



RAINBOW TECHNOLOGY

Specialists in Utility Chemicals & Safety Items



Insects in Light Housings and Other Utility Equipment

By

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“Mother Nature will find a way”...this is a fitting line from a movie called Jurassic Park whereby the lab bred dinosaurs that were “designed” to not be able to reproduce found a way to reproduce and you know the rest of the story. In much the same way, equipment manufacturers that painstakingly design their equipment to keep Mother Nature out...



...eventually discover that she finds a way in.

Once inside, Ants and other insects that infest the equipment will cause corrosion, and ultimately equipment failure.





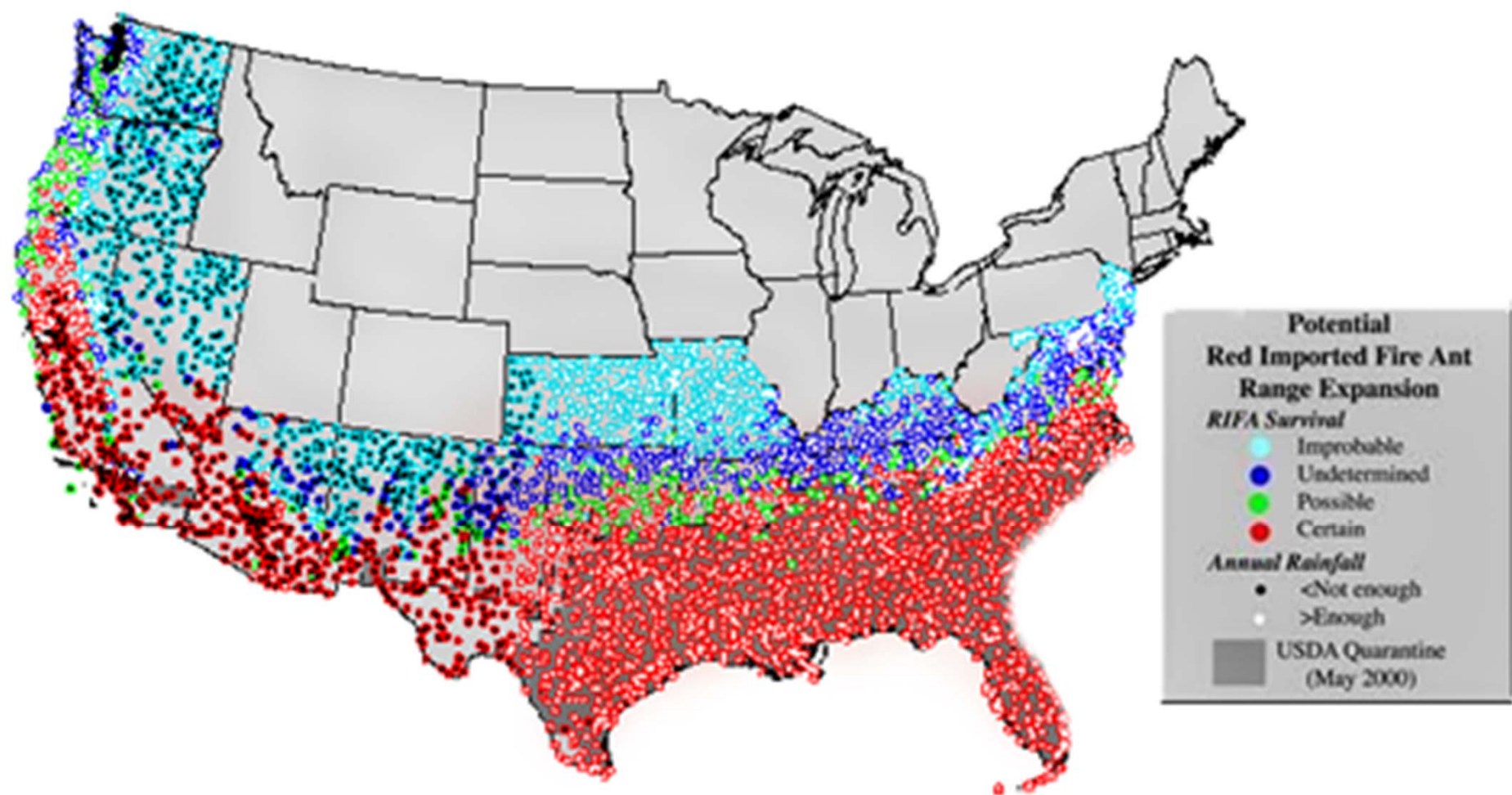
Sometimes insect infestation can be catastrophic. As was the case with an apartment complex outside of Atlanta, Georgia. Ants, specifically the Red Imported Fire Ant (*Solenopsis Invicta*), infested a ground pad mounted transformer and caught the apartment complex on fire.



