

## Up counters/Down - 48 x 48 - CTR48 Multicoloured LCD display (green-red) Part number 87621221



- Counter, Tachometer, Chronometer, Multi-totalizer, Batch counter, Preselection totalizer
- Maximum input frequency 40 k Hz
- Simple parameter setting, configuration using text menus
- Easy modification of presets
- Scaling factor
- 5 A changeover relay and solid state output
- Removable connectors
- Backlit LCD display (orange) : 2 lines, 6 digits or multicoloured display (green-red)
- IP 65 sealed panel
- Option of locking the keypad, completely or partially (preset, programming)
- Accessories for 72 x 72 or 55 x 55 cut-out, DIN rail adaptor

### Part numbers

	Type	Functions	Preset	Voltages	Output
87621221	Multicoloured LCD display (green-red)	Counter, Tachometer, Chronometer, Multi-totalizer, Batch counter, Preselection totalizer	2	10 →30 VDC	1 changeover relay, 1 NO relay, 2 solid state

### Specifications

#### Physical details and protection

Supply	10 →30 VDC / 24 V AC / 90 →260 VAC
Relative humidity (no condensation)	EN 60068-2-30 40/93 % RLF
Altitude	0 < 2000 m
Certifications	UL - cULus (pending) - 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	Conforming to standard EN 60529 IP65 for panel/IP20 for connections
Front panel watertight seal	▪
Temperature limits use (°C)	-20 →+65
Temperature limits stored (°C)	-25 →+75
Weight (g)	150 DC version 250 AC version

#### General characteristics

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 VDC -20/+15 % 50 mA
Programming and current value backed up via EEPROM memory	▪ Service life 10 years

#### Operating characteristics

Functions	Preselection counter, Tachometer, Chronometer, Multi-totalizer, Batch counters, Totalizer
Number of presets	1 or 2
Display	LCD with orange backlighting/Multicoloured LCD (green-red)
Height digits (mm)	LCD 9
Display details	- 999 999 →999 999

#### Inputs 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 VDC→30 VDC
Low level	0 →2 VDC

**Solid state output characteristics**

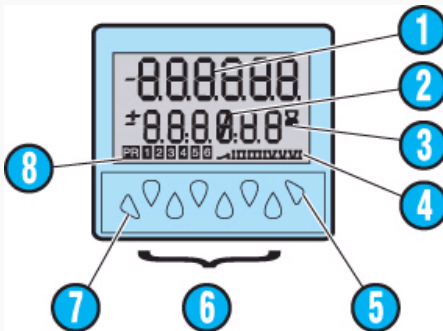
Maximum current	30 mA
Max. voltage	10 →30 VDC for the DC version 24 VDC -20/+15 %

**Relay output characteristics**

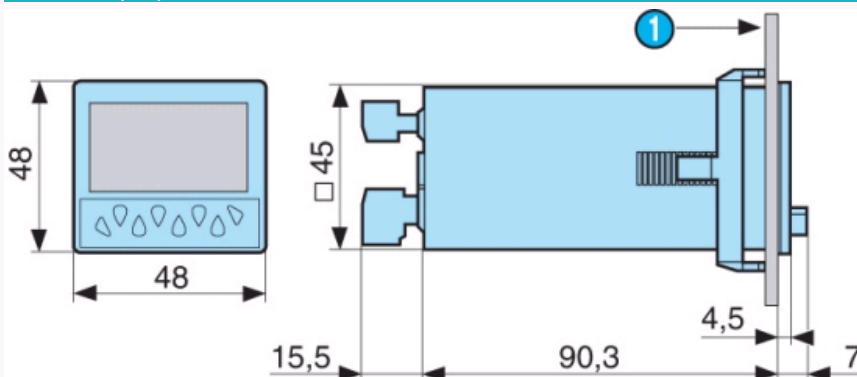
Changeover relay	•
NO contact	Depending on version
Maximum current	5 A
Minimum current	10 mA
Maximum voltage	30 VDC / 250 VAC
Min. voltage	5 VAC/DC
Response time	< 13 ms
Mechanical life (operations)	20 x 10 <sup>6</sup>
Number of operations to 5 A	5 x 10 <sup>4</sup>
Output modes : maintained or pulsed	0.01 →99.99 s

**Accessories**

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

**Principles**

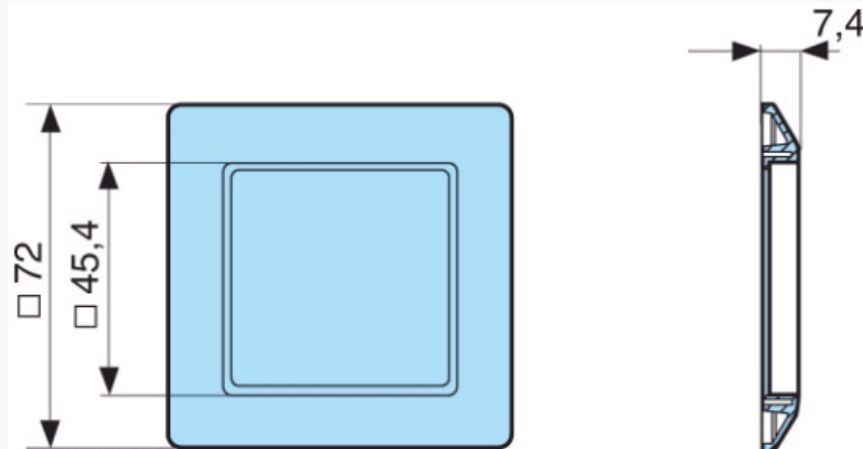
N°	Legend
1	Current value
2	Selected value
3	Chronometer display
4	Active output indication
5	Shows which value is displayed
6	Prog/mode button
7	Preset control buttons
8	Button required for programming parameters

**Dimensions (mm)**

N°	Legend
①	10.5 max.

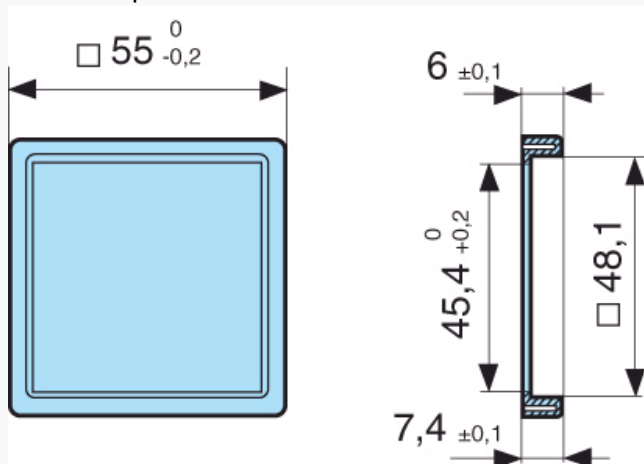
#### Dimensions (mm)

26546842 - Adaptor for 72 x 72 mm cut-out



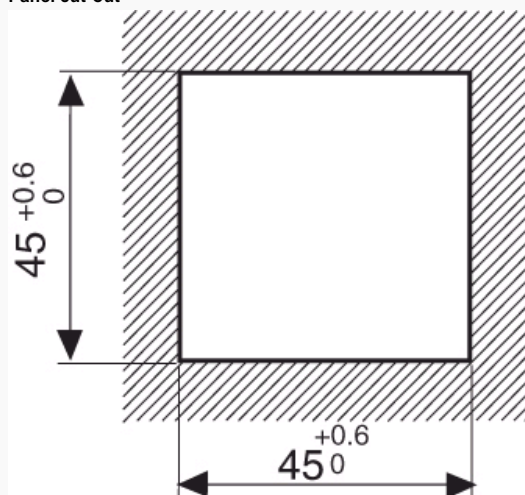
#### Dimensions (mm)

