


2025 Protection Engineers Group Conference

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***SOUTHWIRE IS STILL
HEADQUARTERED IN
CARROLLTON, GA***

*Where we got our start
nearly 75 years ago.*



Today, we are one of the world's largest
privately owned producers of wire and cable.

WE DELIVER... LEGACY

WE DELIVER...

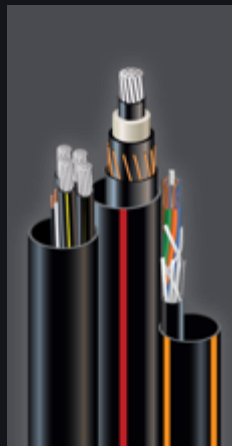
A GROWING AND EXPANDING FOOTPRINT

-  SERVICE HUBS
-  PLANTS/MANUFACTURING FACILITIES
-  CUSTOMER SERVICE/DISTRIBUTION CENTERS
-  MANUFACTURING/CUSTOMER SERVICE CENTERS
-  SALES OFFICES
-  CORPORATE OFFICES





WE DELIVER... SOLUTIONS



Wire & Cable



Tools



Component Solutions



Cable Management

EVERY SOUTHWIRE PRODUCT IS DESIGNED TO:

Simplify Installation

Reduce Man-hours
and Labor Costs

Promote a Safer
Work Environment

Meet Unique
Application Needs

Bremen, IN Facilities

Facility Size:

- Extrusion: 928,000 sq. ft.
- Bare Wire: 120,000 sq. ft.
- Expansion: 400,000 sq. ft.

Products Supported:

- VFD and Tray Cable
- VDE, HVAC, Low Voltage, Irrigation/Landscape
- Cord, PVC & XLP Lead-wire, High Temperature
- Copper Bare & Tinned
- Select Metal Clad



Why Class 4?



Increased Voltage Capability:

Class 4 handles up to 450V peak AC or DC, delivering 7.5 times greater voltage than Class 2, enhancing power transmission while swiftly mitigating faults to reduce electric shock or fire risks.



Fault Detection and Safety:

Class 4 transmitters detect various potential faults, ensuring instant mitigation and eliminating the need for devices like circuit breakers. This saves space and cost while preventing electric shock or fire hazards.



High Power with Limited Fault Current:

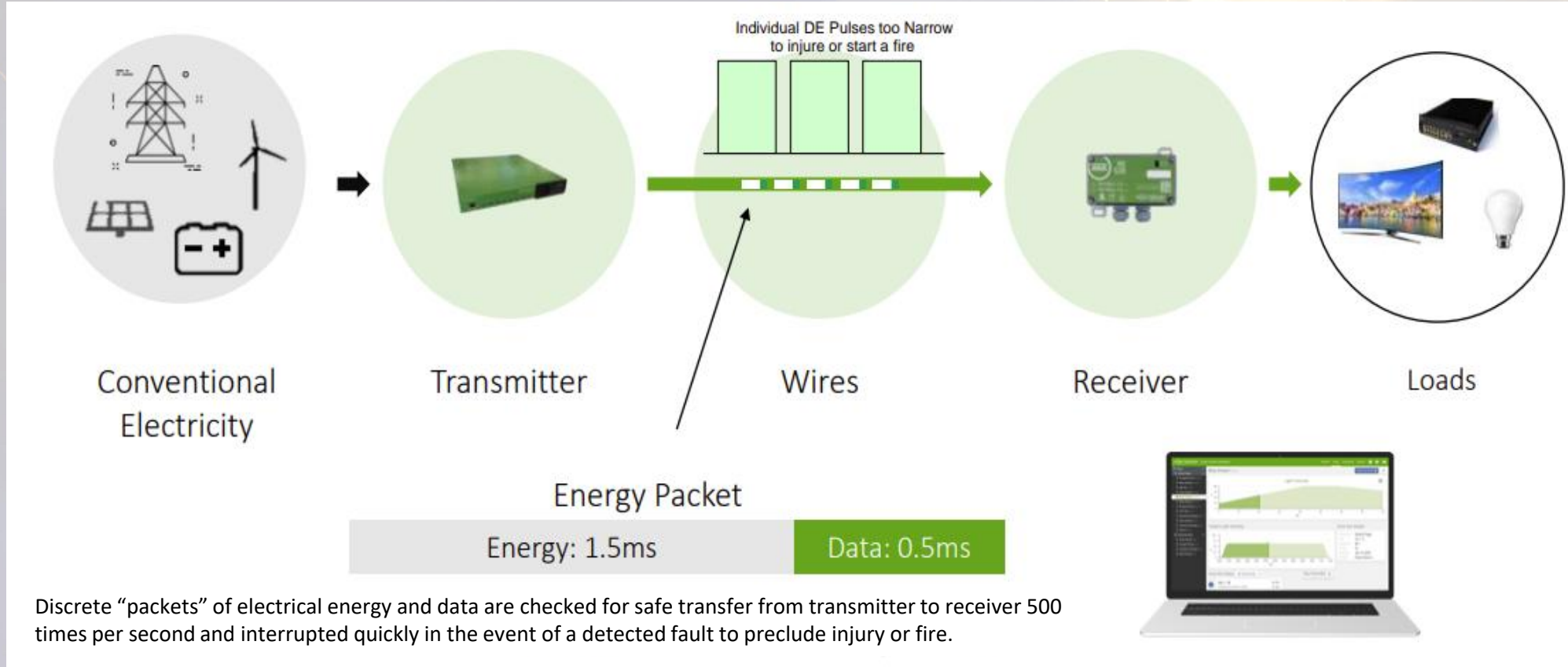
Class 4 circuits control fault energy, limiting the risk of fire ignition. Devices can detect and stop faults almost immediately, going beyond the capabilities of standard AC circuit breakers.



