USER'S MANUAL
MPCIB 20 M1 series
(Bidirectional counter)

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1.0 OVERVIEW

The MPCIB20 M1 model is an instrument which counts, places or measures by a bi-directional encoder.
Main characteristics are:

- count memory at the switching off (you can exclude this function from the menu).
- five digits for counting plus sign
- NPN or PNP encoder inputs open collector, passive pull-up or push-pull, 3 wires amplified proximity or 2 wires not amplified (configured by jumpers and menu)
- 1 or 2 relay alarms
- programmable multiplying and dividing factor from 1 to 65535
- programmable pre-set (offset)
- possibility to read on 1, 2 or 4 edges of frequency input
- one count input and one Up/Down control input
- two indipented count inputs A and B with A+B or A-B function

1.1 TECHNICAL FEATURES

Table 1

Inputs	Bi-directional npn/pnp encoder 3 wires npn/pnp amplified proximity 2 wires not amplified proximity
Transducer Supply	14 Vcc / 60 mA not reg. If options V5 5Vdc / 50mA
Max input frequency	40 KHz
Divider	1 to 65535
Multiplier	1 to 65535
Alarm output	N°1 exchange relay 250 Vac / 5A or N°2 conctact relay 250V/5A
Supply	90 ÷ 260 Vac / Vdc 20 ÷ 30 Vac / Vdc
Dimensions	48 x 48 x 96 mm
Piercing template	44.5 mm (height) x 44.5 mm (width)

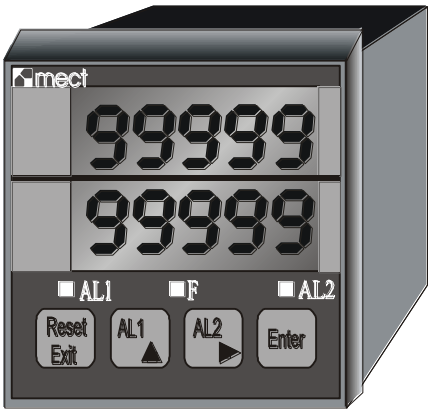
1.2 DISPLAY MESSAGES

Table 2

r.01.00	software version
ErP 6	item dEnon = 0
ErP 7	If windows alarm SP2 < SP1
ErP 8	If windows alarm HY > (SP1-SP2)

1.3 WIRING DIAGRAMS

KEYBOARD DESCRIPTION



Enter: access at the programming functions and confirm of the selected function

AL1: program Set point 1 of Alarm 1 (it can be disabled in the menu). Used for set up.

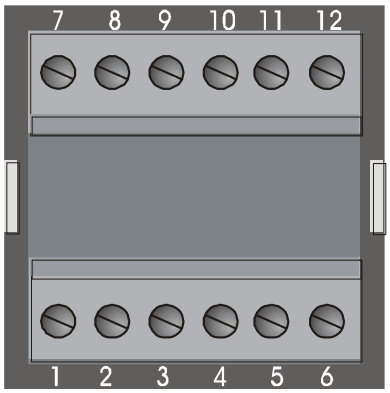
AL2: program Set point 1 of Alarm 2 (it can be disabled in the menu). Used for set up.

Reset Exit: Clears count (can be disabled in the menu) / fast exit in menu

Enter + AL2: Total counting function (it can be disabled in the menu).

Upper display: counting reading
Lower display: SP1 of AL1, or totalcounting (if enabled)
Led AL1: alarm 1 status indication
Led AL2: alarm 2 status indication
Led F: total count on display when on

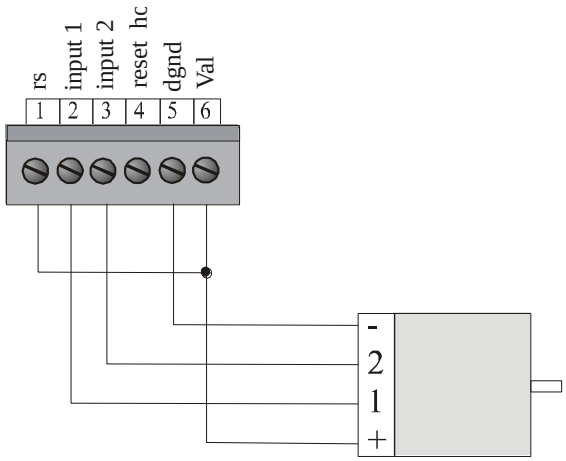
BASIC TERMINAL BOARD DESCRIPTION



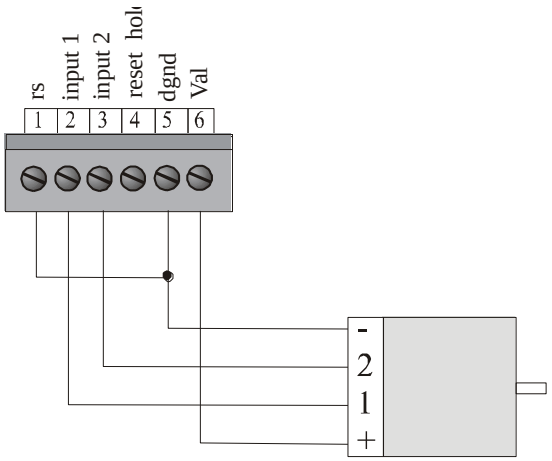
Terminal 5	- encoder ground
Terminal 6	- encoder power supply (14V or 5V if options V5)
Terminal 4	- reset counting / stop counting / total counting reset (by menu setup): short with terminal 5
Terminal 3	- encoder input 2 (direction input counting if monodirectional pulse counter)
Terminal 2	- encoder input 1 (input counting if monodirectional input counting)
Terminal 1	- npn/pnp encoder configuration resistor
Terminals 11- 12	- conctact relay output AL2. If option STN2 see par. 1.4.
Terminals 9 - 10	- conctact relay output AL1. If option STN2 see par. 1.4.
Terminals 9-10-11	- exchange relay output (if option: SR1F: 9 = Com, 10 = N.A., 11 = N.C.)
Terminals 7 and 8	- instrument power supply (verify the instrument's label to understand the power supply value to give)

