› Electronic Counters

Multifunction Counter
CTR48

- › Backlit LCD display (orange)
- › Maximum input frequency 40 k Hz
- › Simple parameter setting, configuration using text menus
- › Easy modification of presets
- › Reset on panel or external with inhibition option
- › Option of locking the keypad, completely or partially (preset, programming)
- › IP 65 sealed panel
- › Highly resistant to shocks and impacts
- › Excellent visibility due to the large digit size (2 lines, 6 digits)



CTR48

Product selection

Model	Type	Functions	Preset	Voltages	Output	Part Number
CTR48	Orange backlit LCD display	Preselection counter, Tachometer, Chronometer, Impulse counter	1	24 V∿	5 A changeover relay, 1 solid state	**87621112**

Accessories

Description	Part Number
Adaptor for 72 x 72 mm cut-out	**26546842**
Adaptor for 55 x 55 mm cut-out	**26546846**
DIN rail adaptor	**26546841**

General characteristics

Physical details and protection

Supply	24 V∿
Relative humidity at 40 ° (no condensation) according to EN 60068-2-30	93 %
Altitude	Up to 2 000 m
Certifications	UL - cULus - CE
Vibration resistance in 3 axes	10-55 Hz/1 min/XYZ EN 60068-2-6: 30 min. in each direction
Connection by screw terminals	Removable
Protection	Front side: IP65 / Connections: IP20
Front panel watertight seal	•
Temperature limits use (°C)	-20 →+65
Temperature limits stored (°C)	-25 →+75
Weight (g)	250

You have a project? Contact us on **www.crouzet.com**

Description:

Crouzet Impulse Counters, accurate and durable solutions for pulse measurement needs

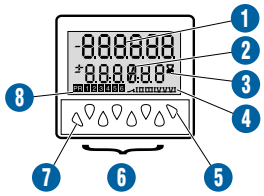
Crouzet's electronic impulse counters are reliable devices designed for measuring and recording electrical impulses in industrial applications. Crouzet's impulse counters use a combination of mechanical and electrical components to precisely count electrical pulses, offering a reliable solution for various industrial control and monitoring tasks.

For more information about: please visit **www.crouzet.com**

Specifications	
Reset to zero or to preset	On panel: if not locked during programming Electrical: automatic, voltage or solid state (NPN or PNP depending on programming)
Minimum pulse time	Impulse counter: < 15 ms Chronometer: 500 µs
Option to protect against reset from front panel	●
Scale factor (each input pulse is multiplied by this figure)	00.0001 → 99.9999
Scaling factor (each input impulse is divided by this value)	01.0000 → 99.9999
Decimal point selectable for ease of reading	0 0.0 0.00 0.000 0.0000 0.00000
Sensor supply version AC	24 V⎓ -20/+15 % 50 mA
Programming and current value backed up via EEPROM memory	● Service life 10 years
Operating characteristics	
Functions	Preselection counter, Tachometer, Chronometer, Impulse counter
Number of presets	1
Display	LCD with orange backlighting
Height digits (mm)	9
Display details	999 999 → 999 999
Input specifications	
Inputs	2 counter inputs 1 reset input, 1 gate input
Input modes	Dir: Directional AS: up/dn AA: up/up PP: phase PP2: phase 2 PP4: phase 4
Input type	Voltage or solid state
High level	8 V⎓ → 30 V⎓
Low level	0 →2 V⎓
Solid state output characteristics	
Maximum current (mA)	30
Max. voltage	24 V⎓ -20/+15 %
Relay output characteristics	
Changeover relay	●
NO contact	No
Maximum current (A)	5
Minimum current (mA)	10
Maximum voltage	30 V⎓ / 250 V∿
Min. voltage	5 V≂
Response time (ms)	< 13 ms
Mechanical life (operations)	20 x 10^6
Number of operations to 5 A	5 x 10^4
Output modes: maintained or pulsed	0.01 →99.99 s

