MINT2270 Series Signal Application Note AN-140

The signals provided in CON3 and CON4 allow the system designer to monitor and control the output of the MINT2270.

CON4 – Fan Output

CON4 provides a convenient connection to the main 24 V output to support a system cooling fan. These connections are tied directly to the 24 V output. The fan will operate when the main output is enabled. Care must be taken not to short this output since the main output will also be effected.

CON3 – Standby Power and Signals

CON3 provides output status and control signals and a convenient Standby +5 V power source.

1. 5V Standby – The +5 V power supply is always available when AC input is active. This output provides 5 V +/- 5% @ 200mA. The standby return is tied to the Main output Return.

2. PS-ON – Logic level control of the main 24 V output is provided via PS-ON. When the PS-ON level is 0~2.5 V, the 24 V output is disabled. When the PS-ON level is 2.5~5.25 V, 24 V output is enabled. (Ref. figure 1, table 1)

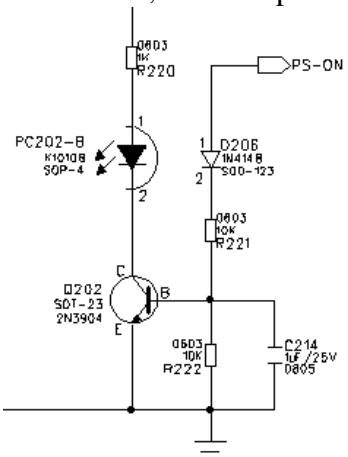

Figure 1. PS-ON Circuit

PS-ON level	24V output
0~2.5 V	OFF
2.5~5.25 V	ON

Table 1. PS-ON logic

Note: PS-ON can be tied directly to the 5 V standby for 'Always On' applications or connected by a switch for easy control of the output.

3. AC-OK – The AC-OK signal will be high when a normal sinusoidal AC input exceeds 68 Vac. The output is driven by the 5 V standby and includes a 20 kΩ pull-down. Care should be taken not to short this output to Return and the input should not be pulled above the 5V standby output. (Ref. figure 2, figure 3, figure4, table 2)

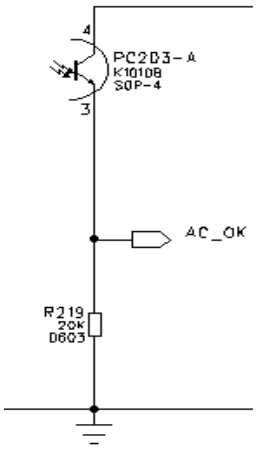

Figure 2. AC-OK Circuit

AC Input level	AC-OK level
0~68 V	Lo 0 V
68V~264 V	Hi 4.25~5 V

Table 2. AC-OK logic

AC-OK will delay 60ms after the turn-off AC input.

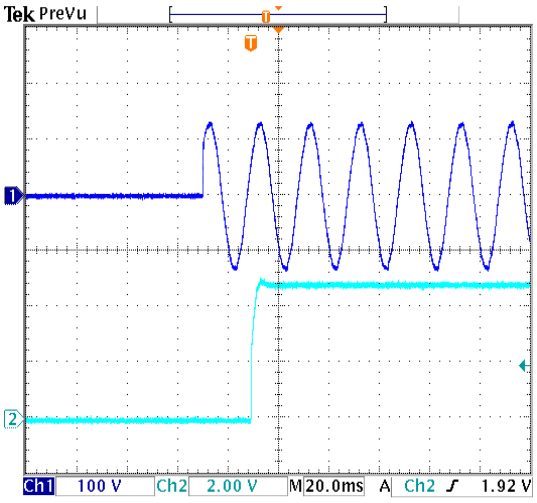

Figure 3. Typical AC turn-on with full load @ 120 V
Channel 1: AC input, channel 2: AC-OK

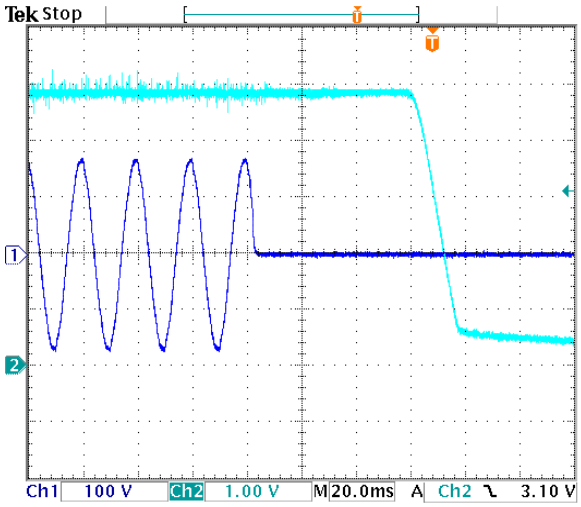

Figure 4. Typical AC turn-off with full load @ 120 V
Channel 1: AC input, channel 2: AC-OK