1.4 WIRING SCHEMATICS

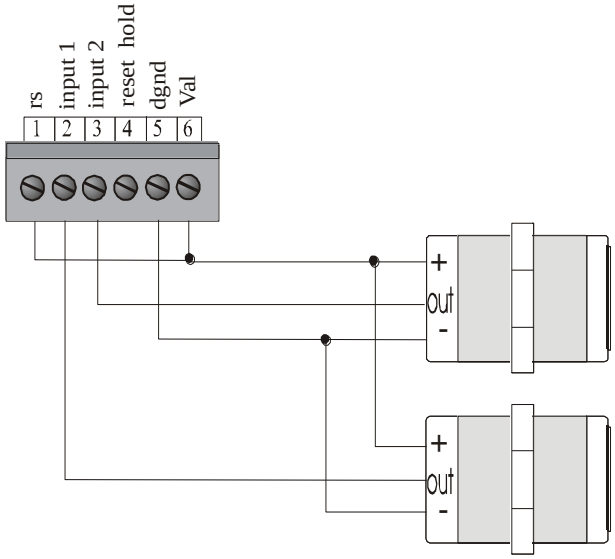
NPN encoder connection



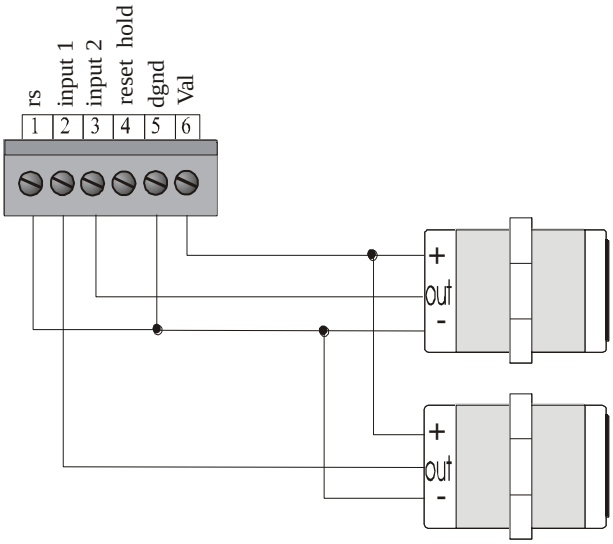
PNP encoder connection



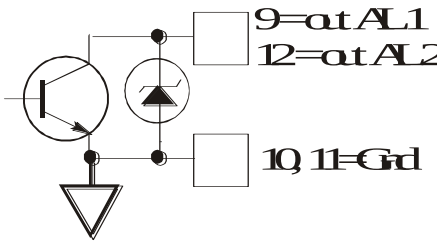
NPN connection



PNP connection



Connection static outputs (option STN2)

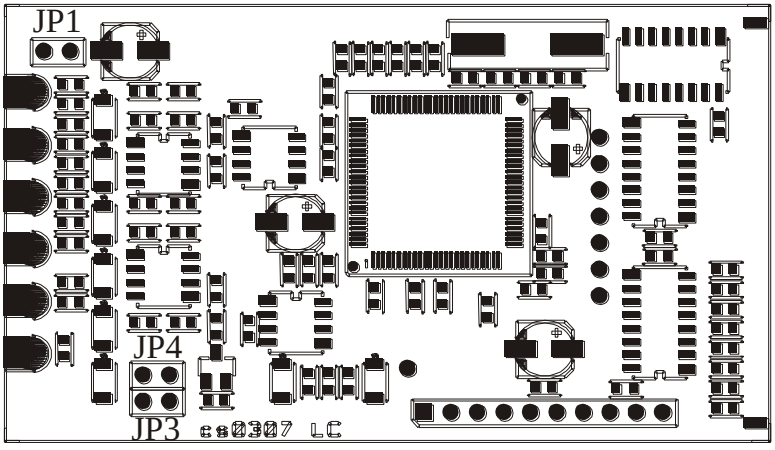


1.5 NPN or PNP INPUT CONFIGURATION

The “hold /reset” input can be used with “npn” or “pnp” polarity.

- “npn” input: short-circuit JP4 and program the menu item “nInP”=nPn
- “pnp” input: short-circuit JP3 and program the menu item “nInP”=PnP

The instruments are delivered with NPN inputs.



