



EDS & RCD

Light Sensors and Dimmers for
Electronic Dimming Ballasts

DESCRIPTION

The **EDS** is a Class 2, low-voltage, indoor light sensor designed to provide control inputs to electronic dimming ballasts. The **EDS** may be used to dim indoor lighting in response to changes in ambient light levels. It can also be used to TASK TUNE lighting zones to the exact illumination level required or to compensate for normal fluorescent LAMP LUMEN DEPRECIATION.

ADJUSTABILITY/OPERATION

The **EDS** sensor precisely measures the amount of illumination on a task surface within it's field of view. Measured light levels are converted into a linear, proportional analog voltage that controls the ballast. By providing dimming control down to as much as 1% of maximum output (depending on ballast used), energy savings are maximized through the efficient blending of natural and artificial light to maintain a comfortable working environment. The **EDS** sensor's internal adjustment sets the maximum output of the controlled ballast. The linear response of the **EDS** sensor allows the user to make accurate adjustments between 7 and 140-foot candles.

CONSTRUCTION

The electronic circuit for all exterior domes and lens for PLC-Multipoint sensor models is encased in a Lexan housing, ultrasonically welded to ASA LI-912; Acrylate Styrene Acrylonitrile (ASA) and meets flame retardant requirements of UL Standard 94HB.

APPLICATION

The **RCD** line of Remote Dimming Devices offers two modes of remote dimming with the option of an ON/Off switch (-SW). The **RCD-SA** is a stand-alone, wall mounted dimming control that works without the **EDS** sensor providing dimming control for spaces with little or no exposure to daylighting, The **RCD-OR** is a wall mounted dimming control that works in conjunction with an **EDS** sensor, overriding the sensor control and allowing light levels to be maintained at a desired dimming level. Both styles can be provided with a low-voltage, Despard-type switch and power cube switcher to switch the fluorescent fixtures on or off.



The **EDS** and **RCDs** are ideal for controlling electronic dimming ballasts such as the Advance TM Mark VII, Osram/Sylvania Helios, Universal Lighting Technologies Balastar, or Lutron ECO-10.

FEATURES

- **One sensor controls up to 80 Advance TM MARK VII, Osram/Sylvania Helios, Universal Lighting Technologies Balastar.**
- **Sensor is made with Bayer Centrex 811 (ASA) housing and has a low-profile, shadow free appearance. Sensor mounts to ceiling tile with peel-back adhesive.**
- **60 degree flat Fresnel lens provides narrow cone of exposure to target task surface.**
- **Sensor light sensitivity range of 0-500 Fc is conveniently adjustable at the sensor.**
- **Sensor response color matched to human visual response range.**
- **Sensor's dimming rate is selectable for 3 or 8 seconds.**
- **Sensor connects to ballast with low-voltage 18 gauge plenum rated wire.**
- **RCD-SA available in ballast load ranges.**
- **RCD-OR available in 3 load ranges.**
- **Both RCD's available with (-SW) switch version for On/Off operation.**



PLC-MULTIPOINT, INC.

PHOTO LIGHTING CONTROL & SYSTEMS

EDS & RCD TECHNICAL DATA

Accuracy:	+/- 1% at 70 F. (21 C.), Derated to +/- 5% above 120 F (49 C) or below 50 F. (10 C)
Operating Temp:	-13 F to 140 F (-25 C to 60 C)
Sensor Type:	Blue-enhanced Photo Diode
Sensitivity Ranges:	0 - 500 FC
Adjustment Ranges:	7 - 140 FC
Input Voltage:	10VDC (supplied by ballast)
Output Voltage:	1VDC (light) - 10VDC (dark)
Wire Leads:	22 gauge Grey and Violet to the dimming ballast Blue and Black to N/C White/Green loop Cut for 3 second dimming delay. Leave intact for 8 second dimming delay.
Dimensions:	Base diameter 2.00"
Sensor Diameter:	1.29"
Height:	1.15"
Mount Hole:	3/8"
Mounting Medium:	3M™ Double Adhesive Tape

REMOTE CONTROL DIMMERS

Both the RCD-OR and the RCD-SA provide manual Dimming control for electronic dimming ballast. Both are mounted on an Ivory Wall-plate with a 2" diameter dial. Both Remote Control Dimmers are available with a Depard type switch (-SW) that can be mounted on the same faceplate. The switch usually operates a 120V or 277V power cube switcher to provide an On/Off function for a maximum 20 Amp lighting load.

