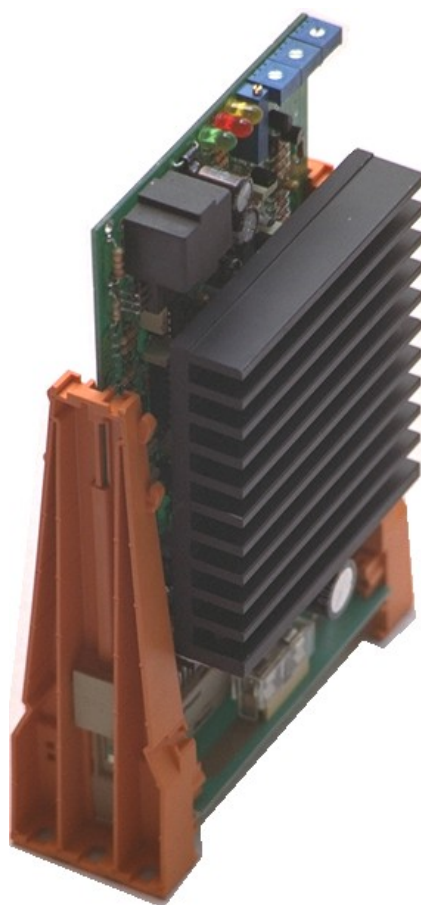


## **REG FET Eurocard**



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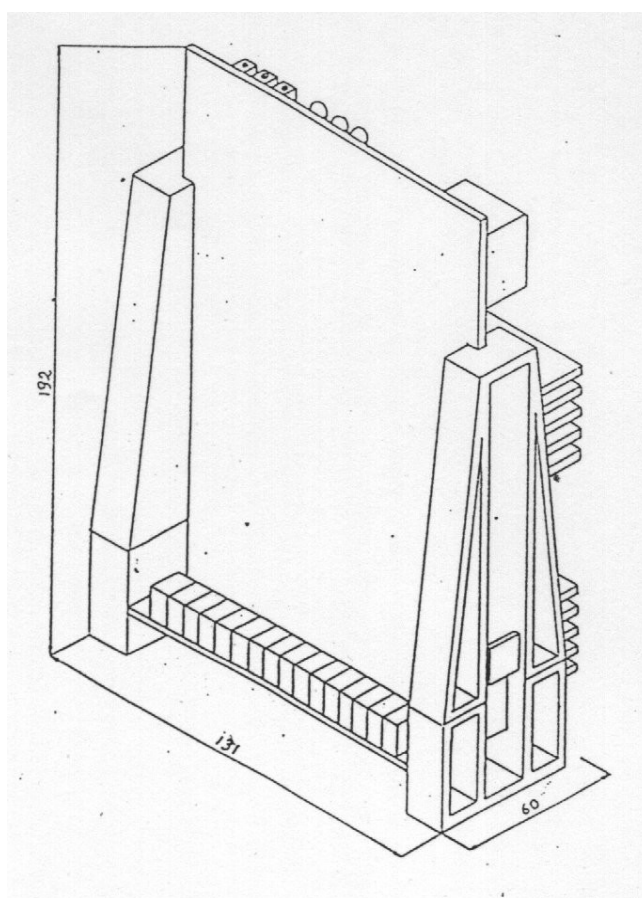


## General ratings

### Mechanical ratings

The drive is a Euro card size single card with 64 terminals output connector, the physical dimension is shown in the picture.