Principles

Display and buttons

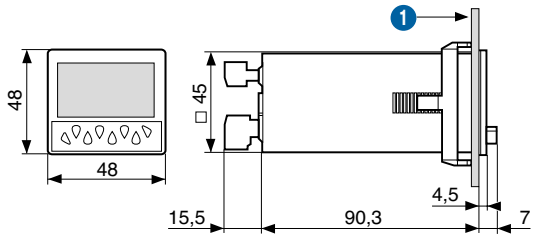


1. Current value
2. Selected value
3. Chronometer display
4. Active output indication
5. Prog/mode button
6. Preset control buttons
7. Button required for programming parameters
8. Shows which value is displayed

Dimensions (mm)

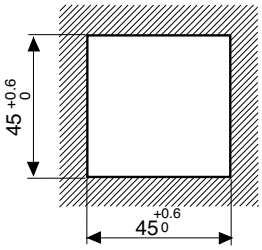
Panel Mounted

CTR48



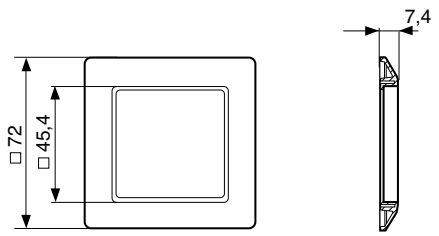
1. 10.5 max

Panel Cut-out

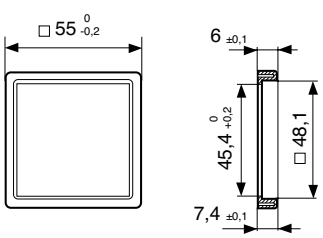


Accessories

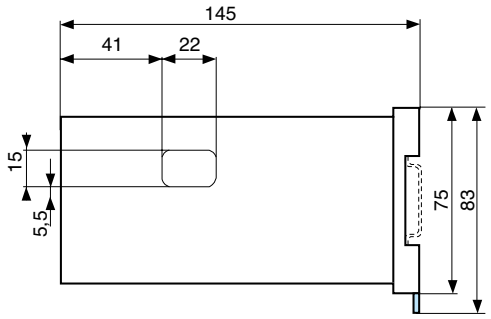
26546842 - Adaptor for 72 x 72 mm cut-out

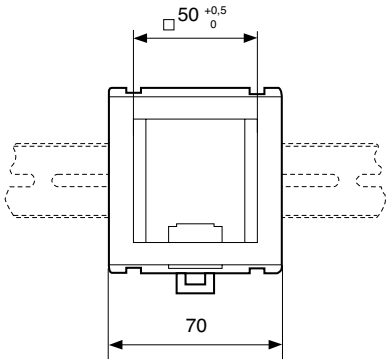


26546846 - Adaptor for 55 x 55 mm cut-out



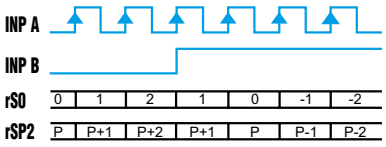
26546841 - DIN rail adaptor





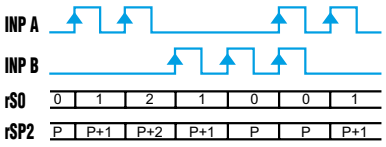
Curves

Counter: dir



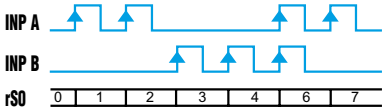
Inp A: counter input / Inp B: count direction / rS0: Display 0 → Preset / rSP2: Display Preset → 0

Counter: AS



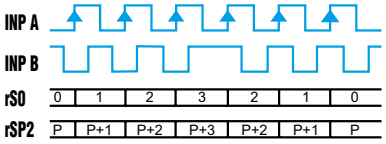
Inp A: Add. counter input 1 / Inp B: Sub. counter input 2 / rS0: Display 0 → Preset / rSP2: Display Preset → 0

