

MK7 SENSORS INSTALLATION AND
MAINTENANCE MANUAL (IMM
p/n 5150KT rev 10/15/98

General

1. Please read these instructions carefully to prevent any possible injury or equipment damage.
2. Installer must be a qualified and experienced service technician.
3. Verify the product ratings to confirm that this product will satisfy your requirements and application.

Introduction

MK7 sensors are available in four different ranges, with three types of sensors. The Indoor, Outdoor, and Skylight versions will operate on a 10.8 to 28 volt input range. Additionally, each version can have either a 5 or 10 VDC full scale output voltage and a 0 or 1 VDC offset at total darkness. Each version is designed to function with a variety of energy management systems (EMS). The sensor monitors light levels and enables the EMS computer to turn on or off lighting at programmed light levels. Figures 1A - 1E depict mounting locations and recommendations.

Installation

1. Indoor Sensor

Mount the Indoor sensor in a 3/8" hole in the false ceiling tile using the adhesive backing. For most general applications the sensor should be mounted between 6-8 feet of the window area, central to the area illuminated by the electrical lighting that will be controlled. In all cases the sensor must be mounted so that it looks at reflected light only and not at any direct light. See Fig. 1A.

2. Outdoor Sensor

Mount the Outdoor sensor in a standard threaded 1/2" conduit or 1/2" knockout. Locate the sensor on the roof or somewhere that is exposed to full daylight and is not shadowed or directly exposed to any

nighttime illumination. Sensor must be mounted horizontally, facing North, with the hooded portion on top. See Fig. 1E.

3. Skylight Sensor in Atrium Location

Mount the Skylight Sensor in a standard threaded 1/2" conduit or 1/2" knockout. Locate the sensor as close to the atrium window as possible and as far away from the wall as possible. Aesthetic and architectural constraints will also influence sensor location. The sensor must be mounted vertically with the domed portion facing up. See Fig. 1B.

4. Skylight Sensor in Skylight Well

Mount the Skylight sensor in a standard threaded 1/2" conduit or 1/2" knockout. Locate the assembly at least 12" from the side or near the center of a representative skylight well that is exposed to full daylight and is not shadowed. Sensor must be mounted vertically with the domed portion facing up. See Fig. 1C and 1D.

Connection

To prevent electrical shock disconnect power coming from the computer prior to hookup. Wiring from the sensor to the computer should be with 20 or 22 gauge stranded wire. Do not run the low voltage wire with or near power wiring. For long wire runs or where there is excessive electrical noise, shielded cable or cable in conduit is required. Cable length should not exceed 500 ft.

Wire the sensor to the appropriate analog part of the computer, according to the computer manufacturer's instructions and observe the following polarities:

RED	Input Voltage
BLACK	Common
YELLOW	Output signal to computer

Butt splices are recommended.

Calibration

1. The light level read at the sensor location may differ from the light level at the work station because of reflections, light absorption

and the distance from the work station, etc. The following calibration procedure may be used to provide an accurate light reading.

2. The celestial sensor comes equipped with a built in amplifier and a 20 turn potentiometer with adjustment tool, to adjust the output of the sensor. (see below for specific outputs) This adjustment will allow the sensors output signal to monitor many different footcandle ranges. Each sensor type has its own range of operation.

<u>Housing</u>	<u>Location</u>	<u>Factory</u>	<u>Min.</u>	<u>Adj.</u>	<u>Maximum</u>
MK7-B-CCF	indoor	100	0		5-750 fc.
MK7-B-CR	outdoor	250	0		5-750 fc.
MK7-B-CS	skylight	2000	10	1000	7500 fc.

3. The adjustment tool (tube screwdriver) should be plugged through the hole in the sensor, with slight inward pressure and twist to engage the potentiometer screw head. Too much pressure may damage the potentiometer and void the warranty.
4. If a light meter is available measure the maximum light level that needs to be monitored. At this light level rotate the adjustment tool, to calibrate the sensor's output to this corresponding light level. See figure 3 for sensitivity adjustments.
 - A. To increase the output voltage for that level, rotate tool clockwise, looking at the calibration hole.
 - B. To decrease the output voltage for that level, rotate tool counterclockwise, looking at the calibration hole

