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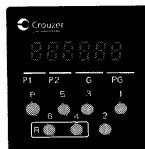
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1 - Description

1.1 - General

The 87 620●●● multifunction counter has 5 operating modes:

Mode	Description	Page
PRESELECTOR <i>F c t P C</i>	Electrical pulse counting with activation of contact(s) when one or two preset value(s) is(are) reached.	55
TACHOMETER <i>F c t t R</i>	Calculates the number of electrical pulses per second or per minute.	60
TIME COUNTER <i>F c t t C</i>	Measurement of time elapsed between 2 electrical states with activation of contact(s) when the preset time(s) is(are) reached.	64
MULTITOTALISER <i>F c t P U</i>	Electrical pulse counting on 2 distinct(s) counting inputs: Totaliser A and Totaliser B.	69
BATCH COUNTER <i>F c t b C</i>	Preselector with a single preset value (see above) with incrementation of a counter each time the preselector activates its contact	74



Display of statuses

- P1: Preset 1
- P2: Main preset 2
- G: Gain (1)
- When PG is on, the counter is in programming mode
- P1 or P2 lights on during the activation of the output concerned (P1 for OUT1 and P2 for OUT2)
- P1 and P2 lights on if the counter shows the general total

If P1, P2 or G is displayed at the same time as PG the value concerned can then be changed.

If OUT1 or OUT2 is activated, the corresponding preset P1 or P2 is displayed.
The access to the presets P1, P2 and Gain can be interlocked by programming.
In the event of a power cut, the parameters are maintained in a non volatile memory.

(1) Gain: Also called Scale factor or weighting. The counter input pulses are multiplied by a multiplying coefficient of 0.001 to 999.999.

1.2 - Technical Description

1.2.1 - Display

LED display	LCD display
<ul style="list-style-type: none"> - 7 segments, 6 digits and a programmable decimal point, - Red in colour, - Height: 7.6 mm LED, - 4 indicators: (P1, P2, G, PG). 	<ul style="list-style-type: none"> - 6 digits and a programmable decimal point, - Height: 9 mm LCD, - 4 indicators: (P1, P2, G, PG).

1.2.2 - Inputs

- Counting inputs A and B.
- Control inputs B and C (Partial stoppage of counting (called Gate function), display reset or maintained).
- Contact, voltage or solid-state inputs (NPN or PNP).

Input modes

- Counting inputs.
- Counting direction input and counting input.
- Differential inputs (adding or subtracting).
- Inputs with phase discriminator, use of edges.

Counting frequency

Counting input frequency	5 KHz with 1 input/2.5 KHz with 2 inputs
Counting input minimum pulse duration	17 ms at 30 Hz, 250 μ s at 2.5 KHz, 100 μ s at 5 KHz
Control input minimum pulse duration	5 ms

1.2.3 - Outputs

Relay	
1 or 2 changeover	Response time < 5 ms
Rated current	5 A
Minimum current	10 mA
Maximum switching voltage	--- 30 V, ~ 250 V
Minimum switching voltage	~ 5 V
PNP solid-state	
Maximum current	30 mA
Switching voltage	--- 12...24 V for version with DC power supply --- 12...30 V for version with AC power supply

The outputs OUT1 for P1 and OUT2 for P2 are available as solid-state or relay outputs.

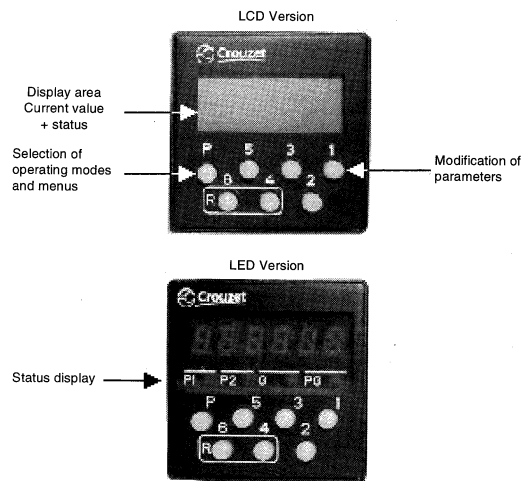
1.2.4 - Supply

Max. current consumption with pulse transmitter	
--- 12...24 V ± 10 %	< 150 mA
~ 24 V ± 10 % - 50/60 Hz	< 250 mA
~ 115 V ± 10 % - 50/60 Hz	< 50 mA
~ 230 V ± 10 % - 50/60 Hz	< 50 mA
Overload protection by external fuse	
0,16 A time delayed per IEC 127 for --- 0,2 A time delayed per UL 198 for --- 32 mA for ~	
Auxiliary power supply only for alternating current supply	
--- 12...30 V	max load 50 mA

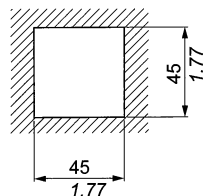
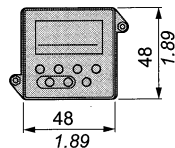
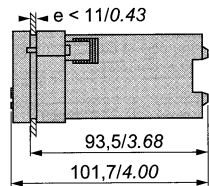
1.3 - Presentation and environment

Electrical connection to terminal	Screw
Front panel dimensions	48 x 48 per DIN 43700
Panel mounting	By self-interlocking clamp by means of M3 set screws, 45 x 45 cutout
Thickness of panel	≤ 11 mm
Attachment	By front panel screw terminals
Protection	By front panel seal
Weight	- Approx. 100 g for the DC version with 1 preset - Approx. 200 g for the others versions
Protection category	Front panel : IP 65 (IEC 144)
Operating temperature range	0 °C...50 °C
Storage temperature range	- 20 °C...70 °C

1.4 - Physical description



Dimensions



mm
inch

1.5 - Setting into service

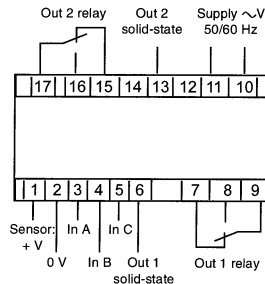
- Make sure that the power supply voltage applied corresponds to the voltage range accepted by the unit. 4 different voltages ($\approx 12...24$ V; ~ 24 V; ~ 115 V; ~ 230 V; \sim version: 50/60 Hz),
- Wire the power supply to terminals 10 and 11 for the DC voltage, and to terminals 1 and 2 for the AC voltage,
- Wire the inputs and the outputs,
- Program the unit. Refer to chapter 3 (Parameters, preset 1, preset 2, Gain).

