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NON-METALLIC AIR CONDITIONING DISCONNECTS (ACD)

Provides Ease Of Maintenance

EATON
Powering Business Worldwide

Eaton's updated ACD features a modern-looking side-hinged door for easier access to the disconnect.

ACDs are located between a loadcenter (distribution panel) and an air conditioner, providing a visible means of disconnect when performing maintenance. They are commonly referred to as disconnects, pullouts or air conditioning switches.

Eaton's non-metallic ACD is UL® Listed and made from polyphenylene ether (PPE) plastic, which has been field tested for decades and is the same material used in Eaton group metering stacks. PPE plastic is corrosion, ultraviolet and impact resistant.

ITEM#	MFG#	DESCRIPTION	WIRE RANGE
1846523	ACD60R	60 A non-fused, non-metallic ACD, 240 V Dimensions: 6.40"H x 5.20"W x 3.30"D Weight: 0.75 lb	#14–3 AWG
0732718	96-3258-4	Replacement pullout head	–

To learn more about Eaton's ACD enclosure designs using PPE plastics, Visit Eaton.com/acd or contact your local Platt branch.

PHONES OPEN 7 DAYS A WEEK | 4am – 12am Pacific
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Plastic Enclosures:

Suitable for Outdoor Electrical Applications?

Powering Business Worldwide

Debunking Common Misconceptions About Thermoplastic Electrical Enclosures

There are preconceived concerns about the ability of plastics to perform reliably in the harsh environmental conditions found in outdoor applications. This paper will address these apprehensions by examining the intended use of the NORYLE family of modified polyphenylene ether (PPE) plastics and the suitability of this material for use in outdoor electrical enclosure applications.

What is NORYL PPE Plastic?
The NORYL family of modified PPE resins is a polymer consisting of amorphous blends of PPOE resin (polyphenylene ether) and polystyrene. This material combines the inherent benefits of PPO resin (affordable, high heat resistance, good electrical properties, excellent hydrolytic stability) with excellent dimensional stability, good processability and low specific gravity.

NORYL PPE also offers low moisture absorption and excellent hydrolysis resistance and can be made flame retardant. Additionally, this family of PPE resins is designed to provide a good balance of mechanical and chemical properties, and to be suitable for a wide variety of applications.

Common commercial use cases for PPE resins include components in printers and copiers, electrical devices like connectors and circuit breakers, and in vending machines and water softeners.

Due to its inherent corrosion-resistant properties, modern PPE plastic is currently utilized as an enclosure material for many different industrial and electrical applications, including:

- Alternative energy: Protecting sensitive electronic devices from the environment in solar and wind applications
- Water treatment: Shielding electronics from environmental conditions typical in wastewater treatment plants, commercial and industrial sprinkler systems and more
- Marine and marina: Safeguarding electrical equipment and components from corrosive saltwater and sunlight
- Harsh and hazardous areas: Protecting motor starters, controls and junction boxes from extreme environmental conditions that cause corrosion.

PPE Plastic Enclosures for Outdoor AC Disconnects
The National Electrical CodeT (NEC)T Article 440 requires a disconnecting means within sight of, and readily accessible from, air-conditioning or refrigerating equipment. These devices are commonly referred to as air-conditioning disconnects (ACDs), pullouts or air-conditioning switches. ACDs are also suitable for any other application where a local disconnect is required, such as heat pumps, water heaters, hot tubs and many others.

Traditionally, ACDs were constructed with NEMAT 3R metallic enclosures in adherence to UL 50E standards to provide a quality weatherproof enclosure resistant to rain, ice and snow. However, PPE plastic enclosures can be used in outdoor ACD applications and they deliver on a variety of benefits compared to the traditional metal enclosure approach.

Six Key Benefits of PPE Plastic Enclosures for AC Disconnects

1. Impact Resistance
NORYL PPE plastics are tested to UL 746C, which outlines the evaluation process for polymeric materials used in electrical equipment.

This test includes:
- Subjection to steel ball impact at –31 °F and at room temperature per UL 746C
- Subjected to the 100 lbf crushing test per UL 746C
- Subjected to mold stress-relief distortion test per UL 746C in an oven at 158 °F for 7 hours

2. Corrosion Resistance
Chemical resistance and corrosion resistance are among the greatest advantages of plastics as compared to metals. Because the impact of corrosive compounds resulting from water, salt, acids and bases is minimal with PPE material, it is incredibly suitable for coastal, marine and harsh environmental applications.

Beyond natural resistance to the impact of corrosion, PPE plastics support effective maintenance in the long term simply because a plastic enclosure is far less likely than its metal counterpart to jam, stick or fail to open because of rust or corrosion—and can be maintained harmlessly with many different cleaning agents. Further, the enclosure never has to be painted to withstand corrosive environments or harsh climatic conditions. They can be installed and used right out of the box in places where a metal enclosure would need to be epoxy coated.

3. Fire Protection and Grounding
The NORYL PPE resin SE1X used in ACD enclosure applications is flame retardant to comply with a broad range of environmental standards, including UL 94 V-1.

4. Ultraviolet (UV) Resistance and Environmental Protection
The NORYL PPE plastics used for ACDs are tested to comply with UL 746C with a f1 rating. This means the material has met both UV and water immersion requirements. UV exposure is performed by using either a twin-enclosed carbon weatherometer for 720 hours or a xenon-arc weatherometer for 1000 hours. Water immersion testing is performed for 7 days at 70 °C. The material is tested before and after exposure for flammability, mechanical impact and mechanical strength. Materials whose properties are not significantly degraded in any of these areas are considered to have passed and are suitable for outdoor use.

5. Ease of Modification
Compared to traditional metal enclosures, PPE plastic enclosures are much easier and safer to machine. Due to their inherent structure, PPE plastics do not leave potentially dangerous edges that must be machined or painted prior to handling. Plus, when drilling mounting holes to meet the needs of unique installation locations, no special tools are required and the risk of exposure to dust particles containing metallic compounds is mitigated to enhance personal safety.

6. Aesthetics
The NORYL class of PPE plastics used for ACDs can be molded in several different colors or pantones as the manufacturer specifies. Further, the enclosure can be painted without any form of pretreatment due to the plastic's favorable paint adhesion to match the appearance of nearly any application, which is especially desirable in the common residential application of ACDs.

To learn more about Eaton's ACD enclosure designs using PPE plastics, Visit Eaton.com/acd or contact your local Platt branch.

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