VN1 INDICATOR

PROGRAMMING MANUAL

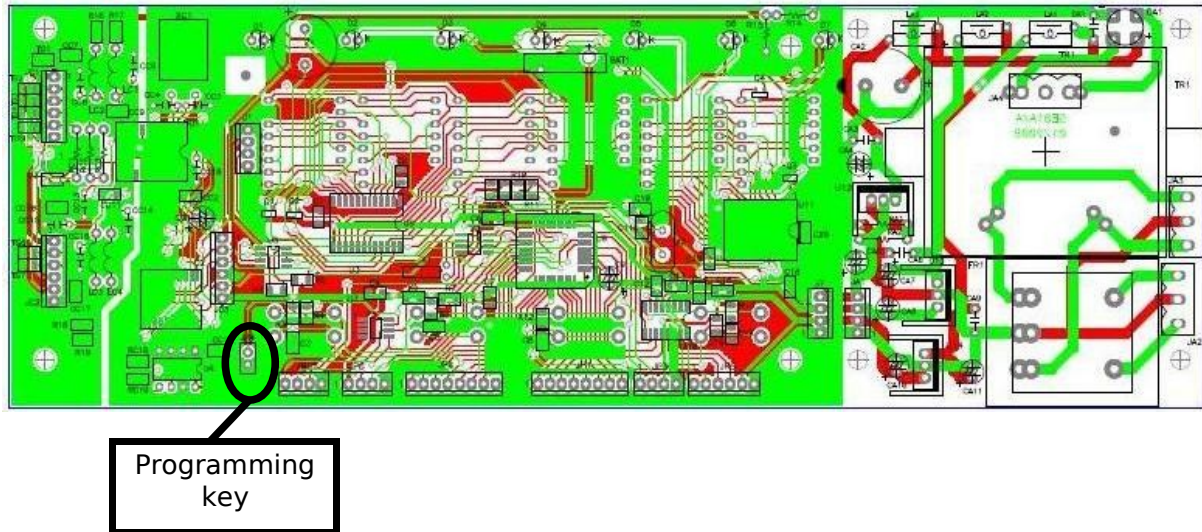May 2010

CONTENTS

1. ENTERING PROGRAMMING

On turning the indicator on and while the initial scroll is running press simultaneously the keys FUN + <T>, While the keys are pressed the system beeps several times until it stops. On releasing the keys the programming menu appears showing in the display the function RANGE.

Programming key

The operation of the keys to use the programming menu is as follows:

- **<T>** & **B**: to move with in the menu.
- **INTRO**: key enters the option to select the display. Once inside can quit without saving.
- **FUN + INTRO**: Pressing this keys simultaneously with the option program is modified. The computer displays a dashed line when programming a new value.
- To vary the content of an option keys are used: **<T>** to increase the value, **B** to decrease the value, **FUN + <T>** to rapidly increase the value and **FUN + B** to decrease rapidly.

2. PROGRAMMING MENU

RANGE	
ZERO	
ADJUST	
FINE ADJUST	
MANUAL ADJUST	Cell capacity
	Cell numbers
	Cell sensibility
	Adjustment calculation
	ESC
ESC	
WEIGHING PARAMS	Span
	Fraction
	Decimal
	Stability Time
	Stability window
	Filter Size
	Filter window
	Initial Zero
	Zero Absorption
	Zero Converter
	Gain Converter
	Metrological parameters
	Default
	ESC

COMUNICATION	Number		
	RS232 1	Active	
		Baud	1200,2400,4800,9600
		Mode	N82,E72,O72
		Loop	
		Connect	PC, Printer
		Protocol	
		Send	Cont., Man., Est.
		Lines	
		Cutter	
		Printer	40c,LX300,Cu.,Zebra
		Zebra	
		Esc	
	RS232 2	Active	

		Baud	1200,2400,4800,9600
		Connect	PC,Printer
		Protocol	
		Send	Cont., Man., Est.
		Lines	
		Cutter	
		Esc	
	RF	Active	
		Operation	Visor, Repeater
		ESC	
	RS485		
	ESC		
OPTION	Clock		
	Dosage		
	Limit		
	Dose 4 products		
	Dose Bulk-Weight		
	4-20mA	Active	
		Adjust 4mA	
		Adjust 20mA	
		Esc	
	0-10V		
	Esc		
HESA			
LANGUAGE	Esp, Por, Fra, Ita, Ing		
OTHER PARAMS	Light display		
	Version		
	Serial number		
	MV Cell		
	Activate Tara		
	Losses		
	Esc		
BATERY	Active		
	Auto Off Time		
	Light to a minimum Time		
	Light Off Time		
	Esc		

