

Typical Automatic Load Control response graph.



ASCO Automatic Load Control toggle switch shown on load bank control panel.

The ASCO Automatic Load Control is an optional accessory for 1000 SERIES (radiator mount) or 4000 SERIES (outdoor free standing style) load banks.

KEY FEATURES

- Automatically keeps a Minimum Load on Generator Set
- Used with Radiator and Free standing Load Banks
- Monitors Building Current
- Loose Current Transformer Provided
- Factory Set Operating Points
- Extended Time Versions also available

The Automatic Load Control (ALC) is a load bank accessory designed to add or remove load steps to maintain an approximate target load level on the generator to which the load bank is connected.

The controller is intended for use with standby or emergency backup power systems. The controller is employed during a utility service power outage when the standby generator is supplying power to the building load. When the controller is operating, the load bank will automatically provide supplemental load capacity to the power source.

The purpose of automatic load control is to maintain optimum loading of the generator and to prevent “wet stacking” on the generator which might occur when the building load alone is low in comparison to generator capacity.

Automatic Load Control

Specifications

Operation

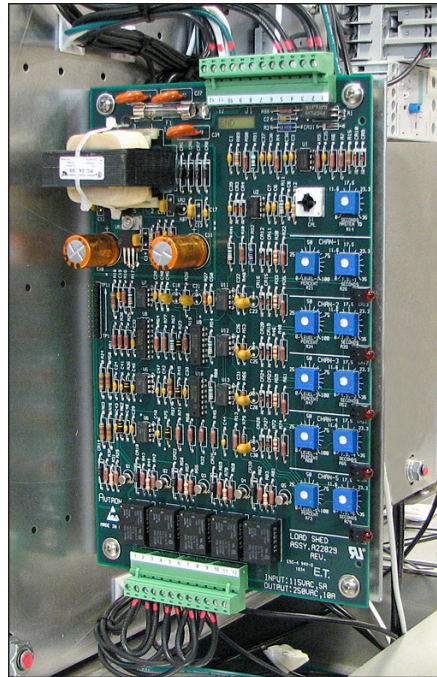
When the automatic load control is initiated, the controller will start the load bank by turning on the blower (free standing outdoor load banks only). After a time delay (typically two to five seconds), the controller begins adding load steps, with a time delay between the addition of each step. The load steps are added in sequence, usually from smallest to largest and removed in reverse sequence; first on/last off, last on/first off.

The building load is continually monitored by means of a current transformer placed between the load bank and the building load. **Correct placement of the current transformer is critical to proper operation of the automatic load control.** The current transformer does NOT monitor the load bank itself, and so does not monitor the total load on the generator. Only the building load is monitored, downstream from the generator and load bank.

With current transformer input from actual building load, the controller adds or removes load steps to supplement the building load and maintain optimum loading on the generator. The current transformer provides input to a series of current sensing relays. There is one adjustable current sensing relay for each load step. These settings are set at the factory and are based on generator kW capacity.

The current sensors enable a load step if the building load is less than the relay set point. The load step is disabled if the building load equals or exceeds the relay set point.

The automatic load control load steps are determined by the load steps available in the load bank. Load step resolution with the controller may be different from the load step resolution on the load bank. The controller window is determined



An Automatic Load Control circuit board.

by the largest step in the controller. The window is the difference between the target maximum load at which load steps are removed, and the minimum load on the generator after the controller has dropped its largest step.

Components

The ASCO Automatic Load Control consists of a current transformer, an ASCO designed circuit board and a mode selector switch. The mode selector switch is added to the load bank control panel and is used to select load bank operation in either Manual or Automatic modes.

MANUAL MODE: In the manual mode, the automatic load control is disabled and the load bank can be used manually to test and exercise the generator.

AUTOMATIC MODE: In the automatic mode, the load bank will sit idle until an external, normally open contact closes and initiates automatic load control operations.

Generator Capacity:

The kW capacity of the generator is the single most important and essential piece of information needed when specifying Automatic Load Control. Generator capacity must be known to select the current transformer and determine load control steps. As noted above, the generator can be overloaded if the load control steps and current sensor settings are not appropriate for the generator.

Settings

The provided current transformer is sized to handle the generators maximum current at 0.8 power factor. Current sense relays are set individually for each load step. The first current sensor is set for the target maximum load (typically 60%) minus the first load control step, usually the smallest. The next current sensor and succeeding sensors are set for the previous level minus the next load control step.

Consideration must also be given for the load bank controls and fan motor(s) which may draw additional power from the generator. The potential exists that these additional current draws could overload the generator if not properly compensated for.