

Sensor Interface to Talon SRX Limit Switch Inputs

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Talon SRX Specs:

- $V_{in-high} = 2.64V$
- $V_{in-Low} = 0.66V$
- default logic sense is H=Motor Run, but can be reversed in talon software
- Internal pullup to 2.5V (??? seems low), so external pullup not needed, supposedly.
- V_{in} maximum is 5V

Omron EE-SPY415 Specs:

- This is max extension sensor
- Sensor detects the **absence** of the scaler tube.
- With scaler retracted, logic output is Low
- With scaler fully extended, logic output is High
- $V_{out-Low} = 0.4v$ max
- $V_{out-High}$ = open-collector
- $I_{out-Low}$ = rated load is 1K min pullup

Optek OPB815 Specs:

- This is fully retracted sensor
- Sensor detects a flag at full retraction
- With scaler retracted and flag detected, logic output is High
- With scaler extended and no flag detected, logic output is Low
- $V_{out-Low} = 0.4v$ max
- $V_{out-High}$ = open-collector
- $I_{out-Low} = 3.5mA$ max (with emitter current of 20mA)

Logic Sense:

- Both sensors are logic Low for normal motor running.
- Both sensors are logic high for limit-reached to stop motors
- **So Talon SRX Limit Switch logic sense should be reversed in software for both limit switch inputs to be Normally Low for motor run and logic High for motor stop.**

Electrical Interface:

- No interface circuit required. Direct connection to Talon Limit Switch inputs.
- Logic low levels are compatible (sensors are lower than Talon requirement)
- Logic high of sensors are open-collector and can be directly connected to Talon, which provides internal pullup.