This is an extreme example but electrical failure due to insect infestation or moisture can shut down most anything including airport lighting. According to the USDA the Red Imported Fire Ant alone is responsible for damages that total approximately \$1 billion annually!

The USDA tracks the movement of the red imported fire ant as it spreads a little north and west every year. It is also interesting to note that a new species has evolved as the red imported fire ant has spread into cooler climates. A hybrid red/black fire ant is making progress in the cooler climates and it is becoming a hardier species as it survives colder winters.

Potential United States Range Expansion of the Invasive Red Fire Ant





If you have spent any time at all in the southeastern United States you will have some personal experience with the Fire Ant.



However, Fire Ants aren't the only ant species that cause problems. There are approximately one thousand ant species in North America...



...and more than 10,000 ant species worldwide! With over 40 years experience in the insecticide business with a focus on utility applications, I have seen many different species of ants invade and infest many different types of equipment.

From the “Caribbean Crazy Ant” invading a large solar array in Florida



to “Carpenter Ants” infesting Fiber Optic connector panels in Maryland



to Fire ants that infest just about everything on the ground

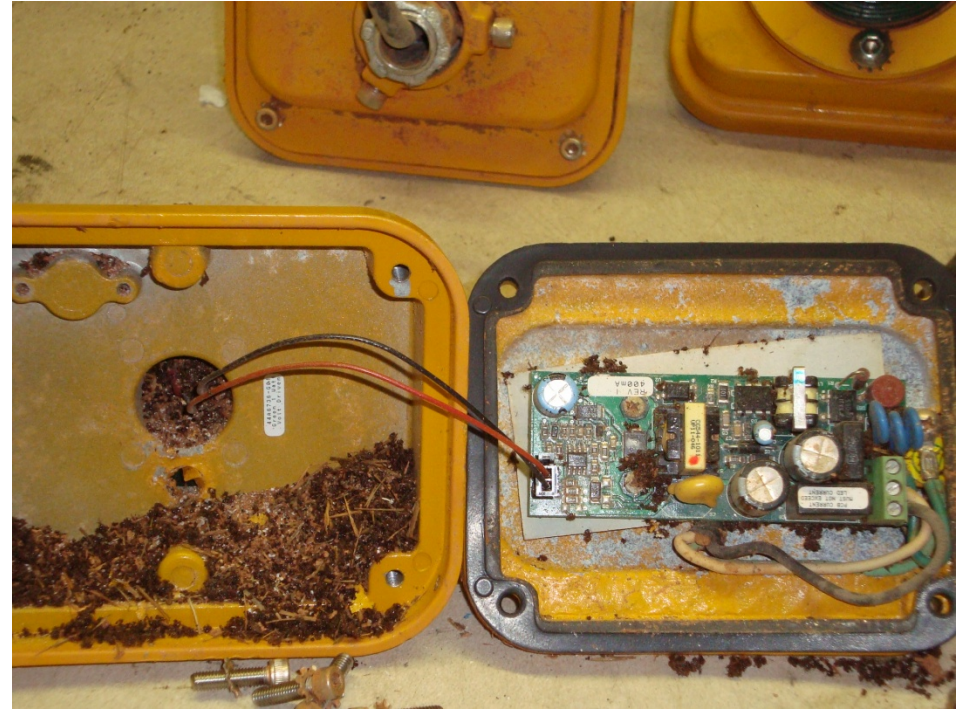


and all the way to an unidentified species of Ant invading an Airport runway light in South Africa.



Ants and other insects are drawn to the warm electrical current that is housed inside the various cabinets, hand holes and other housings that secure the electronics. This combination makes for perfect habitat for all kinds of insects and other vermin. All of these examples demonstrate a very serious problem which results in safety issues, lost revenue and unhappy customers.

This past January, I was contacted by a heliport lighting manufacturer with an example of what many airports around the globe have been facing. These photos illustrate the problem of what fire ants will do when they have invaded heliport lighting.



