

Light & Photo

Wireless  
ECM-20-ZB

## ZigBee Lighting & Photo Control ON/OFF & 0(1)-10V Dimming

### Product Features

- ZigBee Wireless Control of Luminaires
- ZigBee Photo Sensor
- 2.4GHz, +8dBm RF, +20dBm ZigBee transmit power
- ON/OFF and 0(1)-10V Analog Dimming Control, 100mA Sink
- Compatible with Electronic Ballasts & LED Drivers that comply with IEC60929 Annex E2, 1-10V Dimming.
- ON/OFF AC switching up to 277Vac
- Stores last dim setting even when powered off.

### Environmental

1. Operating temperature: -40 to +50°C
2. Storage temperature range: -40 to +80°C
3. Humidity (non-condensing): 5% - 95%RH
4. Cooling: Convection
5. Vibration Frequency: 5-55Hz/2g, 30 minutes
6. Impact resistance: 1g/s

### Safety and Compliance

1. UL244A Listed
2. FCC, 47CFR Part 15 Class B compliant
3. ZigBee HA Certified
4. Wet location Design IP67
5. Compatible with NEMA C-136-41-2013 7-prong ANSI standard receptacles
6. EN61000-4-5: 2kV L-N, 8/20 μsec surge protection

### Electrical Specifications at 25°C

- Input voltage range: 100-277Vac
- Frequency: 47 - 63HZ
- AC Relay Switched Current: ≤20A Resistive, See Page 3 and Note (1) below for load ratings.
- AC Zero Cross Switching
- Input current Module Power: ≤0.05A for Units power use
- Twist lock dimming receptacle, complies w/ ANSI C136.41-2013



IP67



ZigBee®  
Certified product



### Part Numbers

Part Number	Dimming US & CN Class 2	Control	ON/OFF Control	0(1)-10V Analog	Photo Sensor	Power Metering	GPS	AC Relay Voltage Range	AC Relay Maximum Current <sup>(1)</sup>
ECM-20-ZB	YES	ZigBee HA	YES	YES	YES	NO	NO	100-277Vac	20A, See Note (1)

**Note: (1) Max Rated AC Relay Loads (RED Wire):** AC Zero Cross Switching  
Fluorescent Ballasts, LED Drivers, Incandescent & Inductive Loads:  
2,216W @ 277VAC, 8A  
1,920W @ 208-240VAC, 8A  
1,920W @ 120VAC, 16A  
AC Resistive Load: 100-277Vac 50/60Hz, 20A Maximum.

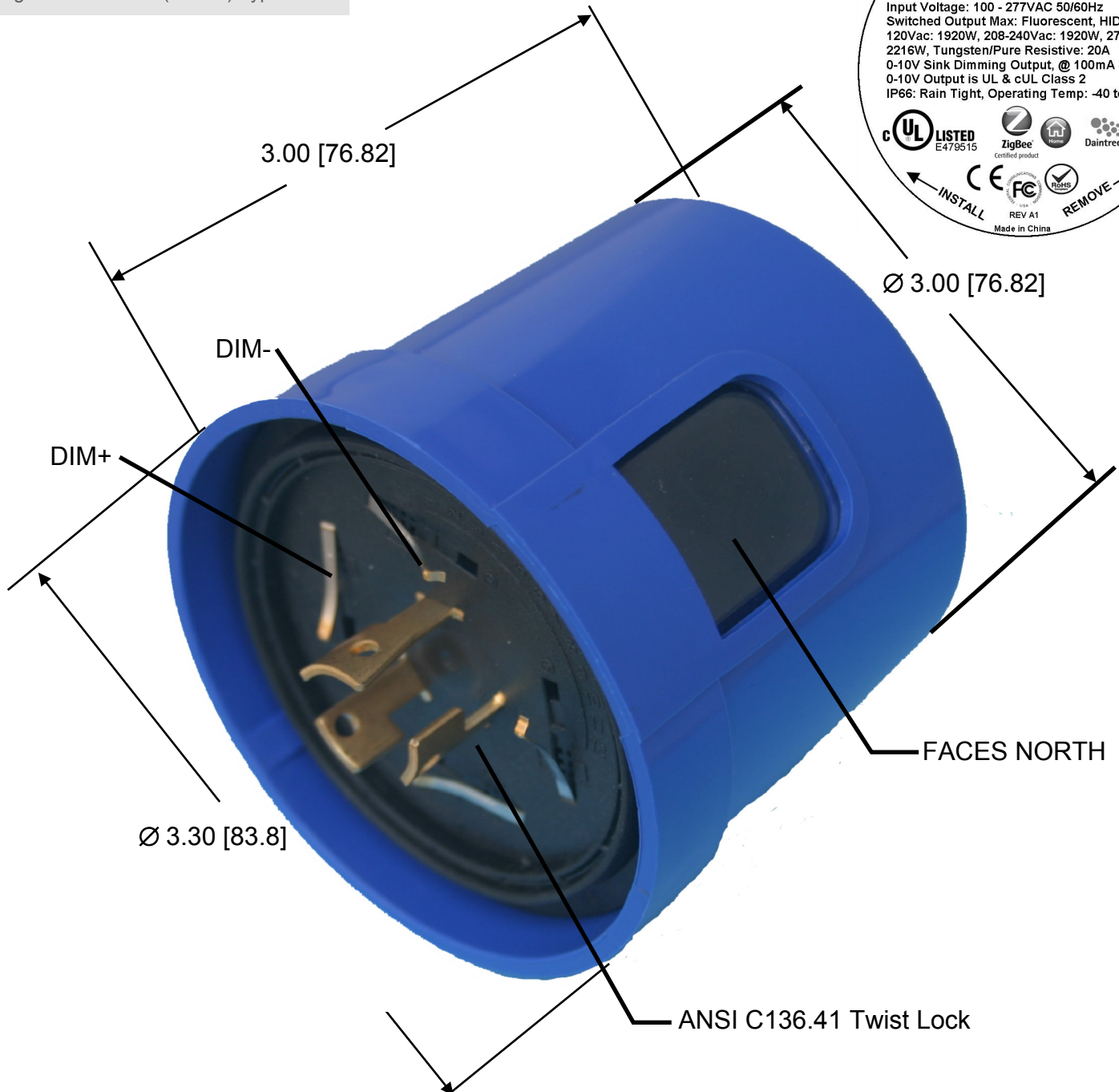
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**Mechanical Dimensions: Inches [mm]**

