Uhlenbrock Elektronik

Loco-Decoder 75 400

DIGITAL 2

Digital Decoder for DC-Motors
for the Märklin-Motorola Format

Suitable for dc-locos by Bemo, Brawa (Life-Like), Fleischmann, Gützold, Liliput, Lima, Piko, Märklin-Hamo, Rivarossi (Atlas), Roco, Trix. *Not suited for coreless instrument motors!*

Properties

Locos with dc motors can be operated digitally by using the 75 400 decoder. This decoder operates on both the old and the new extended Motorola data formats. It features two direction-dependent lamp outputs that are controlled by the ‚function/off‘ keys and an alternate address.

Uhlenbrock decoders can be programmed by Intellibox or Märklin Control 80f. Decoder address, acceleration/braking rates, as well as starting and maximal motor voltage can be set and altered at every time.

Digital Operation

When running in digital mode, the loco works according to the parameters set by the user. These, as well as speed and direction settings, are permanently stored. This means that a loco will retain its settings and will continue to operate as before after the track power has been reestablished. Therefore, a loco can be run in standard automatic block systems.

When crossing over into an analog powered section, it will retain its speed and direction settings provided the track voltage is high enough. Changing of direction or speed is not possible though.

Analog Operation

In analog mode the decoder acts like a standard reverser. Loco will stop when entering a digital section.

Setting the Operation Mode

Switching over from digital to analog mode is done as described in the programming instructions. A value of 01, analog code, is assigned to programming mode's function 08 . Factory set code value is 02 for digital operation.

<u>Important</u>: The state of the lamps set in digital mode will be retained in analog mode, i. e. when lamps should light in analog mode, they must have been switched on in digital mode.

A decoder can be set back to digital when in analog mode, by holding the transformer's control knob in overvoltage position for at least 16secs.

Momentum Control

Use f4 to switch momentum on or off.

<u>Important</u>: Dip switch #2 on back of Märklin Control Unit 6021 must be set to "ON" in order to transmit the new Motorola format.

Compatibility

The decoder is compatible to Märklin's accelerating/decelerating circuit for their C90 decoder. This circuit was published in Märklin-Magazin 4/93 and 5/93.

Technical Data

Max. motor current:	0.7 amp, 1.0 amp with heatsink
Motor surge current:	2.0 amps
Ancillary outputs:	2 x 0.9 amp
Total load:	max. 1.0 amp
Size:	19 x 16 x 5 mm (3/4" x 5/8" x 3/16")
Address range:	1-255, accessible by Intellibox
	1-80, when employing another central unit

The decoder is factory preset to address 01 and digital operation.

Installation of the loco-decoder 75 400

Motor connections

Remove the old reverser and unsolder all wire connections. Solder the brown lead to the frame, the red one to the pickup shoe, and the blue and green ones to the brush connections of the motor.

Important: RFI suppressors and capacitors should be retained.

Installation of an extra function

Connect the gray and yellow leads to the front and rear lamps. Their ground-

connection must be kept. Should the directional lighting come on wrong, change the green and blue leads on the motor. Connect both outputs with each other if you wish them to work direction-independently.

There are other devices possible that can be controlled by the ancillary outputs, e. g. a smoke generator.

Caution

Most of the models suitable for ac-operation are already equipped with 19V-lamps that are also compatible with digital operation. Should you find lamps for a lower voltage, replace them before changing over to digital operation.

Fixing the unit in the model

Use the supplied adhesive pad for fixing where there is room for the decoder. The pad keeps the unit insulated and fixed in its position.

In case the loco has a high current consumption, we recommend to fasten it directly to a metal chassis frame with hot glue. All common brands are suitable for this.

Safety first

Check for proper wiring after installation with a wiring checker or an ohmmmeter. Make sure that the shell will not touch the unit and that no wires can be caught when shell is installed.

> **A short circuit from motor brushes or ancillary outputs
> to pickup shoes, frame, or wheels may destroy the device!**

Programming of Uhlenbrock Decoders by Intellibox

The most comfortable way to program a decoder is offerd by the Intellibox. A menu-driven programming mode in plain english is provided. Programming is carried out by selecting the menu for non-compensated decoders (750/770, 75100 or 754xx).

You find exact instructions in the Intellibox handbook.

Programming of Uhenbrock Decoders by LOKTOOL

This computer routine is used to program Uhlenbrock decoders by applying a Märklin central unit in connection with a Märklin interface. See reverse for a brief description..

