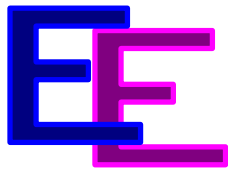


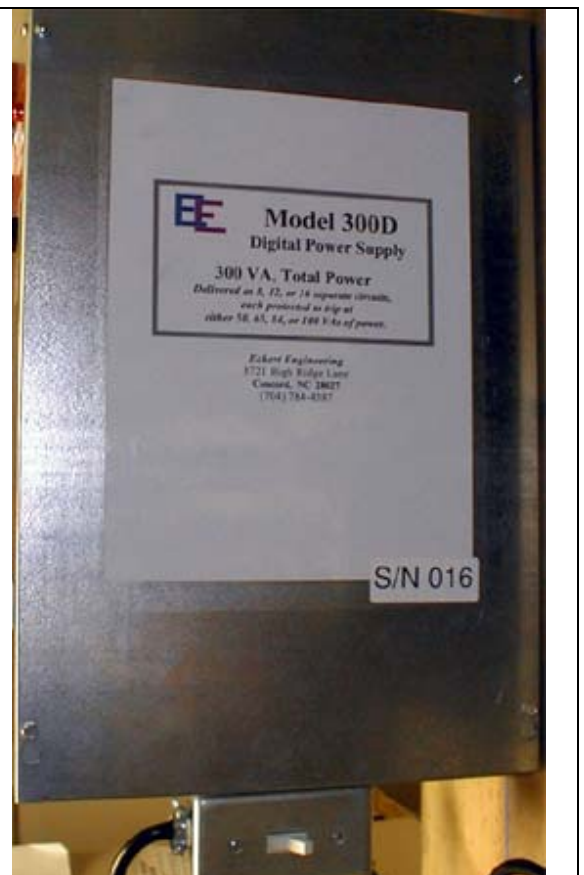
# Owners Manual for



## Model 300D Digital Power Supply

**300 VA, Total Power**

*Delivered as 8, 12, or 16 separate circuits,  
each protected to trip at 50, 65, or 100 VAs of power.*



# EE Model 300D Owners Manual

Eckert Engineering builds the Model EE-300D digital power supplies for large sized Märklin Digital HO digital layouts. This unit has both the transformer AND the booster incorporated into 1 package. Here is an example of how this power can be used:

Chan #	Power (Watts)	Used for:	Chan #	Power (Watts)	Used for:
1	50	Area #1, Digital Catenary	9	65	Area #1, Digital Track
2	50	Area #2, Digital Catenary	10	65	Area #2, Digital Track
3	50	Area #3, Digital Catenary	11	65	Area #4, Digital Track
4	50	Area #4, Digital Catenary	12	65	Area #5, Digital Track
5	50	Area #5, Digital Catenary	13	65	spare
6	50	Area #6, Digital Catenary	14	100	Area #3, Digital Track with large siding yard
7	50	Area #1,2,3 Digital Solenoids	15	100	Area #6, Digital Track with large siding yard
8	50	Area #4,5,6 Digital Solenoids	16	100	spare

In this example, a large hypothetical layout is divided into six areas. Any tracks that cross the boundary between areas (i.e., between Area #1 and Area #2) should have an isolation device installed in the third (middle) rail. In each area, a functional catenary system has been installed. The overhead catenary wires should also have isolation devices installed where they cross area boundaries.

*(NOTE: These isolation devices do NOT have to be rocker style isolators. The time when a lok's slider is bridging from one area to the next area does not pose a problem as it might with other style digital boosters.)*

All tracks in a specific area will have their own channel of digital power. From the table above, note how the tracks of areas 1, 2, 4, and 5 are being fed with 65 watts of power each. The tracks of areas 3 and 6 are being fed with 100 watts of power each. This is because these areas both have large yards where many lighted passenger coaches will be sitting (they consume lots of power.) All catenary in each specific area will be powered from it own 50 watt digital channel. (Track power in an area is usually a higher load than catenary power due to lighted passenger cars taking their power from track sliders. Thus the only 50 watts per catenary circuit.)

