

October 2, 2010

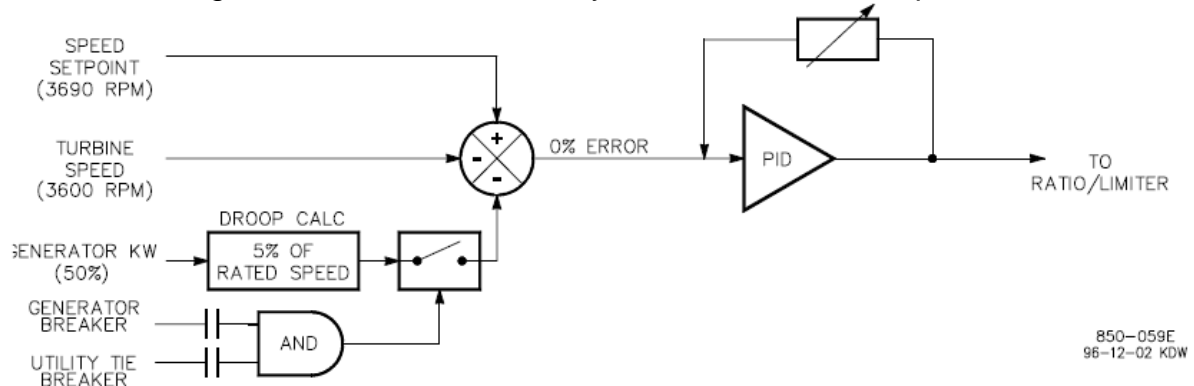
SUBJECT: 505 Droop Functionality & Usage

TO: Whom It May Concern

This statement is in response to questions regarding the 505 controller's speed droop functionality, and is meant to clarify when its usage is recommended by Woodward.

The 505's Speed PID Droop function is available for configuration and use in applications where conditions may exist in which the 505's Speed PID can no longer control turbine speed. An example of this type of condition is when a 505 is used to control a turbine driven generator that is paralleled to a utility grid.

When a turbine generator set is paralleled to a utility grid, turbine speed (generator frequency) is determined by the utility's grid frequency and not the respective turbine. In this case the 505 controller can no longer control turbine speed (generator frequency) and the 505's droop function allows it to sense and control "turbine load" as a second controlling parameter. By programming the 505's Speed PID Droop function, a second control parameter, turbine load, is added to the 505's Speed PID's summing junction when both the generator breaker and utility-tie breaker contact inputs are closed.



Although the 505's Speed PID droop function can be configured for use in other applications (i.e. mechanical drive turbines), it is not recommended as there are no realized benefits and it can reduce the overall performance and response of the 505's Speed PID controller.

Regards,

Rich Kamphaus
Turbomachinery Controls Product Line Manager
rich.kamphaus@woodward.com