



Digitrax Complete Train Control Starter Set Manual

Includes:
DCS52 All In One
Command Station Booster Throttle,
PS314 Power Supply



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1.0 Introduction

Congratulations on your purchase of a Zephyr Express system.

The design of the Digitrax Complete Train Control® system lets you operate your layout the way you choose. With LocoNet® you simply connect system components to build the layout control system that you've always wanted! The Digitrax system reduces and simplifies layout wiring.

Your Zephyr Express Starter Set has several components:

- **DCS52** All-In-one command station, booster and throttle to run your layout. This unit does everything you need to get up and running in one unit, including an interface to a PC via the USB interface.
- **PS314** Power Supply to provide power to run your DCS52. **The DCS52 should only be powered by the provided PS314.**

To simplify operation the DCS52 employs a color graphic LCD screen and a variety of cascading menus, and context-related soft keys and a built in context-related help system that prompts available actions, or information on the side-scrolling HELP line.

This context HELP system prompting, coupled with a color screen makes the DCS52 easy to use and a powerful layout control throttle. You will not need to refer to a manual very often!

The DCS52 firmware can be downloaded and updated in the field using a PC running the free DigiPL app and connected to the DCS52 via USB, or another working LocoNet connection. The DCS52 functions and screens may change with updates from the Digitrax Web site, so be sure to check the DCS52 product pages to get the latest information and if there are any firmware download (or .dmf type) files for the DCS52.

There are many different combinations of Digitrax components that can be used to set up a layout control system that is right for you. You can combine Digitrax products with compatible decoders, boosters and computer software made by other companies that build compatible equipment.

Your success with & enjoyment of our products are very important to us. After all, this is a hobby and it is FUN!!! Please read this manual carefully before installing your system.

There is additional information on this product and its operation at the www.digitrax.com web site. If you have questions not covered by this manual please contact your dealer or visit our web site at www.digitrax.com. The Digitrax on-line Tech Support Depot is always open, and support staff is ready to help on our Help Desk at: helpdesk.digitrax.com.

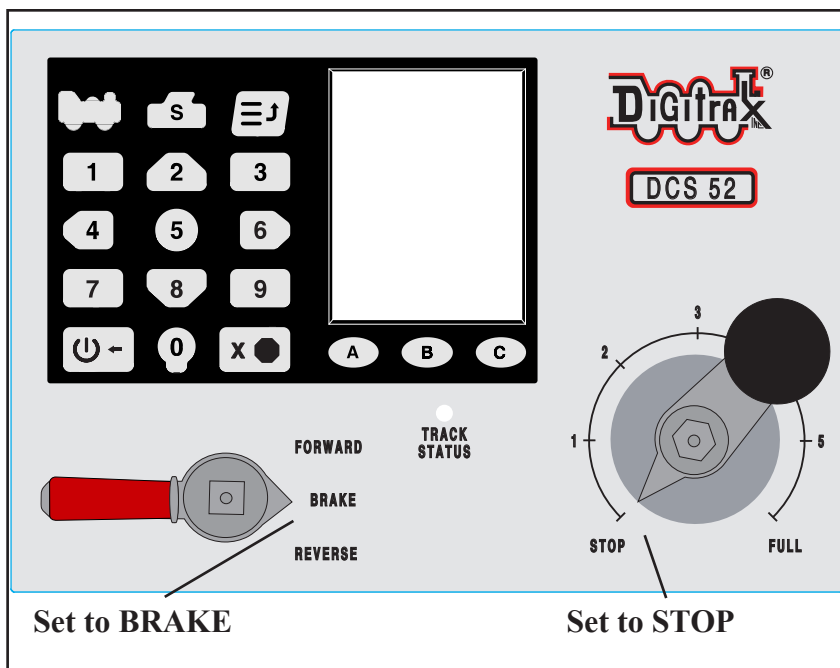


Figure1: DCS52 Front/Top

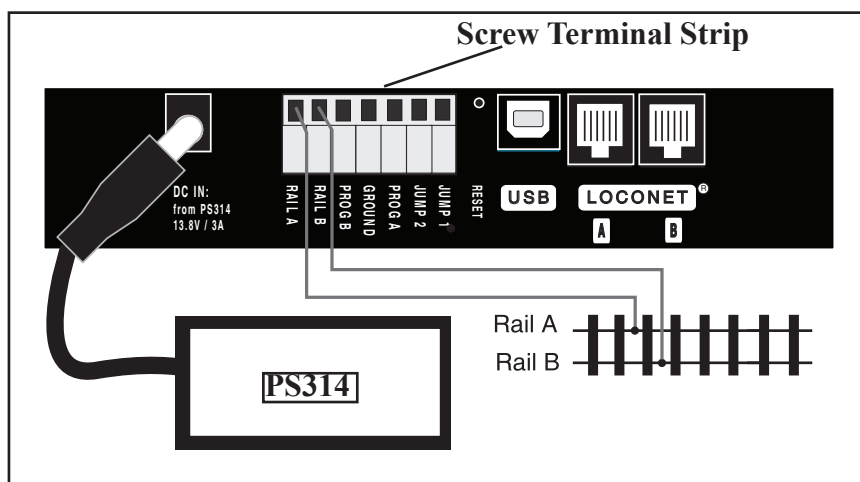





Figure2: DCS52 Rear Connections

2.0 Quick Start Guide:

This Quick Start Guide will have you running a locomotive with your unpacked Zephyr Express system, in about a minute!

Take any analog (address 0000 or non-decoder) locomotives off the track before you begin.

Refer to Figure 1 for the DCS52 Front layout. Figure 2 shows the DCS52 Rear connections. Figure 3 shows an example of the color LCD and the typical HOME screen information display.

1. Locate the gray screw terminal strip on the back of your DCS52.
2. Locate the two terminals labeled **RAIL A** and **RAIL B** on the gray terminal strip. Connect 2 wires from your layout mainline track or test section to these terminals, one for each rail. It does not matter which rail is connected to which terminal.
3. Locate the DC plug connector marked **DC IN: from PS314**.
4. Connect the PS314 to the DCS52 by inserting the barrel plug into the connector. Only the PS314 should be used to power the DCS52.
5. Plug the PS314 to a wall power outlet that matches the power cord supplied with your PS314. The PS314 will work universally on 110-240V 50/60Hz AC power.
6. The DCS52 should beep and power on. A start screen will display briefly saying "Welcome to DCS52" followed by a software version and the unit's serial number.
7. The throttle display will now show the last used locomotive address in big numbers mid-screen, and a green Locomotive symbol showing direction, and a current speed % indication, above this. The scrolling HELP prompt line above the A/B/C soft keys provides useful operating hints and information in context as you use the DCS52, or if you get confused as to control actions possible
8. Press the loco  key, and then the number 0 key twice, then the loco  key again to complete selection of the Analog Locomotive
9. Press the power  key (that will toggle *or swap* track power on/off), until you see the track status led on the command station is lit, indicating the RailA/B track is powered ON.

With these simple steps you have selected an analog locomotive and energized DCS52 mainline track power. Now place an analog loco on the connected tracks to operate it on address 0000. Move the direction knob to swap between forward or reverse, and move the throttle knob clockwise to speed up. Selecting the *BRAKE* position will bring the locomotive to a stop, independent of the speed knob setting

ENJOY running your trains!

You may try out many of the following new concepts that the DCS52 is able to perform, but explore these capabilities at a rate that you are comfortable with.

The following sections provide additional information beyond the built in scrolling HELP prompts. Check the Digitrax Web site for the latest DCS52 information. The DCS52 software can be updated in the field and so the operating screens may change slightly over time.