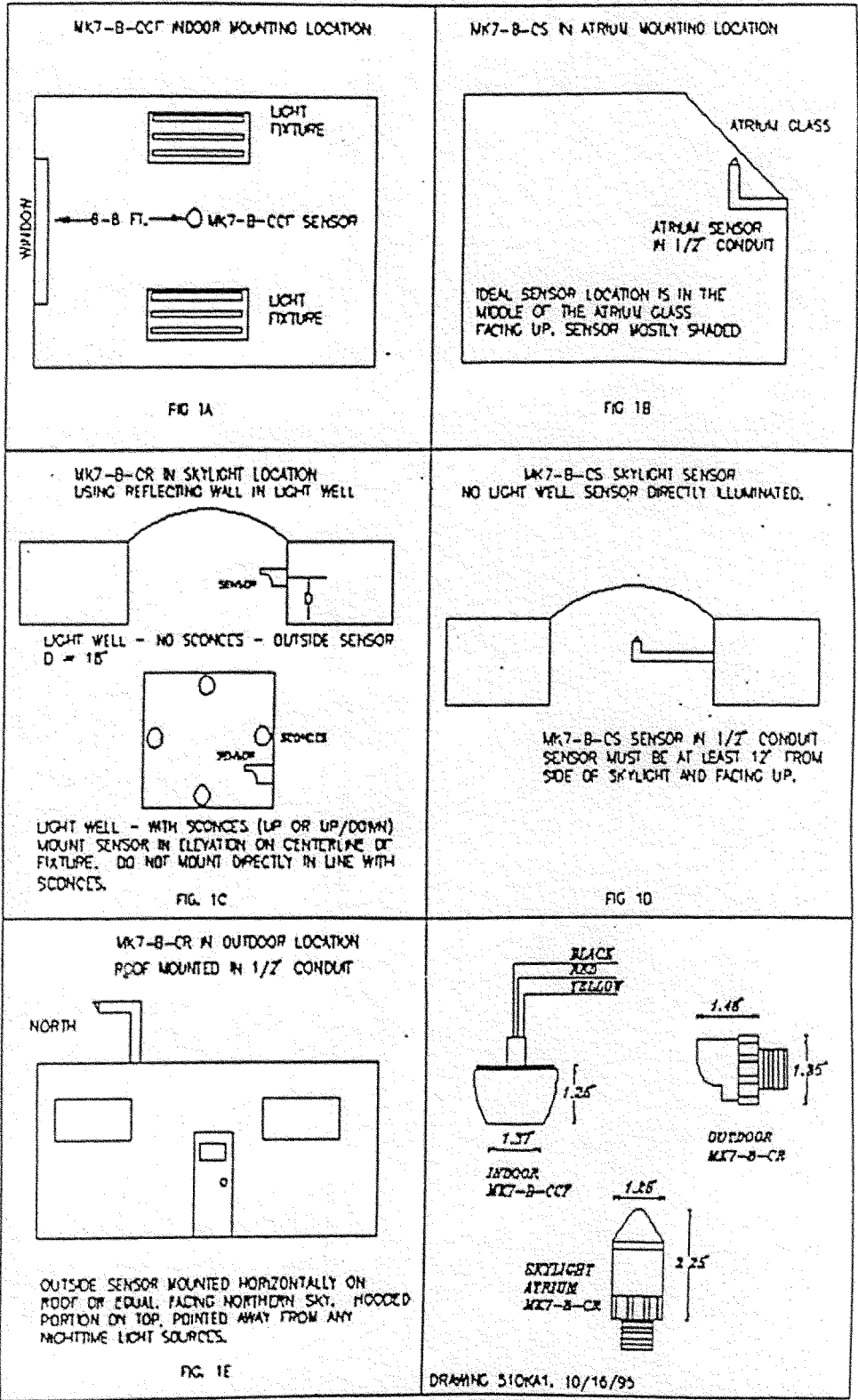
Note: be sure not to shield what the sensor is seeing when adjusting the sensor.

5. When calibration is complete remove the calibration tool and insert plastic screw to seal the hole.

Operation

The MK7-B sensor is functioning when the EMS computer is activated. Once calibrated, the sensor will need no further attention.

FIG. 1A - 1E. MK7-B SENSOR MOUNTING LOCATIONS



FOR SPECIAL APPLICATIONS CONSULT FACTORY OR YOUR LOCAL REPRESENTATIVE FOR MOUNTING RECOMMENDATIONS.

Except for the calibration hole there are no switches or other user controls on the sensor.

Maintenance

Every 2 months wipe the lens clean with a non-scratching clean cloth and ensure that no foreign debris remains. Check the housing for damage such as cracks, burns or other deformations. Check that no moisture has penetrated the sensor, as this will likely render it inoperable.