26546846 - Adaptor for 55 x 55 mm cut-out



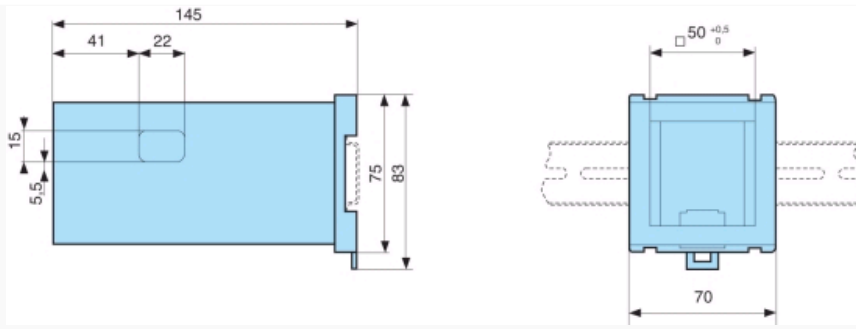
#### Dimensions (mm)

Panel cut-out



#### Dimensions (mm)

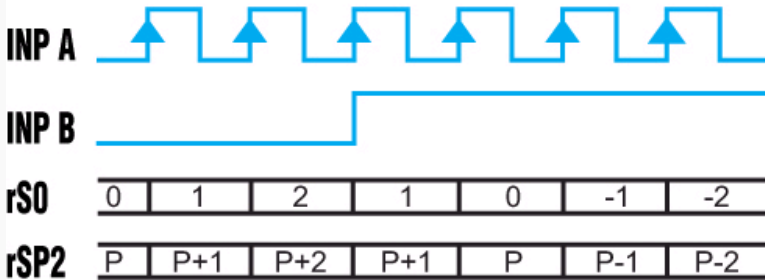
26546841 - DIN rail adaptor



Curves

Counter : dir

dir

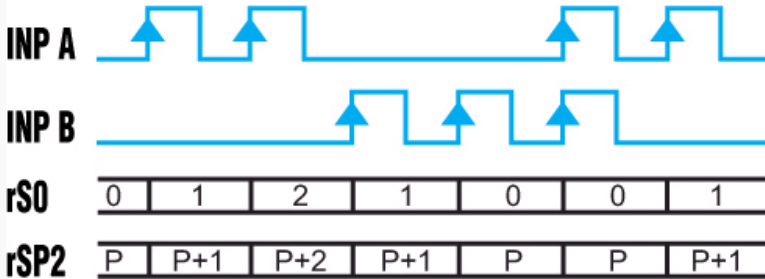


Inp A : counter input Inp B : count direction rS0 : Display 0 →Preset rSP2 : Display Preset →0

Curves

Counter : AS

AS

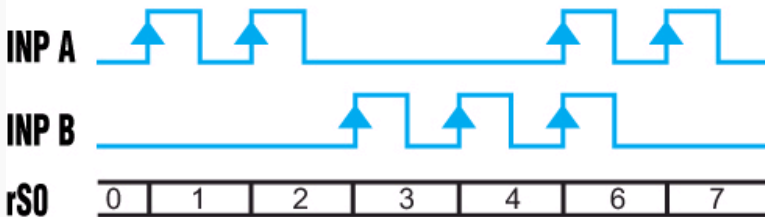


Inp A : Add. counter input 1 Inp B : Sub.. counter input 2 rS0 : Display 0 →Preset rSP2 : Display Preset →0

Curves

Counter : AA

AA

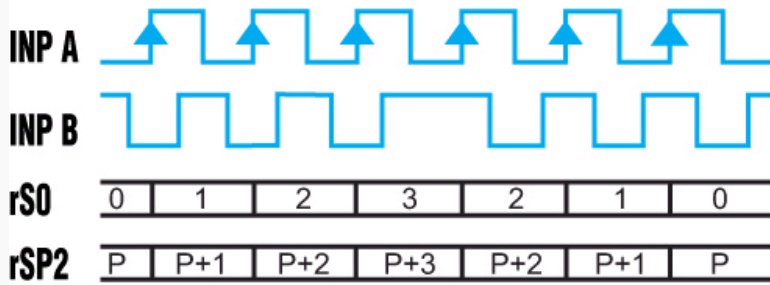


Inp A : Add. counter input 1 Inp B : Sub.. counter input 2 rS0 : Display 0 →Preset

Curves

Counter : PP

# PP

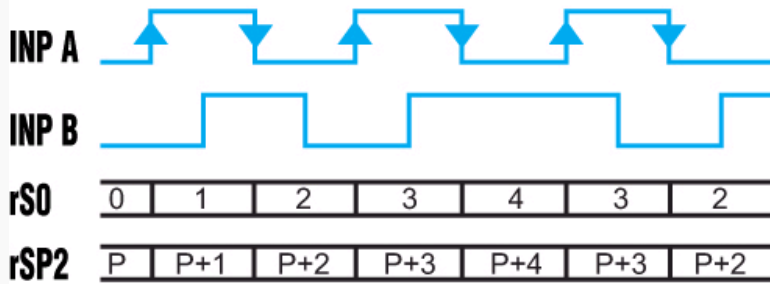


A 90° B Inp A : Counter input Counting on an edge Inp B : Reversal of direction rS0 : Display 0 →Preset rSP2 : Display Preset →0

## Curves

Counter : PP2

# PP2

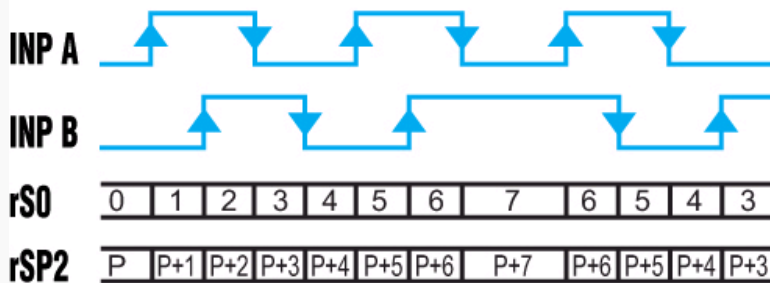


A 90° B Inp A : Counter input Counting on a rising edge and on a falling edge Inp B : Reversal of direction rS0 : Display 0 →Preset rSP2 : Display Preset →0