Material: V0 PC Plastic Case  
 Weight: 162 Grams (5.7 oz.) Typical

**Labeling Example**



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### Input Specifications

Parameter	Min.	Typ.	Max.	Notes/Conditions
Input Voltage	90 Vac	—	277 Vac	120, 230, 240, 277 Vac Nominal Values
Input Frequency	47 Hz	—	63 Hz	50/60Hz Nominal
ZigBee Control Transmit Power	—	—	+20dBm	ON/OFF, 0-10V dimming & Photo Sensor, Standard ZigBee
ZigBee Control Receive	—	-95dBm	—	ZigBee Radio Receive Sensitivity

### Output Specifications

Parameter	Min.	Typ.	Max.	Notes/Conditions
AC Relay Switch ON/OFF (Vac)	0	—	277Vac	Relay N/O Contacts, AC Zero Cross Switching
AC Relay Load @120VAC (W)	0	—	1,920W	16A, Fluorescent, LED Drivers, Incandescent & Inductive Loads
AC Relay Load @ 208-240Vac (W)	0	—	1,920W	8A, Fluorescent, LED Drivers, Incandescent & Inductive Loads
AC Relay Load @ 277Vac (W)	0	—	2,216W	8A, Fluorescent, LED Drivers, Incandescent & Inductive Loads
AC Relay Load Resistive @120-277Vac (A)	0	—	20A	Resistive Loads
Relay Inrush Current (Peak)	—	—	250A	Measured at 120Vac/60Hz Input, 10% Ipeak duration ~2.1msec
	—	—	370A	Measured at 277Vac/60Hz Input, 10% Ipeak duration ~1.25msec
Sink Current on 0-10V (+) Purple Wire	0mA	—	100mA	IEC60929 Annex E2
Absolute Voltage Range on 0-10V (+) Purple Wire	-20.0V	—	+20V	IEC60929 Annex E2
Dimming Range	0.5V	—	+10V	Ballast or Led Driver provides Dim Voltage & Current per IEC60929 Annex E2, 0(1)-10V Analog Dimming

### Environmental Specifications

Parameter	Min.	Typ.	Max.	Notes/Conditions
Case Temperature (Tc)	—	—	+72 °C	Measured at location specified on case.
Operating Temperature (Ta)	-20 °C	—	+50 °C	Operating temperature range.
Storage Temperature (Ts)	-40 °C	—	+85 °C	Non operating temperature range.
Operating Humidity	—	—	95% RH	Relative Humidity, non-condensing.
Vibration	5 Hz	—	55 Hz	2G, 10 minutes/1 cycle, period 30 minutes, each along X, Y, Z axis.

### Safety & EMC Compliance

Safety	Notes/Standards
UL/CUL Listed	UL244A, UL508, CSA22.2 NO. 14-13, UL2043 Plenum Rated
CE	EN61347-1, EN61347-2-13
Withstand Voltage Relay	Input to Output Across Relay Contacts: 700 Vac
Withstand Voltage AC In to Dim Out	Input to DIM: >1750 Vac
Dimming Circuit	UL & cUL Isolated Class 2, Dim+ Purple/Dim- Gray
FCC	Compliant Class B
EN 61000-4-5	Part 4-5: Surge Immunity test, 2 kV L-N

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