

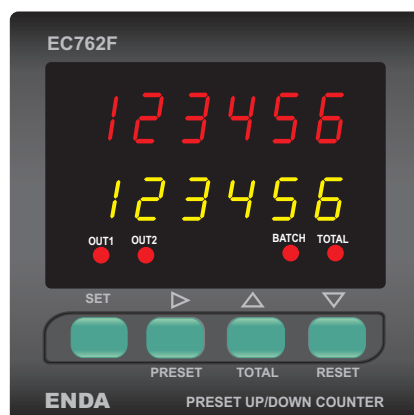


Read this document carefully before using this device. The guarantee will be expired by damaging of the device if you don't attend to the directions in the user manual. Also we don't accept any compensations for personal injury, material damage or capital disadvantages.

# ENDA EC762F UP/DOWN COUNTER

Thank you for choosing ENDA EC762F COUNTER.

- \* 72x72mm sized.
- \* 2x6 digits display.
- \* Easy to use by front panel keypad.
- \* Counting up and down with a 2 channel inputs having 90° phase shift.
- \* Input frequency can be selectable.
- \* Prescaler factor can be adjusted between 0.001 and 99.9999.
- \* 6 digits Batch Counter.
- \* 8 digits Total Counter.
- \* Preset1 may depend on Preset2.
- \* Decimal point can be adjusted between 1. and 5. digits.
- \* Sensor type can be selected as PNP, NPN or Encoder.
- \* Double set-points control is made by 2 relays outputs.
- \* Output can be energized continuously or just for a time interval of 0.01 to 999.9 seconds.
- \* Selectable functional reset input.
- \* Input offset feature.
- \* Parameter access protection on 3 levels.
- \* Easy connection by removable screw terminal.
- \* CE marked according to European Norms.



Order Code : EC762F-□□□□□□

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Supply Voltage  
230VAC...230V AC  
24VAC.....24V AC  
SM.....9-30V DC / 7-24V AC



RoHS  
Compliant

## TECHNICAL SPECIFICATIONS

ENVIRONMENTAL CONDITIONS	
Ambient/storage temperature	0 ... +50°C/-25 ... +70°C (with no icing)
Max. relative humidity	80% up to 31°C decreasing linearly 50% at 40°C.
Rated pollution degree	According to EN 60529      Front panel : IP65 Rear panel : IP20
Height	Max. 2000m

Do not use the device in locations subject to corrosive and flammable gases.

ELECTRICAL CHARACTERISTICS	
Supply	230V AC +10% -20% or 24V AC ±10%, 50/60Hz or optional 9-30V DC / 7-24V AC ±10% SMPS module.
Power consumption	Max. 7VA
Wiring	2.5mm <sup>2</sup> screw-terminal connections
Date retention	EEPROM (Min. 10 years)
EMC	EN 61326-1: 1997, A1: 1998, A2: 2001 (Performance criterion B for the EMC standard)
Safety requirements	EN 61010-1: 2001 (pollution degree 2, overvoltage category II)

INPUTS	
Count inputs (CP1, CP2)	2 channels (Max. 7500Hz, 5V to 30V pulse)
Frequency (Hz)	25, 500, 1000, 2000, 5000, 7500Hz (selectable by programming)
Minimum On ans Off times for pulses	20ms for f=25Hz 1ms for f=500Hz 500 s for f=1kHz 250 s for f=2kHz 100 s for f=5kHz 67 s for f=7,5kHz
Reset input	PNP: Positive reset (5V to 30V pulse with adjustable pulse time between 2ms and 50ms) NPN: GND terminal is connected to the RESET IN terminal.

OUTPUTS	
Control output (OUT1)	Relay : 250V AC, 2A (for resistive load), NO+NC Open collector output (S.S. OUT1): Max. 30V DC, 100mA.
Control output (OUT2)	Relay : 250V AC, 2A (for resistive load), NO+NC Open collector output (S.S. OUT2): Max. 30V DC, 100mA.
Auxiliary power supply	12V DC, Max. 50mA (without regulation)
Life expectancy for relays	Mechanical 30.000.000 operation; Electrical 300.000 operation.