2.1 DCS52 LCD screen:

The DCS52 **Display** is a 2.4 inch color LCD screen. The screen provides a variety of information and input prompts to assist in running locomotives and system setup. This section outlines the Home Operations Screen, other menu displays will be covered in following sections.

NOTE: The display is best viewed from directly above, viewing the screen at some angles may distort the perceived screen colors and actions.

2.1.1 Home Operations Screen:

Figure 3 shows the primary or HOME operations screen for the DCS52. This is the screen you will see most often when operating trains. The Home Operations Screen and it's items are shown below. This example shows a locomotive selected with decoder address 0003.

If you ever get lost you can always quick press the **X** key to return to this Home screen. A long press will begin emergency stop.

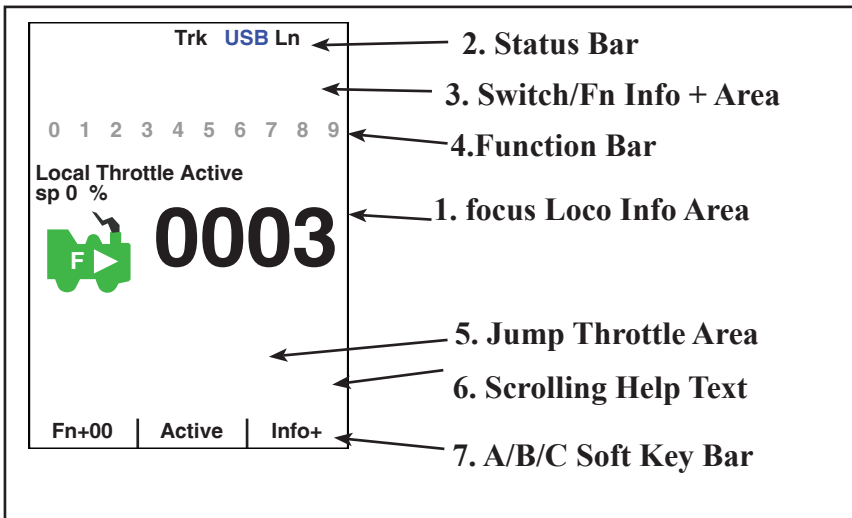






Figure 3: DCS52 Home screen layout


1. The **Loco Info Area** is where the current or *display focus* locomotive information for the active throttle knob is shown. The focus loco's speed is listed as "sp XX %". At left is a loco icon with the current direction indication. Showing forward as "F" and an arrow, or reverse, shown with

or an “R” and arrow. If a focus loco is currently selected this loco icon will be *green* with flashing smoke above the smokestack. If no loco is selected the icon will be *gray* with no smoke. The currently active address is shown in the large numbers in the center. If a loco is selected the numbers will be solid *black*, if no loco is selected the numbers will be *gray*. The **focus Loco Info** area will show additional information during locomotive selection, see section 4.0 for more information on selecting locomotives.

2. The **Status Bar** is active for Home screen and will show the status of your system. There are multiple indicators that appear in the **Status Bar**. The “Ln” indicator is solid black when LocoNet is enabled. The “Trk” indicator is green when system track power is turned on, and the blue “USB” indicator lights when a PC has connected successfully.
3. The **Switch/Fn Info + Area** is where turnout or switch information is displayed in switch mode. Switch mode is covered in more detail in section 6.0. This area of the screen is also where the complete 29 function state is displayed when the  soft key is pressed. Active/ON function numbers are blue and inactive/OFF functions are grayed out. For more info on controlling and managing functions see section 5.0.
4. The **Function Bar** is where ten active locomotive decoder functions are shown. The compact function information shown in this bar correlates to the  soft key action; pressing the  soft key will cycle through control of higher functions, and display them in the **Function Bar**. For more information on using functions see section 5.1.
5. The **Jump Throttle Area** shows information related to optional Jump throttles that may be enabled as detailed in section 8.2.
6. **Scrolling Help text line.** Shows status and prompts user actions
7. **A/B/C soft key Bar.** Indicates the three adjacent soft-key available actions.

Note: holding the the  key for more than about 1 second will perform Emergency Stop for the Locomotive address shown in the throttle. See section 11.0.

3.0 Controlling DCS52 mainline track Power:

To power ON or OFF the DCS52's RailA and RailB terminals, press the  key, and this will toggle the track power between ON and OFF, as indicated by the track status led.



If these Booster terminals or connected layout tracks are short-circuited or overloaded above the 3Amp current limit the DCS52 will automatically employ Intelligent Power Management to interrupt track power, and then retry to power ON every couple of seconds. This ensures that accidental shorts do not damage the DCS52 or layout wiring.

4.0 How to select Locomotives and run trains:

Each decoder typically receives a unique address. To select a decoder equipped locomotive and run it on your throttle, you must know its address. Digitrax decoders are set up at the factory with the factory “default” address “03”. This means that when you take a Digitrax decoder out of the package and install it in your locomotive, you can select address “03” on your throttle to run the decoder.

If you do not know the address of a decoder equipped locomotive, you can program a new decoder address and select it to run using this address, or use the DCS52 and system programming track to read back the decoder address. *See Section 7.1 for details on decoder address and CV programming.*

4.1 How to select a Locomotive address:

1. In order to select a locomotive you need to know it’s address and place it on powered layout track..
2. Press the  key once to enter loco selection mode, the large numbers in the Loco Info Area will begin to blink alternating black and gray. The soft keys will also change to give you new choice; “MU”, “Recall” and “MORE”. Pressing “MORE” will bring up “Disptch” “Stat. Edit” and “MORE” as soft key choices. Pressing “MORE” again will return to the previous soft key choices. These soft keys will be covered in the following sections.
3. Enter the address number of the locomotive you want to select. The text above the address number will provide you additional information about the loco address number you are selecting. If it says “free” the locomotive is available for selection. If it says “busy” the locomotive is in-use on another throttle, to select it you must complete the Steal process. See section 4.6. The second set of numbers, usually “128” specifies the number of speed steps associated with the address. See Status Editing, Section 4.7 for more details.
4. If there is “cn”, “mid”, or “top” the locomotive is part of an MU/consist, see section 4.8 regarding consisting.
5. Once you have entered the address, press the  key again. The entered address number will go steady black and you will have control of the locomotive. Make sure that **Track Power** is turned on. The **Track Status Indicator** should be lit.
6. Turn the **Throttle Knob** to now run your Locomotive. Change direction




with the direction key under the speed knob. You can also “double click” down quickly on the throttle knob to change direction.

4.2 Selecting an Analog or non-decoder locomotive:


A locomotive without a DCC decoder is called an Analog locomotive and is run on address 0000. While an analog locomotive, with no decoder, is sitting still on your digital layout, you will hear a “singing” sound. Once the analog locomotive is moving, this sound will change and be less noticeable. To avoid heat build up in your locos without decoders, Digitrax recommends that analog locos **NOT** be left sitting on DCC powered track for periods of time when they are not running.

As with a regular DC system, only one analog locomotive can be controlled at a time. If you run more than one analog locomotive at the same time on the layout all of the analog locos will respond to the speed and direction sent to address “0000”.

4.3 Select a prior address using RECALL soft key:

In loco selection mode when the  key shows “Recall”, pressing this key will bring up the non-volatile list in order of the last 10 unique addresses used on this DCS52.



When in Recall Session Loco List screen, pressing a 0-9 numeric key with a 4-digit address to the right will enter that number as the selection address.



For example if you press the 6 key for the recall screen shown to the right, then the address 1000 will be entered as the recall selection address. The selection screen will go back with this number, and then pressing the  key will complete the selection of address 1000.

