Cont. Summary of Configuration Variables

CV#	Function/Default Value		CV#	Function/Default Value	
173	Route 3 Cell 7 Address Adder	0	215	Route 6 Cell 4 Address Adder	0
174	Route 3 Cell 8 Address	0	216	Route 6 Cell 5 Address	0
175	Route 3 Cell 8 Address Adder	0	217	Route 6 Cell 5 Address Adder	0
176	Route 4 Cell 1 Address	0	218	Route 6 Cell 6 Address	0
177	Route 4 Cell 1 Address Adder	0	219	Route 6 Cell 6 Address Adder	0
178	Route 4 Cell 2 Address	0	220	Route 6 Cell 7 Address	0
179	Route 4 Cell 2 Address Adder	0	221	Route 6 Cell 7 Address Adder	0
180	Route 4 Cell 3 Address	0	222	Route 6 Cell 8 Address	0
181	Route 4 Cell 3 Address Adder	0	223	Route 6 Cell 8 Address Adder	0
182	Route 4 Cell 4 Address	0	224	Route 7 Cell 1 Address	0
183	Route 4 Cell 4 Address Adder	0	225	Route 7 Cell 1 Address Adder	0
184	Route 4 Cell 5 Address	0	226	Route 7 Cell 2 Address	0
185	Route 4 Cell 5 Address Adder	0	227	Route 7 Cell 2 Address Adder	0
186	Route 4 Cell 6 Address	0	228	Route 7 Cell 3 Address	0
187	Route 4 Cell 6 Address Adder	0	229	Route 7 Cell 3 Address Adder	0
188	Route 4 Cell 7 Address	0	230	Route 7 Cell 4 Address	0
189	Route 4 Cell 7 Address Adder	0	231	Route 7 Cell 4 Address Adder	0
190	Route 4 Cell 8 Address	0	232	Route 7 Cell 5 Address	0
191	Route 4 Cell 8 Address Adder	0	233	Route 7 Cell 5 Address Adder	0
192	Route 5 Cell 1 Address	0	234	Route 7 Cell 6 Address	0
193	Route 5 Cell 1 Address Adder	0	235	Route 7 Cell 6 Address Adder	0
194	Route 5 Cell 2 Address	0	236	Route 7 Cell 7 Address	0
195	Route 5 Cell 2 Address Adder	0	237	Route 7 Cell 7 Address Adder	0
196	Route 5 Cell 3 Address	0	238	Route 7 Cell 8 Address	0
197	Route 5 Cell 3 Address Adder	0	239	Route 7 Cell 8 Address Adder	0
198	Route 5 Cell 4 Address	0	240	Route 8 Cell 1 Address	0
199	Route 5 Cell 4 Address Adder	0	241	Route 8 Cell 1 Address Adder	0
200	Route 5 Cell 5 Address	0	242	Route 8 Cell 2 Address	0
201	Route 5 Cell 5 Address Adder	0	243	Route 8 Cell 2 Address Adder	0
202	Route 5 Cell 6 Address	0	244	Route 8 Cell 3 Address	0
203	Route 5 Cell 6 Address Adder	0	245	Route 8 Cell 3 Address Adder	0
204	Route 5 Cell 7 Address	0	246	Route 8 Cell 4 Address	0
205	Route 5 Cell 7 Address Adder	0	247	Route 8 Cell 4 Address Adder	0
206	Route 5 Cell 8 Address	0	248	Route 8 Cell 5 Address	0
207	Route 5 Cell 8 Address Adder	0	249	Route 8 Cell 5 Address Adder	0
208	Route 6 Cell 1 Address	0	250	Route 8 Cell 6 Address	0
209	Route 6 Cell 1 Address Adder	0	251	Route 8 Cell 6 Address Adder	0
210	Route 6 Cell 2 Address	0	252	Route 8 Cell 7 Address	0
211	Route 6 Cell 2 Address Adder	0	253	Route 8 Cell 7 Address Adder	0
212	Route 6 Cell 3 Address	0	254	Route 8 Cell 8 Address	0
213	Route 6 Cell 3 Address Adder	0	255	Route 8 Cell 8 Address Adder	0
214	Route 6 Cell 4 Address	0			

