



# MD-4

## DECODER FOR DIGITAL CONTROL CEBEK SYSTEM



The MD-4 module is a decoder for the ERD-CEBEK Digital Control. Thanks to the control desk and installing a MD-4 module per locomotive, you could control at the same time, and without any other handling, speed and way of each train placed on the railway.

### TECHNICAL CHARACTERISTICS.

Voltage .....	The supplied one by the MD-1
Maximum Constant Output Intensity.....	1 A.
Maximum Output Intensity .....	1,2 A.
Decoded data .....	Speed and Way
System Protocol .....	ERD-CEBEK Digital System
Sizes .....	40x21,5x16mm

### INSTALLATION.

**INSTALLATION.** All locomotives have a similar configuration regarding the motor feed. On the inside you could see two wires or electrical contacts from wheels input voltage to the motor (see Pic. N°1). .

The MD-4 module had to be inserted between railway input voltage and motor input voltage.

To do this operation, firstly you have to carefully remove the locomotive's body to see the motor and its connection.

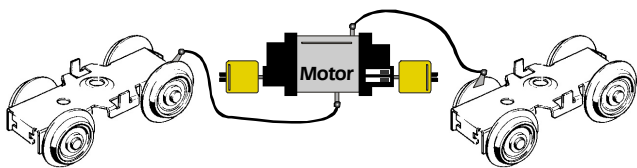
Then, you have to desold or disconnect the connection between the motor and truck (Pic. 2). We suggest you to disconnect it desoldering wires between motor and truck.

### INSTALLATION.

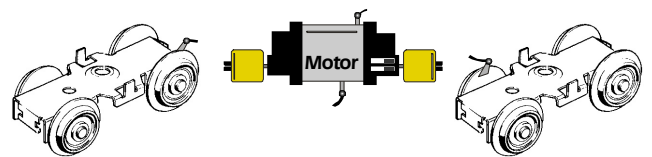
On the MD-4 module, you could appreciate 4 wires (2 green and 2 orange). Green wires correspond to module input and orange ones to its output.

When you have cancelled connection between motor and truck, you have to sold MD-4 green wires to truck input voltage. Use a soldering tool with thin solder point. Then, after the soldering operation you have to verify that there is no tin in contact with any metallic part of the locomotive. If you have to use insulating elements, please do that.

Once the decoder input connected , you have to connect the output soldering orange wires to the motor input voltage. Proceed as you have proceed for greenwires and verify also that there is no tin in contact with any metallic part. See the Pic.3.



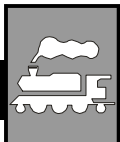
**Pic.1 Standard Connection between a motor and bodies.**



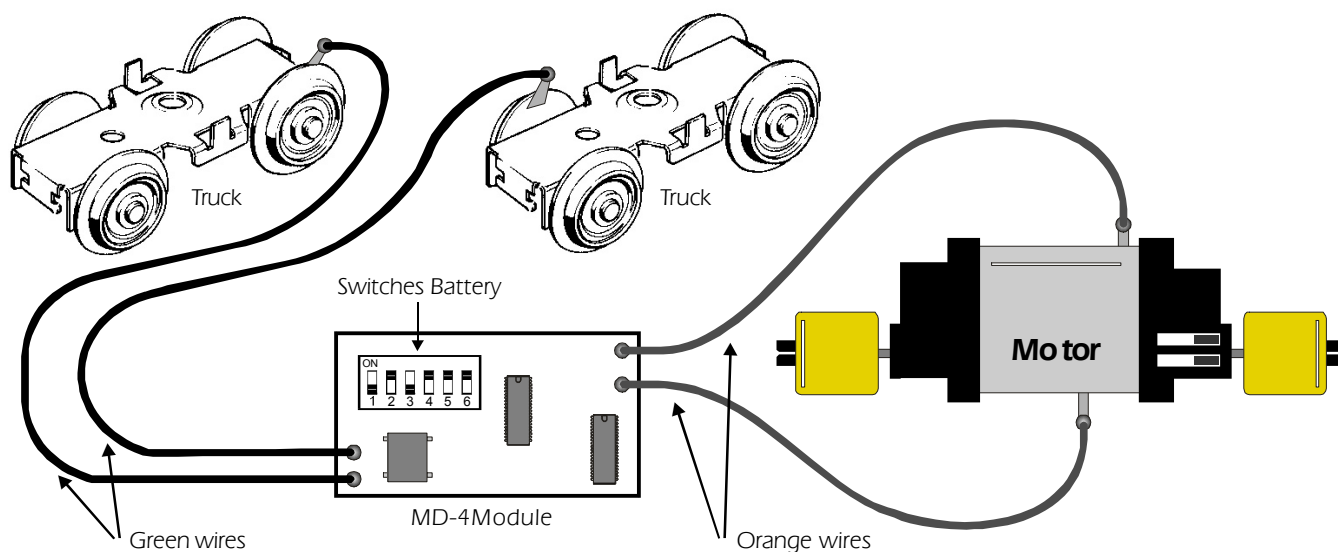
**Pic.2 How to disconnect motor and bodies.**