Counter: AA



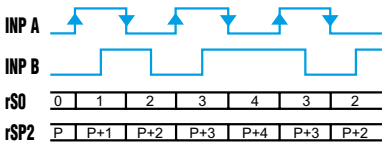
Inp A: Add. counter input 1 / Inp B: Sous. counter input / 2 rS0: Display 0 → Preset

Counter: PP



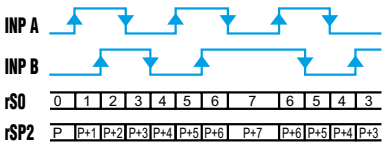
A 90 ° B Inp A: Counter input Counting on an edge / Inp B: Reversal of direction / rS0: Display 0 → Preset / rSP2: Display Preset → 0

Counter: PP2



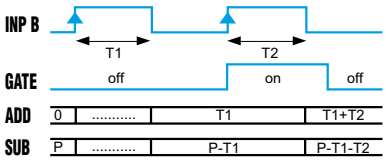
A 90 ° B Inp A: Counter input Counting on a rising edge and on a falling edge / Inp B: Reversal of direction / rS0: Display 0 → Preset / rSP2: Display Preset → 0

Counter: PP4

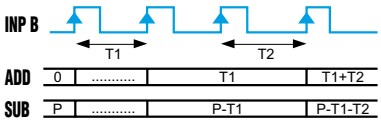


A 90 ° B Inp A: Counter input Counting on a rising edge and on a falling edge / Inp B: Counter input Counting on a rising edge and on a falling edge, reversal of direction / rS0: Display 0 → Preset / rSP2: Display Preset → 0

Chronometer: Start tcCb

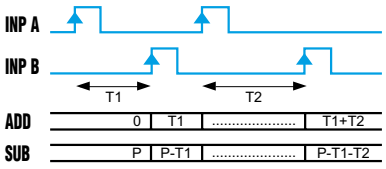


Chronometer: Start tcCbb



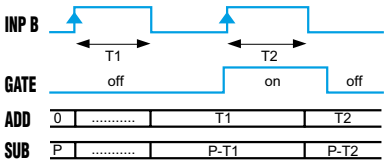
Inp A: No function / Inp B: On/Off Cumulative time counting / Add: Display 0 → Preset / Sub: Display Preset → 0

Chronometer: Start tcCAb



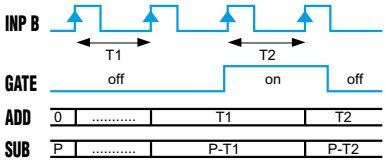
Inp A: On / Inp B: Off Cumulative time counting /
Add: Display 0 → Preset / Sub: Display Preset → 0

Chronometer: Start tcSb



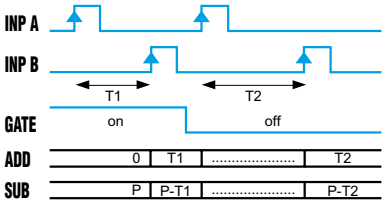
Inp A: No function / Inp B: On/Off Individual time counting while B is active, automatic reset before each new count / Add: Display 0 → Preset / Sub: Display Preset → 0

Chronometer: Start tcSbb



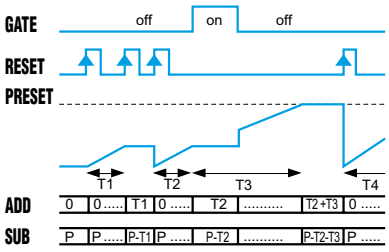
Inp A: No function / Inp B: On/Off Individual time counting, automatic reset before each new count / Add: Display 0 → Preset / Sub: Display Preset → 0

