

















Littelfuse Overview

Empowering a sustainable, connected, and safer world



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Who We Are

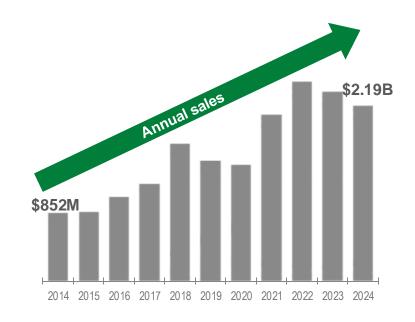
- \$2.19B industrial technology company
- 16,000 innovative employees across 20 countries worldwide
- Designer & manufacturer of leading technologies that improve the safety, reliability, & performance of our customers' products

What We Do

- We partner with global customers to design and deliver innovative, reliable solutions
- We collaborate to provide technical & application expertise

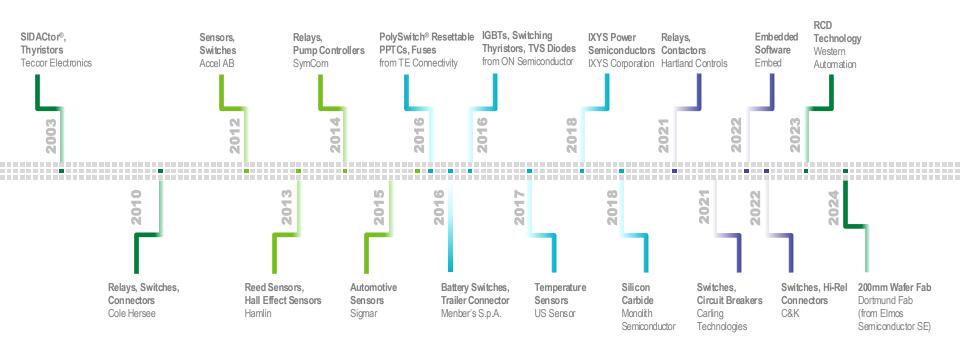
Who We Serve

 Serving over 100,000 end customers; our products are found in a variety of industrial, transportation, and electronics end markets-everywhere, every day



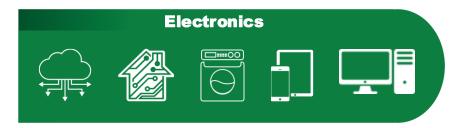


Enhancing growth through strategic acquisitions



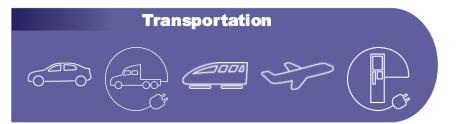


Littelfuse focused on providing applications solutions to help advance electronification and electrification



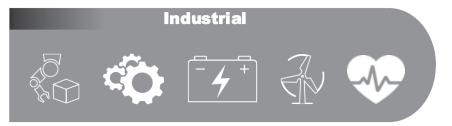
- Data Center and Communication
- **Building Solutions**

- Appliances
- Mobile and Wearables
- Consumer Electronics



- Passenger Vehicles
- Heavy Truck & Bus
- Material Handling Equipment

- Off-Highway Vehicles
- Railway Solutions
- Aerospace and Defense
- eMobility & EV Charging Infrastructure



- Industrial Motor Drives
- Factory Automation & Safety Solutions
- Renewable Energy

- Energy Storage
- Heavy Industry
- HVAC
- Medical



Littelfuse → broad spectrum of product technologies

Circuit Protection Solutions

























Sensing Solutions



Sensors













Indicators



Sensors.

PPTCs Sensing Protectors Resistors

Industrial Resettable Current Battery Varistors GDTs SIDACtor® Protection

IC (eFuse) Diodes Arrays Protection

C&K® Switches



Tactile Pushbutton

Reed

Relav



Reed

Switch



Key switch



DIP

Sensors



Aviation, Defense, and Space

Snap Acting



Slide



Detect



Rocker



Rotary

Power Semiconductor Solutions



Thyristors Diodes









IGBTs





Discrete

MOSFETs Carbide



Silicon





Modules



Devices



Drivers









Connectors

Fuses









Industrial Control Solutions

Single Function Industrial



Ground-Fault Relavs Relays



Motor & Protection











Monitor





Transportation Solutions



Holders





Modules







Circuit protection solutions overview





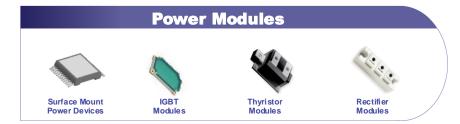




- *Industry's broadest portfolio* with many industry-first solutions
- **New innovative technologies** such as battery protectors, load switches, protection ICs (eFuse), etc.
- Industry standards expertise and application testing capabilities for various standards including UL, IEC, ITU, AEC-Q, and others
- Global network of application expertise to help address customers' design challenges
- Solutions for many applications including eMobility, industrial, data centers, consumer, building solutions

