Optimize Your Demand Response Investment with the Cooper Power Systems Advanced Intelligent Load Control Switch

This multi-relay switch is an intelligent, secure Demand Response solution with flexible communications and enhanced functionality.

Advanced Intelligent Load Control Switch

As Demand Response (DR) technologies and communication media rapidly evolve, how can you maximize on your DR investment?

Overview

Cooper Power Systems Advanced Intelligent Load Control Switch is a proven technology designed to provide a utility the power and flexibility to implement a variety of DR programs across multiple appliances on today’s communication networks, all in our cost effective multi-relay design.

The Advanced Intelligent Load Control Switch provides power quality protection for improved grid reliability, precise comfort and control, delivered through our TrueCycle™ technology, and rich datalogs for measurement and verification of events.

Equipped with dual radio functionality that is field upgradeable, the Advanced Intelligent Load Control Switch allows a utility the flexibility to deploy a DR solution on today’s communication network with the option to augment or upgrade if communication preferences change. The flexibility in communication provided by the Dual Radio option improves network reliability, reduce cost, and truly optimize network traffic and event verification. The switch can be configured to support broadcast and backhaul on separate networks if desired. For example, implement one-way broadcast channels for fast event initiation, while using the two-way network for measurement, verification, and other less time critical functionality.

Advanced Feature Set

The Advanced Intelligent Load Control Switch with Multi-Relay includes the following features:

- ZigBee® Smart Energy™ certified
- Multiple communication capabilities (RF Mesh, ZigBee®, VHF, 900 MHz, and PLC)
- Dual Radio capable
- Remote/local programmability via various modes of connection
- Change communication mode through-the-air
- Power quality protection
- Data logging for measurement and verification
- Optimized air conditioner cycling with smart control and learning capabilities
- Easy and cost-effective installation design
- Price-based control
- Multiple-relay configuration

Simply put, the Advanced Intelligent Load Control Switch will offer the most advanced technologies and communications for your DR system solution.
Advanced Intelligent Load Control Switch—Multi-Relay

Smart Cycling
Cooper Power Systems TrueCycle technology allows smart air conditioner cycling control for residential homes with non-standard or oversized air conditioning units.

TrueCycle adjusts to a home’s hourly runtime profile—balancing demand reduction and customer comfort on a home-by-home, hour-by-hour basis.

Agility in Communication Choices
Designed to ease deployment across service territories, multiple states or provinces, the Advanced Intelligent Load Control Switch offers a utility more communication options than any other load control device on the market. Choose from one or multiple communication media—such as RF Mesh, ZigBee®, VHF, 900 MHz, and PLC.

Secure data transmission is available with both the one-way and two-way communication technology. The Load Control Switch is capable of securing messages transmitted over a paging network using NIST-approved algorithms.

Security Logs
The Load Control Switch allows utilities to perform a security audit by storing local port access and over-the-air message logs. The local port access log stores details on time of field tool connection, failed connection attempts, and actions performed.

Power Quality Protection
The Advanced Intelligent Load Control Switch can automatically shed the connected load if the supply frequency or supply voltage drops below a configurable threshold.

System and Appliance Protection
The condition of the device is continually monitored. If an abnormality is detected, the microprocessor resets, and the connected load is returned to its normal state. In addition, cold load pickup can be enabled or disabled for the connected load to minimize feeder in-rush following power outages.

Ease of On-site Testing and Verification
Readable, visible LED indicators show the state of the device. Test commands can be used to turn on the Switch LED and/or incremental counter allowing for verification of the signal reception. The counter value is readable by a handheld computer without opening the unit.

LED Indicators
A green LED indicates normal operation, communication loss, or logic diagnostic errors. A red LED indicates the load is under control or a possible circuit fault.

Local Communications
A user can remotely access a device to check the operating status, secure data logs, or troubleshoot using Cooper Power Systems FieldScout™ application.

Remote Addition or Removal of Customer Participants
Commands to enable or disable the device functions can be sent at either the device level (individually) or to a large group of Load Control Switches. A Load Control Switch may be deactivated with either a “temporary” or “permanent” setting. This feature improves customer service by reducing customer complaints and minimizing on-site service calls.

Measurement and Verification
The Load Control Switch’s log stores a minimum of 180 days of hourly compressor run time and compressor shed time data that can provide 1-minute interval resolution. In addition, a full communication log is maintained. This information can be downloaded on-site or over-the-air if two-way communications and the backhaul network supports this mode of communication.

Over-the-Air Addressing and Updates
Over-the-air (OTA) programming or addressing, plus individual control or control override communication, can update securely.

Devices can be updated individually, in dedicated groups, or globally.

SPECIFICATIONS

| Environment | Temperature -40 °F to 185 °F (-40 °C to 85 °C) | Relative Humidity 0 to 95% non-condensing |
| Housing     | NEMA® 3R injection-molded, UV-stabilized gray polycarbonate plastic. Rain-tight per UL916. |
| Power Requirements | Voltage 120 or 240 Vac (+10 -20%) | Frequency 60 Hz (±2%), 50 Hz (±2%) |

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An example of an utility user interface to access real-time and historical demand event trends.