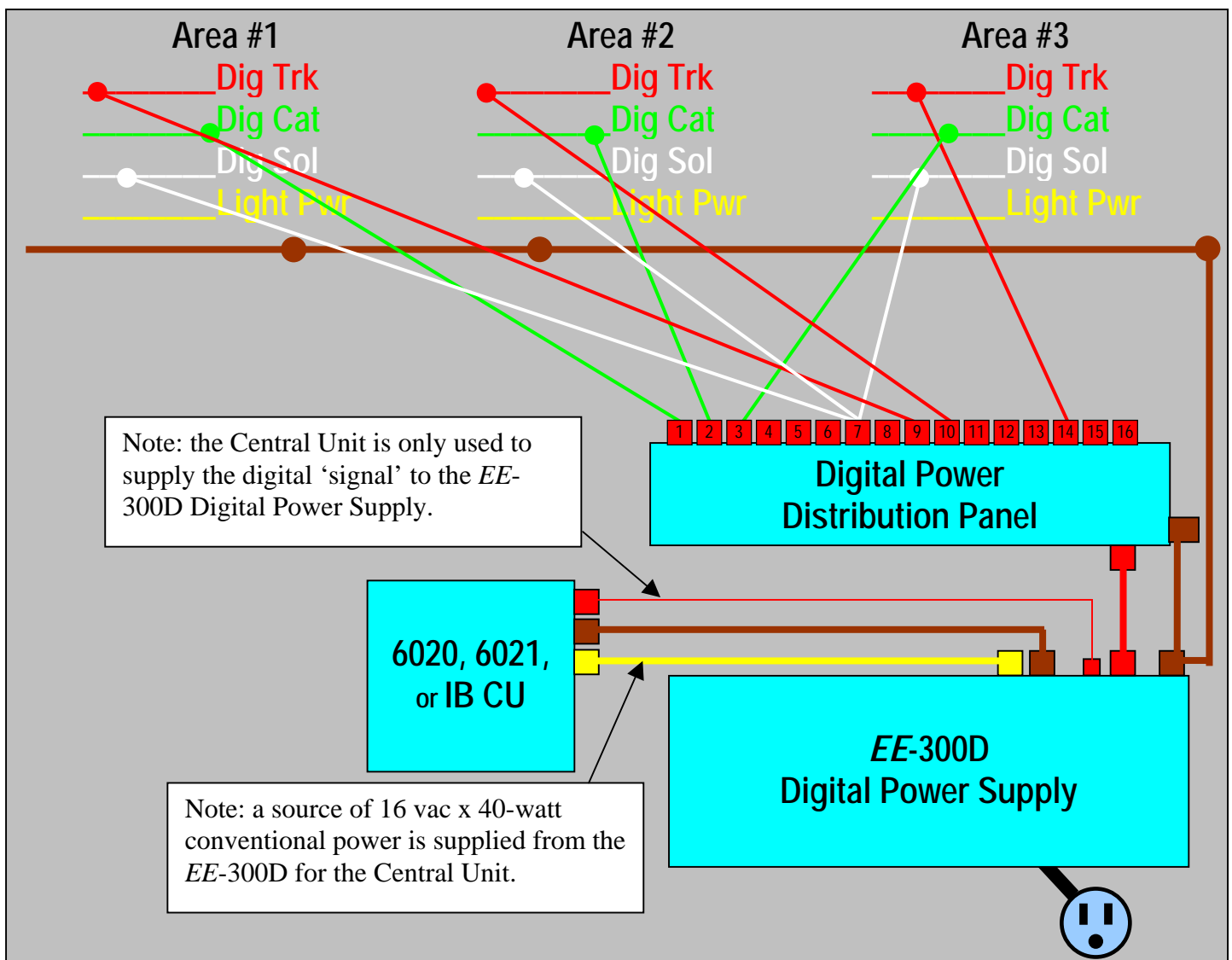
This large layout will have many k83 (6083) and k84 (6084) decoders located throughout. Digital channel #7 is used to give digital power to the k83s and k84s in areas 1, 2, and 3. Likewise, digital channel #8 is used to give digital power to the k83s and k84s in areas 4, 5, and 6. See the white bus labeled "Digital Solenoids" in the following figure.

