

End-stops linear units

Purchased this: <https://cdn.sos.sk/productdata/dc/80/51538cd9/ktir-0621-ds.pdf>

Instructions on how to connect it:

- <https://bennthomsen.wordpress.com/engineering-toolbox/ti-msp430-launchpad/interfacing-a-photo-interrupter/>
- <http://www.utopiamechanicus.com/article/arduino-photo-interruptor-slotted-optical-switch/>

Not what is presented below!!!

Purchased: Photomicrosensor, transmissive sensing method, termination type - terminal type and mounting type - through hole

- Photomicrosensor (Transmissive) - EE-SX1018 from *Omron*.
- One LED (emitter) and one phototransistor on each side of the fork.
- Need a limiting resistor (forward impedance of LED is “limitless”)!
- Lower limit of Forward voltage LED: 1.2 V (specification sheet)
- Optimal forward current: 20 mA.
- $R = (V_{CC} - V_F) / I_F$, V_{CC} = supply voltage, V_F = forward voltage and I_F = forward current
- $V_{CC} = 8V \rightarrow R = 8 - 1.2 / 20e-3 = 340 \text{ Ohm}$

Page 17 for circuit design:

- Unclear what supply voltage needed for the phototransistor.
- Seems proper to have an output resistor for the voltage to “lie over”. There exists one at each pin of the gertbot EXT pins.
- ...

Questions

- What ON/OFF currents/voltages does the Gertbot react to? And what voltages should we supply? Different to the diode and the phototransistor?
- How do we deal with the leakage current in the phototransistor? Is it going to pose a problem?