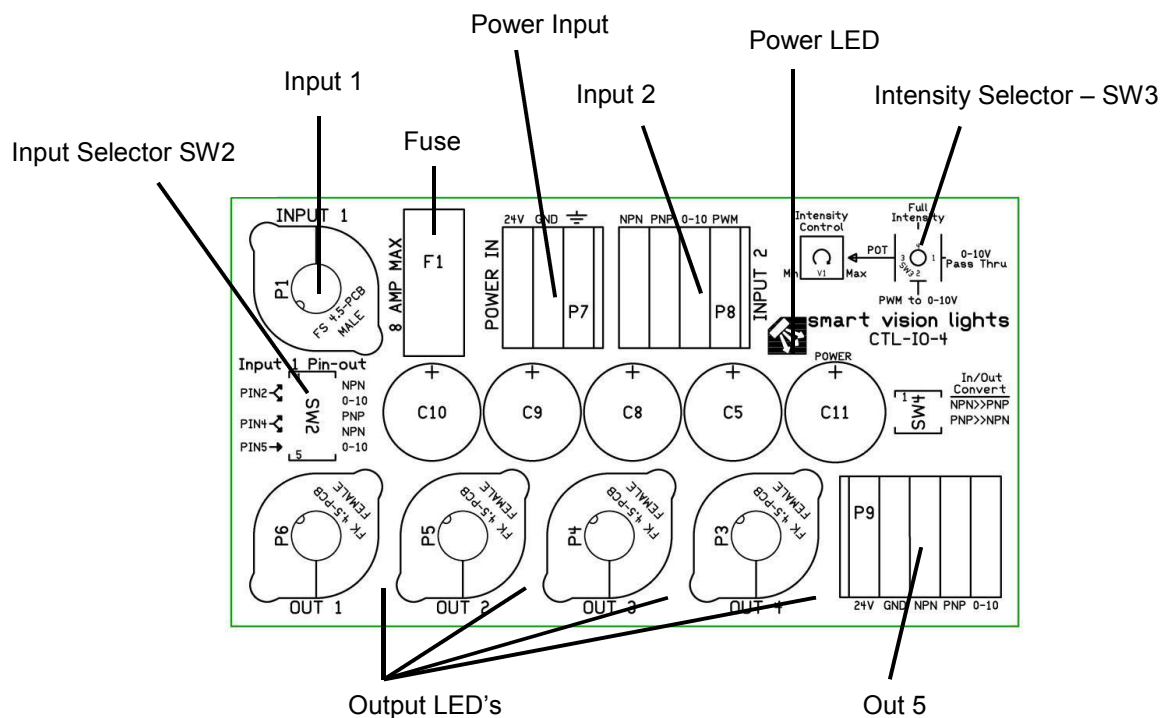


Features

- Connection for up to 4 lights
- Industry Standard M12 Connections
- DIN rail mounting
- 1 Input, 4 Outputs
- Removable Terminal Blocks
- Support for NPN (sinking) and PNP (sourcing) cameras
- LED indicators for outputs
- Energy Storage for Strobe Lights



Electrical Input	Voltage 20-26VDC, 24VDC nominal	
Power Requirement	Combined Current Load: 6Amax continuous, 24A max at 10% duty cycle	
Fuse Replacement	Slow Blow 8A 5X20, Bel Fuse 5ST 8-R	
ON/OFF - Strobe	PNP ► +4VDC or greater to activate.	NPN ► GND (<0.7VDC) to activate
LED Indicators	Power: GREEN= Power ON	Output: AMBER=Output ON



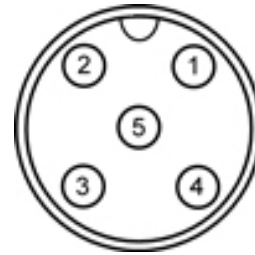
Inputs

The CTL-IO-4 module provides inputs for triggering LED lights. When the I/O module is connected to a strobe source or camera system the strobe signal runs up to 4 lights. Input signals can be NPN (sinking) or PNP (sourcing) from the camera or strobe source. Signals can be selected on what type (NPN or PNP) is sent to the lights.

Input 1 – M12 Male Connection

Specification	Description
Voltage	ON 4 - 26VDC to activate
	OFF 0 - 3VDC
Current	8ma

PIN	ASSIGNMENT
1	24VDC
2	NPN or 0-10V
3	GROUND
4	PNP or NPN
5	Open or 0-10VDC (ANALOG)



Drawing shows male socket on the I/O Board.

