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MARCH 5, 2024

ADDENDUM NO. 01
City of Madison, Engineering Division

CONTRACT NO. 9485
RENNEBOHM PARK SHELTER RESTROOM RENOVATION

This addendum is issued to modify, explain or correct the original Drawings, Specifications, or Contract Documents marked as *Rennebohm Park Shelter Restroom Renovation, City of Madison, Contract #9485, as issued on January 26, 2024* and is hereby made a part of the contract documents.

Please attach these Addendum documents to the Volume 1 Architectural Drawings (Exhibit A), Volume 2 MEP Drawings (Exhibit B), Project Manual (Exhibit C), and Bid Proposal Specification document in your possession.

1. GENERAL CONTRACT CONDITIONS

No new conditions.

2. GENERAL QUESTIONS AND ANSWERS

1. Provide technical information for time clock and electric strike auto lock.
 - i. Please see plan and notes on Sheet EP1 for placement and information on time clock. Cut sheet with technical information on the Intermatic Model ET1725C system will be attached to this document.
2. Provide technical information for specified flush valves.
 - i. Please see plumbing details and notes on Sheet P5 and schedule notes on Sheet P7 for flush valve information. Cut sheet with technical information on the Sloan Optima 152-1.6 ES-S flush valve will be attached to this document.
3. Provide technical information for specified bottle fill station/drinking fountain.
 - i. Please see section on Sheet A5, plan on Sheet P3, riser diagram on Sheets P5 and P6, and schedule on Sheet P7 for information and placement on drinking fountain (DF-1). Cut Sheet with technical information on the Elkay LK44008BF Bottle Filling Station will be attached to this document.
4. The lighting print states that ¾" EMT will be used for all but the fixture whips. The spec packet doesn't state a size requirement for EMT in general. Does that note cover all EMT including conduit runs that would be used for power?
 - i. That note only applies to the lighting conduit. For the power conduit there are no size requirements as long as code minimums are met.
5. The light EC-5400 has been discontinued. What light should be substituted?
 - i. The Parks Division will provide 2 new-in-box light fixtures from their attic stock for the 2 locations where the EC-5400 is to be located. The 2 EC-5400 fixtures are owner furnished/contractor installed. A revised sheet EL1 is provided.
6. Some of the manufacturers for the new panel do not make a 54-pole option. The next size



available is 72. Could you verify if 54-pole is a hard number or if the 72 is an option.

- i. The panel with 72 spaces would be fine as long as there is enough physical space on the wall for mounting. Code requirements are the priority.
7. PLEASE NOTE: Contractor sign in sheets are attached for bidder information.
8. PLEASE NOTE: The Parks Division is planning numerous improvement projects at Rennebohm Park. The Rennebohm Park Shelter Restroom Renovation (contract 9485) is bidding at the same time as the Rennebohm Park Spray Feature (RFB 13008-0-2024-BG). Please review the bid documents on BidExpress. Third party bid sites do not accurately maintain and update the required bid documents.

3. **ACCEPTABLE EQUIVALENTS**

No accepted equivalents.

4. **SPECIFICATIONS**

No new specifications.

5. **DRAWINGS**

Revised EL1

6. **PROPOSAL**

No Change.

Please acknowledge this addendum on page E1 of the contract documents and/or in Section E: Bidder's Acknowledgement on Bid Express.

Electronic version of these documents can be found on Bid Express at <https://www.bidexpress.com/> and the City of Madison web site at <http://www.cityofmadison.com/business/PW/contracts/openforBid.cfm>

If you are unable to download plan revisions associated with the addendum, please contact the Engineering office at 608-266-4751 to receive the material by another method.

For questions regarding this bid, contact:

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Bryan Cooper, Assistant City Engineer, AIA



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RENNEBOHM PARK SHELTER RESTROOM RENOVATION



CONTRACT
#9485
MUNIS
#14525
DRWN BY: KS
DATE 01/19/2023
REV: 03/01/2024

SHT
EL1

Lighting Fixture Schedule (26 50 00 - Lighting)

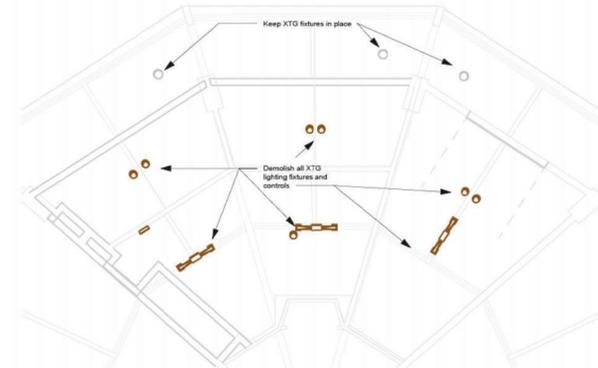
Type Mark	Description	Est. Count	Model	URL	Apparent Power	Luminous Flux	Color Temperature	Efficacy	Lumen Maintenance	Environmental Rating	Notes
EC-5400	Exterior Light matching XTG	2	E-CREB9A-W30Z e-conalight	www.e-conalight.com	55 VA	5420 lm	5000 K	99 lm/W	LM 80 @ 75k hours		
EX-AC	Exit Sign, no Battery	1	Lithonia LDM-3-3-0-120/277	www.auclybrands.com	1 VA						Demolish all existing fixtures and controls
SVT-4-4-DK-M	Strip Light, Vapor-Tight, Medium Distribution	1	Lithonia FEM-41-4000LM-PAQCL-MD-MV-DL-1-02-10-40K-80CRI	www.auclybrands.com	24 VA	2251 lm	4000 K	95 lm/W	L80 @ 100K hours	IP65, NEMA 4X, NSF Splash Zone 2	Use 3/16" stainless latch and wet location fittings in wet environment like washbays and similar
SVT-4-4-DK-W	Strip Light, Vapor-Tight, Wide Distribution	9	Lithonia FEM-41-4000LM-PAQCL-WD-MV-DL-1-02-10-40K-80CRI	www.auclybrands.com	24 VA	2251 lm	4000 K	95 lm/W	L80 @ 100K hours	IP65, NEMA 4X, NSF Splash Zone 2	Use 3/16" stainless latch and wet location fittings in wet environment like washbays and similar
SVT-4-6-DK-W	Strip Light, Vapor-Tight, Wide Distribution	6	Lithonia FEM-41-4000LM-PAQCL-WD-MV-DL-1-02-10-40K-80CRI	www.auclybrands.com	38 VA	2251 lm	4000 K	60 lm/W	L80 @ 100K hours	IP65, NEMA 4X, NSF Splash Zone 2	Use 3/16" stainless latch and wet location fittings in wet environment like washbays and similar
SVT-8-9-DK-W	Strip Light, Vapor-Tight, Wide Distribution	1	Lithonia FEM-41-8000LM-PAQCL-WD-MV-DL-1-02-10-40K-80CRI	www.auclybrands.com	53 VA	2251 lm	4000 K	42 lm/W	L80 @ 100K hours	IP65, NEMA 4X, NSF Splash Zone 2	Use 3/16" stainless latch and wet location fittings in wet environment like washbays and similar

Lighting Device Schedule (26 09 23 - Lighting Control Devices)

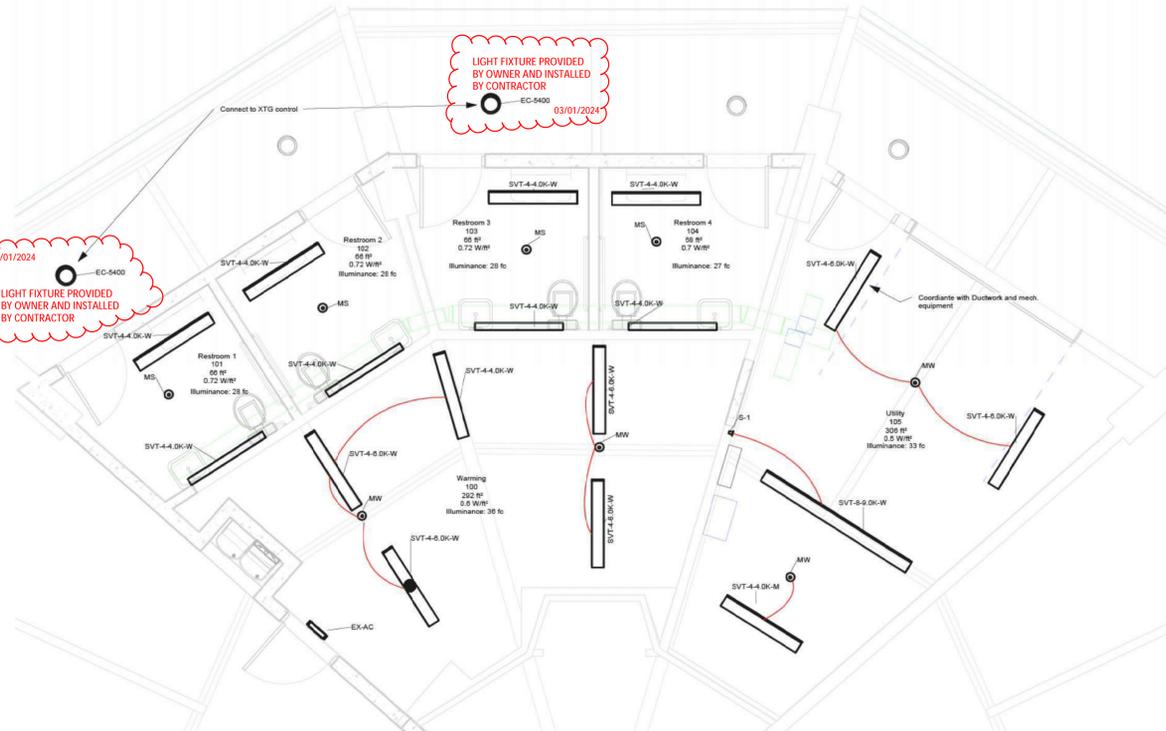
Type Mark	Description	Est. Count	Model	URL	Environmental Rating
MS	Motion Sensor short Range	4	Sensorswitch CMR-8-PDT-ADC-VLP	www.auclybrands.com	
MW	Motion Sensor wide Range	4	Sensorswitch CMR-10-PDT-ADC-VLP	www.auclybrands.com	
S-1	Single Switch	1			