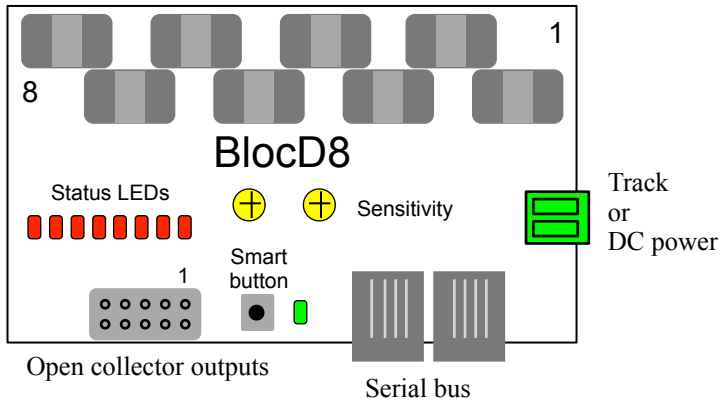
WARNING: This product contains a chemical known to the state of California to cause cancer, birth defects or other reproductive harm.

TEAM DIGITAL

Improving the world of DCC

BlocD8
High Density Block Detector

- > 8 block detectors
- > Electrical isolation from the track
- > No track voltage drop
- > LED indicator for each block
- > 8 outputs for external LEDs or relays
- > Featuring “Smart” Programming
- > LocoNet® compatible
- > Eight configurable routes



07.08.11 V1
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TEAM DIGITAL, LLC
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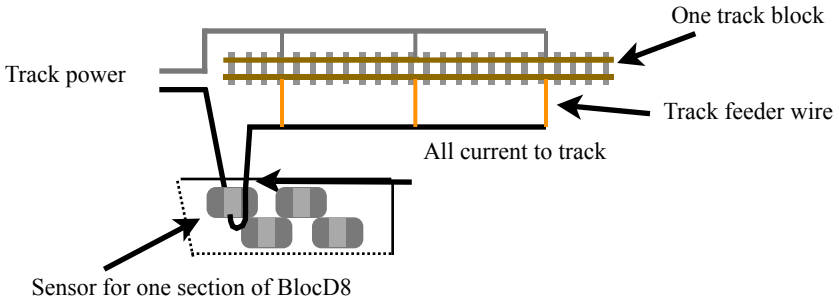
Kokomo IN 46902
www.teamdigital1.com

1 Operation

The BlocD8 is capable of sensing current in eight isolated sections of track called blocks. This provides for detecting the presence of locomotives or other rolling stock that draw current from the track. The status LEDs on the BlocD8 indicate when a block is occupied. For eternal block status indication the 10 pin connector and/or the serial bus can be used.

The track feed wire for one rail of the block is passed through one of the BlocD8 sensors before connecting the feeder to the track. All current flowing to a block must pass through a detector for proper operation. Do not power any type of accessory from the track feeder or there will be false block detection.



Locomotives, lighted cars and rolling stock with resistive wheels sets draw different amounts of current from the track. The BlocD8 has two potentiometers to adjust sensitivity. Turning the pot CCW will increase the sensitivity. **If the pot is turned fully CCW there may be false block detection**. Passing the feed wire through each sensor two times will increase the sensitivity and can improve reliable detection. See "TIP" in section 2.

Duty track can cause intermittent current flow. A built in filter keeps the BlocD8 from rapidly turning the status indicator off and on if the current flow is interrupted. This filter also keeps the status indicator on after a train leaves the block for a short period of time.