## Curves

Counter : PP4

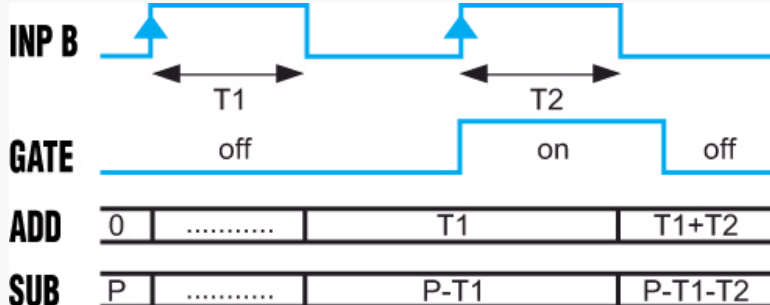
# PP4



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

## Curves

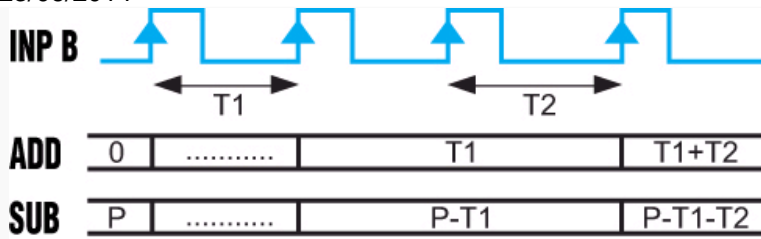
Chronometer : Start tcCb



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

## Curves

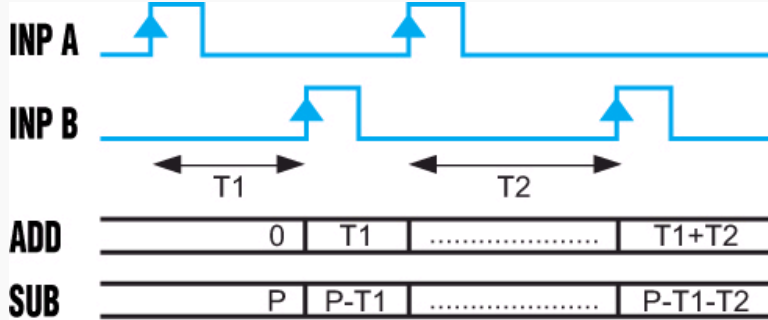
Chronometer : Start tcCbb



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

**Curves**

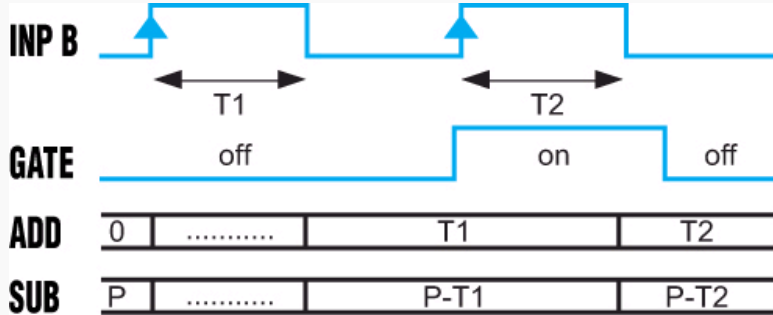
Chronometer : Start tcCAb



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

**Curves**

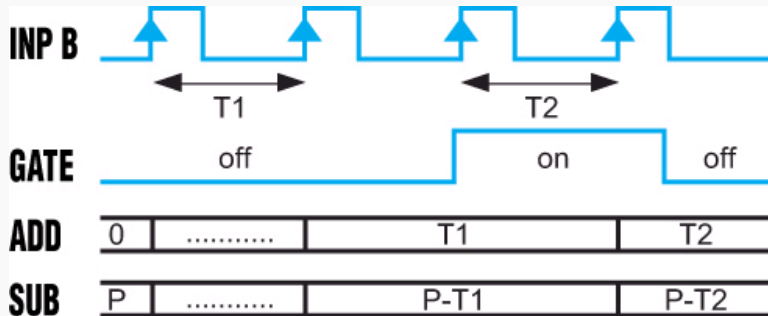
Chronometer : Start tcSb



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

**Curves**

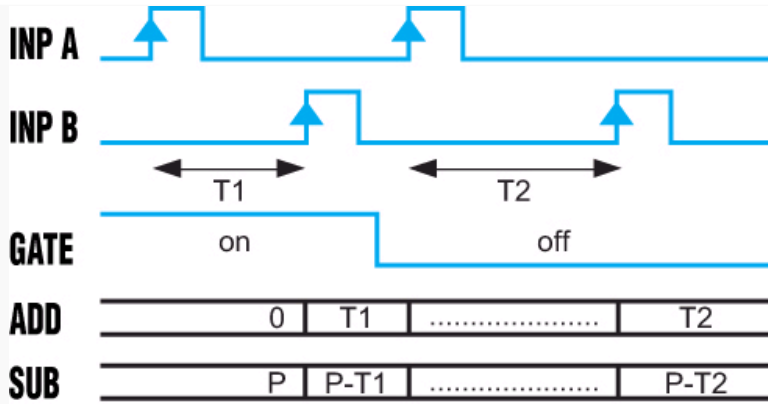
Chronometer : Start tcSbb



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

**Curves**

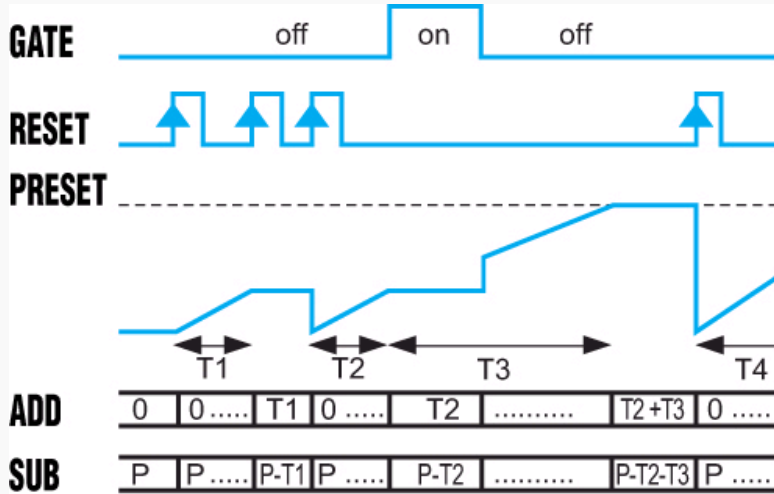
Chronometer : Start tcSAB



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

**Curves**

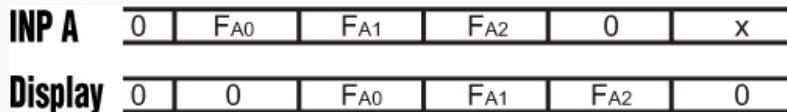
Chronometer : Start tcAuto



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

**Curves**

Tachometer : Start tA.A



Inp A : Frequency input Inp B : No function

**Curves**

Tachometer : Start tA.AS



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

**Curves**

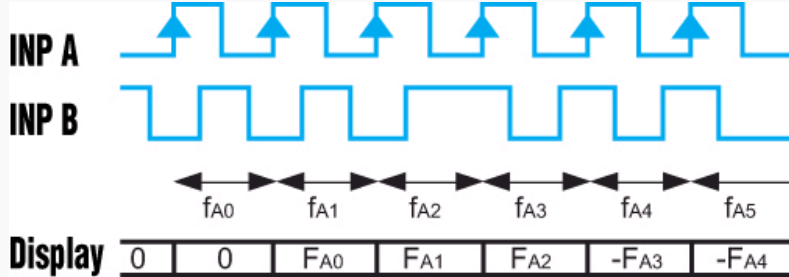
Tachometer : Start tA.AA

<b>INP A</b>	0	FA0	FA1	FA2	0	x
<b>INP B</b>	0	0	FB0	FB1	FB2	x
<b>Display</b>	0	0	FA0	FA0 + FB0	FA1 + FB1	FB2