PRODUCT EXAMPLES

EDS
RCD-ORx
RCD-ORx-SW/120
RCD-ORx-SW/277
RCD-SAx
RCD-SAx-SW/120
RCD-SAx-SW/277
SW/120 (*not available, consult factory if needed)

REMOTE CONTROL DIMMERS

The photoelectric device shall be a Class 2, low-voltage ambient light sensor designed to interface directly via 18 guage wire with the Advance Mark VII, Osram/Sylvania Helios, Universal Lighting Technology Ballast, or Lutron Eco-10 Electronic Dimming Ballast.

The sensor shall automatically dim indoor fluorescent lighting in response to the availability of natural daylight and the dimming rate shall be selectable at either three or eight seconds. The sensor shall have a range between 0-500 footcandles and be adjustable between 7 and 140 Fc. The accuracy shall be +/- 1% at 70 F.

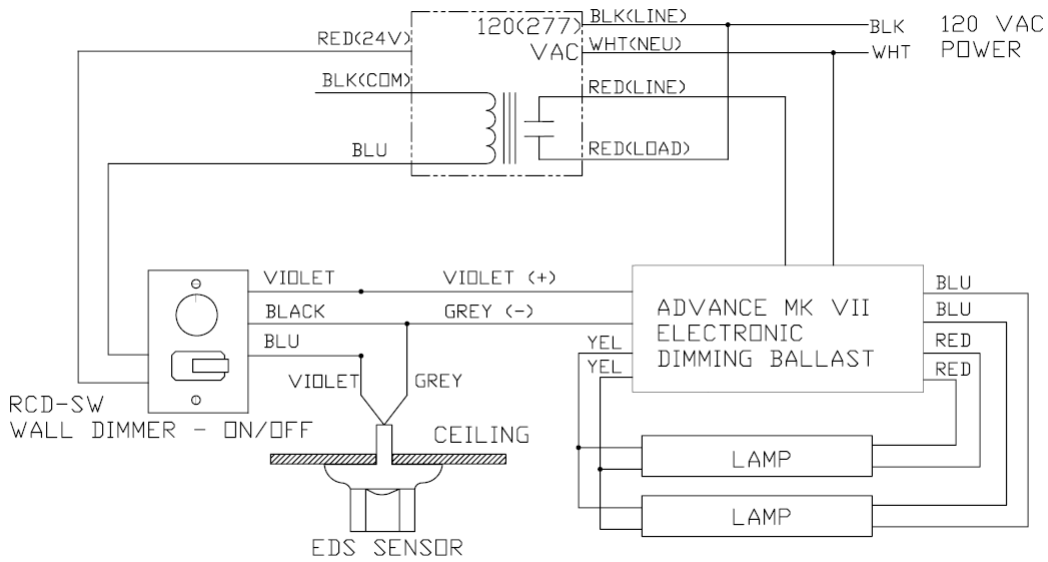
The illuminance maintained on the task shall be adjustable at the sensor head, outside of the sensor viewing angle and shall automatically control the lamp output to compensate for lamp lumen depreciation. The sensor shall have a flat Fresnel lens with a 60 degree cone of response.

The wire penetration through the ceiling shall be no greater than 3/8" diameter and the sensor shall mount to the ceiling surface via adhesive tape. The photoelectric sensor shall be a PLC-MULTIPOINT model EDS.