The BlocD8 includes a serial bus. If the bus is used the BlocD8 will send a message indicating the status of the related block. This message is available to any other device on the bus. The default address is 1 to 8 for the eight sensors respectively.

2 Getting Started

The BlocD8 does NOT require the serial bus to operate. If the serial bus is NOT used, no programming is required. Even if the serial bus is used programming may not be necessary if only one BlocD8 is used.

The following diagram shows the BlocD8 detecting three blocks in a single power district. Since each detector is completely isolated from the track and each other, no special provision is required for the BlocD8 to be used across several power districts.

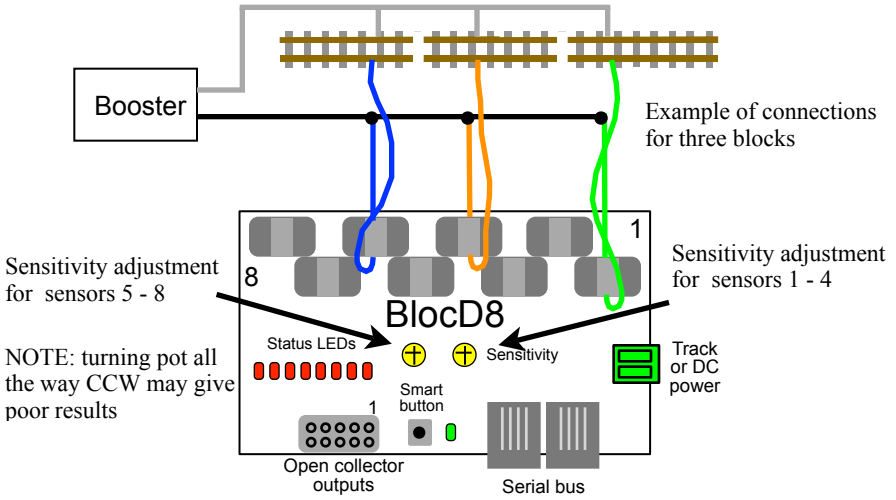
The wire that passes through the sensor should be stranded with a recommend maximum size of AWG 16. The stiffer the wire the more likely a sensor could be damaged. The wire sheathing should not be removed. In an actual application a terminal strip can be used to connect the wire that loops though the sensors to the other wires.

