

## IMPORTANT SAFEGUARDS

### READ AND FOLLOW ALL SAFETY INSTRUCTIONS

- DO NOT MOUNT NEAR GAS OR ELECTRIC HEATERS.
- EQUIPMENT SHOULD BE MOUNTED IN LOCATIONS AND AT HEIGHTS WHERE IT WILL NOT BE SUBJECTED TO TAMPERING BY UNAUTHORIZED PERSONNEL.
- THE USE OF ACCESSORY EQUIPMENT NOT RECOMMENDED BY THE MANUFACTURER MAY CAUSE AN UNSAFE CONDITION.
- DO NOT USE THIS EQUIPMENT FOR OTHER THAN ITS INTENDED USE.

**When using electrical equipment, basic safety precautions should always be followed, including the following:**

THIS PRODUCT MUST BE INSTALLED IN ACCORDANCE WITH THE APPLICABLE INSTALLATION CODE BY A PERSON FAMILIAR WITH THE CONSTRUCTION AND OPERATION OF THE PRODUCT AND THE HAZARDS INVOLVED. DISCONNECT POWER TO ALL CIRCUITS BEFORE WIRING FIXTURE. INSTALL IN ACCORDANCE WITH ALL NATIONAL, STATE, AND LOCAL CODES. DO NOT CONNECT TO AN UNGROUNDED SUPPLY. READ ALL FIXTURE MARKINGS AND LABELS TO ENSURE CORRECT INSTALLATION OF FIXTURE. SUPPLEMENTAL INSTRUCTIONS MAY BE LOCATED ON THE FIXTURE, IN ADDITION TO THIS INSTRUCTION SHEET, REGARDING ORIENTATION, OR MOUNTING RESTRICTIONS.

## SAVE THESE INSTRUCTIONS

## APPLICATIONS

THIS PRODUCT MUST BE INSTALLED IN ACCORDANCE WITH THE APPLICABLE INSTALLATION CODE BY A PERSON FAMILIAR WITH THE CONSTRUCTION AND OPERATION OF THE PRODUCT AND THE HAZARDS INVOLVED. FOLLOW ANY SPECIFIC INSTRUCTIONS ON LUMINAIRE LABELS.

### Preparation

- **WARNING:** Disconnect power to the circuit before wiring fixture.
- Read all fixture markings and labels to insure correct installation of the fixture. Additional information may be located on the fixture or in supplemental instructions sheets, separate from this instruction sheet, regarding orientation, mounting restrictions and optional equipment.
- For Peace of Mind Warranty, fixture must be mounted to building with at least 4 fasteners (4 point mounting). Attachment to the electrical box only is NOT recommended.
- Minimum 12" supply wire pigtailed must extend from electrical junction box for field connections within fixture enclosure.
- **Drilling Tip:** Drill small pilot holes from inside, using drill points as guides. Enlarge holes from outside, using spade bits and light pressure to reduce "digging in" and slow drill speed to prevent material overheating. Remove burrs and plastic chips from parts prior to assembly.

**WALL MOUNTING (Fig. 1):** Remove SHIELD and STENCIL ASSEMBLY. Remove ELECTRICAL CHASSIS by disengaging tabs in upper corners. Remove REFLECTOR (if provided). Locate appropriate REAR PANEL drill points and drill (4) 5/16" dia. mounting holes and (1) hole of suitable size for supply wire entry. Place HOUSING over an installed electrical junction box (drill points provided for temporary j-box attachment prior to permanent mounting). Locate and drill 4 pilot holes in mounting surface using REAR PANEL as a template. For wet location installation, attach self-adhesive pad GASKET to REAR PANEL. Using 1/4-20 fasteners and anchors appropriate for the mounting surface (not supplied), attach HOUSING to structure.



**CANOPY MOUNTING (Figs. 1, 2, 4):** Remove front SHIELD and STENCIL ASSEMBLY. Remove ELECTRICAL CHASSIS by disengaging tabs in upper corners. Remove REFLECTOR (if provided). Locate appropriate HOUSING drill points and drill (2) 5/16" dia. holes for MOUNTING CANOPY attachment and (1) hole of suitable size for supply wire entry. Place MOUNTING PLATE over an installed electrical junction box (slotted holes provided for temporary j-box attachment prior to permanent mounting). Locate and drill 4 pilot holes in mounting surface using MOUNTING PLATE as a template. For wet location installation, attach self-adhesive pad GASKET to MOUNTING PLATE. Using 1/4-20 fasteners and anchors appropriate for the mounting surface (not supplied), attach MOUNTING PLATE to structure. Connect supply ground to GROUND WIRE provided. For wet location installation, attach self adhesive pad GASKET to CANOPY COVER. Using HARDWARE provided, attach CANOPY COVER and HOUSING to CANOPY MOUNTING PLATE.

