

VIA TITO LIVIO 11 - 20137 MILANO - Tel. (02) 5462113-5450303

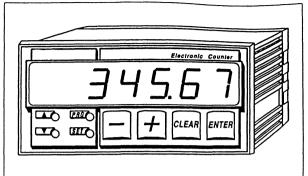
OPERATION HANDBOOK INDICATOR - TOTALIZATOR

207/IF/T2 - 207/IF/T5



INDICATOR - TOTALIZATOR MOD. 207/IF/T2 207/IF/T5

- DIN Dimensions 48 x 96
- Visualization with 6 decimal or sexagesimal figures
- EEPROM memory
- · Anti-scratch feedback keyboard
- Removeable polarised keyboard
- Programmable timed outputs
- Programmable cutting frequency (immunity to disturbances)



DESCRIPTION OF HOW THE INSTRUMENT WORKS

The instrument 207 can be only a single totalizer or double totalizer or flow indicator alarm.

It can have 2 or 5 indipendet outputs of factored pulses

The keyboard, which is in anti-scratch polycarbonate, is realised with mechanical actuators which give the operator the tactile—sense of pressing the keys (feedback keyboard). The counting function, the preselections and the working parameters are memorized on the EEPROM memory to guarantee maximum reliability and safety even when working at capacity.

VERSIONS

MOD. F207/2 CALIBRATOR 2 INPUT DISJOINT

MOD. F207/5 CALIBRATOR 5 INPUT DISJOINT

MOD, 207/2 DOUBLE TOTALIZATOR + 2 OUTPUT CALIBRATED PULSES

MOD. 207/5 DOUBLE TOTALIZATOR + 5 OUTPUT CALIBRATED PULSES

MOD. F207/IF FLOW INDICATOR WITH ALARMS

MOD. F207/IF/T2 FLOW INDICATOR + DOUBLE TOTALIZATOR WITH 2

ALARMS OR PULSES OUTPUT

MOD. F207/IF/T5 FLOW INDICATOR + DOUBLE TOTALIZATOR WITH 5

ALARMS OR PULSES OUTPUT

MOD. 207/P BATCH CONTROLLER + 6 DIGIT TOTALIZATOR



INDICATOR TOTALIZATOR MOD. 207/IF/T2 - 207/IF/T5

The 207/IF/T2 instrument is provided with a six-digits indicator to visualize instantaneous flow (in the wished unit), with 2 alarm signals settable on the whole field, with 2 indipendent totalizators to calculate consumption, with 2 outputs with factoring impulse (five in the 207/IF/T5 instruments).

INSTANTANEOUS FLOW INDICATOR

(no figure on at the left of display)

It shows instantaneous flow value in the wished unit.

To set up instrument, please consult paragraph "SET-UP".

ALARM SIGNALS

The instrument has 2 alarm signals for minimum or maximum flow, selectable and settable on the whole field.

Outputs are with or without stoppage. 4 timers allow possible settings to delay alarm starting.

If alarms are activated, a LED visualize them on the front of the instrument.

SIX-DIGITS RESETTABLE TOTALIZATOR

(number 1 on at the left of display)

If visualized, the resettable totalizator can be reset pressing for about one second the "CLEAR" key.

UNRESETTABLE TOTALIZATOR

(number 2 on at the left of display)

The visualized number can be read on the unresettable totalizator and it is the amount of all takings since instrument set-up.

For possible reset or different use of this totalizator, consult please SET-UP manual.

I/U VISUALIZING PROGRAM

(number 0 on at the left of display)

It is possible to visualize inputs and outputs state of the instrument selecting the relative program on display.

Lighting of the upper orizontal lines show inputs, while lower lines show relative outputs.

FACTORED OUTPUTS

The instrument is provided with 2 factored outputs (five in the 207/IF/T5 instruments).

To each increase in the totalizator correspond an output impulse with a programmable length (5-99999 mS).

To set up factorizators, follow please instructions below.

Outputs 3-4-5 don't have a totalizator.

