DCC Shortcuts Card

PRINT OUT AND KEEP NEAR DCC SYSTEM

Model Railroad Hobbyist magazine - Issue 4 bonus

Common CVs

CV 1: Short address
CV 2: Vstart
CV 3: Acceleration
CV 4: Deceleration
CV 5: Vhigh
CV 6: Vmid

CV 7: Mfg version
CV 8: Mfg ID (list below)

CV 9: Total PVM
CV10: BEMF Cutout
CV11: Packet timeout
CV13: Alternate mode F1-F8
CV14: Alternate mode F9-F12, FL

CV15-16: Decoder lock
CV17-18: Long address

CV19: Consist address
CV21: Consist active F1-F8
CV22: Consist active F9-12, FL
CV23: Acceleration adjust
CV24: Deceleration adjust

CV29: Decoder configuation

CV30: Error indicator

CV65: Kick start
CV66: Forward trim
CV67-94: Speed table
CV95: Reverse trim

CV105-106: User ID

Resetting decoder to factory settings (use programming track):

- Set CV 8 to 8: Digitrax, ESU, SoundTraxx Tsunami
- Set CV 8 to 33: Lenz
- Set CV 30 to 2: NCE, SoundTraxx DSD, TCS

Then remove loco from track and put back on track (or power cycle the layout).

LOCO DOESN'T MOVE?

- Put loco on programming track
- Set CV19 to zero and try again
- Still doesn't move? Then ...
- Set CV29 to 2 and set CV1 to value 1-99
- Assign throttle to value in CV1
- Still doesn't move? Then ...
- Try resetting decoder to factory settings
- Still doesn't move? Then ...
- Time to send the decoder in for repair

GETTING OPTIMUM SLOW SPEED PERFORMANCE

Lubricate and break in your loco. Do the following while the loco is still warm:
- Make sure speed step table in CV67-94 is linear with step 1 = 0 (CV67) and step 28 = 255 (CV94).
- Put the decoder in 28/128 mode and speed table on (50 in CV29). Set CV3, CV4, CV65 all to zero.
- Run the loco, then determine the slowest speed step at which it will keep running.
- Put the speed step value in Vstart (CV2).
- Set the decoder to speed table off (34 in CV29).
- Turn the throttle to speed step 1.
- Play with kick start to get the loco to move consistently at speed step 1. Tweak CV2 up if needed.
- Set CV 5 to desired top speed (128-255 common)
- Set CV 6 to desired mid-speed (40-64 common)
- Now adjust acceleration, deceleration, torque compensation, dithering, or BEMF as desired.

CV Bit Mapping

Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
128	64	32	16	8	4	2	1

CV 29

Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0

- Accessory decoder (**OFF**=mobile on=accessory)
- Reserved (not used)
- Addressing digits (off=2-digit **ON**=4-digit)
- Speed table (**OFF**=none on=use speed table)
- DC sensing (**OFF**=none on=run on DC)
- Speed steps (off=14 **ON**=28/128)
- Reverse direction (**OFF**=normal on=reverse)

Manufacturer IDs (CV 8)

1: CML Electronics Limited
2: Train Technology
11: NCE Corporation
12: Wangrow
13: Public Domain & Do-It-Yourself Decoders
14: PSI - Dynatrol
15: Ramfixx Technologies (Wangrow)
17: Advanced IC Engineering, Inc.
18: JMRI
19: AMW
20: T4T - Technology for Trains GmbH
21: Kreischer Datentechnik
22: KAM Industries
23: S Helper Service
24: MoBaTron.de
25: Team Digital, LLC
26: MBTronik - PiN GITmBH
27: MTH Electric Trains, Inc.
28: Heljan A/S
29: Mistral Train Models
30: Digsight
31: Brelec
32: Regal Way Co. Ltd

34: Aristo-Craft
35: Elektronik & Modell Produktion
36: DCCConcepts
37: NAC Services, Inc.
38: Broadway Limited Imports, LLC
39: Educational Computer, Inc (DCCdevices.com)
40: KATO Precision Models
41: Passmann Modellbahnzubehoer
42: Digirails
43: Ngineering
44: SPROG-DCC
45: ANE Model Co., LTD.
46: GFB Designs
47: Capecom
48: Hornby Hobbies Ltd.
49: Joka Electronic
50: N & Q Electronics
51: DCC Supplies, Ltd
52: Krois-Modell
53: Rautenhaus Digital
54: TCH Technology
62: Tams Elektronik GmbH

66: Railnet Solutions, LLC
68: MAWE Elektronik
71: New York Byano Limited
73: The Electric Railroad Company
85: Uhlenbrock Elektronik GmbH
87: RR-CirKits
95: Sanda Kan Industrial (1981) Ltd.
97: Doehler & Haas
99: Lenz Elektronik GmbH
101: Bachmann Trains
103: Nagasue System Design Office
105: Computer Dialysis France
109: Viessmann Modellspielwaren GmbH
111: Haber & Koenig Electronics GmbH
113: QS Industries
115: Dietz Modellbahntechnik
117: cT Elektronik
119: W. S. Ataras Engineering
123: Massoth Elektronik, GmbH
125: ProfiLok Modellbahntechnik GmbH
127: Atlas Model Railroad Co., Inc.
129: Digitrax
131: Trix Modelleisenbahn
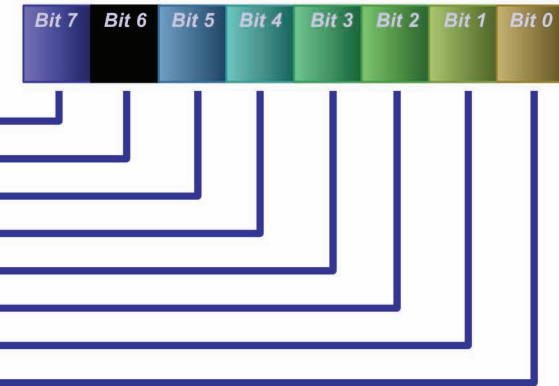
132: ZTC Controls Ltd.
133: Intelligent Command Control
135: CVP Products
139: RealRail Effects
141: Throttle-Up (Soundtraxx)
143: Model Rectifier Corp.
145: Zimo Elektronik
147: Umelec Ing. Buero
149: Rock Junction Controls
151: Electronic Solutions Ulm GmbH & Co KG
153: Train Control Systems
155: Gebr. Fleischmann GmbH & Co.
157: Kuehn Ing.
159: LGB (Ernst Paul Lehmann Patentwerk)
161: Modelleisenbahn GmbH (formerly Roco)
163: WP Railshops
165: Model Electronic Railway Group
170: AuroTrains
173: Arnold - Rivarossi
186: br /AWA Modellspielwaren GmbH & Co.
204: Con-Com GmBH
225: Elproma Electronics Poland
238: NMRA reserved