

Digitrax Decoder Selection Guide

- Choosing the “right” decoder for your installation is fairly simple.
- Check the recommendations below to see if your loco is listed.
- Decide which features you want to use in your installation.
- If your loco is not listed here, check with your Digitrax dealer for a recommendation.
- Look inside the loco to determine how much room you have and whether there is a plug ‘n play interface available.
- Test the stall current of the loco to be sure the decoder is rated for enough current to run the loco reliably.

Remember, all Digitrax decoders are rated for at least 1 amp so all decoders will work in HO scale locos no matter what size they are!

Z Scale -	Works in Z, N & HO
N Scale -	Works in Z, N & HO
HO Scale -	Works in HO
S Scale -	Works in O, S & G
O Scale -	Works in O, S & G
G Scale -	Works in O, S & G

Z scale Decoder Selection Chart:

Manufacturer	Locomotive Model	Recommended Digitrax Decoder
Micro Trains	Z Scale Diesel Locomotives	DZ143, DZ123

N scale Decoder Selection Chart:

Manufacturer	Locomotive Model	Recommended Digitrax Decoder
Arnold	S-2	DZ143, DZ123
Atlas	2-6-0	DZ143, DZ123
	2 Truck Shay	DZ143, DZ123
	Baldwin V0-1000	DZ143, DZ123
	B23-7	DN163A0
	B30-7, B36-7	DN163A0
	C-628	DN163A0
	Dash 8-40B	DN163A0
	Dash 8-32BWH	DN163A0
	GP-7 Pre 1995	DZ143 , DZ123 with frame modification
	GP30 & GP35	DN163A0
	GP38	DN163A0
	GP40, GP40-2	DN163A0
	H 15-44, H16-44	DN163A0
	RS-1	DZ143 , DZ123 (Frame Modification Required)
	RS-3	DZ143 , DZ123
	SD-7	DN163A0
	SD-9	DN163A0
	SD-24	DN163A0
	SD35	DN163A0
	SD50	DN163A1
	SD60, SD60M & SD50	DN163A1
	Trainmaster	DN163A0
	U25B	DN163A0
Athearn	P59PHI	DZ143, DZ123
Bachmann	Doodlebug	DZ143, DZ123
	2-8-0	DZ143, DZ123
	F7 A&B	DZ143, DZ123
ConCor	Northern 4-8-4	DZ143PS, DZ123PS
Kato	C44-9W	DN163K1A with shell modification or DN144K
	E-8	DN163K0A
	F3 A&B	DN163K0B
	Mikado	DZ143, DZ123 (Tender Install with Frame Mod)
	PA-1	DN163K0A
	P42 Genesis	DN163K0A
	RDC	DN122K2

	RS2 & RSC2	DN163K2
	SD40, SD40-2	DN163K1A or DN149K2xx
	SD70 MAC	DN163K1A
	SD80/90MAC Series	DN163K2
ER Models	Sharknose	DN141E2
Intermountain	FT	DZ143 with frame modification, (Plug 'N Play coming soon!)
	SD40T	DN163I0
LifeLike	Alco S-1 Switcher	DZ143, DZ123
	2-8-8-2 Mallet	DZ143, DZ123 Mount in cab, motor is isolated
	FA1/FB1	DZ143, DZ123
	F7	DZ143, DZ123
	F40PH	DZ143, DZ123
	GP18	DZ143, DZ123
	GP20	DZ143, DZ123
	GP38-2	DZ143, DZ123
	SD7	DZ143, DZ123
	SW1200	DZ143, DZ123
Micro Trains	FT	DN163M0xx
Roundhouse-MDC	2-8-0	DZ143, DZ123

Steam Locomotives

Most N scale Steam	DZ143, DZ123 (Tender Install)
Other N scale Locos	DZ143, DZ123 with Replacement Frame* or Frame Modification

*For N scale applications there are replacement frames available for many popular locomotives. These frames use DN121, DN142 or DZ143 decoders. Click [here](#) for more information about replacement frames.