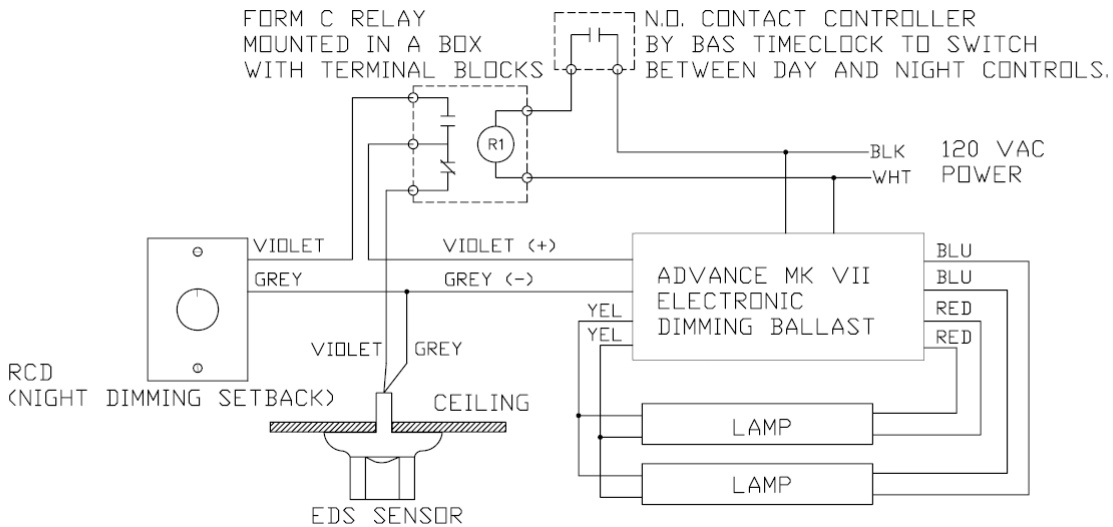
Local override of automatic light level control shall be provided by a rotary controller that disconnects the EDS sensor and provides a 1-10VDC supplied by the ballast. Override control part numbers shall be as follows:

ORDERING EXAMPLES

EDS
RCD-OR3 For 1-3 ballasts
RCD-OR13 For 4-13 ballasts
RCD-OR30* For 14-30 ballasts*
RCD-SA3 For 1-3 ballasts
RCD-SA8 For 4-8 ballasts
RCD-SA17 For 9-17 ballasts
RCD-SA25* For 18-25 ballasts*
RCD-SA30* For 26-30 ballasts*



RCD-SW WALL DIMMER - ON/OFF



RCD (NIGHT DIMMING SETBACK)



EDS APPLICATION NOTE

OFFICE CEILING LIGHTING

A customer wanted to reduce energy costs by upgrading the office floor's lighting to the new electronic dimming ballasts without effecting productivity. The floor area had large windows on each side and the floor layout was partitioned into cubicles, with several walled conference rooms against the windows. The floor's lighting was also to be connected to an energy management system.

The customer considered using just a wall dimmer to adjust the overall maximum light level, but wanted to achieve more responsive control to the available daylighting. Also considered was a step down switching control system, but such a system would not use the proportional control capabilities of the electronic dimming ballasts, and could create distractions at the steps.

The solution was the **PLC-MULTIPOINT EDS** sensor. The **EDS** works with electronic dimming ballasts such as the **ADVANCE MARK VII**. The sensor provides proportional control of the lighting level from 100% of the full ballast output down to 1%. The output of the **EDS** can be used to control up to 80 **ADVANCE MARK VII** electronic dimming ballasts.

The placement of the **EDS** sensor was critical to the ability to control lighting. The floor's lighting control was organized into four zones, with one sensor on each side of the building. Additional sensors were placed in the walled conference rooms. Separate low voltage wiring connected each ballast in a task zone to the sensor controlling that zone.



The lighting power circuitry was distributed from standard circuit panels and interlocked with the energy management system. The energy management system provided the OFF control of lighting during nightly sweep periods and permitted the dimming control during the day. The sensors were placed approximately 6 feet in from the windows, facing down upon an average task area. The easy mounting of the **EDS** sensor (it required only a 3/8 hole in a ceiling tile) and simple connection of the low voltage wiring to the **ADVANCE MARK VII** ballast allowed for a rapid retrofit of the lighting system.

All the sensors were individually adjusted to the response range desired for each zone. The southern, eastern and western perimeters had the greatest availability of ambient light, and were adjusted to provide the maximum response of the sensor. The northern exposure had less available light and the dynamic range of the sensor was reduced to provide more light from the ballast.

By combining the **EDS** sensor with the electronic dimming ballast, the customer was able to achieve dimming control that was barely noticed by the employees because the sensor's response to small incremental changes in the lighting level provided small changes in the ballast's output.