No Conduit Requirement:

Class 4 circuits, being automatically protected against fire hazards, comply with NEC® 2023 article 726, allowing for installation without the need for conduit or metal cladding.

Example of an FMP System

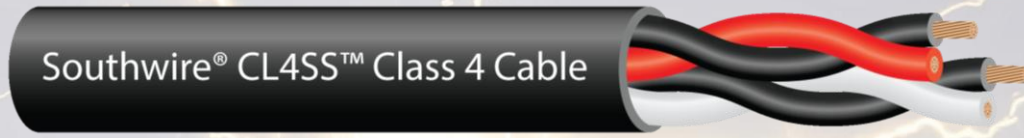


Discrete “packets” of electrical energy and data are checked for safe transfer from transmitter to receiver 500 times per second and interrupted quickly in the event of a detected fault to preclude injury or fire.

Compliant with the Newly Published Article 726 in 2023 NFPA 70® NEC®

Certified to UL 1400-2 Cable Safety Requirements for Fault-Managed Power Systems

Clears Faults in Milliseconds using Advanced Electronic Control



Capable of Delivering High Voltage up to 450V DC or AC without Power Limitations

Current-limited using Smart Class 4 Transmitters to Detect and Mitigate Faults Rapidly

Combines High Power of AC with Safety & Simplicity of Class 2 Circuits

Custom Designed by Sizing Conductor to Lower Voltage Drop for Longest Desired Cabling Route

Combats Risks of Fire & Electric Shock via Intelligent Control & Monitoring Devices Certified to UL 1400-1



Conduit-Free Installation Reduces Time, Labor, and Eases Operation & Maintenance

Cost Saving due to Elimination of Critical Protective Devices such as GFCIs and Circuit Breakers

Class 4 Cable Options

Standards:

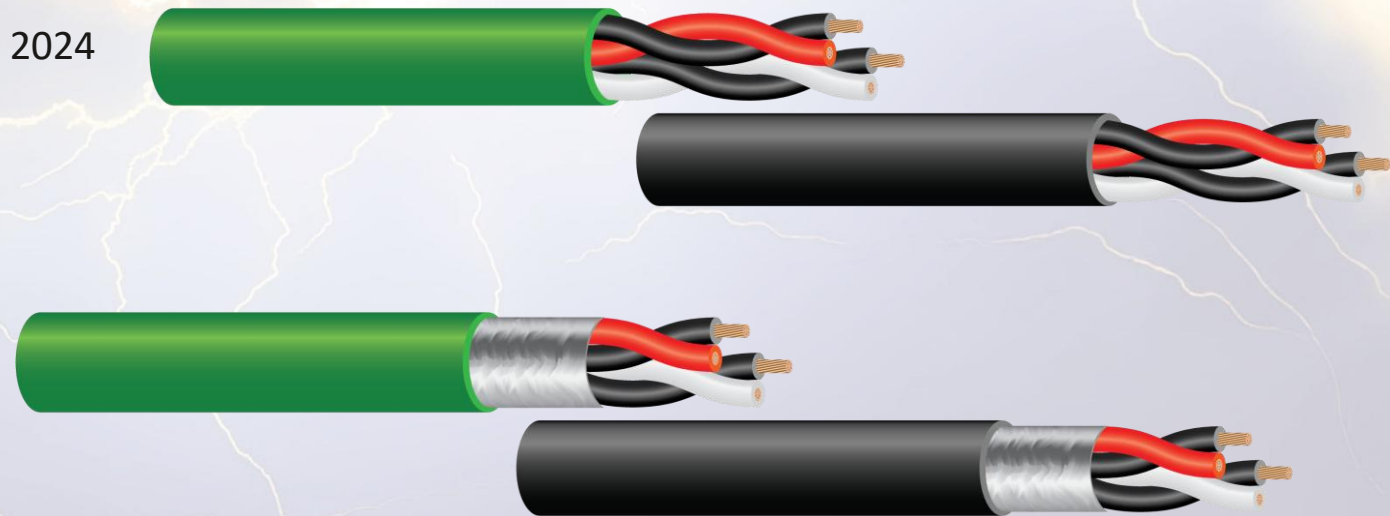
- UL 1400-2 Fault-Managed Power Systems - Part 2: Requirements for Cables
- Fault Managed Power Systems (FMPS), remote powering, indoor Class 4 circuits as per National Electrical Code 2023 (NEC) article 726.

