

The following items shall be submitted by filling in the appropriate number of units and submitting (QTY) with a copy of catalog and instruction manual.

- a. The number of LEIT 4000 powered irrigation controllers shall be _____ each of: LEIT [4004] four-station, [4006] six-station, and [4008] eight-station; manufactured by DIG.
- b. The two-way data communication, micro-powered solenoid actuator with valves shall be _____ each of: [160HE-075] for 3/4", [160HE-100] for 1", [160HE-150] for 1 1/2" and [160HE-200] for 2"; manufactured by DIG.
If the micro-powered solenoid actuator is selected, use the micro-powered solenoid actuator model LEMA 1600HE with the correct adapter to match the valve in use. (see below for adapter compatibility)
The number of two-way data communication, micro-powered solenoid actuators shall be _____ each of: [1600HE] micro-powered solenoid actuator with 1 1/16"-12 UN thread connection, and _____ each of: adapters [30-920] for BERMAD series 200, HIT series 500, DOROT series 80, GRISWOLD series 2000, DW and BUCKNER series VB, [30-921] for RAIN BIRD DV, DVF, PGA, PEB (3/4" and 1" only), GB, EFB-CP, BPE, PESB (3/4" and 1" only) and ASVF, [30-922] for HUNTER series ASV, HPV, ICV, PGV, SRV, IBV and ASVF, [30-923] for WEATHERMATIC series 12000, 21000, [30-924] for IRRITROL series 100, 200B, 205, 217B, 700, 2400, 2500, 2600 and TORO series 220, P220, [30-925] for SUPERIOR series 950, HUNTER HBV and TORO series 252 valves (1.5" and larger), [30-926] for RAIN BIRD series PEB and PESB (1 1/2" and 2" only); manufactured by DIG.
- c. The light powered irrigation controller shall require _____ each of: [LEIT Key] for programming and to enter the system. The same key can be used with any LEIT controller; manufactured by DIG.
- d. The light powered irrigation controller shall require _____ each of: [MCOL 4000] (32") short mounting column and column kit or [MCOL 4000L] (48") long mounting column and column kit; manufactured by DIG.
- e. The controller or the micro-power solenoid actuator shall require if applicable _____ each of: [SKIT sensor adaptor], used as interface between the controller and compatible rain, moisture and/or freeze protection sensors.
- f. The controller shall require, if applicable _____ each of: [RKIT 8810S] relay interface adapter, used as an interface between the controller and pump switch; manufactured by DIG.
- g. The light powered irrigation controller shall require _____ each of: [ENCL 4000] stainless steel enclosures and locks if required, for extra protection against vandalism and theft; manufactured by DIG.

Part 5 Installation

Install irrigation wires at least six inches below finish grade and lay to the side and below main line.

- a. Control wire for LEIT operated valve with LEMA 1600HE shall be NFPA 70 copper conductor, 14-gauge [1.8 mm] irrigation wire, type UF and shall be used for station wire with length up to 4500' (1360 m). NFPA 70 copper conductor 12 gauge [1.6 mm] irrigation wire, type UF, shall be used for station wire with runs up to 7500' (2270 m).
- b. **ELECTRICAL SPLICES SHALL BE WATERPROOF** and shall be located inside the valve box.
- c. An expansion curl shall be provided so that in case of repairs the valve may be brought to the surface to be serviced without disconnecting the control valve.

LEIT® 4000 Controllers



Features

- Operates 4, 6 or 8 stations and a master valve or pump start without AC power hookup, batteries or conventional solar panels
- Bilingual software in English and Spanish
- Functions day or night in any weather and most outdoor locations
- All power is provided by an internal, ultrahigh efficiency photovoltaic module and microelectronic energy management system fueled by ambient light
- Setup system activation allows program verification
- Assign rain, moisture or freeze sensors to an individual valve or to the entire system using the SKIT 8821-4 adaptor
- Manual watering by station or program
- Liquid crystal display is easy to read under almost any lighting conditions
- Rain delay up to 99 days with auto-restart
- Lightning protection, the controller is fully isolated from electrical ground, offering virtual immunity to ground currents from overhead power lines and/or close proximity lightning strikes
- Simple to install easy-access wire connector accommodates standard irrigation wire up to 12 gauge
- Connections secured using a standard Flathead screwdriver (1/8 inch) no special tools required
- Series 4000 controller fitted with a wiring connector strip that can handle a maximum of 8 station hot wires and 2 stations of common wires
- Environmentally friendly using clean power

Programming Features

- 4 independent programs per valve and 3-start times per program allow for mixed irrigation applications
- Duration's from 1 minute to 5 hours and 59 minutes to operate drip or sprinkler systems
- Custom programming with 7-day calendar or interval of 1 to 39 days in odd/even or every day rotation
- Individual monthly water budgeting from 10% to 200% in 10% increments
- Rain delay up to 99 days with auto-restart
- Status Report for each valve verifies operating time for past and current month

Ordering Information

Model 4004 4-stations plus MV/P

Model 4006 6-stations plus MV/P

Model 4008 8-stations plus MV/P

Valves

160HE-075 3/4" plastic valve with flow control

160HE-100 1" plastic valve with flow control

160HE-150 1 1/2" plastic valve with flow control

160HE-200 2" plastic valve with flow control

Actuator

LEMA 1600HE solenoid actuator

Valve Adapters

DIG valve adapters are compatible with the following valves:

300-920 BERMAD series 200, HIT series 500, DOROT series 80, GRISWOLD series 2000, DW and BUCKNER series VB valves

300-921 RAIN BIRD DV, DVF, PGA, PEB (3/4" and 1" only), GB, EFB-CP, BPE, PESB (3/4" and 1" only) and ASVF valves

300-922 HUNTER series ASV, HPV, IGV, PGV, SRV, IBV and ASVF valves

300-923 WEATHERMATIC series 12000, 21000 valves

300-924 IRRITROL series 100, 200B, 205, 217B, 700, 2400, 2500, 2600 and TORO series 220, P220 valves

300-925 SUPERIOR series 950, HUNTER HBV and TORO series 252 valves (1.5" and larger)

300-926 RAIN BIRD series PEB and PESB (1 1/2" and 2" only) valves