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

**Curves**

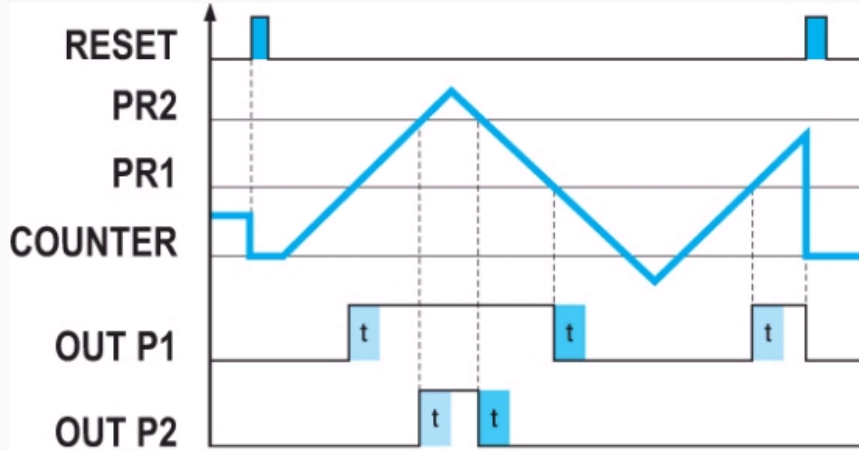
Tachometer : Start tA.PP



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

**Curves**

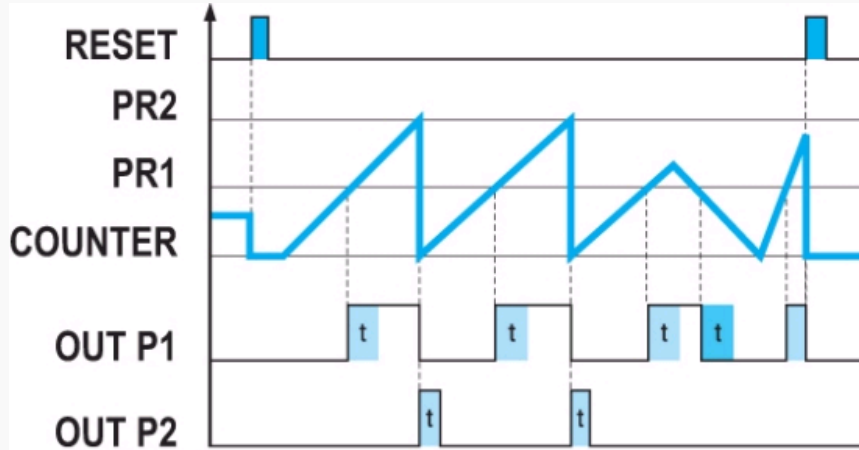
Output operation : OutoP rS0



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

**Curves**

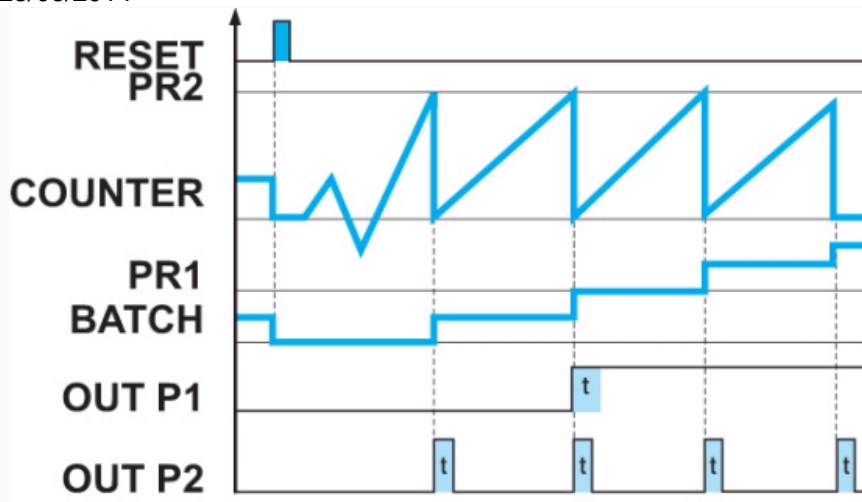
Output operation : OutoP rSA0



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

**Curves**

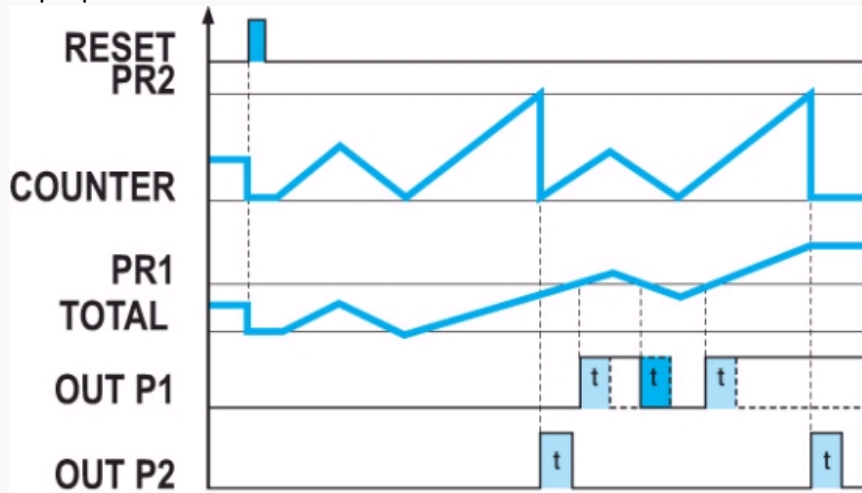
Output operation : OutoP bCrSA0



