

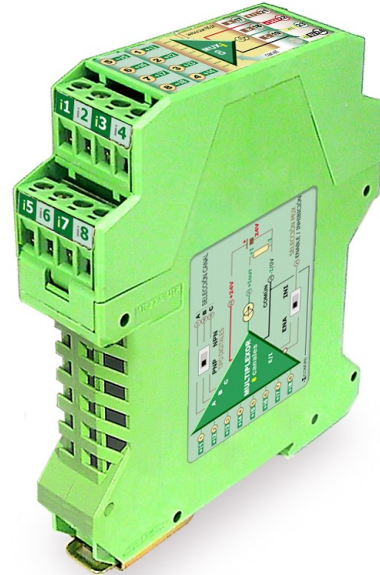


**DATA SHEET — QUICK INSTALLATION GUIDE**



**ANALOGUE MULTIPLEXER FOR 8 INPUTS**

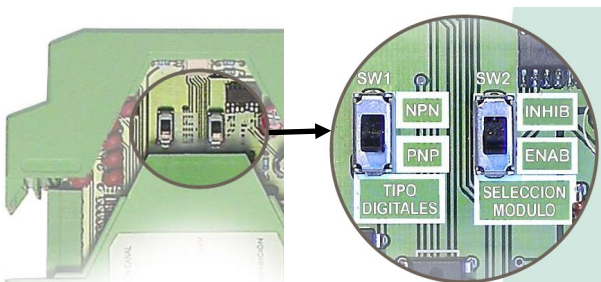
- ◆ 8 x INPUTS 0/4-20mA PROTECTED
- ◆ 1 x ACTIVE 0/4-20mA OUTPUT
- ◆ 3 x DIGITAL INPUTS NPN / PNP
- ◆ 1 x DIGITAL INPUT ENABLE / INHIBIT
- ◆ EXPANDABLE TO 16, 24, 32.... INPUTS
- ◆ MAXIMUM MULTIPLEX SPEED 7 ms
- ◆ POWER SUPPLY 24 V DC



**DESCRIPTION**

Analog multiplexer for eight 0/4 -20mA inputs and one active 0/4 -20mA output controlled by 3 digital inputs with a maximum multiplexing speed of 7ms per channel. Both the analog inputs and the output are protected against overcurrents by resettable protectors. Digital control inputs programmable in positive (PNP) or negative (NPN) logic. E/I digital input to cascade several 8x1 modules to obtain 16, 32...inputs with a single output.

**ACCESS TO SETTINGS**



**MODULE CONTROL SELECTION (SW2)**

The module control is used to extend the analog inputs by linking them with other multiplexers. When using the multiplexer independently, do not use the terminal and set the switch to INI. It can be selected by ENABLE (authorization) or by inverse control INHIBITION (blocking), thus providing greater flexibility.

**ENABLE (authorization):**

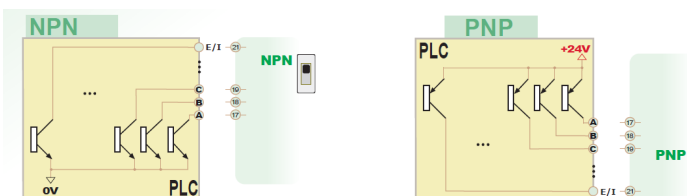
Activated (ON) allows the module to work, obtaining the selected channel at its output. Deactivated (OFF) does not authorize the module to function. At the output, 0mA would be obtained.

**INHIBITION (blocking):**

Activated (ON) it blocks the module, obtaining 0mA at the output. Deactivated (OFF) allows the module to work, obtaining the selected channel at its output.

Via 2 slider switches, accesible from the inside, it is customized: the type of control of the digital lines and the control of the module, when they are linked to expand input channels (16, 24, 32,...)