* The shaded part of menu is out for options on demand

2.1 RANGE
This option lets you select a metrological scale of the following:

SPAN	FRAC	SPAN	FRAC
3.000 (3 kg)	1 gr	1000.0 (1000 kg)	0.2 kg
6.000 (6 kg)	2 gr	1000.0 (1000 kg) ☼	0.1 kg
6.000 (6 kg) ☼	1 gr	1500.0 (1500 kg)	0.5 kg
10.000 (10 kg)	2 gr	1500.0 (1500 kg) ☼	0.2 kg
10.000 (10 kg) ☼	1 gr	3000 (3000 kg)	1 kg
15.000 (15 kg)	5 gr	3000.0 (3000 kg) ☼	0.5 kg
15.000 (15 kg) ☼	2 gr	6000 (6000 kg)	2 kg
30.000 (30 kg)	10 gr	6000 (6000 kg) ☼	1 kg
30.000 (30 kg) ☼	5 gr	10000 (10000 kg)	2 kg
60.000 (60 kg)	20 gr	10000 (10000 kg) ☼	1 kg
60.000 (60 kg) ☼	10 gr	15000 (15000 kg)	5 kg
100.000 (100 kg)	20 gr	15000 (15000 kg) ☼	2 kg
100.000 (100 kg) ☼	10 gr	30000 (30000 kg)	10 kg
150.000 (150 kg)	50 gr	30000 (30000 kg) ☼	5 kg
150.000 (150 kg) ☼	20 gr	60000 (60000 kg)	20 kg
300.0 (300 kg)	0.1 kg	60000 (60000 kg) ☼	10 kg
300.000 (300 kg) ☼	50 gr	100000 (100000 kg)	20 kg
600.0 (600 kg)	0.2 kg	100000 (100000 kg) ☼	10 kg
600.0 (600 kg) ☼	0.1 kg	150000 (150000 kg)	50 kg
		150000 (150000 kg) ☼	20 kg

☼ : led zero on

2.2 ZERO
When you see -zero- in display, you can press the ENTER key to make the zero of the platform.

2.3 ADJUSTMENT
To adjust weight, a weight is placed on the platform and through the keys, change the value displayed on the display until it is the same as the weight that is on the platform.

Standard
To gain weight you must press **<T>** and to decrease **B**. If you hold down the button continuously variable weight faster.

Quickly
To gain weight quickly you must press simultaneously <T> & FUN.
To reduce weight quickly you must press simultaneously B & FUN.

2.4 FINE ADJUSTMENT

With this option you can adjust the weight more accurately and shown one more decimal. The procedure is the same as with the standard setting.

2.5 MANUAL ADJUSTMENT

This adjustment is used to calibrate the platform without the need to place a weight on top.

2.5.1 Cells capacity

In this field you must enter the capacity of the cells that form the platform.

2.5.2 Number of cells

The number of cells containing the platform (from 1-14)

2.5.3 Cells sensibility

It millivolt sensitivity of the cells (if the platform contains more than one cell to calculate the average sensitivity).

2.5.4 Adjustment calculation

In this menu, auto-tuning is done well indicator show **-Yes-** and press **FUN + ENTER**. Then the indicator adjusts the gain based on the previously recorded values.

2.6 ESC

With this option the indicator restarts

2.7 WEIGHT PARAMETERS

This menu contains the additional parameters for weighing.

2.7.1 Span

This option allows the full scale range using the keys: <T> to change the selected digit with the decimal point, and B to select another digit.

2.7.2 Fraction

In this option you can modify the fraction, choosing between the values of 1, 2, 5, 10, 20, 50.

2.7.3 Decimals

In this option you can select the number of decimal weight, choosing between 0 and 3.

2.7.4 Stability time

The stability time is the time it takes for the indicator to reach the stability of weight in fractions of a second (each unit equals ½ second).

Appears with the default value of 3.

2.7.5 Stability window

This window is set to number of fractions which apply stability.

The default value is 0.

2.7.6 Filter

This filter is used to eliminate the oscillations but slows down the weight.

The default value is 3.

2.7.7 Filter window

Entering this option displays the fraction point for the converter. In this way you can calculate that range of points covered by the filter.