Note : Relay and S.S.OUT outputs are in synchronization . When OUT1 relay is energized S.S. OUT1 transistor goes into saturation. Similarly, when OUT2 relay is energized S.S. OUT2 transistor goes into saturation.

HOUSING	
Housing type	Suitable for flush-panel mounting according to DIN 43 700.
Dimensions	W72xH72xD97mm
Weight	Approx. 405g (after packing)
Enclosure material	Self extinguishing plastics



While cleaning the device, solvents (thinner, benzene, acid etc.) or corrosive materials must not be used.

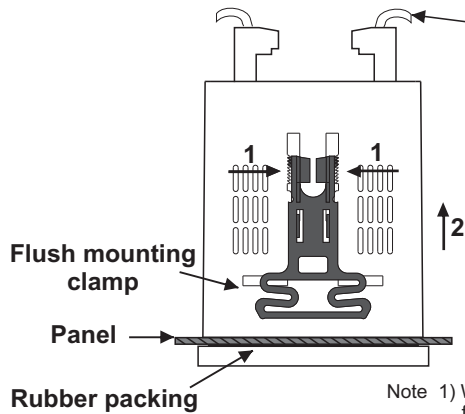
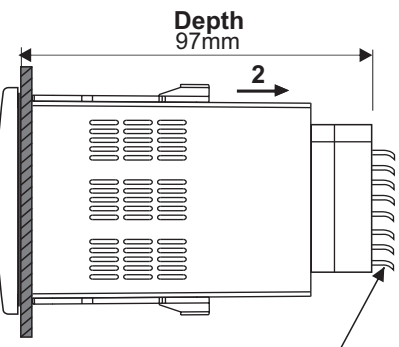
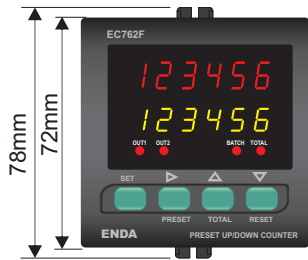
# TERMS



- (1) The value of the parameter selected by  $d_{CONF,iG}^{d,SP}$  parameter during run mode. Parameter name during programming mode.
- (2) The value of the parameter selected by  $d_{CONF,iG}^{d,SP}$  parameter during run mode. Parameter value during programming mode.
- (3) State indicators shows the state of the counter.
- (4) To see the total result press this key in the run mode. Increment or parameter selection key during programming mode.
- (5) Reset key in the run mode. Decrement or parameter selection key during programming mode
- (6) Used for selecting preset value in the run mode. Used for selecting  $OPt, ON, S$  or parameter to be changed in the programming mode.
- (7) Used for selecting run or programming modes or for adjusting parameters.

( 1 ) Digital display	6 digits, seven segment red LED
( 2 ) Digital display	6 digits, seven segment yellow LED
Character height	Digital display (1) : 9.1mm
	Digital display (2) : 7.1mm
( 3 ) State indicators	4 red LEDs
( 4 ), ( 5 ), ( 6 ), ( 7 ) Keypad	Micro switch

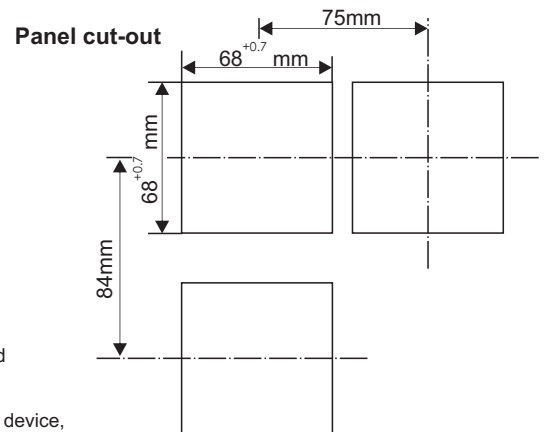
# DIMENSIONS



**Connection cables**

For removing mounting clamps:

- Push the flush-mounting clamp in direction 1 as shown in the figure left.
- Then, pull out the clamp in direction 2.