IECC 2015 Lighting Levels

Space Number	Space Name	Area	Space Type	Workplane Height	Min. Required Illumination	Actual Average Illumination	Max. Allowed Power Density	Actual Power Density	Allowed Lighting Level	Actual Lighting Level	Space Lighting Load Contributing to Total
100	Waiting	252 SF	Lounger/Breakroom	2'-0"	20 fc	28.2 fc	0.73 W/ft ²	0.5 W/ft ²	214 VA	175 VA	0.2 VA/ft ²
101	Restroom 1	66 SF	Restroom - otherwise	2'-0"	20 fc	28.4 fc	0.98 W/ft ²	0.72 W/ft ²	85 VA	48 VA	0.08 VA/ft ²
102	Restroom 2	66 SF	Restroom - otherwise	2'-0"	20 fc	28.4 fc	0.98 W/ft ²	0.72 W/ft ²	85 VA	48 VA	0.08 VA/ft ²
103	Restroom 3	66 SF	Restroom - otherwise	2'-0"	20 fc	28.4 fc	0.98 W/ft ²	0.72 W/ft ²	85 VA	48 VA	0.08 VA/ft ²
104	Restroom 4	308 SF	Restroom - otherwise	2'-0"	20 fc	27.5 fc	0.98 W/ft ²	0.7 W/ft ²	87 VA	48 VA	0.08 VA/ft ²
105	Utility	685 SF	Electrical/Mechanical	2'-0"	30 fc	33 fc	1.09 W/ft ²	0.9 W/ft ²	291 VA	193 VA	0.18 VA/ft ²

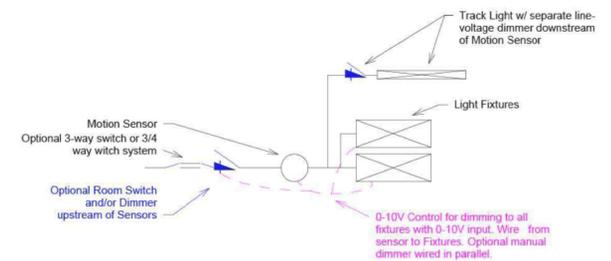


1 ED - Demolition 1/8" = 1'-0"



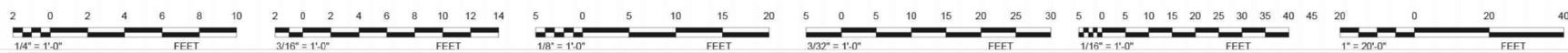
2 EL - New Lighting 1/4" = 1'-0"

- A. Demolition:
- Demolish all existing lighting fixtures and controls. This includes all items not needed for new installation to function. This includes, but is not limited to, emergency, exit, track, architectural and spot lights, switches, sensors, inverters, batteries and control panels. Demolition drawings may not show all existing items.
 - Remove all unused raceways, boxes, conduit and wiring.
 - Patch wall, ceiling and other surfaces damaged by removal of XTG elements. Use adjacent surface matching cover for electrical boxes that remain.
- B. Installation:
- Install new raceways, boxes, conduit and wiring as required for new lighting fixtures and controls.
 - Locations shown are approximate only. Install as required to coordinate with tile patterns, architectural features, sprinklers, mechanical equipment and other obstacles. Center Fixtures and provide even grid wherever possible. Review deviations from plan with designer prior installation.
 - Install fixtures at indicated height. Provide required suspension. A noted height typically applies to all fixtures in a space, even if only a single fixture has an indicated height shown. If no height is given, ceiling surface mounting or mounting at bottom of fixture can be assumed. Installation in between trusses or beams also is an option. Consult with engineer before determining mounting height.
 - Surface wiring raceway in finished areas is only allowed where the structure does not allow installation inside ceiling or wall. Raceway shall be neatly routed and hidden in corners to the greatest extent possible. In finished spaces use surface wire molding instead of conduit. Wiremold shall be factory painted to match wall surface. Where matching factory paint is not available, use field-painting.
 - Support all lighting fixtures adequately and provide all extra support.
 - All conduit except at fixture entrance shall be 3/4" or larger. Turns between access boxes should not be more than 270".
 - Grid Ceilings:
 - Use flexible metal conduit from a J-box in enough length to allow lifting and 2' lateral move of fixture
 - Move flexible head sprinklers where required for even layout pattern.
 - Suspended Strip Light Fixtures: use rigid type hangers every 4' or less. Mount multiple fixtures in a row on a uni-strut structure.
 - Cord & Plug Fixtures: Mount on hook for easy replacement and install safety wire. Provide plug within reach of fixture.
 - In rooms with obstruction (e.g. equipment, pipes, and ducts in mechanical and electrical rooms) mount the fixtures below obstruction and as high as practical to allow good light distribution without limiting access to obstructing equipment. Consult with designer before installation.
- C. Retrofit Installation:
- Maintain all fire ratings while penetrating plenums, walls or ceilings.
 - Install all wiring inside ceiling and wall. If wiring cannot be fished through, provide surface mounted conduit or wire molding in finished spaces.
 - Modify Grid Ceiling to accommodate new fixtures. Fill in openings with new tiles of existing type. Contractor shall provide tiles and grid elements. Review Special site conditions for information on type of tile. Where sprinkler, diffuser or other permanent obstruction prevents even layout, relocate after consultation with engineer.
 - Relocate track lighting occupied areas and take special care while working in occupied areas and cover equipment and furniture as needed.
 - Canopy: Provide retrofit version of fixtures and/or all retrofit accessories for installing over existing fixture locations. Ensure existing opening is fully covered. Build cover matching surrounding surface.
- D. Control:
- Locate sensors to enable good detection within controlled zone and in between partitions. In enclosed rooms minimize detection of motion in adjacent rooms.
 - Lighting zones are indicated by wire annotations and/or switchleg (SL) numbering. Wire annotations are schematic only to indicate control relationships and don't necessarily equal actually required physical wire runs. Lighting zones can be shown by proximity of sensor and light fixture without wire or switchleg annotation for example, garage lighting where each fixture has one sensor). In a room with only one sensor (and dimmer/switch), it is assumed all fixtures are controlled by that sensor (and dimmer/switch) even if no wires or switchlegs are indicated. Unless noted otherwise assume the standard lighting control zone setup.
 - Spaces with electrical panels shall have at least one light be controlled by a manual switch only (no automatic control) per code requirement.
 - Fixture-mounted sensors shall be installed to allow 360° detection and bottom of sensor lens shall be at or below bottom of fixture.
 - Size analog 0-10V wiring to limit voltage drop. At 100% position the light fixture shall be 100% bright.
- E. Emergency Lighting:
- Light fixtures with a black dot indicate emergency lights.
 - Control fixtures from central inverter or generator. Provide all wiring to emergency power source.
 - Re-wire fixture internals if fixture has integrated sensor or other lighting control.
 - Install UL 924 relay in accessible location near controlled fixture. Verify location with engineer.
 - Drywall Ceiling: if no easily accessible location is available, install relay above grid ceiling in adjacent area
 - Outdoor fixtures: Install relay inside above a grid ceiling or other accessible location
 - Retrofit of XTG fixtures: Re-arrange wiring and existing control to allow emergency fixture operation like for new fixtures. Note that schedules that show number of relays required only account for relays of NEW fixtures.



- A. Lighting zones with lighting-devices and light-fixtures are indicated by wire lines and/or switch leg (SL) numbers.
- B. Where devices allow, dimming shall be accomplished by 0-10V wiring of all devices.
- C. Where shown on plans, a zone may have 3-way and 4-way switches. Enable 3-way function on dimmer switch and wire appropriately to enable control from all switch locations. Fixtures and devices in the same above zone are denoted by the same switchleg (SL) number.
- D. Motion sensor with local switch will be de-energized when switch is off (sensor downstream of switch).
 - Light will be on upon activation of local switch regardless of actual motion detection (sensor is ON upon power-up)
 - Sensors will not click when local switch is off (nuisance avoidance in quiet rooms)
 - If the order of switching is different at a specific location, plans will indicate so. Examples include, but are not limited to sensors controlling line-voltage dimmers or other track lighting control.
- E. Line-voltage dimmers (i.e. track lighting) shall be downstream of local motion sensor.
- F. Notes on plans or switchleg naming will indicate exceptions. For example:
 - Disable Switchleg: A dimmer will only dim the lighting level to the allowable minimum. The line voltage switch in the dimmer will not be used. This prevents lights turning off entirely. Hallways are an example.
 - One light fixture shall be controlled by switch only. Switchleg parameters indicate that some lights are controlled by switch and some lights by switch only. This prevents the latter lights from turning off upon loss of motion detection. Electrical or mechanical rooms are examples.
- G. Sensor Programming Instructions:
- The below is based on Sensorswitch Instructions at the time of design. Amend if different sensors are used or if manufacturer changes procedure. Confirm any deviation with engineer. Sensorswitch support#: 1-800-535-2485
 - If sensors are equipped with VLC programming option, a smartphone app shall be used. Note that sensors need to be initialized and set with a PIN within 45 minutes of powering up. Program is sent to sensor via flashlight. Lights will blink to acknowledge successful programming.
 - Verify settings with engineer prior programming. Certain settings may be different in certain zones.
 - Sensors shall be programmed depending on availability of daylight. Save presets to avoid deviations.
 - No daylight available:
 - Enable "Time Delay" - Set to 15 minutes
 - Disable Trim
 - Enable "Dim to Off Delay" - set to 5 minutes
 - Disable Photocell
 - Daylight available (inc. spaces with overhead doors, skylights, windows within 20' of sensor)
 - Enable "Photocell" and set to "On/Off and Auto Dimming"
 - Enable "Auto Set Point"
 - After programming, all functions shall be tested to verify desired function. Adjust as required for intended function. Discuss problems with engineer.