#### REG FET Drive EUROCARD size (Physical dimension)



### AVAILABLE MODELS

TYPE	I nominal	I peak	Vmax mot.	Supply	EMI Filter
REG FET 60-8	8	16	48	25-60 ±10%	823008V
REG FET 60-14	14	28	48	25-60 ±10%	8230024V
REG FET 120-8	8	16	96	50-120 ±10%	823008V

## **Electrical Ratings**

- Bidirectional transistorized DC motor drive with power mosfet H Bridge.
- Single three-phase feeding.
- Double loop feedback speed and current control.
- Form factor almost 1; it is not necessary the smoothing inductance in series of the motor.
- Speed reference with analog signal  $\pm 10V$  from NC potentiometer or others signal sources.
- Switching frequency 20Khz.
- Transition frequency  $>600$  Hz.
- Differential analog input.
- Adjustable speed offset.
- Input impedance 20 Kohm.
- Operating ambient temperature  $0^{\circ}$  to  $+40^{\circ}C$ .
- Delivery of 200 % of the nominal current for 1 second.

## **Active protections from:**

- Mosfets desaturation.
- Mosfet failure.
- Internal power supply failure.
- Motor short circuit.
- Ground short circuit.
- Tacho generator failure.
- Overheatsink temperature.
- AC input under voltage.
- Braking circuit failure or insufficient braking.
- External fault relay.

If a protection is on, the red led of fault is light, and it is carry out by a transistor configured in open collector, normally close between terminal 1 and the 0V of signals.

## **Diagnostic LED**

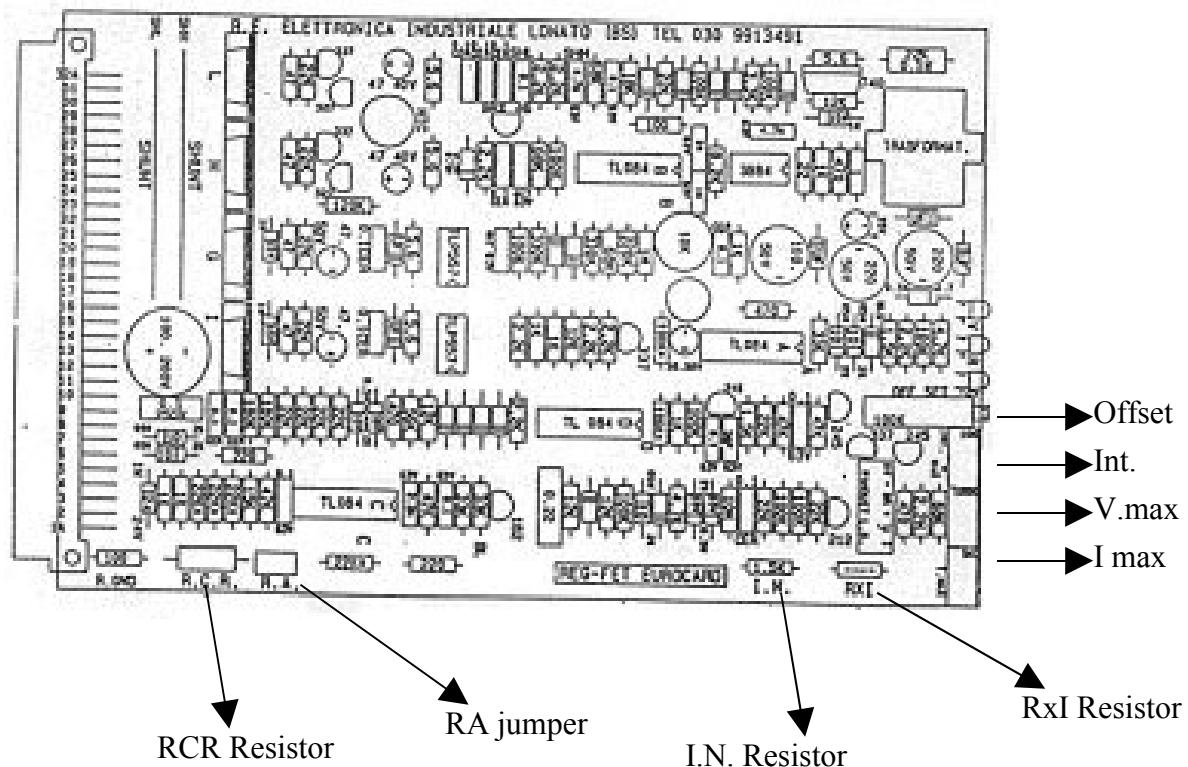
The diagnostic is realized with three LED that indicate:

- GREEN LED - The drive is powered and it works perfectly (Driver OK).
- YELLOW LED - The drive is in re-enter of current.
- RED LED - A fault was occurred.