SET-UP

The totalizator 207 has been realised according to microprocessor logic; it is necessary to enter SET-UP parameters before starting.

Craind's laboratory provides directly this operation; possible changes can be done on field; consult in this case chapter "SET-UP PARAMETERS".

MEMORY

The instrument is equipped with EEPROM Memory, with a life of 10 years battery-free

CONNECTIONS

Enclosed diagrams show how to connect the instrument to all several elements of the equipment.

INTRODUCTION OF CALIBRATION COEFFICIENTS
To get to programming of the calibration it is necessary to introduce a 3-figure
code as follows:
•Simultaneously press keyes - + FITEM for about 1 second
●On the display H 000 This is the request for the access code appears
 Introduce the value 111 for calibration of output 1, 222 for output 2, 333 for output 3, 444 for output 4, 555 for output 5.
●Confirm with EMTER display will visualize:
F 123456 Introduce the value (from 0,00001 to 9,00000) and confirm with ENTER
Display will visualize:
It is activation time of the output, introduce the value (from 5 to
90.000 mS); confirm with ENTER.
The display will start showing the visualization in use again.
flow diagram
counting The Count
Eastward out
ractored out
programmable
Factored out activation time F=0,125

CALCULATING OF CALIBRATION COEFFICIENT

If metered quantity is different from required value act as follows:

multiply the metered value by calibration coefficient and divide the result by value on the display.

example : calibration coefficient

0,296

value required

100 liter

value really metered 106 liter

 $\frac{0.296 \times 106}{100} = 0.31376$

New value is 0,31376

During usual functioning the display will visualize:

3456 Flow indicator (if enabled)

1234 Totalizer 1 (if enabled)

If in setup parameter Ar1=1 by pushing totalizer 1 will reset.

Press the key and the display will visualize:

2 3456 Totalizer 2 (If enabled)

If in setup parameter Ar2=1 by pushing totalizer 2 will reset.

Press the key and the display will visualize:

11 12 13 14 15 16 The display will visualize the state of the inputs and the outputs.

11 12 13 14 15 16 The display will visualize the state of the input and the outputs.

11 12 13 14 15 16 The display will visualize the activation of the input and the outputs.

11 12 13 14 15 16 The lit led_indicates the activation of the input and the output.

11 12 13 14 15 16 The lit led_indicates the activation of the input and the output.

		DESCRIOTION OF KEYBOARD
ENTER	Green	Confirms data Introduction When pressed for 2 seconds, it makes it possible to programme the alarm Pressed together with the (-) key + PASSWORD it is possible to get entry to the SET-UP parameters.
		During data introduction, it puts the data visualized back to zero.
CLEAR	Red	Reset totalizator 1
+	Black	During data introduction, it increases the figure selected (the one flashing) impulsively When pressed during usual functioning, it visualizes totalizator 2 or the input or output states.
	Black	During data introduction move the figure selection towards the right Pressed together with the ENTER key + PASSWORD it is possible to get entry to the SET-UP parameters.
PREC	Led prg	On during the programming of the SET-UP parameters
SELO.	Led set	Not used
<u>—</u>	Led	Not used
<u> </u>	Led	Not used
•	Led lcf	Not used
8		

Name	Signal	Input activation	Description
11	I	ON	CLOCK 1 = INPUT OF FLOW INDICATOR OR TOTALIZATOR-FACTORIZATOR 1 (frequency 0 ÷ 2 Khz)
12	I	ON	CLOCK 2 = INPUT OF TOTALIZATOR-FACTORIZATOR 2 (frequency 0 ÷ 2 Khz)
13	I/C	ON	CLOCK 3 = INPUT OF ENABLE FLOW INDICATOR OR RESET TOTALIZATOR 1 OR FACTORIZATOR 3 (frequency 0 ÷ 200 Hz)
I 4	I/C	ON	CLOCK 4 = INPUT OF RESET FLOW INDICATOR ALARMS OR RESET TOTALIZATOR 1 OR RESET TOTALIZATOR 2 (frequency 0 ÷ 50 Hz)
15	ī	ON	CLOCK 5 = INPUT OF FACTORIZATOR 4 (frequency 0 ÷ 200 Hz)
16	I	ON	CLOCK 6 = INPUT OF FACTORIZATOR 5 (frequency 0 ÷ 200 Hz)