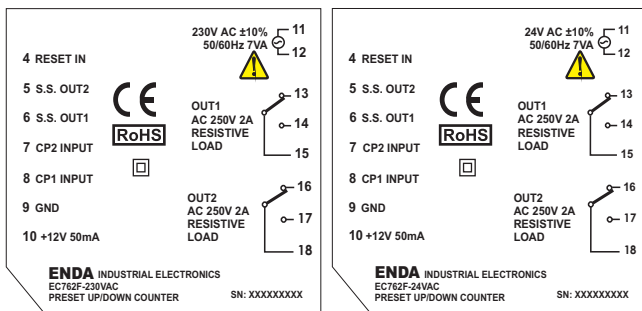


- Note 1) While panel mounting, additional distance required for connection cables should be considered.  
 2) Panel thickness should be maximum 10mm.  
 3) If there is no 90mm free space at back side of the device, it would be difficult to remove it from the panel.

# CONNECTION DIAGRAM

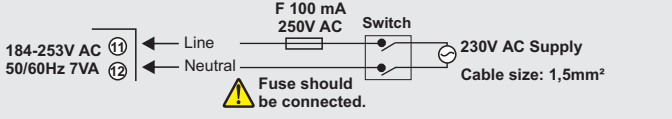


ENDA EC762F is intended for installation in control panels. Make sure that the device is used only for intended purpose. The shielding must be grounded on the instrument side. During an installation, all of the cables that are connected to the device must be free of energy. The device must be protected against inadmissible humidity, vibrations, severe soiling and make sure that the operation temperature is not exceeded. All input and output lines that are not connected to the supply network must be laid out as shielded and twisted cables. These cables should not be close to the power cables or components. The installation and electrical connections must be carried on by a qualified staff and must be according to the relevant locally applicable regulations.



### NOTE :

#### SUPPLY :



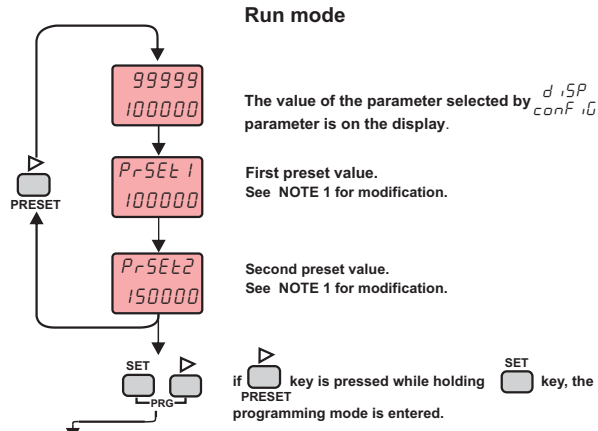
- Note : 1) Mains supply cords shall meet the requirements of IEC 60227 or IEC 60245.  
 2) In accordance with the safety regulations, the power supply switch shall bring the identification of the relevant instrument and it should be easily accessible by the operator.