**ALL MOUNTING TYPES (Fig. 1, 3, 4)** Configure DIRECTIONAL ARROWS as needed. To remove DIRECTIONAL ARROW COVER, use 7/16" nut driver (not supplied) to loosen RETAINER NUT approx. one complete turn and push in cover from outside. Tighten RETAINER NUT to secure COLOR FILTER PANEL and aluminum LIGHT MASK (if provided). Install ELECTRICAL CHASSIS. Install REFLECTOR (if provided), routing supply wires thru center hole (if wall mounted). Route supply wires around ELECTRICAL CHASSIS and connect to appropriate push-in connectors. Connector lead color coding: White= Neutral, Black= 120V, Orange= 277V, Blue= 347V. Install front STENCIL ASSEMBLY and SHIELD to HOUSING using Posigrip fasteners (included) and 9500 screwdriver (ordered separately).

**CONDUIT ATTACHMENT (Fig. 5)** 1/2" trade size conduit may be used for power entry into top or end of HOUSING or into center of REAR PANEL. Locate suitable drill point and drill 7/8" dia. hole. HOUSING is reversible for conduit entry from either end (Note UP indicator). Use proper conduit hub and locknut for wet or damp/dry location installation (not supplied). Applications Millenium Metrex METDU, METSU, METSW series

## Features

- Sealed, maintenance-free nickel-cadmium battery. EL option is suitable for use in 10°C to 40°C environments. EL-CW option includes a thermostatically controlled battery warmer and is suitable for use in -40°C to 40°C environments.
- Self-testing circuitry automatically conditions the battery and performs regularly scheduled tests that conform to NFPA 101 Life Safety Code. Self-diagnostic circuitry monitors battery, charger, power transfer and lamp functions.

## Installation

- Fixture is shipped with battery disconnected.
- Follow Kenall Installation Instruction Sheet F-2189 for proper mounting, assembly and wiring of unit.
- After installing electrical chassis and making field wiring connections (AC power OFF), connect polarized 2-pin battery connector to PC board assembly.
- Exit legend will illuminate for a few seconds and then extinguish. This signals that battery is properly connected and is protected from discharging until AC power is established.
- Attach front stencil assembly and shield.

FIG. 1

REFLECTOR (if provided). Locate appropriate REAR PANEL drill points and drill (4) 5/16" dia. mounting holes and (1) hole for supply wire entry. Place HOUSING over an installed electrical junction box (drill points provided for temporary prior to permanent mounting). Locate and drill 4 pilot holes in mounting surface using REAR PANEL as a template. For wet location installation, attach self-adhesive pad GASKET to REAR PANEL. Using 1/4-20 fasteners and anchors appropriate for the mounting surface (not supplied), attach HOUSING to structure.

Fig. 1, 3, 4) Configure DIRECTIONAL ARROWS as needed. To remove DIRECTIONAL ARROW COVER, use 7/16" nut driver (not supplied) to loosen RETAINER NUT approx. one complete turn and push in cover from outside. Tighten RETAINER NUT to secure COLOR FILTER PANEL and aluminum LIGHT MASK (if provided). Install ELECTRICAL CHASSIS. Install REFLECTOR (if provided), routing supply wires thru center hole (if wall mounted). Route supply wires around ELECTRICAL CHASSIS and connect to appropriate push-in connectors. Connector lead color coding: White= Neutral, Black= 120V, Orange= 277V, Blue= 347V. Install front STENCIL ASSEMBLY and SHIELD to HOUSING using Posigrip fasteners (included) and 9500 screwdriver (ordered separately).

Fig. 5) 1/2" trade size conduit may be used for power entry into top or end of HOUSING or into center of REAR PANEL. Locate suitable drill point and drill 7/8" dia. hole. HOUSING is reversible for conduit entry from either end (Note UP indicator). Use proper conduit hub and locknut for wet or damp/dry location installation (not supplied). Applications Millenium Metrex METDU, METSU, METSW series

FIG. 2

1) initial power-up, the fixture will supply a trickle charge for approximately 24 hours. The fixture will then condition the battery during the final discharge/recharge cycle of the battery connector. The connector is for the internal and external (if equipped emergency) power source.

2) To avoid electrical overload, total connected lamp load should not exceed the total emergency lamp load (internal or external). To test the fixture, press and hold the manual test push button for 5 seconds.

FIG. 3

3) The fixture will operate with a pair of 90 minute discharge and 24 hour recharge cycles.

4) In normal operation, the self-diagnostic feature will measure the operating time of the internal and external LED exit sign.

5) The fixture (factory and field installed) should not exceed output rating. If the fixture's remote exit sign load is intentionally altered, the system must be tested for approximately 7 seconds. Failure to do so will result in a lamp failure.

FIG. 4

FIG. 5

1) The fixture is shipped with the battery disconnected. Follow Kenall Installation Instruction Sheet F-2189 for proper mounting, assembly and wiring of unit. After installing electrical chassis and making field wiring connections (AC power OFF), connect polarized 2-pin battery connector to PC board assembly. Exit legend will illuminate for a few seconds and then extinguish. This signals that battery is properly connected and is protected from discharging until AC power is established. Attach front stencil assembly and shield.