Chronometer: Start tcSAb



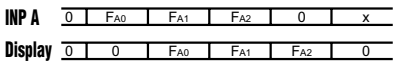
Inp A: On / Inp B: Off Individual time counting, automatic reset before each new count / Add: Display 0 → Preset / Sub: Display Preset → 0

Chronometer: Start tcAuto



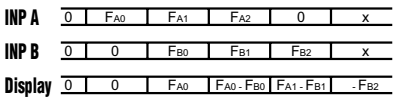
Inp A: No function / Inp B: No function Time counting command via Reset (manual or electrical) / Add: Display 0 → Preset / Sub: Display Preset → 0 The Gate input has a display memory function

Tachometer: Start tA.A



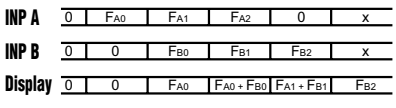
Inp A: Frequency input / Inp B: No function

Tachometer: Start tA.AS



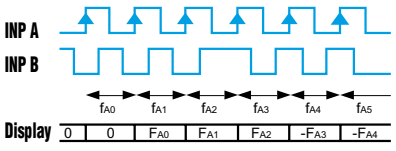
Inp A: Frequency input 1 / Inp B: Frequency input 2 Formula: A - B

Tachometer: Start tA.AA



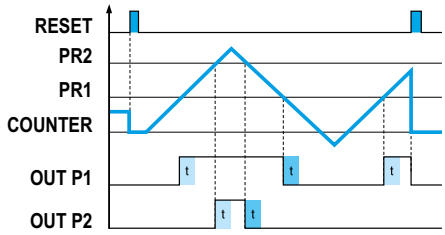
Inp A: Frequency input 1 / Inp B: Frequency input 2 Formula: A + B