Terminal 4 can act as count reset, count stop or total count reset. The function must be selected in the menu as follows:

Tabella 3

n° seq.	Key to press	Appears on the display	NOTES
1	Enter	PASS	Touch the "Enter" key to get into the programming menu
2	Enter	0 0000	Digit the personal Password. Press "Enter " to confirm. (see "Password function")
3		OUt	
4	AL1 ▲	InPUt	
5	AL1 ▲	C.PASS	
6	AL1 ▲	AbtAS	FRONT KEYS ENABLING
7	AL1 ▲	CFnor	TERMINAL CONFIGURATION
8	Enter	n 4	TERMINAL 4 CONFIGURATION
9	Enter	rESEt	rESEt = count reset, hold= count stop, rEStO= total count reset. Select by "AL1 ▲ "key and confirm by "Enter"
10		n 4	
11	Reset Exit	Measure	To get out from the menu

1.6 PROGRAMMING TIPS

- Press 

key to get into the programming menu.
- Press 

key to search the item to program and the 

as indicated in diagram menu.
- If the set up needs a number to write, use the 

key to increase the digit which blinks and 

key to move the blinking digit and confirm with 

key.
- If the set up needs the selection of an item, use 

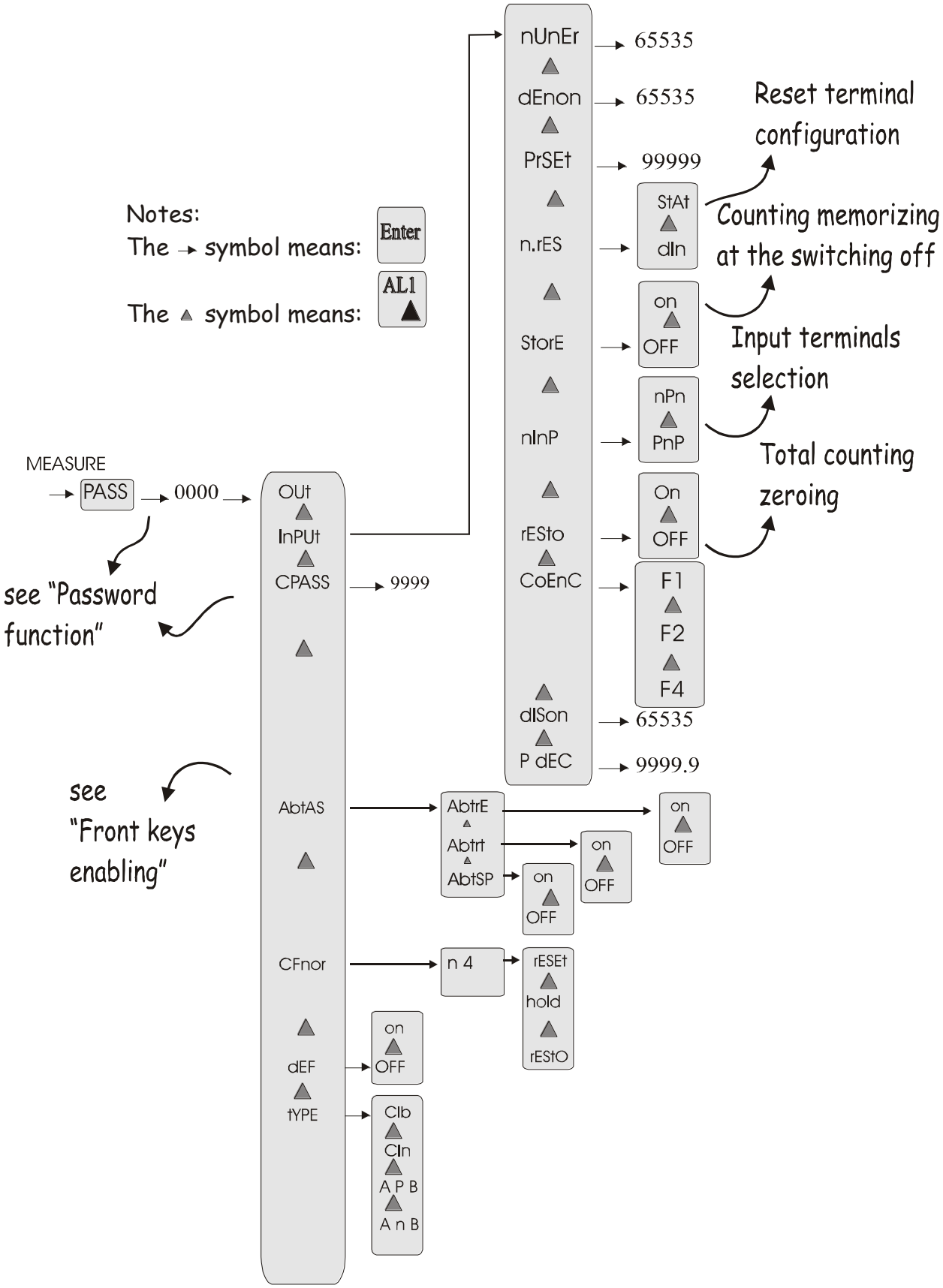
key and confirm with 

key.
- Press 

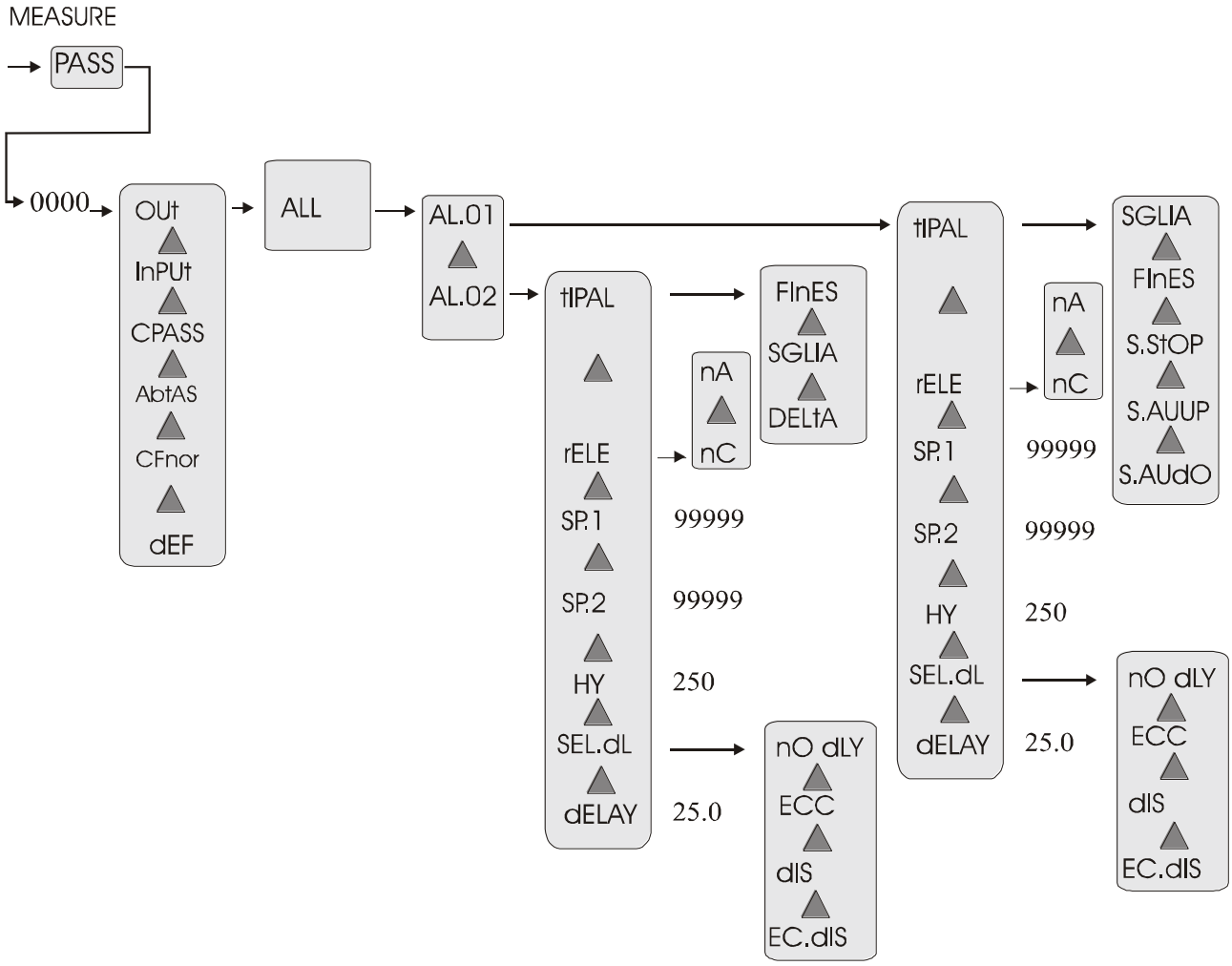
key to go to the upper level.
- To exit the menu, press 

: the modified parameters will be stored.

1.7 BASE INSTRUMENT MENU DIAGRAM



1.8 OPTIONS MENU DIAGRAM



Notes:

The → symbol means: Enter

The ▲ symbol means: AL1 ▲

2.0 INSTALLATION REMARKS

2.1 INSTALLATION PROCEDURE

