

THE EMD BOARD

This board is used when it is necessary to select a signal among a maximum of 3 inputs.

The EMD board accepts input signals coming from a maximum of 3 encoders and provides as output the signals of one of these encoders.

Output signals are selected connecting properly the two inputs, in1 and in2, according to the operating diagram (see next page).

EMD and encoder electronics must be indicated in the ordering code and the electronic interfaces of the connected encoders must be all identical. Moreover the EMD provides 3 contacts normally open that close when respective input is selected.

The following example is needful to understand better the use of this board.

We would like to read the signals of 3 encoders (or other devices with similar features) in sequential way. Encoders must have same output electronics, for example 5 V DC line driver. The instrument for data acquisition, on the contrary, has a different electronic interface, for example 24 V DC push-pull.

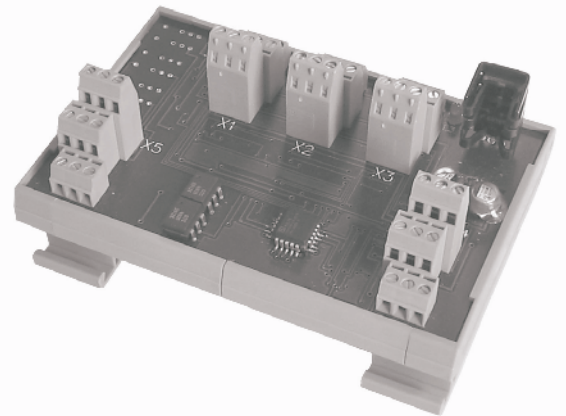
In this case the EMD board will perform the selection function among the connected encoders and the matching of the electronic interfaces.

The ordering code will be:

EMD5L8/24P, where EMD5L indicates that inputs are 5 V DC line driver, EMD5L8/24P indicates that output is 8÷24 V DC push-pull. EMD power supply must be the highest value among requested voltages: in this case 8÷24 V DC. The encoder selection is carried out through a logic type signal at in1 and in2 inputs on the terminal board.

Logic level "1" is obtained connecting a voltage included between 5 and 24 V DC to above mentioned inputs.

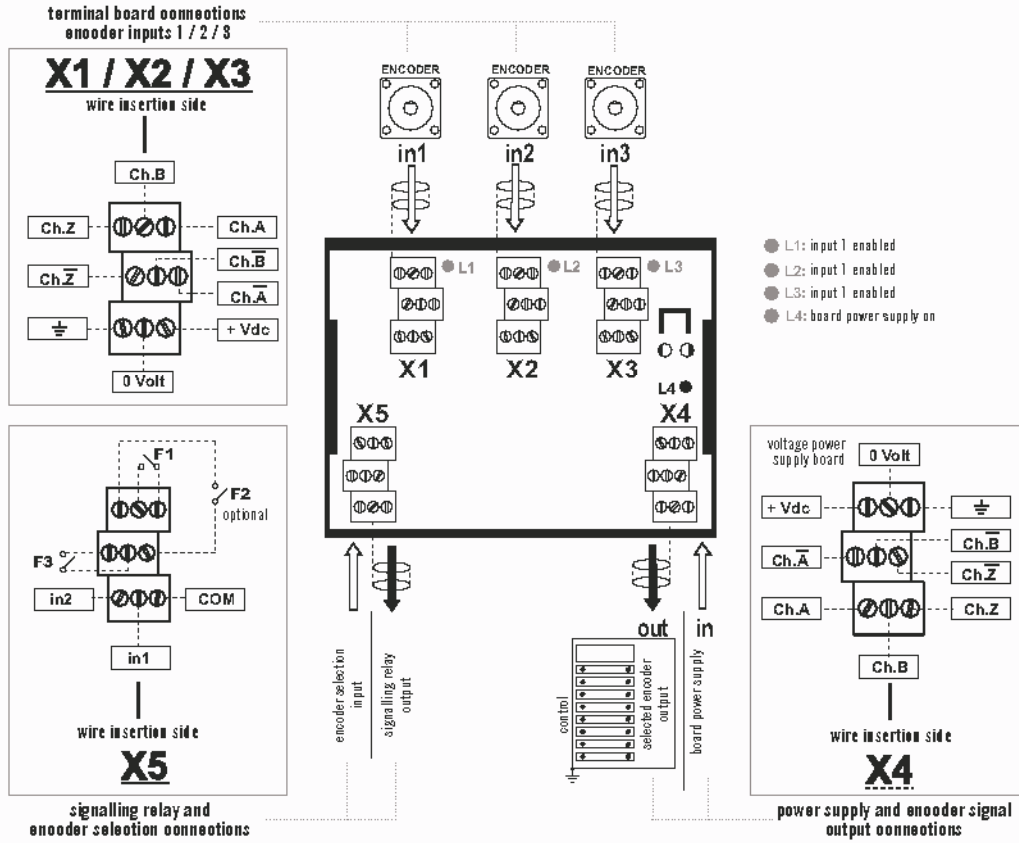
Logic level "0", instead, is correctly interpreted if voltage is included between 0 and 3 V DC. The combination of logic levels at in1 and in2 inputs sets outputs to 4 different states, as described in the table in the following page.



ORDERING CODE

| | | | |
|---|-------|-----|--|
| | in | out | |
| | 5 | L | 8/24 P . XXX |
| EMD | | | |
| SERIES | ..... |  | VARIANT |
| signal selector EMD | ..... |  | XXX custom version |
| INPUT VOLTAGE X1 / X2 / X3 CONNECTOR | ..... |  | OUTPUT ELECTRONICS X4 CONNECTOR |
| 5 V DC 5 | ..... |  | NPN |
| 8 ... 24 V DC 8/24 | ..... |  | P push-pull |
| INPUT ELECTRONICS X1 / X2 / X3 CONNECTOR | ..... |  | L line driver |
| NPN N | ..... |  | OUTPUT VOLTAGE X4 CONNECTOR |
| PNP R | ..... |  | 5 5 V DC |
| push-pull P | ..... |  | 8/24 8 ... 24 V DC |
| line driver L | ..... |  |  |

Operating diagram and terminal board connections



Logic states

The table indicates the output state on X4 connector and on X5 contacts, according to logic states present on in1 and in2 on X5 connector.

| Logic state on X5 | | Selected encoder on X4 | | | Selected contact on X5 | | |
|-------------------|-----|------------------------|----|----|------------------------|----|----|
| in1 | in2 | X1 | X2 | X3 | F1 | F2 | F3 |
| 0 | 0 | - | - | - | - | - | - |
| 1 | 0 | ● | - | - | ● | - | - |
| 0 | 1 | - | ● | - | - | ● | - |
| 1 | 1 | - | - | ● | - | - | ● |

Electrical specifications

| | |
|---|---|
| Power supply | 5 V DC $\pm 10\%$ 8 ... 24 V DC $\pm 5\%$ |
| Current consumption without load | 150 mA max |
| Max load current | 20 mA for channel (line driver) 40 mA for channel (push-pull) |
| Max input current | 10 mA for channel |
| Operating frequency | 100 kHz max |
| Input logic levels in1 and in2 | "1" = 5 ... 24 V DC "0" = 0 ... 3 V DC |
| Contact characteristics | $V_{max} = 125$ V AC / 80 V DC $I_{max} = 0,5$ A $V_{min} = 5$ V DC $I_{min} = 1$ mA |
| Operating temperature | 0° ... +40°C |
| Storage temperature | -10° ... +60°C |
| Fixing on panel | DIN 46277-3 rail (Omega) DIN 46277-2 rail (Omega) |

Mechanical dimensions

