

APPLICATIONS BULLETIN

TUNING GWI SYSTEMS FOR STABILITY AT THE SET POINT

With GWi all of the control of the speed of operation is based in the VFD. In order to determine the stable settings follow the procedure set down below to gain a stable system.

The settings that are important are:

PARAMETER	DESCRIPTION	ABB DEFAULT	GWi Setup	COMMISSIONING DATA		
Group 40	PID CONTROL					
4001	PID gain	1.0				
4002	PID integ time	60 s	0.5 s			
4003	PID deriv time	0 s				
4004	PID deriv filter	1 s				

PROCEDURE

1. Set 4002 to 100 and press ENTER
2. Adjust 4001 in steps of 2 until the system becomes unstable. Change this setting to $\frac{1}{2}$ of the number that produced the instability.
3. Go to 4002 and reduce the setting in steps of $\frac{1}{2}$. (i.e. from 100 to 50, from 50 to 25 etc.) Once the system becomes unstable then revert back to the previous setting.
4. Adjust 4003 to 20% of setting 4002.

The system should now be tuned.

As a rule of thumb the typical setting for the integral should be approximately 2 x the oscillation period of the system ie if the time taken to go from the lowest pressure to the highest pressure is 4 seconds then the setting 4002 should be 8 seconds.