Example: When entering the menu appears **P.Fr. 24**, to apply the filter in the first two fractions must modify the value to **48**.

2.7.8 Zero at start

Select whether you want the indicator to make a zero on startup or not. For applications with hoppers should be start zero to off.

2.7.9 Zero absorption

Selects the number of divisions from zero absorption in tenths of a division.
By entering this option shows the maximum allowed value. As a value by default the display shows the message **MA. 10.6**.

Routinely used for old mechanical equipment.

2.7.10 Converter's Zero

Displays zero in hexadecimal format, which allows the indicator to recalibrate if calibration is lost or in case of repair.
With **<T>** key increases the selected digit value.
With the **B** button is selected another digit.
ENTER key to exit the option without changing the value.
With **FUN + ENTER** keys recording the value of this parameter.

2.7.11 Converter's Gain

Displays the gain value of the equipment, in hexadecimal format and, with zero value converter allows you to save the calibration of equipment.
This parameter is changed using the same keys as the converter's zero.

2.7.12 Metrological parameters

When you select this option, the computer is configured with the weighing metrological parameters(**± 2% up** from zero, **± 8%** at connection zero, and not display the weight if it is negative).

2.7.13 Default

With this option, the indicator loses calibration and all parameters are left with the factory defaults.

2.8 COMMUNICATION

This menu contains the communication parameters of the serial ports.

2.8.1 Number

To assign a indicator number, from 0 to 99 to communicate over a network connected indicators.

2.8.2 Serial 1

2.8.2.1 Active

Enables a serial channel for communication with the PC or printer.

2.8.2.2 Baud

Select the communication speed serial port. The equipment can transmit data at four different speeds: 1200 baud, 2400 baud, 4800 baud and 9600 baud. The latter is selected by default.

2.8.2.3 Mode

Select the serial port communication mode. The equipment can transmit data at three different modes: 8-N-2, 7-E-2, 7-O-2.

2.8.2.4 Loop

Entering this area you can check the serial port connection, since when there is a cross between sending and receiving shows the literal **-yes-**, whereas no cross shows **-no-**.

2.8.2.5 Connect

The equipment can connect to a PC or printer. When connecting to a printer performs a ticket, while selecting the PC sends connection weight with the default format for the selected protocol.

2.8.2.6 Protocol

Indicator contains various protocols to communicate with the PC:

2.8.2.6.1 Protocol –S–

By default it sends the gross weight for the RS-232 channel in a continuous way. It is configured to (Variable Speed,8,N,2). This weight is sent in the following way:

> *Sign + 6 characters + Carriage Return(CR)*

The equipment allows also carrying out the obtaining of the net weight or brute for request through the following commands:

Activation of the communication for request:
> *S + 0 + Carriage Return (3 bytes)*

Request of net weight:
> *S + N + Carriage Return (3 bytes)*

Request of gross weight:
> *S + B + Carriage Return (3 bytes)*

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Turned over to mode by default (continuous):

S + F + Carriage Return (3 bytes)

It carries out one zero to the equipment:

S + C + Carriage Return (3 bytes)

It has the same function of the push button of tare:

S + T + Carriage Return (3 bytes)

Eliminates the tare of the equipment:

S + D + Carriage Return (3 bytes)

Request of the serial number of the equipment:

S + S + Carriage Return (3 bytes)

2.8.2.6.2 Protocol -To-

It is a continuous protocol of variable speed. It is configured to (Speed,E,7,2). This protocol does not send the sign. The chain that it sends is the following one:

Start of text (STX) + 1 + A + 2 spaces + Gross Weight (5 bytes) + Space +

+ 5 zeros + Carriage Return (CR) + Flags

The value of A is 0 if the weight is stable and 8 if it is unstable.

2.8.2.6.3 Protocol -Gv-

9600,8,N,2 is configured.
It works in mode 1 (Continuous) and mode 3 (For request). The tare does not work.

To obtain the net weight it is sent NET and CR. It answers:
: > sign +2 spaces + net weight (5 bytes) + Carriage return(CR)

To obtain the gross weight BRUTE and CR are sent. It answers:
: > sign +2 spaces + gross weight (5 bytes) + Carriage return(CR)

2.8.2.6.4 Protocol –PG–

9600,8,N,2 is configured.
When pressing **INTRO** key it is sent:
Sign + Gross Weight (7 bytes) + Space + Sign + Net Weight (7 bytes) + Space + Number of display (2 bytes) + Carriage Return (CR).

