

## **AUTOMATIC LOAD LEVELING/BALANCING:**

Auto Load Leveling (ALL), also known as Automatic Load Control (ALC), is a feature in load banks that allows for the automatic adjustment of the electrical load applied to the load bank. The primary purpose of auto load leveling in load banks is to ensure that the load applied to the power source remains constant and within the specified limits.

Wet Stacking occurs in diesel gen-set engines operating under no or lightly loaded conditions (less than 30% of rated load) for extended periods. The low running load means the engine does not reach optimal operating temperatures for peak performance leaving unburnt fuel and carbon deposits within the engine. Auto load leveling feature in load banks prevents wet stacking by applying additional load to the gen-set, increasing operating temperatures to burn off accumulated unburnt fuel and carbon.

In case of gas gen-set running at low load the engines do not have enough cylinder pressure to maintain oil control in the cylinder. This allows the oil to work its way past the rings into the combustion chambers, leading to ash deposits. These deposits change the compression ratio, which can reduce the detonation margin. If the detonation margin is reduced sufficiently, detonation can occur. Detonation will decrease the life of the engine, damage components and lead to unplanned shutdowns or failures. The optimal operating conditions for gas generator sets can range from 50 percent to 100 percent of the rated load.

VCM SOLUTIONS INC. resistive load banks come with the optional feature of Auto Load Leveling. When the “Auto Balance” is activated on the main screen, the selection of the loads will not be displayed and an input box “Minimum Auto Balance Load” will be displayed to enter the desired minimum load on the power source. The controller will automatically add or remove loads to keep the required minimum load at the power source. The loads are added/removed in steps (ramp) in order to avoid a large load step to the generator that can cause mechanical stress on the equipment. The time between steps is programable between 250 ms and 5 s.

In addition, the VCM SOLUTIONS INC. load bank has a smart system that make a cycling use of all load steps. It extends the lifetime of contactors and resistive elements.

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