



CommStat™ 3 SC Controller

CommStat™ 3 SC Lead/Lag Controller

The CommStat™ 3 SC lead/lag thermostat/controller by Marvair® is a solid state thermostat/controller designed to operate two, 2-stage Marvair air conditioners in a fully or partially redundant air conditioning system in a telecommunications shelter. When used in this application, the CommStat™ 3 SC controls four steps of cooling. This can provide substantial energy savings and better control of the temperature and humidity by matching the cooling requirement in the shelter with the performance of the air conditioners.

Selected models of Marvair ComPac® I and ComPac® II air conditioners are available with 2-stage compressors. First stage is typically 65% of the total (2-stage) capacity. When operating in the first stage, the air conditioner is approximately 20% more efficient than when operating in the second stage. In addition, the air conditioners always start in the first stage. When operating from power supplied by a generator, starting the air conditioners in the first stage means lower start-up amps.

The control logic of the CommStat™ 3 SC lead/lag controller increases savings compared to a conventional four step thermostat by maximizing the run time of the air conditioners in 1-stage (higher efficiency) stages.

The CommStat™ 3 SC uses the Marvair CommStat 3 lead/lag controller to provide lead lag control, temperature set points and alarms. Please refer to the CommStat 3 product data sheet for a complete description of the operation of the CommStat 3 lead/lag controller.

Control Sequence

When two, 2-stage air conditioners are controlled by a CommStat™ 3 SC lead/lag controller in a redundant application, one of the air conditioners is the lead unit and the second is the lag unit. On a call for cooling, the lead unit starts operation in the 1-stage (low capacity). If the temperature in the building continues to rise above the set point temperature, the lag unit will start operation in the 1-stage (low capacity) and a timer (designated Timer #1) is initiated. The timer is factory set for approximately six minutes, but is field adjustable.

If the set point temperature is not reached with 1-stage capacity operation of both air conditioners, approximately six minutes after the lead unit began operation, the lead air conditioner will commence operation in 2-stage (full capacity) and a second timer (designated timer # 2) will be initiated. If the temperature in the building continues to rise past the set point, the lag unit will switch to 2-stage cooling approximately six minutes (field adjustable) after it began operation. At that time, both air conditioners are operating in maximum capacity. When the temperature in the building is satisfied, both units will turn off.

If the units have economizers (ComPac® II air conditioners), the enthalpy sensor determines whether to use outside air or use mechanical cooling.