Power semiconductor solutions overview

Discrete Devices, Gate Drivers & SSRs Triacs & SCRs Diodes Carbide





- Wide range of discrete devices and power modules to address wide spectrum of power conversion needs
- Industry's broadest lines of SSRs. available in wide array of configurations, blocking voltages, & load currents
- Extensive packaging capabilities including industry standard packages, HV packages, and more
- Standard and custom assemblies: standard sub-assemblies for multi-megawatt power systems
- Solutions for many applications including industrial, EV charging, power supplies, and renewable energy

Industrial control solutions overview

Protection Relays and Controls Motor & Arc-Flash **Ground-Fault** NGR Industrial Function Pump Relavs Protection Relays Monitor Flashers Relav Protection



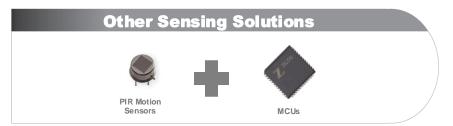


- Ground fault relays & Arc flash relays for protection of personnel and industrial equipment
- Motor & pump protection relays designed to help protect from overloads, jams, phase loss, heat, etc.
- Contactors, AC Relays for safety of industrial equipment, HVAC systems, etc. against abnormal current
- New Residual Current Monitors (RCM) for electrical fault detection used across. EV charging, industrial and renewables.
- New High Endurance Solid-State **Relays** for industrial automation, food & beverage, & HVAC systems

Standard and customized sensing solutions overview









- Wide array of magnetic sensing products: Reed, Hall Effect, and TMR
- Broad range of temperature sensing including thermistors and RTDs
- **Innovative solutions** such as PIR motion detectors & digital temp. indicators solutions for USB-C (setP™) and Lithium-Ion battery (TTape[™]) protection
- Custom sensor design support including custom packages, simulations and more
- Solutions for many applications including appliances, smart meters, battery management, automotive, EV, HVAC, and others

C&K® Switches solutions overview





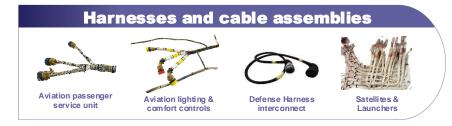


- High-reliability, tactical, & miniaturized switches with over 35,000 standard products and over 10 million switch combinations available in a variety of formats and styles
- Custom design & innovation to meet customer requirements for haptic touch, look, sound, and other unique features
- Value added services from integrated connectors and wire to fully customized assemblies
- State-of-the-art manufacturing facilities in Europe and Asia with in-house design and testing facilities



Aviation, defense, and space solutions

Connectors and rapid splicing solutions Space Splice Connectors Accessories Aer oSplice





- Connectors & accessories: high-performance electromechanical switches, connectors, splice and accessories for aviation, defense and space applications
- Cable assemblies and harnesses: Electrical Wiring Interconnect System (EWIS) and value-added products for aviation, defense and space applications
- **Electronic components:** designed to meet highest reliability standards and designed for mission critical and rugged applications

Transportation* solutions overview

Protection & Sensing Solutions High Current xEV Comfort Fuses Fuses Sensors Sensors Sensors Sensors

Power Distribution Modules Fuse-only **PDMs PDMs PDMs** Modules

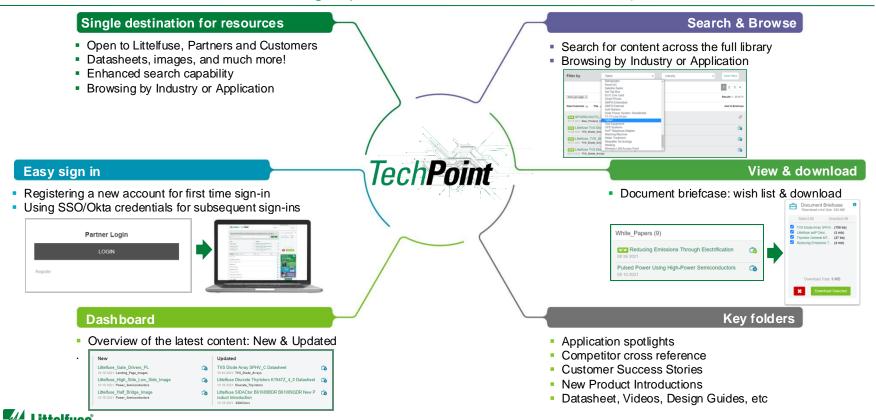


- * Littelfuse also offers AEC-Q-qualified circuit protection (fuses, PPTCs, MOVs, TVS diodes, and ESD suppressors), power semiconductors (ignition IGBTs, MOSFETs), and gate drivers for passenger and commercial vehicles