SW2 – Input 1 Pin-out Selector Switch

Dip switch will allow selection of male M12 input connector pins to M12 outputs.

Pin 2 is settable between NPN or 0-10V (only one switch can be ON).

Pin 4 is settable between NPN or PNP (only one switch can be ON).

Pin 5 is settable between OFF for open circuit, or ON to allow 0-10V analog input on Pin 5.

See “Settings for Connection to Cameras” later in this guide for configurations to common cameras.

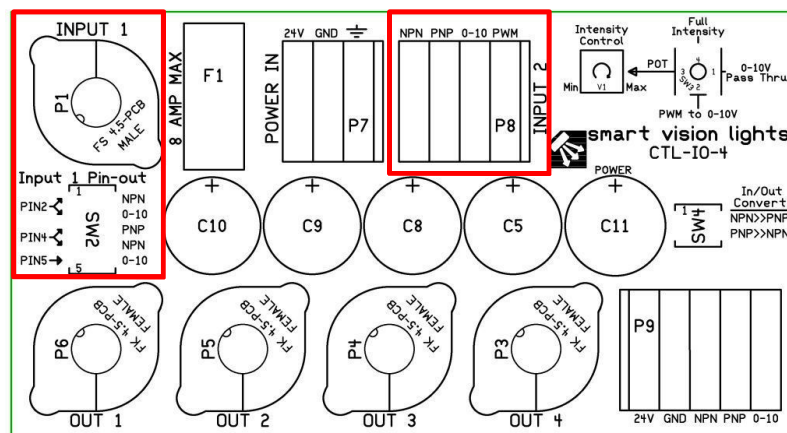
NOTE: This must be configured before powering the module. If the M12 input connector is not used set all switches to OFF.

PWM – Pulse Width Modulation

PWM signal: NPN input, 20-100kHz, 95% PWM input is 100% Light output, 0% input is less than 10% Light output

Input 2 – Connection

Input 2 is terminal connection in addition to M12 male input. The NPN and PNP inputs connect directly to the M12 outputs. The 0-10V and PWM terminals go through the Intensity Control selector to determine how the output to Pin 5 is controlled.



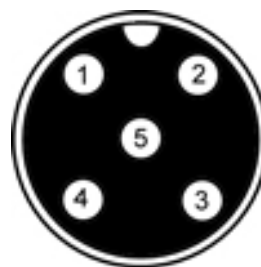
Outputs

The CTL-IO-4 module provides outputs for 1 to 4 LED lights. When the I/O module is connected to a strobe source or camera system the I/O board runs up to 4 lights. Lights draw power from the I/O module and NOT the camera. The 4 Light outputs can draw 6 amps of continuous current or 24 amps of strobe current from the I/O module.

Out 1 thru 4 – M12 Female Connection

Specification	Description
Voltage	ON 4 - 26VDC to activate
	OFF 0 - 3VDC
Current	8ma

PIN	ASSIGNMENT
1	24VDC
2	NPN
3	GROUND
4	PNP
5	0-10VDC (ANALOG)



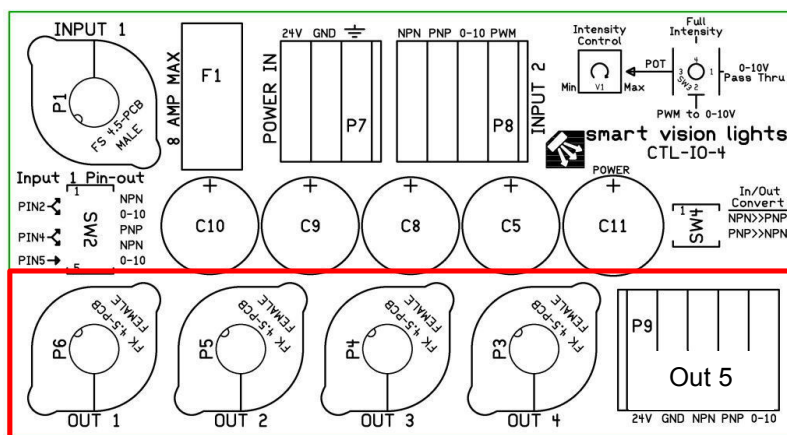
Drawing shows female socket on the I/O Board.