For N scale applications most modern high efficiency can motors draw less than 1/2 amp when running and less than 3/4 amp when stalled at 12 V DC. However, we have found that many Kato N-scale locos actually draw more than this when properly tested. Therefore, we recommend the DN121, DN142, or DZ143 or other 1 amp decoder with these locos. Using decoders that are rated for at least 1 amp in N scale operations has proven to be the most reliable solution over the long term.

HO Scale Selection Chart:

Manufacturer	Loco Model	Premium Decoder Recommended	Basic Decoder Recommended
Athearn	Genesis F3-7	DH163A0	DH123D
	Genesis 2-8-2	DH163D	DH123D
	Genesis 4-6-2	DH163D	DH123D
	Genesis SD70-75	DH163A0, DH163D	DH123D
	GP60M RTR Plus and all other RTR Plus	DH163D	DH123D
	Regular Diesels	DH163AT	DH123AT
Atlas	AEM7	DZ143	DZ123
	B40-8 (Decoder Upgrade)	DH163A0	
	C30-7	DH163IP	DH123P, DZ123PS

	C424, C425	DH163K0, DH163IP,	DH123PS, DZ123PS
	DASH 8-40B	DH163PS	DH123PS
	DASH 8-40C	DH163PS	DH123PS
	GP7 (Pre 2003)	DH163A0, DH163D	DH123D
	GP7 (2003 and later)	DH163IP, DH163PS	DH123PS, DZ123PS
	GP38 (Decoder Upgrade)	DH163A0	
	GP40 (Decoder Upgrade)	DH163A0	
	H-15-44	DH163PS	DH123PS
	RS1 & RS3	DH163A0, DH163K0	
	RS3	DH163A0, DH163K0	
	RSD4/5	DH163A0, DH163K0	
	RS-11	DH163A0, DH163K0	DH123D
	RSD4, RSD5, RSD12	DH163A0, DH163K0	
	S-2, S-4	DZ143	DZ123
	SD24	DH163PS	DH123PS
	SD35 (Decoder Upgrade)	DH163A0	
	U23B	DH163IP	DH123P, DZ123PS
	U33C & U36C	DH163A0, DH163P	DH123P, DZ123PS
Bachmann	Spectrum 2-10-0	DH163IP	DH123P, DZ123PS
	Spectrum 3 Truck Shay	DZ143	DZ123
	Spectrum Steam Engines	DZ143	DZ123
	4-6-0	DH163PS	DH123PS
	GE E-33 Electric	DH163PS	DH123PS
	Hogwart's Express	DH163D	DH123D
	Thomas the Tank	DH163D	DH123D
ER Models	Baldwin Sharknose	DH163D	DH123D
	FP7	DH163D	DH123D
Bowser locos with Pittman Motors		DH163D	DH123D
HAG Locos		HAG501 factory installed or DH140Uxx Retrofit	
InterMountain	F3-F9	DZ143PS	DZ123PS
	F7	DH163IP	
Kato	C44-9W	DH163IP	DZ123PS
	Dash 8	DH163IP	
	C424 C1425 ATAS	DH163K0	
	GP35	DH163K0	DH123D
	NW-2	DH163D with Replacement Frame, DZ143	DH123D
	RS2/RSC-2	DH163IP or DZ143PS	DZ123PS
	SD40-2	DH163K0, DN142, DH163D, DH163IP w/frame mod	DH123D
	SD45	DH163K0, DH163IP	
	SD70	DH163IP	
	SD80/90 Kato Note RE: DCC Installation	DH163P	DH123P
LifeLike	0-6-0	DH163L0	DH123D
	0-8-0	DH163L0	DH123D
	2-8-4	DH163L0	DH123D
	2-8-8-2	DH163IP	DZ123PS