- Wide range of circuit protection **solutions** with AEC-Q qualification and PPAP capability
- Extensive portfolio of sensing **solutions** to monitor passenger safety and comfort, emissions, and more
- Standard & custom power distribution modules housing a variety of fuses, relays, and other electrical components
- Variety of DC solenoid relays for remote switching of electrical currents from 20 A to 600 A
- Multiple electric/electronic switches for battery disconnection, ignition, windshield wipers, and more

TechPoint: technical resource library

Check out this <u>overview video</u> and sign up to access Littelfuse content <u>techpoint.littelfuse.com</u>



Additional information can be found on Littelfuse.com

Explore the world of Littelfuse with the electronics eCatalogs (ecatalogs.littelfuse.com)







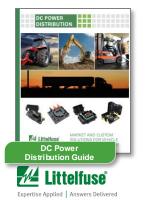


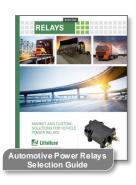




















Littelfuse customization capabilities

Circuit protection

- Over 90 years of experience in custom circuit protection solutions
- CAD drawing & 3D prototype builds
- Expertise on global safety standards (IEC, UL, etc)

Sensors

- Custom products & package design
- Custom simulations & testing
- Rapid prototyping including 3D printing

C&K Switches

- Customized haptics (appearance, feel, & sound)
- Custom graphics, logos, lighting, & textures
- Custom tooling (molds, dies, etc.) & assembly
- Testing (IP67/IP68 standard, sweat resistance, etc.)

Littelfuse

Customization

Transportation

- Custom Power Distribution Module
 - Combining HVDC contactors, fuses, etc.
 - Built within IP67/6K9K-rated enclosure
 - Thermal simulations & testing capabilities
 - DC current sensing capabilities

Power semiconductor

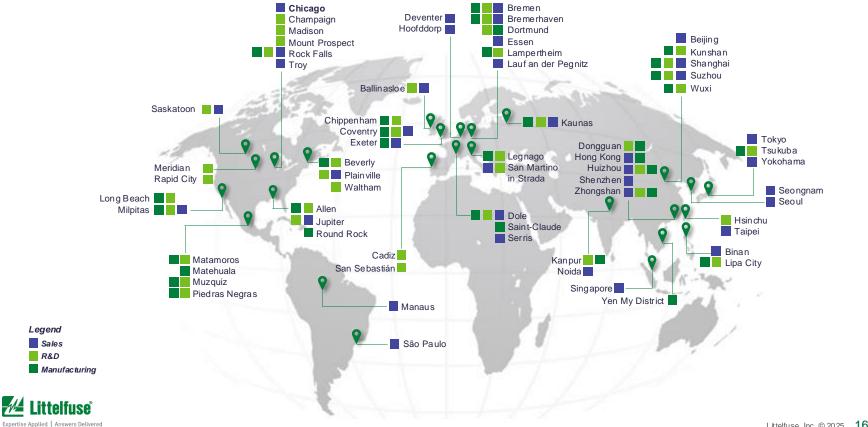
- Custom stack design, development & manufacturing
- Custom packaging
 - New package & new DCB/lead frame
 - Existing packaging & new DCB/lead frame

Aerospace interconnects

- Build-to-print (manufacturing wire harness according to the customer's specifications)
- Design-to-build (concept development, technical configuration, digital mockup, sample, documentation, testing, & production)



Local resources supporting our global customers



Sustainability: Environment, Social, and Governance

More information can be found in our Littelfuse 2023 Sustainability Report on www.littelfuse.com

Environment

24%

reduction in GHG intensity since 2019

Goal: 38% by 2035

46%

of our manufacturing sites utilize renewable energy

Established site-level annual GHG and water target

37%

increase in water recycling

Three-year consecutive reduction in hazardous waste

Social

22.5%

females in leadership. an increase of 1.5% from prior year

Enhanced leadership training and coaching programme

3 Sites

Maintained zero workplace injuries for 3+ consecutive years

805

Critical suppliers screened for ESG risk

91%

of employees agree their manager sets a good example for ethical behavior

Governance

Local ethics ambassadors program launched at 28 largest locations

30,200

hours ethics and compliance training



Gold Rating Ecovadis Program (94th percentile)



Obtained third-party verified GHG data

Enhanced Workplace Investigation Program and Training



Partner for tomorrow's electronic systems

Safety

Broad Product Portfolio

We are an industrial technology manufacturing company empowering a sustainable, connected, and safer world

Application Expertise

Our engineers partner directly with customers to help speed up product design and meet their unique needs

Global Customer Service

Our global customer service team is with you to anticipate your needs and ensure a seamless experience



We help customers get products to market faster, we offer certification testing to global regulatory standards

Compliance & Regulatory

We help customers in the design process to account for requirements set by global regulatory authorities

Global Manufacturing

High-volume manufacturing that is committed to the highest quality standards





Littelfuse.com

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