The *E-Stop* and *Fault* inputs are combined to drive pin 10 on the PC's parallel port **and** to enable or disable all of the PMDX-126's output signals (i.e. all PMDX-126 output signals are disabled as long as either the *E-Stop* or *Fault* signals are active).

6.4   Fault Input

The *Fault* input provides an interface for external fault detection circuits. This signal is "active low", meaning that a logic "low" (or ground) indicates a fault condition, and a logic high (or floating) means "all is OK". *See section 6.7 for information on how the PMDX-126 filters the Fault input.*

The *Fault* input can be connected to an external "wired-or" configuration of open-collector status signals or mechanical switches to ground (switch closed means "fault"). All of the external fault signals should be tied together and connected to the PMDX-126's *Fault* input, provided that the fault signals can share the same ground reference (the "GND" terminal on J13). The *Fault* input has an internal pull-up resistor and may be left unconnected when not used. To indicate a fault condition, drive this input to ground (via either open-collector or TTL-style drivers or mechanical switches). The fault circuit must be capable of sinking 6 mA of current when pulling or driving the *Fault* signal to ground.

The *E-Stop* and *Fault* inputs are combined to drive pin 10 on the PC's parallel port **and** to enable or disable all of the PMDX-126's output signals (i.e. all PMDX-126 output signals are disabled as long as either the *E-Stop* or *Fault* signals are active).

> The PMDX-126's *Fault* signal **must** be either driven high (+5V) or allowed to float in order for the outputs to be enabled and the E-Stop status signal to the PC parallel port (on pin 10) to go low (signaling "OK"). If you do not have any fault detection circuitry, leave the *Fault* input unconnected.

6.5   External Driver (Gecko) Error Input

Many motor drivers, including the Gecko model G320, G320X and G340 step servo drivers, provide an error signal. The PMDX-126 provides an isolated input that can connect to this signal and allow the driver's error signal to trigger an E-Stop condition to the PC. When the *Error Input* signal is active* the PMDX-126 will pulse the *E-Stop* signal to the PC for approximately 1 second and then flash an error code on the *Status* LED. *See section 6.7 for information on how the PMDX-126 filters the Error input.*

* "active" means that the "ERR+" terminal is driven to at least +4.5V volts relative to the "ERR–" terminal on connector J13

The PMDX-126 provides a *Restart Output* that works in conjunction with the error input so that the PMDX-126 can automatically pulse a "reset" or "restart" input on the motor driver. See section 7.3 for more information on the *Restart Output*. Also see the *application notes* section on our web site for example configurations using the Error Input and the Restart output to interface to a Gecko G320X (http://www.pmdx.com, then look on the "Support" page).

6.6   "K" Input and Machine Hold

The "K" input on connector J13 can act as a general-purpose input to parallel port #2 pin 10, or it can act as a "machine hold" input. Jumper JP6 determines how the "K" input is used. When JP6 is set to "Normal", the "K" input is filtered (see below) and output on parallel port #2 pin 10. When JP6 is set to "M-hold", the "K" input is filtered (see below) and used as an active high machine hold signal.

When configured as a "machine hold" input, if the input signal is active (open-circuit or +5V), the PMDX-126 will disable all of its outputs (expect possibly relay K2, see below), *regardless of the state of the charge pump signal*, and sends a logic high to the PC on parallel port #2 pin 10. When the input