Eltra®

ISO 9001:2000

CE

C $\mathbf{R}$ US

EMD
Encoder signal selector

Electronic Characteristics

Power supply	5 Vdc / 8÷24 Vdc
Current consumption without load	150 mA
Max output current per channel	20 mA per LINE DRIVER 40 mA PUSH PULL
Max input current per channel	10 mA
Max output frequency	100 Khz
Operating temperature	0° ÷ +40°C
Logic input levels in1 AND in2 (Vdc)	"0" = 5 ÷ 24 "1" = 0 ÷ 3
Clean contact characteristics	Vmax = 125 Vac / 60 Vdc Imax = 0.5A Vmin = 5 Vdc Imin = 1mA
Fix on frame	GUIDA DIN 46277 / 3 (OMEGA) GUIDA DIN 46277 / 2
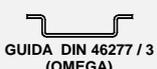
Overall dimension

37.5

15.5

28

77.5

113

X5

X1

X2

X3

X4
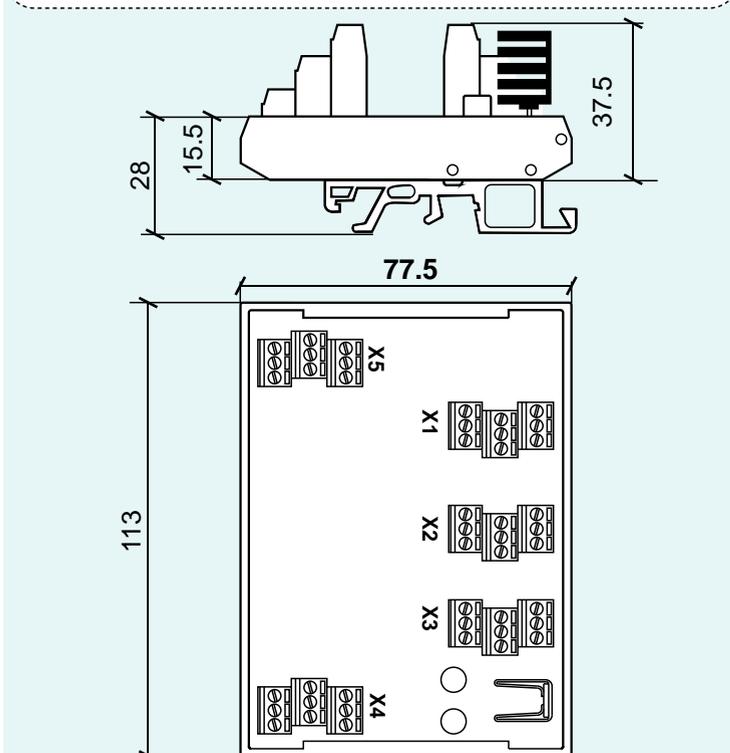
The EMD board

This board is used when it is necessary to carry out a selection function between a maximum of three inputs. **The EMD board accepts in input the signals coming from three encoders and supplies in output the signals of one of these electronically selected** The selection happens suppling opportunely inputs in1 and in2, according to the working diagram (see back side).

The electronic typologies of the output and of the encoders to be connected, must be included in the ones described in the ordering code, the only condition posed, is that the electronics of the encoders connected are the same. The EMD, moreover, supplies three clean contacts usually open that close themselves when the respective input is selected.

An example is needed to understand better the use of this board.

We must realize a reading through an instrument of the three encoders (or other sensors with compatible characteristics), in a sequential mode; we choose the encoders to commute making sure that they have the same electronics output, for example line-driver at 5 Vdc.