1.6 - Connection

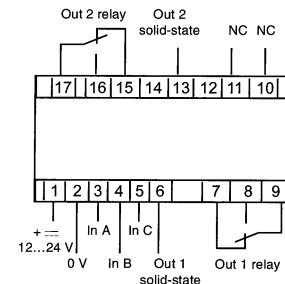
The diagram below shows a complete wiring configuration.

If the product only has one preset, the terminals not connected are named as "nc" and must not be connected.

2 presets version Vac



2 presets version Vdc



Connector screw tightening torques in Nm/lb-in

Terminals 1-6	0,2/1.75
Terminals 7 - 17	0,4/3.55

Connection capacity

Terminals 1-6	Wire without a terminal end	0,15 mm ² x 2, 1.0 mm ² / AWG 26-18
	Wire with terminal end	0,15 mm ² x 2, 0.75 mm ² / AWG 26-18
	Max capacity	1 mm ² / AWG 18
Terminals 7 - 17	Wire with terminal end	0,15 mm ² x 2, 1.5 mm ² / AWG 26-16
	Max capacity	1,5 mm ² / AWG 18

TERMINAL	DESCRIPTION
1	- Auxiliary power supply providing 12-24 volts dc only in ac voltage version to actuate pulse generators up to 50 mA. Note: For the dc power supply, this terminal is used for the direct current positive input.
2	0 Volt or common - for use with the sensor power supply, inputs A, B and C, and solid-state outputs 1 and 2
3	Input A (see the Role of counting and control inputs parameter)
4	Input B (see the Role of counting and control inputs parameter)
5	Input C - Programmable for use as a 0 reset input or gate (see Role of counting and control inputs parameter)
6	Solid-state output provides a PNP output signal
7	Changeover output 1: NC
8	Changeover output 1: NO
9	Changeover output 1: Common
10	Alternating current input - neutral (not wired for dc power supply products)
11	Alternating current input - line (not wired for dc power supply products)
12	Do not connect
13	Solid-state output provides a PNP output signal
14	Do not connect
15	Changeover output 2: NC
16	Changeover output 2: NO
17	Changeover output 2: Common

2 - Input and output mode

2.1 - Counting and control input modes (function + diagram)

			Diagram
<i>InEGr</i>	Input A Input B Input C Display	Counting Gate Reset	
<i>InEdr</i>	Input A Input B Input C Display	Counting Counting direction Reset	
<i>InEdG</i>	Input A Input B Input C Display	Counting Counting direction Gate	
<i>InASr</i>	Input A Input B Input C Display	Adding Subtracting Reset	
<i>InASG</i>	Input A Input B Input C Display	Adding Subtracting Gate	
<i>InARr</i>	Input A Input B Input C Display	Adding Adding Reset	
<i>InPPr</i>	Input A Input B Input C Display	Channel A Channel B Reset	
<i>InPPG</i>	Input A Input B Input C Display	Channel A Channel B Gate	

NPN counting on falling edge.

PNP counting on rising edge.

*The reset inputs are configured as solid-state by default.

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2.2 - Output modes

The outputs operate in correspondence with the pulse counter.
 The outputs are monostable or bistable according to the configuration set.

In operation with resetting mode:

- If the preset value P1 is reached, the output OUT1 is activated.
- If the preset value P2 is reached, the output OUT2 is activated.

Zero reset mode or original mode

Static reset <i>r 5 b l a</i>	Counting	
	Reset	
	Display	1 2 0 0 0 0 0 0 1 2
Dynamic reset <i>r 5 c P t</i>	Counting	
	Reset	
	Display	1 2 0 1 2 3 4 5 6 7 8

Reset mode

Upcounting <i>r 5 0</i> <i>r 5 A 0</i>	Counting	
	Reset	
	Display	1 2 0 1 2 3 4 5 0 1 2
Operation with electrical, automatic or manual Reset		
Downcounting <i>r 5 P 2</i> <i>r 5 A P 2</i>	E.g. P2 = 8 Counting	
	Reset	
	Display	0 - 1 8 7 6 5 4 3 8 7 6
Operation with electrical, automatic or manual Reset		

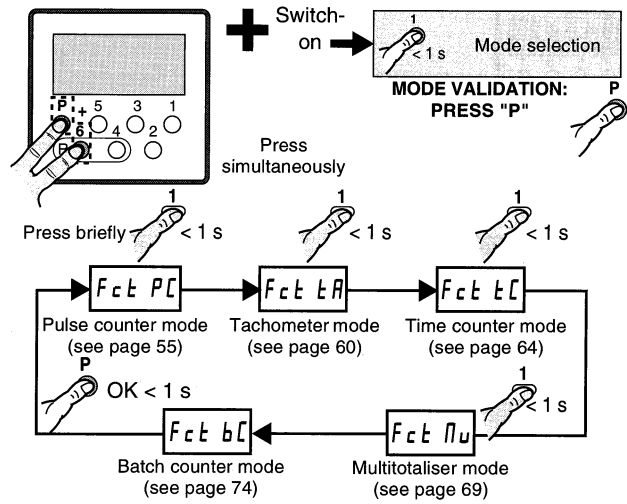
The outputs OUT1 for P1 and OUT2 for P2 are available as changeover outputs and PNP solid-state outputs.

They can be programmed as bistable or monostable with adjustable durations. The state of the outputs after a power cut can be restored by configuration.

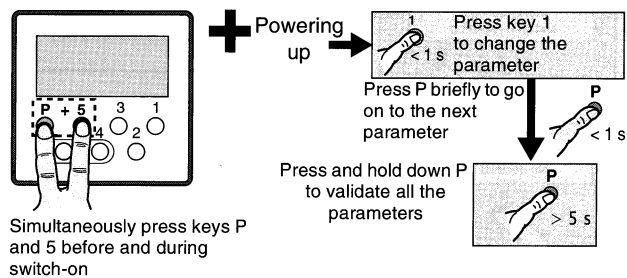
If OUT1 is programmed as bistable, it disappears when signal OUT2 is sent.
 If the output OUT2 is set as bistable, it can only be reset manually or electrically.