Name	Signal	Description
U1	I/C	OUT 1 = OUTPUT OF FLOW INDICATOR ALARM OR FACTORIZATOR
U2	I/C	OUT 2 = OUTPUT OF FLOW INDICATOR ALARM 2 OR FACTORIZATOR 2
U3	I	OUT 3 = FACTORIZATOR 3
U4	r	OUT 4 = FACTORIZATOR 4
U5	I	OUT 5 = FACTORIZATOR 5

SET UP SECTION EXCLUSIVE USE FOR THE OPERATORS

WARNING:

THE TOTALIZATOR 207 HAS BEEN REALISED ACCORDING TO MICROPROCESSOR LOGIC; IT IS NECESSARY TO ENTER SETUP PARAMETERS BEFORE STARTING. CRAIND'S LABORATORY PROVIDES DIRECTLY THIS OPERATION.

INTRODUCTION TO SET-UP PARAMETERS

To set-up the following parameters a three-digits code must be digited as follows:

- Press at the same time for 1 second the two keys: and ENTER.
- Enter the access code when on the display appears H 000
- Use + and keys to digit number 207 and confirm by ENTER: led PRG lights on.

FUNCTION	DISPLAY	DESCRIPTION
Transducer Clock 1	EEI O	0 = Clock signal comes from an electronic
		transducer (encoder, proximity, etc.) [max.
		2000,0 Hz with duty cycle 50%]
		1 = Clock signal comes from a mechanical "reed"
		transducer [max. 200.0 Hz with duty cycle 50%]
		2 = Clock signal comes from a mechanical
	"micro, relè" transducer [max. 20.0 Hz with duty	
		cycle 50%]
Transducer Clock 2	EEZ D	0 = Clock signal comes from an electronic
		transducer (encoder, proximity, etc.) [max.
		2000,0 Hz with duty cycle 50%]
		1 = Clock signal comes from a mechanical "reed"
		transducer [max. 200.0 Hz with duty cycle 50%]
	2 = Clock signal comes from a mechanical	
		"micro, relè" transducer [max. 20.0 Hz with duty
		cycle 50%]

Duty cycle clock 1	€ € 99.99	Percentage of activation of clock 1 input, compared to signal period. dC = t ON x Fmax. x 100 t ON = time in seconds to activate input I1
Cutting Frequency Clock 1	c 12000)	Cutting Frequency of clock 1 input, beyond which no computation is noticed. This value must be ≥ to highest frequency (generally at least 10% more). Gmax. = 3000.0

Setting "Transducer Clock 2" on 0, display visualizes even:

Duty cycle clock 2	€ C 9999	Percentage of activation of clock 2 input, compared to signal period. dC = t ON x Fmax. x 100 t ON = time in seconds for activity input [1]
Cutting Frequency Clock 2	(c 12000)	Cutting frequency of clock 2 input, beyond which no computation is noticed. This value must be ≥ to highest frequency (generally at least 10% more). Gmax. = 3000.0

FUNCTION	DISPLAY	DESCRIPTION
flow indicator	аь О	0 = Flow Indicator is not operative. N.B. In this case all parameters connected to
		flow indicator set-up can't be entered.
		1 = Flow Indicator is operative.