Programming of Uhlenbrock Decoders without load compensation by a Märklin Central Unit

<table>
<tr><td colspan="2">Follow exactly these steps when programming the decoder.
Do not push any other keys.</td><td></td></tr>
<tr>
<td>1.</td>
<td>Preparation
▶ Connect a Märklin central unit together with a control 80/80f or a control unit to the track where the loco sits.
▶ Switch off power supply for at least ten seconds, then switch on again.
<i>All digital signals that may possibly interfere have died away.</i>
▶ Key in decoder address.
<i>Every new decoder is set to 01.</i>
▶ Hold knob in direction reversal position for at least 8 secs.
<i>Decoder changes over to programming mode.</i></td>
<td></td>
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</table>

Default setting

		Default setting
2.	**Calling up the Programming Functions** *It does not matter whether a single function or several at a time are called up.* *Functions not called up remain unaltered.* *The loco's lamps will flash four times in acknowledge of a properly programmed step.*	
	2.1 Main Address ▶ Call up function: Key in 01 and shortly push knob to reverse - *a lamp will flash* ▶ Set value: Key in 01-80 and shortly push knob to reverse - *a lamp will flash*	01
	2.2 Minimal Speed (min. speed for speed step 2) ▶ Call up function: Key in 02 and shortly push knob to reverse - *a lamp will flash* ▶ Set value: Adjust knob to desired minimal speed. Depress ‚function‘ and ‚off‘ keys consecutively when loco is moving - *it will stop and a lamp will flash*	-
	2.3 Maximal Speed (max. speed for speed step 15) ▶ Call up function: Key in 03 and shortly push knob to reverse - *a lamp will flash* ▶ Set value: Adjust knob to desired maximal speed. Depress ‚function‘ and ‚off‘ keys consecutively when loco is moving - *it will stop and a lamp will flash*	-
	2.4 Not applicable	
	2.5 Acceleration ▶ Call up function: Key in 06 and shortly push knob to reverse - *a lamp will flash* ▶ Set value: Key in 01-32 and shortly push knob to reverse - *a lamp will flash* *01 = no momentum, 32 = maximal momentum; a value of 10 will render a realistic impression.*	01
	2.6 Deceleration ▶ Call up function: Key in 07 and shortly push knob to reverse - *a lamp will flash* ▶ Set value: Key in 01-32 and shortly push knob to reverse - *a lamp will flash* *01 = no momentum, 32 = maximal momentum; a value of 10 will render a realistic impression.*	01
	2.7 Operation Mode ▶ Call up function: Key in 08 and shortly push knob to reverse - *a lamp will flash* ▶ Set value: Analog mode - key in 01 and shortly push knob to reverse - *a lamp will flash* Digital mode - key in 02 and shortly push knob to reverse - *a lamp will flash*	02
	2.8 Reset ▶ Key in 10 and shortly push knob to reverse - *a lamp will flash* *Decoder is reset to factory default values: Address 01, acceleration/braking 01, digital mode.*	-
3.	**Leaving Programming Mode** ▶ Key in 80 and shortly push knob to reverse. *Decoder returns to its normal operating mode.*	

Important

If a decoder will not react after a programming cycle, most probably its address has been altered inadvertently. To resolve this situation, either try all address settings, or Intellibox's or Loktool's address search function.

Wrong settings may be corrected by resetting the decoder using programming function 10.

Loktool 2.0 for Windows (TM)

contains these features:

Programming of decoders - comfortable input of all parameters, store in decoder profile database.

Address search function - for all decoders using the Märklin-Motorola data format.

Controller screen - six controllers are shown on a screen display.

Hardware requirements: A Märklin central unit and 6050/6051 interface connected to a PC. Programm will run on all PCs from 386-25 on under Win 3.x, 95/98 and NT.

www.uhlenbrock.de

Be it most recent information about Intellibox, a pricelist or a listing of authorized dealers, plus various publications to download, our website warrants your visit in every case.

Warranty Statement

Every item is fully tested for functioning before shipment. If a defect occurs within two years after purchase, the item will be repaired free of charge against presentation of purchase proof.

Damages caused by overload or improper treatment are not covered by this warranty.

For EU only

Please note that decoders may only used in models carrying the EC conformance label.

[B] Uhlenbrock Elektronik

These are your advantages:

Two years' warranty
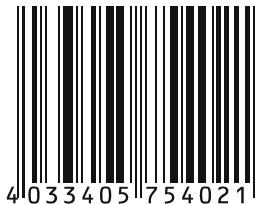from date of purchase

Service
In case of an eventual failure please return the defective item to us for repair. Please include purchase proof and a short description of defect, as well as stating the decoder's address setting.

Hotline
In case of questions, we are ready to answer them for you!

Directly contact our technician: **(49) 2045 858327**

Mo - Fr except Wed 14:00-16:00 hrs CET, Wed 16:00 - 18:00 hrs CET