## Terminal Block

1. - Output of drive OK (open collector 100 mA max), without active fault the terminal is send to ground by an open collector output.
2. - Current demand signal (output loop speed).
3. - Zero signal.
4. - Negative supply -10V (5 mA max).
5. - Positive supply +10V (5 mA max).
6. - Drive enable (connect between 8 and 24 V).
7. - Speed reference input  $\pm 10V$ .
8. - Zero signal.
9. - Zero signal.
10. - Tacho generator signal.
11. - Positive power supply.
12. - Positive power supply.
13. - Negative power supply.
14. - Negative power supply.
15. - Motor.
16. - Motor.

## Topography of drive:



## *Settings*

### Trimmers settings

- **Offset:** It sets the motor speed to zero with 0 volt reference input voltage.
- **Int.:** It sets the integrative action of the speed loop and it must be setted in order to obtain the fastest response of motor in accord with the rotation stability.
- **V.max.** It sets the max speed of the motor with the max reference input voltage.
- **I.max.:** It sets the max current

### Calibration Resistors

- **RxI:** It sets the compensation of motor losses with the armature feedback.
- **I.N.:** It modifies the report 1:2 among peak current and nominal current.
- **R.C.R.:** It sets the maximum feedback voltage of tacho dynamo used like speed feedback.
- **R.A. Jumper:** Jump to enable armature feedback.

#### TACHO FEEDBACK:

- Remove the resistor RxI
- Insert the resistor R.C.R. of the value indicated in chart:

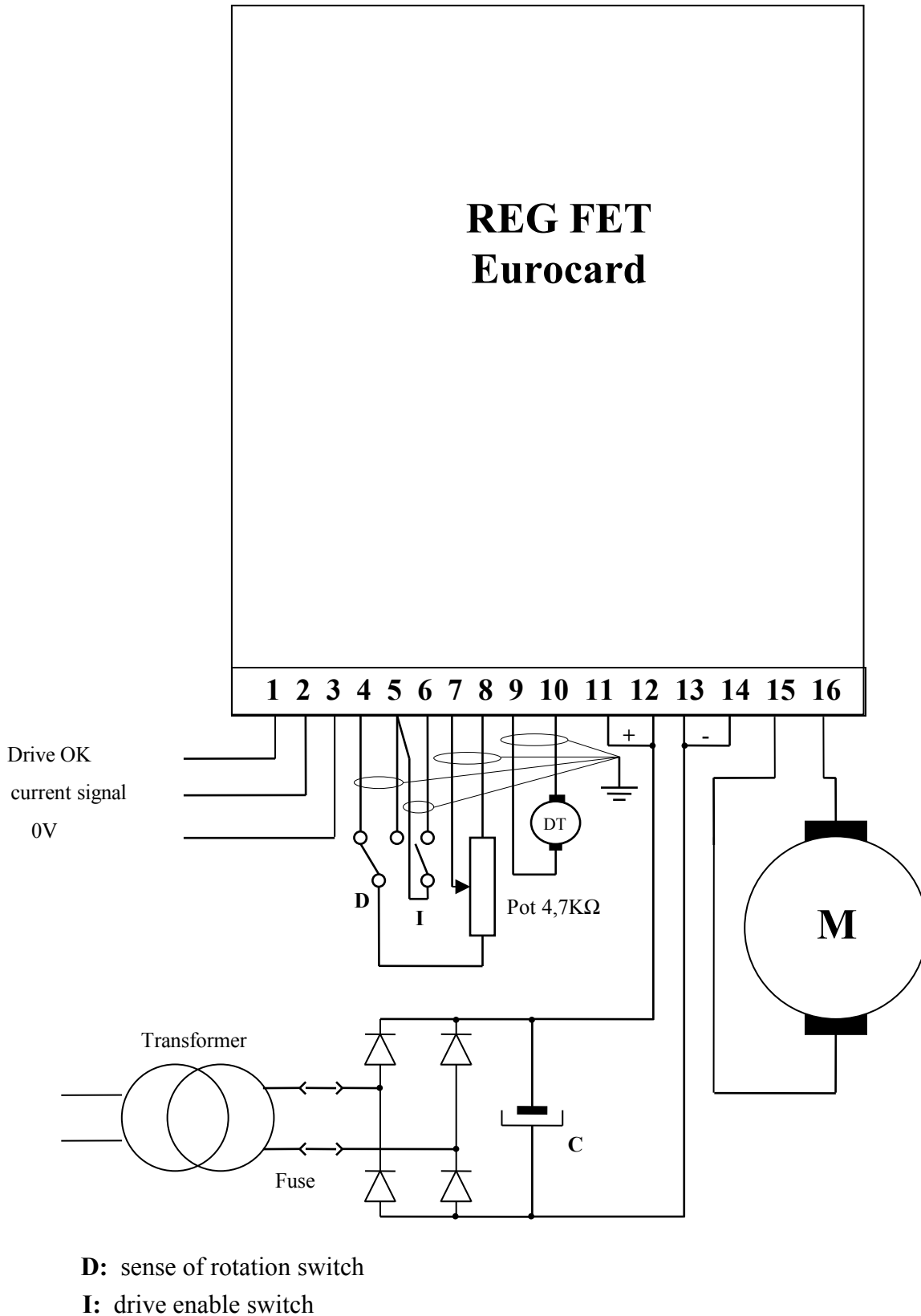
VDT	R.C.R.	Power
60V	470K $\Omega$	0.25W
40V	330K $\Omega$	0.25W
20V	120K $\Omega$	0.25W