Make connections as indicated at pages:
page 6 and 7 – base instrument wiring diagram and input signal wiring

1. Switch the unit on.
2. Get into the menu with 

key. Program the functions of the following table to select the requested type of functioning.

Table 4

n° seq.	Key to press	Appears on the display	NOTES
1	Enter	PASS	Touch the "Enter" key to get into the programming menu
2	Enter	0 000	Digit the personal Password. Press "Enter " to confirm. (see "Password function")
3		OUt	
4	AL1 ▲	InPUt	
5	AL1 ▲	CPASS	
6	AL1 ▲	AbtAS	
7	AL1 ▲	CFnor	
8	AL1 ▲	dEF	
9	AL1 ▲	tYPE	TYPE INSTRUMENT
10	Enter	CIb	CIb = bidirectional input CIn = monodirectional input A P B = input 1 + input 2 A n B = input 1 – input 2 Select by "AL1 ▲ "key and confirm by "Enter"
11		tYPE	
12	Reset Exit	"measure"	To get out from the menu

3. If requested monodirectional input see paragraph "monodirectional pulse counter functioning"

4. If requested Add/Subtract counting modes see paragraph “A+B and A-B functioning”
5. If requested marker pulse see paragraph “marker pulse functioning”
6. Set up the correcting factor using “nUnEr” and “dEnon” items (see paragraph).
7. Set a preset number (if desired) using “PrSEt” function.
8. Set alarms (if requested see paragraph)
9. Set, if desired, the programming menu access code (password function)
10. For default parameters see "default parameters" paragraph
11. The unit is now ready to be used.