Cont. Summary of Configuration Variables

CV#	Function/Default Value		CV#	Function/Default Value	
87	reserved	-	130	Route 1 Cell 2 Address	0
88	reserved	-	131	Route 1 Cell 2 Address Adder	0
89	reserved	-	132	Route 1 Cell 3 Address	0
90	reserved	-	133	Route 1 Cell 3 Address Adder	0
91	reserved	-	134	Route 1 Cell 4 Address	0
92	reserved	-	135	Route 1 Cell 4 Address Adder	0
93	reserved	-	136	Route 1 Cell 5 Address	0
94	reserved	-	137	Route 1 Cell 5 Address Adder	0
95	reserved	-	138	Route 1 Cell 6 Address	0
96	reserved	-	139	Route 1 Cell 6 Address Adder	0
97	reserved	-	140	Route 1 Cell 7 Address	0
98	reserved	-	141	Route 1 Cell 7 Address Adder	0
99	reserved	-	142	Route 1 Cell 8 Address	0
100	reserved	-	143	Route 1 Cell 8 Address Adder	0
101	reserved	-	144	Route 2 Cell 1 Address	0
102	reserved	-	145	Route 2 Cell 1 Address Adder	0
103	reserved	-	146	Route 2 Cell 2 Address	0
104	reserved	-	147	Route 2 Cell 2 Address Adder	0
105	reserved	-	148	Route 2 Cell 3 Address	0
106	reserved	-	149	Route 2 Cell 3 Address Adder	0
107	reserved	-	150	Route 2 Cell 4 Address	0
108	reserved	-	151	Route 2 Cell 4 Address Adder	0
109	reserved	-	152	Route 2 Cell 5 Address	0
110	reserved	-	153	Route 2 Cell 5 Address Adder	0
111	reserved	-	154	Route 2 Cell 6 Address	0
112	Route 1 Top Address	0	155	Route 2 Cell 6 Address Adder	0
113	Route 1 Top Address Adder	0	156	Route 2 Cell 7 Address	0
114	Route 2 Top Address	0	157	Route 2 Cell 7 Address Adder	0
115	Route 2 Top Address Adder	0	158	Route 2 Cell 8 Address	0
116	Route 3 Top Address	0	159	Route 2 Cell 8 Address Adder	0
117	Route 3 Top Address Adder	0	160	Route 3 Cell 1 Address	0
118	Route 4 Top Address	0	161	Route 3 Cell 1 Address Adder	0
119	Route 4 Top Address Adder	0	162	Route 3 Cell 2 Address	0
120	Route 5 Top Address	0	163	Route 3 Cell 2 Address Adder	0
121	Route 5 Top Address Adder	0	164	Route 3 Cell 3 Address	0
122	Route 6 Top Address	0	165	Route 3 Cell 3 Address Adder	0
123	Route 6 Top Address Adder	0	166	Route 3 Cell 4 Address	0
124	Route 7 Top Address	0	167	Route 3 Cell 4 Address Adder	0
125	Route 7 Top Address Adder	0	168	Route 3 Cell 5 Address	0
126	Route 8 Top Address	0	169	Route 3 Cell 5 Address Adder	0
127	Route 8 Top Address Adder	0	170	Route 3 Cell 6 Address	0
128	Route 1 Cell 1 Address	0	171	Route 3 Cell 6 Address Adder	0
129	Route 1 Cell 1 Address Adder	0	172	Route 3 Cell 7 Address	0

