

Route Control System (RCS) CV Worksheet

Yard or Headblock Name: _____

Lock Address: (1)_____ (Lock = N, Unlock = R)

Switch #	Wire Color	RCS	Route	Route CV	Switch Position (N or R)								Don't Move	Don't Move
		Input	CV#	Value	SW8	SW7	SW6	SW5	SW4	SW3	SW2	SW1	CV Value	CV#
					(9)	(8)	(7)	(6)	(5)	(4)	(3)	(2)		
					D7	D6	D5	D4	D3	D2	D1	D0		
Route Name	Wire Color	CV Weight	Total N's		128	64	32	16	8	4	2	1	Total X's	
R1		A0	81	(N's)									(X's)	98
R2		A1	82	(N's)									(X's)	99
R3		A2	83	(N's)									(X's)	100
R4		A3	84	(N's)									(X's)	101
R5		A4	85	(N's)									(X's)	102
R6		A5	86	(N's)									(X's)	103
R7		B0	87	(N's)									(X's)	104
R8		B1	88	(N's)									(X's)	105
R9		C0	89	(N's)									(X's)	106
R10		C1	90	(N's)									(X's)	107
R11		C2	91	(N's)									(X's)	108
R12		C3	92	(N's)									(X's)	109
R13		C4	93	(N's)									(X's)	110
R14		C5	94	(N's)									(X's)	111
R15		C6	95	(N's)									(X's)	112
R16		C7	96	(N's)									(X's)	113
Lock (L/U)		E0 out	97	(L's)										
		+5/GND			Note: N=Normal, R=Reverse, X=Don't Move, L=Locked, U=Unlocked									

Instructions:

1. Enter on Worksheet header the Yard or Headblock Name and Lock Address. (Yard/Headblock Name is an optional entry.) Lock Address and Switch # address range is 0-2047.
2. Enter on Worksheet the Switch #s, Track Names, and Wire Colors. Leave unused switches and tracks blank. (Track Names and Wire Colors are optional entries.)
3. Enter on Worksheet the required Switch Position (N, R, or X) for each Track. (Ask yourself: when **A0** is pressed, what position should **SW1** go to? **SW2**? **SW3**? Etc.)
4. Enter on Worksheet an "L" in the Lock row for each switch you want the dispatcher to be able to lock (that is, disable local control). Enter a "U" otherwise. (See Note 2)
5. Calculate the CV values by adding the CV Weight (1,2,4,8,etc.) for each entry of N's and L's in the left CV Value column, for X's in the right CV Value column.
6. Place the Jumper on the RCS board in "Program" position. (Jumper 1-2)
7. Program* the Lock and Switch #s using your throttle in "Switch Mode" in the following order: Lock, SW1, SW2, ... (Select address, press either N or R to program)
8. Program* the CV#s and their corresponding CV Values with your throttle in "Ops Mode". Use a non-existent locomotive address number - but not zero.
9. Replace the Jumper on the RCS board to "Default" position. (Jumper 2-3)

Note:

1. The Lock Address and Switch #s should be unique on the layout. Exceptions may exist when multiple activations for the same address are desired.
2. The Lock Address and Switch #s must always be entered in order (Lock, SW1, SW2, etc.). CV Values may be entered in any order.
3. Outputs **D0 to D7** are switch outputs (**N=Hi=1, R=Lo=0**); **E0 Out** is a lock indicator output (Locked=Hi=1, Unlocked=Lo=0)
4. Inputs **A0 to C7** are pushbutton inputs and must be pulled low for local operation. **Lock Address** locks switches indicated by "L" in CV97 (**N-->Locks, R-->Unlocks**)
5. For some DCC systems: **N(Normal)=C(Closed), R(Reverse)=T(Thrown), "Switch Mode"="Select Acc", "Ops Mode"="Program On The Main"**
6. *Power LED will flash from **GREEN** to **RED** then back to **GREEN** when a program operation is accepted.