Trk USB Ln	
Recall Session Loco List:	
0-	0003
1-	0069
2-	0009
3-	0085
4-	0045
5-	0065
6-	1000
7-	0026
8-	0006
9-	
Mu Recall More	

4.4 Releasing an address from a throttle:

When you are finished running a locomotive address, it is best practice to release it from your throttle, so that it is available for other throttles to select and run.

1. Use the **Throttle Knob** to make the locomotive’s speed zero (this optional step is strongly recommended as the loco will continue to move after released if speed is not zero).
2. Press the  key to go into locomotive select mode.
3. The address will begin to blink in the display. Press the  key, this will release the address from both the DCS52 and the locomotive stack in the system. The display on your DCS52 will show the previously selected address grayed out.




4. If you press the  key again, the DCS52 will begin flashing the address you just released. You can re-select that address by pressing the  key again or you can enter a new address number to select.

4.5 How to Dispatch Locomotives:

Dispatching is a special feature incorporated in the LocoNet system to meet the needs of operators that wish to enforce a strict discipline in how operators gain access to locomotives during an operating session. Dispatching also lets you run consists with basic throttles that can't set up their own consists and run four digit addresses on basic throttles that only have two digit capability. It lets you have newcomers run trains on the layout without giving them access to the entire operation.

When you dispatch a locomotive address or consist to your LocoNet system, you make it available to be acquired by another throttle. Only one address at a time can be marked as a dispatched address in the system.

To dispatch a locomotive address using a DCS52

1. Press the  key to enter address selection, enter the address you want to dispatch.
2. Press the  key marked "MORE" to bring up additional address selection soft keys. Pressing more will bring up "Disptch", "Stat.Edit" and "MORE" as soft key options.
3. Press the  key now marked "Disptch" to dispatch the entered Loco Address.



The dispatched address can be a single locomotive address, either two digit or four digit, or a consist/MU that was set up by the DCS52. The TOP locomotive in a consist or MU can be dispatched to transfer control of the entire consist to another throttle.

4.6 How to Steal Locomotives, forcing selection:

If you try to select a loco address that is already selected on another throttle the DCS52 will display "adr-busy" in red above the address in the Loco Info area of the display when the address is entered.

This is a safety interlock to prevent operators from taking control of locos that are already selected on other throttles. Occasionally it is necessary to override this interlock to gain control of a loco that is "lost" for whatever reason. This override is called "stealing a locomotive". When stealing with the DCS52 it is then possible to have an address selected on more than one throttle on your system.



To steal an address with the DCS52:

1. Press  to enter selection mode.
2. Enter the address of the loco you want to steal and press  again.

3. A scrolling message will appear in the Scrolling Help Text Area reading "Press YES to steal Loco, No to exit" and the lower soft keys will change to "YES" and "NO" choices.
4. To steal the loco address press **A** key marked "YES", to cancel the selection press **B** key marked "NO".

4.7 Status Edit, changing speed step settings:

To Change the Speed Step Settings in use for a Decoder:

1. Select the loco address you want to status edit.
2. Press  once to enter loco selection mode, the large numbers in the Loco Info Area will begin to blink black and gray. The soft keys will also change to give you the options "MU", "Recall" and "MORE".
3. Press the **C** key labeled "MORE": This will bring up the additional loco selection tasks of "Disptch" and "Stat.Edit" above the **A** and **B** Soft Keys. Pressing the **C** key labeled "MORE" again will return you to "Mu" and "Recall" soft key selections.
4. Press the **B** key below "Stat.Edit" text. The Status Edit Loco# menu will appear and display the available speed step settings.
5. Press the number on the keypad to select the corresponding speed step setting. The menu will exit and you will see the corresponding speed selection in the Additional Loco Selection Info area.
6. Once the speed step setting you want to use is in the display, press the  key to complete the selection and speed step setting change. Once this change is made, the Digitrax command station will send DCC commands to the edited decoder in the speed step setting you entered.

Trk **USB** Ln

Status Edit Loco#:
Decoder modes

0-
1- 28: 28step
 2- reserved 1
 3- reserved 2
4- 128: 128step
 5- 28A: 28step/CV19
 6- reserved 5
 7- reserved 6
 8- 128A: 128step/CV19
 9-

4.8 Multiple Unit [MU] or Consist operations:

It is not uncommon to see two, three or even four diesel locos pulling in consist at the front of a train. Sometimes, there is a locomotive added in the middle of the train or at the end of the train to give "helper service" to the head end locomotives. This is called Multiple Unit Operation or MU operation. With DCC, each locomotive is separately controlled. But in the case of MUing we would like to have more than one locomotive address controlled by a single throttle to simplify MU operation.

Your DCS52 uses universal consisting to make MU operations simple and easy to do. This is the most flexible and realistic method of MUing available. You can add any locomotive to your MU, no matter what kind of DCC decoder






is in your loco. You can even add an analog loco to your MU.

You can add a locomotive to an MU in either orientation and in any physical location in the train. When you send commands to the MU you use the address of the TOP locomotive to control the entire MU and the command station handles the rest of the commands to the other locomotives in the MU. As the address you will use to control the consist is not necessarily the address of the lead or head end loco, we use the term “TOP” for this special address. The TOP address can also be the train number.

You will not be able change the speed or direction of any individual loco that is part of an MU, however you can control individual locomotive functions. Locomotive speed and direction for all locos in the MU are controlled by the TOP address

4.9 Adding a Locomotive to an MU:

To MU two locomotive addresses together with the DCS52:

1. Choose two locos you want to MU together. Place them on the track. Make sure that both locos that will be part of the MU are running in the same physical direction. Select and run the first loco to determine which way it is headed. Then select the other loco and run it in the *same physical direction*. They are now ready to consist.
2. Select the address you want to use to control the MU. This will be the TOP address. To do this, press  enter the address numbers & press  again.
3. Press  again to re-enter loco selection mode, and the large numbers in the Loco Info Area will begin to blink black and gray. The soft keys will also change to give you the options “MU” “Recall” and “MORE”.
4. Press  key labeled “Mu”: This will enter MU mode. The display will now show the TOP address below the blinking loco address number. It will say “Consist To:” and then your chosen TOP loco’s address. It will also now show a “MU+” soft key.
5. Use the Keypad to enter the locomotive address you wish to add to the consist.
6. Press  key now labeled “Mu+” to make a consist addition of the newly selected address.
7. The DCS52 will consist the flashing address to the TOP loco, exit MU mode and the TOP locomotive will remain selected on the throttle
8. To add additional locos to the MU/consist repeat steps 3-6.





If your MU could not be set up the DCS52 will display an informational message in the Scrolling Help Text line.

This happens when you try to link to an address that is already part of an MU or link an address that is under the control of another throttle. For example if you MU’ed address 14 to the TOP loco 23 and then tried to MU another

address to 14 you would get this error. If you wanted to add another loco to the MU with 23 as the TOP address, the right way to do it is to add that loco to 23, not to another address in the MU.

4.10 Removing a Locomotive from an MU:

To remove a locomotive address from an MU:



1. Select the locomotive address you want to remove from a consist. To do this, press  and enter the address numbers. The large address numbers in the Loco Info Area will begin to blink black and gray, and the consist flag “cn” should show in the Loco Info area indicating this address is in a consist. The soft keys will also change to give you the options “MU”, “Recall” and “MORE”& press  again.
2. Press the  once to enter MU mode, If the flashing address is in a consist the new soft key settings will now include an “MU-” choice
3. Press the  key labeled “MU-”: This removes the flashing address from the consist. The DCS52 will exit MU mode and the removed locomotive will now be selected on the throttle.

