

GUIA RÁPIDA DE INSTALACIÓN
GUIDE RAPIDE D'INSTALLATION
QUICK INSTALLATION GUIDE



INDICADOR DIGITAL CON INTEGRADOR Y MULTI-ENTRADA* PARA:

INDICATEUR NUMÉRIQUE AVEC INTÉGRATEUR ET ENTRÉES MULTIPLES* POUR :

DIGITAL INDICATOR WITH INTEGRATOR AND MULTI-INPUT* FOR:

Célula de carga, Transductores de presión, Caudalímetros (medición del **CAUDAL** instantáneo así como el **GASTO** acumulado), Medición de corrientes continuas a través de Shunt (ideal para galvanoplastia)

Canal matemático que permite operaciones (+, -, *, /) entre las dos entradas.

Display instantáneo ±9999 puntos y display totalizador desde -9999999 a 99999999 puntos.

Todas las opciones de salida que pueden ser incorporadas responden a 100 lecturas / segundo. Si se utilizan las dos entradas, en el display principal se indican los valores netos de la medida de la entrada 1, la entrada 2 y el canal matemático, según selección por tecla MAX/MIN, visualizando en el display auxiliar el total acumulado de la entrada 1, sea cual sea el canal en uso.

Capteurs de force, transducteurs de pression, débitmètres (mesure du **débit instantané et cumulé**), mesure du courant continu par shunt (idéal pour la galvanoplastie). Canal mathématique permettant les opérations (+, -, *, /) entre les deux entrées. Affichage instantané ±9999 points et affichage totalisateur de -9999999 à 99999999 points.

Toutes les sorties disponibles supportent 100 lectures/seconde. Si les deux entrées sont utilisées, l'écran principal affiche les valeurs nettes de la mesure provenant de l'entrée 1, de l'entrée 2 et du canal mathématique, selon la sélection de la touche MAX/MIN. L'écran auxiliaire affiche le total cumulé pour l'entrée 1, quel que soit le canal utilisé.

Load cell, Pressure transducers, Flow meters (measuring **instantaneous flow rate as well as accumulated flow rate**), DC current measurement via shunt (ideal for electroplating). Mathematical channel allowing operations (+, -, *, /) between the two inputs. Instantaneous display ±9999 points and totalizing display from -9999999 to 99999999 points.

All output options that can be incorporated respond to 100 readings/second. If both inputs are used, the main display shows the net values of the measurement from input 1, input 2, and the mathematical channel, according to the MAX/MIN key selection. The auxiliary display shows the accumulated total for input 1, regardless of which channel is in use.

Proceso. Process. Process.

Rango Plage Range	±0-20mA * dual input	±0-10V ±0-5V ±0-1V**
Impedancia de entrada Impédance d'entrée Input impedance	11,8Ω	1MΩ **100MΩ
Precisión Précision Accuracy	±(0.1% mv +3digit)	
Excitación Excitation Excitation	24V@ 30mA	

mv = measured value

Célula de carga. Pont de jauge. Strain gauge.

Rango Plage Range	0-30 mV	0-60 mV	0-120 mV	0-300mV 0-500mV
Impedancia de entrada Impédance d'entrée Input impedance	100 MΩ			
Precisión Précision Accuracy	±(0.1% mv +2 digit)			
Excitación Excitation Excitation	5 V ±100 mV @ 120 mA 10 V ±10 mV @ 120 mA fine tuning (50 ppm / °C)			

Potenciometro. Potentiomètre. Potentiometer.

Rango Plage Range	Min 120 Ω
Impedancia de entrada Impédance d'entrée Input impedance	>10MΩ
Precisión Précision Accuracy	±0.1% mv+ 1 digit
Excitación Excitation Excitation	2,2 V DC @ 30mA

A/D Conversion

Técnica Technique	ΔΣ
Resolución Résolution Resolution	±15 bit
Cadencia Cadence de mis a jour Up date rate	200/s



Conformidad CE. Conformité CE. CE Conformity.

Directivas Directives Directives	ROHS 2011/65/EU 2015/863/EU	EMC 2014/30/UE	LVD 2014/35/UE
Normas Normes Standards		EN 61000-6-2 EN 61000-6-3	EN 61010-1



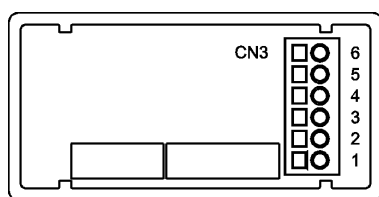
Para una información más completa, por favor consulte el manual de instrucciones en nuestra web
 Pour plus d'informations veuillez consultez le manuel dans notre site web
 For complete instructions please refer to the user manual in our website

DOWNLOAD
USER MANUAL



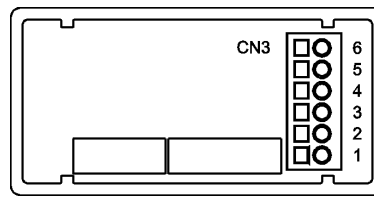
Según la Directiva 2012/19/UE, no puede deshacerse de este aparato como un residuo urbano normal. Puede devolverlo, sin coste alguno, al lugar donde fue adquirido para que de esta forma se proceda a su tratamiento y reciclado controlados.
 Selon la Directive 2012/19/UE, l'utilisateur ne peut se débarrasser de cet appareil comme d'un résidu urbain courant. Vous pouvez le restituer, sans aucun coût, au lieu où il a été acquis afin qu'il soit procédé à son traitement et recyclage contrôlés.
 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.