3 - Operating and configuration mode

3.1 - Mode selection

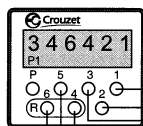


3.2 - Function parameter configuration mode selected



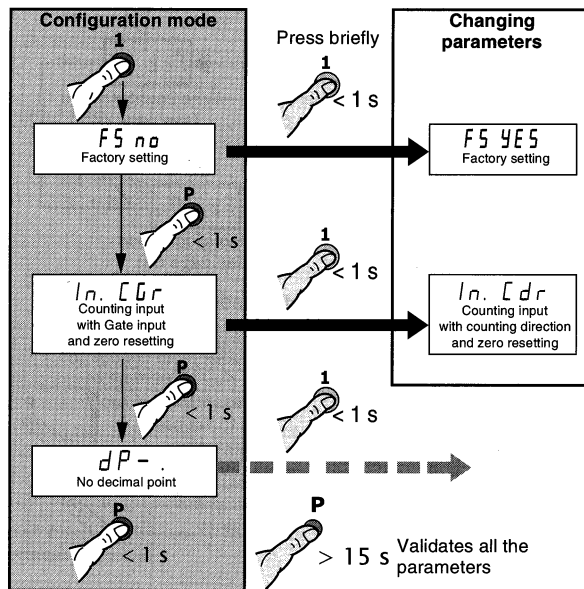
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3.3 - Programming of the preset and gain values



- Units, 0 to 9, one push = + 1
- Tens, 0 to 9, one push = + 1
- Hundreds, 0 to 9, one push = + 1
- Thousands, 0 to 9, one push = + 1
- Tens of thousands, 0 to 9, one push = + 1
- Hundreds of thousands, 0 to 9, one push = + 1

Example: P + 5



4 - Preselector mode

4.1 - Description of the preselector mode

F c t P C

The CPT4 multifunction electronic counter configured in preselector mode enables:

- the upcounting/downcounting of electrical pulses,
- the display of current value, taking into account the Gain G, also known as the weighting factor, or scale factor,
- activation of a contact OUT1 when the value P1 is reached,
- activation of a contact OUT2 when the value P2 is reached,
- manual reset, electrical reset (using input C) or automatic reset by programming.
- operation with reset to zero or reset to the main preset value.

where:

- P1: intermediate preset.
- P2: main preset.

Note: In the case of a counter with only one preset, P1 is the main preset.

- The output OUT2 is activated, or not, on an intermediate reset, according to the counter user settings. For units with a single preset, the corresponding output is OUT1.

4.2 - Configuration of the preselector mode

PARAMETERS	VALUES	DESCRIPTION		
Setting to default configuration	F 5 n 0*	- Manual reset		
	F 5 y e s	- Default factory setting (parameters marked*)		
Function of counting and control inputs		Input A	Input B	Input C
	i n . C G r *	Counting	Gate	Reset
	i n . C d r	Counting	Counting direction (2)	Reset
	i n . C d G	Counting	Counting direction (2)	Gate
	i n . R S r	Adding	Subtracting	Reset
	i n . R S G	Adding	Subtracting	Gate
	i n . R R r	Adding	Adding	Reset
	i n . P P r	Phase A (1)	Phase B (1)	Reset
	i n . P P G	Phase A (1)	Phase B (1)	Gate
Display of decimal point on screen	d P _ . *	xxxxxx no decimal point		
	d P _ . 0	xxxxx.x		
	d P _ . 0 0	xxx.x		
	d P _ . 0 0 0	xxx.xxx		
Reset mode	r 5 0*	- Upcounting mode; no automatic reset to zero; manual or electrical reset.		
	r 5 R 0	- Upcounting mode; reset to zero automatic when main preset is reached. (3)		
	r 5 P 2	- Downcounting mode; no automatic reset to preset value. (3)		
	r 5 R P 2	- Downcounting mode; automatic reset to main preset when zero is reached. (3)		

(1) Operation with phase discriminator.

(2) Input B passive (0 V for PNP or 24 V for NPN) for upcounting, Input B active (24V for PNP or 0V for NPN) for downcounting.

(3) For the units with only one preset P1, the corresponding output is OUT1.

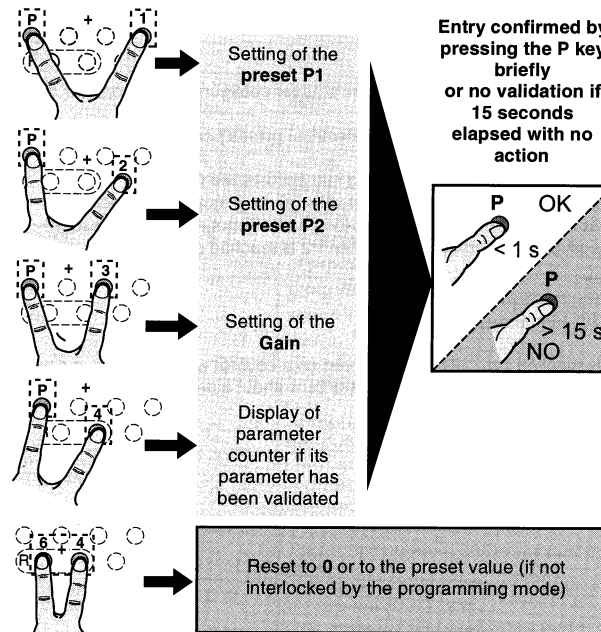
PARAMETERS	VALUES	DESCRIPTION
Duration of the output signal OUT1	S I O F F	- No output signal
	S I 0 n	- Bistable output (disappears on transmission of OUT2)
	S I 0 . 0 2	- 20 ms
	S I 0 . 0 5	- 50 ms
	S I 0 . 1 0*	- 100 ms
	S I 0 . 2 0	- 200 ms
	S I 0 . 5 0	- 500 ms
	S I 1 . 0 0	- 1 s
Duration of the output signal OUT2		Same as OUT1
Operation of OUT2 on an intermediate reset	O u r n*	- No transmission (if external reset before P2 is reached, the output is not activated) (1)
	O u r y	- With transmission OUT2 on a reset (In the event of a reset on OUT2 the output is activated) (1)
Logic of NPN or PNP inputs	i n . n H	- HTL inputs for NPN (sensitive to a level "0" \leq 2 V and "1" \geq 8 V)
	i n . P H*	- HTL inputs for PNP (sensitive to a level "0" \leq 2 V and "1" \geq 8 V)
	i n . n L	- TTL inputs for NPN (sensitive to a level "0" \leq 2 V and "1" \geq 3.8 V)
	i n . P L	- TTL inputs for PNP (sensitive to a level "0" \leq 2 V and "1" \geq 3.8 V)
Maximum counting input frequency	F r 9 L	- Attenuation at 30 Hz (to avoid contact bounce being taken into account)
	F r 9 H*	- No attenuation (5 KHz or 2.5 KHz if two-way counting)
Static or dynamic reset	r 5 b l o*	- Static: no counting during resetting time
	r 5 c p t	- Dynamic: counting possible during resetting time
Saving of outputs OUT1 and OUT2	n e n n*	- No saving of output states in the event of powercut
	n e n y	- With saving of output states in the event of powercut
General totaliser	t o t n*	- Without
	t o t y	- With (provides an indication of the total number of pulses even reset is/has been activated)

