

INSTALLATION FLEXIBILITY HELPED A CONVEYOR SYSTEMS MANUFACTURER MITIGATE THEIR ELECTRICAL SAFETY RISKS

INTRODUCTION

A machine manufacturer in Wisconsin improved their electrical safety program with the use of our Permanent Electrical Safety Device (PESD) known as the Flex-Mount Voltage Indicator. The company designs, manufactures, and integrates conveyor system automation and accessories for industrial process applications. To verify the functionality of their finished product, they perform a sequence of tests before shipping to their customers. As part of the test set up they use braided pigtail leads to temporally connect the motor of the conveyor system to a Variable Frequency Drive (VFD) and run tests to validate the equipment's complete functionality.



The Flex-Mount Voltage Indicator conveniently mounts onto any electrical equipment. This 3-phase voltage indicator uses redundant, longlife LEDs (flashing or non-flashing options available) to provide a visual representation of energy presence with the flexibility of being mounted virtually anywhere (alternate mounting position labels provided). In addition to the four-wire option, the Flex-Mount is the first voltage indicator in our line to utilize an optional five-wire configuration for use on wye power systems.

Prior to installing the Flex-Mount PESD, they had occasions where they forgot to de-energize the main power source before unplugging the cord sets. This resulted in hazardous electrical arcing in few instances because their test set up had no way of indicating voltage presence.

The Senior Electrical Engineer explained the situation, “All of our OEM equipment needs to be tested before they ship it to their customer. We’ve had several situations where personnel forgot to unplug the pigtail leads meant for testing. This would result in live flying leads coming out and arcs, sparks, blown fuses would occur.”

BACKGROUND

As part of improving the overall worker safety when performing these tests, the Senior Electrical Engineer was tasked with finding a safer way to test their equipment and mitigate these risks. They were already familiar with Grace and had installed some of our other products in the past on their OEM equipment projects. The Senior Electrical Engineer already had a Flex-Mount product-replica similar to a stress ball on his desk that Grace created as a promo item. It occurred to him that this might be the product he could use to solve their safety risk problems.

The engineer stated, “I’ve used your other voltage indicators and Safe-Test Points™ in the past on some of our OEM projects as we’ve put them out the door so I was familiar with Grace. Actually, on my desk I’ve got a squishy Flex-Mount. So I grabbed that and thought, well, this might be of interest. This might be able to be a way flash lights whenever there’s power present. So that’s the path I went down.”



They mounted the Flex-Mount Voltage Indicator onto a conduit tee and wired the device between the flying leads and the detachable plug and cord set assembly. This helped their personnel verify voltage presence before connecting and disconnecting their equipment to the source voltage, making functional testing of their outgoing OEM equipment safer and more reliable than before.

FLEX-MOUNT SOLUTION

Originally, they had looked into NCVD options but it didn't suit their precise application need with installation difficulty. The Flex-Mount replica stress ball led the Senior Electrical Engineer to our website where he did some research on the Flex-Mount and determined this device with a M20 or 3/4" threaded base and locknut would be ideal for ease of installation. There, he immediately determined it was the best solution.

With the addition of the Flex-Mount's LED verification of voltage presence, everyone agreed that it was the best option given the fact it also verifies the stored electrical energy dissipation as most of their tested equipment is connected to a VFD.

The **entire team** gave a green light to **purchase more Flex-Mounts** and use them for testing equipment as a **standard operating procedure**.

They have purchased 28 Flex-Mount voltage indicators for their temporary testing leads and intend to purchase more to improve their testing process and safety.

SAFETY CULTURE

The Senior Electrical Engineer emphasized, "*safety is our number one priority. We have people keeping everyone in check and published procedures for all employees.*"

Incorporating the Flex-Mount into their process has made the testing phase safer and more reliable.

When asked how the process has been received to improve safety, the engineer said, "*My operators are giving no push back or problem whatsoever with the new procedure. They've been gladly moving forward. We need to test our equipment with temporary cords, and with the Flex-Mount, we've made it much safer than before.*"

GRACE PESDs®

Grace PESDs® include voltage indicators, like the Flex-Mount, that are self-powered, UL listed, and permanently installed devices that visually represent presence of voltage with flashing or non-flashing, redundant LED lights. Typically hardwired to the load side of an electrical feeder or a disconnect switch, voltage indicators illuminate whenever hazardous voltage is present in any individual phase or stray voltage present in the ground path. Voltage indicators greatly assist task qualified personnel with enhanced productivity and reduced risk while performing mechanical and electrical LOTO tasks by verifying the release of stored electrical energy per Article 120.5(4) of NFPA 70E 2018, and OSHA's CFR 1910.147 for LOTO



A VOLTAGE INDICATOR FOR EVERY APPLICATION

GRACE PESDs® Visit us at: www.pesd.com