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

Curves

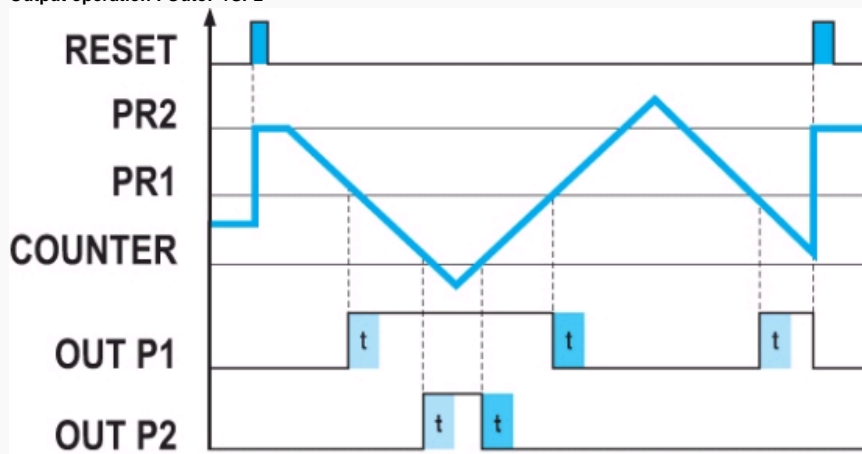
Output operation : OutoP tCrSA0



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

Curves

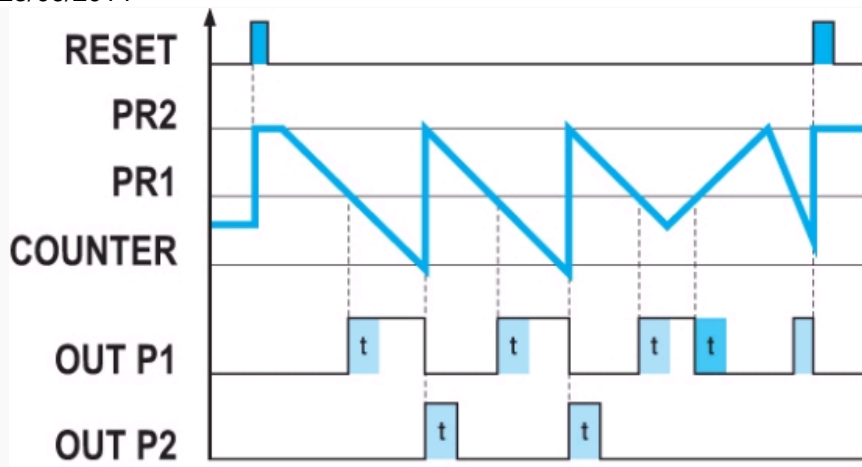
Output operation : OutoP rSP2



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

Curves

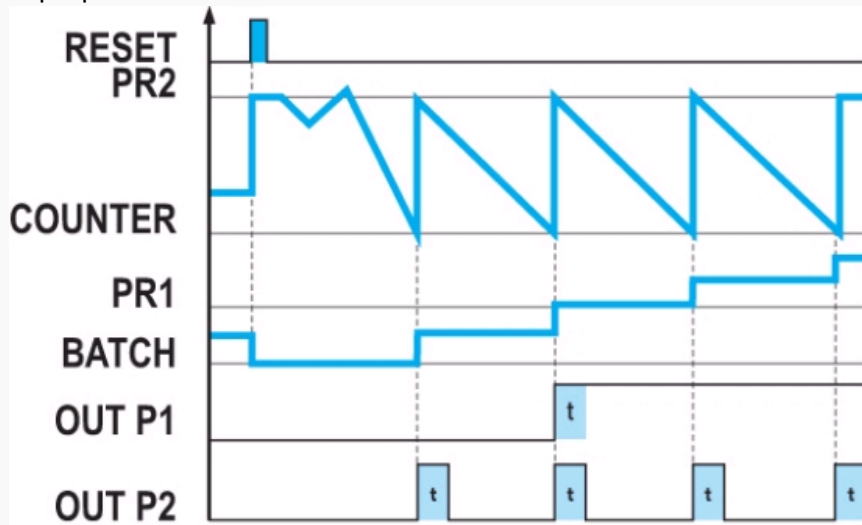
Output operation : OutoP rSAP2



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

Curves

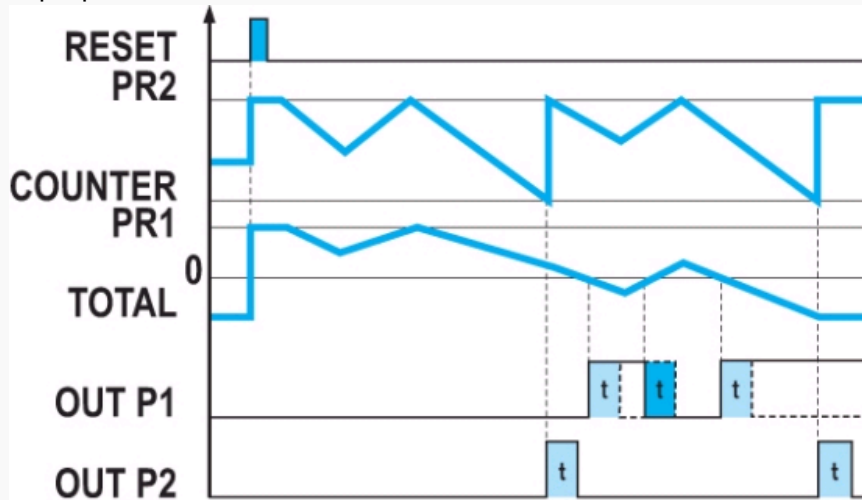
Output operation : OutoPbCrSA2