(1) For units with only one preset P1, the corresponding output is OUT1.

PARAMETERS	VALUES	DESCRIPTION
Reset interlocking by keys (6 + 4)	<i>r 5 u n L</i> *	- Manual reset possible (keys 6 + 4)
	<i>r 5 L o c</i>	- Reset by keys, interlocked or delayed (see Interlocking mode parameter)
Interlocking of access to preset P1	<i>P 1 u n L</i> *	- Access to preset P1 possible (keys P + 1)
	<i>P 1 L o c</i>	- Access to P1 interlocked (or possible after 10 s, see Interlocking mode parameter)
Interlocking of access to preset P2	<i>P 2 u n L</i> *	- Access to preset P2 possible (keys P + 2)
	<i>P 2 L o c</i>	- Access to P2 interlocked (or possible after 10 s, see Interlocking mode parameter)
Interlocking of access to gain G	<i>G R u n L</i> *	- Access to gain possible (keys P + 3)
	<i>G R L o c</i>	- Access to gain interlocked (or possible after 10 s, see Interlocking mode parameter)
Interlocking mode for reset, presets and gain	<i>R I I u n L</i> *	- Access to interlocked parameters possible after pressing > 10 s
	<i>R I I L o c</i>	- Access to interlocked parameters impossible

4.3 - Use of the preselector mode

Display or modification of presets P1, P2 and gain G (they can be interlocked by programming)



5 - Tachometer mode

5.1 - Description of the tachometer mode

F c t t R

The CPT4 multifunction electronic counter configured in tachometer mode enables:

- upcounting/downcounting of electrical pulses per second or per minute (counting on rising edges),
- display of current value, taking into account the Gain G,
- remaining of display of current value as long as input C is active,
- activation of contact OUT1 as long as P1 is not reached or passed,
- activation of contact OUT2 when P2 is reached or passed.

where:

- P1: low threshold.
- P2: high threshold

This function can only be configured on a counter with 2 presets; a counter with 1 preset will behave like a counter without a preset.

5.2 - Configuration of the tachometer mode

PARAMETERS	VALUES	DESCRIPTION		
Default configuration	F 5 n 0*	- Manual reset - Default factory setting (parameters marked *)		
	F 5 y e s			
Function of counting and control inputs		Input A	Input B	Input C
	In. CH *	Counting input	-	Hold
	In. CDH	Counting	Counting direction (2)	
	In. RSH	Adding	Subtracting	
	In. RRH	Adding	Adding	
In. PPH	Phase A (1)	Phase B (1)		
Time unit	U. SEC*	- Pulses/second		
	U. min	- Pulses/minute		
Display of decimal point on screen	dP..*	xxxxxx no decimal point		
	dP.. 0	xxxxx.x		
	dP.. 00	xxxx.xx		
	dP.. 000	xxx.xxx		
Minimum input frequency	LF 1*	- 1 Hz (if no pulse after 1 s, the display returns to 0)		
	LF 0 12	- 0,125 Hz (if no pulse after 8 s, the display returns to 0)		
Low threshold for output OUT1 (3)	S 1 OFF	- No output signal		
	S 1 0 n*	- Output OUT1 bistable, OUT1 = 1 if current value ≤ P1		
High threshold for output OUT2 (3)	S 2 OFF	- No output signal		
	S 2 0 n*	- Output OUT2 bistable, OUT2 = 1 if current value ≥ P2		
Logic of NPN or PNP inputs	In. nH	- HTL inputs for NPN (sensitive to a level "0" ≤ 2 V and "1" ≥ 8 V)		
	In. pH*	- HTL inputs for PNP (sensitive to a level "0" ≤ 2 V and "1" ≥ 8 V)		
	In. nL	- TTL inputs for NPN (sensitive to a level "0" ≤ 2 V and "1" ≥ 3.8 V)		
	In. PL	- TTL inputs for PNP (sensitive to a level "0" ≤ 2 V and "1" ≥ 3.8 V)		

(1) Operation with phase discriminator.

(2) Input B passive (0 V for PNP or 24 V for NPN) for upcounting mode.

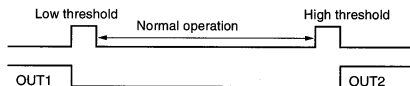
Input B active (24 V for PNP or 0 V for NPN) for downcounting mode.

(3) Only for units with 2 presets.

PARAMETERS	VALUES	DESCRIPTION
Maximum input frequency	<i>F r 9 L</i> <i>F r 9 H*</i>	- Attenuation at 30 Hz (to avoid contact bounce being taken into account) - No attenuation (5 KHz or 2.5 KHz if two-way counting)
Clearance of low threshold for starting	<i>S U P n*</i> <i>S U P y</i>	- Without - With (OUT1 active if the current value has passed P1 once)
Interlocking of the access to the low threshold P1 (1)	<i>P 1 u n L*</i> <i>P 1 L o c</i>	- Access to the low threshold P1 possible (keys P + 1) - Access to P1 interlocked (or possible after 10 s, see Interlocking mode parameter)
Interlocking of the access to the high threshold P2 (1)	<i>P 2 u n L*</i> <i>P 2 L o c</i>	- Access to the high threshold P2 possible (keys P + 2) - Access to P2 interlocked (or possible after 10 s, see Interlocking mode parameter)
Interlocking of access to Gain G	<i>G A u n L*</i> <i>G A L o c</i>	- Access to gain possible (keys P + 3) - Access to gain interlocked (or possible after 10 s, see Interlocking mode parameter)
Interlocking mode for presets and gain	<i>R 1 1 u n L*</i> <i>R 1 1 L o c</i>	- Access to interlocked parameters possible after pressing > 10 s - Access to interlocked parameters impossible

(1) Only for units with 2 presets.