CN3 TRANSDUCER/ PROCES (V, mA)



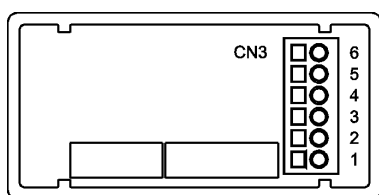
- PIN 6 = -EXC [excitation supply (-)]
 PIN 5 = +EXC [excitation supply (+)]
 PIN 4 = +IN [input mA (+)] (INP1)
 PIN 3 = -IN [input mV, V, mA]
 PIN 2 = +IN [input V (+)] (0-10/ 0-5)
 PIN 1 = +IN [input mV, V (0-1V) / mA (INP2)]

CN3 LOAD CELL (mV/ V)



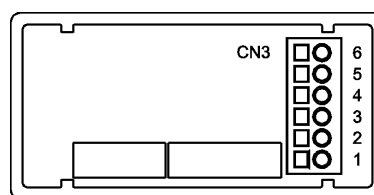
- PIN 6 = -EXC [excitation supply (-)]
 PIN 5 = +EXC [excitation supply (+)]
 PIN 4 = Not connected
 PIN 3 = -mV [input mV (-)]
 PIN 2 = Not connected
 PIN 1 = +mV [input mV (+)]

CN3 EXTERNAL SHUNT/mV for current DC



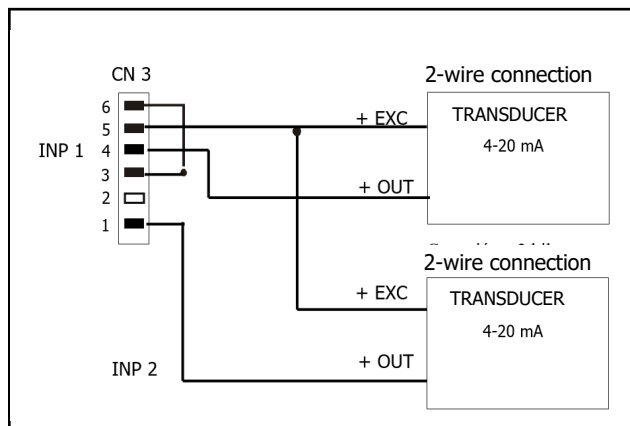
- PIN 6 = Not connected
 PIN 5 = Not connected
 PIN 4 = Not connected
 PIN 3 = - SHUNT (50 / 60 / 100) mV DC
 PIN 2 = Not connected
 PIN 1 = +SHUNT (50 / 60 / 100) mV DC

CN3 POTENTIOMETER



- PIN 6 = - EXC (2,2 V)*
 PIN 5 = POT HI
 PIN 4 = Not connected
 PIN 3 = POT LO (COMM) * (Hay que unir el PIN 6 y el PIN 3)
 PIN 2 = Not connected (PIN 6 et PIN 3 doivent être reliées)
 PIN 1 = POT CENTRAL (PIN 6 and PIN 3 need to be joined)

CN3 DUAL INPUT PROCES 4-20mA



NOTA: Las dos entradas comparten el mismo negativo de entrada.

REMARQUE : Les deux entrées partagent la même entrée négative.

NOTE: Both inputs share the same negative input.

**** IMPORTANTE! / IMPORTANT! / WICHTIG!**

Para garantizar la seguridad eléctrica de acuerdo con EN 61010-1 deberá instalarse como medida de protección un fusible externo.

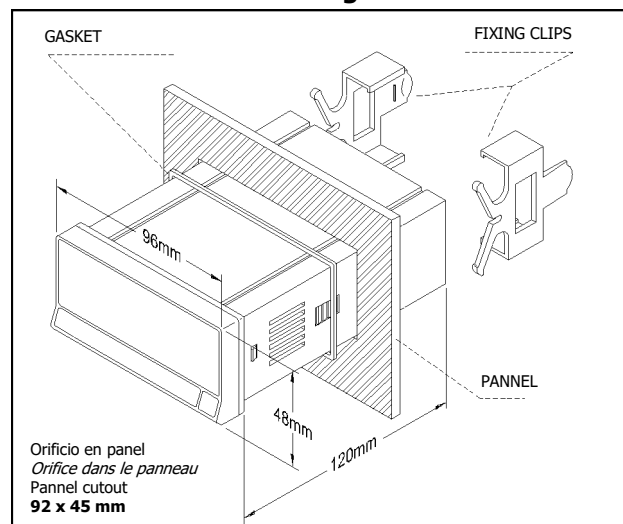
Pour garantir la sécurité électrique selon EN 61010-1 il faut installer un fusible externe de protection.

To guarantee electrical safety according to EN 61010-1 a protective external fuse must be installed.