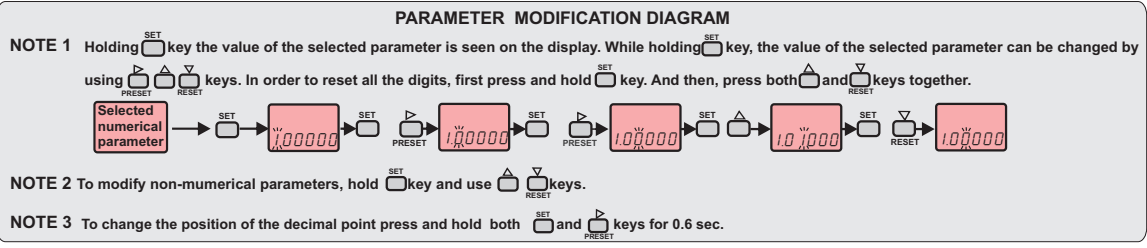
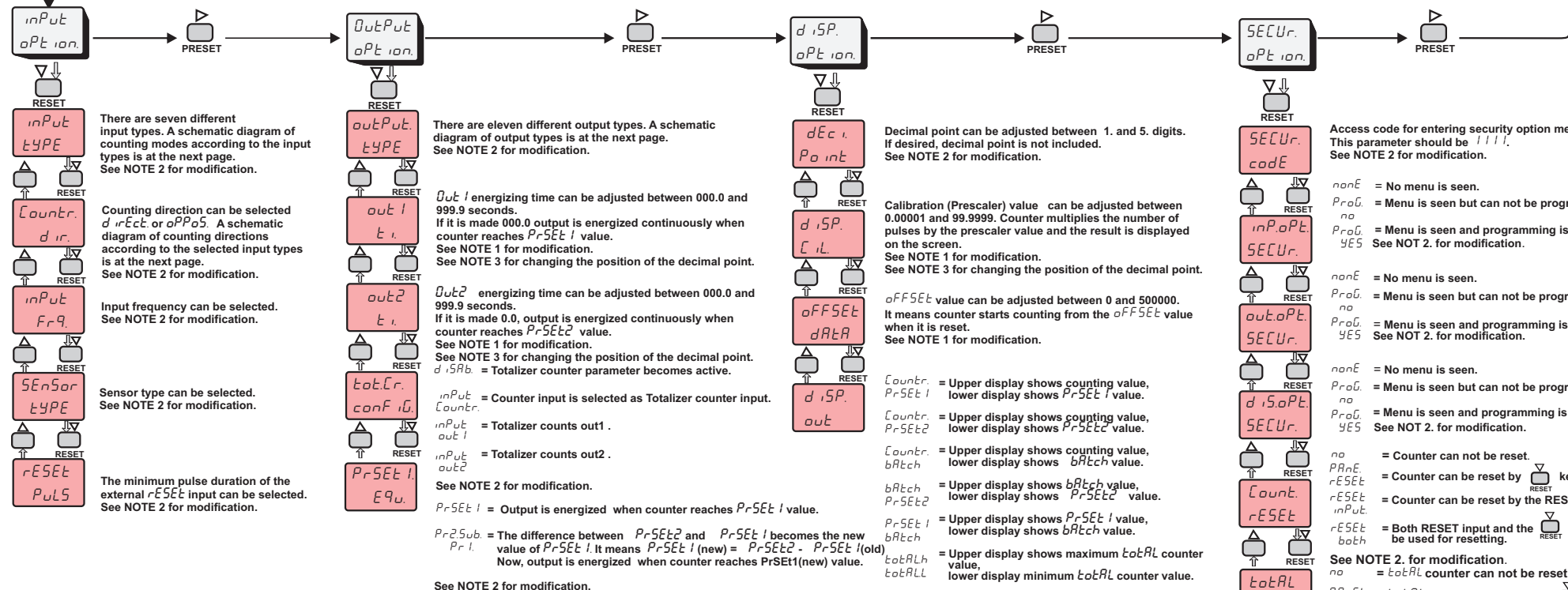
Holding screw 0.4-0.5Nm