3 EL Lighting Control Zone - Not to Scale



SPECIFICATIONS

PRODUCT SPECIFICATIONS

Elkay Outdoor ezH2O® Bottle Filling Station Wall Mount with Single Fountain Non-Filtered Non-Refrigerated. Features shall include Heavy Duty Vandal Resistant, Laminar Flow, 300 Series Stainless. Furnished with Vandal Resistant bubbler. Mechanical Button activation. Product shall be Wall Mount (On Wall), for Outdoor applications, serving 2 station(s).

Special Features:	Heavy Duty Vandal Resistant, Laminar Flow, 300 Series Stainless
Finish:	Black (BK), Blue (BLU), Evergreen (EVG), Gray (GRY)
Power:	No Electrical Required
Bubbler Style:	Vandal Resistant
Activation by:	Mechanical Button
Mounting Type:	Wall Mount (On Wall)
Chilling Capacity:	Non-refrigerated
Dimensions (L x W x H):	21-1/4" x 21-7/16" x 33-1/2"
Approx. Shipping Weight:	176 lbs.
Installation Location:	Outdoor
No. of Stations Served:	2
**When used in non-temperature controlled environments, unit(s) must be adequately winterized and/or protected from extreme heat to prevent damage where climates dictate.	



Special Note: Wall Mounted Bottle Filler Station (1), Bubbler Stations (1), Choose from 4 color options

- Mechanically-Activated unit continues to supply water in event of service disruptions.
- Laminar flow provides clean fill with minimal splash.

Ships in one box.

A Century of Tradition and Quality. For more than 100 years, Elkay has been making innovative products and providing exceptional customer care. We take pride in offering plumbing products that make life easier, inspire change and leave the world a better place.



PRODUCT COMPLIANCE

- ADA & ICC A117.1
- ASME A112.19.3/CSA B45.4
- GreenSpec®
- NSF/ANSI 61 (Q≤1) & 372 (lead free)
- NSF REG4



Complies with ADA & ICC A117.1 accessibility requirements when installed according to the requirements outlined in these standards. Installation may require additional components and/or construction features to be fully compliant. Consult the local Authority Having Jurisdiction if necessary.

[Installation Instructions \(PDF\) - 1000004376](#)

Warranty pertains to drinking water applications only. Non-drinking water applications are not covered under warranty.

[Warranty \(PDF\)](#)

PART: _____ QTY: _____

PROJECT: _____

CONTACT: _____

DATE: _____

NOTES: _____

APPROVAL: _____

In keeping with our policy of continuing product improvement, Elkay reserves the right to change product specifications without notice. Please visit elkay.com for the most current version of Elkay product specification sheets. This specification describes an Elkay product with design, quality, and functional benefits to the user. When making a comparison of other producers' offerings, be certain these features are not overlooked.

SPECIFICATIONS

MOUNTING INSTRUCTIONS and PLUMBING CONNECTIONS

Refer to diagrams for plumbing rough-in. This fountain is to be mounted on a smooth, flat finished wall surface with adequate support.

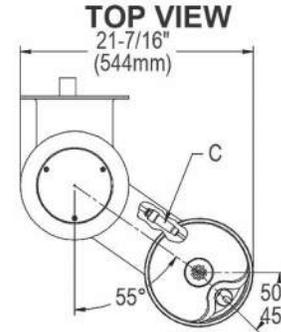
Note: Wall mounting structure must be capable of supporting 300lb. load minimum on fountain. To secure unit, use 3/8" minimum fasteners (not provided). Water service line and waste line are to be assembled as required. Final check for leaks and correct functions of fountain should be made. (For details see the installation instructions.)

Installation requires trap to be installed in wall. A service supply stop must be installed at the fountain inlet line. Trap and service stop not included.

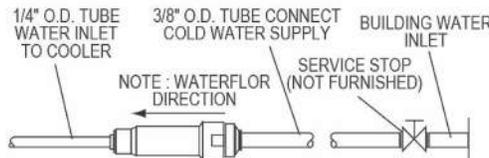
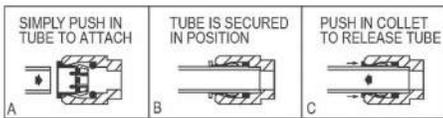
Caution - Fountain must be securely bolted to wall.

Note: For wall support required locations see installation instructions provided with fountain.

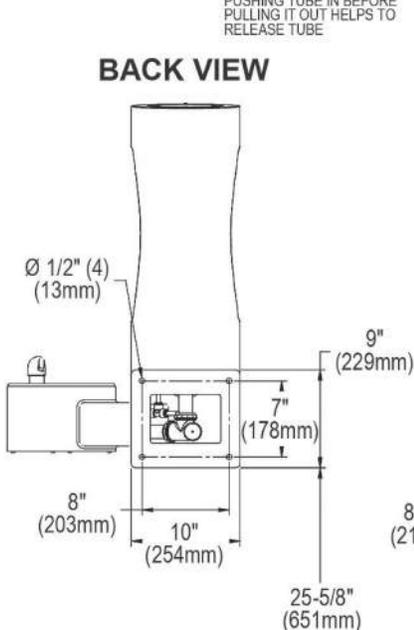
OPERATING PRESSURES:
Supply water 20 - 105 psi maximum



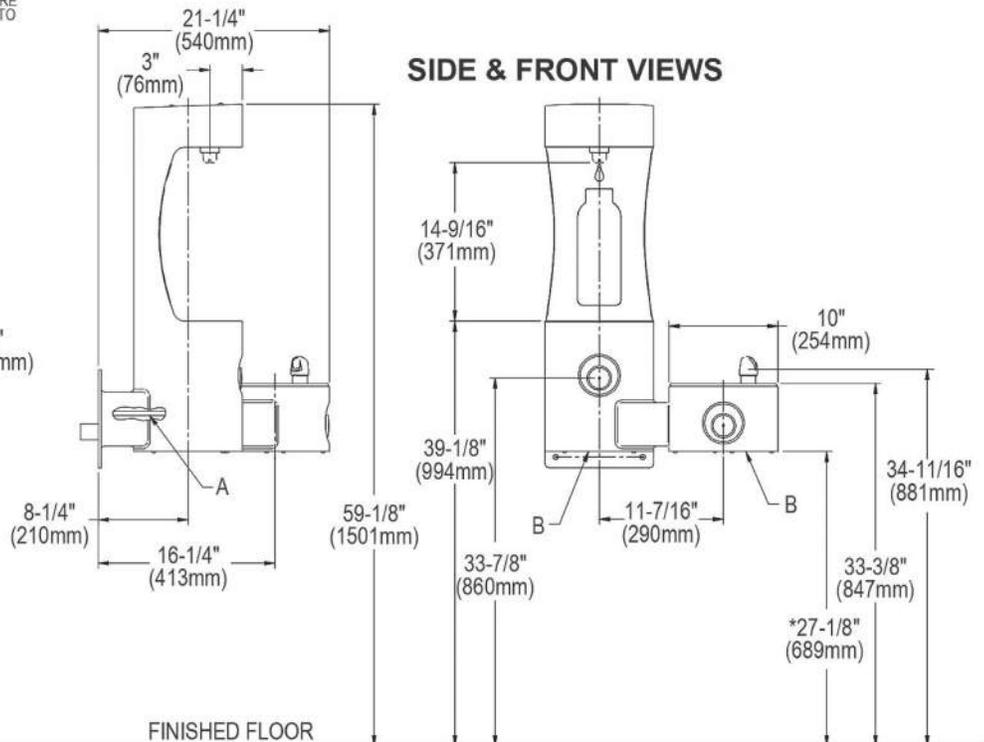
OPERATION OF QUICK CONNECT FITTINGS



BACK VIEW



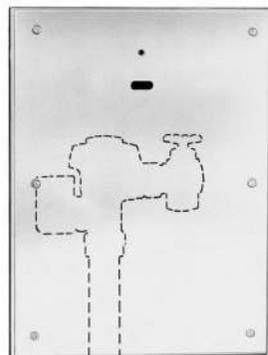
SIDE & FRONT VIEWS



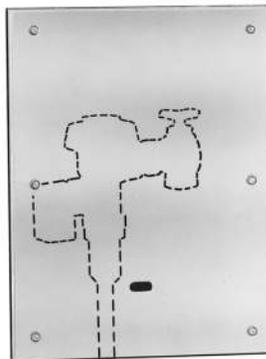
- A = 3/8" O.D. UNPLATED COPPER TUBE CONNECT - SHUT OFF VALVE BY OTHERS
- B = REMOVABLE BOTTOM COVER
- C = IN-LINE STRAINER

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INSTALLATION INSTRUCTIONS FOR OPTIMA® SYSTEMS SENSOR ACTIVATED ROYAL® CONCEALED CLOSET AND URINAL FLUSHOMETERS WITH WALL BOX



CLOSET FLUSHOMETER
WITH WALL BOX
Model 152 WB ES-S Shown



URINAL FLUSHOMETER
WITH WALL BOX
Model 195 WB ES-S Shown

Concealed Closet Flushometer with Wall Box — 1-1/2" Back Spud

Model 152 WB ES-S

Concealed Closet Flushometer with Wall Box — 1-1/2" Top Spud

Model 153 WB ES-S

Concealed Urinal Flushometer with Wall Box — 1-1/4" Back Spud

Model 190 WB ES-S

Concealed Urinal Flushometer with Wall Box — 1-1/4" Top Spud

Model 192 WB ES-S

Concealed Urinal Flushometer with Wall Box — 3/4" Back Spud

Model 195 WB ES-S

Concealed Urinal Flushometer with Wall Box — 3/4" Top Spud

Model 197 WB ES-S

Made in the U.S.A.