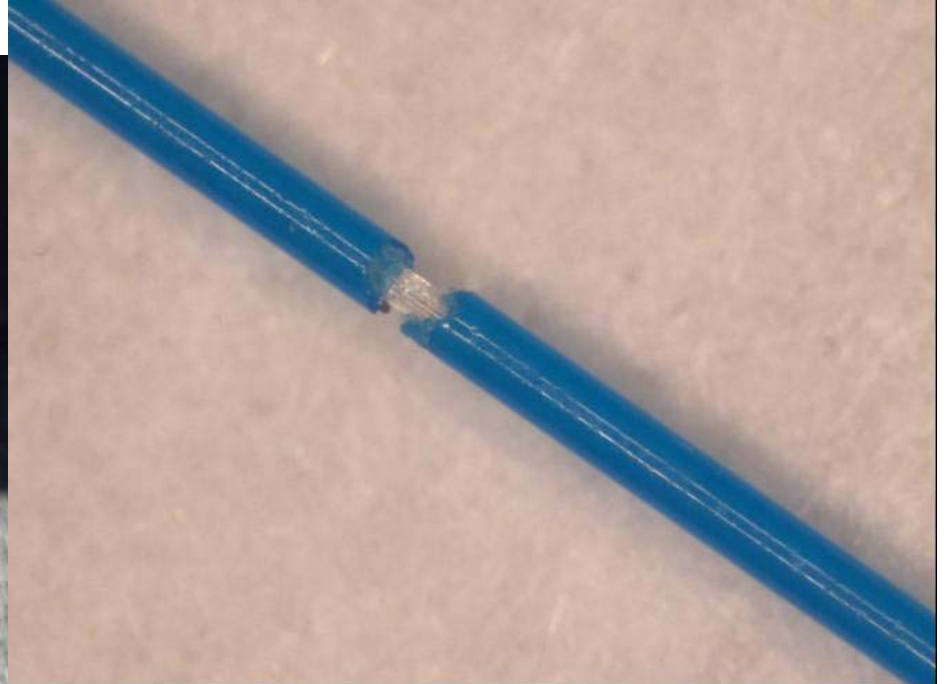


Fire ants are foraging insects that have very powerful mandibles, which are the pincher mouth parts illustrated above. Fire ants as well as all other ant species will forage for food and nesting material and will use its mandibles to cut and carry the foraging matter. The soft plastic insulation on wiring is easily cut by the mandibles of ants, exposing the wires underneath.