#### ARMATURE FEEDBACK:

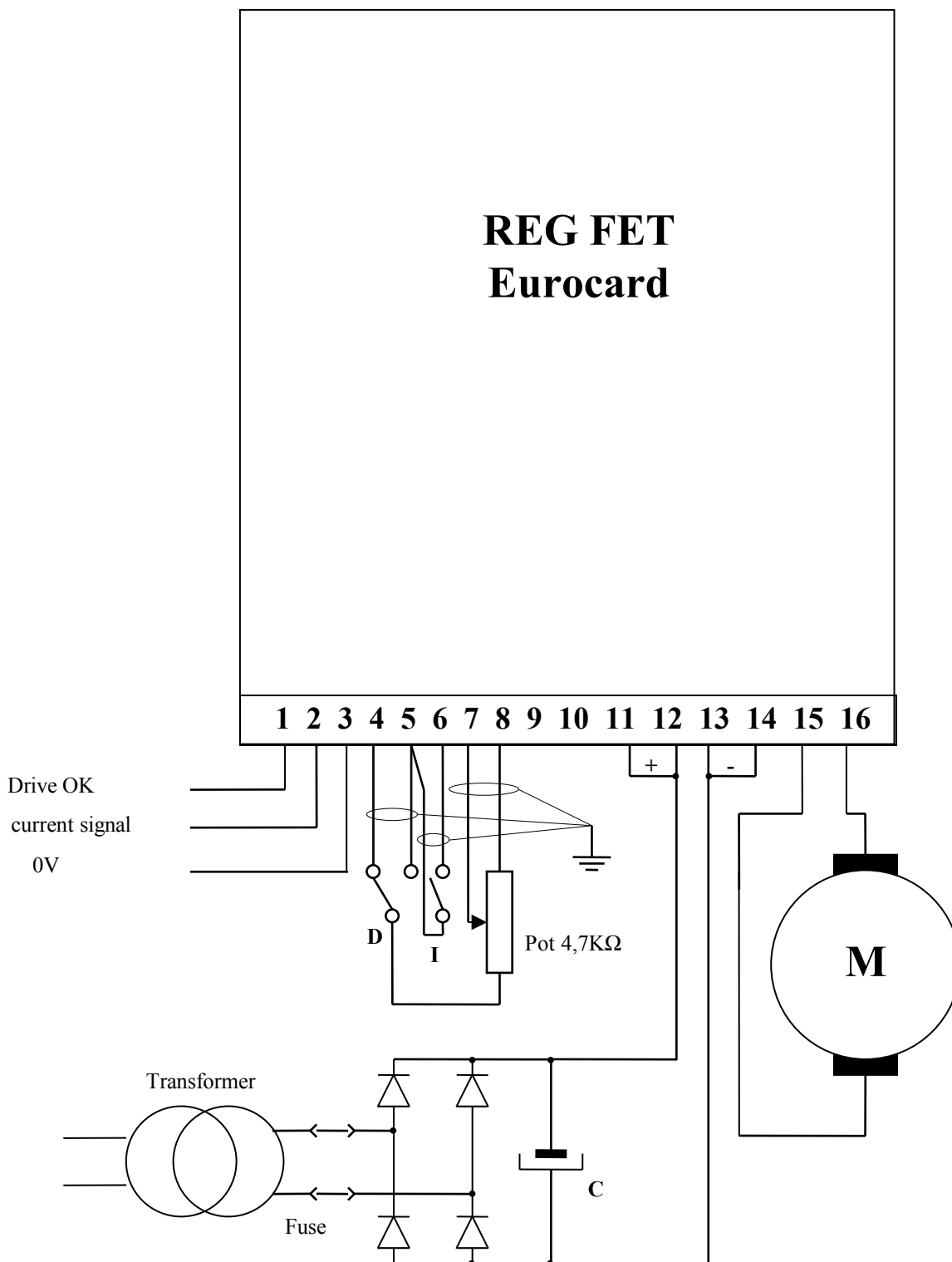
Insert the resistor RxI of value 270 K $\Omega$  and close the pad R.A. with solder.