Tachometer: Start tA.PP

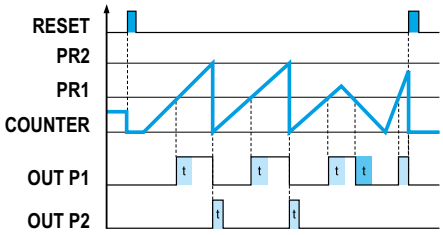


A 90 ° B Inp A: Frequency input / 1 Inp B: Reversal of direction

Output operation: OutoP rS0

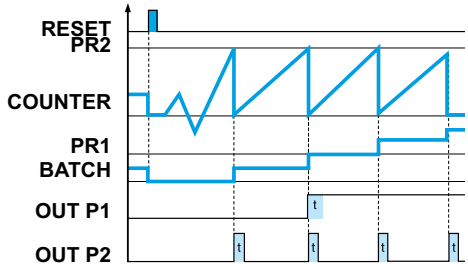


Output operation: OutoP rSA0

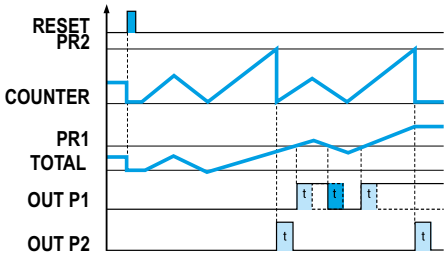


A 90 ° B Inp A: Frequency input / 1 Inp B: Reversal of direction

Output operation: OutoP bCrSA0

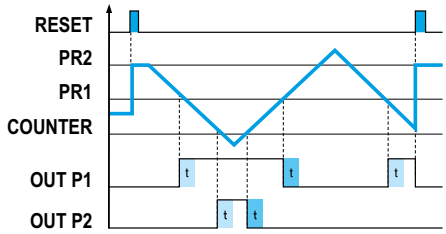


Output operation: OutoP tCrSA0

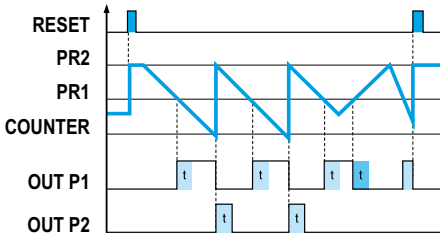


A 90 ° B Inp A: Frequency input / 1 Inp B: Reversal of direction

Output operation: OutoP rSP2

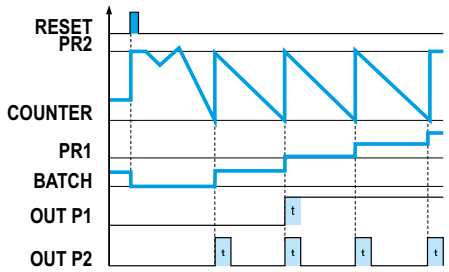


Output operation: OutoP rSAP2

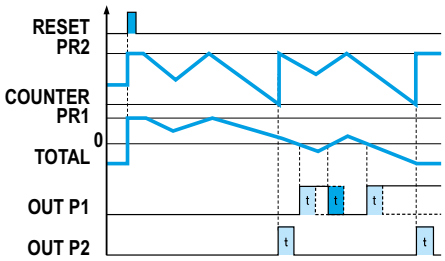


A 90 ° B Inp A: Frequency input / 1 Inp B: Reversal of direction

Output operation: OutoPbCrSA2

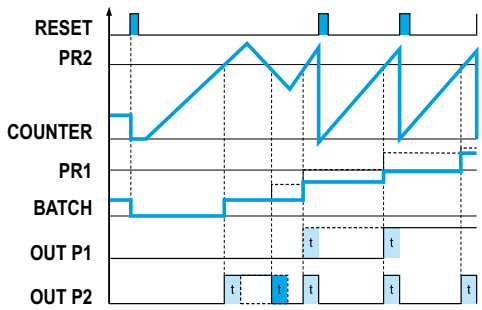


Output operation: OutoP tCrSA2

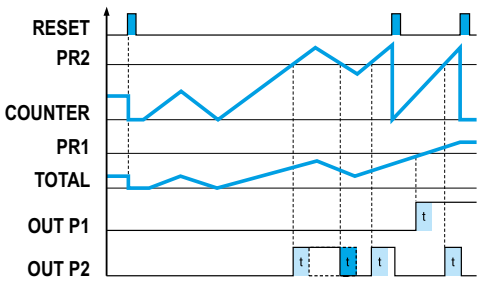


A 90 ° B Inp A: Frequency input / 1 Inp B: Reversal of direction

Output operation: OutoP bCrS0

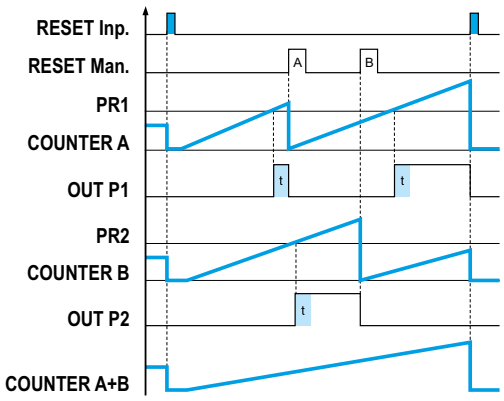


Output operation: OutoP tCrS0

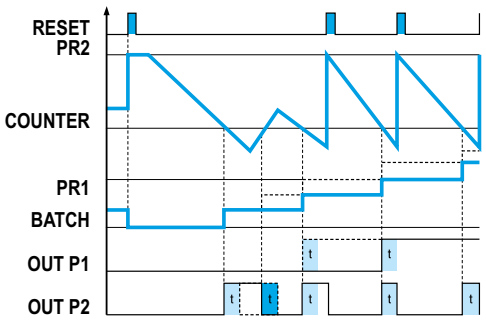


A 90 ° B Inp A: Frequency input / 1 Inp B: Reversal of direction

Output operation: OutoP MurS0 (AA)