Result of Fire Ants Damaging
L-824 Series Circuit Wire



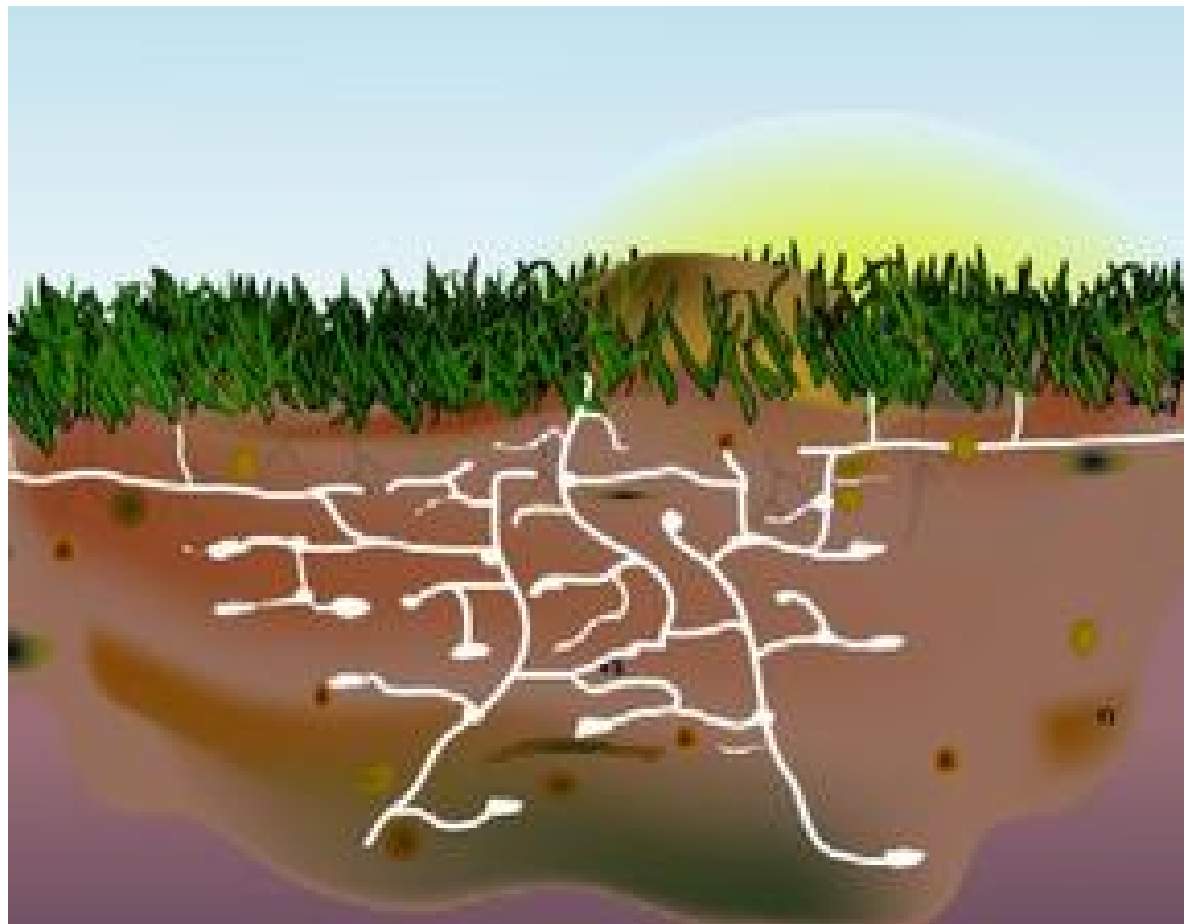
Result of Fire Ants Damaging
Airfield Fixture Input Wire



This photo is from a heliport in South Carolina that experienced a fire ant infestation resulting in a failure of the fixtures. As you can see from the photos the fire ants will bring dirt and debris into whatever they have infested. Also, when the ants die off they will haul the dead carcasses to the top of the mound to the “bone yard”, which in the case of the light fixture is the top of the mound. This pile of dead ants combined with the moisture, dirt and heat will generate a corrosive residue that will literally eat the paint off of metal. This is noticeable in the photographs of the fixture.



Fire Ants will build dirt mounds that are constructed with about $\frac{1}{3}$ of the mound above ground and $\frac{2}{3}$ s of the mound below ground. The fire ant mounds need warmth, moisture and air. The mounds are constructed in a labyrinth of tunnels and chambers that are sustained and flourish with warm, moist soil. The light fixtures provide a sustained amount of warmth around the moist soil which the fire ants will be drawn to. Once they have infested the area they will build the colony with the Ant queen residing in the bottom of the mound.



Fire ant mounds will appear virtually overnight especially after a rain. In winter the cooler temperatures will move the fire ant colonies deeper into the soil and they will go into a dormant state until the warmer temperatures of spring signal time for swarming. When the fire ants swarm they will fly and drift with the wind starting new colonies in other conducive areas such as the rest of the lights on the airfield or heliport.

Common Methods for Treating Fire Ants

- 1) Contact insecticides – Chemical products that are EPA approved and labeled for treating fire ants are effective in controlling fire ants. Some products have long term residual activity and others do not. Products with long term residual activity are labeled for turf application, such as an airfield. These products would need to be applied with a spreader at least annually. The big downside to this, is cost. This method focuses on treating the entire property, which in the case of an airfield could be very expensive.
- 2) Baits – Baits are also very effective and are applied using a spreader for turf application. Baits have very specific directions for use and if not followed exactly, the product is useless. For instance, baits must be applied when the temperatures are over 70 degrees, when ants are foraging, and there can not be any moisture present. Moisture, such as dew, etc, will ruin the bait and render it useless. Baits are also expensive, especially when treating large areas, such as an airfield.

In my experience, the most cost effective way for a company to protect their equipment is to treat the equipment with an EPA approved insecticide product that will provide years of protection against invasive insects. If the equipment is treated, then it really doesn't matter if fire ants or other insects are in the area as long as they aren't causing a problem.