4.11 MU of mismatched locomotives:

If all the locomotives in the MU have performance characteristics that are closely matched, you can run all the MU’ed locomotives in e.g. 128 step mode. If the units are completely mismatched (for example, if you are running two different brands of locos with noticeably different characteristics), then we recommend speed matching the locos by programming the decoder with either Simple 3-step or Advanced 28-step loadable speed tables (See your Decoder Manual for more information on these features of your decoder).

4.12 Controlling functions on MU’ed locomotives:

Even though an individual locomotive is part of an MU and you can’t control its individual speed and direction, you can still control its function outputs independently as follows:

1. Select the loco that is part of an MU which you wish to independently control functions. To do this, press  enter the address numbers & press  again to complete selection of the consisted loco.
2. Now use the numeric keypad to control the consisted loco’s functions like you would any other loco. The changes will take effect immediately if the locomotives are moving, otherwise changes will take effect when you reselect the TOP address on the throttle.
3. When you are finished turning functions on or off for the consisted loco, simply select the TOP address and resume running the MU.
4. Remember, you will not be able change the speed or direction of any individual loco that is part of an MU. Locomotive speed and direction for all locos in the MU are controlled ONLY by the TOP address loco.

5.0 Locomotive/Decoder Functions:

Most DCC decoders have function output leads that you can use to control lamps, LEDs, sound, smoke generators and other on/off devices installed in your locomotives. Most locomotives made today come with a head light and sometimes with a rear light, too. With DCC, these are controlled by the decoder's function outputs. You can also install additional DCC controlled lighting such as cab lights, Mars lights, ditch lights, rotating beacons and others on your locos. The addition of these functions can add to the fun and realism of your locomotives. ***You must have the functions installed and connected to the appropriate decoder function leads in order to use the following keys.***

5.1 Controlling Functions F0-F9:

To operate functions F0-F9 on your locomotive:

1. Select the loco you want to control. By default the Home Operations Screen uses the keypad numbers to operate functions. On DCS52 press the **A** key until you will see the "Fn+00" over the **A** key. Press the **C** key to get "Fn Info+" over the **C** key
2. Use the DCS52's numeric keypad to turn the same number 0-9 functions on and off. For example, to turn the head light or F0 on, press the **0** key. Press the **0** key again to turn it off. The corresponding function number will go blue for on and gray for off in the **Function Bar** area of the display.

NOTE: "Fn+00" should be over the **A** key and numbers 0-9 should be shown in the **Function Bar** area of the display.

5.1.1 Function 0 (F0) Headlights Forward and Reverse:

Press the **0** key to toggle Function 0 or F0 between on and off. Each time the **0** key is pressed while in function mode the decoder F0 lead will change from off to on or vice-versa. On locos with reversing head lamps and back up lamps, the head lamp or back up lamp in your loco will come on depending on the direction of travel of the loco. Function 0 is most often used to turn on/off the head light/back up light but can be set up for other functions as well (See your Decoder Manual for more information). It can be used as two functions.

5.1.2 Functions 1,3, 4, 5, 6, 7, 8 & 9:

Press the number key on the numeric keypad that corresponds with the function number you want turn on/off. The function will toggle between on and off each time you press the number key.

5.1.3 Function 2 (F2) Momentary Operation:

Press the **2** key on the numeric keypad. The **2** key operates Function 2 and is the preferred function for whistle or horn operation. This key is set up as a "non-latching key" so that if a horn or whistle sound is installed in the loco, it will sound for as long as the key is held down. This lets you vary the length of time that the horn or whistle blows, just like the prototype.

5.2 Functions 10 through 28 (F10 - F28):

From the Home Operations Screen, press the **A** labeled “Fn+00” to cycle through the functions “Fn+10” and “Fn+20”. When “Fn+10” is displayed over the soft key the numeric keypad will control functions 10-19. If “Fn+20” is displayed the keypad will control functions 20-28. Press the **A** again to return to “Fn+00” which will allow the keypad to control functions 0-9. In addition to watching the soft key data the full function number and status will be displayed in the **Function Bar** area of the display.

5.3 Fn Info+ : expanded function status:

If you wish to view the status of all 29 functions at once you can use the “Fn Info+” soft key. From the Home Operations Screen, press the **C** labeled “Fn Info+” this will expand the **Function Bar** area to show functions 0-28. To collapse this function display press the **C** then labeled “Fn Info-”.

NOTE: The functions controlled by keypad still correspond to the indicated status of the **A** key; “Fn+00”, “Fn+10”, or “Fn+20”.

5.4 Troubleshooting Function Operation:

If the function you want to operate does not respond, check the following:

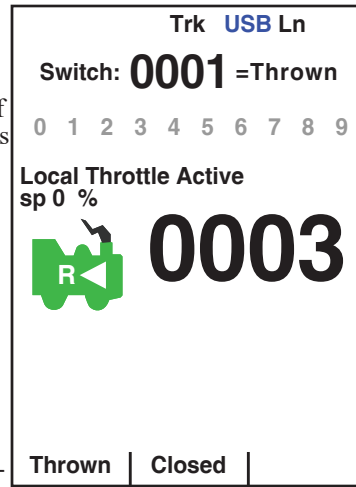
1. Is Track Status on or lit? If not, press the **U-** key to turn it on.
2. Did you select the correct loco? If not, select it now.
3. Is the function you want to use installed in the loco? If not, you may need to install it. Most new locos have a head lamp/backup lamp installed, but most do not have any additional lights or sounds installed.
4. Change the position of the **Direction Control switch** and see if the lamp comes on in the other direction. If the normal direction of travel feature in the decoder loco is set for the opposite of what you were expecting, you will see the head lamp operating in what you expected to be the reverse direction and vice versa for the back up lamp. See your Decoder Manual for information about how to change the Normal Direction of Travel (NDOT).

6.0 Switch/Turnout control mode:

Switch Mode is most commonly used for sending commands to accessory decoders to control layout turnouts, and also for changing Option Switches (OpSw) on other LocoNet devices. Switch commands may also be used for controlling Digitrax compatible signal units. This section assumes that you have already installed and programmed turnouts and turnout decoders on your layout.

To change the position of a turnout:

1. Press the **S** or Switch key.
2. The last switch address you selected will be displayed in the **Switch/Info + Area** of the display shown in Figure 2. If 0001 was the last switch you used and was thrown, the display “Switch:0001=Thrown” will be shown.
3. Use the numeric keypad to enter the turnout address for the turnout or switch you want to change.
4. Press **A** key for “Thrown” action, and the **B** key for “Closed”, to change the turnout or switch accessory decoder position.
5. When you have finished your switch operations, press **X** to return HOME to normal operation mode.



NOTE: The “Closed” or “Thrown” shown in the display may or may not match the physical position of the turnout selected.

NOTE: When you are in switch control mode, the throttle knob and their direction keys will continue to drive the loco address running on the throttle, but the numeric keys are used for switch address selection and not function control.

7.0 Expanded Menu Features:

To reduce display clutter the DCS52 places expanded menu choices in a menu system accessed by the **≡** or MENU key. Pressing the **≡** key from the HOME screen will bring up the MAIN Menu A screen with several numeric key selection choices shown, such as Decoder programming, Option Switch (OpSw) setup, etc.

7.1 Programming Your Decoders:

Decoders are programmed when the command station sends programming information to them through the rails. Your DCS52 supports two types of programming: 1) **Programming on the Mainline** and 2) **Service Mode Programming** on an electrically isolated separate programming track.

Using **Service Mode**, the command station broadcasts programming information to all decoders on the isolated **program track** that is connected to the command station for programming but not powered for operation of the locomotive. This mode works with all DCC decoders. This is the most commonly used programming method for initial setup.

