

Notes:

- None of the opto-isolated signals should exceed more than 50V relative to the MultiSense's power ground (the isolators are rated for more than this, but the physical layout inside the head lacks sufficient clearance to safely permit high voltage differences).
- Both paths have a built-in 100 ohm current-limiting resistor. Additional external resistance should be supplied as needed to provide further current limiting. Damage to the PS2810C isolators WILL OCCUR if external voltages are not limited properly.
- Trigger / Sync events are referenced to the leading edge of signals.

Frame Trigger Calculations (RX Path):

$$\frac{\text{External Voltage} - 1.5\text{v}}{\text{External Resistor} + 100\Omega} \approx 5 \text{ mA Current thru LED}$$

5V Example:

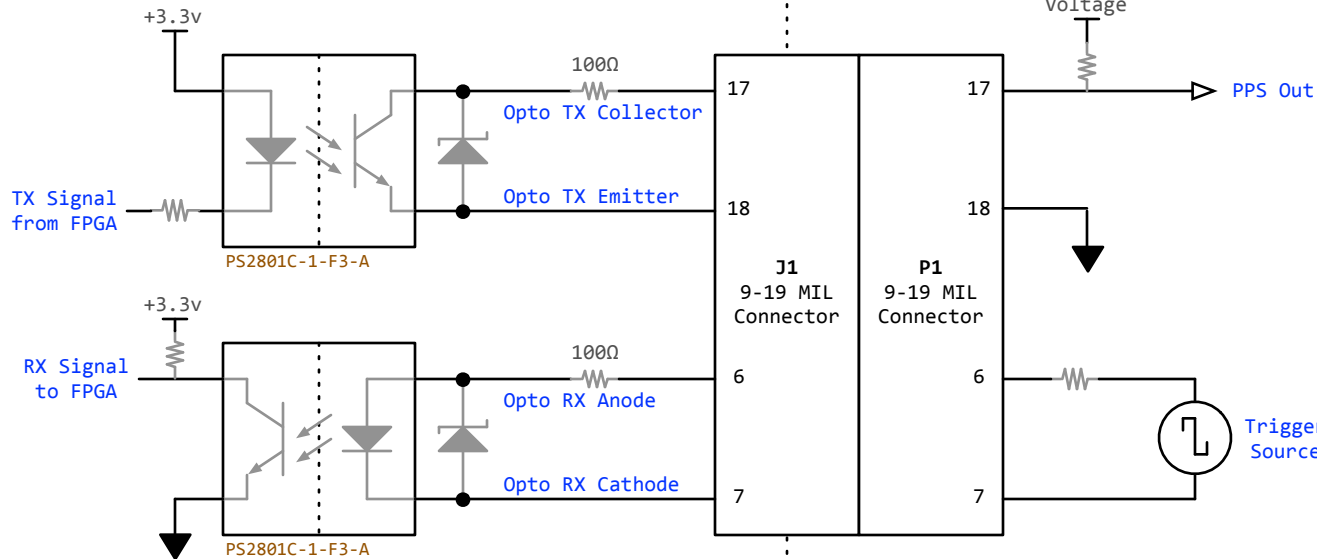
$$\frac{5\text{v} - 1.5\text{v}}{0.005 \text{ A} - 100\Omega} \approx 600\Omega = 560\Omega$$

External Resistor Closest Smaller Value

$$\frac{5\text{v} - 1.5\text{v}}{560\Omega + 100\Omega} = 5.3 \text{ mA Current thru LED}$$


Circuitry Inside MultiSense

External Customer Circuit



Voltage	Current Limiting Resistor	
3.3v	560 Ω	1/10 W
5v	900 Ω	1/10 W
12v	2.3 kΩ	1/4 W
24v	4.7 kΩ	1/4 W

Voltage	Current Limiting Resistor	
3.3v	270 Ω	1/10 W
5v	560 Ω	1/10 W
12v	2.0 kΩ	1/4 W
24v	4.3 kΩ	1/4 W

 Carnegie Robotics. 4501 HATFIELD ST PITTSBURGH, PA 15201	PART NAME	MultiSense S21 / S7 / SL	SIZE	A
	PART NUMBER	-	REV	0
	DRAWING NAME	Opto-Isolation Drawing		
DRAWN BY CHKD BY CREATED	DRAWING IS THE SOLE PROPERTY OF CARNEGIE ROBOTICS LLC		DO NOT SCALE	
ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF CRL IS PROHIBITED			SHEET 1 OF 1	