Table 5

n seq.	Key to press	Appears on the display	NOTES
1	Enter	PASS	Touch the “Enter” key for some seconds to get into programming menu
2	Enter	0 0000	Digit the personal Password. Press “Enter “ to confirm. (see “Password function”)
3		OUt	
4	AL1 ▲	InPUt	
5	Enter	nUnEr	MULTIPLAYING FACTOR
6	Enter	10000	Set multiplying factor value (1÷65535). This number will be the numerator of the correction constant . ** (press “Enter” to confirm)
7		nUnEr	
8	AL1 ▲	dEnOn	DIVISION FACTOR
9	Enter	10000	Set division factor value (1÷65535). This number will be the denominator of the correction constant **(press “Enter” to confirm)
10		dEnOn	
11	AL1 ▲	PrSEt	PRESET SET UP
12	Enter	00000.	Set up the desired preset between –19999 and + 99999. **(press “Enter” to confirm)
13		PrSEt	
14	AL1 ▲	nrES	RESET TERMINAL CONFIGURATION
15		StAt	StAt = the instrument remains at zero till when the terminal is short-circuited dIn = the instrument instantaneously zeroes itself when the terminal is short-circuited Press “AL1 ▲ ” key till when the desired function appears on the display. (press “Enter” to confirm)

n seq.	Key to press	Appears on the display	NOTES
16		nrES	
17	AL1 ▲	StorE	TOTAL COUNTING AND PARTIAL COUNTING STORED AT THE SWITCHING OFF
18		On	On =it memorizes the counting OFF = it doesn't memorize the counting Press "AL1 ▲ " key till when the desired function appears on the display. (press "Enter" to confirm)
19		StorE	
20	AL1 ▲	nInP	INPUT TERMINAL SELECTION
21	Enter	nPn	nPn ="reset" or "hold" input have NPN polarity PnP = "reset" or "hold" input have PNP polarity Press "AL1 ▲ " key till when the desired function appears on the display.(press "Enter" to confirm)
22		nInP	
23	AL1 ▲	rESto	TOTAL COUNTING ZEROING
24	Enter	OFF	On = it zeroes the total counting OFF = it doesn't zero the total counting Press "AL1 ▲ " key till when the desired function appears on the display. (press "Enter" to confirm)
25		rESto	
26	AL1 ▲	CoEnC	ENCODER COUNTING
27	Enter	F 1	Press " ▲ " key till when the desired function appears on the display (see "COEN function" paragraph). (press "Enter" to confirm)
28		CoEnC	
29	AL1 ▲	dISon	TOTAL COUNTING DIVISOR
30	Enter	65535	Write the desired divisor factor (between 1 and 65535. ** (press "Enter" to confirm)
31		dISon	
32	AL1 ▲	P dEC	DECIMAL POINT
33	Enter	9999.9	Press " AL1 ▲ " key till when the decimal point appears on the display in the desired position. (press "Enter" to confirm)
34		P dEC	
35	Reset Exit	"measure"	

** see para. “SET-UP” to change the set value.

2.2 "nUnEr" and “dEnon” FUNCTION (multiplying factor)

It is possible to programme a correction factor, which multiplies or divides the number pulses received at the input, visualizing them as you desire. The two menu items that you have to programme mean:

$$\text{display readout} = \frac{\text{nUnEr}}{\text{dEnon}} * \text{CoEnC} * \text{Input pulses}$$

For a reading without correction factor is sufficient to set up nUnEr = dEnon, instead to add corrective constant is necessary to set up “nUnEr” and “dEnon” to get the desired value.
As described in “CoEnC function” paragraph, it is possible to obtain multiplying factors using the reading of the encoder’s edges (see paragraph).
Now is shown an applicative example; for the set up instruction see Table 4.

- 119 pulses/revolution encoder and it is requested a visualisation of 100 digits/revolution

$$K = \frac{\text{display readout}}{\text{input pulses}}$$

Programme “100” at the “nUnEr” item and 119 at the “dEnon” item (CoEnC = F1).

2.3 FRONT KEYS ENABLING

The keys used on the front of the instrument for the direct sets up (reset, total counting, alarms and decimal point) can be disabled from the programming menu. Follow the next table.

Table 6

N seq.	Key to press	Appears on the display	NOTES
1	Enter	PASS	Touch the “Enter” key to get into the programming menu
2	Enter	0 0000	Digit the personal Password. Press “Enter” to confirm. (see “Password function”)
3		OUt	
4	AL1 ▲	InPUt	
5	AL1 ▲	C.PASS	
6	AL1 ▲	AbtAS	KEYS ENABLING
7	Enter	AbtrE	"Reset” KEY ENABLING
8	Enter	On	On = enabled, OFF= disabled Press “AL1 ▲” key till when the desired

N seq.	Key to press	Appears on the display	NOTES
			function appears on the display.(press “Enter” to confirm)
9		AbtrE	
10	AL1 ▲	Abtrt	"Σ” KEY ENABLING
11	Enter	On	On = enabled, OFF= disabled Press “AL1 ▲” key till when the desired function appears on the display.(press “Enter” to confirm)
12		Abtrt	
13	AL1 ▲	AbtSP	“AL1” and “AL2” KEYS ENABLING (alarms)
14	Enter	On	On = enabled, OFF= disabled Press “AL1 ▲” key till when the desired function appears on the display.(press “Enter” to confirm)
15		AbtSP	
16	Reset Exit	Readout	To get out from the menu

** see “SET-UP” paragraph to change the set value.

2.4 “CoEnC” FUNCTION (bi-directional encoder counting)

The “CoEnC” function gives you the possibility to get readings with major resolutions using as much as possible the encoder resources.
Infact the bi-directional encoder produces two waves dephased of 90°. The reading of an edge every four allows to visualize the encoder revolution pulses: this function is obtained with the set up of “CoEnC” = F1 (fig.C). By the “CoEnC” set up it is possible to read two or four edges, getting double or quadruple readings about the encoder revolution pulses. To double the reading you have to set up “CoEnC” = F2 (fig. B), while to quadruple you have to set up “CoEnC” = F4 (fig. A). See Table 4 to set up this function.

