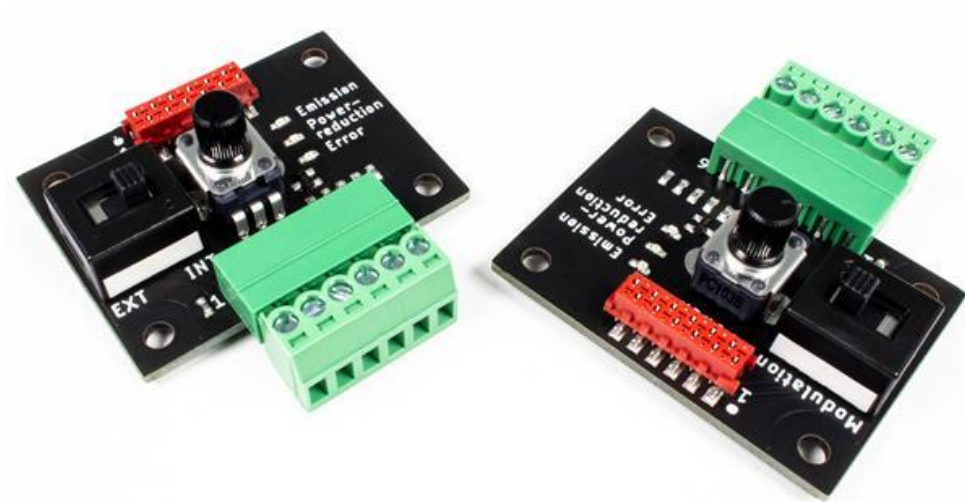


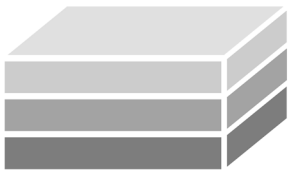
ColorDRIVE Control Box PCB

Manual



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Description

Our ColorDRIVE Control Box PCB makes modulation control for our ColorDRIVE series possible without the need of an external 0-5V voltage source or function generator.

It provides a potentiometer to set the required output power/modulation signal for a ColorDRIVE as well as any Sparrow module with ColorDRIVE.

The PCB includes a screw cage clamp connector that offers all control and status signals.

Attention: To use this in conjunction with a ColorDRIVE, the right jumpers need to be set on it. Please check the ColorDRIVE manual to set the right jumpers!

Modulation

Pin 1 (Modulation +) and Pin 2 (Modulation -) can be used to supply a differential or single ended external modulation signal to the driver.

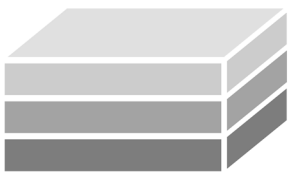
This signal gets only used if the modulation source switch is set to EXT.

If the switch is set to INT, the potentiometer will become active and supply the ColorDRIVE with a 0-5V adjustable modulation signal.

Status LEDs

The PCB features 3 LEDs that show the state of the connected ColorDRIVE.

- Emission:
 - Illuminates if the driver is enabled / interlock loop is closed
- Power reduction:
 - Illuminates when the temperature of the connected module is out of range or too far away from its setpoint requiring the activation of the power reduction feature of the ColorDRIVE
 - connected laser module power is halved if it is illuminated
- Error:
 - Illuminates if sensor error is detected or no module is connected to the ColorDRIVE



Interlock

The Interlock signal is used to enable and disable the ColorDRIVE in a safe way. It provides a way to disable the ColorDRIVE completely regardless of the applied modulation signal. If the Interlock loop is not closed, no laser drive current will flow thus no laser radiation will be emitted from any connected module/diode.