## Connections:

- CONNECTION WITH TACHO FEEDBACK -



- CONNECTION WITH ARMATURE FEEDBACK -

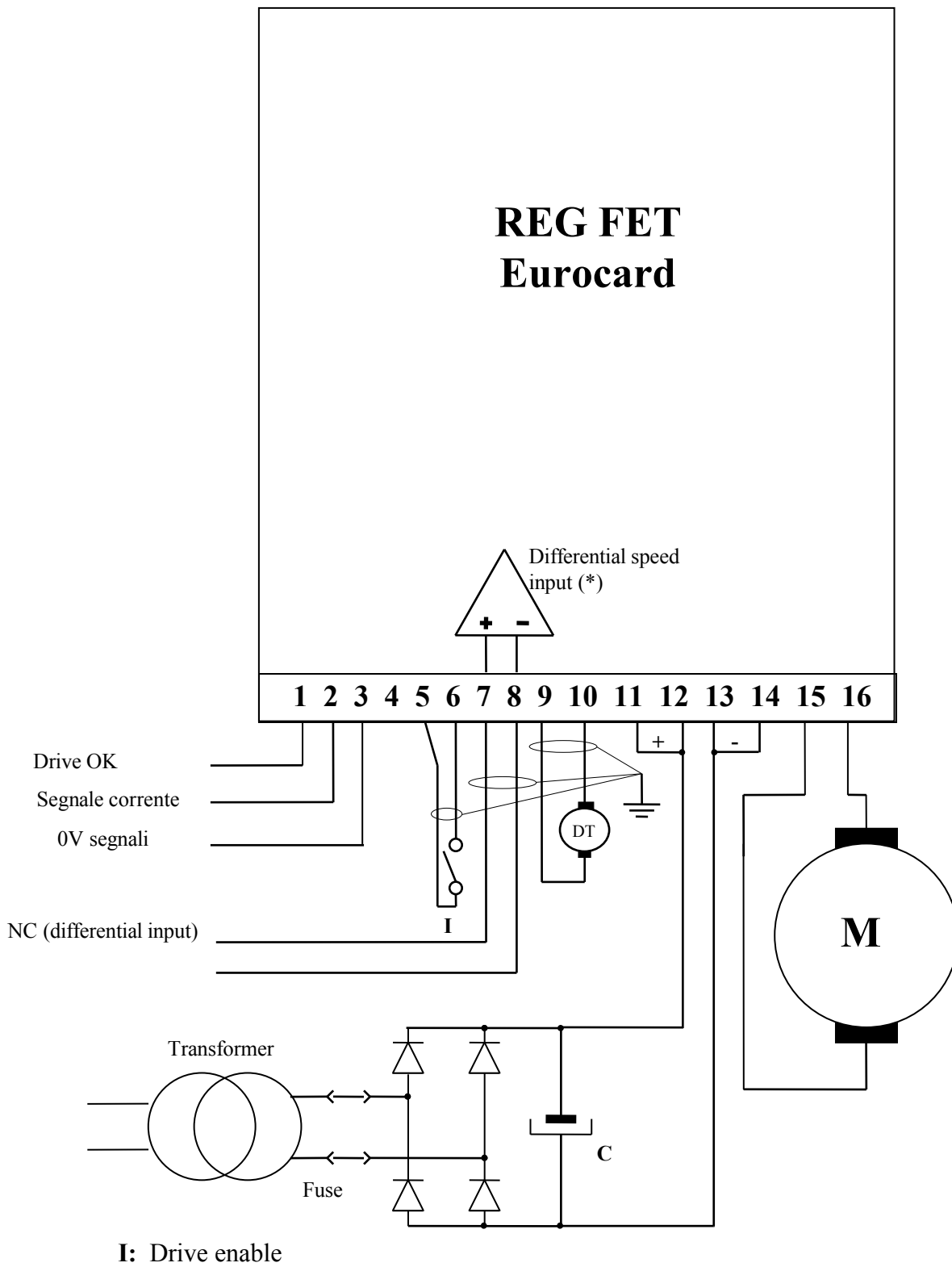


**D:** sense of rotation switch

**I:** drive enable switch



- CONNECTION WITH NUMERIC CONTROL REFERENCE -



(\*) To make differential this input remove the jump between 7, 8 terminal

## Troubleshooting guide:

<b>Malfunction</b>	<b>Possible Cause</b>	<b>Solutions</b>
<ul style="list-style-type: none"><li>• The motor doesn't brake fault led lights and the led OK is off</li><li>• The motor run at the max speed without control</li><li>• LED OK is off with supply and LED fault on</li></ul>	<ul style="list-style-type: none"><li>• Insufficient value of capacitor of filter for the mechanical size</li><li>• The connection with tacho is break or inverted.</li><li>• Tacho is not efficient</li><li>• External short circuit</li><li>• Internal short circuit</li><li>• AC main voltage too high</li><li>• Heatsink overtemperature</li></ul>	<ul style="list-style-type: none"><li>● Increase the capacity of filter capacitor or add the braking auxiliary circuit.</li><li>● Check the tacho generator wiring</li><li>● Check the efficiency of tacho</li><li>● Remove the short circuit</li><li>● Change the drive</li><li>● Decrease supply voltage</li><li>● Disconnect AC main supply and wait 15 minutes; try to put an electric fan.</li></ul>

## Connection system:

