

14 DIAG Outputs

Operation with an external motion controller often requires quick reaction to certain states of the stepper motor driver. Therefore, the DIAG outputs supply a configurable set of different real time information complementing the STEP/DIR interface.

Both, the information available at DIAG0 and DIAG1 can be selected as well as the type of output (low active open drain – default setting, or high active push-pull). In order to determine a reset of the driver, DIAG0 always shows a power-on reset condition by pulling low during a reset condition. Figure 14.1 shows the available signals and control bits.

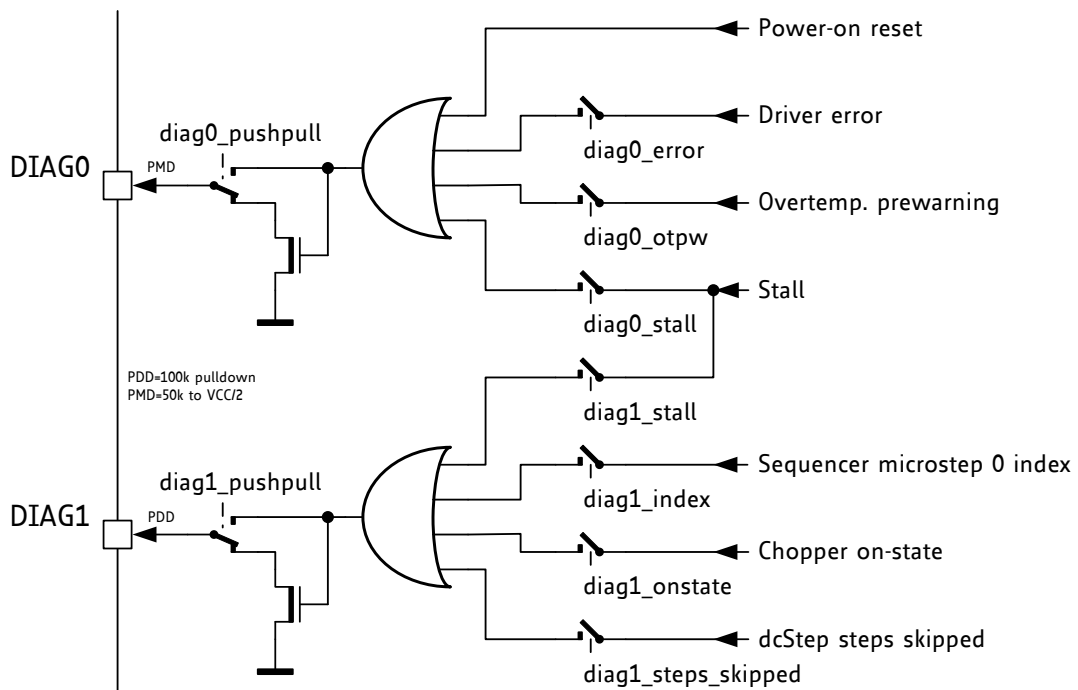


Figure 14.1 DIAG outputs

The stall output signal allows stallGuard2 to be handled by the external motion controller like a stop switch. The index output signals the microstep counter zero position, to allow the application to reference the drive to a certain current pattern. Chopper on-state shows the on-state of both coil choppers (alternating) when working in spreadCycle or constant off time in order to determine the duty cycle. The dcStep skipped information is an alternative way to find out when dcStep runs with a velocity below the step velocity. It toggles with each step not taken by the sequencer.

Attention

The duration of the index pulse corresponds to the duration of the microstep. When working without interpolation at less than 256 microsteps, the index time goes down to two CLK clock cycles.