Setting "FLOW INDICATOR VALIDATION on 1, display shows even:

Decimals on Flow		0 = Max. visualization 999999
Indicator Display	(<u>c</u> <u>U</u>)	1 = Max. visualization 99999,9
		2 = Max. visualization 9999,99
		3 = Max. visualization 999,999
Top Frequency	(F4000.00)	Highest Frequency transmitted by transducer
	(F 1000.00)	when system is at the highest flow (max. 2000
		Hz, min. 0,001 Hz)
		Over this frequency, display shows value n
		(SET-UP).
Lowest Frequency	[I 3.00]	Lowest frequency wished by operator.
	6 12.00	Below this frequency, display shows value H
		(SET-UP).
Top Visualization	(,999999)	Value shown by instrument at the highest
	(A 2 2 2 2 2)	frequency.
Lowest Visualization	(+999999)	Value shown by instrument at the lowest
	((frequency.
Reading means during	(A 99)	It shows within how many readings is calculated
acquisition	(د د ــــــــــــــــــــــــــــــــــ	the flow to be visualized (flow indicator).
		Higher is the number of readings and slower is
		flow aggiornamento number.
Reading means during	(15 99)	It shows within how many readings in
stabilization	(1)	stabilization is calculated the flow to be
		visualized if changes in readings are lower than
		2,5 of highest flow.

Choose of output U1	(sUI D	0 = Output U1 is used as flow indicator alarm 1 1 = OutputU1 is used as factorizator 1
Choose of output U2	[sU2 D]	0 = Output U2 is used as flow indicator alarm 2 2 = OutputU2 is used as factorizator 2

Setting "CHOOSE OF OUTPUT U1" on 0, display shows even:

Working of output U1	F113233	Each couple of numbers identifies the kind of set-up (first number) and the dependence of
		output U1 band (see paragraph "Outputs Set-
		up")

Setting "CHOOSE OF OUTPUT U2" on 0, display shows even:

Working of output U2		Each couple of numbers identifies the kind of
	(5 <u>313213</u>)	set-up (first number) and the dependence of
		output U2 band (see paragraph "Outputs Set-
		up")

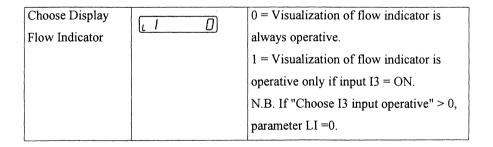
FUNCTION	DISPLAY	DESCRIPTION

Setting "CHOOSE OF OUTPUT U1 OR U2" on 0, display shows even what follows:

Starting Timer	[tn 99.99]	Time expressed in seconds, active when
		input I3 (used as validation flow indicator)
		turns ON. If dependence to this timer (4)
		has been set during outputs operative
		system set-up, output moves to a level
		opposite to the comparing one.
Band 1 Timer (Hd)	[19999]	Delay time (expressed in seconds) for
		band (Hd) comparation, when reading
		enter in it. It is used to delay commutation
		in programmed output level.
Band 2 Timer (dA)	[2 9999]	Delay time (expressed in seconds) for
		band (dA) comparation, when reading
		enter in it. It is used to delay commutation
		in programmed output level.
Band 3 Timer (An)	[£3 99.99]	Delay time (expressed in seconds) for
		band (An) comparation, when reading
		enter in it. It is used to delay commutation
		in programmed output level.

Choose I3 input	[5 13 D]	0 = Input I3 works as validation flow
operative	<u> </u>	indicator.
		• If L1 = 0 (SET-UP), flow indicator is
		always operative.
		• If input I3 = OFF alarm outputs are
		not operative.
		• If L1 = 1 (SET-UP) and Input I3 =
		ON, flow indicator is operative.
		• If input I3= OFF, visualization moves
		to zero and alarm outputs become not
		operative.
		1 = Input I3 works as reset key for
		totalizator 1.
		2 = Input I3 works as input for
		factorizator 3

Setting "CHOOSE I3 INPUT OPERATIVE" on 0 and "VALIDATION FLOW INDICATOR" on 1, display visualizes even:



Setting "CHOOSE OUTLET U1 OR U2" on 0, display shows even:

Validation	(nE D)	$0 = \mathbf{A}$ and \mathbf{d} threshold alarm
Threshold Set-Up	(HC U)	programming can be set only during set-
		up.
		1 = A threshold alarm programming can
		be done only through keyboard ENTER
		key, d alarm threshold programming can
		be done only during set-up.
		2 = A threshold alarm programming can
		be set only during set-up, while d alarm
		threshold programming con be done only
		through keyboard.
		3 = Only ENTER key allow to set-up A
		and d alarm threshold.