Start Up

- Do not apply power to fixture unless supply can be maintained for at least 7 days without interruption.
- If battery is not connected when power is applied, the self diagnostic feature will detect the missing battery and the status LED will display a steady red signal. Connect the battery and reset the system by pressing and holding the manual test push button for approximately 7 seconds.
- Battery connection sequence: Always connect BATTERY CONNECTOR 1 first and BATTERY CONNECTOR 2 (if equipped) second. Always disconnect in reverse order.

Operation

Normal operation is indicated by steady green display of the status LED. Should the voltage drop below a predetermined level due to either a power failure or a brown out condition, circuit will switch to emergency power. The status LED will turn off, signaling normal AC power is not present. Emergency power will be provided for a minimum of 120 minutes. In the event of a prolonged power outage, the battery is protected from deep discharge by a low voltage disconnect circuit. The status LED will display a slow green flash, signaling the battery guard circuit is functioning. Resumption of normal AC power will return the unit to normal operation and begin a charge cycle.

The battery charge condition is constantly monitored. When the battery voltage drops below a predetermined level, a charge cycle is initiated. The status LED will display two green flashes. The charger will return a depleted battery to full capacity with 24 hours. When the battery has reached full capacity, charging stops and the status LED will display steady green.

Battery Conditioning

- Upon initial power-up, the fixture will supply a trickle charge to the battery for 90 minutes. Then it will switch to full charge mode for approximately 24 hours. The fixture will then condition the battery with a pair of 90 minute discharge and 24 hour recharge cycles.

Load Learning

- During the final discharge/recharge cycle of the battery conditioning function, the self-diagnostic feature will measure the operating current of the internal and external (if equipped emergency lamps and external LED exit sign).

CAUTION: To avoid electrical overload, total connected lamp load (factory and field installed) should not exceed output rating.

- Any time the total emergency lamp load (internal or external) or the remote exit sign load is intentionally altered, the system must be reset by pressing and holding the manual test push button for approximately 7 seconds. Failure to do so will result in a lamp fault indication.

Normal Operation

Normal operation is indicated by a steady green signal from the status LED. This indicates the fully charged battery is receiving a maintenance (trickle) charge and normal AC power is present. The normally off emergency lamps will be off and any normally on remote exit signs will operate from normal AC power.

Automatic tests meet or exceed requirements of NFPA 101 Life Safety Code, Section 4.6, Article 7.9.3.:

- Monthly Test      1 minute cycle every 30 days.
- Twice-Yearly Test      90 minutes cycle every 6 months.

These tests allow the self-diagnostic circuit to monitor battery discharge and power transfer functions and exercise the battery to optimize its capacity. The status LED display single green flashes signaling a test is in progress.

User Instiated Tests

A single momentary actuation of laser-activated photocell ( see fig. 1) or the protected manual push switch will initiate a one-minute test cycle. After 5 seconds, another actuation will cancel the test.

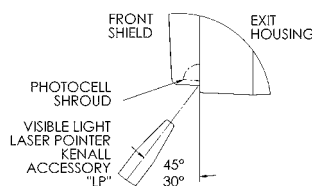


Fig. 1 Laser Activated Photocell



Self-Diagnostics

**Battery:** The battery condition is constantly monitored during normal operation, tests and charge cycles. A malfunctioning or end-of-life battery will terminate any charge or test and return the unit to normal operation. The status indicator will display steady red.

**LED Lamps:** The LED lamp conditions is constantly monitored during normal operation and test cycles. A minor lamp malfunction will cause the status LED to display single red flashes. A major lamp malfunction will shut down the LED lamps and cause the status LED to display two red flashes.

**Charger:** The charger function is constantly monitored during battery charging. A charger malfunction will terminate the charge and return the unit to normal operation. The status LED display three red flashes.

**Transfer:** The normal-to-emergency and emergency-to-normal power transfer functions are monitored at the beginning and end of each test cycle. A transfer circuit malfunction will cause the status LED to display four red flashes.

Status LED

A single dual-color status/fault LED is provided to allow monitoring of the circuit function. See fig. 2

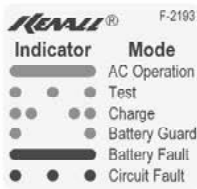


Fig. 2 Status LED Label

<b>Green Status Indications</b>	
On	Normal ac power operation (maintenance charge)
Off	Ac power not present (blackout/brownout)
One flash	Test in progress, user initiated or automatic
Two flashes	Recovery charge in progress
<b>Red Fault Indications</b>	
On	Battery disconnect/fault detected
One flash	Emergency lamp fault detected
Two flashes	Remote exit fault detected (if equipped)
Three flashes	Battery charger fault detected
Four flashes	Load transfer fault detected

**CUSTOMER SERVICE**

For technical assistance, call 1-800-4KENALL (1-800-453-6255).

**WARRANTY**

For warranty information visit [www.kenall.com/Resources/Certified-Performance-Warranties](http://www.kenall.com/Resources/Certified-Performance-Warranties)