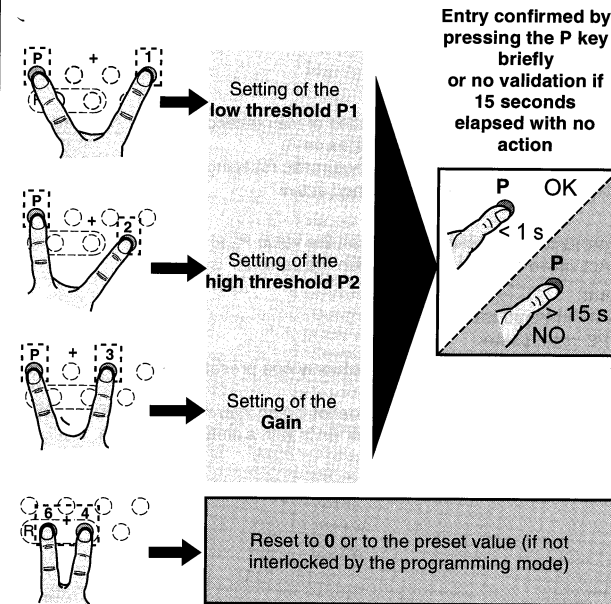
Tachometer operating mode



Outputs no longer monostable; bistable only.

5.3 - Use of the tachometer mode

Display or modification of presets P1, P2 and gain G (they can be interlocked by programming).



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6 - Timer mode

6.1 - Description of the timer mode

F c t t C

Inputs A, B and C:

- Input A : Measurement of duration of maintenance of input A or time elapsed between two rising edges on A.
- Input B : manual, electrical or automatic resetting when active.
- Input C: Display maintained when active.

- Activation of contact OUT2 when the value P2 is reached.
- Activation of contact OUT1 when the value P1 is reached.

where:

- P1: intermediate preset.
- P2: main preset.

Note: In the case of a counter with only one preset, P1 is the main preset.

- The output OUT2 is activated, or not, on an intermediate reset, according to the counter user settings. For units with a single preset, the corresponding output is OUT1.

6.2 - Configuration of the timer mode

PARAMETERS	VALUES	DESCRIPTION
Default configuration	F 5 n 0* F 5 y e 5	- Manual reset - Default factory setting (parameters marked *)
Time unit	t u S E c* t u m i n t u h r t u H M S	- Second - Minute - Hour - Format HH.MM.SS
Display of decimal point on screen	t u . . * t u . . 0 t u . . 0 0 t u . . 0 0 0	xxxxxx no decimal point xxxx.x xxx.xx xxx.xxx
Reset mode	r 5 0* r 5 R 0 r 5 P 2 r 5 R P 2	- Upcounting mode; no automatic reset to zero; manual or electrical reset. - Upcounting mode; reset to zero automatic when main preset is reached. (1) - Downcounting mode; no automatic reset to preset value. (1) - Downcounting mode; automatic reset to main preset when zero is reached. (1)
Duration of the output signal OUT1	S 1 0 F F S 1 0 n S 1 0 . 0 2 S 1 0 . 0 5 S 1 0 . 1 0* S 1 0 . 2 0 S 1 0 . 5 0 S 1 1 . 0 0	- No output signal - Bistable output (disappears on transmission of OUT2) - 20 ms - 50 ms - 100 ms - 200 ms - 500 ms - 1 s
Duration of the output signal OUT2		Same as OUT1

(1) For the units with only one preset P1, the corresponding output is OUT1.

PARAMETERS	VALUES	DESCRIPTION
Operating types	$t c c P u^*$	- Accumulated time duration while input A is active (1)
	$t c c P P$	- Accumulative time duration between 2 rising edges on A (2)
	$t c 5 P u$	- Time duration while input A is active (1), (3)
	$t c 5 P P$	- Time duration between 2 rising edges (2), (3)
Transmission of OUT2 on an intermediate reset	$D u r n^*$	- No transmission (if external reset before P2 is reached, the output is not activated) (4)
	$D u r y$	- With transmission OUT2 on reset (In the event of reset on OUT2 the output is activated) (4)
Logic of NPN or PNP inputs	$I n. n H$	- HTL inputs for NPN (sensitive to a level "0" $\leq 2 V$ and "1" $\geq 8 V$)
	$I n. P H^*$	- HTL inputs for PNP (sensitive to a level "0" $\leq 2 V$ and "1" $\geq 8 V$)
	$I n. n L$	- TTL inputs for NPN (sensitive to a level "0" $\leq 2 V$ and "1" $\geq 3.8 V$)
	$I n. P L$	- TTL inputs for PNP (sensitive to a level "0" $\leq 2 V$ and "1" $\geq 3.8 V$)
Maximum input frequency	$F r q L$	- Attenuation at 30 Hz (to avoid contact bounce being taken into account)
	$F r q H^*$	- No attenuation (5 KHz or 2.5 KHz if two-way counting)
Static or dynamic reset	$r 5 b l a^*$	- Static: no counting during resetting time
	$r 5 c P t$	- Dynamic: counting possible during resetting time
Saving of outputs OUT1 and OUT2	$n e n n^*$	- No saving of outputs after power cut
	$n e n y$	- With saving of outputs after power cut
General totaliser	$t o t n^*$	- Without
	$t o t y$	- With (provides an indication of the time duration even reset is/has been activated)
Measurement stop when the main preset reached	$5 t P n^*$	- No stop
	$5 t P y$	- Measurement stop when the main preset is reached.

(1) The measurement starts on the rising edge of the state applied to input A and stops on the falling edge.

