Specification

Item Number 36-552

E-Z COMMAND
Two Function Decoder

Technical Data

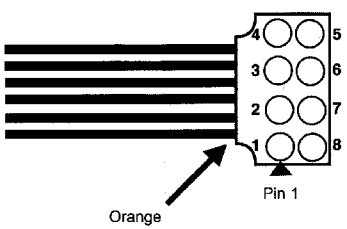
Normal operation:	
current carrying capacity	
of the decoder in sum	1 A
motor output	1 A
function output	100 mA
addresses	1 - 9999
speed steps	14, 27, 28, 128
dimensions	25 x 16 x 5mm

Features

- Acceleration and deceleration separately adjustable
- Programming on main
- Multi unit capability (advanced consisting)
- 2 function output
- Operation on standard DC systems (analogue operation) possible. This feature can be disabled.
- With NEM652/NMRA plug

The pin allocations of the NEM652 plug:

PIN	Meaning	Wire Colour
1	Motor terminal 1	Orange
2	Function Output B (rear headlight)	Yellow
4	Left rail pickup	Black
5	Motor Terminal 2	Grey
6	Function output A (front headlight)	White
7	Function positive common	Blue
8	Right rail pickup	Red



Getting Started

The Bachmann ***E-Z COMMAND*** locomotive decoders can be used with standard digital control with an NMRA conformance seal. If in doubt, ask the system suppliers.

Note the maximum current-carrying capacity of the outputs must not be exceeded. Exceeding this will destroy the decoder. The parts of the locomotive decoder must not touch the metal components of the chassis or the body of the locomotive. This could cause a short-circuit within the locomotive decoder which might destroy it.

Locomotives equipped with ***E-Z COMMAND*** decoders must not be run using powered overhead line (catenary) either on conventional DC control or DCC control This could subject the locomotive to double the voltage and this would destroy the decoder.

Before installing a ***E-Z COMMAND*** Decoder, check the loco in normal DC operation to make sure that it works as it should before modifying the locomotive.
Replace worn wheel contacts, motor brushes and blown bulbs. Only a locomotive that is mechanically fine will function properly with a locomotive decoder.

Installation of the 36-552

These decoders come with a NEM652 / NMRA medium plug. To install the decoder simply remove the dummy socket in your locomotive and install the decoder plug. To ensure the headlights work properly you must align the plug properly. Pin 1 of the plug connects to the orange wire. Ensure this is aligned to Pin 1 of the locomotive. If the plug is installed backwards the lights will not work.
When installing or removing the plug be carefull that the pins do not become bent or broken.

Follow the ***E-Z COMMAND*** instructions to change the decoder address.
The decoder has advanced programmable functions using suitable equipment, but it will operate as supplied. Do not worry if you do not understand all of the functions of the decoder. For advice, please call the Service Department on 0870 751 9990 or e-mail via *www.bachmann.co.uk*

PLEASE NOTE that except for allocating address and direction, ***E-Z COMMAND*** is unable to program decoder CVs

Programming the decoder
(Not applicable to *E-Z COMMAND*)

The locomotive address, acceleration and deceleration delay, and all other features of the locomotive decoder can be changed as often as desired by reprogramming. The features are "stored" permanently in special locations even when the operational voltage is switched off. These locations are called "configuration variables" or simply CV. The configuration of the values is done electronically, which means that it is not necessary to open the locomotive again after the decoder has been installed.
On delivery the decoder is programmed for operating with the basic address 03, 28 running notches and an internal speedline. The decoder can be used immediately on purchase with these basic configurations. All configurations can, of course, be changed.

Testing the installation on equipment other than Bachmann *E-Z COMMAND*.

Place the locomotive on the programming track (without its housing) and read the address. Ex-works, the decoder is programmed to the address 03. If you have connected the decoder correctly thus far you should now be able to read the address. If you are not able to do so it is possible that you have made a mistake when connecting the cables. Do not subject the loco to full running track power until you obtain the correct "03" address read-out. Check the cable connections and change them as required. You should now be able to send your locomotive on its first test run on your layout.

GUARANTEE

Bachmann Europe Plc will remedy any defect or malfunction occurring on this product during a six month guarantee period from date of purchase.This guarantee does not extend to defects or malfunctions caused by damage or unreasonable use.

If a claim is made within the six month guarantee period, in the first instance, return the product to your dealer. In the event of your problem not being satisfactorily resolved, return the product, with a brief explanatory note describing the fault(s), to the Service Department at Bachmann Europe Plc with proof of purchase

This guarantee is quoted in addition to all legal rights of the purchaser under the sale of goods act, and shall expire six months from date of purchase. Under no circumstances shall Bachmann Europe Plc, be responsible for any consequential damages arising in regard to any product.

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List of supported CVs

Bits are counted beginning with '1'

CV	Min-Max	CV Definition	Deft
1	1-99	Locomotive address	3
2	0-31	Starting voltage	10
3	1-255	Acceleration momentum	1
4	1-255	Deceleration momentum	1
7	-	Version number	46
8	-	Manufacturer ID	101
17		Extended address, high byte	0
18		Extended address, low byte	0
19	1-99	Multi unit (consist) address	0

CV29 - Default value decimal 6
Decoder configuration byte 1

Bit No.	8	7	6	5	4	3	2	1
Default	0	0	0	0	0	1	1	0
Bit = 1			Decoder uses extended address CV's 17/18			Operation on digital and analogue	28/128 speed steps	Operates with reverse direction
Bit = 0			Decoder uses CV1 value as address			Digital operation only	14/27 speed steps	Operates with normal direction

CV50 - Default value decimal 4
Decoder configuration byte 2

Bit No.	8	7	6	5	4	3	2	1
Default	0	0	0	0	0	1	0	0
Bit = 1						Stores with brake momentum (set in CV4) if DC on track when CV29 is set for DCC only		
Bit = 0						Does not operate if DC on track when CV29 is set for DCC only		

CV51 - Default value 0
The bit set corresponds to the Function button F1 to F8 to switch output to the dimmed value (CV52). If set to 0 the output can be switched on/off with F0

Bit No.	8	7	6	5	4	3	2	1
Default	0	0	0	0	0	0	0	1
Bit = 1	Function output dimmed by F8	Function output dimmed by F7	Function output dimmed by F6	Function output dimmed by F5	Function output dimmed by F4	Function output dimmed by F3	Function output dimmed by F2	Function output dimmed by F1
Bit = 0								

52	0 - 255	Dimming F-output A, 0 is dark 255 is max brightness	64
		Function output dimming	
	0	Dark	
	255	Maximum brightness	