FUNCTION	DISPLAY	DESCRIPTION
	L	

Setting "VALIDATION THRESHOLD SET-UP" on 1, 2, or 3, display shows even one or both following visualizations:

Top Speedness Threshold	A 123456	Top Speed Threshold, used to compare outputs U1 and U2.
Lowest Speedness Threshold	J 4567	Lowest Speedness Threshold, , used to compare outputs U1 and U2.

Choose input I4 works	s 14 D	0 = Input I4 works as reset for flow indicator alarm signals.
		1 = Input I4 works as reset for totalizator 1
		2 = Input I4 works as reset for totalizator 2
Enable Totalizator 1	AE I O	0 = Totalizator 1 is not operative
(AC : 5)	1 = Totalizator 1 is operative.	

Setting "VALIDATION TOTALIZATOR 1" is on 1, display shows even:

Reset Totalizator 1	er T	0 = Totalizator 1 can be reset only when inputs I4 or I3 are selected. 1 = If visualized on display, totalizator 1 can be reset pressing CLEAR key, from input I3 (if S 13 = 1) or input I4 (if S 14 = 1)
Decimals Totalizator 1	cd I D	0 = Max. visualization 999999 1 = Max. visualization 99999,9 2 = Max. visualization 9999,99 3 = Max. visualization 999,999

Enable Totalizzator 2	0 = Totalizator 2 is not operative 1 = Totalizator 2 is operative
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Setting "Validation Totalizator 2" on 1, display shows even:

Reset Totalizator 2	Ar2 D	0 = Totalizator 2 can be reset only when input I4 has been selected 1 = Totalizator 2 can be reset through CLEAR
		key and from input I4 (if S $14 = 2$)
Decimals Totalizator 2	² [cd2 D	0 = Max. visualization 999999
		1 = Max. visualization 99999,9
		2 = Max. visualization 9999,99
		3 = Max. visualization 999,999

After set-up of last function, display comes back to visualization in act before set-up starting; led prg lights off.

For introduction of calibration coefficients of totalizators and factorized outputs 1-5 please see page 4

SET-UP OF OUTPUT U1, U2, USED AS FLOW INDICATOR ALARMS

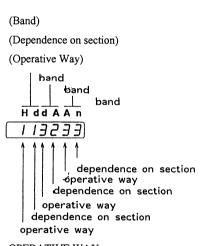
P and S Parameters during SET-UP allow programming the operative way for outputs U1 and U2 inside lowest and highest visualization bands (H and n) and from alarm thresholds (d and A); in this way the changing range of visualization becomes:



3 work sections can be identify: Hd, dA, An. For each band a different setting of outputs U1 and U2 is possible. Besides, it is possible to validate an output working inside a band, only if visualization is already linked to one another band ("Dependence on section").

This last operative characteristic allow a particular outlet working, when instrument is ON as long as than visualization is regular.

STRUCTURE OF SET-UP p AND s PARAMETERS



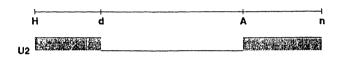
OPERATIVE WAY

- 1. Active
- 2. Active with stoppage (resettable by CLEAR key or by inlet I4)
- 3. Not active
- 4. Not active with stoppage (resettable by CLEAR key or by inlet I4)

DEPENDENCE ON SECTION

- 1. Section from H to d
- 2. Section from d to A
- 3. Section from A to n
- 4. Dependence on starting timer (with input I3 becoming operative)
- 5. Depending on its own band with timer 1 2 3

Example:



(with stoppage)

(Normal)

To programme output U2 as shown in the picture.