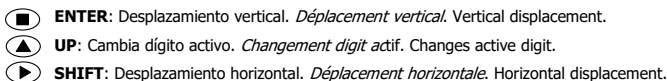
Dimensiones y montaje

Dimensions et montage

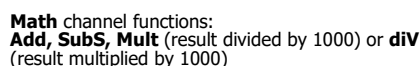
Dimensions and mounting

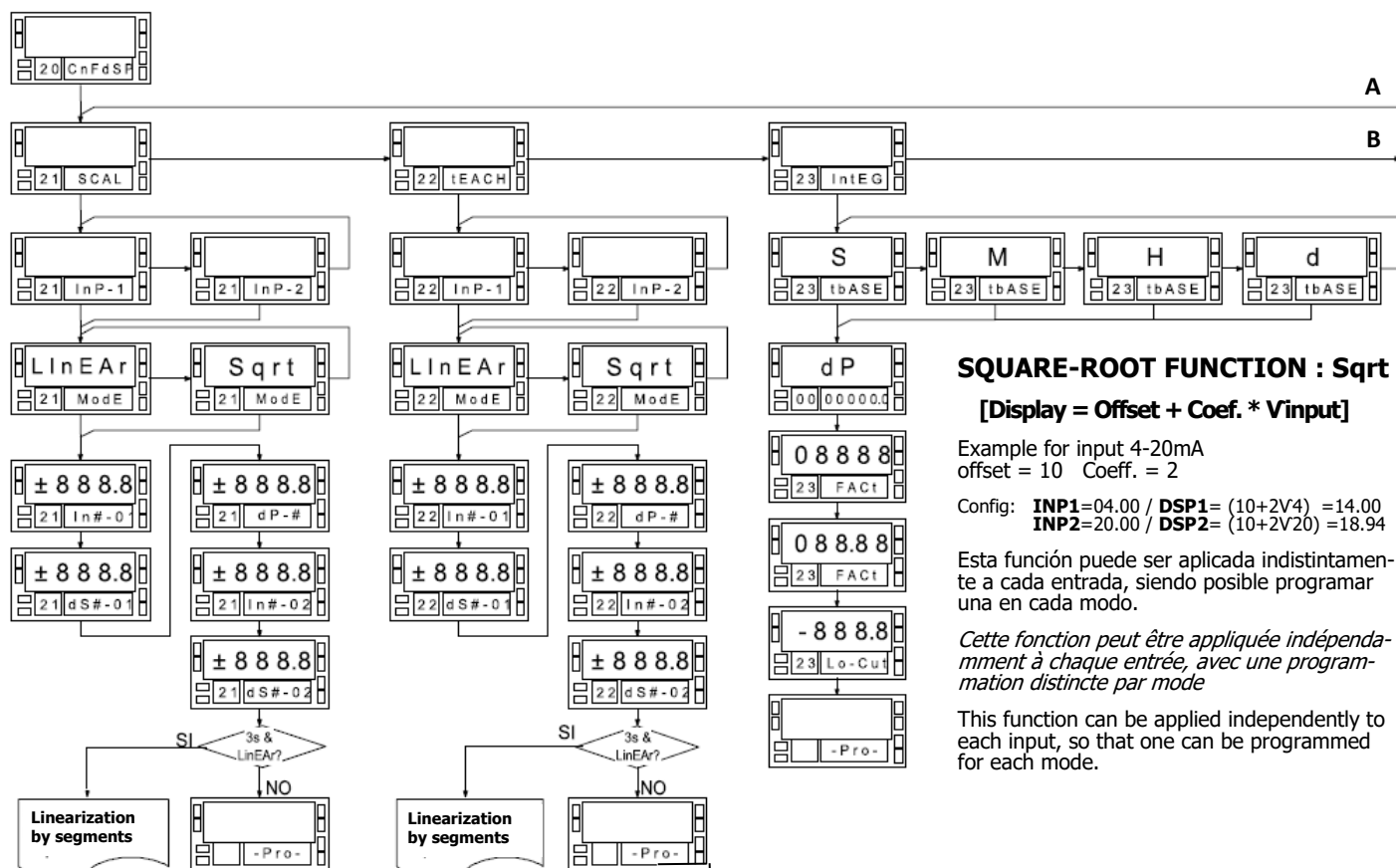


MODULE SELECTION



INPUT TYPE





LINEALIZACIÓN EN 15 TRAMOS (16 PUNTOS)
LINEARISATION EN 15 SEGMENTS (16 POINTS)
LINEARIZATION IN 15 SEGMENTS (16 POINTS)

Si después de programar el display 2 de la entrada deseada, mantenemos pulsada la tecla ENTER mas de 3 segundos accederemos a la programación de mas segmentos hasta un total de 15

Los valores de entrada a programar en cada punto deben estar en orden siempre creciente o siempre decreciente

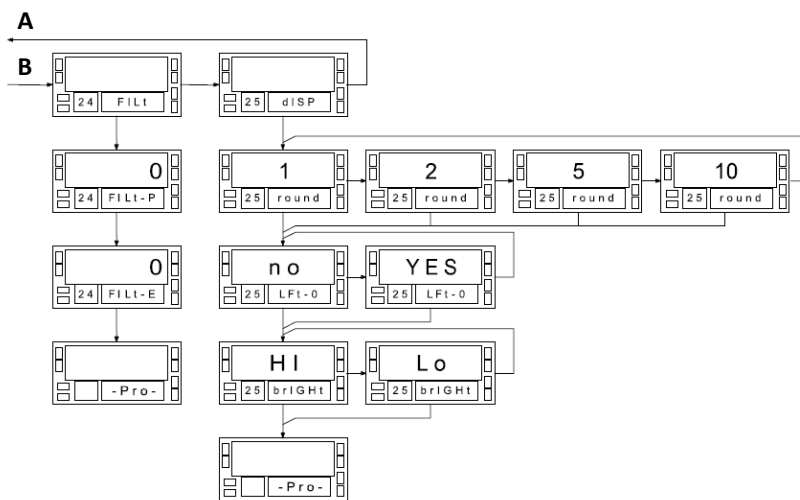
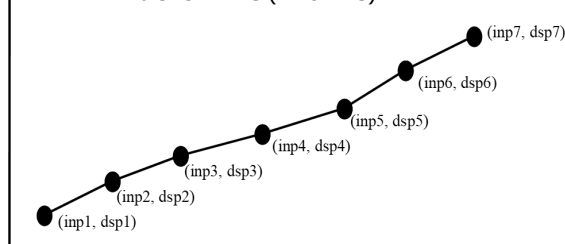
Après avoir programmé l’affichage 2 de l’entrée souhaitée, si la touche ENTER est maintenue enfoncée pendant plus de 3 secondes, il sera possible d’accéder à la programmation de segments supplémentaires, jusqu’à un total de 15