Once connections between MD-4, motor and railway input done, you have to verify the connection between motor and decoder have been done with orange wires. Then, you have to also verify that the connection between decoder and railway input voltage have been done with green wires. A wrong or defective wiring connection will generate a short-circuit on the module, damaging it.

Once the MD-4 installed on the inside of the locomotive, you have to electrically insulate it from metallic parts composing the machine.



## INSTALLATION.



Pic.3 Decoder Connection between motor and truck.

## OPERATING.

Each decoder has a switches battery composed by 6 units and already inserted in the circuit. Thanks to this battery you could select the digit that you wish assign to each locomotive to allow you to control speed and way of this train from your control desk. Put switches according to the following data.

Note. Do never change the assigned digit of a locomotive when this one is supplied. You have firstly to remove it from electrical feed.

**Data to configure Switches battery according to the assigned locomotive digit.**

Locomotive nº.	Sw1	Sw2	Sw3	Sw4	Sw5	Sw6
Locomotive nº 1.	ON	OFF	OFF	OFF	OFF	OFF
Locomotive nº 2.	OFF	ON	OFF	OFF	OFF	OFF
Locomotive nº 3.	ON	ON	OFF	OFF	OFF	OFF
Locomotive nº 4.	OFF	OFF	ON	OFF	OFF	OFF
Locomotive nº 5.	ON	OFF	ON	OFF	OFF	OFF
Locomotive nº 6.	OFF	ON	ON	OFF	OFF	OFF

Locomotive nº.	Sw1	Sw2	Sw3	Sw4	Sw5	Sw6
Locomotive nº 7.	ON	ON	ON	OFF	OFF	OFF
Locomotive nº 8.	OFF	OFF	OFF	ON	OFF	OFF
Locomotive nº 9.	ON	OFF	OFF	ON	OFF	OFF
Locomotive nº 10.	OFF	ON	OFF	ON	OFF	OFF
Locomotive nº 11.	ON	ON	OFF	ON	OFF	OFF
Locomotive nº 12.	OFF	OFF	ON	ON	OFF	OFF

## TECHNICAL CONSULTATIONS.

If you have any doubt, you could contact your wholesaler or our Technical Department.

- Via E-Mail, [sat@cebek.com](mailto:sat@cebek.com) | by Fax. +34.93.432.29.95 | by mail P.O Box 23455 - 08080 Barcelona- Spain

- **Keep the invoice of this module.** For any repair, the corresponding invoice had to be added. If the invoice is not presented together with this module, the module's warranty will be automatically cancelled.

**MORE 300  
MODULES.**

All the module's CEBEK have **3 years of total warranty** in thecnical repairing, and spares from the date of buy.

CEBEK is trade make of FADISEL S.L. more than 300 module's are available in stock for any purpose **request our CATALOGUE**, or visit our Web. [Http://www.cebek.com](http://www.cebek.com)

**WARRANTY**

**3  
YEARS**