Decoder Comparison Matrix

March 2010

Scale	Mfg	Model Name	Wired	JST Header	Board 8-pin Plug	NMRA 8-pin Plug	NMRA 8-pin Plug	6-pin Plug	Max Motor Current	Peak Motor Current	# Functions	Special FX	Silent	Back EMF	Length	Width	Height	MSRP
Z/N/HO	Digitrax	DZ125	X						1	2	2	X	X	X	0.42	0.34	0.11	$24.99
Z/N/HO	Digitrax	DZ125PS				X			1	2	2	X	X	X	0.42	0.34	0.11	$26.99
Z	Digitrax	DZ123M0 Microtrains						X	1	2	2	X	X		2.16	0.58	0.14	$34.99
Z/N/HO	Digitrax	DZ125IN					X		1	2	2	X	X	X	0.42	0.34	0.11	$26.99
Z/N/HO	Digitrax	DZ143	X						1	1.5	4	X	X	X	.36″	.55″	.13″	$34.95
Z/N/HO	Digitrax	DZ143PS				X			1	1.5	4	X	X	X	.36″	.55″	.13″	$37.95
Z/N/HO	Digitrax	DN143IP			X	X			1	1.5	4	X	X	X	.36″	.55″	.13″	$29.99
N	Digitrax	DN143K2 (Kato RDC)	X						1	1.5	4	X	X		NA	NA	NA	$44.99
N/HO	Digitrax	DN123K3 Kato NW2						X	1	1.5	2	X	X	X	1.34	0.39	0.1	$29.99
N/HO	Digitrax	DN163	X						1.5	2	6	X	X	X				$34.95
N/HO	Digitrax	DN163PS				X			1.5	2	6	X	X	X				$37.99
N	Digitrax	DN163A0 (Atl 4 Axle)						X	1	1.5	6	X	X	X	.374″	3.0015″	0.16	$34.95
N	Digitrax	DN163A1 (Atl 6 Axle)						X	1	1.5	6	X	X	X	.374″	3.0015″	0.157″	$34.95
N	Digitrax	DN163A2(Atl 4 Axle recent)						X	1	1.5	6	X	X	X	.374″	3.0015″	0.157″	$34.95
N	Digitrax	DN163A3 (Atl MP15DC)						X	1	1.5	6	X	X	X	.374″	3.0015″	0.157″	$29.99
N	Digitrax	DN163I0						X	1	2	6	X	X	X	3.5″	.367″	0.135″	$34.99
N	Digitrax	DN163I1A						X	1.5	2	6	X	X	X	12mm	55mm	2.5mm	$34.99
N	Digitrax	DN163I1B						X	1.5	2	6	X	X	X	12mm	55mm	2.5mm	$34.99
N	Digitrax	DN163I1C						X	1.5	2	6	X	X	X	12mm	55mm	2.5mm	$34.99
N	Digitrax	DN163I2						X	1.5	2	6	X	X	X	12mm	55mm	2.5mm	$34.99
N	Digitrax	DN163K0A (Kato P42)						X	1	1.5	6	X	X	X	.5485″	2.2165″	.1015″	$34.99
N	Digitrax	DN163K0B (Kato F3 A+B)						X	1	1.5	6	X	X	X	.5485″	2.2165″	0.1	$34.95
N	Digitrax	DN163K0D Kato F40PH						X	1	1.5	6	X	X	X	.5485″	2.2165″	0.1	$35.99
N	Digitrax	DN163K1B (Kato AC44)						X	1	1.5	6	X	X	X	.426″	3.11″	.195″	$34.95
	Digitrax	DN163K1C Kato SD40-2						X	1	1.5	6	X	X	X	.426″	3.11″	.195″	$35.95
N	Digitrax	DN163K1D (Kato GG1)						X	1	1.5	6	X	X	X	.426″	3.11″	.195″	$35.95
N	Digitrax	DN163K2 (SD80/90)						X	1	1.5	6	X	X	X	3.11″	.426″	.195″	$34.99
N	Digitrax	DN163M0						X	1	1.5	6	X	X	X	2.158″	.58″	0.135″	$34.99
HO	Digitrax	DH123AT (Old Athearn)	X	X					1.5	2	2	X	X		.66″	1.2″	.25″	$24.99
HO	Digitrax	DH123D	X	X					1.5	2	2	X	X		.66″	1.2″	.25″	$19.95
HO	Digitrax	DH123P /PS		X		X			1.5	2	2	X	X		.66″	1.2″	.25″	$22.99
HO	Digitrax	DH163AT (Old Athearn)	X	X					1.5	2	6	X	X		.66″	1.2″	.25″	$34.99
HO	Digitrax	DH163D	X	X					1.5	2	6	X	X	X	.66″	1.2″	.25″	$29.99
HO	Digitrax	DH163IP			X			X	1.5	2	6	X	X	X	.67″	1.05″	.25″	$26.99
HO	Digitrax	DH163P /PS		X		X			1.5	2	6	X	X		.66″	1.2″	.25″	$32.99
HO	Digitrax	DH165 A0 Atlas/Ath						X	1.5	2	6	X	X	X	0.67	2.88	0.17	$26.99
HO	Digitrax	DH165 K0 Kato						X	1.5	2	6	X	X	X	0.67	2.88	0.17	$26.99
HO	Digitrax	DH165 K1A Kato SD40-2						X	1.5	2	6	X	X	X	0.67	2.88	0.17	$27.99
HO	Digitrax	DH165 L0 LL/Walthers			LL/Walther only			X	1.5	2	6	X	X	X	0.67	2.88	0.17	$26.99
HO	Digitrax	DH165Q1 QSI Non Sound						X	1.5	2	6	X	X	X				$26.99
G/0	Digitrax	DG383AR			X			X	3	5	8	X	X	X	1.45″	2.23″		$59.99
G/0	Digitrax	DG583AR			X			X	5	10	8	X	X	X	1.45″	2.23″		$64.99
G/0	Digitrax	DG583S	X						5	10	8	X	X	X	1.45″	2.23″		$66.99
HO	Lenz	GOLD+JST		X					1	1.8	4	X	X	X	0.91″	0.62″	0.2″	$39.95
HO	Lenz	GOLD+JST-W	X	X					1	1.8	4	X	X	X	0.91″	0.62″	0.2″	$44.95
HO	Lenz	GOLD+JST-MP		X		X			1	1.8	4	X	X	X	0.91″	0.62″	0.2″	$44.95
G/0	Lenz	GOLD +Maxi	X						3	5	8	X	X	X				$89.95
Z/N/HO	Lenz	GOLD +Mini-W	X						0.5	0.8	2	X	X	X	0.43″	0.35″	0.11″	$59.95
Z/N/HO	Lenz	GOLD +Mini-D	X				X		0.5	0.8	4	X	X	X	0.43″	0.35″	0.11″	$59.95
HO	Lenz	SILVER+MP				X		X	1	1.8	4	X	X	X	0.91	0.66	0.12	$36.95
HO	Lenz	SILVER+ DIRECT			X			X	1	1.8	4	X	X	X	0.91	0.66	0.12	$39.95