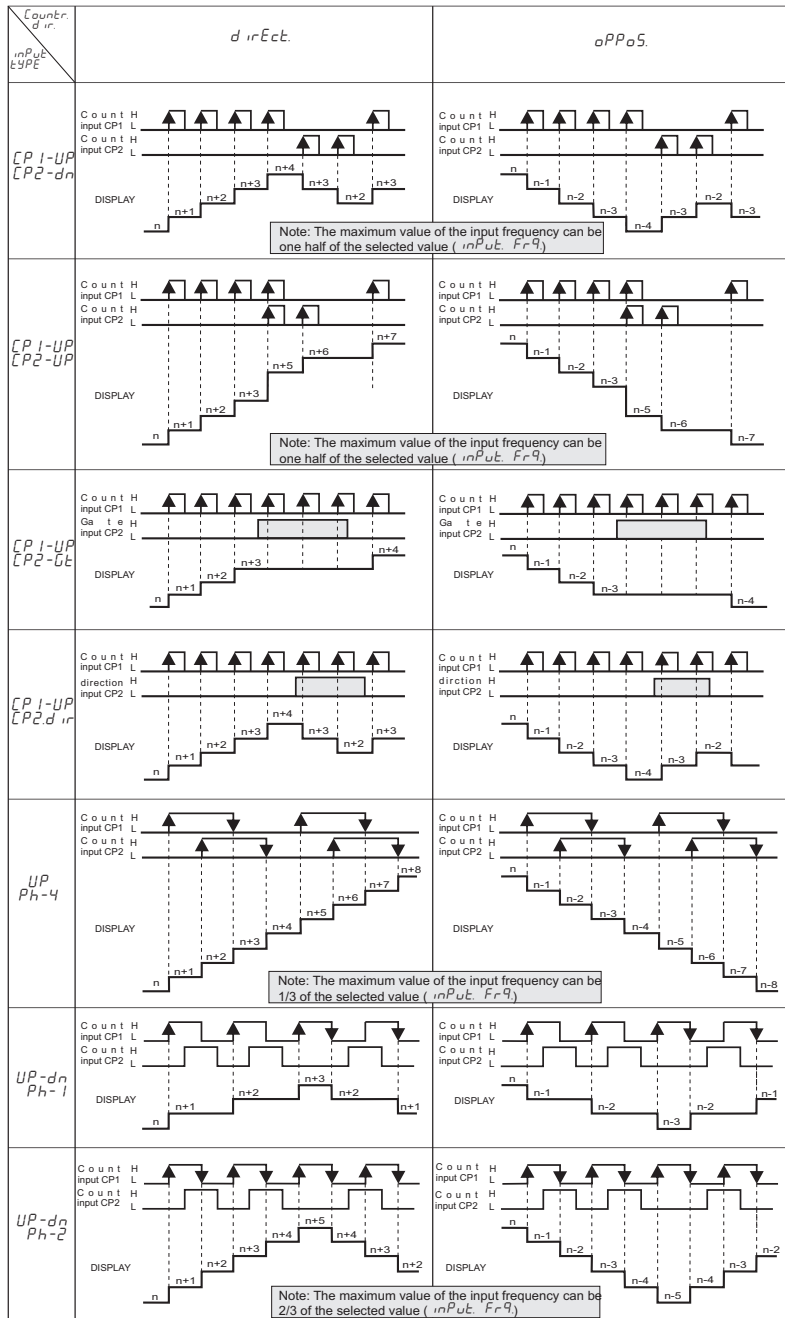
Equipment is protected throughout by DOUBLE INSULATION.



PARAMETER TABLE														
input opt ion.	input type	CP1.UP	CP1.UP	CP1.UP	CP1.UP	UP Ph.4	UP.dn Ph.1	UP.dn Ph.2						
	Counter dir.	d irEct	oPPoS											
	input Frq.	25 HErt	500 HErt	1000 HErt	2000 HErt	5000 HErt	7500 HErt							
	SEnSor tYPE	nPn	PnP	Encod.										
	rESEt PuLS	0.002 SEcond	0.005 SEcond	0.010 SEcond	0.020 SEcond	0.050 SEcond								
Output opt ion.	output type	conf iG 1	conf iG 2	conf iG 3	conf iG 4	conf iG 5	conf iG 6	conf iG 7	conf iG 8	conf iG 9	conf iG 10	conf iG bAtch		
	out1 t.i.	000.0	—	999.9										
	out2 t.i.	000.0	—	999.9										
	totCr. conf iG	d iSAb.	inPut Count.r.	inPut out 1	inPut out 2									
	PrSEt 1. EQu.	PrSEt 1.	Pr2Sub Pr 1.											
	dEc i. Po int.	0	0.0	—	0.00000									
	d iSP. CAL	0.00001	—	99.9999										
	d iSP. oFFSEt dAtA	0	—	500000										
	d iSP. Conf iG PrSEt 1	Count.r. PrSEt 1	Count.r. PrSEt 2	Count.r. bAtch	PrSEt 1 bAtch	PrSEt 2 bAtch	totALt							
	SECUR. codE	1111												
SECUR. opt ion.	inPoPt SECUR.	nonE	ProG. no	ProG. YES										
	outPoPt SECUR.	nonE	ProG. no	ProG. YES										
	d iSoPt SECUR.	nonE	ProG. no	ProG. YES										
	Count rESEt	no	PAnEL rESEt	rESEt inPut	rESEt both									
	totAL rESEt	no	PAnEL rESEt											
	bAtch rESEt	no	PAnEL rESEt											
	dEFAuL SEt	no	YES											



