STAMFORD®

Excitation Boost System (EBS) for P0 and P1 Generators

The new range of small generators by STAMFORD, the P0 and P1, covers 7.5 to 42.5 kVA at 50Hz and 9.4 to 50kVA at 60Hz in 12 core lengths. The base machine is self excited and designed to replace the existing self excited BC range of generators.
Current forcing requirements have traditionally been fulfilled on our BC generators by producing dedicated machines with either transformer control or an auxiliary winding. Both of these options require a purpose built machine with a non standard winding. Today our customers ask for products with a greater degree of flexibility and performance. With this in mind, STAMFORD generators have developed the innovative Excitation Boost System (EBS), providing short circuit maintenance and improved motor starting capability in a module that is independent of the base machine.

EBS Operational Benefits

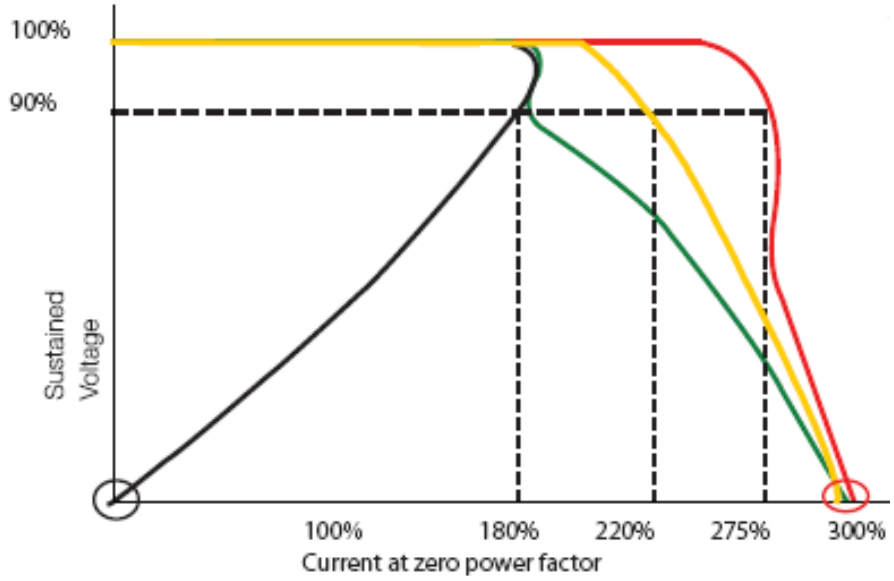
The EBS is a self-contained unit attached, with the aid of five fasteners and one plug connector, to the non-drive end of the generator. The EBS unit may be specified and fitted prior to delivery or ordered separately for customers to fit at a later date. Fitting an EBS to a standard P0 or P1 generator provides improved performance during motor starting applications and provides sustained short circuit capability. Flexibility of supply and ease of installation and improved performance are key features requested by our customers, the EBS unit fitted to the P0 or P1 generator provides all of these features. Being independent from the base machine, the EBS may be installed prior to delivery or replaced in service if required, without disruption to any other genset interface. EBS Components are shown in the adjacent image:

① Excitation Boost Controller, ② Excitation Boost Stator, ③ Excitation Boost Rotor.

EBS Performance

Under fault conditions, or when the generator is subjected to a large impact load such as a motor starting, there is an increased demand on the excitation system. The EBC senses the increased demand and switches the output power of the EBG to the AVR. This additional power is added to the generator's excitation system, to provide 300% Sustained Short Circuit Current for 10-15 seconds to allow breaker discrimination to remove the fault. This additional power will also assist the generator during high motor starting demands to pick up a motor and drive the voltage recovery.

Comparison of Overload Characteristics



BASE MACHINE: Limited motor starting and no short circuit maintenance
AUXILIARY WINDING: Limited motor starting and 300% short circuit maintenance
PMG : Improved motor starting and 300% short circuit maintenance (Not available on smaller machines)
EBS: Further improved motor starting and 300% short circuit maintenance