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

Curves

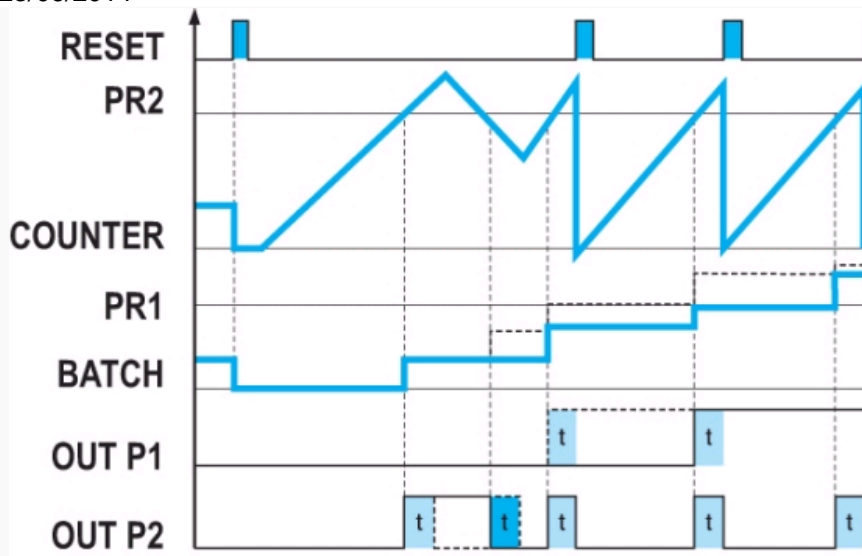
Output operation : OutoP tCrSA2



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

Curves

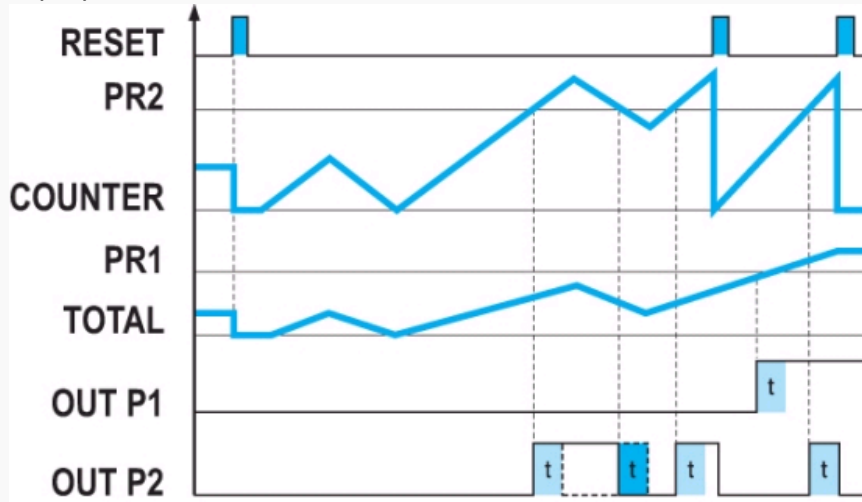
Output operation : OutoP bCrS0



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

**Curves**

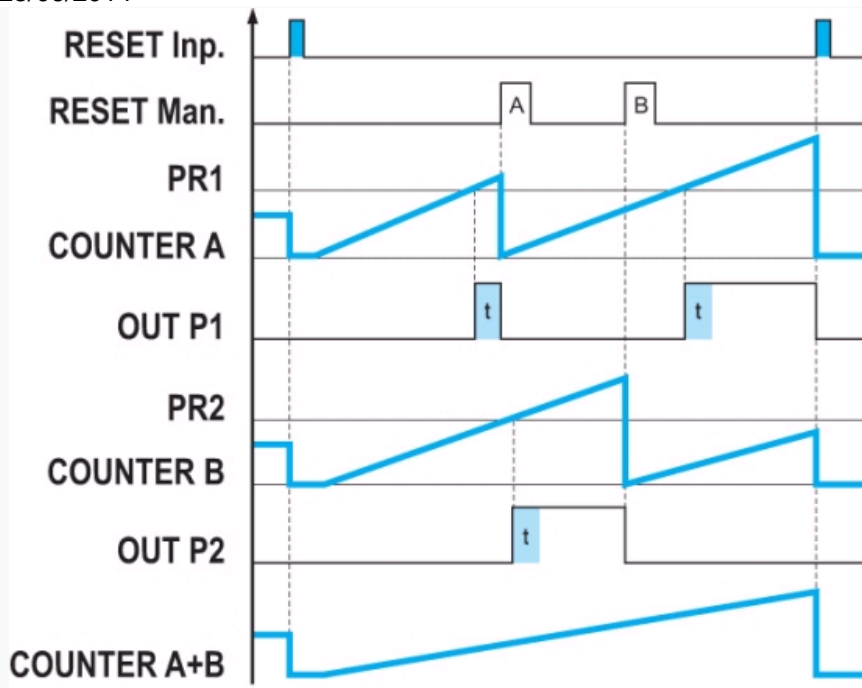
Output operation : OutoP tCrS0



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

**Curves**

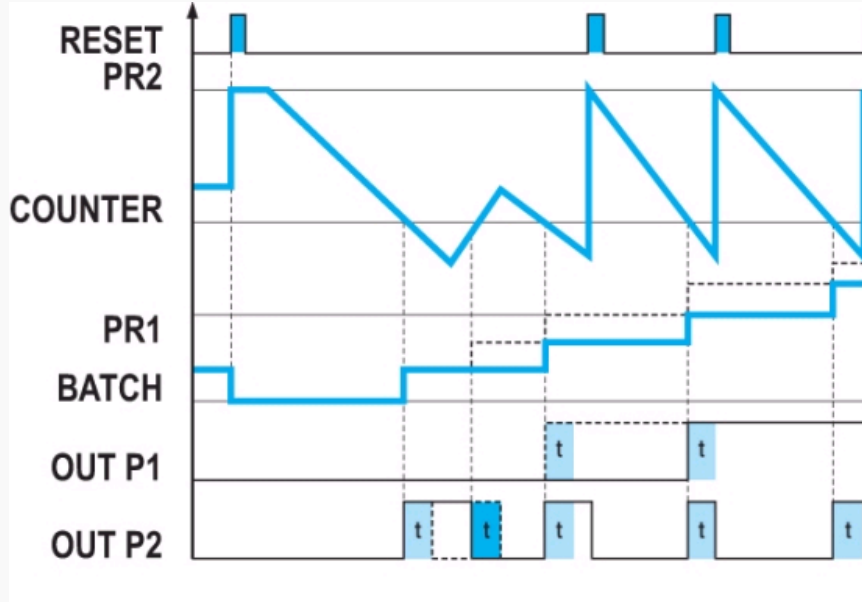
Output operation : OutoP MurS0 (AA)