Your DCC Decoders have many different **configuration variables** (CVs for short) that let you set up a different set of characteristics for each decoder installed in a locomotive. When you want to change a loco's address, set up how its lights work, change its momentum characteristics, etc. you will program new CV values into the appropriate CVs to set it up just the way you want. *Please consult the manual provided by the manufacturer for how CV's are used and programming instructions for your decoder model.*

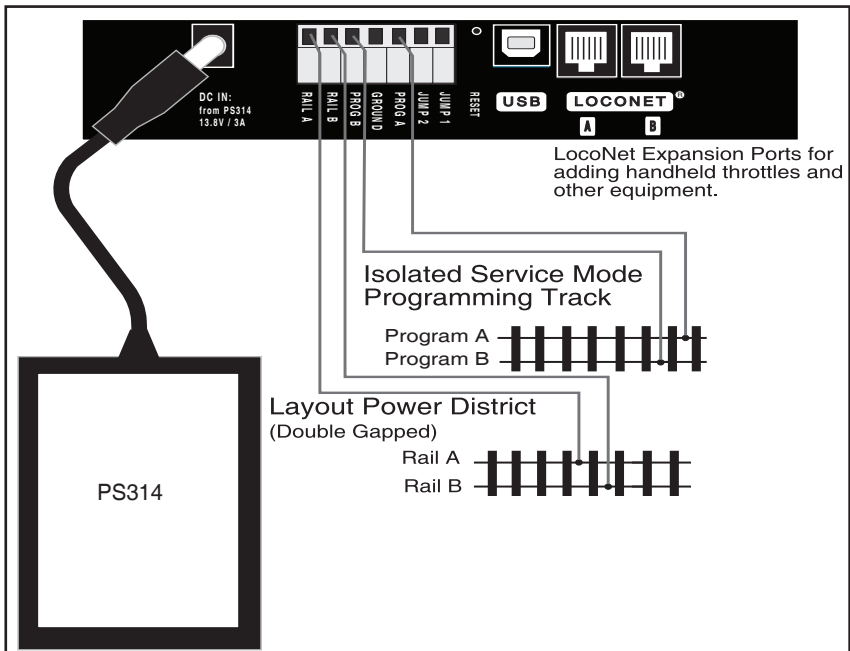


Figure 4: DCS52 Program track connections

Setting Up a Programming Track:







Your DCS52 has two sets of DCC outputs as shown in Figure 4. This means

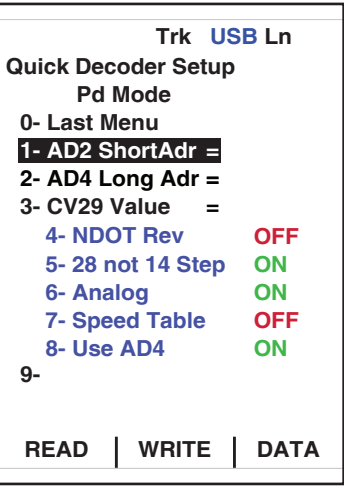
that you are able to program decoders using the program only DCC outputs while the layout is running on the other set of DCC rail outputs. When you hooked up your DCS52 to the layout, you use the **RAIL A & RAIL B** connections to the track. Now we will add the **PROG A & PROG B** outputs to set up an isolated programming track.

NOTE: The programming track is powered during programming only and cannot run locomotives. You will have to manually move your locomotive to the mainline or running track. Your programming track can be as simple as a spare piece of track (not connected to the layout), as shown in Figure 4.

7.1.1 Using Quick Decoder Setup:

Be sure that only the locomotive you want to program is on the programming track if you use Direct, Paged or Physical types of Service Mode CV programming.

1. To enter Quick Decoder Setup, press the  key. Main Menu A will display giving you a list of menu options. Select 1-Quick Decoder Setup by pressing the  key on the keypad.
2. This will put you in Quick Decoder Setup. This uses Service Mode type *Direct Programming on the program track*. In this mode you can change the; 2digit locomotive address AD2 or the 4 digit locomotive address AD4, and CV29 decoder configuration settings.
3. Once in the Quick decoder setup menu you can change AD2 and AD4. You must decide what address you want to use, for addresses 0000-0127 you use AD2. For addresses 0128-9983 you use AD4.
4. Press the  key “READ” to read the current data from your decoder on the programming track. This read step isn’t required but is useful in confirming current decoder settings, and that the decoder and program track are working.
5. To set AD2 press the  key on the keypad to highlight the AD2 line. Press the  key “DATA” so the numeric keys now setup AD2. Use the numeric keys to enter the address you want to use, press the  key “WRITE” to now write the AD2 address to the decoder. To make changes



to AD4 or CV29 press the **C** key to get DATA indication, then number keys will choose line numbers in the Quick Decoder Setup Menu. When showing DATA the number keys pick the line number you intend to edit, and when SELECT the number keys enter values.

6. To setup AD4 make sure you are showing DATA mode (the **C** key will read "DATA"). Press the **2** key on the keypad to highlight the AD4 line. Press the **C** key to select the line. Use the keypad to enter the AD4 address you want to use, press **B** "WRITE" to write the address to the decoder.

NOTE: "Use AD4" control bit in CV29 is set to OFF to enable AD2 and is set to ON to use AD4. The DCS52 will automatically set this value correctly when a change is made to AD2 or AD4. This option can also be manually set by following the following steps.

7. CV29 can also be setup in the Quick Decoder setup. CV29 also called the Configuration Register is a special CV that controls a number of characteristics for your decoder. CV29 bits control:
 - Normal Direction of Travel (NDOT)
 - Speed Step Control: Advanced Mode or Standard Mode
 - Analog Mode Conversion
 - Speed Tables
 - 2 or 4 digit addressing



See your decoder manual for a full listing of these features.

8. CV29 can be changed two ways in the Quick Decoder Setup. When the **C** key shows DATA simply press the number key corresponding to the feature you want to toggle off/on. For example pressing the **4** key will toggle NDOT off and on. The CV29 Value will automatically be calculated. Once you have all the settings configured the way you want simply press the **B** "WRITE" to write the configuration to the decoder.
9. Alternately, if you know the CV29 Value you want to program into the decoder you can select it and use the keypad to enter the number. CV29 values can be looked up in the Digitrax Decoder Manual available at www.digitrax.com, or:
<https://www.digitrax.com/news/2014/02/02/digitrax-decoder-manual-20/>
10. To manually enter the CV29 value. Press the **3** key on the keypad to highlight the CV29 Value line. Press the **C** key to show SELECT. Use the number keys to enter the value you want to use, then press **B** "WRITE" to write the value to the decoder.
11. After values are written OK to the decoder, the text "CV Task Completed OK" will scroll in the **Scrolling Help Text** line.
12. When changes are completed press the **X** key to exit programming.

7.2 Read and Write Configuration Variables:

There are many different CVs that have been defined to control the operating characteristics of your locomotives. The decoder manual and product Instruction Sheets have added information for CVs that are available in specific decoders, what they do and suggested values for each CV. Programming these CVs is straightforward:






1. Be sure that only the locomotive you want to program is on the programming track. If using Operations mode CV programming, the loco will need to be on the powered mainline RAILA/B, and you will only be able to write CV values).

