



Radio Control Unit

Solutions for Advancing Communications

M2115RCU



Mentor Radio produces a family of radio control units, also known as, Pilot Controlled Lighting (PCL) systems, Aircraft Radio Control of Aerodrome Lighting (ARCAL) or Pilot Activated Lighting (PAL) systems. One version can operate in the aviation VHF band (118-137MHz) and another version can operate in the marine VHF band (155-157MHz). The new M2115RCU is a replacement for both M15RCU-24-A and M15RCU-115-A units.

- **Less Expensive, MORE FEATURES!** Versatile unit provides unattended, all weather, air-to-ground radio control to operate hanger doors, control approach and runway end lights, taxi lights, or any other application where remote operation is desired from inside the aircraft. The marine controller can be used to control horns, lights, and other waterway markers from inside the vessel.
- **Resume On Power Loss** – Automatically energizes the same relays that were on when the power was lost significantly increasing flight crew safety especially in remote airfield locations.
- **Synthesized Tuning - No more Crystals!** Customer programmable. Utilizing a standard DB-9 serial cable (included) use your PC to program the operating frequency and adjust sensitivity using custom PC software. Password required to change operating frequency for increased security.
- **Multiple Configuration Options** – Can be configured for one, two or three relays. Has an 8 position DIP switch for setting configuration options. Operates like the older M15RCU unit. Same 3, 5 and 7 clicks to activate individual relays.
- **Indications.** LED's light up to display relay activation. A STATUS LED flashes to indicate normal operation. WINDOW LED indicates detection of a mic click.
- **Operates from any Available Power Source -** Power from 9VDC, 12VDC, 24VDC, 30VDC, 115VAC, or from a solar panel with a battery back-up system for longer life and minimum maintenance.
- **8 Different Time Out Values** - No timeout, 10 seconds (used for testing units), 5, 10, 15, 30, 45 & 60 minutes. Available in 8 and 12 hour timeouts intervals upon special request.
- **Test Button** - Test controller circuits without radio inputs. Reset button resets relay after test.





SPECIFICATIONS

GENERAL

- **Dimensions:** 7.5" wide 4.5" high 2" deep excluding hardware
- **Case Type:** Optional aluminum box, NEMA4 fiberglass or steel.
- **Power Required:** 10 to 30 VDC (negative ground) 0.30 amp maximum or - 120 / 240 VAC +/-15% jumper selected at the factory (50 / 25 mA AC).
- **Recommended Protection:** 1/8A / 250V for controller / radio. 5A for relay contacts. Choose between Fuse and Circuit breakers when ordering. Optional AC line and antenna lightning protection (Standard on FAA unit.)
- **Temperature range:** -20° F to +122° F (-30° C to +50° C) standard unit -67° F to +131° F (-55° C to +55° C) FAA unit
- **Humidity:** 95% non-condensing, 100% for FAA unit
- **MTBF:** 10,000 hours

RECEIVER

- **Antenna:** SO-239 (UHF) 50 ohms with optional lightning protection (replaceable cartridge)
- **Frequency Ranges:** 118.000 to 136.975 MHz Aeronautical band 156.050 to 157.425 MHz Marine band. Band selection is factory configured.
- **Channel Spacing:** 25 KHz or 8.333 KHz
- **Sensitivity:** 5 uv 30% mod. at 1 KHz gives at least 10 dB (S+N)/N into 600 ohms adjustable via potentiometer (<5 uV to > 10,000 uV)
- **Selectivity:** -6 dB at +/-9 KHz, -60 dB at +/- 40 KHz
- **Adj Channel Selectivity:** 65 dB at 25 kHz
- **Intermodulation:** -65 dB type dB; typical at 25 kHz
- **Spurious Rejection:** 80 dB at 25 kHz
- **Spurious Emission:** Conducted: <-60 dBm
- **Radiated:** -60 dBm < 1 GHz
- **Timebase Stability:** ±30 ppm, includes aging and temperature effects

CONFIGURATION AND USER INTERFACE

- **Test Switch:** Pressing this activates the relays just as a received microphone click would.
- **Reset Switch:** Resets all energized relays.
- **RS-232C Serial COM Port:** Allows authorized changes of operating frequency via a Windows PC program (M2115RCU-PC). Password Protected. Software Included.
- **Status LED:** Blinks at a rate of once per second to indicate normal operation.
- **Window LED:** Lights when the first valid click is detected. Remains on for the allowed window duration (3 to 5 seconds depending upon DIP switch settings)
- **Relay LED's:** Visual indication of the adjacent relay state.
- **DIP Switches:** Allows field configuration of relay timing and behavior.
- **Sw 1, 2 & 3 - "Timeout Period".** (Variable from 10 seconds to 1 hour) (Optionally can be programmed for 8 hour and 12 hour max timeout)
- **Sw 4 - "Window Time"** (3 sec or 5 sec)
- **Sw 5 - Relay Deactivate Disable.** Relays will only de-energize at timeout period expiration.
- **Sw 6 - "Mutually Exclusive" relay operation.** Only one relay is ever active at one time. When the 5 click relay energizes, the 3 click relay de-energizes. Same for the 7 click.
- **Sw 7 - "5 Click-Off" function.** If only one relay is installed, this setting allows the customer to turn on the lights with 3 clicks, and turn them off with 5 clicks.
- **Sw 8 - "7 Click Off" function.** Same as 5 Click off function except it turns all the energized relays off with 7 clicks.
- **Relays:** 1, 2, or 3, form A, SPDT, standard unit 3 form A (SPDT), plug in for FAA unit.
- **Mechanical Life:** 100,000 operations.
- **Switch Circuit Protection:** Fuse or circuit breaker as specified by the user.

ADDITIONAL FEATURES

- **Weatherproof Enclosure.** Unit fits into a 12"x10"x6" enclosure with built-in mounting capability.
- **Optional Lightning Protection** – Available for both AC line input and antenna input.
- **Sensitivity Adjust Pot**
- **Power Status** – Status LED.
- **Marine Band Version** – allows boat operator to operate horns, lights and other waterway markers from inside the vessel. Currently in use by both the US and Canadian Coast Guard for waterway navigational aids.
- **Versatility** - Open/Close hanger doors and operate other airfield equipment or lighting all without ground crew intervention or requiring you to exit the aircraft.

ACCESSORIES/OPTIONS:

Antenna – Two types of antennas are recommended for radio controls. For installations where the unit is located indoors and the antenna needs to be mounted outdoors we suggest a type ASP7A. Installations where the unit will be exposed to outdoor environmental conditions we recommend either connecting a whip antenna or a base style antenna. Of course the ASP7A type antenna can be set-up anywhere to maximize antenna reception performance and minimize interference.

NEMA Enclosure – Choices! Add to the base unit with a NEMA enclosure. Choose from one that has a removeable or hinged lid and several mounting capabilities. Enclosures offer hinged lids with or without quick release latches for easy access. Steel enclosures and aluminum cases are also available.