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

**Curves**

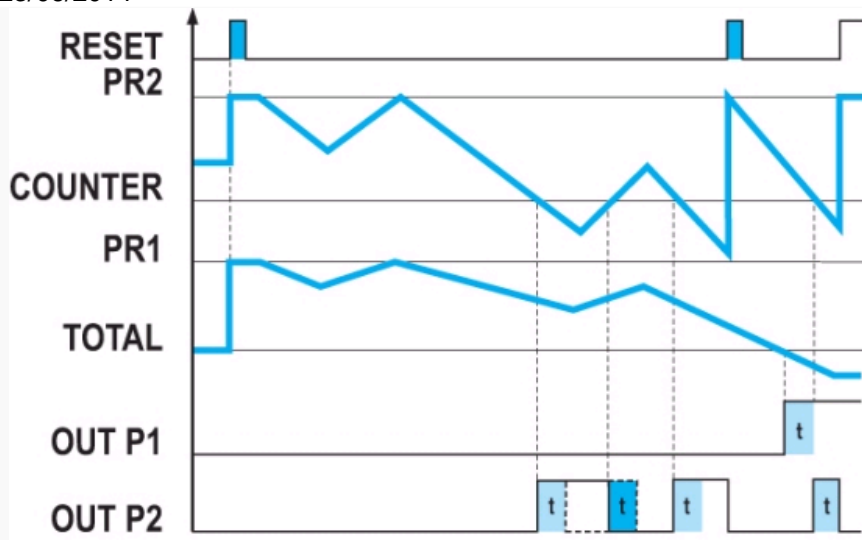
Output operation : OutoP bCrSP2



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

**Curves**

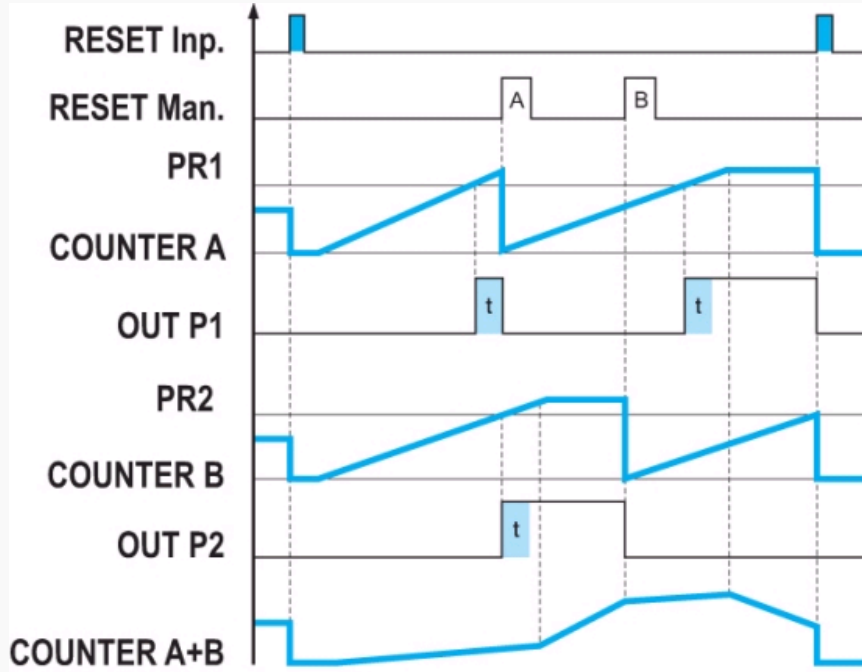
Output operation : OutoP tCrSP2



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

**Curves**

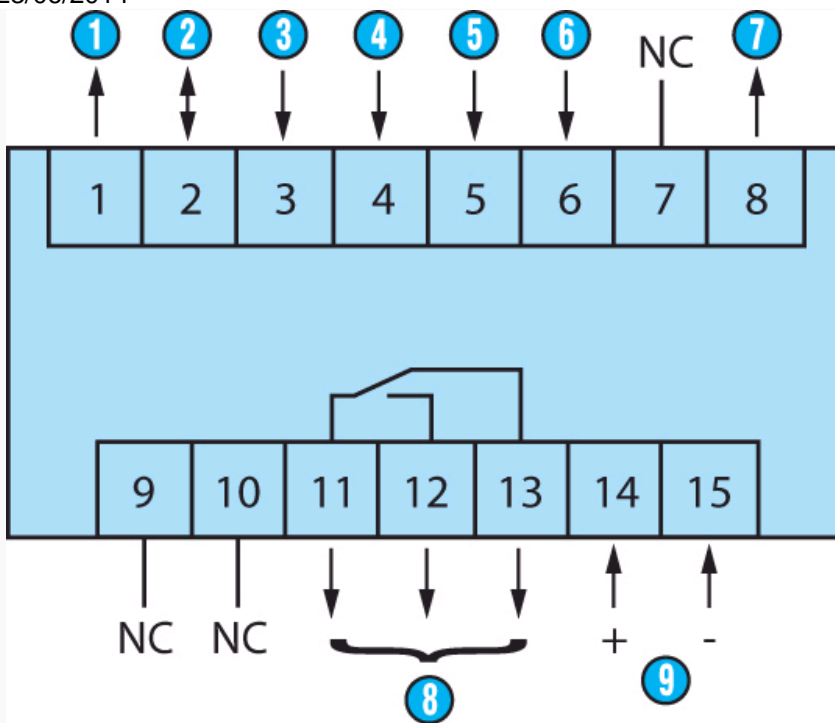
Output operation : OutoP MurS0 (AS)



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

**Connections**

87621111 / 211

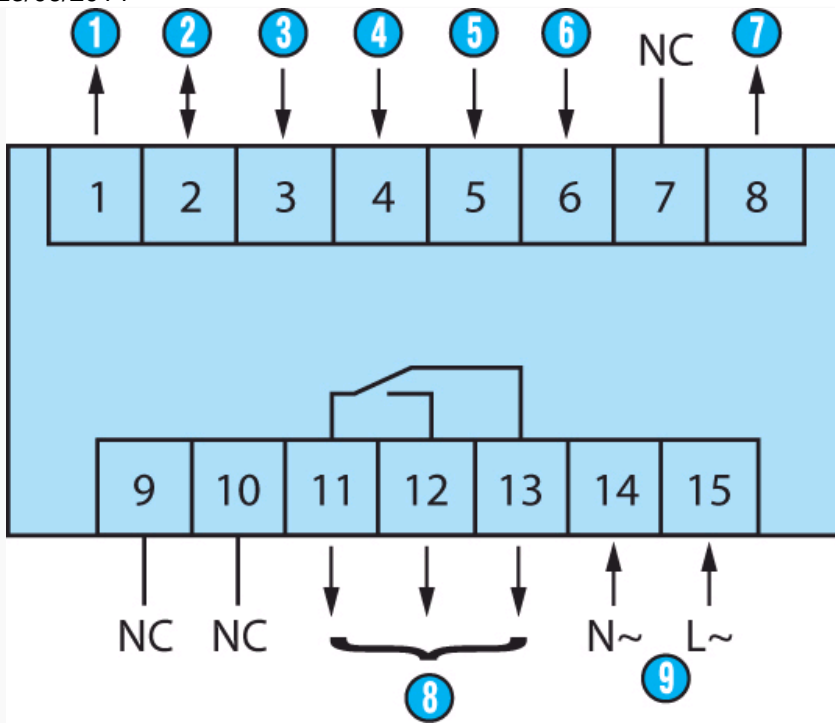


Output : 5 A/250 VAC/AC : 24 VAC

N°	Legend
①	Sensor voltage supply (* UB interconnected)
②	GND (0 VDC)
③	INP A (signal A input)
④	INP B (signal B input)
⑤	Reset (Reset input)
⑥	Gate input
⑦	Output 1 - 10-30 VDC/30 mA
⑧	11-12-13 : Output 1
⑨	14-15 : Supply

#### Connections

87621112 / 212

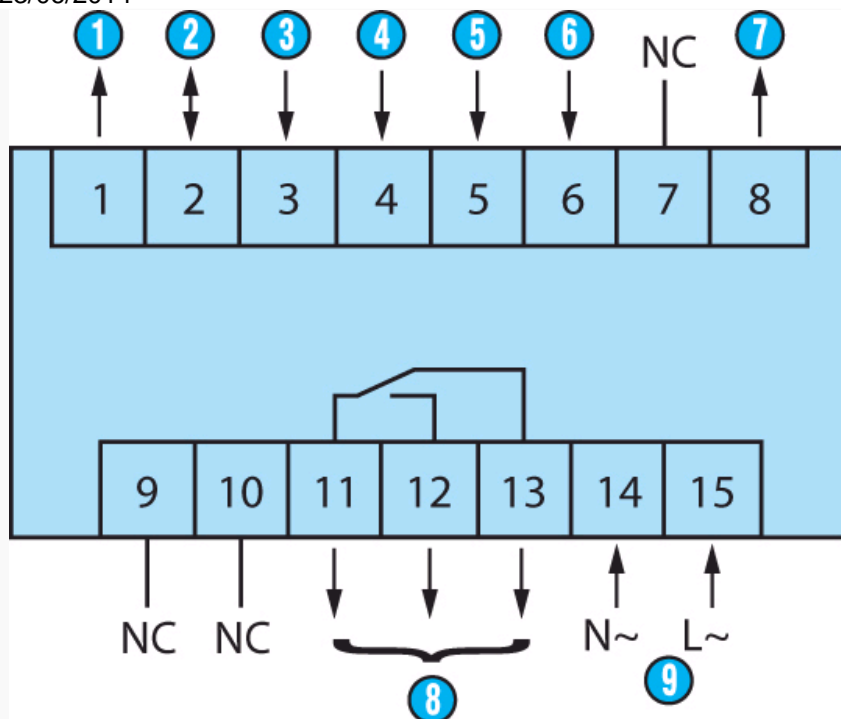


Output : 5 A/250 VAC/AC : 90 260 VDC

N°	Legend
①	Sensor voltage supply
②	GND (0 VDC)
③	INP A (signal A input)
④	INP B (signal B input)
⑤	Reset (Reset input)
⑥	Gate input
⑦	Output 1 - 24 VDC/30 mA
⑧	11-12-13 : Output 1
⑨	14-15 : Supply

