Setup

- 140l fridge.
- 12 v PC case fan running on walwart on all the time
- Heat source: 2 x incandescent light globes 100w plus 40w.
- 5 gallon plastic brew drum
- 300mm thermowell in beer
- 1 probe in fridge, 1 in beer, 1 external to fridge
- Fridge door open close circuit
- Initial PID: Kp=10 Ki=0.25 , Kd=-1.5 (default)
- Debian wheezy on old laptop and brewpi installed
- Arduino uno R3 with brewpi revs.

- Fantastic beer temp control through out whole of brew to date.
- Least variation was with lower than expected heating input and Kp =5
- Zeroing in on a period showed lag between fridge peak and beer peak to be ~12min.
- Fridges as designed are great insulators, you need less heat than you think.
- The system will control your beer but you can tweak it to reduce the heating/cooling cycle rate

PID: Kp=10 Ki=0.25 , Kd=-1.5

PID: Kp=5 Ki=0.25 , Kd=-1.5

Change from 140w to 100w here.
Reduced variation in fridge setting and fridge

Changed PID (p) from 10 to 5 here.
Reduced variation in fridge setting and fridge

- Script restart?
- Integral windup?

Refresh Chart

Help

Date/Time

- Beer Temp
- Beer Setting
- Fridge Temp
- Fridge Setting
- Room Temp

State

A Annotations

Door open/close
No airlock activity

Door open/close
Airlock activity

Door open/close

Door open/close

Door open/close

Door open/close
(Didn't show as I accidentally turned the script off and had to restart script here)

Door open/close

Door open/close

Door open/close

30Jun   01Jul   02Jul   03Jul

No airlock activity. Brewpi searching for settings?

Noticeable airlock activity. Fermentation underway = heat generation

Excessive heating /cooling cycles even when ambient is low. Heat source too big?

Lowering to 100w heating reduced cycling of heat/cool to heat only when ambient is low . Lower fridge setting variation and fridge temp variation.

Lowering PID Kp to 5 significantly reduced the cycling of heat/cool. Lower fridge setting variation and fridge temp variation.