Les valeurs d’entrée à programmer à chaque point doivent toujours être dans un ordre strictement croissant ou strictement décroissant

After programming display 2 of the desired input, if the ENTER key is held for more than 3 seconds, access to programming additional segments—up to a total of 15—will be enabled

The input values to be programmed at each point must always be in strictly ascending or strictly descending order

EXAMPLE : 6 SEGMENTS (7 POINTS)



INTEGRATOR CONFIGURATION : Integ

tbASE : Base de tiempos **s, M, H, d** de integración
dP : Posición del punto decimal del totalizador
FACT : Valor del factor multiplicador (rango 0.0001 a 9999)
FACT : Posición del punto decimal del factor multiplicador
Lo-Cut : no integra valores de la lectura instantánea inferiores al valor Lo-Cut

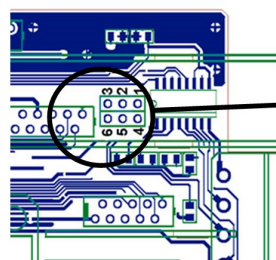
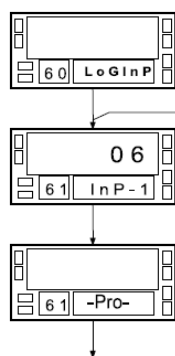
NOTA: EL INTEGRADOR SOLO TOTALIZA LA SEÑAL INSTANTÁNEA DE INPUT 1.
 La integración se realiza a un ritmo de 100 lecturas por segundo.

tbASE : Base de temps **s, M, H, j** pour l’intégration
dP : Position du point décimal du totalisateur
FACT : Valeur du facteur multiplicateur (plage de 0,0001 à 9999)
FACT : Position du point décimal du facteur multiplicateur
Lo-Cut : n’intègre pas les valeurs instantanées inférieures à la valeur Lo-Cut

REMARQUE : L’intégrateur ne totalise que le signal instantané de l’ENTRÉE 1.
 L’intégration se réalise à une cadence de 100 mesures par seconde.

tbASE: time base **s, M, H, d** for integration
dP : Decimal point position of the totalizer
FACT : Multiplier factor value (range 0.0001 to 9999)
FACT : Decimal point position of the multiplier factor
Lo-Cut : Does not integrate instantaneous readings below the Lo-Cut value

NOTE: The integrator only totals the instantaneous signal of INPUT 1.
 Integration is performed at a rate of 100 readings per second



MOTHER BOARD

PNP / NPN SELECTION

3 2 1 JUMPER J1

...

...

6 5 4 JUMPER J2

CN2 input type

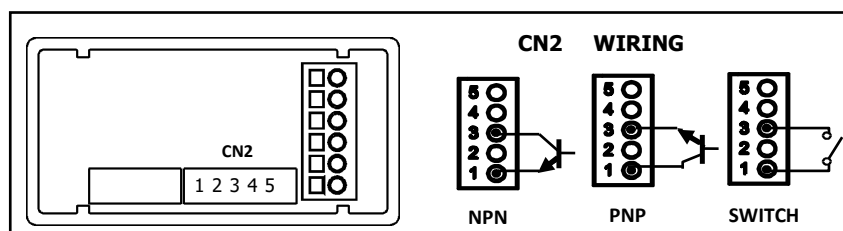
PNP J1 (2-3) + J2 (5-6)**NPN** J1 (1-2) + J2 (4-5)

Default config. NPN / Switch.

For PNP see manual)

CN2 DIGITAL INPUTS (Factory Configuration)

PIN (INPUT)	Function	Number
PIN 1 (INP-1)	RESET	Function nº 7
PIN 2 (INP-2)	HOLD	Function nº 9
PIN 3	COMMON	
PIN 4 (INP-4)	TARE	Function nº 1
PIN 5 (INP-5)	PEAK/VALLEY	Function nº 6