Out 5

Output 5 is an option for connecting to un-terminated cables. Connect wires to these terminals as marked on the module. All outputs are connected in parallel within the CTL-IO-4 module.

SW4 - IN/OUT Strobe Signal Converter

SW4 will select the strobe signal as PNP or NPN to OUT 1-4. The first DIP switch when switched ON, will translate the NPN input of the CTL-IO-4 module on to the PNP outputs feeding the LED lights. The second DIP switch translates the PNP input to the NPN outputs. This can be helpful if you are seeing voltage drop or voltage transient issues in your system wiring.



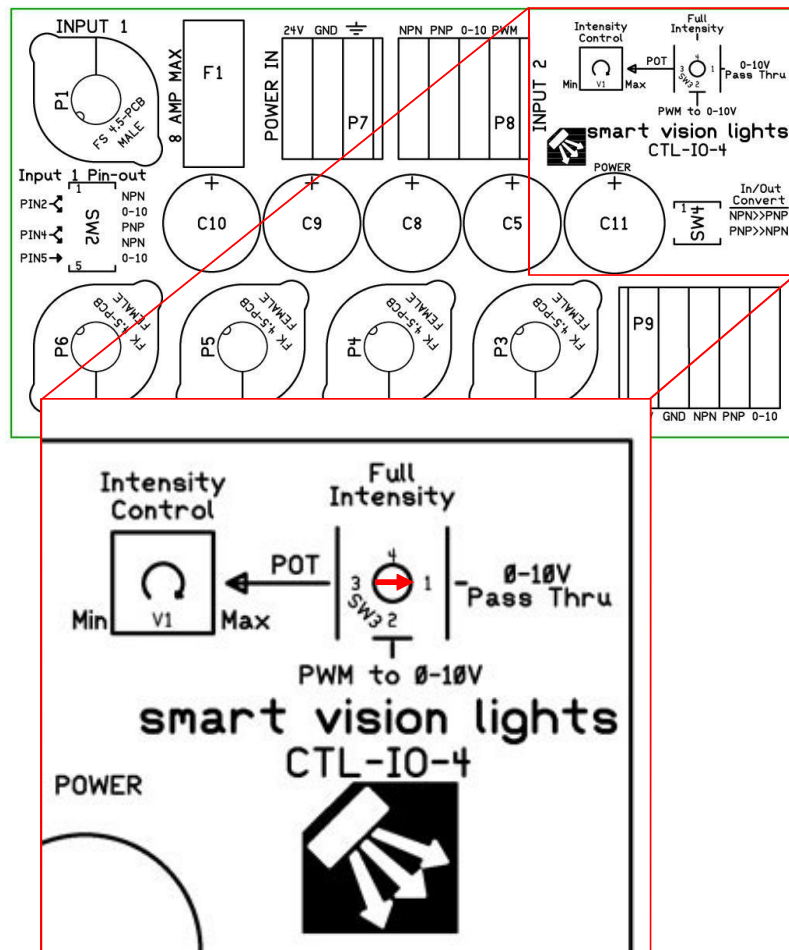
Intensity Control

The CTL-IO-4 module provides selector switch for intensity control. Intensity control can be passed thru from the camera with a 0-10VDC analog signal or PWM. The I/O module will also set all lights to full intensity or allow all lights to be adjusted with V1 Potentiometer.

SW3 – Selector Switch

SW3 switch will allow selection of Full Intensity, 0-10V Pass Thru, PWM to 10V and V1 Potentiometer. Switch controls all 4 outputs intensity.

1. 0-10V Pass Thru
2. PWM to 0-10V
3. V1 Potentiometer
4. Full Intensity



Cables

Part Number	Length
5PM12-J300	0.3 meter
5PM12-J2000	2 meter
Additional lengths available upon request	



Settings for Connection to Cameras

Input 1 DIP Switch:

SVL standard pin out: Set 1, 3, & 5 to ON, and 2 & 4 to OFF

Cognex IS 7000 Camera: Set 1 & 3 to ON, and 2, 4, & 5 to OFF (set intensity control to either Full or Pot)

Cognex DM300 Camera: Set 2 & 3 to ON, and 1 & 5 to OFF

For more information on camera instructions see data sheets available at

<http://www.smartvisionlights.com/products/camera-to-light>