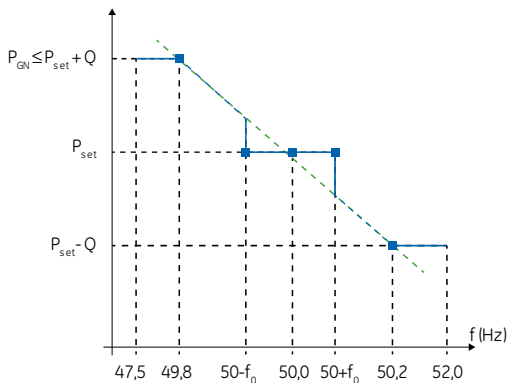




# Primary Frequency Control

## 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

GE's global service network provides life cycle support for more than 3,500 aeroderivative gas turbines worldwide to help you meet your business challenges and success metrics – anywhere and anytime. Our global service network connects with you locally for rapid response to your service needs.

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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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