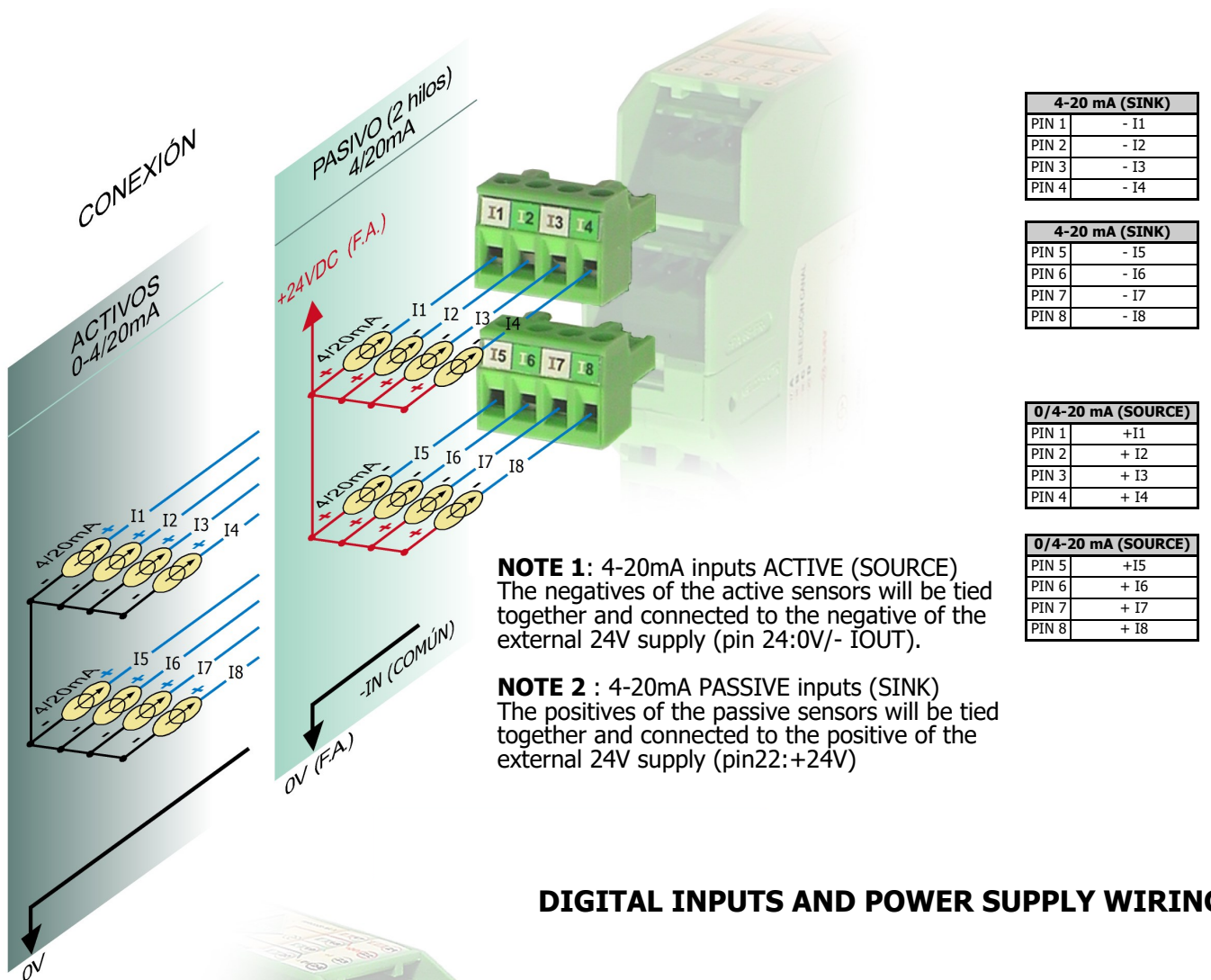
**INPUT CONTROL DIGITAL INPUTS SELECTION (SW1)**