2. For CV Programming, press the  key then the  key to start the CV Programmer.

3. You will now see CV Program Menu A. From this menu use the number key to select the method of CV programming you wish to use:

- 1-Po; Ops on Mainline
- 2-Pd; Direct on Prg Trk
- 3-Pg; Paged on Prg Trk
- 4-Ph; Physical on Prg Trk

Note: Direct programming ( key) is the Digitrax preferred Service Mode method

4. Once you have selected a programming method, it will now show the CV number of the CV you are changing. CV data is the value you are programming to that CV number.
5. To change the CV number you are editing press the  “CVNUM”, then use the number keys to enter the CV number you want to change.
6. Once you have the CV number entered press the  “CVDATA” key. The soft keys will change to “WRITE”, “READ”, and “BACK”. Press the  “READ” to read the current value of the CV number you have selected. Now the number keys enter the value you wish to program to the CV number you have selected. Press the  “WRITE” to save the data entered. The **Scrolling Help Text** line will read “Program Task OK” if it has successfully programmed the value.
7. Press  “BACK” to exit to the previous menu to select another CV num-

CV Program Menu A:

- 0- Last Menu
- 1- Po; Ops on Mainline
- 2- Pd; Direct on Prg Trk
- 3- Pg; Paged on Prg Trk
- 4- Ph; Physical on Prg Trk
- 5-
- 6-
- 7-
- 8-
- 9-

CVNUM | CVDATA | DONE

CV Program Menu A:

- 2- Pd; Direct on Prg Trk

CV Number: **0001**

CV data: **0001**

CVNUM | CVDATA | DONE

ber to change if you wish. When done editing CVs, press **C** “DONE” to return to normal operations.

7.2.1 Programming On The Mainline:

Operations (OPS) Mode Programming lets you program CVs in DCC locomotives equipped with extended packet format decoders while they are running on the mainline. A typical use for OPS mode programming would be to change the acceleration rate (CV03) or the deceleration rate (CV04) of your locomotives to simulate the weight and braking capability of the train to compensate for changing the number of cars or power units on a train.

Your DCS52 can use OPS Mode Programming to change the CV value in ANY CV, including 2 digit and 4 digit addresses, but some decoders may not accept changing these CVs in Operations mode.

How to use Operations Mode Programming:

1. Make sure the loco you want to program is on the powered up mainline connected to the Rail A and B terminals of your command station.
2. Select the Locomotive on your DCS52. Operations Mode programming will program the active address on your DCS52.
3. To enter the CV Programmer, press the **≡**. Main Menu A will display giving you a list of menu options. Select 2- CV Programmer by pressing the **2** key on the keypad.
4. You will be presented with CV Program Menu A. From this menu press **1** key to select Po; Ops on Mainline.
5. In addition to Po; Ops on Mainline, the display will also show Ops Prg ADR: followed by the throttle address that was active when you entered this mode. This is the decoder you will be programming on the mainline. This information will be listed above entries for CV number and CV data. CV number is the number of the CV you are changing. CV data is the value you are programming into the CV number.
6. To change the CV number you are editing press the **A** “CVNUM”, then use the keypad to enter the CV number you want to change.
7. Once you have the CV number selected press the **B** “CVDATA”. The soft keys will change to “WRITE”, “READ”, and “BACK”.
8. Use the keypad to enter the value you wish to program to the CV number you have selected. Press the **A** “WRITE” to save the data entered. The **Scrolling Help Text** line will read “Program Task OK” when it has successfully programmed the value.
9. If you have optional Operations mode read capability in the locomotive’s track section, press the **B** “READ” to read the current value of the CV number you have selected, see the note below.
10. Press **C** “BACK” to exit to the previous menu to select another CV to change if you wish. When done editing CVs, press **C** “DONE” or **X** key to return to normal operations.

NOTE: OPS Mode Programming on the mainline tracks and boosters on most systems is *write only*, so you can change a CV to a new value you want without knowing what it was in the decoder. OPS mode read back requires Digitrax compatible transponding decoders and transponding detectors on the layout in order to provide the two way communication required for OPS Mode read back.

7.2.2 Programming Error Messages:

When you are programming decoders, there are a few error messages you may encounter. The messages will scroll in the **Scrolling Help Text** line.

“Program Track Empty” means there is an open circuit on the Service Mode programming track and no current draw is detected by the programmer.

“No Decoder ACK Pulse!” means there is no acknowledgment from the decoder typically during decoder write operations.

There are many causes for these error messages but most can be solved by checking the following:

1. Be sure the programming track is connected properly to the command station.
2. Be sure a decoder is correctly installed in the locomotive with all motor and pick up connections made correctly. The motor must be connected to draw sufficient programming acknowledgement current.
3. Be sure the loco with decoder correctly installed is making electrical contact with the programming track and that it remains in contact with the programming track until programming is complete.
4. Be sure there is not too much current draw from lamps and other loads from the locomotive that is being programmed.
5. Be sure the decoder you are programming supports the programming mode you are using. Not all decoders support all programming modes.

7.2.3 Configuration Variable (CV) Programming Notes:

1. Check your decoder manufacturer’s manual for factory settings, recommended CV value ranges and for instructions on resetting the CVs to factory settings.
2. It is good practice to record the changes you make to the CV values for each decoder/locomotive combination. This will allow you to profile each locomotive type for programming similar locomotives.
3. Resetting your decoder CV values to factory settings by writing CV8 to a value of 8 can eliminate some problems caused by inadvertently changing a CV value. Writing CV8 to a value of 9 will do a decoder factory reset without changing the decoder 28-step speed table.

8.0 Adding Throttles: LocoNet & Jump Ports:

Sooner or later you will probably want to have other people to run trains with you. This means you'll have to add more throttles to your DCS52 system.

You can add compatible LocoNet throttles to your DCS52, or you can use one or two smooth DC power packs as jump throttles.

8.1 Adding LocoNet Throttles To Your DCS52:

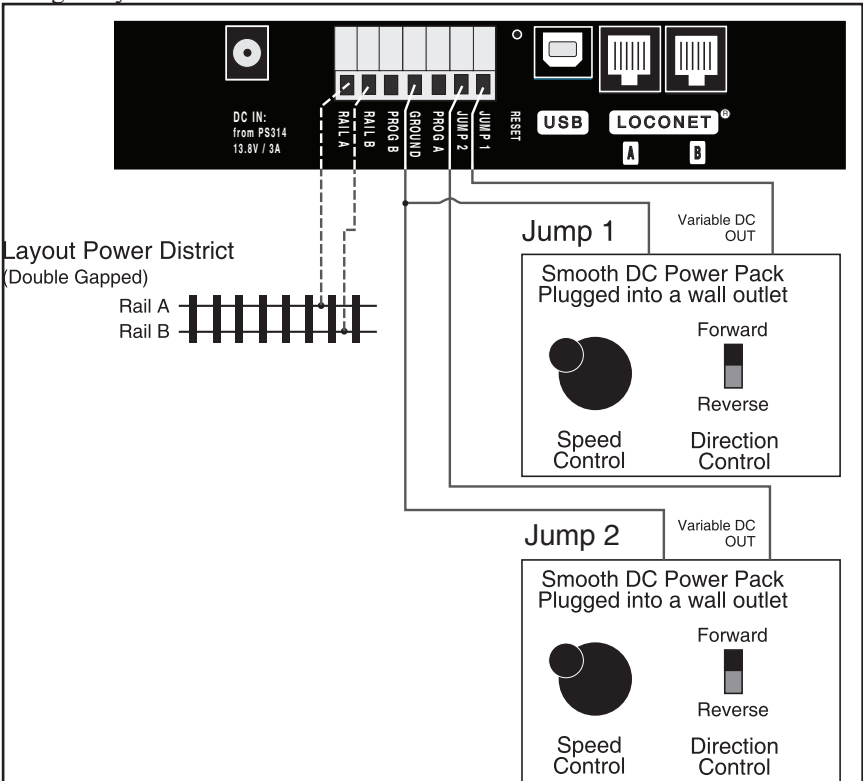
A compatible LocoNet throttle can be used with your DCS52. Simply plug this LocoNet throttle into either LocoNet port on the back of your DCS52 or into any LocoNet or Throttle Jack anywhere on your LocoNet system.