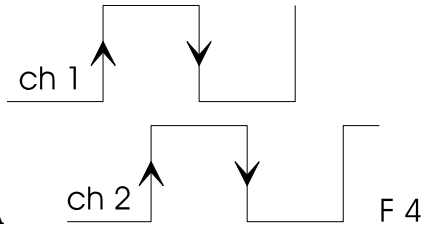


Figure A

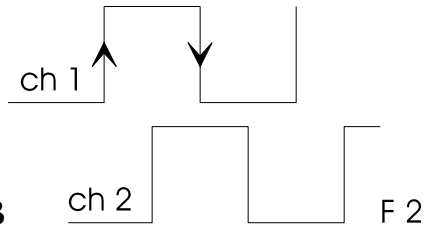


Figure B

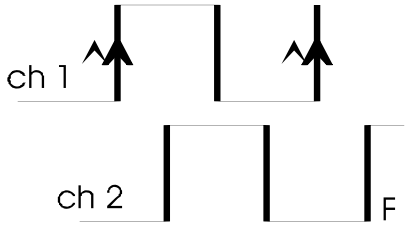


Figure C

2.5 " PrSEt" FUNCTION (preset)

The "PrSEt" function on the MPCIB20 M1 instrument allows to set up a preset, i.e. a number which appears every time that the instrument is zeroed.
The "PrSEt" function works with any number between –19999 and +99999 (to set up the negative sign see "SET UP" paragraph). To set the visualization at the "PrSEt" value, it is sufficient to press the reset front key (if enabled), or the terminal reset. To modify this function see Table 4.

2.6 DEFAULT PARAMETERS (dEF)

Some wrong values in menu programming function can cause the "ERR" item to appear. To reset to factory default parameters you can use the "dEF" function, which sets up all the programmation parameters at the factory value, eliminating all the error situation (look the following table).
BE CAREFUL: all previous programmed values will be lost.

Table 7

n° seq.	touch key	Appears on the display	NOTES
1	Enter	PASS	Press "Enter" key to get into the programming menu
2	Enter	0 0000	Digit the personal password ** (confirm with "Enter")
3		OUt	
4	AL1 ▲	InPUt	
5	AL1 ▲	C.PASS	
6	AL1 ▲	AbtAS	
7	AL1 ▲	CFnor	Terminals configuration
8	AL1 ▲	dEF	DEFAULT PARAMETERS

n° seq.	touch key	Appears on the display	NOTES
9	Enter	On	Touch the " AL1 ▲ " key until the written "ON" appears ** (confirm with "Enter") The instrument exits from the programming menu and it follows the default parameters.

** see "SET-UP" paragraph to change the set value.

2.7 TOTAL COUNTING FUNCTION

By the 

+ 

keys it is possible to visualize the total counting on the display. The total counting is the sum of all the partial counting memorized after a reset. The "F" led switching on means that the display is visualizing the total counting. To zero this counting it is necessary to put "on" at the "rESto" menu item. The key can be disabled setting "OFF" at the "Abtrt" menu item (see "Front key enabling" paragraph).

By means of keys 

+ 

it is possible to show on bottom display the total count value. This value is the sum of all counting cycles stored by reset function. The "F" led on menus that bottom display shows total count. To reset the total count value it is necessary to set to "on" the menu item "rESto" or to use the rear panel terminal 4 (if configured). Front keys can be disabled to off the menu item "Abtrt" (see front key enable paragraph). Total count value can be devided by a factor written in the menu item "dISon".

2.8 MONODIRECTIONAL PULSE COUNTER FUNCTIONING

Selecting from the programming menu the "tYPE" = "CIn" item, the instrument works as monodirectional pulse counter. The counting input is terminal 2, while the second input, terminal 3 can be used to select the counting direction (shortcircuited input at V+ (terminal 6) = Up counting; shortcircuited input at GND (terminal 5) = Down counting).

2.9 A + B AND A – B FUNCTIONING

Selecting from the programming menu the "tYPE" = "A P B", the instrument works as monodirectional pulse counter with double input in add counting mode. The two used inputs are: input 1 at terminal 2 and input 2 at terminal 3.
Selecting from the programming menu the "tYPE" = "A n B", the instrument works as monodirectional pulse counter with double input in subtract counting mode. The two used inputs are: input 1 at terminal 2 for up counting and input 2 at terminal 3 for down counting.

3.0 ALARMS

The MPCIB20 M1 instrument has 2 relay.
Alarm 1 can be set up in the following ways:

1. windowed programming two set point (FinES)
2. threshold with programmed set point (SGLIA)
3. threshold with programmed set point and stop counting (S.Stop)
4. Automatic cycle (up count) with reset of the display when count reaches the setpoint and switch of the output for a programmable time. (S.AuuP)
5. Automatic cycle (down count): the display is set to the setpoint value when the count reaches zero and switch of the output for a programmable time (S.AudO).

Alarm 2 can be set up in the following ways:

1. windowed programming two set point (FinES)
2. threshold with programmed set point (SGLIA)
3. offset respect setpoint 1 (dELtA).

