Sourcing Products with an Eye on Safety

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Sourcing Products - Eye on Safety

- Authenticity
- Safety Impact
- Risk
- Best Practices
Authenticity
Counterfeit

An imitation intended to be passed off fraudulently or deceptively as new or genuine.

Related:

• Bargain priced knock-offs; common with luxury goods, watches, and handbags but now becoming more prevalent with electrical products.

• Counterfeits may be newly manufactured fakes or products refurbished with counterfeit components, packaging, marks, documentation or labeling.

• Counterfeit and fraudulent circuit breakers are **unsafe** and pose a significant risk to channel partners, contractors, and end users.

• Unauthorized resellers tend to be the origin of counterfeit products, knowingly or unknowingly, due to sourcing practices.
Gray Market

The unintended resell of genuine products by, unauthorized, independent resellers or brokers.

Related:

• Products sourced by a variety of methods and sold “as new” but without a manufacturer relationship, support, or warranty.

• Gray market goods may be new but are acquired through means outside of authorized distribution channels and policies.

• Gray market resellers frequently misrepresent surplus, used or refurbished goods as new, genuine, product.

• Gray market resellers have the highest risk for counterfeit, sub-standard, or fraudulent goods due to sourcing practices.
Safety Impact
Safety Impact

Purchasing decisions have an impact on the two key areas electrical hazards
• Arc Flash Hazards
• Shock Hazards
The Wrong PPE could leave you wearing fuel
OCPDs and Equipment Can Become the Source of Problems
Type 1 vs. Type 2 Protection

Motor starters specified to be protected by OCPDs that provide Type 2 protection increase electrical safety.

Illustrated above: sequence of photos of short-circuit current testing for motor starter with Type 2 “No Damage” Protection.
Type 1 vs. Type 2 Protection

Type 1 Protection of Motor Starters

• Motor starters are susceptible to extensive damage if not specified to be protected by OCPDs that can provide Type 2 protection

• Type 1 protection is itself a potential arc flash hazard if the fault occurs with a worker near and enclosure door open.
Interrupting Rating

**NEC 110.9:** Device interrupting rating MUST be equal to or greater than the maximum available fault current.

Demonstrations (Miss-Applied OCPD Devices)
- 10,000 AIR, 600V, Class H Fuse, 50,000A Available
- 14,000 AIR, 480V, Circuit Breaker, 50,000A Available
Interrupting Rating – Fully Rated

- Utility
  - 1500kVA
  - 4160/480V
  - 5.75% Z
  - 480/277V
  - ISC = 31.4kA
- OCPD
  - 65 kAIC
- OCPD
  - ISC = 31.4kA
- OCPD
  - 65 kAIC
- OCPD
  - 65 kAIC
- OCPD
  - ISC = 31.4kA
- OCPD
  - 10 kAIC
Interrupting Rating – Series Rated

- Series rated system
  - Upstream OCPD and downstream circuit breaker tested to interrupt the fault current
  - Both devices will probably open to clear the available fault current (31.4kA)
  - Found on price competitive commercial projects

Tested Pairs
Downstream Device Will Always Be A Circuit Breaker
SCCR . . . . Who are these players?
Magnetic Forces

Distribution Equipment

The OCPD
Who’s Your Spotter?
Who’s Your Spotter?
Section 110.10, Circuit Impedance, Short-Circuit Current Ratings, and Other Characteristics

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Who’s Your Spotter?
Example 1 Video

Approximately 26,000A Short-Circuit: 90 ft 2/0 AWG
Non-Current Limiting (1 cycle clearing)
SCCR Consideration is Important for Safety
Technologies that reduce incident energy

Power Distribution technologies to Reduce Arc-Flash Hazards

Arc Flash Reduction
Maintenance System

Substation Primary Vacuum Circuit Breaker
Early detection and avoid the flash

Prevent Fault

• Infrared Scanning Windows for LV/MV Assemblies
Risk
Texas business owner sentenced in counterfeit circuit breaker scheme

JACKSONVILLE, Fla. — An Austin, Texas, man was sentenced Wednesday to 12 months and one day in federal prison for mail fraud and trafficking in counterfeit goods and services. He was also ordered to pay $59,653.97 in restitution to the victims of the offenses, following an investigation by U.S. Immigration and Customs Enforcement’s (ICE) Homeland Security Investigations (HSI).