3. DC-OK – The DC-OK signal provides a logic level high signal when the main 24 V output is normal range**.** The signal is driven by the 5 V Standby output and has a source impedance of 10 kΩ. The output should typically be buffered in the system interface. (Ref. figure5, figure6, table 3)

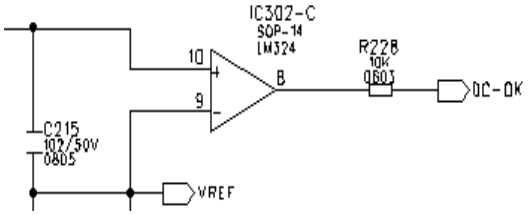

Figure 5. DC-OK circuit

24Voutput level	DC-OK level
22.8~25.2 V	Hi 4.25~5.25 V
Out of 22.8~25.2 V	Lo 0 V

Table 3. DC-OK logic

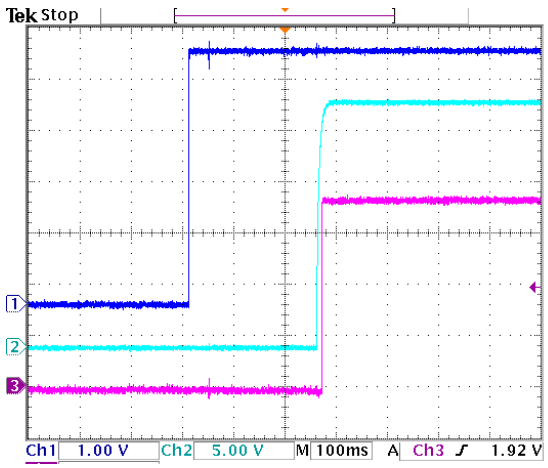

Figure 6. Typical DC output with full load @ 120 V
Channel 1-PS-ON signal, channel 2-24 V output
Channel 3- DC-OK signal.

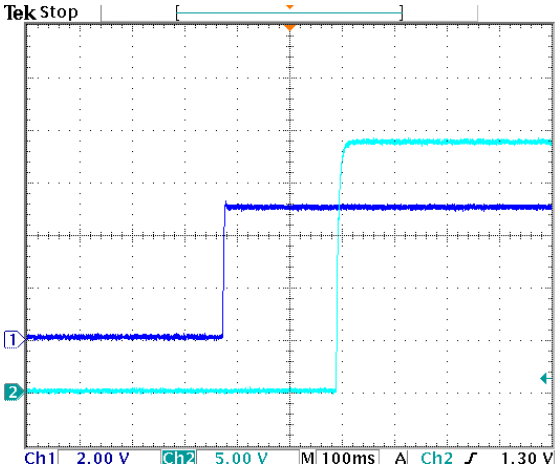

Figure 7. Typical output with full load @ 120 V
Channel 1-5 V standby output,
Channel 2-24 V output.

4. **5V Standby power and 24V output ramp up sequence**

PS-ON can be tied directly to the 5 V standby for 'Always On' applications or connected by a switch for easy control of the output. The 5V standby comes up before the main 24 V output. (Ref. figure7,)

