Tam Valley Depot

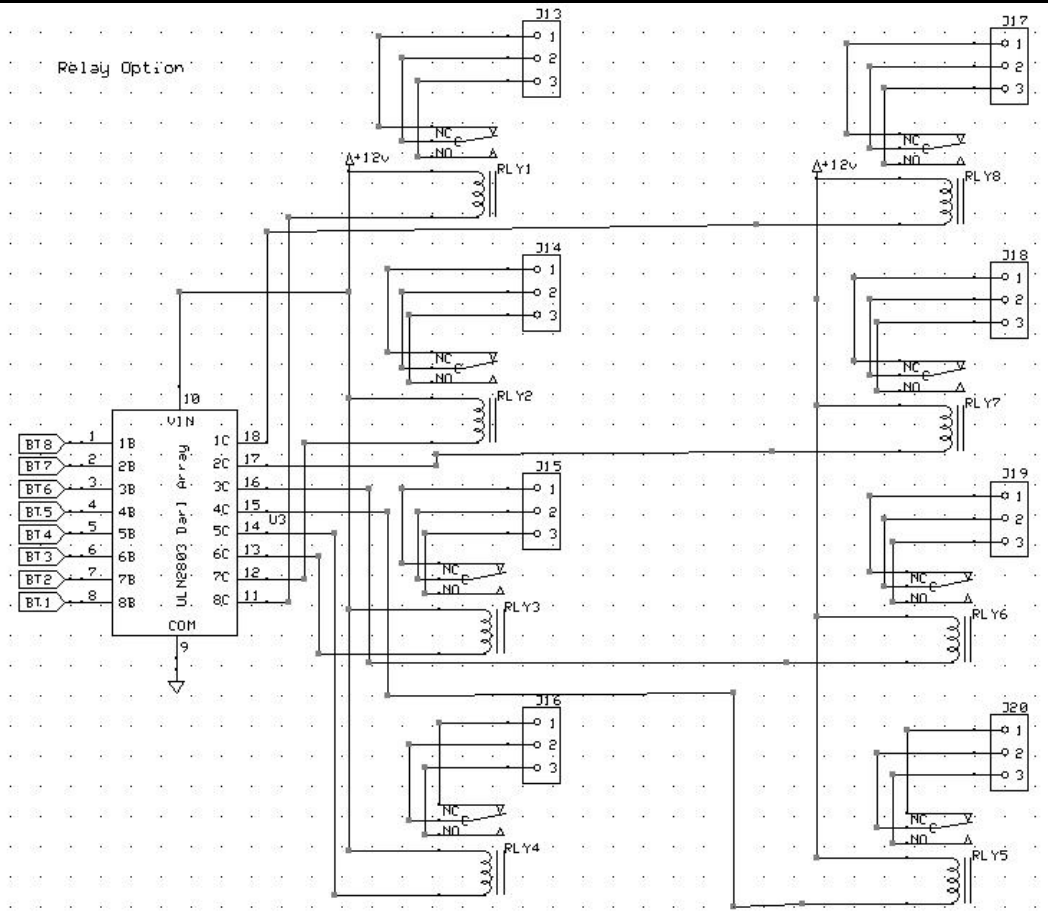☐ **Home**   ☐ **Products**   ☐ **Ordering Info**   ☐ **Support**   ☐ **User Gallery**   ☐ **About Us**