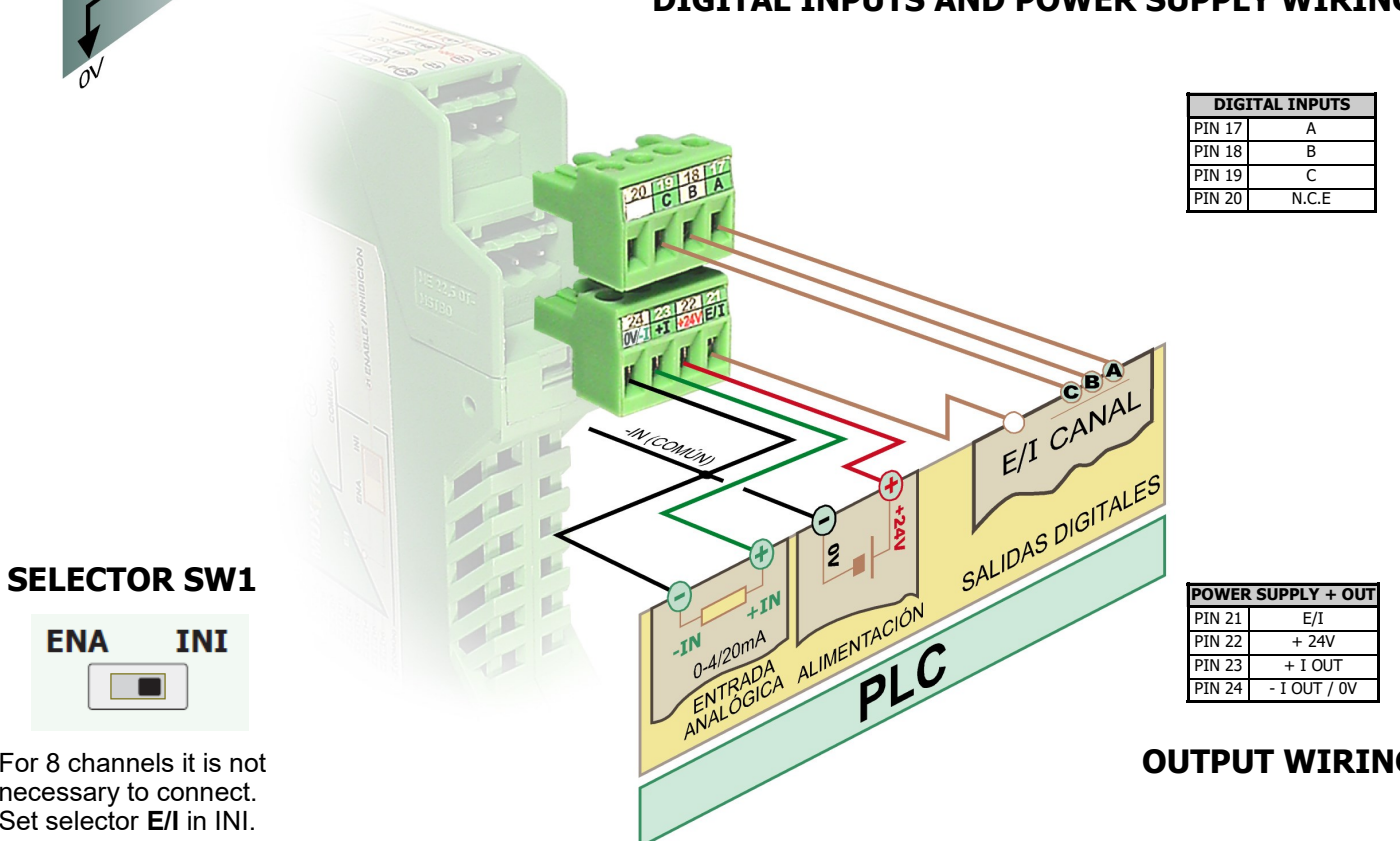
**NPN/PNP SELECTION**

Channel selection (1.. 8) and module control recommends that it be done with transistors. So the number of switching actions will be unlimited and the speed faster. NPN or PNP transistors can be used, configuring the switch (SW1). The channel is selected by binary code.