LIMITED WARRANTY

Sloan Valve Company warrants its WB ES-S Sensor Activated Royal® Series Flushometers with Wall Box to be made of first class materials, free from defects of material or workmanship under normal use and to perform the service for which they are intended in a thoroughly reliable and efficient manner when properly installed and serviced, for a period of three years (1 year for special finishes) from date of purchase. During this period, Sloan Valve Company will, at its option, repair or replace any part or parts which prove to be thus defective if returned to Sloan Valve Company, at customer's cost, and this shall be the sole remedy available under this warranty. No claims will be allowed for labor, transportation or other incidental costs. This warranty extends only to persons or organizations who purchase Sloan Valve Company's products directly from Sloan Valve Company for purpose of resale.

THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF. IN NO EVENT IS SLOAN VALVE COMPANY RESPONSIBLE FOR ANY CONSEQUENTIAL DAMAGES OF ANY MEASURE WHATSOEVER.

PRIOR TO FLUSHOMETER INSTALLATION

Prior to installing the Sloan OPTIMA equipped Flushometer with Wall Box, install the items listed below as illustrated in the Rough-in diagrams on Pages 2 and 3.

- 2-gang electrical box — 4" x 4" x 2-1/2" (102 mm x 102 mm x 64 mm) for transformer; see paragraph entitled "Transformer Installation" (mount in a convenient location)
- Electrical wiring to the transformer box (120 VAC, 2 amp service required for each EL-154, 24 VAC, 50 VA transformer used)
- Closet or urinal fixture
- Drain line
- Water supply line

Important:

- INSTALL ALL ELECTRICAL WIRING IN ACCORDANCE WITH NATIONAL/ LOCAL CODES AND REGULATIONS.
- INSTALL ALL PLUMBING IN ACCORDANCE WITH APPLICABLE CODES AND REGULATIONS.

- WATER SUPPLY LINES MUST BE SIZED TO PROVIDE AN ADEQUATE VOLUME OF WATER FOR EACH FIXTURE.
- A 24 VAC STEP-DOWN TRANSFORMER MUST BE USED.
- USE APPROPRIATE PRECAUTIONS WHILE CONNECTING TRANSFORMER TO 120 VAC POWER SOURCE.
- FLUSH ALL WATER LINES PRIOR TO MAKING CONNECTIONS.

Sloan Flushometers are designed to operate with 15 to 100 psi (104 to 689 kPa) of water pressure. THE MINIMUM PRESSURE REQUIRED TO THE VALVE IS DETERMINED BY THE TYPE OF FIXTURE SELECTED. Consult fixture manufacturer for minimum pressure requirements.

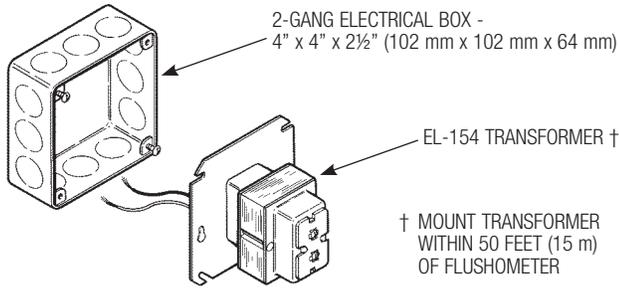
Most Low Consumption water closets (1.6 gallon/6.0 liter) require a minimum flowing pressure of 25 psi (172 kPa).

Protect the Chrome or Special finish of this Flushometer — DO NOT USE TOOTHED TOOLS TO INSTALL OR SERVICE THE VALVE. Also, see "Care and Cleaning" section of this manual.

IMPORTANT: EXCEPT FOR CONTROL STOP INLET, DO NOT USE PIPE SEALANT OR PLUMBING GREASE ON ANY VALVE COMPONENT OR COUPLING!

Transformer Installation

Install Transformer (EL-154) on a 2-Gang Electrical Box, 4" x 4" x 2-1/2" (102 mm x 102 mm x 64 mm) in a convenient location.



Note: One Sloan EL-154 transformer can operate up to ten OPTIMA equipped Flushometers. Run 18-gauge wire from transformer to Flushometer(s). Wire supplied by others. DO NOT supply power to transformer until installation of Flushometer is complete.

Note: A maximum of ten (10) Flushometer units can operate from one (1) Sloan EL-154 Transformer, Class 2, UL Listed, 50 VA (min.) at 24 VAC, plate mounted.

For 220/240 VAC electrical service, use Sloan Transformer EL-342.

Sensor Location (refer to Rough-in diagrams on Pages 2 and 3)

SENSOR LOCATION IS CRITICAL — Failure to properly position the electrical box to the plumbing rough-in will result in improper installation and impair product performance. All tradesmen (plumbers, electricians, tile setters, etc.) involved with the installation of this sensor activated flushometer must be familiar with the requirements of its installation. Improper installation may void the manufacturer's warranty.

Tools Required for Installation

- Slotted screwdriver
- Adjustable wrench
- Wire stripper/crimping tool
- Sloan A-50 Super-Wrench™, Sloan A-109 Plier Wrench or smooth jawed spud wrench
- #8 Drilled Spanner Head screwdriver for wall box cover plate (supplied)

!!! IMPORTANT !!!

Carefully read this manual to ensure proper product installation and longevity. Also, please visit our website www.sloanvalve.com to download our most recent documentation for this product.

With the exception of Control Stop Inlet, DO NOT use pipe sealant or plumbing grease on any valve component or coupling!

Never open Control Stop to where the flow from the valve exceeds the flow capability of the fixture. In the event of a valve failure, the fixture must be able to accommodate a continuous flow from the valve.

Protect the chrome or special finish of Sloan Flushometers — DO NOT USE toothed tools to install or service these valves. Use a Sloan A-50 Super-Wrench™, Sloan A-109 Plier Wrench or smooth jawed spud wrench to secure all couplings. Also see "Care and Cleaning" section of this manual.

This product contains mechanical and/or electrical components that are subject to normal wear. These components should be checked on a regular basis and replaced as needed to maintain the valve's performance.

If you have questions about how to install your Sloan Flushometer, consult your local Sloan Representative or call Sloan Installation Engineering Department at:

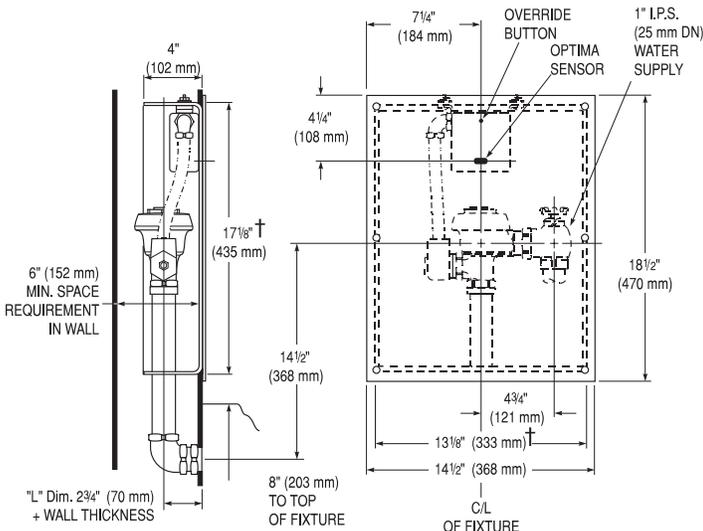
1-888-SLOAN-14 (1-888-756-2614) OR 1-847-233-2016

VALVE ROUGH-IN

Model 152-1.6 WB ES-S — Low Consumption, 1.6 gpf (6.0 Lpf)

Model 152-2.4 WB ES-S — 2.4 gpf (9.0 Lpf)

Model 152 WB ES-S — Water Saver, 3.5 gpf (13.2 Lpf)

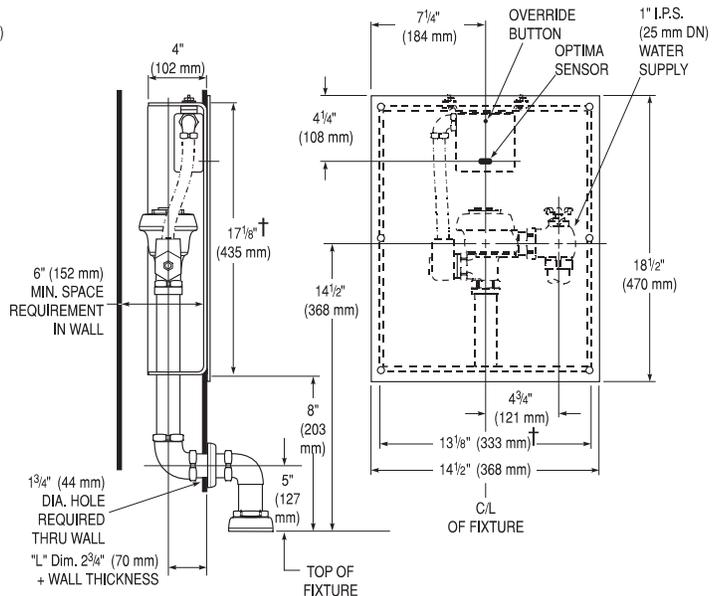


† Required Wall Opening.