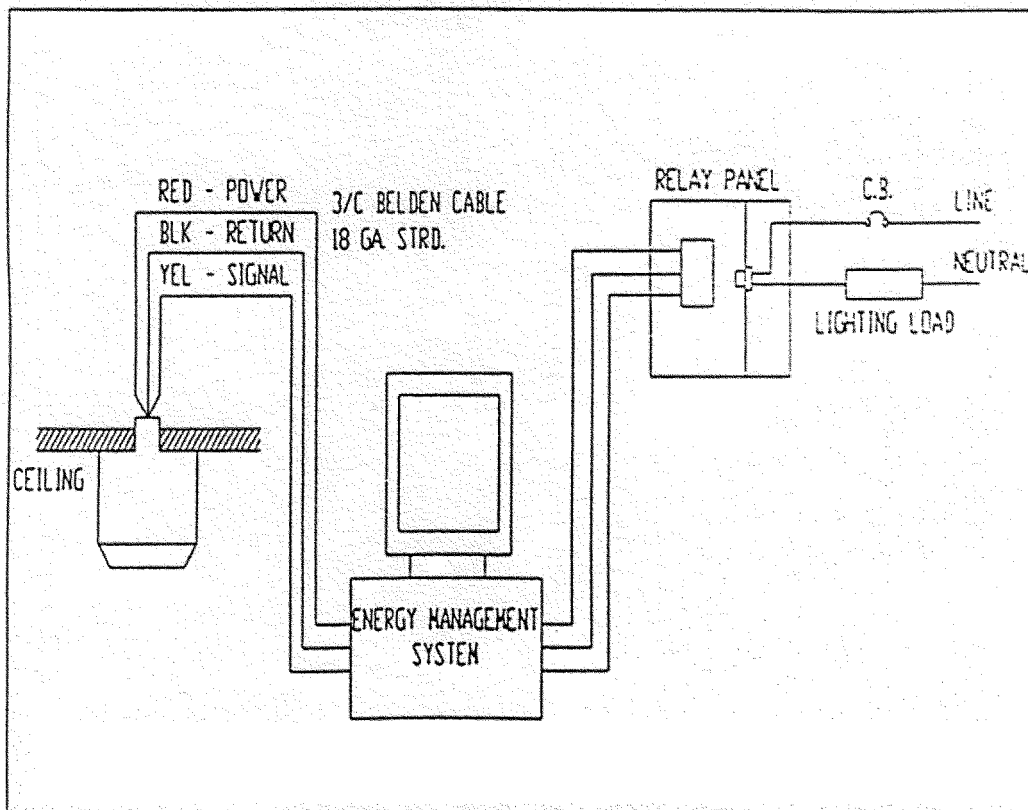


FIG 2: CONNECTION DIAGRAM

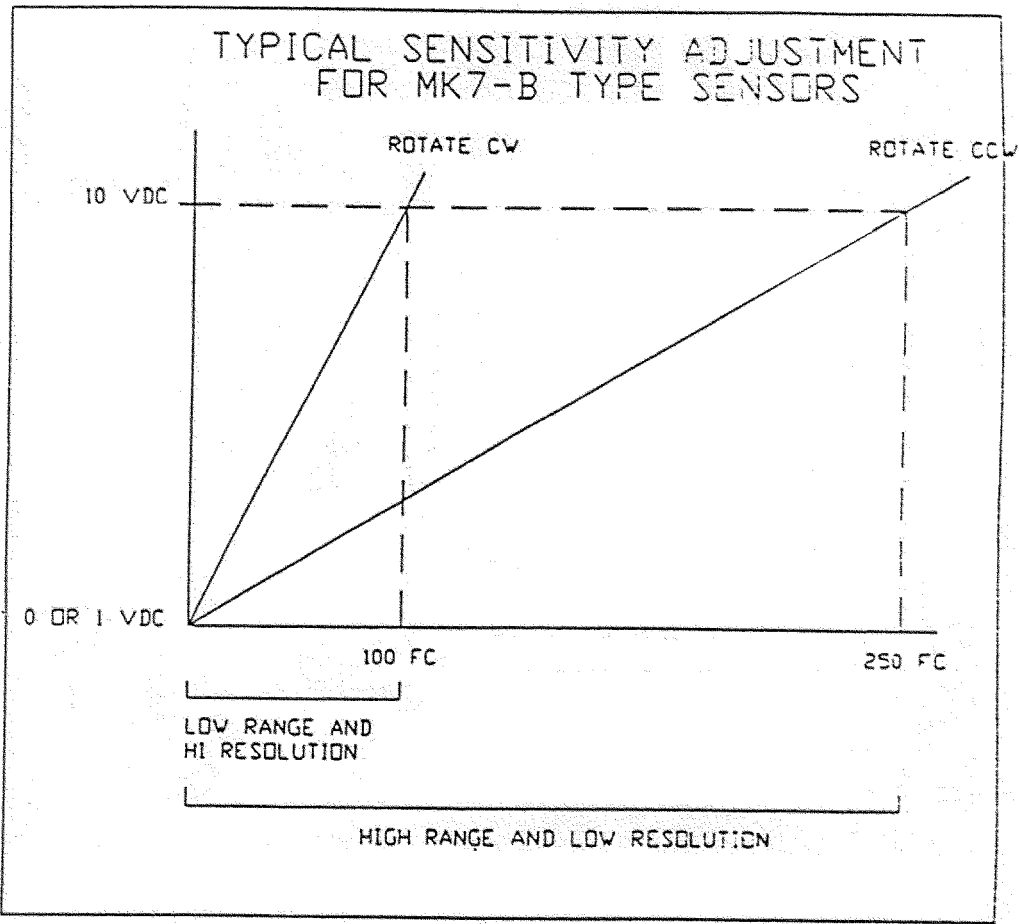


FIGURE 3