**ANALOG INPUTS WIRING**



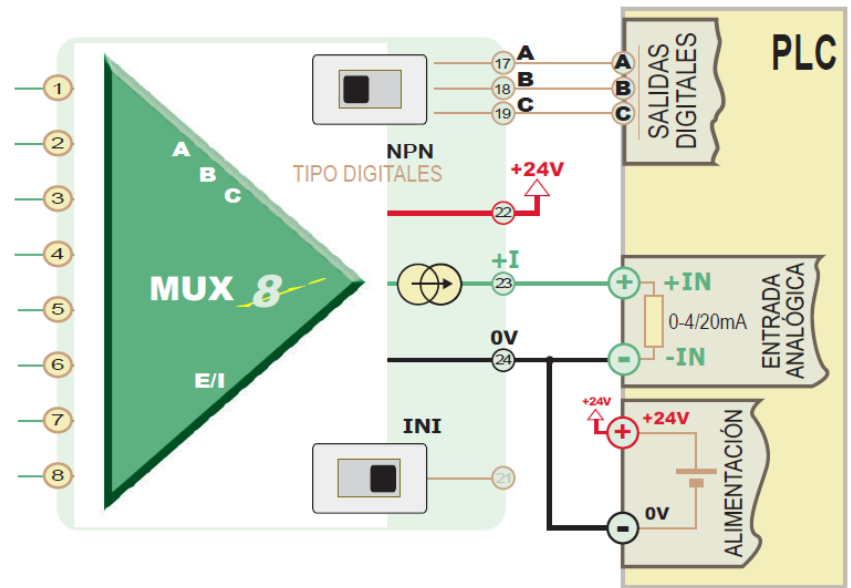
**DIGITAL INPUTS AND POWER SUPPLY WIRING**



For 8 channels it is not necessary to connect. Set selector **E/I** in INI.