Model 153-1.6 WB ES-S — Low Consumption, 1.6 gpf (6.0 Lpf)

Model 153-2.4 WB ES-S — 2.4 gpf (9.0 Lpf)

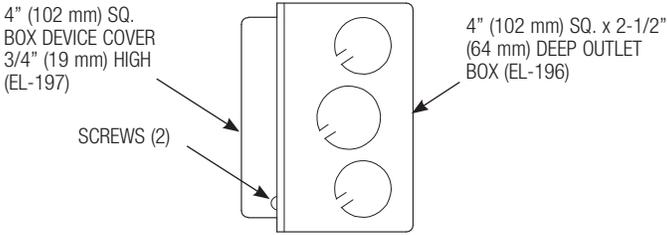
Model 153 WB ES-S — Water Saver, 3.5 gpf (13.2 Lpf)



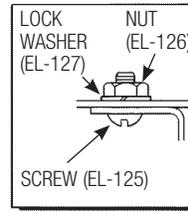
† Required Wall Opening.

1 Assemble and Install Wall Box into Wall

- A** Remove Cover from Wall Box frame using a #8 Drilled Spanner Head screwdriver (supplied).
- B** Mount the 4" x 4" x 3/4" (102 mm x 102 mm x 19 mm) Electrical Box Device Cover (EL-197) to the 4" x 4" x 2-1/2" (102 mm x 102 mm x 64 mm) Outlet Electrical Box (EL-196) using two (2) Screws provided.

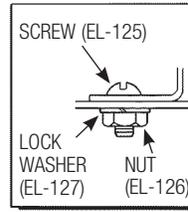
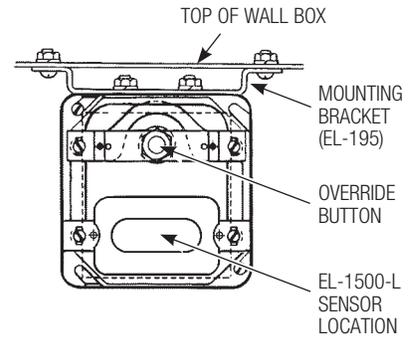


- C** Install Electrical Box into Wall Box as follows
Assemble Mounting Bracket to Electrical Box using two (2) Screws (EL-125), internal tooth Lock Washers (EL-127) and Nuts (EL-126) provided.
Assemble Mounting Bracket with Electrical Box to Wall Box using two (2) Screws (EL-125), internal tooth Lock Washers (EL-127) and Nuts (EL-126) provided.



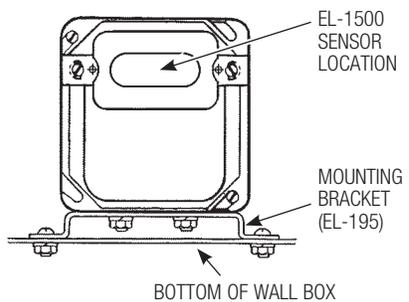
TYPICAL 4 PLACES

**FOR CLOSET
INSTALLATION –
MODELS 152 & 142**



TYPICAL 4 PLACES

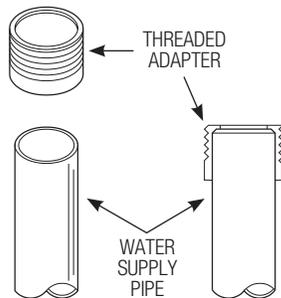
**FOR URINAL
INSTALLATION –
MODELS 190, 192,
195 & 197**



- D** Install Wall Box into wall in the exact location as illustrated in the Rough-in diagrams on Pages 2 and 3. Secure Wall Box using Drive Screws provided or other appropriate fasteners.

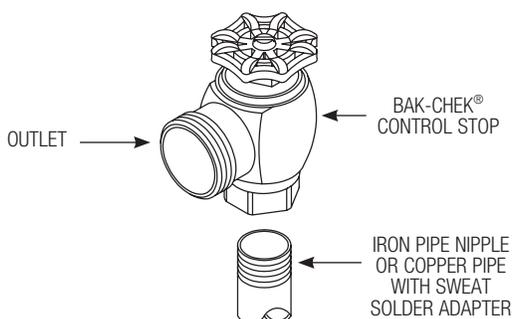
2 Install Optional Sweat Solder Adapter (only if your supply pipe does not have a male thread) and Install Control Stop

- A** For Sweat Solder applications, slide Threaded Adapter onto water supply pipe until end of pipe rests against shoulder of Adapter. Sweat solder the Adapter to water supply pipe.



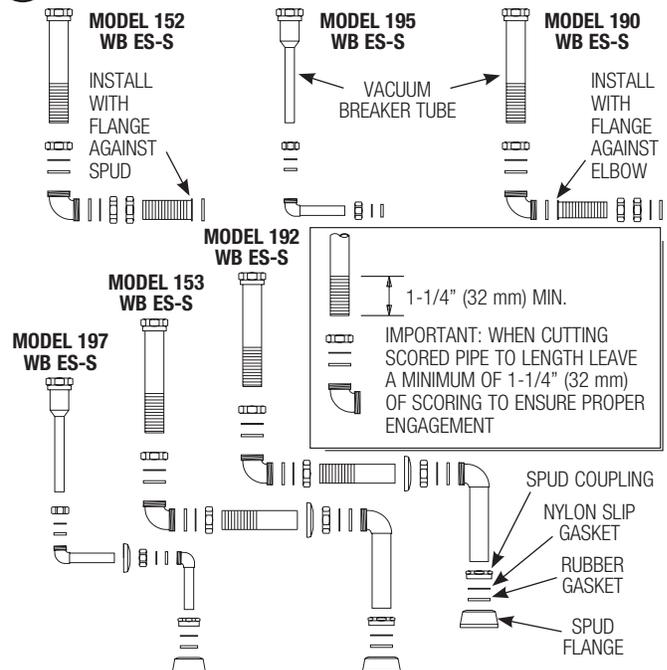
Note: Concealed valves are supplied with double handle opening to allow for installation of Control Stop on either the left or right side of the valve (refer to illustration in Step 4).

- B** Install the Sloan Bak-Chek® Control Stop to the water supply line with the outlet positioned as required.



3 Install Vacuum Breaker Flush Connection

- A** Assemble Pipe, Elbows, Couplings, Nylon Slip Gaskets, Rubber Gaskets and Flanges as illustrated.
- B** Insert Tube into Fixture Spud.
- C** Hand tighten all Couplings.



4 Install Flushometer

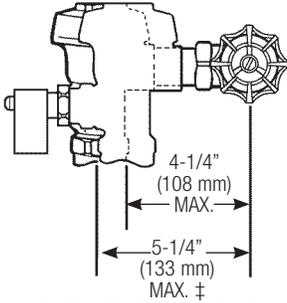
NOTE

For high efficiency urinal flushometers (0.5, 0.25 and 0.125 gpf), it is necessary to first insert the flow control component into the tailpiece assembly. See the H1015A flow control kit and separate instructions for details on how to install.

NOTE

Maximum adjustment of the Sloan Adjustable Tailpiece is 1/2" (13 mm) IN or OUT from the standard 4-3/4" (121 mm) (centerline of Flushometer to centerline of Control Stop).

If roughing-in measurement exceeds 5-1/4" (133 mm), consult factory for longer tailpiece.

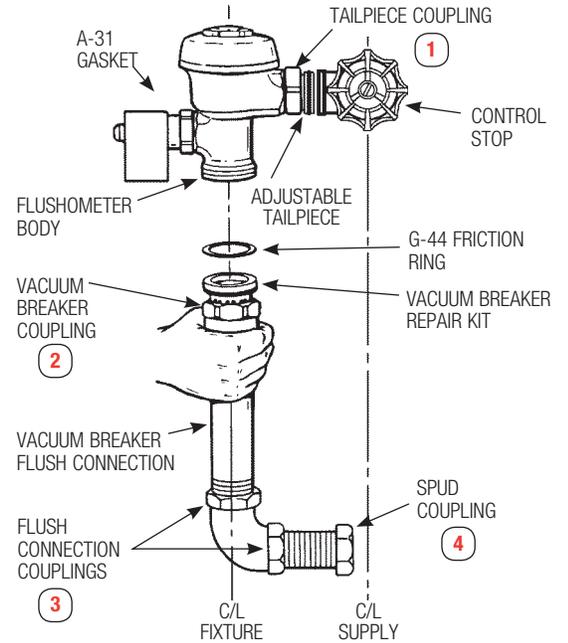


‡ **IMPORTANT:** IF INSTALLED AT MAXIMUM DISTANCE, STOP MAY INTERFERE WITH WALL BOX FRAME.

- A** Lubricate tailpiece O-ring with water. Insert Adjustable Tailpiece into Control Stop. Tighten Tailpiece Coupling by hand.
- B** Align Flushometer directly above the Vacuum Breaker Flush Connection. Assemble Vacuum Breaker Flush Connection to Flushometer. Tighten Vacuum Breaker Coupling by hand.