According to court documents, from 2008 until April 2010, Elod Tamas Toldy used his Austin-based electronics firm, Pioneer Breaker and Control Supply, to market counterfeit circuit breakers on eBay. Undercover HSI special agents purchased numerous counterfeit circuit breakers from Toldy bearing the names Zinsco and Stab-lok. Zinsco is a trademark held by Connecticut Electric Inc. Stab-lok is a registered trademark held by American Circuit Breaker Corporation.

On April 21, 2010, HSI special agents executed a federal search warrant at Pioneer Breaker and Control Supply and seized more than 20,000 counterfeit electronic products. Toldy consented to an additional search in Laredo, Texas, where HSI special agents seized an additional 77,000 counterfeit circuit breakers and 60,000 counterfeit labels bearing the trademark UL for Underwriters Laboratories. The manufacturer’s suggested retail price for the genuine circuit breakers and electronic products is more than $4.7 million.

"Trafficking in counterfeit goods is a serious problem. In this particular case, an individual was marketing counterfeit circuit breakers to unsuspecting consumers, which poses significant safety implications," said Sue McCormick, special agent in charge of HSI Tampa, which oversees the agency's Jacksonville office. "The holiday shopping season is right around the corner. I urge consumers to protect themselves. Buy from legitimate retailers. Otherwise, you may put your health and safety at risk."
Counterfeit Breakers are an industry problem and prevalent across the major brokers

- TAMAS TOLDY OF PIONEER BREAKER PLEADS GUILTY TO TRAFFICKING COUNTERFEIT CIRCUIT BREAKERS
- JURY FINDS BREAKERS UNLIMITED GUILTY OF SELLING COUNTERFEIT CIRCUIT BREAKERS
- NORTH AMERICAN BREAKER CO. RECALLS COUNTERFEIT CIRCUIT BREAKERS DUE TO FIRE HAZARD
- CONNECTICUT ELECTRIC RECALLS COUNTERFEIT SQUARE D CIRCUIT BREAKERS DUE TO FIRE HAZARD
- SQUARE D® OBTAINS INJUNCTION AGAINST MIAMI BREAKER AND GENERAL BREAKER & PANEL TO PREVENT THE SALE OF COUNTERFEIT PRODUCTS
- SQUARE D® COMPANY OBTAINS INJUNCTION AGAINST MAINE CIRCUIT BREAKER TO PREVENT THE SALE OF COUNTERFEIT PRODUCTS
- SQUARE D® COMPANY SETTLES WITH SPECIALTY LAMP INTERNATIONAL TO PREVENT THE SALE OF COUNTERFEIT PRODUCTS
- NORTH AMERICAN BREAKER COMPANY PERMANENTLY ENJOINED FROM SELLING COUNTERFEIT SQUARE D® PRODUCTS
- CES LIQUIDATING AND TES LIQUIDATING PERMANENTLY ENJOINED FROM SELLING COUNTERFEIT SQUARE D® PRODUCTS
- SCOTT ELECTRIC PERMANENTLY ENJOINED FROM SELLING COUNTERFEIT SQUARE D® PRODUCTS
Counterfeit & Fraudulent Items Nuclear Utility 2017
Counterfeit & Fraudulent Items Nuclear Utility 2017
Knock-off, counterfeit, breaker base assembled with Eaton cover and counterfeit nameplates
Brokers willing to go to any extent
The Impact of Counterfeiting