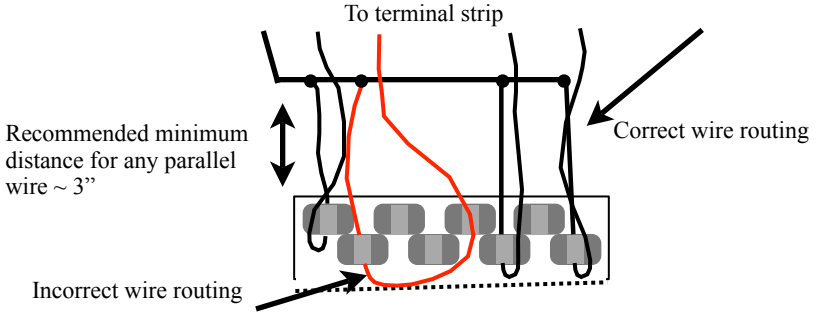
7 Summary of Configuration Variables

CV#	Function/Default Value		CV#	Function/Default Value	
1	Ops Mode Loco Address	1	44	Input 6 Secondary Address	0
2	reserved	-	45	Input 6 Sec Type & Address Adder	0
3	reserved	-	46	Input 7 Address	1
4	reserved	-	47	Input 7 Type & Address Adder	160
5	reserved	-	48	Input 7 Secondary Transition	0
6	reserved	-	49	Input 7 Secondary Address	0
7	Manufacturer Version No.	-	50	Input 7 Sec Type & Address Adder	0
8	Manufacturer ID	25	51	Input 8 Address	1
9	Decoder Configuration	0	52	Input 8 Type & Address Adder	160
10	Status Report	1	53	Input 8 Secondary Transition	0
11	Route send delay	0	54	Input 8 Secondary Address	0
12	reserved	-	55	Input 8 Sec Type & Address Adder	0
13	reserved	-	56	Input 1 delay x 256 ms	12
14	reserved	-	57	Input 2 delay x 256 ms	12
15	reserved	-	58	Input 3 delay x 256 ms	12
16	Input 1 Address	1	59	Input 4 delay x 256 ms	12
17	Input 1 Type & Address Adder	160	60	Input 5 delay x 256 ms	12
18	Input 1 Secondary Transition	0	61	Input 6 delay x 256 ms	12
19	Input 1 Secondary Address	0	62	Input 7 delay x 256 ms	12
20	Input 1 Sec Type & Address Adder	0	63	Input 8 delay x 256 ms	12
21	Input 2 Address	1	64	Output 1 Address	1
22	Input 2 Type & Address Adder	160	65	Output 1 Type & Address Adder	32
23	Input 2 Secondary Transition	0	66	reserved	-
24	Input 2 Secondary Address	0	67	Output 2 Address	2
25	Input 2 Sec Type & Address Adder	0	68	Output 2 Type & Address Adder	32
26	Input 3 Address	1	69	reserved	-
27	Input 3 Type & Address Adder	160	70	Output 3 Address	3
28	Input 3 Secondary Transition	0	71	Output 3 Type & Address Adder	32
29	Input 3 Secondary Address	0	72	reserved	-
30	Input 3 Sec Type & Address Adder	0	73	Output 4 Address	4
31	Input 4 Address	1	74	Output 4 Type & Address Adder	32
32	Input 4 Type & Address Adder	160	75	reserved	-
33	Input 4 Secondary Transition	0	76	Output 5 Address	5
34	Input 4 Secondary Address	0	77	Output 5 Type & Address Adder	32
35	Input 4 Sec Type & Address Adder	0	78	reserved	-
36	Input 5 Address	1	79	Output 6 Address	6
37	Input 5 Type & Address Adder	160	80	Output 6 Type & Address Adder	32
38	Input 5 Secondary Transition	0	81	reserved	-
39	Input 5 Secondary Address	0	82	Output 7 Address	7
40	Input 5 Sec Type & Address Adder	0	83	Output 7 Type & Address Adder	32
41	Input 6 Address	1	84	reserved	-
42	Input 6 Type & Address Adder	160	85	Output 8 Address	8
43	Input 6 Secondary Transition	0	86	Output 8 Type & Address Adder	32

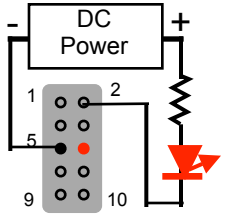


The current sensors used in the BlocD8 are sensitive to radiated noise that can occur when high current is flowing through a wire. For this reason the track power wires to and from the BlocD8 must be carefully routed. The following diagram shows correct and incorrect ways to route wires. Incorrect routing of wires will cause false block detection.Wires with DCC current should be routed away from the sensors in a perpendicular manner.

TIP: Passing the feed wire through each sensor two or three (maximum) times will increase the sensor output and allow the sensitivity pots to be adjusted (less sensitive) to make the over all sensitivity the same. This scheme will cause the BlocD8 to be less susceptible to false indications.



The BlocD8 can be powered from the track or 12 volt DC filtered power supply. See section 5.1 for more details.



If external LED status indicators are used a separate DC power supply is required as shown.

If more than one BlocD8 is used in a serial bus network then the addresses will have to changes so there is no duplicates. See section 3, “Smart” Programming. For very custom programming see section 4, Configuration Variables for various options.

3 "Smart" Programming

"Smart" programming is a term used to describe an easy way to program the BlocD8 addresses. The throttle is used to issue switch or accessory commands just like controlling switches (turnouts).

Programming is only require if the serial bus (called LocoNet® in a Digitrax system) is used and the addresses need to be changed from the factory settings.

To program in "Smart" mode, connect the BlocD8 power terminals to track power. Turn on power. Wait about 5 or 6 seconds.

Press the "Smart" program button and hold it down for approximately one second until LED1 starts to flash. Then release it. The BlocD8 is now ready to have the addresses changed.