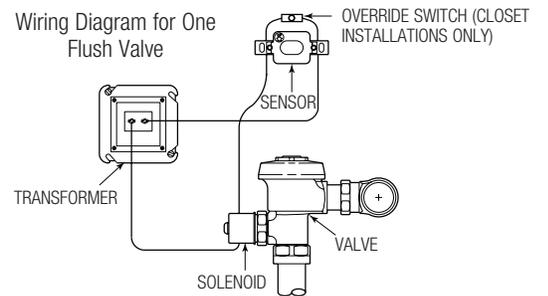
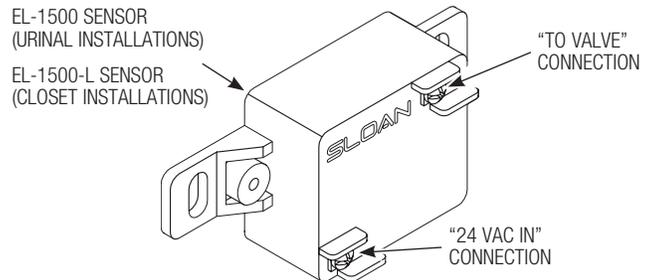
Important: Use a Sloan A-50 "Super-Wrench™", Sloan A-109 Plier Wrench or smooth jawed spud wrench to secure all couplings. This will eliminate damage to chrome or special finish that normally occurs when slip-joint pliers, pipe wrenches or other "toothed" tools are used.

- C** Use a wrench to tighten the following couplings in the order shown. Align Flushometer Body and securely tighten first the Tailpiece Coupling (1), then the Vacuum Breaker Coupling (2), then all Flush Connection Couplings (3) and finally the Spud Coupling (4).

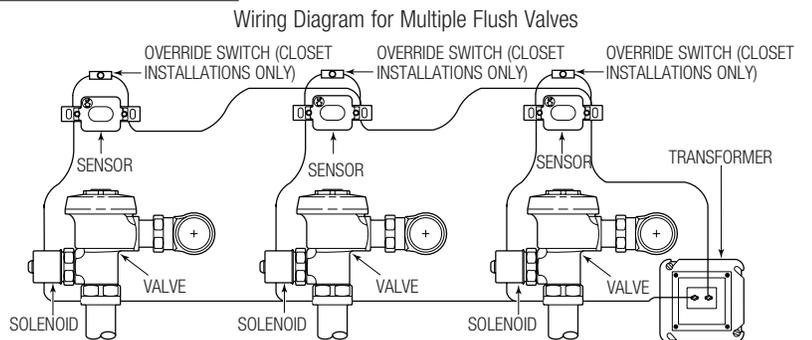
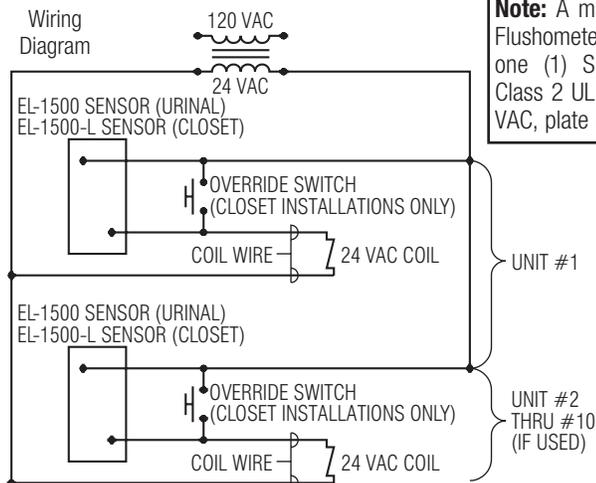


5 Electrical Hook-Up

- A** Be certain power is OFF to prevent damage to electrical components. Connect Sensor to Transformer and Solenoid Coil EXACTLY as shown.
- B** Connect 24 volt source lead to terminal labeled "24 VAC IN" of Sensor.
- C** Connect solenoid lead to terminal labeled "TO VALVE" of Sensor.
- D** Connect remaining solenoid lead to remaining 24 volt source lead.
- E CLOSET INSTALLATIONS ONLY** — Connect override button parallel to the EL-1500-L sensor. Use 18 gauge wire between override button terminals and the connection of the EL-1500-L sensor.

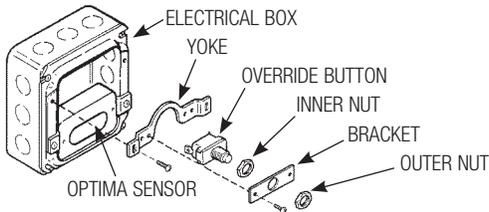


Note: A maximum of ten (10) sensor Flushometer units can operate from one (1) Sloan EL-154 transformer. Class 2 UL Listed, 48 VA (min.) at 24 VAC, plate mounted.



6 Install Optima Sensor and Yoke Assembly (Closet Installations)

- A** Install OPTIMA Sensor EL-1500 (urinal installation) or EL-1500-L (closet installation) into the 2-gang electrical box using two (2) long screws provided. Ensure that sensor lens faces outward and horizontally from finished wall.

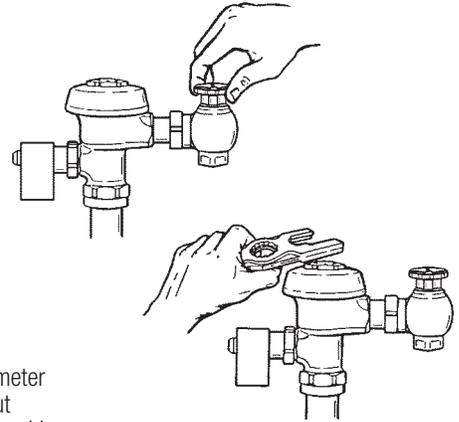


Install Yoke Assembly — Closet Installations Only

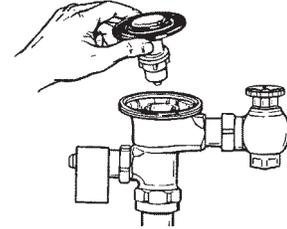
- B** Assemble Inner Nut, Bracket and Outer Nut on threaded shaft of Override Button.
- C** Mount Bracket to Yoke using two (2) Screws provided.
- D** Adjust distance that override button will protrude through wall box cover plate using the nut on each side of the bracket. Threaded shaft end of override button and lens of sensor should rest against wall box cover plate.
- E** Connect Override button parallel to the EL-1500-L sensor.
- F** Mount assembled yoke to electrical box using two (2) Screws provided.

7 Flush Out Supply Line

- A** Make sure Control Stop is CLOSED.



- B** Remove Flushometer Cover and lift out Inside Parts Assembly. Install Flushometer Cover wrench tight.



- C** Open Control Stop. Turn on water supply to flush line of any debris or sediment.

- D** Shut off Control Stop, remove Cover and reinstall Inside Parts Assembly. Install Flushometer Cover wrench tight. Do Not open Control Stop until Step 10.

8 Power and Start-up Mode

Note: It is recommended that all electronic connections be tested with the water supply OFF.

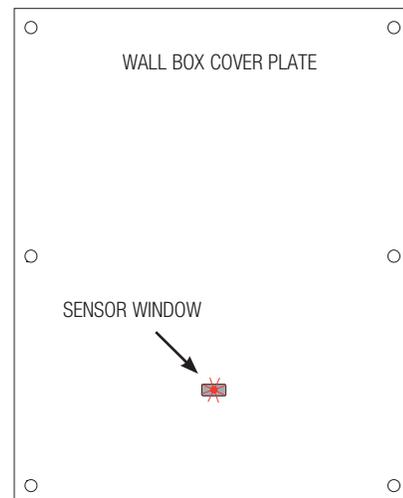
- A** Turn Power ON. The self adaptive sensor automatically adapts to the surrounding environment when 24 volt supply is activated. No manual adjustments are required.
- B** Start-up mode will take approximately five (5) minutes to complete its cycle and is important that no non-permanent target is present at this time. A continuous red light visible in sensor window indicates sensor is in the start-up mode. If the red light is flashing, this indicates that the sensor is picking up a target. Unless this target is a permanent fixture in the sensor's environment (i.e., a wall or stall door), it must be removed from the view of the sensor. If this target is permanent, the sensor will adapt itself around this target. In this case, the start-up mode may take up to ten (10) minutes. When the start-up cycle is completed, no light is visible in sensor window.

Note: If 24 volt power supply is interrupted at any time for more than fifteen (15) seconds, the start-up mode automatically repeats itself when power is restored.

- C** If indicator light flashes three (3) times slowly, three (3) times rapidly and again three (3) times slowly and continually repeats this signal, this indicates incorrect wiring or a short in the 24 volt supply. The self-adaptive sensor is equipped with the sentinel flush feature (automatically flushes every twenty-four (24) hours after last use).

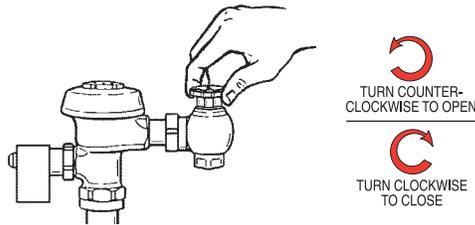
9 Detection/Activation

- A** When an object is detected, a slowly flashing red light will appear in the sensor window. After approximately sixteen (16) seconds for closet/eight (8) seconds for urinal, the light will flash rapidly indicating sensor is armed and ready to activate solenoid when the object leaves the detection area. For Urinal installations, the solenoid will activate immediately after non-detection. For Closet installations, the solenoid will activate within two (2) to four (4) seconds after non-detection.



10 Turn Water on and Adjust Control Stop

- A** Adjust Control Stop to meet the flow rate required for proper cleansing of the fixture. Open Control Stop COUNTERCLOCKWISE one (1) FULL turn from the closed position.



- B** Activate Flushometer by placing hand in front of OPTIMA Sensor Lens for ten (10) seconds and then moving it away.
- C** Adjust Control Stop after each flush until the rate of flow delivered properly cleanses the fixture.

!!! IMPORTANT !!!

