

Littelfuse Solid State Relays: Advancing Building Automation

A global leader in circuit protection technologies, Littelfuse serves the electronics, automotive, and industrial sectors with a diverse portfolio of fuses, sensors, and switches. Headquartered in Chicago with multibillion-dollar revenue and a workforce of 16,000, the company possesses the industry's broadest portfolio of circuit protection technologies.

CPC1601M Features and Benefits

First SSR of its kind to combine load-powered operation with a latching architecture in a 3 × 3 mm DFN package. Latching relay architecture requires just a single pulse to change states. Also optimized for the 24 VAC operation standard in HVAC systems, and zero-cross switching reduces electrical noise and improves reliability.

Other benefits include:

- **Dual-Power Capability:** Operates in system-powered (R-C) or load-powered designs
- **Silent, Solid-State Switching:** No mechanical contacts, thermostat “no-click” operation, eliminates arcing and electrical chatter
- **Compact & Versatile:** Ideal for smart thermostats, HVAC boards, and small building-automation circuits; tiny, 3 × 3 mm footprint.
- **Reliable & Long-Lived:** High durability with fast, precise control



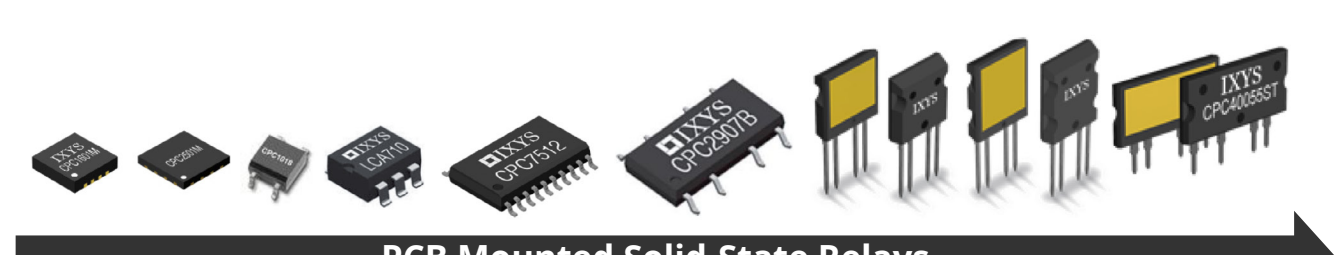
Smart-Circuit Packaging

The CPC1601M's pinout and packaging make it ideal for compact, reliable, and easily manufactured building automation designs.

- **8-Pin Layout:** Easy surface-mount placement for quick PCB integration
- **Small Surface-Mount Design:** Saves space on low-voltage control boards
- **Durable Encapsulation:** Protects against humidity, dust, and electrical stress
- **Tape-and-Reel Delivery:** Optimized for automated assembly and high-volume production

Littelfuse SSR Expertise: Powering Smarter Control

- Applications in HVAC, lighting, industrial, and energy-management
- Silent, fast, and durable switching for AC and DC loads (no moving parts)
- Optical isolation and low-input current protect sensitive electronics
- Minimize interference and extend system reliability



SSR Advantages for Smart Buildings

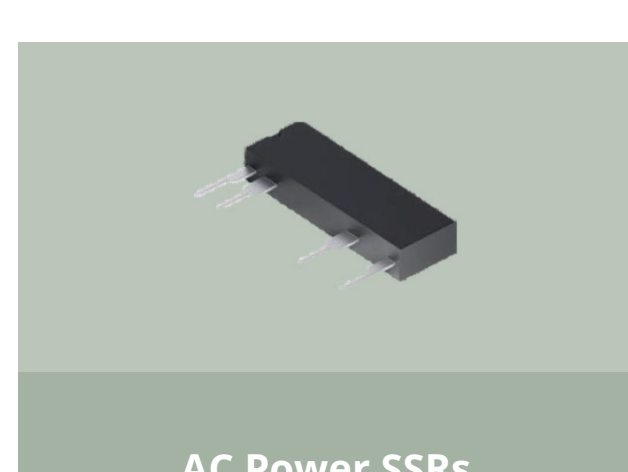
SSRs deliver quiet, efficient, and durable control, making them a key enabler for modern building automation systems. Unlike mechanical relays, SSRs switch circuits without moving parts, providing silent, vibration-free operation and longer lifespans.



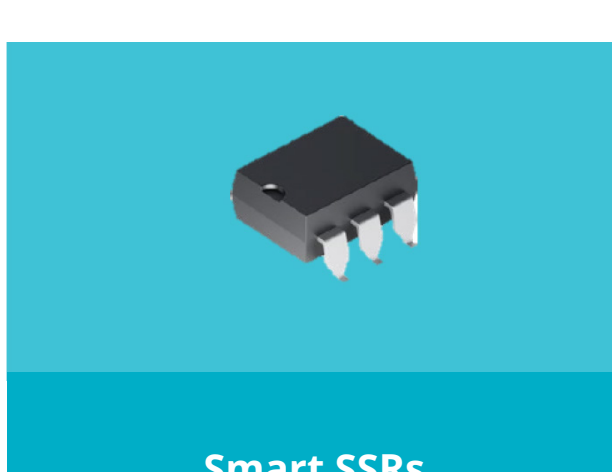
One of the industry's broadest lines of optically isolated SSRs, available in a wide selection of configurations, blocking voltages, and load currents.



MOSFET-based SSRs in packages with heat dissipating, isolating ceramic substrate that are heat-sink compatible for higher current applications.



SCR-based AC Power Switches: zero-cross & rapid turn-on. Available in standard industry packages and packages with heat-sink compatibility.



Fault Protected Solid Relays:
 • Active current limiting SSR with thermal management.
 Application ready SSRs for:
 • Thermostat/HVAC applications
 • Video-doorbell systems

Advantages of SSRs

- **Silent & Reliable:** No moving parts, long lifespan
- **Flexible Power Options:** With system-powered or load-powered designs, even without a C-wire in HVAC applications
- **Precise Control:** Low current, optically isolated outputs for precise, safe HVAC, lighting, and automation circuits
- **Reduced Risk of Interference:** Avoid noise that interferes with control circuits

[Learn More Here.](#)