

# SYC3 Staging Yard Controller Tips and Techniques

**Switch Motor Wiring**

The SYC3 provides +12 volts and -12 volts to power slow-motion switch machines, such as the Tortoise brand. For a Tortoise, connect pin 1 or pin 8 to the correct switch motor terminal (e.g., A, B, C) on J2 of the SYC3.

Connect the other pin (8 or 1) to the common terminal on the dual power supply that you use to run the SYC3 (the one wired to J1). You may "daisy chain" this wire from one motor to another to simplify the wiring. If the turnout operates backwards, swap the wires to pins 1 and 8 on the Tortoise.

**Using LOC2 in Double-end Yard**

One LOC2 can detect both ends of a double-end yard. Install U5 and U6 normally (no jumpers). In the SYC3, install a 1.8K resistor for R14. Wire LOC2 outputs together and connect to SYC3 as shown. See SYC3 instructions fig. 3, diagram B.

**Stub-end and Double-end Yard Track Wiring.**

Wire the "hot" lead from your track power supply directly to one rail of every staging yard track. If using DCC, it doesn't matter which lead this is.

Connect the other rail to the correct track terminal on J5, J6, J7, or J8 on the TPR2 relay board. These terminals are labeled X1, X2, X3, etc.

Wire the "common" lead from your track power supply to any "X" terminal (plain "X," no number) on J5, J6, J7, or J8 on the TPR2 relay board. All "X" terminals are connected together on the TPR2, so you need to wire only one.

One SYC3 can control a double-ended yard with up to five tracks. (If your yard has more than five tracks, you will need one SYC3 for each end.)

Label each turnout with a unique letter, then complete the route table for all turnouts. In this example, Track 2 would need A and C reversed, B and D normal.

You could also assign two numbers to each track (italics above), one number for one end, and the second for the other end.

**Wire the track power connections together, as shown below in the Reverse-loop Yard section.** In this example, you'd select track 1, 2, or 3 for the west end, and track 4, 5, or 6 for the east end.

**Double-end Yard**

It's likely that you can use the Tortoise's DPDT contacts on one turnout to switch polarity of the track voltage in the reversing loop. Here, for example, inbound tracks are selected when turnout C is in the Normal position, and outbound tracks are selected in the Reversed position.

**Reverse-loop Yard**

If you use a Tortoise to switch the track polarity, be sure to specify Normal and Reversed positions for that turnout for every track in the yard, even if that turnout normally would not be considered part of the route. Do not leave a blank (don't care) for any track; that turnout is now part of every route because it sets the track polarity.

Wire your track power supply's "hot" and "common" leads to the Tortoise as shown. Tortoise pins 4 and 5 are now the "hot" and "common" power leads for your yard tracks. Wire to one rail and to any "X" terminal on the TPR2; check polarity to determine which way.

One SYC3 can control a reverse-loop yard with up to five tracks. Draw the yard diagram as if it were a stub-end yard, then add the loops later.

Number each track uniquely; you'll have one number for inbound tracks and another for outbound tracks. In this example, you'd select 1, 2, or 3 for inbound and 4, 5, or 6 for outbound. You could also pair the track numbers (e.g., odd numbers for inbound and even numbers for outbound).