# Primary Frequency Control

Product Description

- The Primary Frequency Control (PFC), an important way to maintain frequency stability, balances the power generation and load consumption in the grid.

- PFC immediately activates when the Grid frequency limit is not in set dead band limits. Response delivered within 30 seconds.

- Turbine power will increase or decrease in response to any sudden changes.

- PFC mode will allow dispatch operations to set a reserve power setting (from 65% power to base load) to allow automatic increase or decrease in power during grid frequency shifts.

- PFC in the package controls enables operation of the plant and equipment continuously between 47.5-52.0 Hz and for at least 20 seconds between 47.0-47.5 Hz.

- Operation of PFC is designed to be enabled/disabled from local HMI or via remote operations.

- Controls can be programmed with an embedded high-speed data collection facility called the datalog. Controls are sensitive to 10 mHz accuracy.
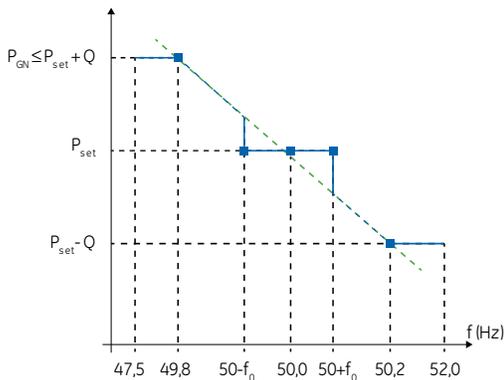
Power Output v. Frequency Graph

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Customer Value

- Maintains correct frequency for turbine/generator via adjustment of total MW output.

- Units will have the capability to react immediately when system frequency is beyond dead band limits.

- More accurate grid frequency measurements.

- PFC system continuously provides PFC reserve in line with Grid fluctuations, maintaining normal operation.

- Allows customer control on their reserve in line with the resultant deviations in the system frequency.

- **Incorporation of latest fuel core includes 25 software improvements focused on:**

  - SPRINT* & NOx water optimization (reduced chance of water in the turbine lube oil)

  - Expanded operating ranges on PS3, T2, and T3

  - Improved trip reduction

- **Benefits on integrated NOx water and SPRINT tables:**

  - NOx water active during fuel transfers.

  - SPRINT water flow dependent from fuel flow.

  - Variable SPRINT water flows at lower power settings to better accommodate load following decreased power demands while also improving water consumption in base load operations.

Applicable Units:

LM6000**	✔	LM2500*	
LMS100	✔	LM5000	
LM1600		TM2500	

**Configured for LM6000 PC unit only

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