If you want to be able to plug in a throttle at a remote location, we recommend using a UP5 or UP7 Universal Panel.

8.2 JUMP Ports: Using a Smooth DC Power Pack As An Additional Throttle:

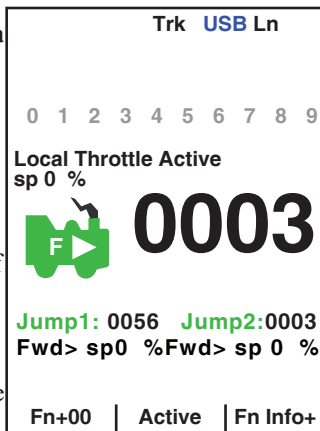
DCS52's Jump 1 & 2 ports can host two DC power packs as additional throttles that control locomotive speed and direction.

Begin with an operating DCS52 attached to your layout. Hook up one or two smooth DC power packs as shown in the following illustration. This configuration gives you three throttles to control three DCC loco addresses.





By default the jump ports on the DCS52 are *disabled* and must be enabled in Option Switch setup. See section 9.0 for option switch setup.

1. Ensure that OpSw 83=Closed so that Jump Ports are enabled on your DCS52. If Jump Ports are enabled there will be additional text in the **Jump Throttle Area** of the display. The Display will show “Jump1” and “Jump2” as well as speed and direction info for each throttle. The **B** key will show “Active”.
2. The Throttle Knob and Direction Lever on your DCS52 is called the **Local Throttle**.
3. The throttle and direction controls on each of the smooth DC power packs you are using will control the jump throttles are called respectively, **Jump1** and **Jump2**.
4. Press the **B** “Active” key to cycle from the **Local Throttle** to **Jump 1** to **Jump 2** and back to the **Local Throttle**. The top line of the **Loco Info Area** tells you which throttle info is being shown and which functions are being addressed by the DCS52 keyboard. The top line will read “LocalThrottle” [the DCS52’s knobs], “Jmp1 Throttle”, or “Jmp2 Throttle” to indicate which throttle you have selected for *function* control.
5. The functions for each throttle are controlled by the DCS52’s keypad. You will only be able to control the functions for the throttle that is listed in the top line of the **Active Throttle Info** line.
6. The throttle knobs and direction controls for all three throttles will continue to control the loco selected on them while you are working with function controls for the loco selected in the **Active Throttle Info** line. Speed, direction, and loco selected info for the other throttles will be shown in the **Jump Throttle Area**. Inactive throttles will be shown as gray in the **Jump Throttle Area**.
7. To access function controls for each throttle, simply press the **B** “Active” key, to cycle among the three throttles. The three throttle will cycle from the **Jump Throttle Area** to the **Loco Info Area** to show which is active for function and address control.
8. When the throttle’s name for which you want to control functions appears in the **Loco Info Area** on the display, use the DCS52’s keypad to change the functions or select a loco.




To run a locomotive address on Jump 1 or Jump 2:

1. Press the **B** key, until you have **Jump Port** throttle you want to run in the **Loco Info Area** of the display, if nothing is selected the last selected address will be show in all gray. If a loco is selected on the throttle you wish you use, you will need to reselect it, by pressing **⏏**, then the **✖** **Exit/Stop Key**.

2. To select a loco on a Jump port or to change the loco that is already there follow the same procedure you'd use to select a loco on the local throttle. Press , the address will begin flashing to let you know that the loco selection is pending. The display will now show the last loco that was selected on this throttle.
3. Use the numeric keypad to enter the loco address you want to run and press  again to select it on the selected jump port. The display will be steady and you will be able to control the speed and direction of the loco you selected using the DC power pack attached to the jump port.
4. When you have **Jump1 or Jump2** on the DCS52's **Loco Info Area** of the display, you can use the numeric keys to make changes to the function controls on the selected loco (turn on/off lights etc.). The smooth DC power pack being used as the for the **Jump1 or Jump2** throttle will continue to control speed and direction of the loco address selected. The DCS52's **Throttle Knob** and **Direction Control Lever** will continue to control the speed and direction of the loco selected on the **Local Throttle**. Speed, direction, and loco selected info for the other throttles will be shown in the **Jump Throttle Area**.

Your DCS52 can handle up to 20 LocoNet Throttles. If you need to run more than 20 throttles, you can move up to a Digitrax Command Station with additional capacity. You can continue to use your DCS52 as a throttle with a command station on your Digitrax LocoNet system.



9.0 Option setup:

To enter the Utility Menu, from the home screen press the  key. Main Menu A will display giving you a list of menu options.

9.1 Customizing DCS52-Option Switch Setup:

The Option Switch (OpSw) setup allows you to customize the operation of the DCS52. The DCS52's power up defaults are fine for most applications and the DCS52 will run "out of the box." We have included a few option switches below that you may want to change. For info visit www.digitrax.com.

9.1.1 Changing DCS52 Option Switches:

1. See the Option Switch Table below to decide which option switches you want to change.
2. Press  to get Main Menu A.
3. Select Option Switch Setup by pressing the  key.
4. Use the number keys to enter the number of the OpSw you wish to change.

USB Ln

Switch: 0001 = Thrown

Option Switches:

Thrown |
 Closed |
 SAVE

- Press **B** “Closed” or **A** “Thrown” **key** to set the option switch according to the desired change in the OpSw table. The changes will take immediate effect.
- Press **C** “SAVE” **key** to save the Option Switch settings. *If you do not save the settings the OpSw changes will not be saved when the unit is powered off.*

NOTE: Do not adjust Op Switches not listed

These option switches are reserved and changing them may cause problems with your system.

Set OpSw 40 = Closed to reset the DCS52 to factory defaults.

9.2 DCS52 Option Switch Tables:

The following tables provide a list of the DCS52 Option Switches and the impact of the change on the system.

Option Switch #	Effect on System operation	Factory Default
OpSw 36	Closed = Clears all mobile decoder info & consists	Thrown
OpSw 39	Closed = Clears all internal memory states	Thrown
OpSw 40	Closed = Clears all internal memory states and sets DCS52 to Factory Default	Thrown
OpSw 83	Thrown = DCS52’s Jump Mode Disabled	Thrown
	Closed = DCS52’s Jump Mode Enabled	
<i>DCS52 Option Switch Tables</i>		

10.0 Clearing the Locomotives with the Reset Button:



The Reset button can be found recessed on the back of the DCS52 between the USB connector and the track power connector. You will need a small pin to press the button. Pressing the reset button on the back of your unit will activate OpSw 36. All mobile decoder and consist info will be cleared.

11.0 Emergency Stop:

To stop everything on a powered layout immediately:

Press the **⏻** key to toggle off track power to the whole layout. This will stop everything on the layout, without knowing what locomotive is on which throttle, or the need to actively control the speed of any locomotive.

Do not turn Track Power off during a short circuit. Clear the short first.


To Emergency Stop the active knob controlling a locomotive: Press and hold down the  key for about one second and the speed will go to zero and the throttle will beep. The release the  key, or hold down for another about 1/2 second to also emergency stop a locomotive controlled on the other DCS52 knob.

12.0 Having Problems?:

Having Trouble Stopping? If the deceleration CV value you set for a particular loco is very large, this can make it look like the loco is not stopping on command because the deceleration CV value is causing the loco to take a long time to come to a stop. Emergency stop commands force an immediate stop with no deceleration delays.