The instrument, instead, can acquire the data even with another electronics for example push-pull at 24 Vdc. The EMD board will provide, in this case, to realize the commutation function of the connected encoders and to adapt the electronics of these with the one required from the instrument.
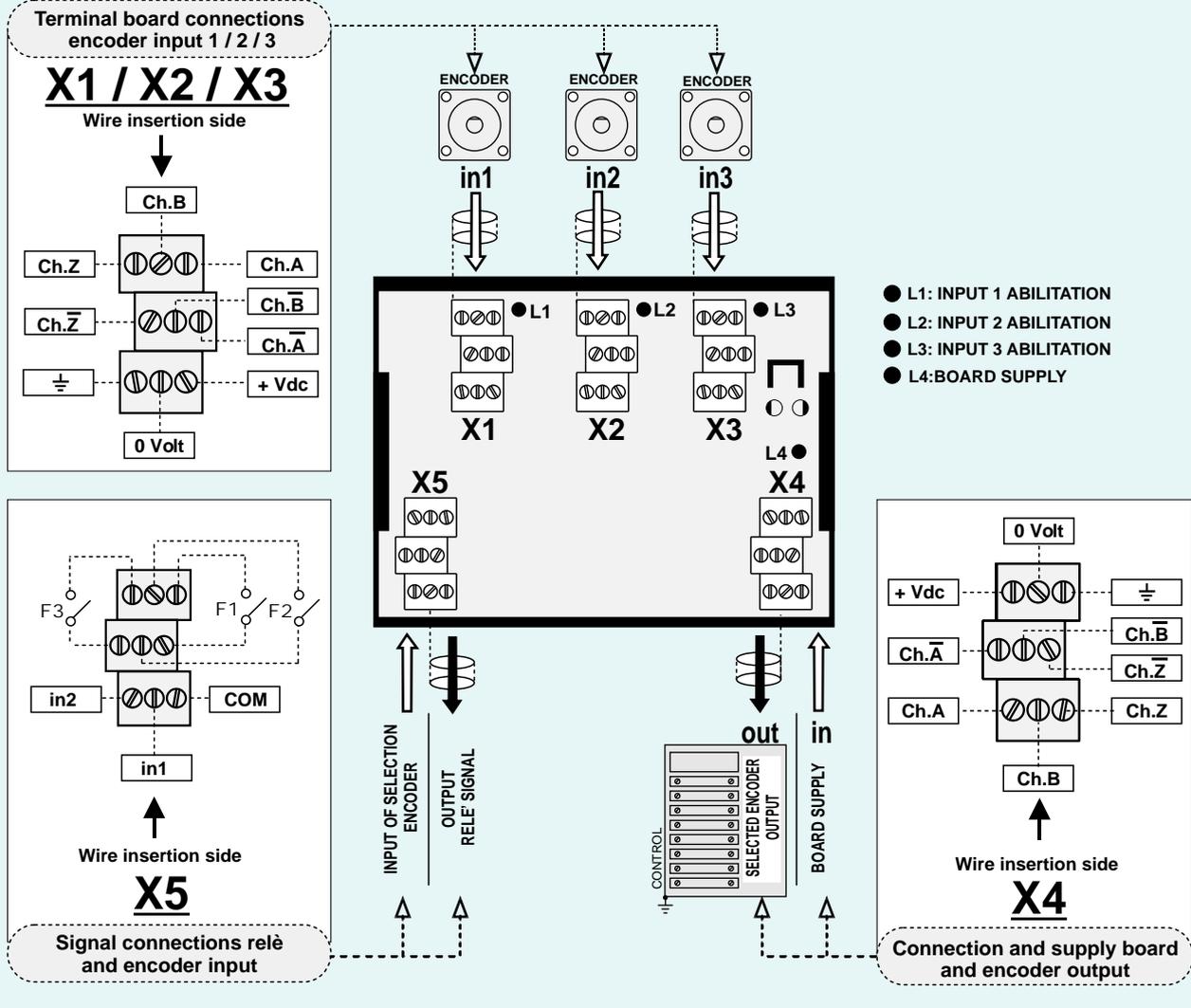
The ordering code will be:
EMD5L8/24P,
Where **5L**, indicates that the inputs are set for line-driver encoder at 5 Vdc, and **8/24P** indicates that the outputs is with push-pull electronics and with a power supply from 8 to 24 Vdc.

The board must be supplied with the highest voltage of those requested: in this case 8/24 Vdc. The commutation of the encoder happens through a command of logic type at the inputs called in1 and in2 on the Xn terminal board.

The logic level "1" is obtained connecting to the above-mentioned inputs a voltage included between +5 and +24 Vdc.

For the "0" level, instead, the voltage must be between 0 and +3 Vdc. The combination of the logic levels present on in1 and in2 configurates the terminal board of output in 4 different mode described in the tabel on the following page.

Working diagram and terminal connections board

Terminal board connections encoder input 1 / 2 / 3

X1 / X2 / X3
Wire insertion side

Ch.B	
Ch.Z	Ch.A
Ch.$\overline{Z}$	Ch.$\overline{B}$
	Ch.$\overline{A}$
⊥	+ Vdc
0 Volt	

ENCODER — in1
ENCODER — in2
ENCODER — in3

● L1
● L2
● L3

X1 X2 X3

L4 ●

X5   X4

● **L1: INPUT 1 ABILITATION**
● **L2: INPUT 2 ABILITATION**
● **L3: INPUT 3 ABILITATION**
● **L4:BOARD SUPPLY**

F3   F1 F2

in2 — COM

in1

Wire insertion side

X5

Signal connections relè and encoder input

INPUT OF SELECTION ENCODER
OUTPUT RELE' SIGNAL

out   in

CONTROL
SELECTED ENCODER OUTPUT
BOARD SUPPLY

Connection and supply board and encoder output

0 Volt	
+ Vdc	⊥
	Ch.$\overline{B}$
Ch.$\overline{A}$	Ch.$\overline{Z}$
Ch.A	Ch.Z
Ch.B	

Wire insertion side

X4

Table of logic status

The table indicates the output status on the X4 connector and on the clean contacts on X5, in order to the logics status present on in1 and in2 on the X5 terminal board

Logic status on X5		Encoder selected on X4			Contact selected on X5		
in1	**in2**	**X1**	**X2**	**X3**	**F1**	**F2**	**F3**
0	0	-	-	-	-	-	-
1	0	●	-	-	●	-	-
0	1	-	●	-	-	●	-
1	1	-	-	●	-	-	●

Ordering code

In **Out**

EMD 5 L 8/24 P . XXX

In the case of particular client variant seperate by a full stop.

EMD = Signal selector encoder

XXX = Particular customer variants indicated by a progressive number from 001 to 999

5	
8 ÷ 24	**Input power supply of terminal boards X1 / X2 / X3 (Vdc)**

N = NPN
P = PUSH PULL
L = LINE-DRIVER
OutX4 Electronics

N = NPN
R = PNP
P = PUSH PULL
L = LINE-DRIVER
Electronics input of terminal board X1 / X2 / X3

5	
8 ÷ 24	**Out voltage terminal board X4 (Vdc)**

PV003GB0803A