For both alarms it is possible to configure:

1. starting relay condition (normally open or normally closed)
2. eventual hysteresys
3. eventual delay times (activation, deactivation or activation + deactivation)

WINDOWED THRESHOLD (FinES). The output changes when the counting crosses a window defined by two set point: SP1 and SP2 (SP2>SP1).
The output, inside of the window, can be normally activated or deactivated.
Besides for SP1 and SP2 it is possible to programme delay time or hysteresys (see figure D). After reset the display shows the preset value.

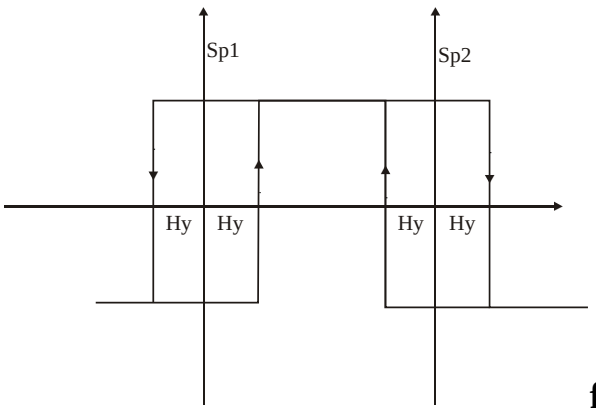


figure D

THRESHOLD (SGLIA). The output changes when the counting crosses the SP1 set point.
The output can be normally activated or deactivated.

Besides for SP1 it is possible to set up delay time or hysteresys (see figure E). After reset the display shows the preset value.

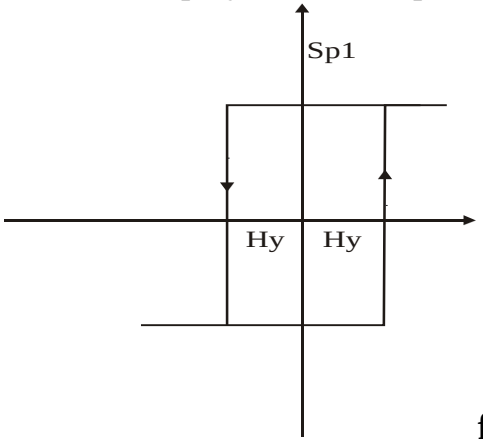


figure E

THRESHOLD WITH STOP COUNTING (S.StoP). When the counting reaches the value written in the SP1 changes the output and stops itself. It is not possible to programme delay time and hysteresys. After reset the display shows the preset value.

AUTOMATIC CYCLE THRESHOLD for up count (S.AuuP). The counting when reaches the value SP1 changes the output for the time programmed in the “dELAY" menu item, loads the preset value on the display and restarts the cycle.

AUTOMATIC CYCLE THRESHOLD for down count (S.AudO). The counting when reaches zero change the output for the time programmed in the "dELAY" menu item, loads the SP1 value on the display and restarts the cycle. The preset value can be used to increase or decrease the start value of the cycle (setpoint 1). After a reset the display shows the setpoint value (SP1) of the alarm 1.

Example 1:
SP1 = 1000
PrSEt = +100
Counting decrease till 0, switch the relay for a programmed time, shows 1100 on the display and restarts until reaches 0 again.

Example 2:
SP1 = 1000
PrSEt = -100
Counting decrease till 0, switch the relay for a programmed time, shows 900 on the display and restarts until reaches 0 again.

OFFSET THRESHOLD. This function is available only for alarm 2. The offset value is respect setpoint 1.

Example :
Alarm 1 Threshold (Sp1) = 1000
Alarm 2 dELtA (Sp1) = -20 (980)
In this case, if setpoint 1 changes, the values of alarm 2 follow setpoint 1.

3.1 ALARM SETTING

Alarm values can be set in two different ways: by front panel keys or by standard menu. In the first case it is possible to get quickly into the alarms set up, in the second case it is possible to reach the alarm sets and all the parameters of the instrument.

- The first step is to get into the complete menu and to configure the alarms as requested. See the following table.

Table 8

n° seq.	Touch key	Appears on the display	REMARKS
1	Enter	PASS	Touch the "Enter" key to get into the programming menu
2	Enter	0 000	Digit the password code **(press "Enter" to confirm)
3		OUt	
4	Enter	ALL	
5	Enter	AL01	ALARM 1 PARAMETERS
6	Enter	tIPAL	ALARM SELECTION
7	Enter	FInES	FinES = windowed alarm S.StOP = alarm with stop counting S.AuuP = automatic cycle alarm (count up) S.AudO = automatic cycle alarm (count down) SGLIA = threshold alarm Select the desired item by " AL1 ▲ " key and confirm with "Enter"
8		tIPAL	
9	AL1 ▲	rELE	AL1 CONTACT CONFIGURATION
10	Enter	nA	n.A. = relay normally open n.C. = relay normally closed Select the desired item by "AL1 ▲ " key and confirm with "Enter"
11		rELE	
12	AL1 ▲	SP 1	First trigger set point SET UP
13	Enter	0 0000	Set up the SP1 value **(Confirm by "Enter")
14		SP 1	

