

## CLOSED TRANSITION SOFT LOAD TRANSFER SWITCHES

### INTRODUCTION

**Distributed Generation** (electrical power generated at its point of consumption) is expected to comprise over 45% of all new generating capacity added to the U.S. electrical grid by the year 2008. New technologies such as micro-turbines, fuel cells, and dual-fuel gensets head the list of the latest generating advancements. Most of these generating solutions will require a unique and innovative method of paralleling this equipment with the existing utility supply. Our new **Closed Transition Soft Load Transfer Switch** is the latest product offering in Cutler-Hammer's family of automatic transfer switch solutions. Unlike traditional open transition switches that provide a "break-before-make" operation, our new closed transition product allows for two power sources (typically the utility and a generator-set) to be paralleled so that the load can be gradually and seamlessly transferred from one source to the other. All of this is accomplished without any interruption of power to the load.

The ability to actively parallel the two sources is accomplished using a microprocessor based power controller which manages the speed governor and voltage regulator of the generator-set, thus bringing the two sources into synchronization. This approach not only allows the switch to be applied in soft load transfer applications, but it also can be used as a "peak shaving" switch allowing customers to reduce their peak demand charges by paralleling the generator-set with the utility source during times of high electrical demand. This is a great way for customers to reduce their annual electrical bill and realize a short-term financial payback.



### POTENTIAL CUSTOMERS

- Customers with emergency or critical power systems seeking methods of testing their generator-sets without an interruption of power.
- Any industrial, institutional, or commercial customer looking for ways to lower energy costs by reducing demand charges, which can represent over 50% of their electrical bill.
- Energy Service Companies (ESCO's) interested in offering performance based solutions to their customer base.
- Electrical power providers (utilities) looking to offer power reliability solutions to their customer base in return for long term electrical contracts.



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### KEY FEATURES

Closed Transition Soft load features include:

- Insulated case SPB switching devices providing high withstand ratings
- A generator power controller offering microprocessor based integrated control in a user accessible drawout drawer
- PanelMate D500 operator interface for ease of programming with display of metered parameters.
- UL1008 and UL891 Listings
- A 16 point annunciator for display of system and switch functions
- Optional remote communications and remote dispatch capability
- Optional IQ metering with PowerNet communications
- Optional Transient Voltage Surge Suppression (TVSS)
- Service Entrance rating available

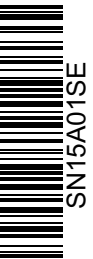
### APPLICATIONS

Closed transition soft load switches can be applied in new installations or as a retrofit replacing an existing open transition transfer switch. While most facility engineers are very knowledgeable about their standby systems, there are several issues that you will need to be aware of when discussing soft load solutions with your customer. First, since most generator-sets run on diesel fuel, there may exist exhaust emission

ordinances that need to be taken into account. In some markets, the EPA limits the amount of hours annually that a generator-set can be operated. Methods around these restrictions include using a natural gas or a "dual fuel" (natural gas/diesel mixture) type of genset. A second issue relates to utility interconnect standards. Many utilities require multiple levels of protective relaying if a user wishes to parallel to the utility grid. A coordination study may also be required. Since the costs of meeting some of these specifications can be high, these issues should be discussed with customers desiring to peak shave. The Generation Systems group maintains a list of many interconnect standards. Please contact us for this or other application concerns.

### PRESENTING THE PRODUCT

The ideal audience for presenting soft load and peak shaving solutions would include a facility engineer, maintenance engineer, or financial principle at a given industrial or institutional facility. It is also important to identify and include any individual that may be responsible for energy management within a given site. For utility customers, it is a good idea to involve both the ESCO and T&D functions to assure complete system compliance. A PowerPoint presentation has been developed that highlights



the various methods customers are undertaking to maximize on-site generation and includes the features of our soft load transfer switch. Other sales supporting documents include:

- Sales Brochure **B.15A.03.S.E**
- Technical Data **TD.15.A.04.T.E**
- Guide Specification
- Quotation Checklist
- Peak Shaving Application Notes
- Peak Shaving Questionnaire

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