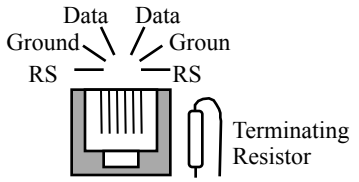
Using the throttle select the switch address or accessory number you want for the start of eight sequential addresses and issue a throw (reverse) command. The BlocD8 will reset and be ready to use with the new addresses.

To program other items start with Section 2 or 3 as show in the table below.

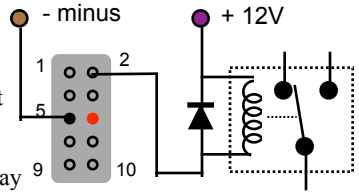
Smart Programming Summary			
#Flashes	**Description**	t	c
Section 1: To start - Press the "Smart" button until LED1 starts to flash			
1	Beginning address for 8 sequential addresses	accept	accept
Section 2: To start here - Press the "Smart" button until the green LED lights - Non-sequential addresses			
1	Input 1 address	accept	accept
2	Input 2 address	accept	accept
3	Input 3 address	accept	accept
4	Input 4 address	accept	accept
5	Input 5 address	accept	accept
6	Input 6 address	accept	accept
7	Input 7 address	accept	accept
8	Input 8 address	accept	accept
Section 3: To start here - Press the "Smart" button until the green LED lights and then turns off			
1	Value of CV9 - Decoder configuration	set	clear
2	Value of CV10 - Status report	set	clear

In steps 1 and 2 of section 3 a CV value is programmed instead of an address. Check the appropriate section in the manual to determine the CV value and use a switch address for that value.

Switch (Turnout) Terminology		
This manual	throw or t	close or c
Digitrax	throw or t	close or c
NCE	reverse or OFF or 2	normal or ON or 1
Lenz	-	+
MRC	OFF	ON



6 Applications



6.1 Relay drive

The BlocD8 outputs can drive a relay with a low current coil. The relay shown has a coil current of 30 mA and a contact rating of 10 amps (Digikey PB380-ND). A clamping diode (1N4148) is required when driving a relay to suppress the voltage spike. Example shows relay connected to output 2, pin 2.

6.2 Routes

The BlocD8 supports eight routes which requires the use of the serial bus. Each route has eight cells. There is one top or route execution address for each route. A route can be executed by a block sensor or switch type message. When using a block sensor message several turnouts can automatically be alined went a block becomes occupied.

Multiple routes can be executed be having more than one top address the same address. Also a route can execute from other routes (nested). This occurs when a route cell has an address that matches the top address of another route.
Warning: Do not create recursive loops. That is, do not have a route executing itself or two routes executing each other. Otherwise various unexplained problems will occur.
The following shows an example of five routes using four switches. The route CV values were determined using the information in sections 4.6 and 4.7.

Yard diagram

Route Example								
Route	1	2	3	4	5	6	7	**8**
Execute address	101 t	101 c	102 t	102 c	103 t			
Address 1	33 t	33 t	33 c	33 c	33 c			
Address 2	36 c	36 t	34 c	34 t	34 t			
Address 3				35 t	35 c			
Address 4								
Address 5								
Address 6								
Address 7								
Address 8								

4.9 Send Address Delay

This CV determines the time delay the BlocD8 waits before sending the next address in a route. Some switch machine drivers require a time delay between switch activation.
CV11 - Send address time delay, value 0 to 255.
The delay is the CV11 value x 0.25 seconds.

Delay between sending route addresses								
CV11 Value	0	1	2	4	8	12	16	**20**
Delay (sec)	0	0.25	0.5	1	2	3	4	5

4.10 Operations Mode Loco Address

This CV sets the operations mode program address. Program the BlocD8 just like you would a loco in ops mode. This is a loco 2 digit address and therefore must be unique among locomotive addresses.
CV1 - Ops mode address, a value of 1 to 127. Default is one (1).