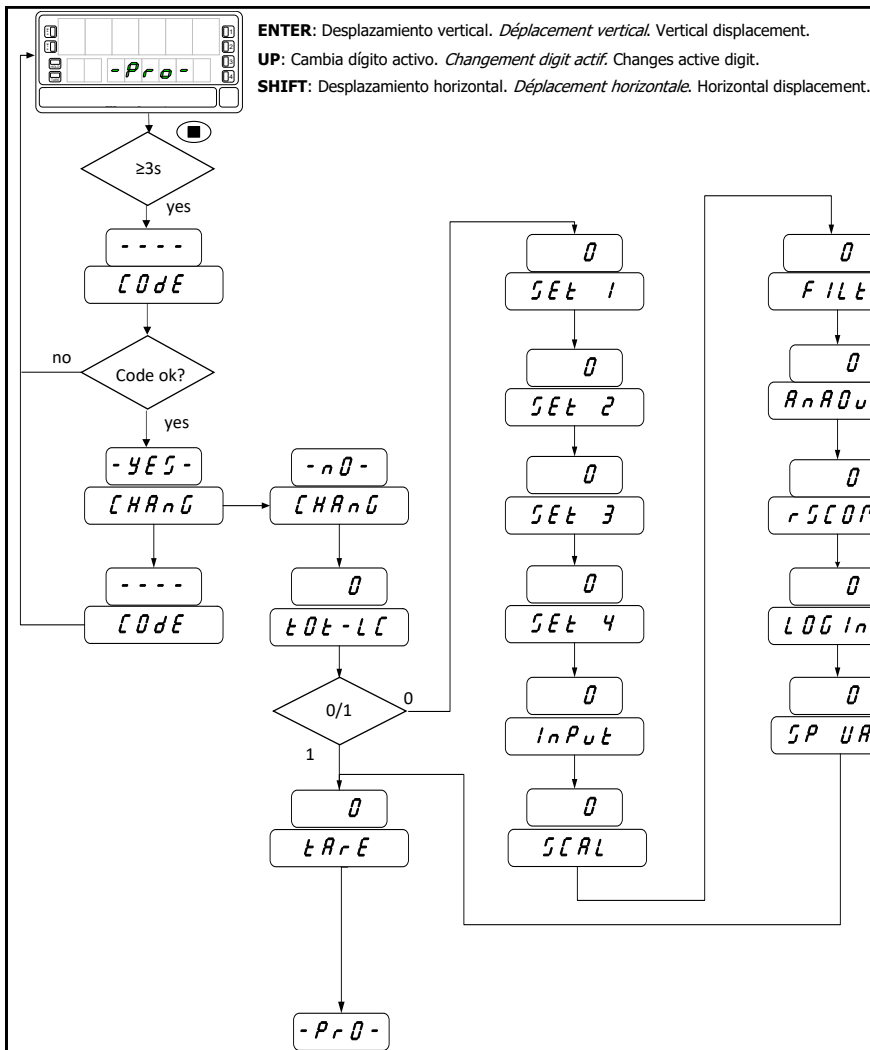


No.	FUNCTION	DESCRIPTION	ACTION
0	Disabled	None	-
*1	TARE	Sets the display to zero and adds the absorbed value to the TARE memory. The function is performed on the channel shown on the display, provided it is not the mathematical channel.	Button press
2	RESET TARE	Adds the accumulated TARE to the display value and sets the TARE memory to zero. The function is performed on the channel shown on the display, provided it is not the mathematical channel.	Button press
3	TOTAL RESET	Sets the TOTALIZER to zero.	Button press
4	STOP TOTAL	Temporarily stops the time during which the function remains active.	Level
5	DISPLAY	Displays / changes the displayed channel on the main display.	Button press
*6	PEAK / VALLEY	Displays, with each button press, the peak and valley values of the channel in use.	Button press
*7	COMBINED RESET	Combined with function 1, resets the TARE memory. Combined with function 6, resets the value currently shown on the secondary display (peak, valley, or total).	Button press
8	HOLD 1	Freezes the display, allowing visualization of the different channels (all of them frozen at the moment of operation).	Level
*9	HOLD 2	Same as HOLD 1, but also freezes the analog output and the displayed values requested by the PC.	Level
10	VIEW INPUT	Replaces the totalizer value on the secondary display with the indication of the input value of the channel in use, provided it is not the mathematical channel.	Button press
11	VIEW GROSS	Replaces the totalizer value on the secondary display with the indication of the gross value (net + tare) of the channel in use, provided it is not the mathematical channel.	Button press
12	VIEW TARE	Replaces the totalizer value on the secondary display with the indication of the tare value of the channel in use, provided it is not the mathematical channel.	Button press
13	ANALOG GROSS	Sets the analog output to the gross value of the programmed channel.	Button press
14	ANALOG ZERO	Sets the analog output to zero (0 V or 4 mA depending on type).	Level
15	AUXILIARY CLEAR	Turns off the auxiliary display if it is showing the total.	Level
16	TOTAL PRINT	Prints the totalizer value.	Button press
17	NET PRINT 1	Prints the display value of channel 1.	Button press
18	NET PRINT 2	Prints the display value of channel 2.	Button press
19	MATH PRINT	Prints the display value of the mathematical channel.	Button press
20	SETPOINT 1 PRINT	Prints the value of setpoint 1 and its status.	Button press
21	SETPOINT 2 PRINT	Prints the value of setpoint 2 and its status.	Button press
22	SETPOINT 3 PRINT	Prints the value of setpoint 3 and its status.	Button press
23	SETPOINT 4 PRINT	Prints the value of setpoint 4 and its status.	Button press
24	FALSE SETPOINTS	Provides access to the programming and use of four setpoints when no expansion board is installed.	Level
25	RESET LATCH	Resets the latched alarms that are active outside the alarm zone.	Level
26	ROUND RS	Makes the display values sent through the serial channel be taken from the internal rounding filter.	Level

BLOQUEO

VERROUILLAGE

LOCK



BLOQUEO TOTAL : No será posible modificar datos. En este caso, cuando se entra en programación, aparecerá en el display la indicación "-dAtA-".

BLOQUEO PARCIAL : Se podrán modificar datos en aquellos menús o submenús que no estén bloqueados. En este caso, cuando se entra en los menús de programación, aparecerá en el display secundario la indicación "-Pro-".