n° seq.	Touch key	Appears on the display	REMARKS
15	AL1 ▲	SP 2	Second trigger set point SET UP. Program only if the functioning of the windowed alarm is requested.
16	Enter	0 0000	Set up the SP2 value. **(Confirm by “Enter”)
17		SP 2	
18	AL1 ▲	HY	HYSTERESIS ALARM 1 SET-UP
19	Enter	00 250	Set up a number between 0 and 250 digit. ** (press “Enter” to confirm)
20		HY	
21	AL1 ▲	SEL.d	TIME CONFIGURATION AL1
22	Enter	ECC	ECC = activation delay dIS = deactivation delay EC-dIS = activation + deactivation delay nO dLY = no delay Select the desired item by " AL1 ▲ " key and confirm with “Enter”
23		SEL.d	
24	AL1 ▲	dELAY	AL1 TIME SET-UP
25	Enter	00 25.0	Set up a number between 0 and 25.0 sec. ** (press “Enter” to confirm)
26		dELAY	
27	▶	AL01	
25	AL1 ▲	AL02	ALARM 2 PARAMETERS
26	Enter	tIPAL	KIND OF ALARMS SELECTION
27	Enter	FInES	FinES = windowed alarm SGLIA = threshold alarm dELtA = delta rispetto allarme1 Select the desired item by "AL1 ▲ " key and confirm with “Enter”
28		tIPAL	
29	AL1 ▲	rELE	ALARM 2 FUNCTIONING CONFIGURATION
30	Enter	NA	n.A. = relay normally open n.C. = relay normally closed Select the desired item by "AL1 ▲ " key and confirm with “Enter”
31		rELE	
32	AL1 ▲	SP 1	First trigger set point SET UP
33	Enter	0 0000	Set up the SP1 value. **(Confirm by “Enter”)

n° seq.	Touch key	Appears on the display	REMARKS
34		SP 1	
35	AL1 ▲	SP 2	Second trigger set point SET UP. Program only if the functioning of the windowed alarm is requested.
36	Enter	0 0000	Set up the SP2 value. **(Confirm by "Enter")
37		SP 2	
38	AL1 ▲	HY	ALARM 2 HYSTERESIS SET-UP
39	Enter	00 250	Set up a number between 0 and 250 digit. ** (press "Enter" to confirm)
40		HY	
41	AL1 ▲	SEL.d	AL2 TIME CONFIGURATION
42	Enter	ECC	ECC = activation delay dIS = deactivation delay EC-dIS = activation + de-activation delay nO dLY = no delay Select the desired item by " AL1 ▲ " key and confirm with "Enter"
43		SEL.d	
44	AL1 ▲	dELAY	AL2 TIME SET-UP
45	Enter	00 25.0	Set up a number between 0 and 25.0 sec. ** (press "Enter" to confirm)
46		dELAY	
47	AL2 ▶	AL02	ALARM 2 PARAMETERS
48	Reset Exit	"measure"	Procedure to get out of the menu

** see para "SETTING" to change the set value.

After to have configured the alarms, it is possible to get in the change of set point by the front key "AL1" (for alarm 1) and "AL2" (for alarm 2)

4.0 PASSWORD FUNCTION

Programmed data can be protected from unauthorised changes using the password function.
The instrument is supplied with the password code set = 0; any number in the range 0 to 9999 can be used as access key to changing set data.
See following table for setting a customer password.
The password code is requested when accessing the programming menu.
The instruments, after receiving the password number, can behave in two different ways.

1) **correct Password number:** The user can gain access to programming menu and modify any function or number that is flashing.
2) **false Password number:** The user can only see the programmed numbers but cannot modify them.

WARNING. The code programmed at the item "c.PASS" by the user, shall be entered in the field "n.PASS" every time access is required to the programming menu to change the set data.
Should the user forget the programmed password code, our Customer Service should be called to unlock the instrument.

Table 9

n° seq.	Touch key	Appears on the display	REMARKS
1	Enter	PASS	Touch the "Enter" key to get into the programming menu
2	Enter	0 0000	** (confirm with"Enter")
3		OUt	
4	AL1 ▲	InPUt	
5	AL1 ▲	C.PASS	PERSONAL PASSWORD
6	Enter	0 0000	Input a Password number between 0 and 9999. ** (confirm to "Enter")
7		C.PASS	procedure to exit the programming mode
8	Reset Exit	"measure"	

** see para. "SET UP" to change the set value.

5.0 SET UP

Instructions for changing and storing programming numbers. In this paragraph the instructions to set up "SP1" item are shown but the procedure is the same for all items.

Table 10

n° seq.	Touch key	Appears on the display	REMARKS
1		SP. 1	example of threshold changing
2	Enter	0 0000	the display shows the first digit blinking
3	AL1 ▲	1 0000	key "AL1 ▲ " increases the blinking digit. The first digit on the left is used to set up the numbers from 0 to 9 and the negative sign at the items which can be set up in the negative field .
4	AL2 ▶	0 0 000	key "AL2 ▶ "moves the blinking digit forward right
5	Enter	SP. 1	The value is stored and the display moves back to the selected item.

6.0 NOTES

The instrument does not have a power on switch and a fuse, but it immediately switches on when the correct voltage is applied (see the operating voltage on the instrument label). Keep the power line separate from the signals lines.
For security reasons, it is necessary to provide externally a two phases switch and a protective fuse near the instrument with easy access for the user.
Avoid the presence of others power elements, humidity, acid, heat sources, etc..
The instruments must be powered by safety isolating transformer or by selv type power supply.

Mect srl is not responsible for damages to humans or goods for an improper use of the instrument or not conforming to the characteristics of its instrument.
In mect srl there is an help desk office.