



DH465

Fits many HO and O Scale
wired Locomotives.

HO/O Scale

Wired Mobile Decoder
4 Amp/ 6 Amp Peak
6 FX³ Functions, 0.5 Amp

Features:

- **High current capacity wired decoder**-for multi-motor HO or O locomotives or hard wired multiple locomotive consists.
- **SoundBug® plug-in compatible**-Allows easy addition of sound if desired.
- **Digitrax LocoMotion® System**-Your locomotives look like the real thing. The Digitrax LocoMotion® System makes them run like the real thing, too!
 - Torque Compensation** for smooth as silk operation.
 - 128 Speed Step** operation (14 or 28 steps can also be used).
 - Momentum** with acceleration and deceleration.
 - Normal Direction of Travel** is user selectable.
 - Switching Speed** feature for easier and faster access to yard speeds.
 - 3 Step Speed Tables** set start, mid and max voltage for custom control.
 - 28 Step Speed Tables** with 256 level resolution for precise control.
- **Scalable Speed Stabilization (Back EMF)** with simple setup & 256 level resolution.
- **SuperSonic™** motor drive for quiet operation.
- **FX³ Functions** for prototypical lighting effects:
 - Constant Brightness Lighting** with directional or independent control.
 - Realistic Effects** like Ditch lights, Mars lights, strobes, and many more.
 - FX³ & Standard Function Qualifiers** operate functions based on direction, F0 on or off, direction and F0, and whether loco is moving.
 - Function Remapping** for custom function setup.
 - Master Light Switch** turns off all lights & functions with one keystroke.
 - Advanced Consist Function Controls**
- **Transponder equipped** ready for transponding on your layout.
- **All Mode Programming with Operations Mode Read Back** reads back CV values right on the mainline.
- **Decoder Factory CV Reset** with or without speed table initialize.
- **Motor Isolation Protection** helps prevent damage to your loco and decoder.
- **2 Digit and 4 Digit Addressing**
- **DCC Compatible**
- **FCC Part 15, Class B RFI compliant**

Parts List

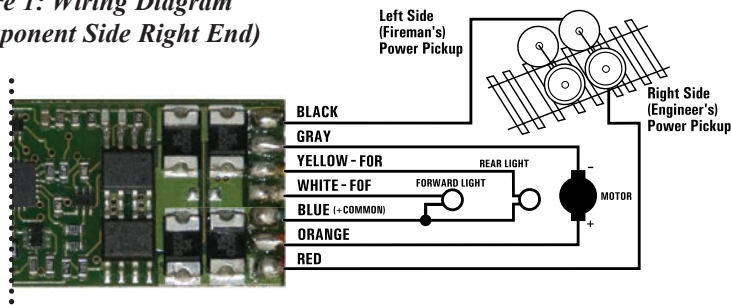
1 DH465 Decoder

1 Instruction sheet

Installation Information

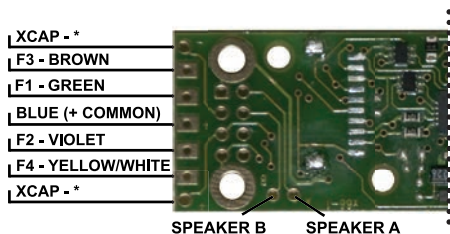
- Carefully remove the locomotive's shell. Notice the orientation of the shell so that you can reinstall correctly. Identify the track and motor connections and make sure that the motor will be isolated from the track when the decoder is wired in. Verify the motor stall current(s) at the track voltage in use and ensure that the total value does not exceed the decoder motor rating. As you plan your installation it is useful to bench test the decoder to gain familiarity with operation and be confident it is OK before installation.
- The DH465 has four heavier 22AWG wires for the high current connections to the Track and Motor terminals. **(Figure 1)** shows these connections to the locomotive. Note that this decoder can handle multiple motor loads in parallel, for example a A-B hardwired consist. Be sure to parallel connect both the track leads and motor leads in both locomotives, and ensure that the motor leads do not connect to the track. Ensure no parts of the decoder PCB short to any metal in the locomotive.

