

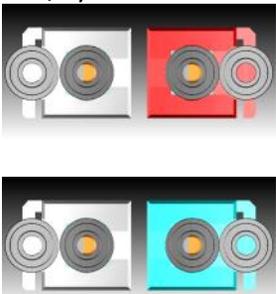
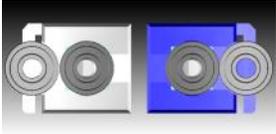
# Tunell Monitor Operations

Wednesday, October 12, 2016 12:45 PM

The Tunell monitor has two kinds of LED's - the monitor status light and the encoder activity light:

## Monitor status light

A multi-color LED lights up the housing for the Tunell monitor main board. On doublel-sensor Tunell monitors, the secondary sensor does not have a status light. The monitor status light indicates the status of the monitor.

Status	Color (Double monitor shown)	Comment
Startup	White 	If the black button is held down while powering up or resetting the monitor, it will enter the timeout adjustment mode
Startup - Timeout Reporting	Red/Cyan blink 	Each red/cyan blink at startup indicates one second in the timeout setting for the monitor. If there are 11 blinks, for example, the monitor will repor stopped filament after 11 seconds of inactivity. (orange shaft)
Ready	Blue 	The unit is ready to monitor filament activity
Watching	Orange 	The unit is watching for additional filament motion.  Under normal operation, the monitor should regularly toggle between "watching" and "detect" state.
Detect	Green blink  Or 	Filament motion is detected.  Under normal operation, the monitor should regularly toggle between "watching" and "detect" state.

Filament Stopped	<p>Red</p> 	<p>A filament motion timeout has been detected (or the end of the print job reached). The monitor reports to the printer that filament has stopped moving.</p>
Monitor Override	<p>Green (Solid)</p> 	<p>There may be times when you do not want the filament monitor to monitor and report filament stoppage. Pressing the mode-set button (black) on the back of the monitor locks the monitor in the override mode, and it will no longer look for filament activity until the monitor is reset by pressing the reset button (red).</p>
Timeout adjust	<p>Cyan/Orange/Orange blink</p> 	<p>To adjust the timeout duration, keep the black button pressed down while powering up or restarting the monitor (by briefly pressing the red button).</p> <p>The timeout period will be adjusted to the duration that you keep the black button pressed down after startup. For each second of timeout being set, the status light will double-blink in cyan.</p> <p>After counting out the desired timeout interval, release the black button</p>
Unpowered	<p>Off</p> 	

### Encoder activity light

As filament is fed into the printer, the movement of the filament will slowly turn the shaft of the encoder. As the filament moves between sensing positions on the encoder (24 positions per turn), the monitor detects this movement and will blip the orange encoder activity light on the moving shaft. During startup and the timeout reporting at startup, the orange encoder activity light will also be lit.

### Pushbuttons

The red button (lower left side of the monitor main board) is the reset button. Press this button to reset the monitor.

The black button (lower right side of the monitor main board) is the mode-set button. During normal

operation, press this button to force the monitor to bypass mode.