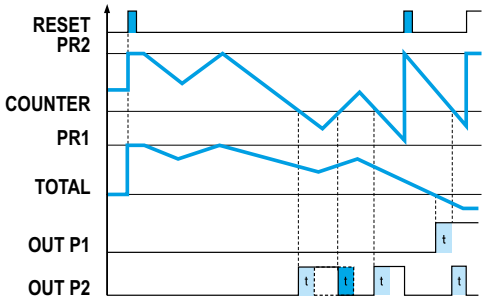


Output operation: OutoP bCrSP2

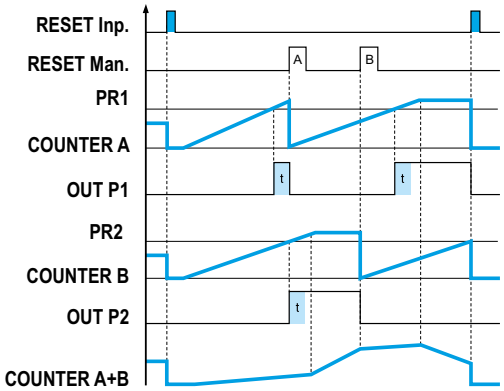


A 90 ° B Inp A: Frequency input / 1 Inp B: Reversal of direction

Output operation: OutoP tCrSP2



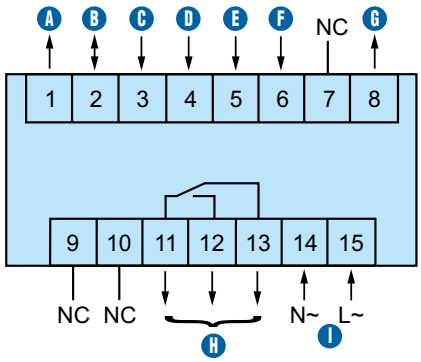
Output operation: OutoP MurS0 (AS)



A 90 ° B Inp A: Frequency input / 1 Inp B: Reversal of direction

Connections

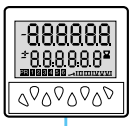
87621112 - Output: 5 A/250 V~ / AC: 90 → 260 V⎓



- A Sensor voltage supply (* UB interconnected)
- B GND (0 V⎓)
- C INP A (signal A input)
- D INP B (signal B input)
- E Reset (Reset input)
- F Gate input
- G Output 1 - 10-30 V⎓/30 mA
- H 11-12-13: Output 1
- I 14-15: Supply

Applications

Programming diagram



Cntr

- Input — PnP / npn
- FrQ — HIGH / Low
  Low=30Hz HIGH=max
- In.Cnt — dir / AS / AA / PP / PP2 / PP4
  dir: Count direction
  AS: Differential counting A-B
  AA: Totalising A+B
  PP: Quadrature Input
  PP2: Quadrature with pulse doubling
  PP4: Quadrature x4
- Out.oP — rS0 / rSA0 / rSAP2 / bCrSA0 / bCrSA2 / tCrSA0 / tCrSA2 / bCrSo / bCrSP2 / tCrS0 / tCrSP2 / MurS0
  rS0: Count mode Add (reset to zero)
  rSP2: Count mode Sub (reset to main preset)
  rSA0: Count mode Add with automatic reset
  rSAP2: Count mode Sub with automatic reset
  ***bCrSA0**: Count mode Add with automatic reset and batch counter
  ***tCrSA0**: Count mode Add with automatic reset and total counter
  MurS0: Multitotalizer (reset to zero)
  *Only version 2 preset
- MultPI — 00,0001...99,9999
- diVidE — 01,0000...99,9999
- dEcPt — 0 / 0,0 / 0,00 / 0,000 / 0,0000 / 0,00000
- CoLor** — rEd / rEdGm
  **Only for multicolor version
- rESMod — no rEs / ELrES / Man.rE / Man.EL
  norES: No reset
  ELrEs: Electrical reset
  ManrE: Manual reset
  ManEL: Manual and electrical reset