- When visualization has fully reached An band, Hd band start can be validated.
- SET-UP S parameter becomes 23 32 13.
- Until visualization has not reached An band and remains inside Hd, output U2 continues to be OFF.

ALARM THRESHOLS SET-UP

To set-up alarm threshold use following instructions:

In SET-UP, all following parameters must be = 1: Ab (Validation Flow Indicator), A (Highest Flow Threshold) and d (Lowest Flow Threshold)

Press ENTER key for 2 seconds. Display shows:

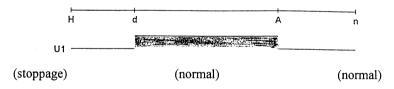
Operator can use + and - keys to enter the highest Flow threshold. Pressing ENTER to confirm, display visualizes:

Operator can use + and - keys to enter the lowest Flow threshold. Pressing ENTER to confirm, display comes back to visualization in act before set-up starting.

N.B. Threshold determines 3 kinds of bands to set-up outputs U1 and U2.

OUTPUTS SET-UP

Example:



To programme output U1 as shown in the picture.

- When visualization has fully reached dA band, Hd band start can be validated.
- SET-UP P parameter becomes 42 12 33.
- Until visualization has not reached dA band and remains inside Hd, output U1 continues to be OFF and without stoppage.

N.B. It is possible to late time for outputs commutation, using section timers (SET-UP)

```
INPUTS AND OUTPUTS EVECTRICAL CONNECTIONS
          Transducers positive supply 12 V 100 mA
1
2
          Transducers positive supply
          Input polarization terminal board I1+I4 (+ NPN, - PNP)
    P1
3
4
    11
          (I) Clock 1
5
    12
          (I) Clock 2
          (1) Clock 3
6
    13
7
    14
          (1) Clock 4
          Output polarization terminal board U1-U2 (+ PNP, - NPN)
8
    C1
9
    U1
          (I/C) Out 1
10
    U2
          (1/O) Out 2
    GND Earth (a conductor of f 4 mm is advisable.)
11
    XXX Supply voltage Vac ±15% 50 / 60 Hz
12
    XXX Supply voltage Vac ±15% 50 / 60 Hz
13
          Input polarization terminal board I5-I6 (+ NPN, - PNP)
    P2
14
15
    15
          (I) Clock 5
16
    16
          (I) Clock 6
17
          Output polarization terminal board U3, U4, U5 (+ PNP, - NPN)
    C2
18
    U3
         (I) Out 3
19
    U4
         (I) Out 4
20
         (I) Out 5
    U5
21
    GND Door of the analogue exits
22
    AN1
          Not used
23
    AN2
          Not used
24
    GND Door of the serial gate
25
    RX
          Not used
    TX
          Not used
```

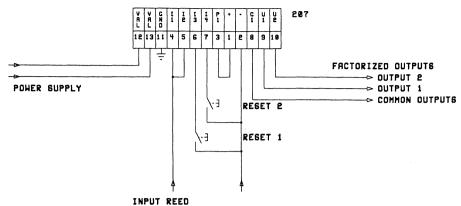
GENERAL CHARACTERISTICS OF ELECTRICAL CONNECTIONS

INPUTS

Every ON / OFF input is universal, optoinsulated and can receive digital signals both in NPN and PNP logics. By connecting the terminal boards P1 and P2 to + all the inputs will accept NPN-type signals, that is, with closure towards negative supply voltage. By connecting the terminal boards P1 and P2 to - all the inputs become the PNP type, that is, with closure towards positive supply voltage. Every input is protected against short circuiting in both supply poles, so that the instrument is practically indestructible. Several inputs with the same logic can be parallel connected, if the output which is controlling them is able to withstand the total current required, which is equal to the number of the inputs connected together and multiplied by 10 mA.

OUTPUTS

The dc outputs are optoinsulated in continuous current and all have a terminal in common (C1, C2). By connecting this terminal to a positive voltage + all the outputs become the PNP type, and by connecting it to a minus voltage - they become the NPN type. The maximum continuous voltage applicable is of 50 V.The outputs are able to withstand currents up to 70 mA with a typical voltage drop of 3,5 V between the output and the door. With the dc outputs, relays of 24 Vac can also be controlled.