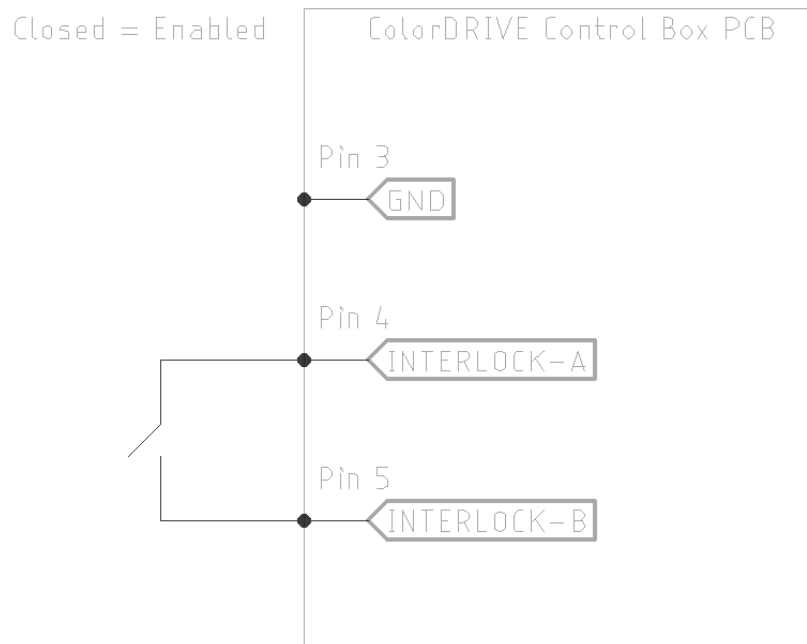
The interlock signal can be used in three different ways: "Make", "Break" and "TTL".

- **Make:**

The drive will be active if the connection is made e.g if continuity is made.

To use the "Make" interlock mode, just short "INTERLOCK-A" and "INTERLOCK-B". This will enable the driver.

Keep both pins floating.

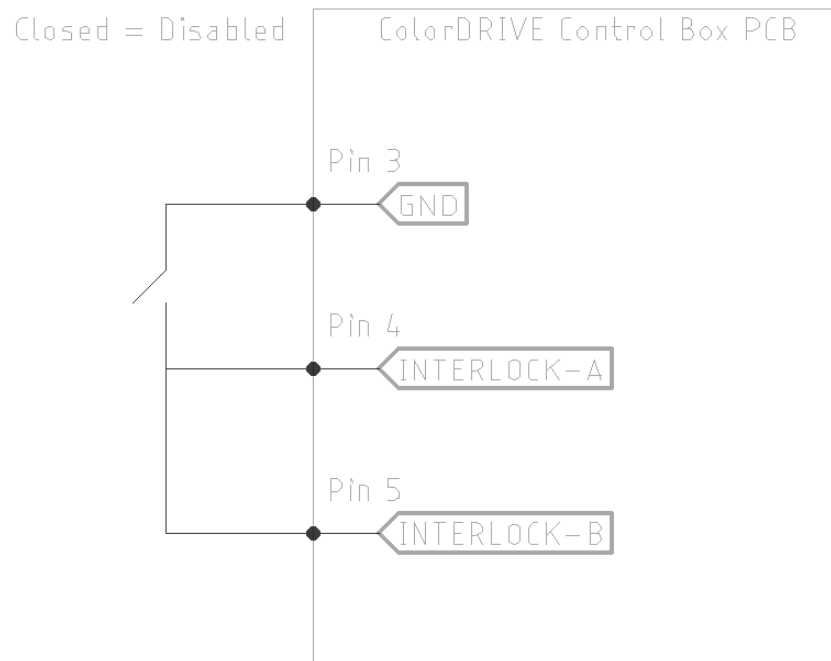




- **Break:**

The drive will be active if the connection is broken i.e. if continuity is lost. This mode is perfect for use with a switch or e-stop switch.

To use the “break” interlock mode, just short “INTERLOCK-A” and “INTERLOCK-B”. Connect both to GND to disable the driver.