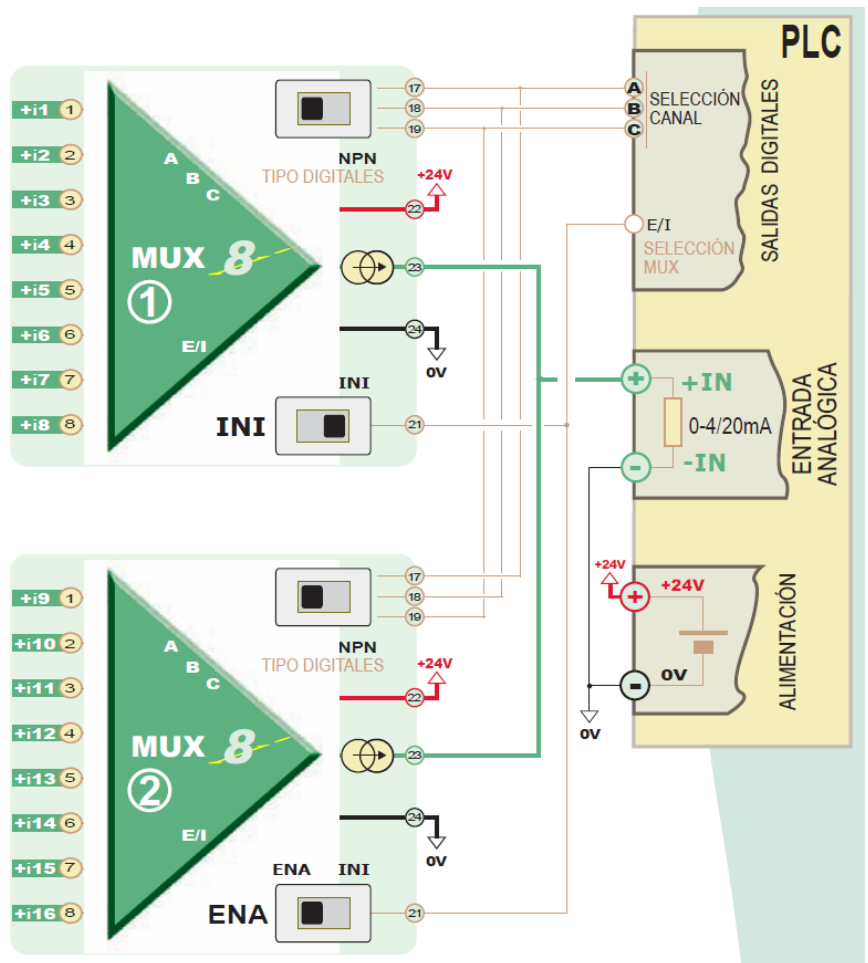
## WIRING FOR 8 ANALOG INPUTS

A	B	C	Nº CANAL
OFF	OFF	OFF	1
ON	OFF	OFF	2
OFF	ON	OFF	3
ON	ON	OFF	4
OFF	OFF	ON	5
ON	OFF	ON	6
OFF	ON	ON	7
ON	ON	ON	8



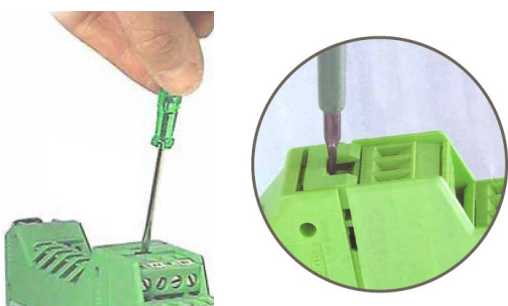
## WIRING FOR 16 ANALOG INPUTS

A	B	C	ENA/INI	Nº CANAL
OFF	OFF	OFF	OFF	1
ON	OFF	OFF	OFF	2
OFF	ON	OFF	OFF	3
ON	ON	OFF	OFF	4
OFF	OFF	ON	OFF	5
ON	OFF	ON	OFF	6
OFF	ON	ON	OFF	7
ON	ON	ON	OFF	8
OFF	OFF	OFF	ON	9
ON	OFF	OFF	ON	10
OFF	ON	OFF	ON	11
ON	ON	OFF	ON	12
OFF	OFF	ON	ON	13
ON	OFF	ON	ON	14
OFF	ON	ON	ON	15
ON	ON	ON	ON	16



## BOX OPENING

Pressing with a screwdriver on the side tabs, the box jumps up, partially extracting the card, to proceed to the configuration or adjustment of the multiplexer.



**NOTE :** Special application for 16 analog inputs 0/4 -20mA (with only 4 digital lines).

Through the flexibility provided by enabling or inhibiting the module by customizing it by  $\text{E/I}$  ENABLE or INHIBITION control, the 2 terminals are joined and controlled by a single digital signal.

Module 1 is configured as INhibit, and module 2 as ENable. In this way one will act contrary to the other with the same digital line.

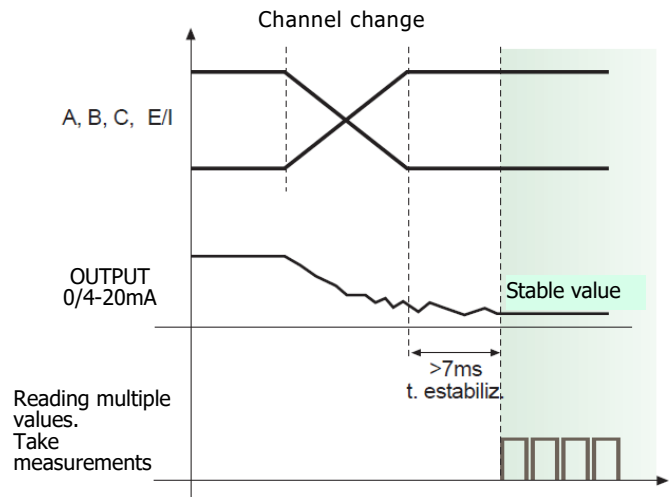
## SPAN ADJUSTMENT (end of scale)

1. To proceed with the recalibration of the Multiplexer, access the SPAN adjuster by sliding the card.
2. Keep the measuring instruments and the KOSMUX8 switched on for at least 15 minutes prior to calibration.
3. Introduce a signal as close to 20mA through one of the 8 input channels, digitally selecting the channel.
4. Adjust the output, using the SPAN potentiometer until obtaining a value identical to that of the input.