Figure 1: Wiring Diagram
(Component Side Right End)



- Connect the lights as needed on the lighter gauge White, Yellow and Blue wires as shown in **(Figure 1)**.
- For additional functions F1-F4 refer to the connection pads shown in **Figure 2**. If a SoundBug™ is plugged in on the reverse side of **(Figure 1)**, extra pads are provided for speaker and extra sound capacitors, as shown on **(Figure 2)**.
- Replace the loco shell. You are now ready to run your locomotive. The DH465 is factory programmed to address 03. You can easily customize the address and other features. See section “Customizing Your Decoder” that follows.

Figure 2: Additional Wiring (Component Side Left End)



* = Extra extended connections for SFX004 speaker / capacitor

Installation Notes:

- Do not exceed the decoder's 500mA total function output rating.
- We recommend that the Blue wire, also called +Common or Lamp Common, be



connected as shown. If you wish to omit the Blue wire in your installation, consult the Digitrax Decoder Manual.

3. To use a function output with an inductive (coil) type load, see the Digitrax Decoder Manual for more information to avoid damage to the decoder.
4. See the Digitrax Decoder Manual for full details of wiring 12-16V lamps, 1.5V lamps, and LEDs. For lamps that draw more than 80 mA when running, we suggest an e.g. 22 ohm 1/4 watt resistor in series with the directional light function lead to protect the decoder.

Customizing Your Decoder

Your Digitrax decoder is ready to run and will operate using address 03 with no additional programming. For a more prototypical railroading experience, your decoder can be customized for your specific locomotive by programming some of the Configuration Variables, or CVs, available.

See the Digitrax Decoder Manual for complete decoder test procedures, installation instructions, programming and technical information. Digitrax manuals and instructions are updated periodically. Please visit www.digitrax.com for the latest versions, technical updates and any additional locomotive-specific installations.

Changing the Decoder Address

The first CV most people change is the decoder address. This allows you to independently control each loco with a unique address. Digitrax decoders are shipped with CV01 (AD2), the two digit address, set to 03. Following is a brief description of how to change the decoder address with a Digitrax DT series throttle. See your Starter Set Manual for complete programming instructions.

1. Place the loco on the programming track. Go into Program Mode on your system. On DT400/DT402 press **PROG**. On DT300, DT100 & DT200 press **RUN/STOP & FN/F0**.
2. Choose AD2 for 2 digit addressing or AD4 for 4 digit addressing (DT400/DT402 and DT300). (Ad for DT100 & DT200, see set manual for 4 digit instructions).
3. Choose the address you want to set up for the decoder.
4. Complete address programming. On DT400/DT402 press **ENTER**. On DT300, DT100 & DT200 press **SEL**.

Note: CV29 must also be programmed to enable 4 digit addressing, this is done automatically by the DT400/DT402 & DT300 but not on earlier throttles. This decoder does not implement CV21/22 functionality.

Decoder Reset CV08

Decoder reset lets you reset all CV values to the initial factory settings. To reset all CV values, program CV08 to a value of 008. You also have the option of resetting all values except the 28 speed step tables. To do this, program CV08 to a value of 009.

Warranty & Repair

Digitrax gives a one year *"No Worries" Warranty* against manufacturing defects and accidental customer damage on all Digitrax products.

That's it! A simple, straightforward warranty with no tricky language!

Visit www.digitrax.com for complete warranty details and instructions for returning items for repair.



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wired Locomotives

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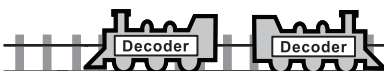
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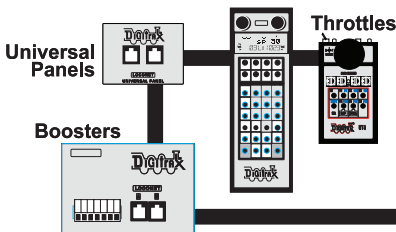
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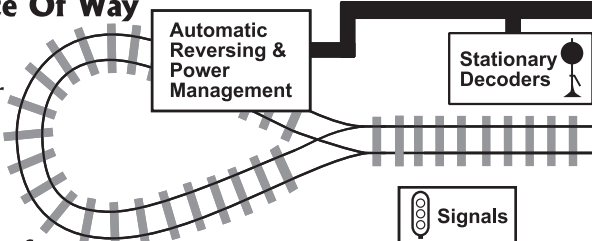
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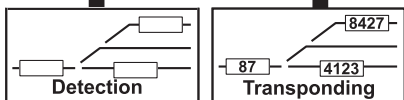
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