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Z/N/HO	Lenz	SILVER +Mini-W	X						0.5	0.8	2	X	X	X	0.43″	0.35″	0.11″	$44.95
HO	Lenz	STANDARD+MP				X		X	1	1.8	3	X	X	X	0.91	0.66	0.12	$24.95
HO	NCE	ATL-S4						X	1.3	2	2	X						$29.95
HO	NCE	Bach-DSL						X	1.3	2	4	X	X		1.9″	.63″	.12″	$19.95
HO	NCE	KRS-SR (Kato)			X			X	1.3	2	4	X	X		1.9″	.65″	.12″	$29.95
HO	NCE	SW9-SR (LL SW's)						X	1.3	2	2	X	X					$29.95
N	NCE	N12A1						X	1.3	2	2	X	X		2.65″	.37″	.12″	$29.95
N	NCE	N12A2						X	1.3	2	2	X	X					$29.95
N	NCE	N12A0						X	1.3	2	2	X	X		2.65″	.37″	.12″	$29.95
N	NCE	N12K0A (Kato PA,E8)						X	1.3	2	2	X	X					$29.95
N	NCE	N12K0B (Kato F unit)						X	1.3	2	2	X	X					$29.95
N	NCE	N12SR	X						1	1.25	2	X	X		.34″	.70″	.12″	$29.95
N	NCE	N12A0e						X	1	1.25	2	X	X		2.65″	.370″	.120″	$29.95
N	NCE	N12SRP				X			1	1.25	2	X	X		.34″	.70″	.12″	$35.95
N	NCE	N14IP			X			X	1.3	2	4	X	X		1.0″	.38″	.13″	$29.95
N	NCE	N14SR	X						1	1.25	4	X	X		1.15″	0.4″	0.12″	$29.95
N	NCE	N14SRP				X		X	1	1.25	4	X	X		1.15″	0.4″	0.12″	$35.95
N	NCE	NMP15 (Atl MP15)						X	1	1.25	2	X	X					$29.95
N	NCE	NAVO(Atl VO1000)						X	1	1.25	2	X	X					$29.95
Z/N/HO	NCE	Z14SR	X						1.3	2	4	X	X		0.57″	0.34″	.13″	$34.95
Z/N/HO	NCE	Z14SRP				X			1.3	2	4	X	X		0.57″	0.34″	.13″	$39.95
HO	NCE	D13SR	X						1.3	2	3	X	X		1.6″	.67″	.13″	$19.95
HO	NCE	D13SRP				X			1.3	2	3	X	X		1.6″	.67″	.13″	$25.95
HO	NCE	D13SRJ	X	X					1.3	2	4	X	X		1.68″	.63″	.25″	$19.95
HO	NCE	D14SRP			X				1.3	2	6	X	X		.90″	.63″	.13″	$29.95
HO	NCE	D15SR	X	X					1.3	2	5	X	X		1.08″	.63″	.27″	$29.95
HO	NCE	D15SRP	X	X				X	1.3	2	8	X	X		1″	0.63″	0.25″	$35.95
HO	NCE	DA-SR (Atl, ATH, Kato)						X	1.3	2	4	X	X					$24.95
HO	NCE	P2K-SR (LL/Walthers)						X	1.3	2	4	X	X					$29.95
O/S/G	NCE	D408SR	X	X					4	8	8	X	X		2.25″	1.20″	.35″	$69.95
O/S/G	NCE	D808SR (USA Trains)	X	X					8	30	8	X	X		3.75″	1.45″	.063″	$129.95
O	NCE	ATL-O (Atl O)						X	4	8	8	X	X					$49.95
N	TCS	AMD4						X	1	2	4	X	X	X	3.03″	.355″	.135″	$39.95
N	TCS	ASD4						X	1	2	4	X	X	X	2.73	0.35	0.13	$39.95
N	TCS	ALD4						X	1	2	4	X	X	X	3.04	..035	0.13	$39.95
N	TCS	MP15N						X	1	2	4	X	X	X	2.09	0.36	0.1	$39.95
N	TCS	VO1000						X	1	2	4	X	X	X	3.03	0.36	0.14	$39.95
N	TCS	K1D4						X	1	2	4	X	X	X	2.7	0.4		$39.95
N	TCS	K1D4-NC						X	1	2	4	X	X	X	2.7	0.4		$39.95
N	TCS	K2D4						X	1	2	4	X	X	X	2.7	0.4		$39.95
N	TCS	K2D3						X	1	2	3	X	X	X	2.86	0.68	0.15	$39.95
N	TCS	K0D8						X	1	2	8	X	X	X	2.53	0.54	0.16	$39.95
N	TCS	CN						X	1	2	2	X	X	X	0.83	0.36	0.1	$39.95
N	TCS	CN-GP						X	1	2	2	X	X	X	0.83	0.36	0.1	$39.95
N	TCS	EUN651					X		1	2	2	X	X	X	0.57	0.36		$34.95
Z/N/HO	TCS	M1	X						1	2	2	X	X	X	.565″	.35″	.125″	$34.95
Z/N/HO	TCS	M1P-MH				X			1	2	2	X	X	X	.565″	.35″	.125″	$39.95
Z/N/HO	TCS	M3	X						1	2	3	X	X	X	.570″	.355″	.132″	$37.60
Z/N/HO	TCS	M3P-MH		X		X		X	1	2	3	X	X	X	.570″	.355″	.132″	$39.60
Z/N/HO	TCS	M4	X						1	2	4	X	X	X	.570″	.355″	.132″	$41.80