2.8.2.6.5 Protocol -EP-

It is a protocol of variable speed. Configure to (Speed,N,8,2). This protocol does not send decimals. The chain that it sends is the following one:

Start of text (STX) + Flags (1byte) +3 spaces + Weight (5 bytes) + Carriage Return (CR) + Line Feed (LF)

If it is wanted to obtain by the weight for request (configuring to manual in the option of send of the RS- 232 menu) the sign is sent $.

2.8.2.6.6 Protocol –P2–

To use this protocol the protocol P-GII- must be configured in MANUAL send.

When we send the chain:

98 + Price per kilogramme (5 bytes) + checksum (1 byte) + Carriage Return (CR) + Line feed (LF)

The equipment returns the chain:

99 +0 + Weight without decimal comma (5 bytes) +0 + Amount (6 bytes) + checksum (1byte) + Carriage Return (CR) + Line feed (LF).

2.8.2.6.7 Protocol -ME-

It is configured to (Variable Speed, E,7,2). The chain that it sends is:

Weight (5 bytes) + space + kg + Carriage Return (CR)

If it is configured in manual mode sends this chain when pressing **INTRO**. It sends the weight with sign and without decimals.

2.8.2.6.8 Protocol -MC-

It is configured to (4800, E , 7, 2). The chain that it sends is:

Start of text (STX) + 5 spaces + Weight (4 bytes) + 5 spaces + Tare (4 bytes) + 1 space + A + Carriage Return (CR)

The value of A is 3 if the weight is stable and 1 if it is unstable.

2.8.2.6.9 Protocol -u3000-

It is configured to (Speed, N , 8, 2). The chain that it sends is:

Start of Text (STX) + 3 Spaces + Weight (6 bytes) + End of Text (EOT)

2.8.2.7 Send

We can configure the indicator to send data to PC using RS-232 port in the following ways:
- Manual: Data is sent by demand or pressing a key **INTRO**.
- Stable: Data is sent as soon as weight stability is reached
- Continuous: Data is sent continuously

2.8.2.8 Lines

This parameter is the bottom lines of the ticket, to suit the desired size.

2.8.2.9 Cutter

Select whether the printer is connected automatic cutter.

2.8.2.10 Printer

Select the printer connected to your computer:
- 40C: 40 columns standard printer (SRP-275, TM-U220)
- LX300: 80 columns printer (Epson LX300)
- CUSTOM: Integrated printer (PLUS2)
- ZEBRA: Label printer (TLP-2844)

2.8.2.11 Zebra

There is the possibility to choose the fields you want printed on the label printer zebra. If the digit is 1 the data is printed on the label, and if 0 the data will not appear on the label.

NETO	PESADA	BRUTO	TARA	CODIGO	FECHA

2.8.2.12 Esc

Return to the main menu.

2.8.3 Serial 2

2.8.3.1 Active

Enables a serial 2 channel for communication with the PC or printer.

2.8.3.2 Baud

Select the communication speed serial port. The equipment can transmit data at four different speeds: 1200 baud, 2400 baud, 4800 baud and 9600 baud. The latter is selected by default.

2.8.3.3 Connect

The equipment can connect to a PC or printer. When connecting to a printer performs a ticket, while selecting the PC sends connection weight with the default format for the selected protocol.

2.8.3.4 Protocol

Indicator contains various protocols to communicate with the PC:

2.8.3.4.1 Protocol –S–

By default it sends the gross weight for the RS-232 channel in a continuous way. It is configured to (Variable Speed,8,N,2). This weight is sent in the following way:

> *Sign + 6 characters + Carriage Return(CR)*

The equipment allows also carrying out the obtaining of the net weight or brute for request through the following commands:
Activation of the communication for request:
> *S + 0 + Carriage Return (3 bytes)*

Request of net weight:
> *S + N + Carriage Return (3 bytes)*

Request of gross weight:
> *S + B + Carriage Return (3 bytes)*

Turned over to mode by default (continuous):
> *S + F + Carriage Return (3 bytes)*

It carries out one zero to the equipment:
> *S + C + Carriage Return (3 bytes)*

It has the same function of the push button of tare:

S + T + Carriage Return (3 bytes)

Eliminates the tare of the indicator:
S + D + Carriage Return (3 bytes)

Request of the serial number of the equipment:

S + S + Carriage Return (3 bytes)

2.8.3.4.2 Protocol -Gv-

9600,8,N,2 is configured.
It works in mode 1 (Continuous) and mode 3 (For request). The tare does not work.

To obtain the net weight it is sent NET and CR. It answers:
: > sign +2 spaces + net weight (5 bytes) + Carriage return(CR)

To obtain the gross weight BRUTE and CR are sent. It answers:
: > sign +2 spaces + gross weight (5 bytes) + Carriage return(CR)

2.8.3.4.3 Protocol -EP-

It is a protocol of variable speed. Configure to (Speed,N,8,2). This protocol does not send decimals. The chain that it sends is the following one:

Start of text (STX) + Flags (1byte) +3 spaces + Weight (5 bytes) + Carriage Return (CR) + Line Feed (LF)

If it is wanted to obtain by the weight for request (configuring to manual in the option of send of the RS- 232 menu) the sign is sent $.

2.8.3.5 Send

We can configure the indicator to send data to PC using RS-232 port in the following ways:
- Manual: Data is sent by demand or pressing a key **INTRO**.
- Stable: Data is sent as soon as weight stability is reached
- Continuous: Data is sent continuously

2.8.3.6 Lines

This parameter is the bottom lines of the ticket, to suit the desired size.

2.8.3.7 Cutter

Select whether the printer is connected automatic cutter.

2.8.3.8 Esc

Return to the main menu.

2.8.4 RF

This option is only for indicators with RF.

2.8.5 RS-485

This option is only for indicators with RS485.

2.9 OPTIONS

It allows to activate or to deactivate the different available options that the equipment can incorporate

2.9.1 Clock

If the equipment is installed additional clock-calendar, you must enable this option so that the ticket is printed the date and time.

2.9.2 Dosage

This option allows a dosage of two products at two speeds, with the additional relays.

2.9.3 Limit

With this option enabled the additional relay and the indicator can work with as pass/fail, turning on and off the relays on the basis of weight limits programmed by the user.

2.9.4 Dosage 4 products

If you select this option and the indicator contains the additional relays can work at a dosage of 4 products to 1 speed.

2.9.5 Dosage Bulk-Weight

If you select this option and the equipment contains the additional relays, can work at a dosage to facilities Bulk-Weight hoppers.

2.9.6 Additional 4-20mA

This additional gives the indicator with one analogical output compatible with automation and process control.

2.9.6.1 Active

Active 4-20mA additional.

2.9.6.2 Adjust 4mA

Split adjust the weight value of zero to 4 mA, place a series resistance of 560 Ohms at the outlet and connect the indicator with the PLC. And then be adjusted using standard keys.

2.9.6.3 Adjust 20mA

Split adjust the weight value of span to 20 mA, place a series resistance of 560 Ohms at the outlet and connect the indicator with the PLC. And then be adjusted using standard keys.

2.9.6.4 Esc

To quit 4-20 mA option.

2.9.7 Additional 0-10V

Active 0-10V additional.

2.10 HEAD

When you select this option, the computer displays **on hold**, and allows you to record the header that appears on the ticket, using software from a PC.

2.11 LANGUAGE

Select the indicator language from five different: Spanish, Portuguese, Italian, French and English.

2.12 OTHER PARAMETERS

This menu contains the additional parameters of the equipment.

2.12.1 Display Light

Allows you to modify the brightness of the display between 1 and 4.

2.12.2 Version

Shows the software version of the equipment.

2.12.3 Serial Number

Shows the serial number of indicator.

2.12.4 mV Cell

Shows us the load cell signal in mV (with two decimals) without any kind of filter.
This parameter is calibrated in factory and its range is between –3,50 mV to 35,00 mV

2.12.5 Active Tara

Tara active in normal operation.

2.12.6 Losses

Losses are allowed to work. And there are two new parameter in the user menu.

2.12.7 Esc

Return to the previous menu.

2.13 BATERY

This menu is used only for equipment that works on batteries and you want to lock in energy saving mode.

2.13.1 Active

Enable the option to save energy.

2.13. 2 Auto-Off Time

Set the time in minutes auto shut down if the weight is stable.

2.13.3 Minimum Light Time

Sets the time in minutes for the brightness of the display is placed to a minimum when the weight is stable.
The brightness recovered normal value when the weight varies.

2.13.4 Off Light Time

Sets the time in minutes for the display turns off when the weight is stable.
The brightness recovered normal value when the weight varies.