If your throttle says “SLOT MAX...”. This means that the Zephyr Express system’s capacity to handle operating locos is full. The DCS52 can run up to 20 addresses at the same time. This includes all decoder/locomotive addresses in use on the system, whether they are being run individually or as part of an MU. If you have the “SLOT MAX: Release unused locomotives at zero speed to free space” message, be sure that all locos that are not running are released from throttles.

If you run into this problem often, you should consider a command station with more capacity. If you want to clear all of the loco addresses and consist information in the DCS52 and start over, set OpSw 36 to “Closed” or press the Reset button.

I’m totally lost! If your DCS52 display isn’t showing you what you expect based on the manual, press the  key to return to the Home Operations Screen. Then try the throttle task again. If you think you might have made an inadvertent change to one of the factory settings in either the decoder or the command station, try resetting everything to the factory settings and try the task again. See your decoder instructions for resetting the factory settings of the decoder. See Section 9.2 for using OpSW 40 for resetting the DCS52 to factory settings.

DCS52 Track power Shutdown

If the DCS52 track status led shows unlit briefly and then comes back on again, it is probably being run too close to its preset current limit of 3.0 Amps. In this case it may clip or mutilate some outgoing packets of information to keep the track current within acceptable limits. To solve this problem, reduce the track current load by running fewer locomotives, or set up additional power districts and adding more boosters to provide more power for the layout.

13.0 Connecting the DCS52 to a Computer:

The DCS52 can be connected to a computer using the USB connection on the rear. It provides similar functionality as a; PR4, DCS210+ and DCS240+, giving you access to Digitrax SoundLoader II and other computer utility programs. It can also be used as an interface for other compatible layout control software. For complete information visit www.digitrax.com.

13.1 Updating the DCS52 to the latest firmware:

Occasionally Digitrax makes updates and improvements to the operational code of its products. In order to update your DCS52 you will need to have the DigiIPLII utility installed on a computer and the latest firmware (.dmf) file. The DCS52 can be updated either directly using its USB connection, or via LocoNet using a PR4 or other computer to LocoNet interface. When updating via USB & LocoNet the display will dim and the keypad will flash green. For complete instructions and the latest firmware files visit www.digitrax.com/downloads/.

14.0 LocoNet: The Digitrax Difference!:

14.1 System Architecture:

System architecture is the biggest difference among layout control systems. System architecture is the way the components of a control system communicate among themselves. Digitrax LocoNet is a Peer to Peer local area network (LAN) designed specifically for model railroad operation. LocoNet wiring is cost effective, flexible and expandable to accommodate almost anything you want to do with your railroad today and in the future.



The system architecture used for communication within DCC and other control systems is not standardized. Therefore DCC compatibility encompasses only decoders, command stations and boosters but not throttles and other devices. In addition, devices that require feedback and other types of signals that are outside the domain of DCC, such as detection systems and transponding, are not standardized. LocoNet is a system design that incorporates DCC and other technologies to expand the capabilities of your layout. Your Digitrax system gives you the best of both worlds with a system that is compatible with today's DCC standards and also goes beyond those standards to deliver enhanced system performance and advanced features that are far beyond the scope of DCC. With Digitrax, you get Complete Train Control®!

14.2 LocoNet Expansion for Complete Train Control:

Your DCS52 is compatible with any other LocoNet device. The DCS52 offers you the ability customize your layout and add the features you want. Many different combinations of hardware will work, not all combinations will have all features available. With LocoNet some of the things you can add are:

- More boosters to give you more power to let you run more trains
- More throttles for more operators
- Different types of throttles

- More throttle jacks for convenient walk-around operation
- Radio capability for more freedom for operators
- Accessory decoders for turnout and accessory control
- Block Detection
- Transponding for Locomotive ID and Operations mode readback
- Signaling
- A personal computer to automate operations or for dispatching
- Automatic reversing with a booster or power manager

With LocoNet, you customize your layout to run the way you want it to run! Visit www.digitrax.com for a full product line and information on how to expand your system.

14.3 LocoNet Wiring Components:

Connecting the LocoNet components is easy to do. Digitrax LocoNet devices are connected using plug and play 6-conductor cables with RJ12, 6-pin connectors.

Making your own LocoNet Cables is simple and cost effective. However, we offer Digitrax Pre-Made Pre-Tested LocoNet Cables in a variety of lengths. Cable Maker kits and additional cabling supplies are also available. Visit www.digitrax.com for more details.

15.0 What's Next:

Now that you've learned about your Zephyr Express Set, it's time to learn more about the features and options offered by Digitrax Complete Train Control and the LocoNet system. The Zephyr Express is just the first step in what is available with the Digitrax Complete Train Control system. We welcome you to visit our website www.digitrax.com to learn more about additional features and products available for your system.

16.0 FCC/Regulatory Information:

Declaration of Conformity: “This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.”

“This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures: Reorient or relocate the receiving antenna. Increase the separation between the equipment and receiver. Connect the equipment into an outlet on a circuit different from that to which the receiver is connected. Consult the dealer or an experienced radio/TV technician for help.”

Manufacturer/Responsible Party: Digitrax Inc., 2443 transmitter Rd, Panama City, FL 32404, USA. (850) 872 9890. Model: RF28

This device complies with Industry Canada’s licence-exempt RSS’s. Operation is subject to the following two conditions: (1) This device may not cause interference; and (2) This device must accept any interference, including interference that may cause undesired operation of the device.”

“Le présent appareil est conforme aux CNR d’Industrie Canada applicables aux appareils radio exempts de licence. L’exploitation est autorisée aux deux conditions suivantes : 1) l’appareil ne doit pas produire de brouillage; 2) l’appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d’en compromettre le fonctionnement.”

Patents and Trade Secret

Digitrax uses material covered by US Patents 6,220,552, 6,275,739, 6,318,678, 6,367,742, 6,545,886, 6,513,763, 6,747,579, 6,536,716, 6,533,223, 6,533,224, 8,229,582, 8,292,237, 6,729,584 and others under non-exclusive licenses and/or assignments from Anthony J. Ireland. Licensing for material covered by these patents are available to other companies and individuals. Other patents covering technology used by Digitrax are pending. Measures to protect trade secret information are enforced.

Digitrax licenses the commercial use of LocoNet, which is trade secret tech-

nology, to other companies on a non-exclusive basis. LocoNet is copyrighted property.

17.0 Warranty and Repair Information:

Digitrax gives a one-year warranty against manufacturing defects for the DCS52.

Do not use an AC output transformer to power the DCS52, as it will cause distinct damage. Operating with any supply other than the provided PS314 will void the warranty.

All warranties on Digitrax products are limited to repair or replacement of Digitrax products at the discretion of Digitrax. Except to the extent expressly stated, there are no warranties, express or implied, including but not limited to any warranties of merchantability or fitness for a particular purpose.

For items that are no longer covered under warranty, whenever possible we will make repairs to units at fair and reasonable rates.

Please visit our latest warranty and repair page at www.digitrax.com/warranty for warranty and repair information and procedures.

Digitrax, Inc. reserves the right to make changes in design and specifications, and/or to make additions or improvements in its products without imposing any obligations upon itself to install these changes, additions or improvements on products previously manufactured.

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Need Help?

Digitrax Tech Support Team

Need Help?: helpdesk.digitrax.com

Digitrax Tech Support Depot 24/7/365

www.digitrax.com/support

Contains links to all instructions sheets and manuals, application notes, videos and tons of helpful information.

Digitrax Decoder Selector

www.digitrax.com/decoderselector

Helps you find which decoder will fit in a particular locomotive.

Digitrax CV Calculators

www.digitrax.com/support/cv

Calculate a CV value to program your locomotive,

Warranty and Repairs

www.digitrax.com/support/returns

Fill out the online form, print it out and return it with your item for repair