Octopus Eight Servo Driver Schematics
(This is for the Original Octopus based on the SX chip)
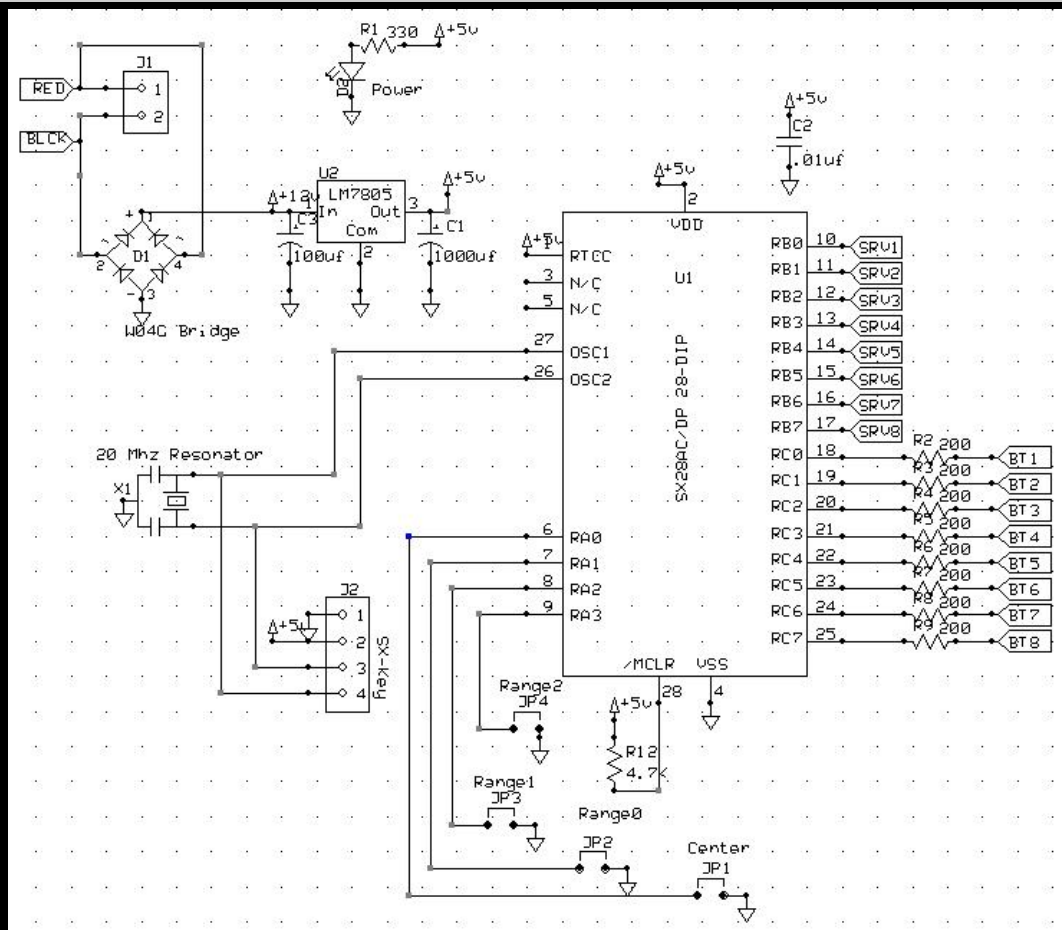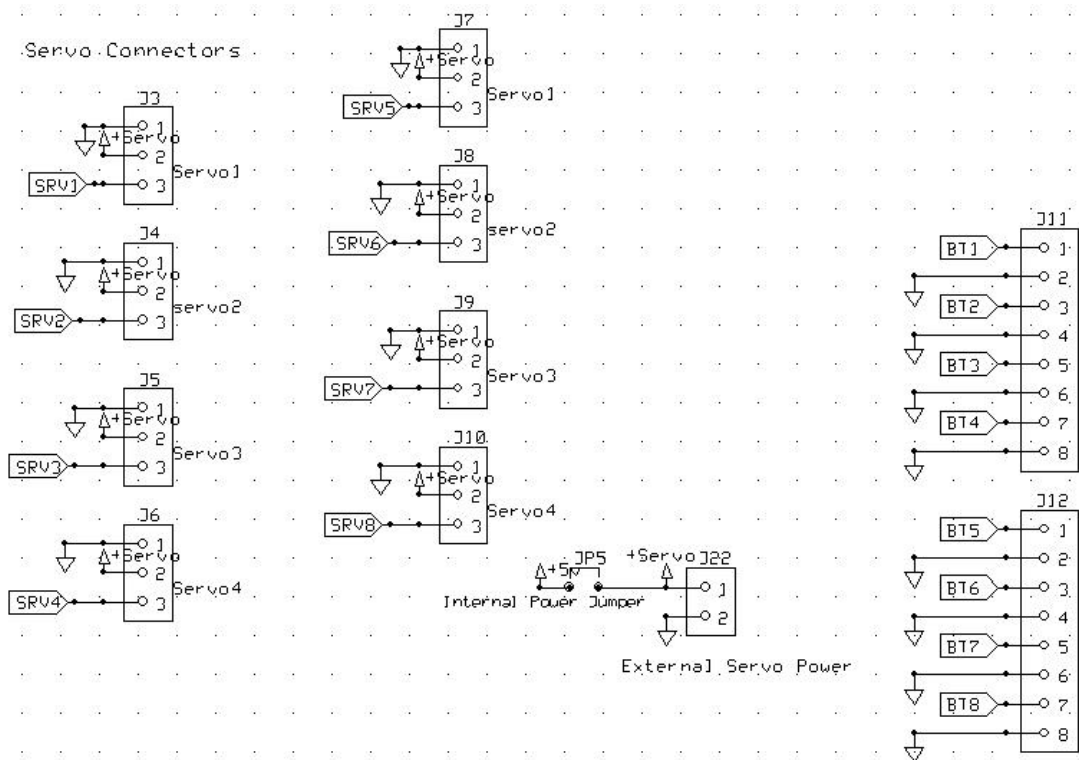
The control code in SX/Basic can be downloaded by clicking here. Learn more about the SX chip and SX/B, the BASIC language for SX at the Parallax website.

Circuit Description

Power is input through a bridge rectifier which allows the use of DC or AC voltage. U1 is an SX28AC microprocessor running at 20 MHz as set by the ceramic resonator X1. This provides the timing necessary to precisely time the pulse-widths for the servos. The SX-Key connector can be used to program the chip from a USB port of a Windoze PC with an SX-Blitz. The more expensive SX-Key also works but the debugging features will not work on this board, so only purchase it if you are interested in other development using SX chips. The SX is a very fast chip designed to program virtual peripherals and is well suited for this application.

The SX receives inputs from switches (BT1-8) connected to ground on one side. In the closed position the switch pulls the wire low and in the open position an internal pullup resistor in the SX keeps the line high. The input can be any open collector logic that is active low. The control pulses for the servos (SRV1-8) are output through 3-pin connectors.

The relays are optional and are designed to be used to power the frogs. However, the relays can be used to control any device that draws up to 1 amp. An example would be a crossing gate that is activated when a turnout is in a particular position. The relays are buffered by a ULN2803 Darlington transistor array that also provides diode flyback protection. If the relays are used then 12-15 volts should be provided to the board to

provide the proper voltage for the relay coils.