5 Connections

5.1 Power

The BlocD8 can be powered from the track or a filtered DC voltage (12 VDC) power supply. Most analog 'Power Packs' will not work because they do not provide smooth (filtered) DC power. The BlocD8 power connector is non polarized and either terminal can be connected to plus or minus of the DC power supply. The power supply should be isolated from the system ground. That is, not connected to ground (booster ground, house wiring ground, etc). When multiple BlocD8 s are used they can be all connected to one power supply. The power supply must be able to supply the current for all the BlocD8s. The plus and minus of the power supply must be connected to the same power power terminal on each BlocD8.

5.2 Track Block Sensors

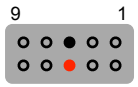
There is no electrical connection to the sensors. They are completely isolated. They have a hole in them to pass a wire that carries the track current. See diagram in section 1. Maximum of three passes. Maximum continuous current 3 amps.

5.3 Output Drive

The outputs are open collector and can drive LEDs and other low current devices such as low current relays. Maximum current is 50 mA.

5.4 10 PIN Output

Connections can be made using our terminal strip adapter (TSA) or our Connector Cable Kit. You can build your own by using flat ribbon cable Insulation Displacement (IDC) and connectors from Jameco. The mating connector is #138377. 10 ft of gray flat ribbon cable is #643794. 10 ft of multicolor flat ribbon cable is #639672. See the diagram on the front page for connector location.



5.5 Serial Bus

The BlocD8 has two RJ12 connectors for ease in making connections between devices. In a Digitrax system the data pins are LocoNet® and the RS pins are Rail Sync. RS is not used by the BlocD8. In a systems when more than 10 Team Digital devices with a serial bus are used the bus terminating resistor lead should be cut on any additional devices.

4 Configuration Variables (CVs)

The BlocD8 supports **Paged Mode Programming in Service Mode and Operations (Ops) Mode** programming. To program in paged mode, connect the Track Power terminals to the programming track. See diagram on the front page. When power is applied, LED 1 will come on and the green LED will flash when programming is successful. Some systems only apply power during actual programming, so LED1 will only be on during that time. The BlocD8 does not have built in feedback like a mobile decoder. Therefore, some systems may show a “no decoder on track” error or “can not read CV”. However it still is programmed. To enter normal operation, disconnect from the program track and connect as defined is section 5.

To program in ops mode hold down the Smart button just before power is turned on. When the green LED turns on release the button then wait until LED1 turns off. The BlocD8 is now in ops mode until power is turned off. The default ops address is one (1). **This is a loco address, so be careful when using this feature**. The BlocD8 can be programmed so it is always in ops mode by setting option 3 in CV9. **When using ops mode to change CV values, the BlocD8 does not recognize some new values until power is turned off and then back on.** Programming CV7 with a value of 1 will restart the BlocD8 so power need not be cycled when programming in ops mode. This is the same as turning power off and then back on.

To “reset” all CVs to factory defaults, after power is turned on enter “Smart” programming (section 3) and continue to hold the button down (at least 16 seconds) until both LEDs are alternately flashing. Also programming CV7 with a value of 170 in ops mode will “reset” all CV’s to the factory default value.

4.1 Output Address

These CVs determine the address of the outputs and how the output responds. Normally the output indicates the status of it’s respective block. It has the same address as it’s input. However, for special applications, each output can be controlled independent of the input by assigning a unique address.

Each output has two CVs, an address and a type which includes the address adder, that makes up the address. See section 7 for CV numbers. The type CV also contains the message type the output responds to. That is, the output will turn on when a command is received when this criteria is met. The following table shows the CV value to set the criteria. To calculate the type CV value add up the selected values.

Output			
Address CV	Value	Select	
Address	1 - 255		
Program this value into the appropriate address CV			
Type CV	Value	Select	
Close	64		Select
Throw	0		one
Message type, sensor	32		Select
Message type, feedback (actual switch position)	16		
Message type, switch (commanded switch position)	0		one
Address adder (see the address adder table for amount to add)	0 - 9		
Program this value into the appropriate type CV			

If an address greater than 255 is needed then use the address adder. The address adder value represents a number that is added to the address value to give the 'actual' address. The following table shows the CV value to use for the adder. To set addresses for output groups see "Smart" Programming for easier programming.

