

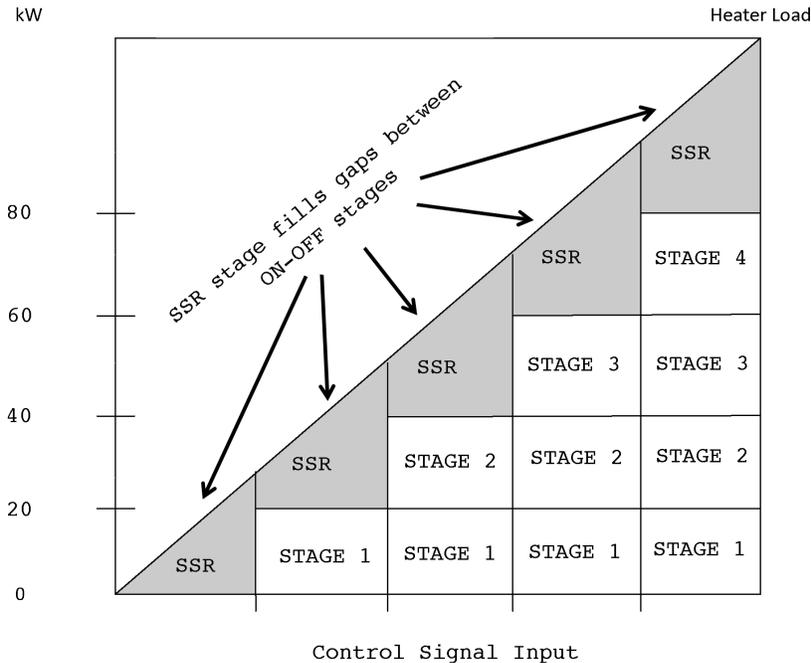


## Play with Power Vernier Control

High capacity electric heaters are occasionally required to meet a sizable load ( $\Delta T$ ). Neptronic is capable of building electric heaters to meet these high capacity demands. These large kW heaters can be built with staged (on-off control) or with proportional SCR (modulating control).

The best and most efficient way to control these large kW heaters is with proportional SCR control with a vernier sequence. These heaters require only one analog input and give you the highest turndown ratio and thus a stable heat output. They are also the most cost effective!

Using **Vernier Control**, with the help of the HEC controller, we are able to reduce the current by cutting down the number of SSR's.



## What is Vernier Control?

SSR and on-off stages (relays) are combined and both are controlled by the same input signal. The SSR modulating stage automatically fills in the gaps between on-off controlled stages and provides fully proportional control over the entire heater kW. The additional sequenced on-off stages are internally controlled by the HEC controller and require no extra wiring or extra controls on site. Vernier control is recommended for large kW heaters.

Below table provides selection guidelines for Vernier control

Current (FLA)	Vernier Control
40 AMPS OR LESS	(1 MOD 40 AMPS)
40 AMPS -78 AMPS	(1 MOD 40A + 1ON/OFF 38A)
78 AMPS- 116 AMPS	(1 MOD 40A + 2 ON/OFF 38A)
116 AMPS-154 AMPS	(1 MOD 40A + 3 ON/OFF 38A)
154 AMPS-192 AMPS	(1 MOD 40A + 4 ON/OFF 38A)
192 AMPS -230 AMPS	(1 MOD 40A + 5 ON/OFF 38A)
230 AMPS -280 AMPS	(1 MOD 80 A + 6 ON/OFF 40A)
280 AMPS -320 AMPS	(1 MOD 80 A + 7 ON/OFF 40A)
320 AMPS -360 AMPS	(1 MOD 80 A + 8 ON/OFF 40A)
360 AMPS -400 AMPS	(1 MOD 80 A + 9 ON/OFF 40A)
400 AMPS -440 AMPS	(1 MOD 120 A + 5 ON/OFF 80A)
440 AMPS- 520 AMPS	(1 MOD 120 A + 6 ON/OFF 80A)
520 AMPS – 600 AMPS	(1 MOD 120 A + 7 ON/OFF 80A)
600 AMPS- 680 AMPS	(1 MOD 120 A + 8 ON/OFF 80A)
680 AMPS- 760 AMPS	(1 MOD 120 A + 9 ON/OFF 80A)

Same quality electric heater, but with a better design!

In the next edition of TechTime, we will cover details on how to select Vernier control with our heater selection software.

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