

Power Monitor

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I added a power monitor to the layout. This monitor can be mounted on the powered corner and is connected to the main power box using a removable cable.

The panel on the power monitor contains a green light and a voltmeter for each of the four mainline tracks.

The green light monitors the power directly from the transformer for that track (for track 1, it monitors the output of both transformers). When the transformer is supplying power (for track 1, when either transformer is supplying power) the light is green. When the circuit breaker on the transformer is tripped (or the power switch for the transformer is turned off), the light is off.

The voltmeter monitors the power being sent to the track. For track 1, this is the power being supplied by the TMCC Track Power Controller (TPC). For track 2, this is the power being supplied by the MTH Track Interface Unit (TIU). For tracks 3 and 4, this is the power being supplied by the TMCC PowerMaster. The voltage supplied by the TPC is controlled by the CAB-1 handheld unit. The voltage supplied by the TIU is controlled by the MTH handheld unit. (Note: Since the power to the TIU is supplied by the track 2 TPC, the voltage must be turned up

for **both** units (i.e. using the CAB-1 handheld unit for the TPC and the MTH handheld unit for the TIU) before track 2 can receive power.)

To troubleshoot power problems on a track, you can look at the status on the power monitor. If the light is off, you have to reset the circuit breaker for the transformer. If the light is green and the track is not receiving any power, you may have to reset the circuit breaker on the TPC (tracks 1 or 2), turn up the voltage using the CAB-1 controller (all tracks), turn on the power to the TIU (track 2 only), or turn up the voltage using the MTH handheld (track 2 only).

You can monitor the voltage being supplied to the track you are using by looking at the voltmeter. I was very surprised to find out how low the track voltage is when running a power-hungry train (i.e. a train with several engines or many lighted cars). The transformers cannot supply full voltage when they are supplying the heavy current required for our large trains.

You can also use the power monitor to ensure that the track voltage is set to zero when you are putting your train on the track.

When I installed the power monitor I noticed that the voltage on track 4 never goes to zero. I verified with my digital voltmeter that the PowerMaster for track 4 never sets the voltage below approximately 4 volts, even if you press the Aux1-0 sequence on the CAB-1 controller.