Decoder Comparison Matrix

Scale	Mfg	Model Name	Wired	JST Header	Board 8-pin Plug	NMRA 8-pin Plug	NMRA 8-pin Plug	6-pin Plug	Max Motor Current	Peak Motor Current	# Functions	Special FX	Silent	Back EMF	Length	Width	Height	MSRP
Z/N/HO	TCS	M4P-MH		X		X		X	1	2	4	X	X	X	.570″	.355″	.132″	$46.80
Z/N/HO	TCS	MC2	X						1	2	2	X	X	X	.71″	.41″	.19″	$29.95
Z/N/HO	TCS	MC2P-MH		X(7)		X		X	1	2	2	X	X	X	.71″	.41″	.19″	$34.95
Z/N/HO	TCS	MC4	X						1	2	4	X	X	X	.71″	.41″	.19″	$34.95
Z/N/HO	TCS	MC4P-MH		X(7)		X		X	1	2	4	X	X	X	.71″	.41″	.19″	$39.95
HO	TCS	DP2X			X				1	2	2	X	X	X	0.46	0.69	0.14	$27.95
HO	TCS	DP2X-UK			X				1	2	2	X	X	X	0.46	0.69	0.14	$29.95
HO	TCS	DP5			X				1	2	5	X	X	X	0.64	0.51	0.04	$34.95
HO	TCS	A4X (Atl, Ath Dsl)						X	1.3	2	4	X	X	X	2.86″	.680″	.145″	$30.95
HO	TCS	A6X (Atls, Ath Dsl)						X	1.3	2	6	X	X	X	2.86	0.68	0.15	$35.95
HO	TCS	T1	X	X					1.3	2	2	X	X	X	1.0″	.68″	.25″	$24.95
HO	TCS	T1P-MH		X		X			1.3	2	2	X	X	X	1.0″	.68″	.25″	$29.95
HO	TCS	T4X	X	X					1.3	2	4	X	X	X	1.0″	.68″	.25″	$27.95
HO	TCS	T4XP-MH		X		X			1.3	2	4	X	X	X	1.0″	.68″	.25″	$32.95
HO	TCS	T6X	X	X					1.3	2	6	X	X	X	1.0″	.68″	.25″	$30.95
HO	TCS	T6XP-MH		X		X			1.3	2	6	X	X	X	1.0″	.68″	.25″	$35.95

Explanation of Decoder Terms

Scale
The Size of the locomotive the decoder is designed for, HO, Z, N, O/G/S.
Mfg
Name of the manufacture for the specific Decoder, Tony's, Digitrax, North Coast Eng, Lenz, TCS, Zimo.
Model Name (PnP Loco)
The manufacture's identification for the decoder. The parenthesis indicate Plug and Play locomotive application, see below.
Wired
Indicates wires from the decoder to be soldered to motor contacts, pick-up and lites.
JST Header
A small female straight 9 pin micro connector mounted to the decoder circuit board. This connector accepts various wire harnesses that have the JST male connector like the Digitrax DHWHP.
Internal Plug
Indicates the decoder has an 8 pin NMRA plug mounted directly on the board.
NMRA Plug
Indicates the decoder has NMRA plug either on the board itself or at the end of the wire harness.
PnP (Plug and Play)
Indicates the decoder can be installed by simple plug-in play steps.
Max Motor Current
Indicates the maximum motor amperage allowed for safe operation of the decoders. Range is from .5 Amps to 5+ Amps! The industry does not provide a standard for measuring max motor current and practices differ according to mfg.
Peak Motor Current
Indicates the maximum motor peak draw amperage before the decoder is "smoked". Range is from is from .75 Amps to 5+ Amps! The industry does not provide a standard for peak max motor current and practices differ according to mfg.
#Functions
Indicates the number of user programmable functions for the decoder. Functions can be used to operate smoke units, lights, and other on/off devices. Range is from 2 to 12 different functions.
Special FX
Indicates the number of special effects functions that can be programmed into the decoder. These features include, but are not limited to, ditch lites, mars lites, beacon lites and other flashy/prototypical features.
Standard Motor Drive (P)
Indicates the decoder is capable of powering a locomotive comparable to DC performance. Precision glide, (P), indicates smooth low speed performance.
Silent
Indicates the decoder is capable of running the locomotive's motor without the low speed hum associated with typical decoders.
Back EMF
Also known as Load Compensated & Speed Stabilization, Indicates the decoder is capable of running at a constant speed regardless of load. Provides great performance with constant speed on grades or hills and creates superior low speed control.
Length, Width, and Height
Provides the physical dimensions of the decoder in fractions of inches. Please note Zimo decoders are listed in millimeters. Range is from .1" to 2.5"
Factory Reset
Indicates the decoder has the capability of being returned to the programmed condition it was in upon leaving the factory.
NMRA Compliant
Indicates the decoder's mfg has made every attempt to insure the decoder meets all applicable DCC standards. Does not imply NMRA conforming.
NMRA Conformance
This decoder was submitted to the NMRA C&I Testing and has received an NMRA Conformance Warrant, indicating that the product completely adheres to all NMRA DCC Standards and applicable Recommended Practices.
Manufacturer warranty
A- Lenz Warranty
Year 1- "goof Proof" no cost
Year 2-3 $3.00 shipping and handling
Year 4+ service charge plus $3.00 S&H
B- Lenz rates their decoders on long term maximum continuous current for the model the decoder is installed in. The short term peak or stall current can be several times the maximum continuous current.
C: Dimming and blinking only
D: Dimming, blinking, and Ditch