We conducted a field experiment at the heliport in South Carolina, where the infestation occurred using an insecticide product, called INSECT TAG. This product is a contact insecticide with repellent properties, designed to slowly release into the area it is placed for several years. New light fixtures were provided to the heliport in South Carolina and Rainbow provided samples of the Insect Tag. The Insect Tag was placed in the new fixture and the new fixture was then installed.

INSECT TAG

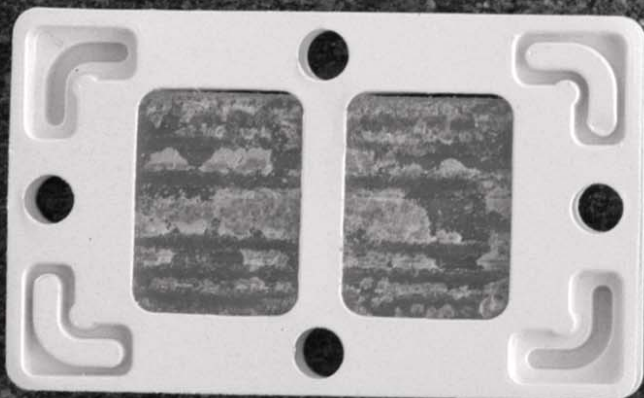
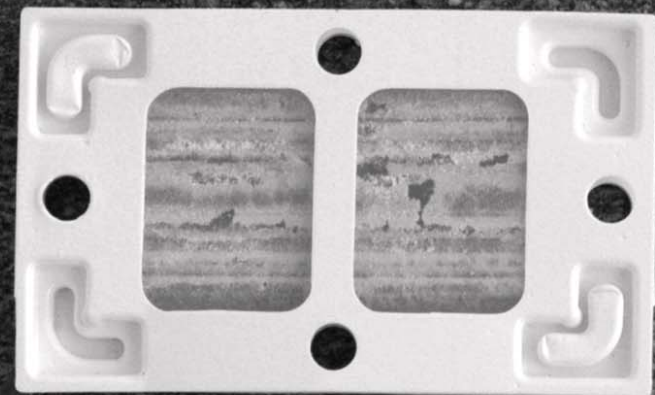
WHAT IS IT?

This time-release product is designed to slowly release insecticide for years inside electronics, telecommunications and utility equipment. This unique product **KILLS** existing infestation and **PREVENTS** future infestation.

Propoxur, the active ingredient, has repellency properties to help keep insects away from equipment.

Place the 2" x 3" INSECT TAG at or around entry points where insects will be killed or repelled as they attempt to enter equipment.

Apply INSECT TAG inside airfield light fixtures, aerial closures and terminals, pole-mounted equipment, customer premise equipment, cable closures, terminal boxes, telecommunications, power and utilities, electronics, street lighting, computers, railroad systems, municipalities, security and smoke alarms, traffic control systems, network interface devices, meter boxes surge protectors, various OEM equipment, and outdoor equipment or contained areas. One application repels and kills insects around the clock.



RAINBOW

INSECT TAG

KILLS AND CONTROLS Wasps, Bees, Hornets, Yellowjackets, Spiders, (including Black Widow and Brown Recluse), Ants and Fire Ants.

REPELS Fire Ants and Cockroaches from Enclosed Utility Equipment. **REPELS** Continuously.

ALSO CONTROLS Crickets, Earwigs, Fleas, Millipedes, Cockroaches, Scorpions, Silverfish, Sowbugs, Ticks and Waterbugs.

FOR USE IN AND AROUND Telecommunications, Power, Utilities and Railroad Systems Equipment Including (but not limited to): Buried Cables, Cable Television Pedestals, Cables, Pad-Mounted Air Conditioning Units, Pad-Mounted Electric Power Transformers, Telephone Cables and Underground Vaults.

ACTIVE INGREDIENT:

2-(methylethoxy) phenol methylcarbamate.....9.4%

OTHER INGREDIENTS.....90.6%

Total.....100.0%

**KEEP OUT OF REACH OF CHILDREN
WARNING**

See back panel for additional precautionary statements.

EPA Reg. No. 13283-26 • EPA Est. 42836-TX-1

Manufactured for:

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Suggestions or Comments?