## SELECTION SEQUENCE

1. Select the E/I multiplexer module (only in case of having more than 8 channels with modules linked)
2. Select channel in binary A , B , C
3. Wait, at least, the stabilization time, (>7 msg).
4. Capture various analog signal values, then perform the average. (a more stable uptake will be obtained)
5. Go back to point 2



## TECHNICAL SPECIFICATIONS

### ANALOG INPUTS

Current ..... 8 x 0/4-20mA  
 Impedance .....  $\leq 260\Omega$   
 Protected against permanent overcurrents by means of resettable fuses when the anomaly ceases.  
 Current circulating constantly in all loops of inputs, even if they are not selected.

### DIGITAL INPUTS

Optocoupled and Selectables ..... NPN / PNP  
 Consumption intensity/channel ..... 9 mA  
 Module selection ..... ENABLE / INHIBT

### OUTPUT

Current ..... 0/4-20mA (SOURCE)  
 Amplified load capacity .....  $\leq 750\Omega$   
 Output current protection .....  $< 28\text{mA}$   
 Expandable to join another output  
 Stabilization time on each channel .....  $< 7\text{s}$   
 SPAN setting .....  $\pm 10\%$  F.S.

### POWER SUPPLY

Voltage ..... 24 VDC (20V to 30V)  
 Maximum consumption ..... 50mA  
 Protected against reverse polarity

### ENVIRONMENTAL CONDITIONS

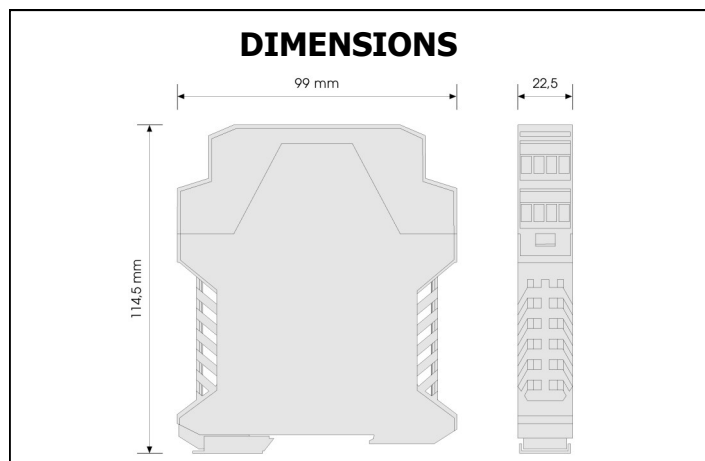
Operating temperature .....  $-40^\circ\text{C}$  to  $+85^\circ\text{C}$   
 Overall maximum error .....  $< 0.05\%$

### FORMAT

Protection ..... IP20  
 Material ..... Polyamide PA6.6  
 Weight ..... 120g  
 UL Combustibility ..... V0  
 Mounting ..... rail EN50022

### WIRINGS

Screw terminals M3 ..... torque 0.5Nm  
 Connection cable .....  $\leq 2.5\text{mm}^2$  (12AWG)  
 Connection cable inputs (9 to 16) .....  $\leq 1.5\text{mm}^2$  (16AWG)



### CE Conformity.

Directives	EMC 2014/30/EU	LVD 2014/35/EU
Standards	EN 61000-6-2 EN 61000-6-3	EN 61010-1



**ATTENTION: If this instrument is not installed and used in accordance with these instructions, the protection it provides against hazards may be impaired.**

To meet the requirements of EN 61010-1, where the unit is permanently connected to the main power supply, it is mandatory to install a circuit-breaking device easily accessible to the operator and clearly marked as a disconnect device.



According to 2012/19/EU Directive, You cannot dispose of it at the end of its lifetime as unsorted municipal waste. You can give it back, without any cost, to the place where it was acquired to proceed to its controlled treatment and recycling.