VERROUILLAGE TOTAL : Il ne sera pas possible de modifier des données. Dans ce cas, lorsque la programmation est entrée, l'indication "-dAtA-" apparaît sur l'afficheur.

VERROUILLAGE PARTIEL : Les données peuvent être modifiées dans les menus ou sous-menus qui ne sont pas verrouillés. Dans ce cas, lorsque les menus de programmation sont entrés, l'indication "-Pro-" apparaît sur l'affichage secondaire.

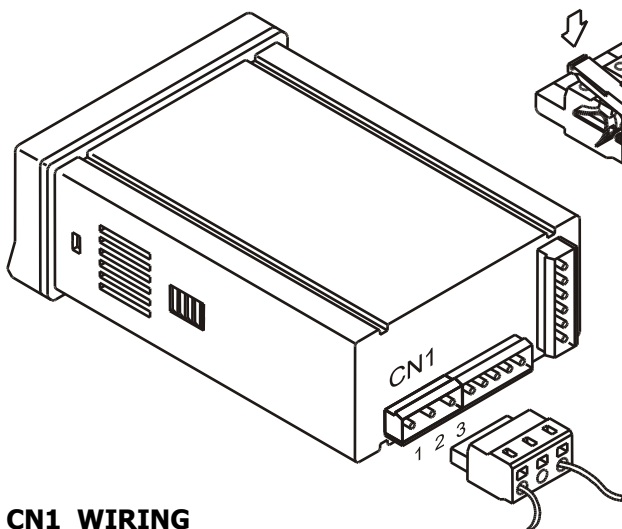
TOTAL LOCK : It will not be possible to r modify data. In this case, when programming is entered, the indication "-dAtA-" will appear on the display.

PARTIAL LOCK : Data can be modified in those menus or submenus that are not locked. In this case, when the programming menus are entered, the indication "-Pro-" will appear on the secondary display.

CONEXIONADO

RACCORDEMENT

WIRING



CN1 WIRING

AC VERSIONS

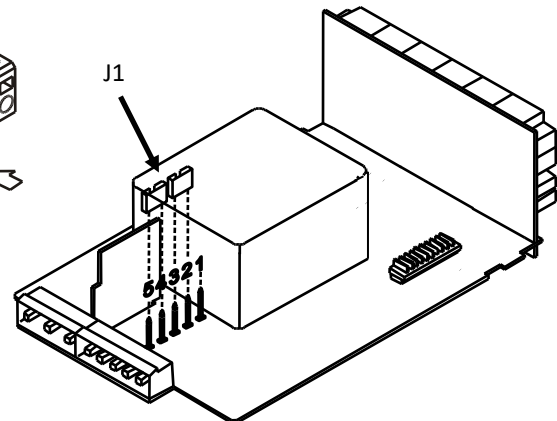
PIN 1 - AC LINE

PIN 2 - GND (GROUND)

PIN 3 - AC NEUTRAL

Each terminal accept cables of section between 0.08 mm² and 2.5 mm² (AWG 26 ÷ 14).

The blocks provide removable adaptors into each terminal to allow proper fastening for cable sections < 0.5 mm².



POWER SUPPLY RANGE

KAPPA-M 115VAC 5W 50/60Hz (J1= 1-2 / 3-4)

KAPPA-M2 24VAC 5W 50/60Hz (J1 = 1-2 / 3-4)

KAPPA-M 230VAC 5W 50/60Hz (J1 = 2-3 / 4-5)

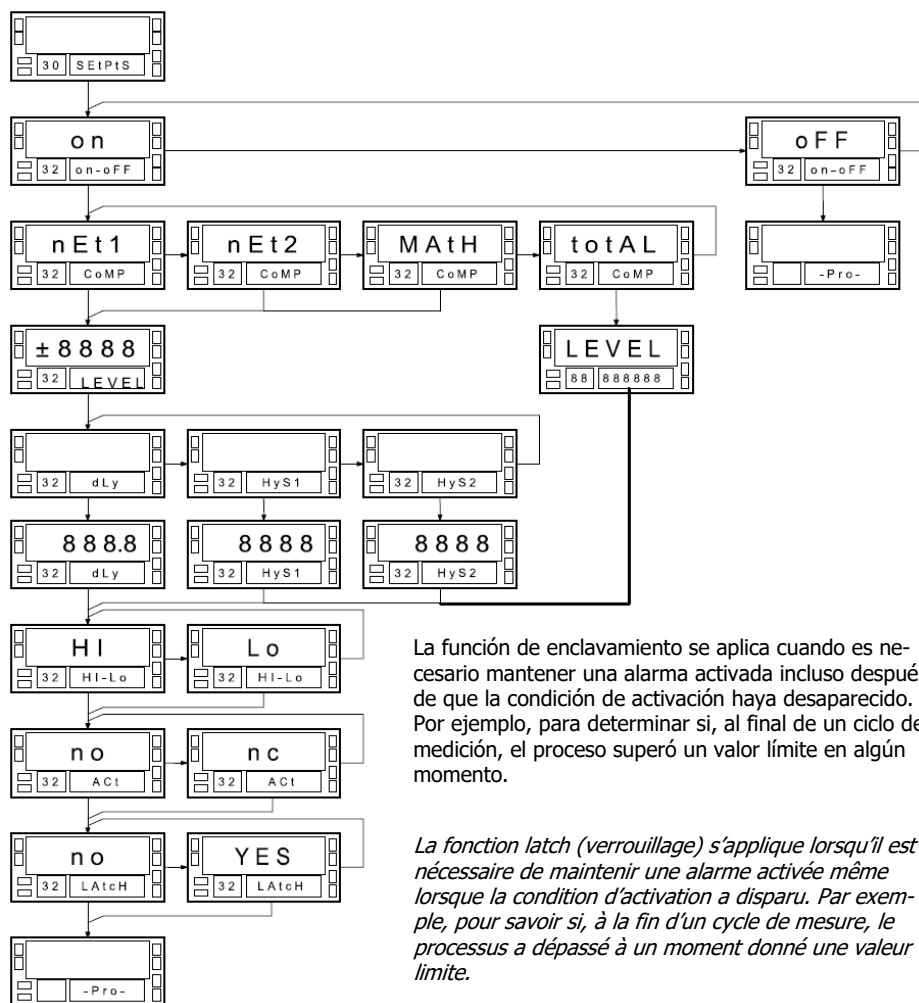
KAPPA-M2 48VAC 5W 50/60Hz (J1 = 2-3 / 4-5)