- Globally counterfeiting is estimated to be $1.77T
- In the U.S. counterfeiting is estimated to be $200B - $250B
- The loss of 750,000 jobs annually in the U.S. can be attributed to the lost revenues of counterfeiting
- The domestic value of IPR seizures for 2014 was $1.2B
- 538% Growth in value of seizures (MSRP) since 2010 with electrical products representing 12% of all seizures
- More than 80% of seized counterfeits seized by U.S. Customs originate in China
The Impact of Counterfeiting

The U.S. domestic value of IPR seizures for 2014 was $1.2B

More than 80% of seized counterfeits seized by U.S. Customs originate in China

$1.77 Trillion
Counterfeiting across industries is estimated to have cost this much worldwide in 2015.
Factors that contribute to products being targeted by counterfeiters

- Well known global brand
- High volume products
- High demand products
- Large installed base
- Complex, loosely controlled, supply and distribution chains
- Internet access to customers

All well-known brands are being counterfeited
Counterfeits are a Growing Problem

• Consumers desensitized by bargain priced knock-offs
• Counterfeits not fully understood as a major threat to safety
• Easy access to illicit manufacturing and distribution via the internet
• Laws exist in many countries and lack of enforcement is still an issue
Dangers of Counterfeit Electrical Products

• Counterfeit circuit breakers are difficult to detect and extremely dangerous.

• Assembled with inferior internal parts that are not built to OEM specifications and are likely untested.

• Increased risk to personal safety, equipment, and loss of production due to failures.
Addressing the Risk
Eaton’s PowerEdge | Tools
Molded Case Circuit Breaker Tool

- Launched in 2011 to support MCCB products through 400A
- Updated in 2015 to include Breaker authentication, product information, and distributor locator.
- Responsive design for desktop and mobile devices
- Eaton’s PowerEdge App for iOS and Android devices

Eaton’s PowerEdge | Tools
Molded Case Circuit Breaker Tool

Scan MCCB QPC Code (Serial #) for specific product information with authentication

Scan UPC Code of any component product for general product information of any standard component product

Molded Case Circuit Breaker Tool
Product Specific Information
Power of Authenticity

Eaton’s Power of Authenticity ensures that users receive authentic Eaton products, eliminating the downtime, safety, liability and performance issues that may occur when using counterfeit products.
4 Things you should know about Counterfeit products

**Know counterfeits pose danger**

Using counterfeit electrical products can result in a higher risk for failure or malfunction. Such failures may result in electrical shock, overheating or short circuits, leading to equipment failure, fires or explosions that can cost workers their lives and cause considerable property damage.

**Know counterfeits are hard to spot**

All well-known brands face the issue of counterfeiting. Counterfeit product manufacturers rely on deception, the Internet, and prices below market level to find their way into our homes, businesses, and commercial and industrial facilities. The more sophisticated counterfeiters become, the more difficult counterfeit products are to identify.

**Know you can help**

Buy from authorized resellers. The best way to avoid counterfeit electrical products is if you can trace the path of commerce to the original manufacturer. If every individual along a product’s supply chain played an active role in stopping counterfeit products from being bought and sold, the demand for counterfeit electrical products would decrease. Reducing the spread of counterfeit electrical products can help to ensure maximum electrical safety protection.

**Know how to report a counterfeit**

If you identify a counterfeit in the field, report it to the brand owner. This will allow authentication of the suspect product and ensure that it is removed from the marketplace.

If you cannot find brand contact information, contact the IPR Center who will disseminate the information for appropriate response. Contact the IPR Center at IPRCenter@dhs.gov or 1-866-IPR-2060.
Call to Action

- You can easily become an unsuspecting victim of counterfeit products
- Purchase products from reputable sources
- You should always be able to track a product to the original OEM – authorized distribution
- Authenticate whenever possible using the manufacturer’s published information
- Alert the OEM of any suspect products that you might encounter