Address Adder										
CV Value	0	1	2	3	4	5	6	7	**8**	**9**
ADD	0	256	512	768	1024	1280	1536	1792	2048	2304

4.2 Output Control

See section 4.1 for special control of the outputs. This applies to both the status LEDs and open collector outputs as they are linked together.

4.3 Unoccupied Delay

These CVs determines how long the BlocD8 waits to show unoccupied after the block actually becomes unoccupied.
CV56 to 63 - Unoccupied delay. Value x 256 ms = delay. Default is 12 (~3 seconds).

4.4 Decoder Configuration

This CV determines the configuration which consist of only one option.
CV9 - Configuration.

Ops Mode Programming. Allows Operations mode (On the Main) programming using a Loco address to be enabled all the time. Programming this CV to a value of one (1) will set this option. See section 4.10.

4.5 Status Report

This CV provides options for sending the state of all inputs on the serial bus.
CV10 - Status report. Default is one (1).

Option 1 - Input state messages are sent on the serial bus at power on.
Option 2 - N/A
Option 3 - Input state messages are sent on the serial bus when a Digitrax interrogation command is received.

Status Report CV	Value	Select
No options	0	
Option 1 - Send input state at power on enabled (default)	1	
Option 2 - Not used	-	
Option 3 - Interrogate input state enabled	4	
Program this value into the status report CV		

4.6 Input Control

These CVs determine what action the inputs will have when a block state changes. Normally the action causes block status (sensor) messages to sent. However, for special applications, other actions can be programmed.

Unless you understand these special features, it is recommended that they not be changed. Use "Smart" programming to change addresses.

For each input there is a primary and secondary address and type. One or two messages can be sent on the serial bus when a block state changes. If an address greater than 255 is needed then use the address adder. The address adder value represents a number that is added to the address value to give the 'actual' address. See section 7 for CV numbers.

Input Control			
Address CV	Value	Select	
Address	1 - 255		
Program this value into the appropriate address CV			
Type CV	Value	Select	
Invert the normal state	128		Select
Normal state	0		one
Message type, sensor	32		Select
Message type, feedback (actual switch position)	16		
Message type, switch (commanded switch position)	0		one
Address adder (see the address adder table for amount to add)	0 - 9		
Program this value into the appropriate type CV			
Transition CV (Secondary message only)	Value	Select	
Send message on change transition	12		Select
Send message on hi to low transition	8		
Send message on low to hi transition	4		One
Disable message	0		
Program this value into the appropriate transition CV			

4.7 Route Execute Address

These CVs determine the top or execute address of a route. Each top address is completely independent of an input address. A route is executed when a message from any source on the serial bus including those from the BlocD8 or computers matches the top address, message type and state for that route. When a route is executed, turnout commands are sent for each cell containing an address.

Route Top (Execute) Address			
Address CV	Value	Select	
Address	1 - 255		
Program this value into the appropriate address CV			
Type CV	Value	Select	
Close	64		Select
Throw	0		one
Execution type, sensor	32		Select
Execution type, switch (turnout command)	0		one
Address adder (see the address adder table for amount to add)	0 - 9		
Program this value into the appropriate type CV			

4.8 Route Cell Address

These CVs determine the address in a route cell. When a route is executed all cell addresses are sent one at a time. For all addresses in a route to be sent there must be no empty cells between cells with addresses.

Route Cell Address			
Address CV	Value	Select	
Address	1 - 255		
Program this value into the appropriate address CV			
Type CV	Value	Select	
Close	64		Select
Throw	0		one
Address adder (see the address adder table for amount to add)	0 - 9		
Program this value into the appropriate type CV			