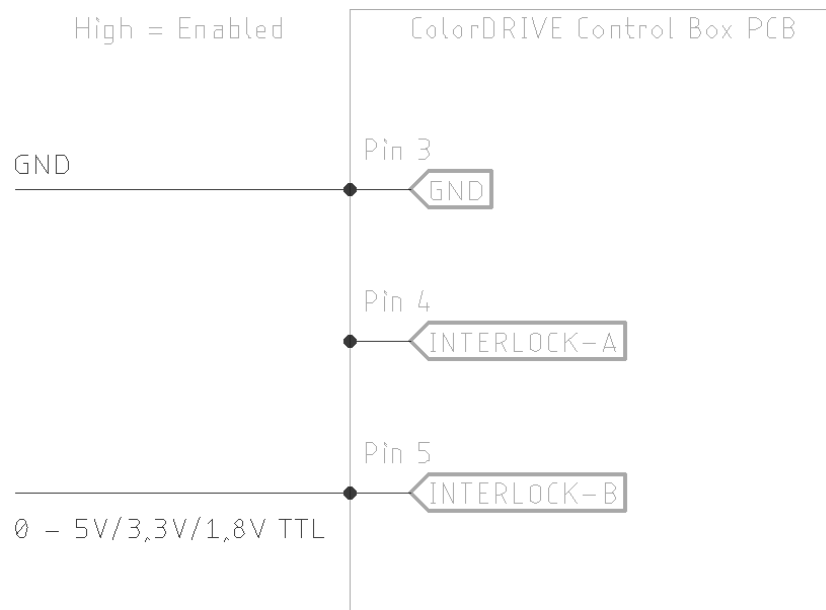


- **TTL:**

The drive will be active if a TTL “high” signal is applied. A TTL “low” signal as well as a floating input will disable the driver.

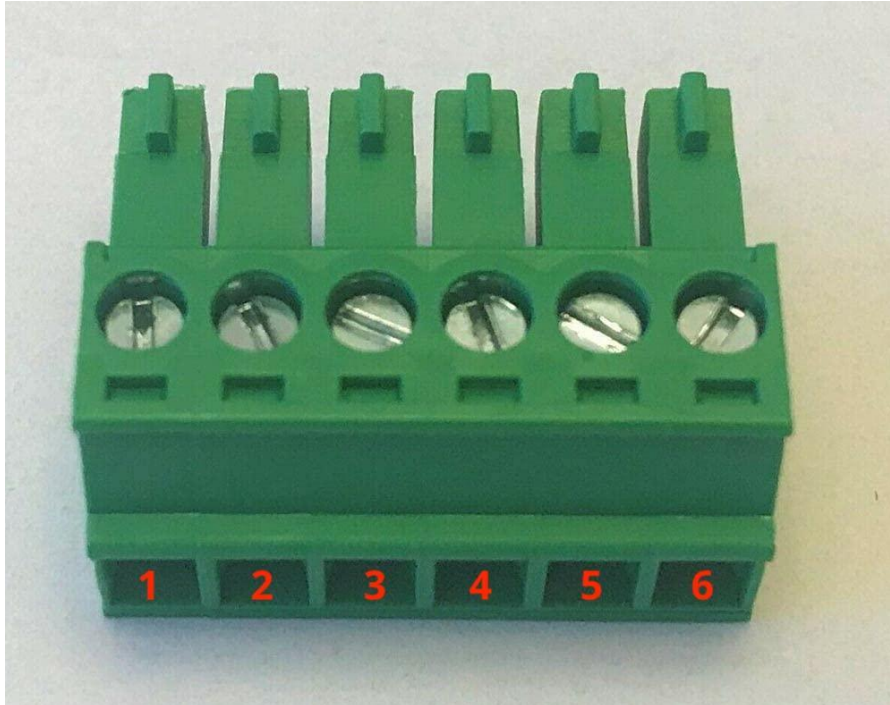
A 1.8V to 5V TTL signal is acceptable.

To use the “TTL” interlock mode, connect your TTL signal between “INTERLOCK-B” and GND.





Pinout



Pin		I/O	Description
No	Name		
1	Mod+	I	Positive external modulation input
2	Mod-	I	Negative external modulation input
3	GND		Ground reference terminal
4	Interlock-A	O	Interlock loop connection
5	Interlock-B	I	Interlock loop connection
6	PR_LOW	O	Power reduction enabled output



Technical Specification

		MIN	MAX	Unit
TTL input level	for interlock loop	0	5	V
TTL input resistance		505	515	ohm
TTL input current	at 5V	9,5	10	mA
PR_LOW output				
PR inactive	with DVT & multiple drivers connected	5	30	V
PR active	with DVT & multiple drivers connected	-24	0,7	V
PR inactive	single driver connected	4,7	5	V
PR active	single driver connected	0	0,7	V
External Modulation Input				
Vcm	common mode input range	31	31	V
Vdm	differential mode input range	0	5	V
Rin diff	differential input resistance	505	510	ohm