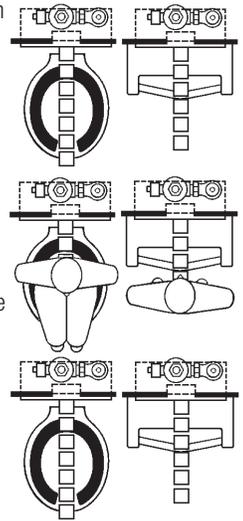
All Sloan Flushometers are engineered for quiet operation. Excessive water flow creates noise, while too little water flow may not satisfy the needs of the fixture. Proper adjustment is made when plumbing fixture is cleansed after each flush without splashing water out from the lip AND a quiet flushing cycle is achieved.

Never open Control Stop to where the flow from the valve exceeds the flow capability of the fixture. In the event of a valve failure, the fixture must be able to accommodate a continuous flow from the valve.

- D** After adjustment, install Wall Box Cover Plate using six (6) Drilled Spanner Head tamper-proof screws. Tighten screws securely.

Operation

- A continuous, invisible light beam is emitted from the OPTIMA Sensor.
- As the user enters the beam's effective range, (25 to 40 inches (635 to 1016 mm) for closet installations and 15 to 30 inches (381 to 762 mm) for urinal installations), the beam is reflected into the OPTIMA's scanning window and transformed into a low voltage electrical signal that activates a sixteen (16) second (closet) /eight (8) second (urinal) time delay circuit. The time delay circuit eliminates false operation from passers-by in the rest room. Once the time delay is completed, the output circuit is alerted and continues in a "hold" mode for as long as the user remains within the effective range of the sensor.
- When the user steps away from the OPTIMA sensor, the loss of reflected light initiates an electrical "one-time" signal that energizes the solenoid operator, and activates the Flushometer to flush the fixture. For closet installations, this occurs approximately 3 seconds after indication. This delay is built into the sensor to help prevent false flushing due to movement by the user of the commode. The circuit then automatically resets and is ready for the next



Care and Cleaning

DO NOT use abrasive or chemical cleaners (including chlorine bleach) to clean Flushometers that may dull the luster and attack the chrome or special decorative finishes. Use ONLY soap and water, then wipe dry with clean cloth or towel.

While cleaning the bathroom tile, the Flushometer should be protected from any splattering of cleaner. Acids and cleaning fluids can discolor or remove chrome plating.

TROUBLESHOOTING GUIDE

1. Valve does not function (red light does not flash when user steps in front of sensor).

- No power is being supplied to sensor. Ensure that the main power is turned "ON." Check Transformer, leads and connections. Repair or replace as necessary.
- EL-1500 (urinal installations) or EL-1500-L (closet installations) sensor not operating. Replace EL-1500 or EL-1500-L sensor.

2. Valve does not function (red light flashes when user steps in front of Sensor).

Red light stops flashing when user steps away and valve makes a "clicking" sound but does not flush.

- No water is being supplied to the valve. Make certain that water supply is turned "ON" and the Control Stop is open.
- EL-128-A Cartridge is fouled or jammed. Turn electronic power to valve "OFF" (failure to do so could result in damage to the solenoid coil). Remove the Solenoid Operator from the valve and remove the EL-128-A Cartridge. Clean and/or repair as necessary.

The red light stops flashing when user steps away but the valve does NOT make a "clicking" sound and does NOT flush.

- EL-163-A Solenoid Shaft assembly is fouled or jammed. Turn electronic power to valve "OFF" (failure to do so could result in damage to the Solenoid Coil). Remove Nut and Coil from the Solenoid Operator. Use a spanner wrench or pliers to remove the EL-163-A Solenoid Shaft Assembly from valve. Clean and/or replace as necessary. Be sure to replace Plunger Spring when reassembling Solenoid Shaft Assembly.

The red light flashes three (3) short flashes, three (3) long flashes then three (3) short flashes ("S-O-S") and continues to repeat this cycle even when user steps out of the sensor's detection range.

- EL-1500 or EL-1500-L Sensor wiring connections are incorrect. Rewire Sensor to valve. One solenoid lead connects to the "TO VALVE" connection on Sensor. One transformer lead connects to the "24 VAC IN"

connection on Sensor. Second solenoid lead and second transformer lead connect together.

- Wiring to Sensor is ground shorted. Find short in wiring circuit and correct.
- EL-165-2 Solenoid Coil is burnt out or Coil is not connected to Solenoid Plunger Shaft. Reinstall or replace Coil as necessary.

3. Volume of water is insufficient to adequately siphon fixture.

- Control Stop is not open wide enough. Adjust Control Stop for desired water delivery.
- Low Consumption unit is installed on Water Saver or Conventional fixture. Replace Diaphragm component parts of valve with kit that corresponds to appropriate flush volume of fixture.
- Inadequate water volume or pressure available from supply. Increase pressure or supply (flow rate) to the valve. Consult factory for assistance.

4. Length of flush is too long (long flushing) or valve fails to shut off.

- Water Saver Valve is installed on Low Consumption fixture. Replace Diaphragm component parts of valve with kit that corresponds to appropriate flush volume of fixture.
- Relief valve in Diaphragm is not seated properly or bypass hole in Diaphragm is clogged. Disassemble inside Diaphragm component parts and wash parts thoroughly. Replace worn parts if necessary.

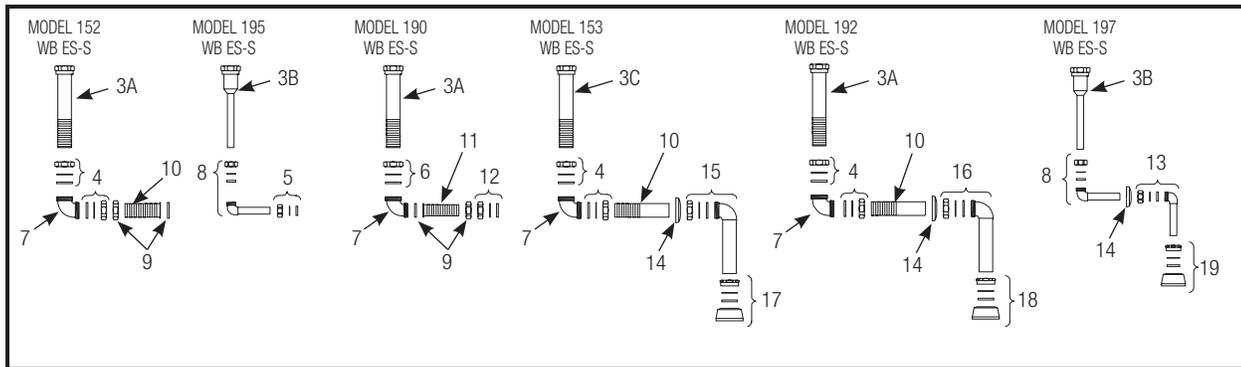
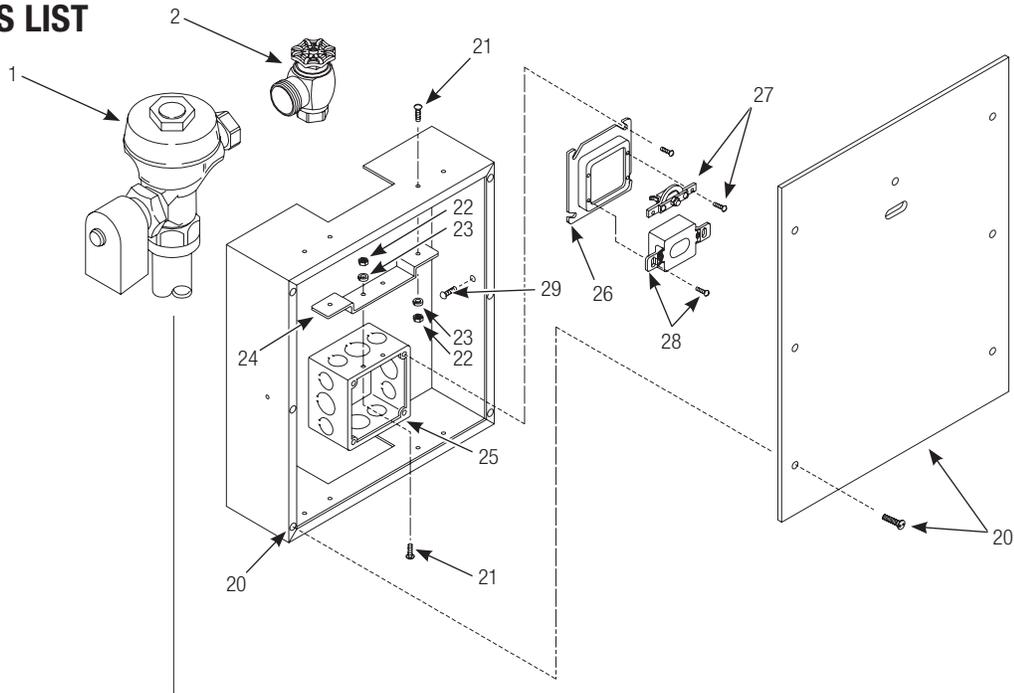
5. Water splashes from fixture.

- Supply flow rate is more than necessary. Adjust Control Stop to meet flow rate required for proper cleansing of the fixture.
- Closet valve is installed on urinal fixture. Replace closet Diaphragm component parts with proper urinal kit (Inside Diaphragm Assembly or Inside Parts Kit).