	BL2	DH163D	DH123D
	BUDD Units (RDC)	DH163D	DH123D
	DL109	DH163D	DH123D
	FA1/FB1	DH163P	DH123P, DH123D
	FA2/FB2	DH163D	DH123D
	E6/E7 (Proto 2000) <small>Mars Light Installation Note</small>	DH163P	DH123P
	E8/E9 (Proto 2000) App Note	DH163D	DH123D
	F3A/B (Proto 1000)	DH163D	DH123D
	GP7 (Proto 2000)	DH163L0	DH123D
	GP9 (Proto 2000)	DH163L0	DH123D
	GP18	DH163L0	DH123D
	GP20	DH163L0	DH123D
	GP30	DH163L0	DH123D
	GP38-2	DH163L0	DH123D
	GP60 (Proto 2000) See app note	DH163L0	DH123D
	PA/PB	DH163D	DH123P, DH123D
	P1K C Liners	DH163D	DH123D
	P1K Erie Builts	DH163D	DH123D
	S-1 See application note	DH163PS	DH123PS or DZ123PS
	S-3 Alco (Proto 2000)	DZ143PS	DZ123PS (Change Bulbs to 12V)
	SD7	DH163D	DH123D
	SD9	DH163IP	DH123D
	SD45	DH163L0	DH123D
	SD60/SD60M See app note	DH163L0	DH123D
	SW8/900/600	DZ143	DZ123
	Life Like Diesels with DCC Medium Socket	DH163PS	DH123PS or DZ123PS
Marklin Trinary AC Digital		Any decoder & bridge rectifier (see pp 29-30 in the Digitrax Big Book of DCC for instructions)	
MDC	Four Truck Shay	DZ143PS	DZ123PS
Rivarossi	Allegheny Heisler	DH163PS DZ143PS	DH123PS or DZ123PS
Stewart	Baldwin AS16 (Kato drive)	DH163K0, DH163D	DH123D
	C628	DH163D, DH163P	DH123P, DH123D
	C630	DH163D, DH163P	DH123P, DH123D
	F3-7, F9 A&B	DH163K0	DH123D
	FT	DH163P	DH123P
	U25B	DZ143PS	DZ123PS
	U25C (Kato drive)	DH163K0, DH142	DH123D
	Baldwin AS16 (Kato drive)	DH163K0, DH142	DH123D
	VO1000	DZ143PS	DZ123PS
Trix	Big Boy	DH163PS	DH123PS or DZ123PS
Walthers	All Locos	DH163D, DZ143	DH123D
HO Locos with DCC Medium Socket		DH163P	DH123P

Most HO Locos Not Listed Above

DH163D

DH123D

For HO applications, most modern high efficiency can motors draw less than 1/2 amp when running and less than 1 amp when stalled at 12V DC. These motors are suitable for use with 1.5 amp (DH163, DH121, DH150 plug n'play decoders), or 1 amp (DN142, DN121, or DZ143) decoders.

Note: Some older HO motor designs (older Athearn open frame motors, Pittman motors, etc.) may exceed the 1.0 amp limit and you may need to use a 1.5 amp. 2.0 amp or other higher current decoder such as the 3.0 amp DG380L in these applications.

G Scale Selection Chart:

Manufacturer	Locomotive Model	Recommended Digitrax Decoder
LGB	All	DG583S
Aristocraft	Alco FA-1	DG383AR (Remove Pin #7 before installation)
	RS-3 RDC SD45	DG383AR
	RDC	DG383AR
	Diesels with Single Motor/Truck	DG383AR
	SD45	DG583AR
	Diesels with Dual Motors/Truck	DG583AR
Bachmann		DG583S
Heartland		DG583S
Others not listed		DG583S

O & S Scale & Hi Rail Selection Chart:

Manufacturer/Loco Model	Digitrax Decoder Recommended
Most O Scale**	DG583S
Most S Scale **	DG583S