5. Timing sequence overall (Ref. figure8, figure 9, figure 10, table 4)

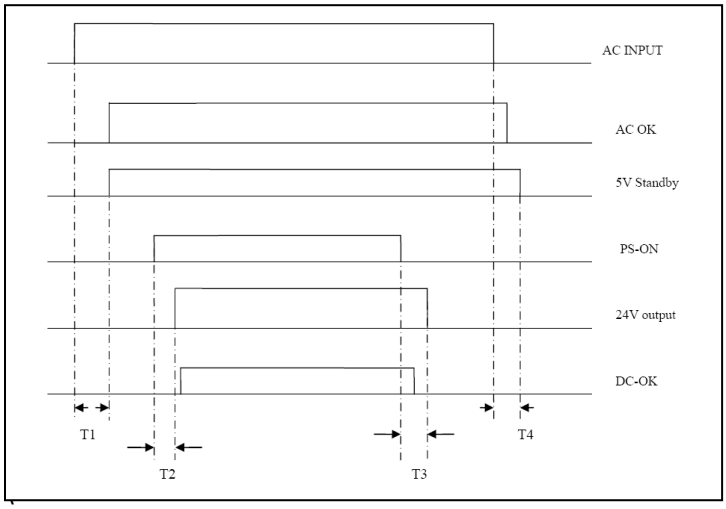

Figure 8. Typical turn on and turn off timing sequence

Ref	Typical	Description
T1	25ms	AC input until 5 V standby turn on
T2	240ms	PS-ON until main output turn on
T3	10ms	PS-ON until main output turn off
T4	58ms	AC input until 5 V standby turn off

Table 4. Typical timing sequence with full load @ 120 V

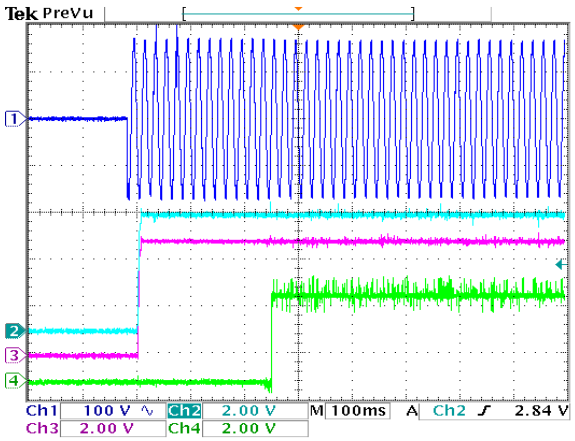

Figure 9. typical turn on overall sequence with full load @ 120 V, PS-ON tied directly to 5Vstandby. Channel 1 AC input, channel 2 AC-OK signal, channel 3 PS-ON signal , channel 4 DC-OK signal

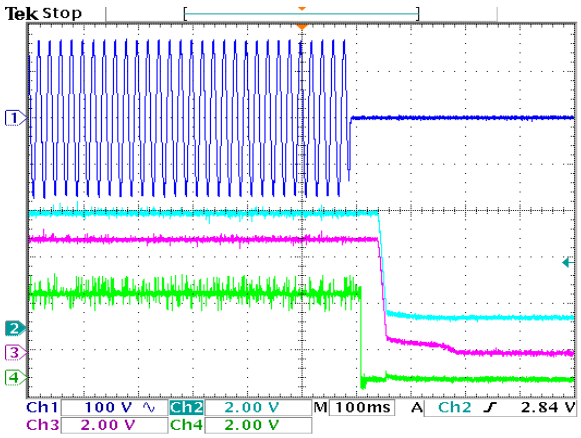

Figure 10. typical turn off overall sequence with full load @ 120 V, PS-ON tied directly to 5Vstandby Channel 1 AC input, channel 2 AC-OK signal, channel 3 PS-ON signal, channel 4 DC-OK

6, Additional notice-Ac input drop to 40% of normal input, 5 cycle dropout of main output with 6A load (Ref. figure 11)

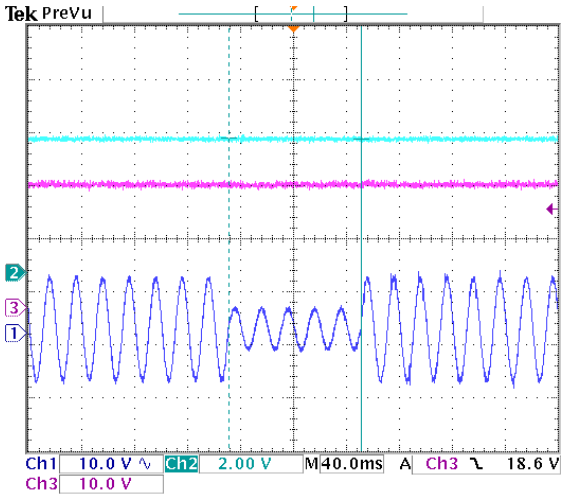

Figure 11. 5 cycle dropout of main output @ 40% normal input dip with half load Channel 1 AC input, Channel 2 5V standby, Channel 3 24V output