Southwire Options:

- Wet Location / CMG – launched in September 2024
- Plenum and Riser – Coming Soon 2025
- Shielded or Unshielded

Applications:

- Commercial Enterprise/ Intelligent Buildings
- Wireless Densification
- Industrial Manufacturing
- Datacenter
- Indoor Agriculture



20 REASONS WHY SOUTHWIRE'S CLASS 4 CABLE WILL ENABLE DIGITAL POWER
EDITION 20
VOLUME 1
WRITTEN BY: Dr. Nuhon Hwang, VP of Applications Engineering | Charles Hume, Managing Director, Technology Ventures

SUSTAINABLE DIGITAL POWER
The transformational development of digital power allows high power AC or DC electricity to be transmitted safely and reliably from traditional methods. Southwire has been a leader in the electric utility supply chain in North America for over 75 years. Our expertise comes from being selected to supply power to the nation's most critical facilities and operating in the most demanding environments. This whitepaper explains why Southwire's Class 4 cable products will further enable the transition to sustainable digital power.

NEW CLASSIFICATION, 4 BECOMES LATER
The 2023 NEC National Electrical Code (NEC) has introduced Class 4 circuits. The 2023 NEC has introduced Class 4 circuits, which are defined as circuits that carry power over longer distances safely, and exceptionally using the same low-voltage wiring practices as Class 2 circuits.

FAULT-MANAGED POWER
Fault-managed power systems (FMPS) or FMPS can power many low-voltage applications from a remote source. Class 4 is a remote (RT) and Class 4 cable (CMG) through a Class 4 cable fault source. Class 4 differs from Class 1, Class 2, and Class 3 systems in that they are current limited for fault, but can still provide high power to loads during normal operation.

7.5 TIMES HIGHER VOLTAGE
Power over Ethernet (PoE) in a Class 2 circuit with a maximum voltage of 50V DC. Class 4 can be supplied with a much higher voltage power source from the transmitter of up to 450V peak AC or DC. Therefore, Class 4 can deliver 7.5 times greater voltage compared to Class 2. For the same size conductor, a much higher power can be achieved by Class 4. Any fault on a Class 4 circuit are mitigated almost instantly, preventing electric shocks or fires.

DETECT POTENTIAL FAULTS
Many potential fault events could trigger the Class 4 transmitter to interrupt power. These include short circuits, low-to-the-fault ground faults, overcurrent, overvoltage, or control device and fault clearance. These events that prevent an unacceptable safety risk. Any fault on a Class 4 circuit can be detected through monitoring devices and relays. The high-voltage safety of Class 4 cable, its inherent protection, and GFI/ground fault circuit interrupter (GFCI) test fault circuit interrupter (GFCI) test fault circuit interrupter, which contribute to space and cost savings.

FIRST METHOD FOR FAULT MANAGEMENT
Digital Electricity™ technology, pioneered by Southwire, has introduced the world's first method for fault management. The first method is a Patent Power of Power Transfer (PPT) device. It works by transferring a high-frequency signal through a Class 4 cable, which leads the fault energy to diverting to power into a ground plane. When a fault is detected, the system can quickly cut off power with very little fault current. Once the fault is cleared, the system can resume power again automatically without a manual reset. Class 4 is the only cable to have this.

HIGH POWER, LIMITED FAULT CURRENT
Class 4 systems can deliver tens of thousands of high power, which is a source of high power. Class 4 circuits, Class 4 systems are high power, but they have a limited fault current between the transmitter and the receiver. For example, the maximum peak AC fault current is 1.122 milliamperes (mA) at 450V AC. This is a very low fault current. By limiting the fault current to such a low level, the fault energy is limited to a safe level. Similarly, Class 4 circuits cannot fault energy to limit the system risk, thereby preventing the fault source from becoming a hazard. This is what a standard AC circuit breaker can do.

Southwire
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Low Voltage Partnerships



VoltServer is the inventor of Digital Electricity™ (DE), an innovative method for distributing power that combines the high-power aspects of AC with the safety and simplicity of Power over Ethernet (PoE).



Sinclair Digital and Southwire partnered on the new Battery office building. For the development, Sinclair Digital is responsible for the design and implementation of the Power over Ethernet (PoE) lighting and shading systems, and other IoT systems for the office space.



**STRONG.
SUSTAINABLE.
SOUTHWIRE.**



At Southwire, our employees are *The People Behind the Power™* of what is possible. We seek to discover, develop and distribute strong and sustainable solutions that exceed the expectations of our stakeholders around the world.

**>> WE DELIVER
SUSTAINABILITY**

QUESTIONS?