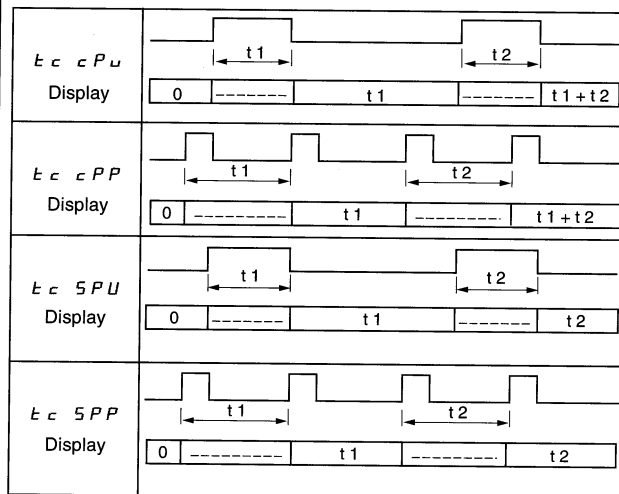
(2) The measurement starts on the rising edge of the pulse and stops on the rising edge of the Stop pulse.

(3) On each Start pulse, the measurement starts again at 0.

(4) For counters with only one preset P1, the corresponding output is OUT1.

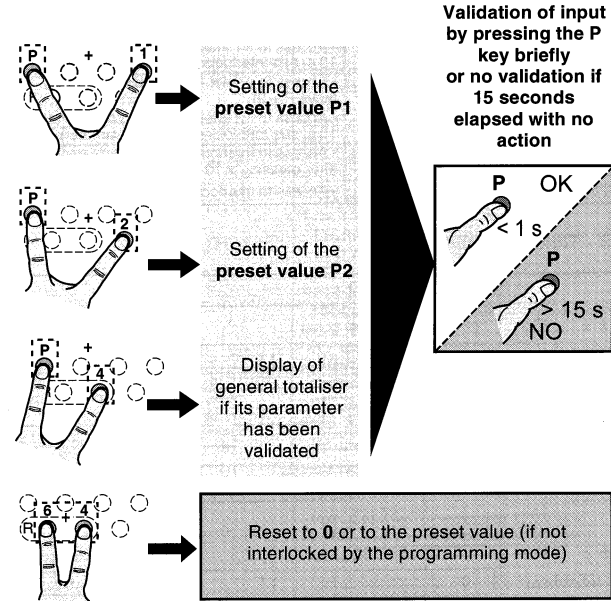
PARAMETERS	VALUES	DESCRIPTION
Reset interlocking by keys (6 + 4)	$r 5 u n L^*$	- Manual setting to zero possible (keys 6 + 4)
	$r 5 L o c$	- Manual setting to zero interlocked or delayed (see Interlocking mode parameter)
Interlocking of access to preset value P1	$P 1 u n L^*$	- Access to preset P1 possible (keys P + 1)
	$P 1 L o c$	- Access to P1 interlocked (or possible after 10 s, see Interlocking mode parameter)
Interlocking of access to preset value P2	$P 2 u n L^*$	- Access to preset P2 possible (keys P + 2)
	$P 2 L o c$	- Access to P2 interlocked (or possible after 10 s, see Interlocking mode parameter)
Interlocking mode for reset and presets	$R 1 l u n L^*$	- Access to interlocked parameters possible after pressing > 10 s
	$R 1 l L o c$	- Access to interlocked parameters impossible

6.3 - Timer operating mode



6.4 - Use of the timer mode

Display or modification of presets P1, P2 (they can be interlocked by programming).



7 - Multitotaliser mode

7.1 - Description of the multitotaliser mode

$F c t \quad \Pi u$

The CPT4 multifunction electronic counter configured in multitotaliser mode enables the number of pulses on two inputs to be counted independently of each other. It only operates with 2 preset values. A counter with only one preset behaves as if it did not have a preset.

It allows:

- counting of electrical pulses on input A (Totaliser A),
- counting of electrical pulses on input B (Totaliser B),
- main display of value A + B or A - B (according to configuration),
- taking into account of a Gain factor (common to the two totalisers and to the main display),
- manual setting to zero of totaliser A or totaliser B (without effect on main display),
- electrical setting to zero of totaliser A or totaliser B and the main display by activation of input C,
- activation of a contact OUT1 when the intermediate preset value P1 is reached for input A,
- activation of a contact OUT2 when the main preset value P2 is reached for input B,

Note: The reset to zero of one input (A or B) does not change the display, the counter stores in memory the value reached. Use input C for zero resetting.

7.2 - Configuration of the multitotaliser mode

PARAMETERS	VALUES	DESCRIPTION
Default configuration	<i>F 5 n 0*</i>	- Manual reset
	<i>F 5 4 E 5</i>	- Default factory setting (parameters marked *)
Function of counting and control inputs		Input A Input B Input C
	<i>i n. A A r*</i>	Adding Adding Reset
	<i>i n. A 5 r</i>	Adding Subtracting Reset
Display of decimal point on screen	<i>d P _ _ *</i>	xxxxxx no decimal point
	<i>d P _ _ 0</i>	xxxxx.x
	<i>d P _ _ 0 0</i>	xxxx.xx
	<i>d P _ _ 0 0 0</i>	xxx.xxx
Duration of the output signal OUT1	<i>5 1 0 F F</i>	- No output signal
	<i>5 1 0 n</i>	- Bistable output
	<i>5 1 0. 0 2</i>	- 20 ms
	<i>5 1 0. 0 5</i>	- 50 ms
	<i>5 1 0. 1 0*</i>	- 100 ms
	<i>5 1 0. 2 0</i>	- 200 ms
	<i>5 1 0. 5 0</i>	- 500 ms
<i>5 1 1. 0 0</i>	- 1 s	
Duration of the output signal OUT2		Same as OUT1
Logic of NPN or PNP inputs	<i>i n. n H</i>	- HTL inputs for NPN (sensitive to a level "0" ≤ 2 V and "1" ≥ 8V)
	<i>i n. P H*</i>	- HTL inputs for PNP (sensitive to a level "0" ≤ 2 V and "1" ≥ 8V)
	<i>i n. n L</i>	- TTL inputs for NPN (sensitive to a level "0" ≤ 2 V and "1" ≥ 3.8 V)
	<i>i n. P L</i>	- TTL inputs for PNP (sensitive to a level "0" ≤ 2 V et "1" ≥ 3.8 V)
Maximum input frequency	<i>F r 9 L</i>	- Attenuation at 30 Hz (to avoid contact bounce being taken into account)
	<i>F r 9 H*</i>	- No attenuation (5 KHz or 2.5 KHz if two-way counting)
Static or dynamic reset	<i>r 5 b l o*</i>	- Static: no counting during resetting time
	<i>r 5 e P t</i>	- Dynamic: counting possible during resetting time