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In our example layout, each area is equipped with a bus network with the following circuits:

Digital Track Power	Bare Multi-Strand Copper / 14 AWG	Red
Digital Cat Power	Bare Multi-Strand Copper / 14 AWG	Green
Digital Solenoid Power	Bare Multi-Strand Copper / 14 AWG	White
16 VAC Lighting Power	Bare Multi-Strand Copper / 14 AWG	Yellow
Ground	Bare Multi-Strand Copper / 12 AWG	Brown

The EE-300D Digital Power Supply and a Central Unit are shown connected to Areas 1, 2, and 3 of the layout. Areas 4, 5, and 6 are similar but are not shown. **Note how all areas share a common ground (brown.)** (The power source for the 16 vac lighting power is not shown for clarity.)



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## Power Connections

Locate and mount the *EE-300D* power supply under the layout **with the fan exhaust facing up**. Locate and mount the “Digital Power Distribution Panel” within easy reach of the layout operator (i.e., close to the various digital control boxes.) Using the red and brown power cable supplied by *EE*, connect these two units together. Run a 10 AWG brown wire from the Ground outlet of the *EE-300D* to the ground buss of the layout. The 8 (or 12 or 16) circuit output connections are located on a terminal strip connected by cable to the “Digital Power Distribution Panel”. Run a power wire from each of these outputs to its respective load (area of the layout.) Each of these circuits has a polyswitch circuit breaker that will open at 2.4 Amps (~50 watts) or 3.2 Amps (~65 watts.) or 4.8 Amps (~100 watts.)



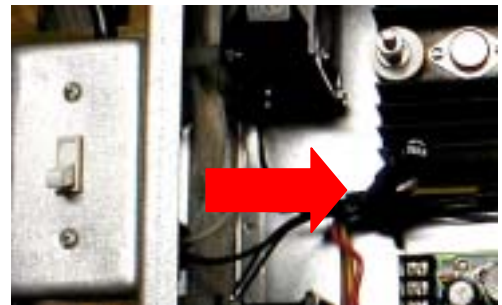
## Operating the “Digital Power Distribution Panel”

When a circuit is switched “ON” (up) and power is being supplied, the indicator LED will be green. If a short or overload on a circuit trips that circuit’s breaker, the indicator LED will be red. To clear a faulted circuit, remove the short, switch “off” (down) that circuit for a 10 second cooling off period, and switch that circuit back to “on” (up).



## Fuse Protection

A single 5-amp slow blow fuse (non-resetting) protects the 110 VAC side of the power supply.



# EE Model 300D Owners Manual

**Common Ground** - *EE* uses and recommends a common ground for all circuits. Even the non-digital power supply for building lights, streetlights, and accessories should share a common ground with the digital circuits. This *EE* Digital Power Supply has been designed and constructed with all of the circuit's grounds connected to each other. This common ground is connected to the brown ground output on the connection panel. This brown connection should be connected to the ground of the layout (the outer rails of the track) using the supplied brown wire (10 AWG).

**Connections to the Central Unit** - The *EE-300D* receives its input signal from the Märklin 6020 Central Unit, or the Märklin 6021 Central Control, or from the Uhlenbrock Intellibox (IB). The customary 5 wire booster cable is NOT used, rather:

Run a small (18 to 28 AWG) red wire from the red output port of the 6020/6021/IB to the red "Digital Signal Input" terminal shown here. This wire can be of any length.

Run a small (18 to 22 AWG) brown and yellow wire pair from the brown and yellow ports of the 6020/6021/IB to the 16 VAC output on the *EE-300D*.



**No Central Unit Trip** - When a short is detected within one of the output channels of the *EE-300D*, power is removed from that specific output channel. A signal is NOT generated to trip (shutdown) the **6020/6021/IB** Central Unit. This is by design. On very large layouts, it is not desired to stop all train activities just because one area (circuit) has encountered a fault. The non faulted areas will continue to run normally while the operator turns "off" the switch to the faulted area, removes the short, and then turns "on" the switch to that area.

# EE Model 300D Owners Manual

## Other Features:

- 3 prong grounded plug
- Master On-Off Switch
- Handsome metal case, grounded
- Internal cooling fans
- For USA use only (can be modified for European 220VAC)
- Not UL Listed
- Unit was tested under full load.



*For further information, sales, and service, call:*



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