If further assistance is required, please contact Sloan Installation Engineering Department at:

1-888-SLOAN-14 (1-888-756-2614) or 1-847-233-2016

PARTS LIST



Item No.	Part No.	Description
1	‡	Solenoid Operated Valve Assembly
2	H-730-A	Bak-Chek® Control Stop
3A	V-500-AA	1-1/2" x 11-1/2" (38 mm x 292 mm) Vacuum Breaker Assembly RB (Models 152, 190 & 192 WB ES-S)
3B	V-500-AA	3/4" x 10-1/2" (19 mm x 267 mm) Vacuum Breaker Assembly RB (Models 195 & 197 WB ES-S)
3C	V-500-AA	1-1/2" x 7-1/2" (38 mm x 191 mm) Vacuum Breaker Assembly RB (Model 153 WB ES-S)
4	F-2-AA	1-1/2" Slip Joint Coupling (Set of Two)
5	F-2-AW	3/4" Slip Joint Coupling
6	F-2A	1-1/2" Slip Joint Coupling
7	F-21	1-1/2" Double Slip Elbow
8	F-15-A	ELL with 3/4" Tail
9	F-2A	1-1/2" Coupling with S-21 Gasket
10	F-102	1-1/2" Outlet Tube CP
11	F-110	1-1/4" O.D. Outlet
12	F-2-A-U	1-1/4" Slip Joint Coupling
13	F-15-A	ELL with 3/4" Tail CP
14	F-7	Flange
15	F-25-A	1-1/2" Elbow Assembly
16	F-25-A	1-1/4" Elbow Assembly
17	F-5-A	1-1/2" Spud Coupling Assembly CP
18	F-5-A	1-1/4" Spud Coupling Assembly CP
19	F-5-A	3/4" Spud Coupling Assembly CP

Item No.	Part No.	Description
20	EL-216	13" x 17" (330 mm x 432 mm) Stainless Steel Wall Box with Cover Plate (152 and 142 WB ES-S) and (6) #8-32 x 3/4" Drilled Spanner Screws
	EL-193	13" x 17" (330 mm x 432 mm) Stainless Steel Wall Box with Cover Plate (190, 192, 195 and 197 WB ES-S) and (6) #8-32 x 3/4" Drilled Spanner Screws
21	EL-125	#8-32 x 3/8" Screw (4 Required)
22	EL-126	#8-32 Hex Nut (4 Required)
23	EL-127	#8 Internal Tooth Lock Washer (4 Required)
24	EL-195	Mounting Bracket
25	EL-196	4" x 4" x 2-1/2" (102 mm x 102 mm x 64 mm) 2-Gang Electrical Box
26	EL-197	4" x 4" x 3/4" (102 mm x 102 mm x 19 mm) Electrical Box Device Cover
27	EL-141-A	Yoke and Override Button Assembly (Models 152 and 142 WB ES-S)
28	EL-1500-L	Closet Sensor (Models 152 and 142 WB ES-S)
	EL-1500	Urinal Sensor (Models 190, 192, 195 and 197 WB ES-S)
29	WB-6	Drive Screw (4 Required)

Complete Wall Box Assembly (Item Numbers 20 - 29):

EL-192-A	Models 152 and 142 WB ES-S
EL-191-A	Models 190, 192, 195 and 197 WB ES-S

‡ Part number varies with valve model variation; consult factory.

The information contained in this document is subject to change without notice.

SLOAN®

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www.sloan.com

Code. 0816168 Rev.3 (02/17)

Electronic Timer Control - 7-Day 2-Circuit Electronic Control, 120-277 VAC, 2-SPST, Indoor Metal Enclosure

Item ET1725C



PRODUCT DESCRIPTION

This series offers an easy way to upgrade from a basic mechanical time switch to an electronic time switch. These timers will allow for up-to-the-minute programming, battery backup for power loss, up to 28 events total, and automatic daylight saving time corrections without the need of user interaction. They come in standard 24-hour, 7-day and 7-day astronomic versions.

FEATURES

- ▶ Selector switch to determine input voltage between 120-277 VAC
- ▶ Up to 28 events total
- ▶ To-the-minute accuracy
- ▶ Temporary override or permanent manual override
- ▶ Automatic Daylight Saving Time adjustment
- ▶ Astronomic models enable dusk-to-dawn scheduling

APPLICATIONS

- ▶ Indoor Lighting Control
- ▶ Timing/Scheduling ON/OFF
- ▶ Machinery & Pump Controls

TECHNICAL DATA

General

Model Number	ET1725C
Description	7-Day 2-Circuit Electronic Control, 120-277 VAC, 2-SPST, Indoor Metal Enclosure
UPC Code	078275109865
Brand	Intermatic
Country of Origin (Intermatic)	CHINA
Warranty Period	1-Year limited

Control Specifications

Minimum ON/OFF Times	1 min
Minimum Pulse Time	2 sec
Maximum Pulse Time	2 sec
Maximum ON/OFF Times	Indefinite
Maximum ON/OFF Operations	28
Setpoint Program Count	28
ON/OFF Operations	28
Operation Mode	7 day
Daylight Savings Adjustment	Automatic
Backup Type	Battery
Battery Type	AAA
Battery Service Type	Field Serviceable

Mechanical Specifications

Enclosure Type	Indoor type 1 metal
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Dimensions

Product Dimensions (H x W x D) in	7.875 x 5.125 x 3.4375 in
Wire Size Min	#14 AWG
Wire Size Max	#8 AWG
Knockout Dimensions Bottom	(2) combination 1/2" - 3/4"
Knockout Dimensions Back	(1) combination 1/2" - 3/4"

Load Ratings

Tungsten Range(s)	5 A, 120-240 VAC
Electronic Ballast Load Ratings Ranges	1 A, 120-277 VAC
Magnetic Ballast (NO) Range(s)	20 A, 120-277 VAC
Resistive (NO) Range(s)	20 A, 28 VDC; 30 A, 120/240 VAC
Inductive Load Ratings NO Ranges	30 A, 120/240 VAC
Resistive Load Ratings Ranges	20 A, 28 VDC; 30 A, 120/240 VAC
Tungsten (NO) Range(s)	5 A, 120/240 VAC
Motor Load Ratings Ranges	1 HP, 120 VAC; 2 HP, 240 VAC
Motor Load Ratings NO Ranges	1 HP, 120 VAC; 2 HP, 240 VAC

Electrical Specifications

Voltage Selection Type	Selector Switch
Wiring Option	Terminals
Input Voltage Range(s)	120-277 VAC, 50/60 Hz
Number of Circuits	2
Switch Type	2xSPST, 1xDPST or Pulse
Maximum Power Consumption (W)	6 W
Electronic Series	ET1700 Series

Packaging

Unit Carton Dimensions (H x W x L) in	3.131 x 5.251 x 8.001 in
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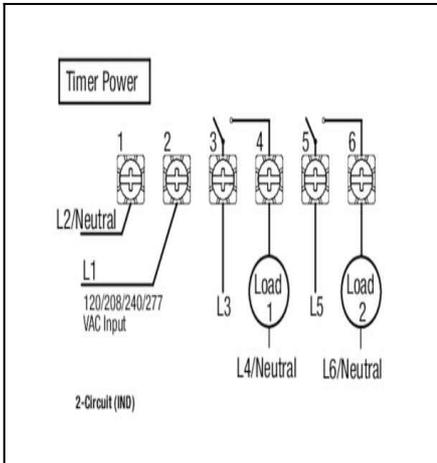
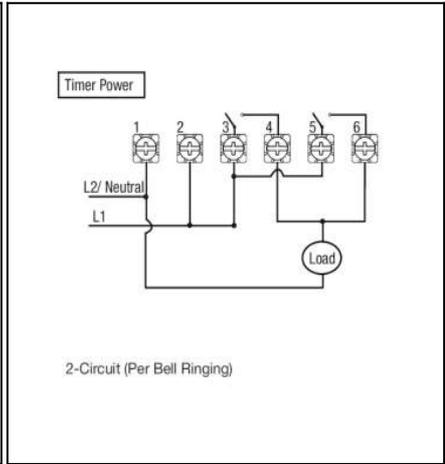
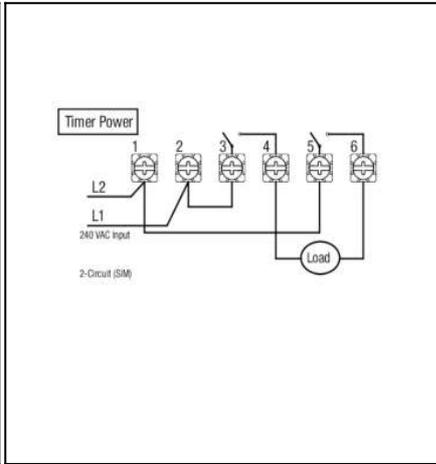
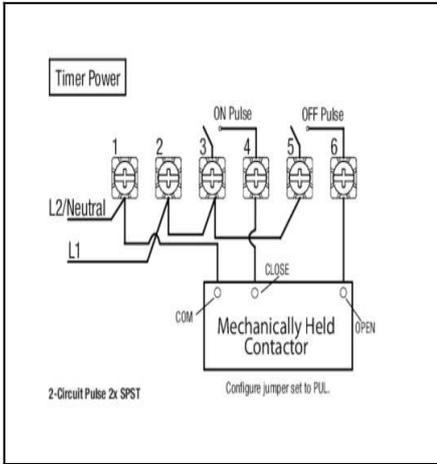
Environmental Specifications

Temperature (operation)	-40 °F to 104 °F / (-40 °C to 40 °C)
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Standards and Certifications

CSA Certification	cCSAus
Other Certifications and Compatibilities	Title 20
California Proposition 65	Lead

DRAWINGS AND DIAGRAMS



ACCESSORIES

**Product
Image
Not
Available**

124ET2582

(DPST) Insulator for ET Series controls (ET1125C, ET1125CR, ET1725C, ET1725CR, ET8215C and ET8215CR)