Recommended fuse : KAPPA-M (0.5A)
KAPPA-M2 (2A)

OPCIÓN RELÉS

RELAIS OPTION

RELAYS OPTION



ON-OFF SELECTION

ON: habilitado / activé / enabled

Comp SELECTION (# = Channel)

Net#1, Net#2, #Math, Totalizer

dLy : delay

HyS1 : asymmetric hysteresis

HyS2 : simetrical hysteresis

Hi - Lo SELECTION

HI : Relay ON display > setpoint

Lo : Relay ON display < setpoint

Act SELECTION

no : Normally Open contacts

nc : Normally Closed contacts

LAtch SELECTION

no : without LATCH

YES : with LATCH

La función de enclavamiento se aplica cuando es necesario mantener una alarma activada incluso después de que la condición de activación haya desaparecido. Por ejemplo, para determinar si, al final de un ciclo de medición, el proceso superó un valor límite en algún momento.

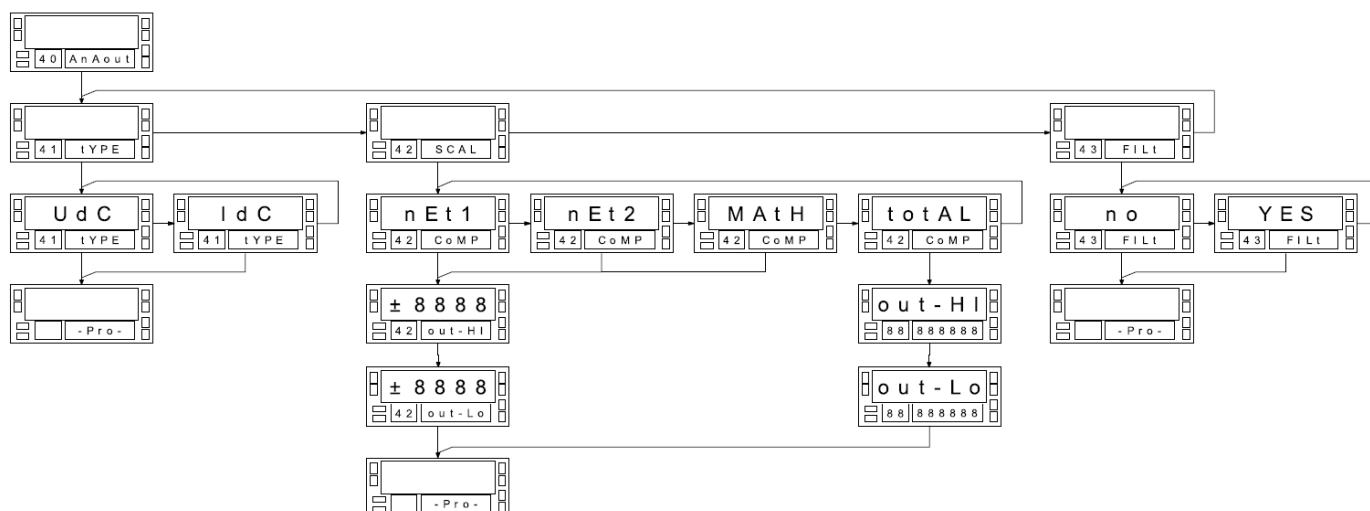
La fonction latch (verrouillage) s'applique lorsqu'il est nécessaire de maintenir une alarme activée même lorsque la condition d'activation a disparu. Par exemple, pour savoir si, à la fin d'un cycle de mesure, le processus a dépassé à un moment donné une valeur limite.

The latch function is applied when it is necessary to keep an alarm activated even after the activation condition has disappeared. For example, to determine whether, at the end of a measurement cycle, the process exceeded a limit value at any point.