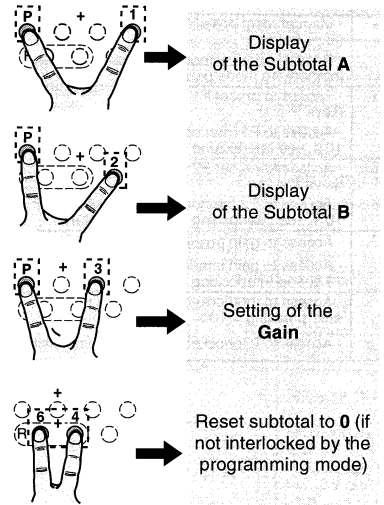
PARAMETERS	VALUES	DESCRIPTION
Saving of outputs OUT1 and OUT2	<i>n e n n*</i>	- No saving of output states in the event of a power cut
	<i>n e n y</i>	- With saving of output states in the event of a power cut
With or without preset	<i>P</i>	<i>n*</i> - Without
	<i>P</i>	<i>y</i> - With
Reset interlocking by keys (6 + 4)	<i>r 5 u n L*</i>	- Manual reset possible (keys 6 + 4)
	<i>r 5 L o c</i>	- Reset by keys, interlocked or delayed (see Interlocking mode parameter)
Interlocking of access to preset P1	<i>P 1 u n L*</i>	- Access to preset P1 possible (keys P + 1)
	<i>P 1 L o c</i>	- Access to P1 interlocked (or possible after 10 s, see Interlocking mode parameter)
Interlocking of access to preset P2	<i>P 2 u n L*</i>	- Access to preset P2 possible (keys P + 2)
	<i>P 2 L o c</i>	- Access to P2 interlocked (or possible after 10 s, see Interlocking mode parameter)
Interlocking of access to Gain G	<i>G R u n L*</i>	- Access to gain possible (keys P + 3)
	<i>G R L o c</i>	- Access to gain interlocked (or possible after 10 s, see Interlocking mode parameter)
Interlocking mode for reset, presets and gain	<i>R 1 1 u n L*</i>	- Access to interlocked parameters possible after pressing > 10 s
	<i>R 1 1 L o c</i>	- Access to interlocked parameters impossible

7.3 - Use of the multitotaliser mode

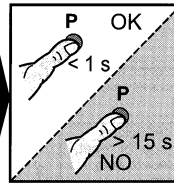
Display or modification of preset values P1, P2 and gain G (they can be interlocked by programming).

This mode allows 2 inputs to be counted independently of each other.

By default, the multitotaliser does not use preset values $\boxed{P \quad n}$

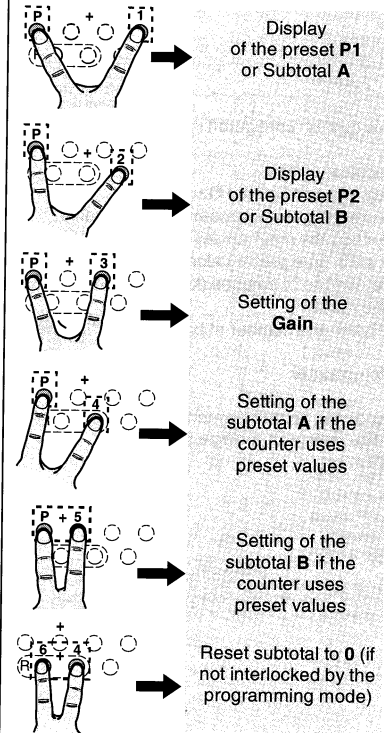


Entry confirmed by pressing the P key briefly or no validation if 15 seconds elapsed with no action

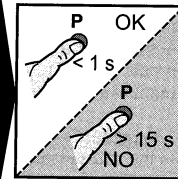


This mode allows 2 inputs to be counted independently from each other.

If the multitotaliser uses preset values, make sure that the value displayed on the counter is $\boxed{P \quad y}$



Entry confirmed by pressing the P key briefly or no validation if 15 seconds elapsed with no action



ENGLISH

8 - Batch counter

8.1 - Description of the batch counter mode

F c t b C

The CPT4 multifunction electronic counter configured in batch counter mode enables:

- counting/downcounting of electrical pulses,
 - display of current value, taking into account the Gain G,
 - manual, electrical or automatic setting to zero/reset of current value,
 - activation of a contact OUT2 when the main preset value P2 is reached,
 - increment of a batch counter each time preset value P2 is reached,
 - display of current value of the number of batches (keys P and 4)
 - manual, electrical or automatic reset,
 - activation of a contact OUT1 when the number of batches reaches the preset value P1,
 - manual setting to zero of batch counter.
- The output OUT2 is activated, or not, on an intermediate reset, according to the counter user settings. For units with a single preset, the corresponding output is OUT1.

8.2 - Configuration of the batch counter mode

PARAMETERS	VALUES	DESCRIPTION		
Default configuration	F 5 n 0 *	- Manual reset		
	F 5 4 5 5	- Default factory setting (parameters marked *)		
Function of counting and control inputs	in. C G r *	Input A	Input B	Input C
	in. C G r *	Counting	Gate	Reset
	in. C d r	Counting	Counting direction (2)	Reset
	in. C d G	Counting	Counting direction (2)	Gate
	in. A S r	Adding	Subtracting	Reset
	in. A S G	Adding	Subtracting	Gate
	in. A A r	Adding	Adding	Reset
	in. P P r	Phase A (1)	Phase B (1)	Reset
Display of decimal point on screen	in. P P G	Phase A (1)	Phase B (1)	Gate
	d P . . *	xxxxxx no decimal point		
	d P . . 0	xxxxx.x		
	d P . . 0 0	xxxx.xx		
Reset mode	d P . . 0 0 0	xxx.xxx		
	r 5 0 *	- Upcounting mode; no automatic reset to zero; manual or electrical reset.		
	r 5 A 0	- Upcounting mode; reset to zero automatic when main preset is reached. (3)		
	r 5 P 2	- Downcounting mode; no automatic reset to preset value. (3)		
r 5 A P 2	- Downcounting mode; automatic reset to main preset when zero is reached. (3)			

(1) Operation with phase discriminator.