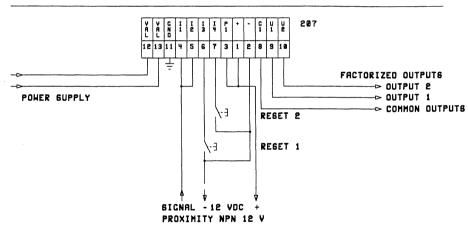


STANDARD CONNECTION

INPUT REED - FACTORIZED OUTPUTS - POWER SUPPLY - EXTERNAL RESETS

CHANNEL 1 = TOTALIZATOR 1 - RESET BY CLEAR KEY OR INPUT 6

CHANNEL 2 = TOTALIZATOR 2 - RESET BY INPUT 7

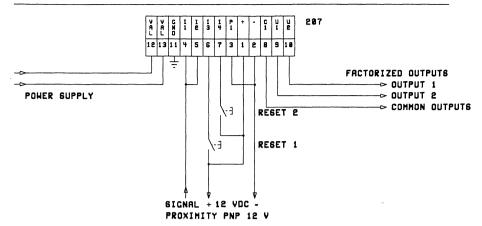


STANDARD CONNECTION

INPUT PROXIMITY NPN - FACTORIZED OUTPUTS - POHER SUPPLY - EXTERNAL RESETS

CHANNEL 1 = TOTALIZATOR 1 RESET BY CLEAR KEY OR INPUT 6

CHANNEL 2 = TOTALIZATOR 2 RESET BY INPUT 7

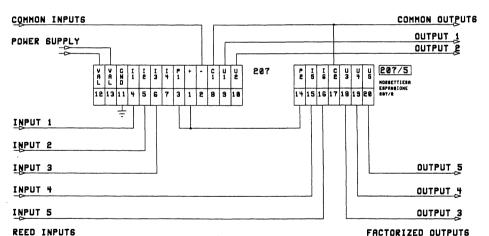


STANDARD CONNECTION

INPUT PROXIMITY PNP - OUTPUTS FACTORIZED - POWER SUPPLY -EXTERNAL RESETS

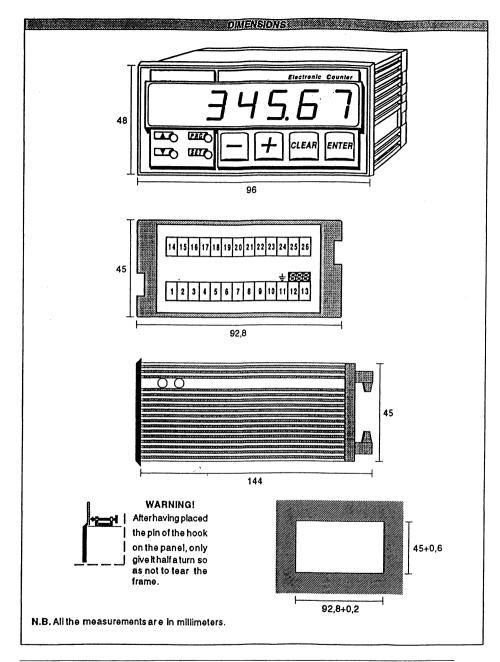
CHANNEL 1 = TOTALIZATOR 1 - RESET BY CLEAR KEY OR INPUT 6

CHANNEL 2 = TOTALIZATOR 2 - RESET BY INPUT 7



STANDARD CONNECTION 207/5 (HITH EXPANSION)
POHER SUPPLY - 5 REED INPUTS - 5 FACTORIZED OUTPUTS





Il nostro Ufficio Tecnico è a disposizione dei Clienti per fornire eventuali chiarimenti e consigli sull' installazione e realizzazione di impianti di dosaggio.

Ci riserviamo il diritto di apportare modifiche senza preavviso al presente manuale