SALIDA ANALÓGICA

SORTIE ANALOGIQUE

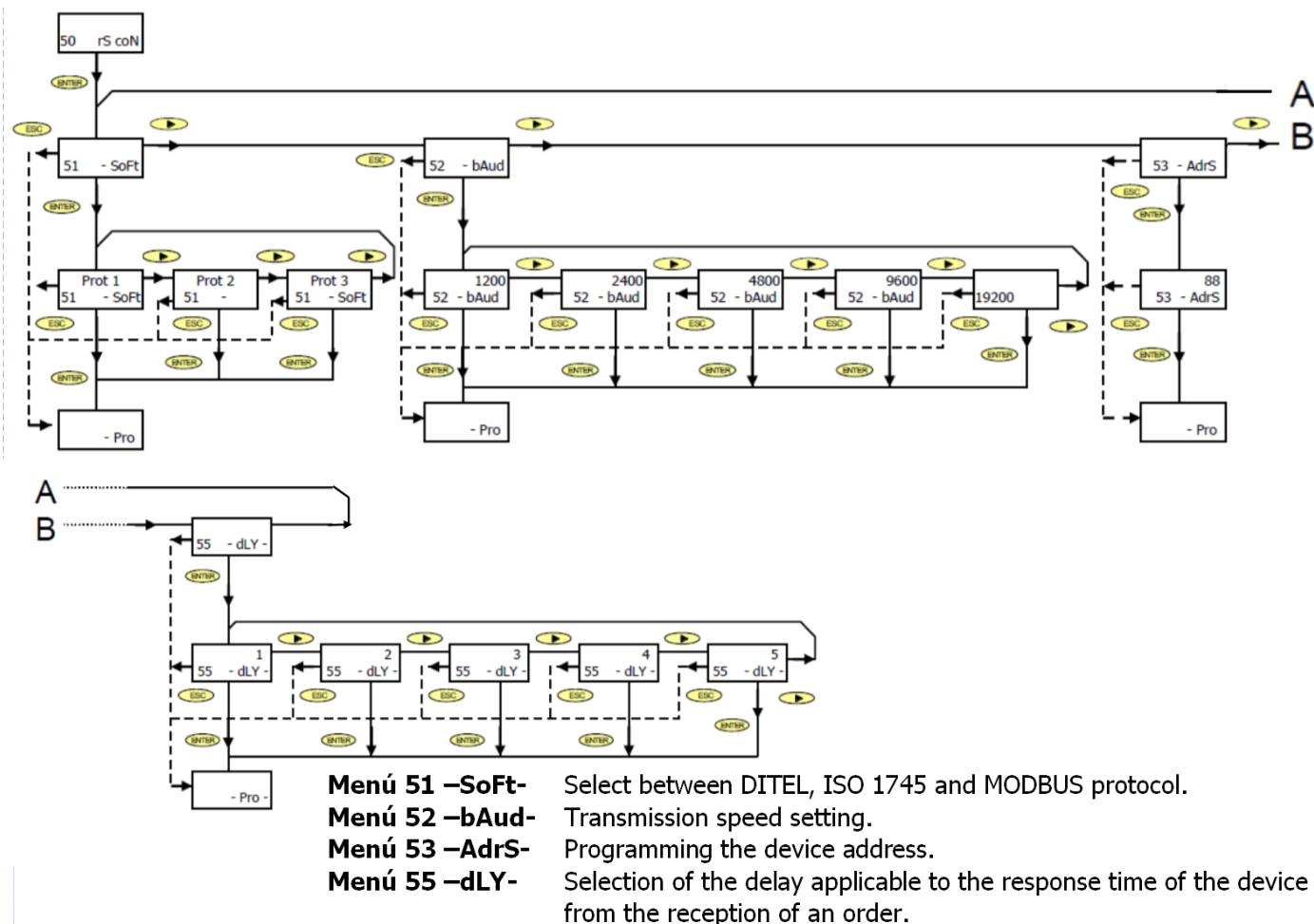
ANALOG OUTPUT



La salida analógica se actualiza cada 10 ms. El valor de umbral de la señal de entrada se programa dentro de un rango de cualquiera de las pantallas, y cuando se supera el valor de NET1, NET2, MATH o TOTAL (siempre que dicho valor esté visualizado).

La sortie analogique est actualisée chaque 10 ms. La valeur de seuil du signal d'entrée se programme dans une plage de n'importe quel affichage, et lorsque la valeur de NET1, NET2, MATH ou TOTAL est dépassée (à condition que cette valeur soit affichée).

The analog output is updated every 10 ms. The threshold value of the input signal is programmed within a range of any of the displays, and when the value of NET1, NET2, MATH, or TOTAL is exceeded (as long as that value is displayed).



PROTOCOLS

There are three communication protocols identified as '**Prot-1**', '**Prot-2**', and '**Prot-3**', which correspond respectively to the **STANDARD**, **ISO 1745**, and **MODBUS** protocols.

AVAILABLE COMMANDS

The list of commands given in the **RS232C** or **RS485** option manual is replaced by the following:

Data	1	2
Main display value	'D'	'0D'
TARE value	'T'	'0T'
PEAK value	'P'	'0P'
VALLEY value	'V'	'0V'
TOTAL value	'Z'	'0Z'

Command	1	2	3
reset PEAK	'p'	'0p'	'p'
reset VALLEY	'v'	'0v'	'v'
reset LATCH RELAY	'n'	'0n'	'n'
reset TARE	'r'	'0r'	'r'
set TARE	't'	'0t'	't'
reset TOTAL	'z'	'0z'	'z'

- Data request and modification in protocol 2 (ISO1745)**

Transmit setpoint # value → '**L#**'

Modify → setpoint # value → '**M#**'

- Data request and modification in protocol 3 (MODBUS)**

All data contained in the instrument memory can be read and, if located in a permitted write area, modified in blocks of up to **250** bytes.

Writing is limited to the instrument's programming data area.

Reading has no limitation.

- PROTOCOL MODBUS** (see manual MODBUS at www.ditel.es)