(2) Input B passive (0 V for PNP or 24 V for NPN) for upcounting mode.

Input B active (24 V for PNP or 0 V for NPN) for downcounting mode.

(3) For the units with only one preset P1, the corresponding output is OUT1.

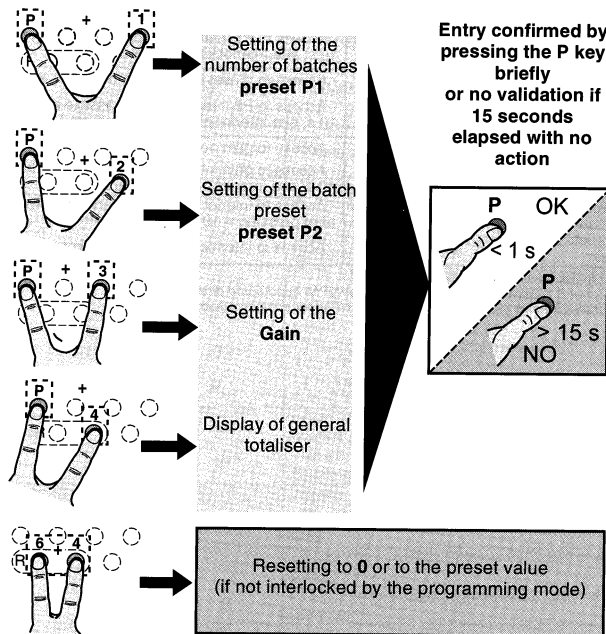
PARAMETERS	VALUES	DESCRIPTION
Duration of the output signal OUT1	5 1 0 F F	- No output signal
	5 1 0 n	- Bistable output
	5 1 0. 0 2	- 20 ms
	5 1 0. 0 5	- 50 ms
	5 1 0. 1 0*	- 100 ms
	5 1 0. 2 0	- 200 ms
Duration of the output signal OUT2	5 1 0. 5 0	- 500 ms
	5 1 1. 0 0	- 1 s
Duration of the output signal OUT2		- Same as OUT1
Operation of OUT2 on an intermediate reset	0 u r n*	- No transmission (if external reset before P2 is reached, the output is not activated)
	0 u r y	- With transmission OUT2 on a reset (In the event of a reset on OUT2 the output is activated)
Logic of NPN or PNP inputs	l n. n H	- HTL inputs for NPN (sensitive to a level "0" \leq 2 V and "1" \geq 8 V)
	l n. P H*	- HTL inputs for PNP (sensitive to a level "0" \leq 2 V and "1" \geq 8 V)
	l n. n L	- TTL inputs for NPN (sensitive to a level "0" \leq 2 V and "1" \geq 3.8 V)
	l n. P L	- TTL inputs for PNP (sensitive to a level "0" \leq 2 V and "1" \geq 3.8 V)
Maximum input frequency	F r q L	- Attenuation at 30 Hz (to avoid contact bounce being taken into account)
	F r q H*	- No attenuation (5 KHz or 2.5 KHz if two-way counting)
Static or dynamic reset	r S b l o*	- Static: no counting during resetting time
	r S c P t	- Dynamic: counting possible during resetting time
Saving of outputs OUT1 and OUT2	n e n n*	- No saving of output states in the event of a power cut
	n e n y	- With saving of output states in the event of a power cut
Reset input	E r S C n*	- Only resets the preselector
	E r S b C	- Only resets the batch counter
Batch counter or second preselector	b C b C*	- Batch counter
	b C 2. t o	- Second preselector

PARAMETERS	VALUES	DESCRIPTION
Reset interlocking by keys (6 + 4)	r S u n L*	- Manual reset possible (keys 6 + 4)
	r S L o c	- Reset by keys, interlocked or delayed (see Interlocking mode parameter)
Interlocking of access to preset P1 Batch counter	P 1 u n L*	- Access to preset P1 possible (keys P + 1)
	P 1 L o c	- Access to P1 interlocked (or possible after 10 s, see Interlocking mode parameter)
Interlocking of access to preset P2 Main counter	P 2 u n L*	- Access to preset P2 possible (keys P + 2)
	P 2 L o c	- Access to P2 interlocked (or possible after 10 s, see Interlocking mode parameter)
Interlocking of access to Gain G	G R u n L*	- Access to gain possible (keys P + 3)
	G R L o c	- Access to gain interlocked (or possible after 10 s, see Interlocking mode parameter)
Interlocking mode for reset, presets and gain	R 1 1 u n L*	- Access to interlocked parameters possible after pressing > 10 s
	R 1 1 L o c	- Access to interlocked parameters impossible

(1) Operation with phase discriminator.
(2) Input B passive (0 V for PNP or 24 V for NPN) upcounting direction.
Input B active (24 V for PNP or 0 V for NPN) for downcounting.

8.3 - Use of the batch counter mode

Display or modification of presets P1, P2 and gain G (they can be interlocked by programming).

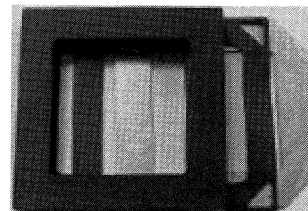


9 - Encoding

Counter	87 620	X	Y	Z
Display	LCD LED	1 2		
Preset	1 preset 2 presets		1 2	
Supply	☐ 12 24 V ~ 24 V - 50/60 Hz ~ 115 V - 50/60 Hz ~ 230 V - 50/60 Hz			1 2 3 4

10 - Accessories

Adaptor 72 x 72



11 - Glossary

Gate: Input allowing the counting in progress to be suspended without cancelling; partial stop.

Gain: Also called Scale factor or weighting. The counter input pulses are multiplied by a multiplying coefficient of 0.001 to 999.999.

Multitotaliser: This mode allows 2 inputs to be counted independently from each other.