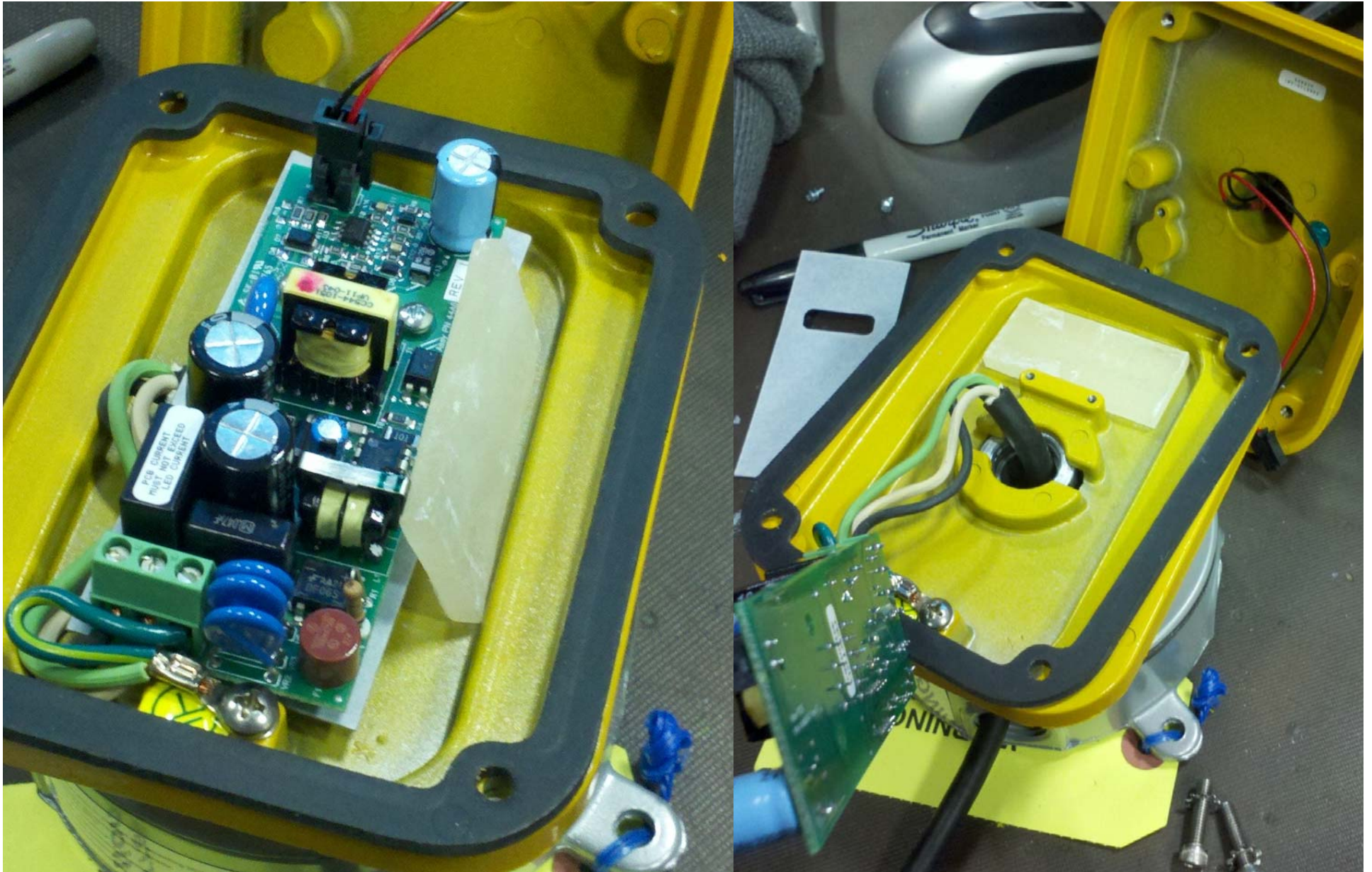
www.rainbowtech.net - 1.800.637.6047

**PRODUCT
4049**

NET WT: (Two Tags) 0.56 oz (16 grams)



4049-C



As of the installation in January 2012 until now, there have not been any further infestations of fire ants in the fixtures, proving the Insect Tag a success.

Whether it is an ant or another insect, they all can present issues if they aren't controlled.

We are giving away a 4 gigabyte flash drives with information on fire ants and our products to each attendee that stops by our booth. I look forward to speaking with each of you individually and discussing your concerns more about insect infestation in air field light fixtures or other areas where insects are a problem.



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