tiMErC

- Input — PnP / npn
- FrQ — HIGH / Low
  Low=30Hz HIGH=max
- StArt — tcCb / tcCab / tcCbb / tcSb / tcSbb / tcSab / tcAuto
  tcCb: Start/Stop pulse duration on input B (comulative)
  tcCab: Start edge to input A Stop edge to input B (comulative)
  tcCbb: Start edge to input B Stop edge to input B (comulative)
  tcSb: Start/Stop pulse duration on input B (single pulse)
  tcSbb: Start edge to input B Stop edge to input B (single pulse)
  tcSab: Start edge to input A Stop edge to input B (single pulse)
  tcAuto: Control timing of reset
- Out.oP — rS0 / rSA0 / rSAP2 / bCrSA0 / tCrSA0 / rSP2
  rS0: Count mode Add (reset to zero)
  rSP2: Count mode Sub (reset to main preset)
  rSA0: Count mode Add with automatic reset
  rSAP2: Count mode Sub with automatic reset
  bCrSA0: Count mode Add with automatic reset and batch counter
  tCrSA0: Count mode Add with automatic reset and total counter
- tUnit — SEC / MIN / hour / h.Min.S /
- dEcPt — 0 / 0,0 / 0,00 / 0,000 / 0,0000 / 0,00000
- CoLor — rEd / rEdGm
- rESMod — no rEs / ELrES / Man.rE / Man.EL
  norES: No reset
  ELrEs: Electrical reset
  ManrE: Manual reset
  ManEL: Manual and electrical reset

tAcho

- Input — PnP / npn
- FrQ — HIGH / Low
  Low=30Hz HIGH=max
- StArt — tA.AS / tA.AA / tA.PP / tA.A
  tA.AS: Differential measurement A-B
  tA.AA:Total measurement A+B
  tA.PP: Freq. Measurement with direction (phase)
  tA.A: Single frequency measurement
- MultPI — 00,0001...99,9999
- diVidE — 01,0000...99,9999
- tUnit — U.MIN / U.SEC
- dEcPt — 0 / 0,0 / 0,00 / 0,000 / 0,0000 / 0,00000
- AVG — oFF / AVG2 / AVG5 / AVG 10 / AVG 20
  Moving average
- StuPtm — 00.0..99,9
  Start delay
- WAit0 — 00.0..99,9
  Waiting time
- CoLor** — rEd / rEdGm
  **Only for multicolor version

- OutS1 — on / oFF
- S1



- tiMES1 — 00.01..99,99s
  Time signal output regulation
- P1 — Loc / UnLoc / Loc-tr
  Loc: Preset value is locked
  UnLoc: Preset value is open
  UnLoc-tr: Preset valure is locked is possible to open with pression key with 10s
- **OutS2 — on / oFF
- **S2



**Only version 2 preset

- tiMES1 — 00.01..99,99s
  Time signal output regulation
- P2 — Loc / UnLoc / Loc-tr
  Loc: Preset value is locked
  UnLoc: Preset value is open
  UnLoc-tr: Preset valure is locked is possible to open with pression key with 10s
- PrG — Loc / UnLoc
  Loc: Press Key R and P into 15s after powerOn to enter in the programming
  UnLoc: Press Key R and P for 3 sec to enter in the programming

Counter

Output operation modes	rSo / rSP2 bCrS0 bCrSP2 tCrS0 tCrSP2 MurS0	rSA0	rSAP2 bCrSA0 bCrSA2 tCrSA0 tCrSA2
dir	40 kHz	5.2 kHz	4.2 kHz
AS AA	20 kHz	4.4 kHz	4.2 kHz
PP PP2	20 kHz	2.2 kHz	2.1 kHz
PP4	15 kHz	1.1 kHz	1.0 kHz

Tachometer

tA.A tA.AS tA.AA	40 kHz
Quad	20 kHz

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