

AnDi 75 000



Reverser for AC-Operation

Digital Decoder for the Märklin-Motorola Format

For locos with AC-motors as made by Märklin or HAG.

Properties

In digital operation, AnDi is a small low-cost digital decoder whose address can be changed quickly without cumbersome programming. In ac operation, it is a reverser that is ready for conversion to digital mode. Whenever you wish to convert to digital operation, a direction change-over impulse of a little extended duration will set it to its digital mode.

AnDi is of small outline and provides a continuous motor current of 1.2 amp with appropriate heat sink.

Use as an AC Reverser

In ac mode the unit works as a full reverser that offers excellent running properties. Headlights change over with direction. Direction setting is stored permanently and is retained while supply voltage is off.

The unit will not switch over automatically to digital mode if the loco enters such a section.

Use as a Digital decoder

After setup of digital mode, the unit can be freely used on layouts that are driven by either Intellibox or Märklin Digital System (Central-Unit, Control-Unit or Delta-Zentrale). It works on both standard and extended Motorola data formats.

The unit features two direction dependent ancillary outputs that are governed by the 'function' and 'off' keys. In Delta operation the lights will stay on after setting an address. Direction and speed settings will be retained while power is off, so that a loco will continue to move as before as soon as the supply is restored. This feature makes it fully suitable for automatic block systems.

The unit will keep its speed settings when entering an analog ac section, provided the voltage is sufficient. Speeding up or reversing in analog ac sections are not possible, though.

The factory-preset digital address is 78 (Delta steam loco address).

Technical Data

Max. motor current: 1.0 amp, 1.2 amp with heatsink

Motor surge current: 2.0 amps

Ancillary outputs: 1.0 amp each

Total load: 1.2 amp with heatsink

Size: 35 x 19 x 5 mm

Address space: 1-255, accessible by Intellibox
1-80, if another Central Unit is used

Factory settings: analog ac mode
preset digital address 78 (Märklin Delta steam loco address)

Installation of AnDi 75 000

Connection of the unit to motor and lamps

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 field-coil connections of the motor.

Important: Do not remove the motor brush lead, keep the rfi suppressor if fitted and connect it to the decoder's black lead.

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.

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 ohmmeter. 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!**

Setting the mode of operation

The unit is preset for analog ac operation mode. This can be changed by either a standard Märklin-compatible transformer or a digital central unit.

Change of operation mode with a standard controller/transformer

A standard analog ac controller is used to change from analog to digital and vice versa as follows:

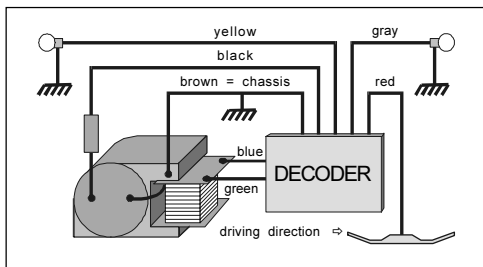
- Put the loco on a piece of track connected to that controller.
- Keep the control knob in direction-changeover position until one of the headlights will start to flash after approx. 8 secs. Now the unit has changed from analog to digital or from digital to analog.

Change of operation mode with a digital central unit

A digital central unit can only be used to switch over from analog to digital.

- Put the loco on a piece of track connected to that central unit.
- Select decoder address (preset factory value is 78).
- Switch *on* the headlights by the 'function'-key, before the decoder will be used together with an Intellibox or a Märklin 6021, failing to do so will make them inaccessible during digital operation. Switch *off* the headlights by the 'function'-key after having programmed the decoder with an Intellibox or a Märklin 6021, before using it together with a Märklin-Delta central unit.
- Keep the control knob in direction-changeover position until one of the headlights will start to flash after approx. 8 secs.
- Release knob and shortly push to direction-changeover position again. Now the unit is in digital mode.

Important: Setting back to analog mode is only possible with an analog controller as described in the foregoing paragraph!



Address setting AnDi 75 000 and 75 320

In digital mode the unit can be used as a simple decoder which features the full address range from 1-255.

For changing the decoder address only a long direction-changeover command of your digital control system is necessary.

Setting the address with the Intellibox

- Select the actual decoder address:
*Depress [lok#]-key and type in address number.
A new decoder is preset to 78.*
- Set the data format to 'Motorola old':
*Depress [menu]-key. Select 'loco settings' and scroll with keys [↓] and [↑] to 'Moto. old'.
Acknowledge by depressing the [↔]-key (An asterisk is displayed at the end of the line).
Depress [menu]-key again to return to keyboard mode.*
- Set the basic setting of the control knob to 'ac style knob' in order to issue a long changeover command:
*Consecutively depress the [menu] and [mode]-keys.
Scroll with [↓]-key to 'User interface'. Depress [↔]-key.
Scroll with [↓]-key to 'Speed knobs'. Depress [↔]-key.
Scroll with [↓]-key to 'AC style knob'.
Acknowledge with [↔]-key.
Depress [menu]-key again to return to keyboard mode.*
- Switch the unit to address input mode:
Keep the control knob in direction-changeover position until one of the headlights will start to flash after approx. 8 secs.
- Key in the desired new address on the Intellibox panel.
- Switch *on* the headlights by the 'function'-key, before the decoder will be used together with an Intellibox or a Märklin 6021, failing to do so will make them inaccessible during digital operation.
Switch *off* the headlights by the 'function'-key after having programmed the decoder with an Intellibox or a Märklin 6021, before using it together with a Märklin-Delta central unit.
- Complete the input: Release knob and shortly push to direction-changeover position again. Now the new address is set and the unit is in digital mode.

**You may use either the left-hand or the right-hand knob.
But make sure that you use always the same knob during all operations.**

Setting the address with the Märklin Digital Central Unit

- Select the current decoder address on the Märklin controller (Control 80, Control 80f, Control Unit). Factory preset value is 78.
- Keep the control knob in direction-changeover position until one of the headlights will start to flash after approx. 8 secs.
- Key in the desired new address on the controller's panel.
- Switch *on* the headlights by the 'function'-key, before the decoder will be used together with an Intellibox or a Märklin 6021, failing to do so will make them inaccessible during digital operation.
Switch *off* the headlights by the 'function'-key after having programmed the decoder with an Intellibox or a Märklin 6021, before using it together with a Märklin-Delta central unit.
- Release knob and shortly push to direction-changeover position again.
Now the new address is set.

Setting the address with the Märklin Delta Control Unit

- Select the decoder address on the Delta controller. Factory preset value is 78 (steam loco).
- Keep the control knob in direction-changeover position until one of the headlights will start to flash after approx. 8 secs.
- Turn to the desired new address on the Delta panel.
- Release controller knob and shortly push to direction-changeover position again.
Now the new address is set.

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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.

 **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



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