#### Connections

87621115 / 215

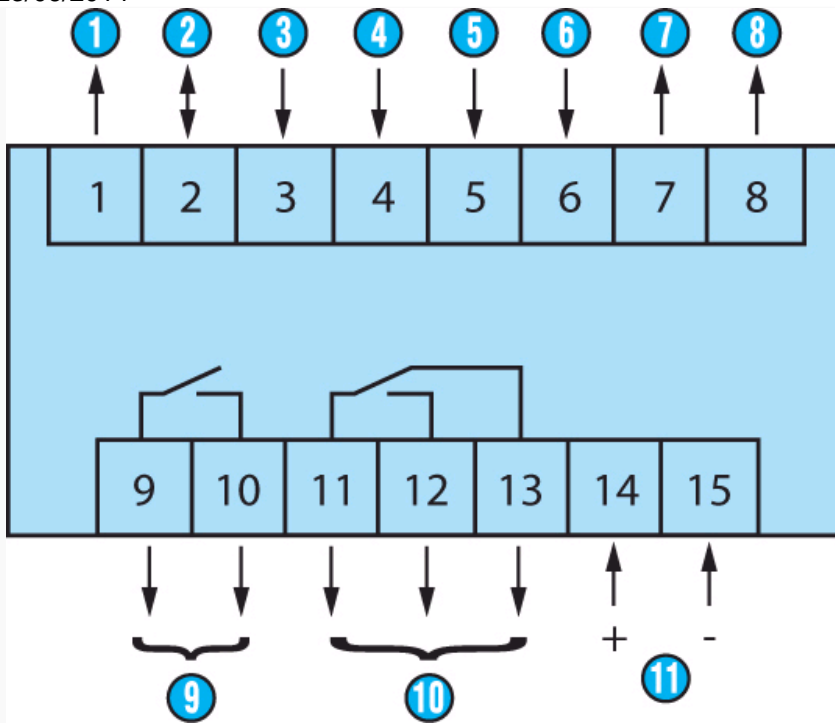


Output : 5 A/250 VAC/AC : 24 VAC

N°	Legend
①	Sensor voltage supply
②	GND (0 VDC)
③	INP A (signal A input)
④	INP B (signal B input)
⑤	Reset (Reset input)
⑥	Gate input
⑦	Output 1 - 24 VDC/30 mA
⑧	11-12-13 : Output 1
⑨	14-15 : Supply

#### Connections

87621121 / 221

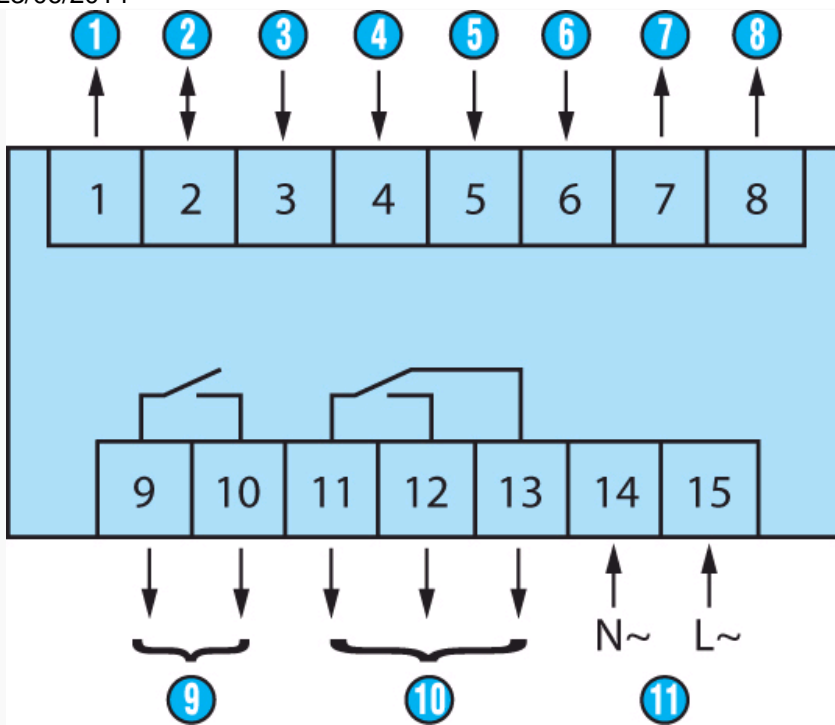


Output : 5 A/250 VAC/DC : 10 30 VDC

N°	Legend
①	Sensor voltage supply (* UB interconnected)
②	GND (0 VDC)
③	INP A (signal A input)
④	INP B (signal B input)
⑤	Reset (Reset input)
⑥	Gate input
⑦	Output 1 : 10-30 VDC/30 mA
⑧	Output 2 : 10-30 VDC/30 mA
⑨	9-10 : Output 1
⑩	11-12-13 : Output 2
⑪	14-15 : Supply

#### Connections

87621122 / 222

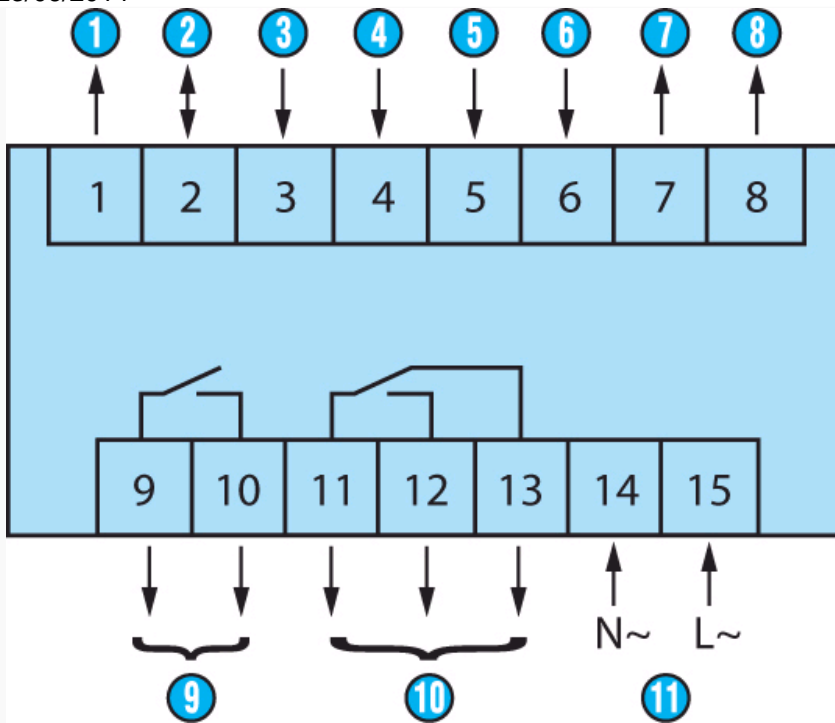


Output : 5 A/250 VAC/AC : 90 260 DC

N°	Legend
①	Sensor voltage supply
②	GND (0 VDC)
③	INP A (signal A input)
④	INP B (signal B input)
⑤	Reset (Reset input)
⑥	Gate input
⑦	Output 1 : 24 VDC/30 mA
⑧	Output 2 : 24 VDC/30 mA
⑨	9-10 : Output 1
⑩	11-12-13 : Output 2
⑪	14-15 : Supply

#### Connections

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Output : 5 A/250 VAC/AC : 90 260 VDC

N°	Legend
①	Sensor voltage supply
②	GND (0 VDC)
③	INP A (signal A input)
④	INP B (signal B input)
⑤	Reset (Reset input)
⑥	Gate input
⑦	Output 1 : 24 VDC/30 mA
⑧	Output 2 : 24 VDC/30 mA
⑨	9-10 : Output 1
⑩	11-12-13 : Output 2
⑪	14-15 : Supply

## Applications

### Programming diagram