### INPUT TYPES

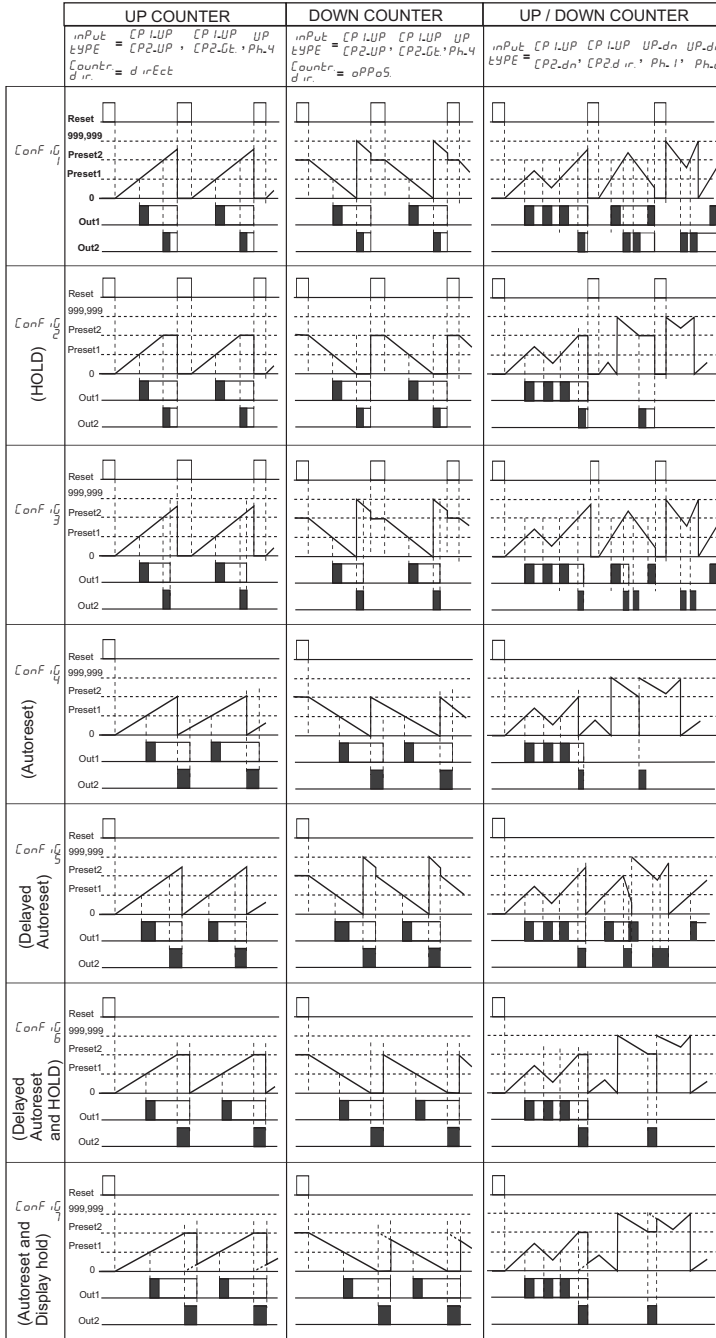


- NOTE : 1) For PNP sensor, counter is triggered at the rising edge of the pulses. For NPN sensor counter is triggered at the falling edge of the pulses.
- 2) For NPN sensor, if you select *inputType* CP1.U, CP2.r., above diagram for *Counter direction* direct replaces with *Counter direction* oPPoS.

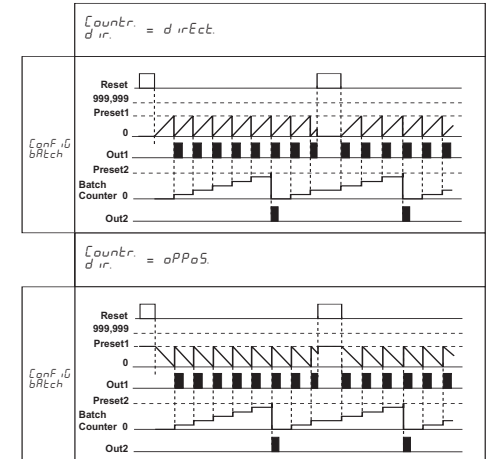
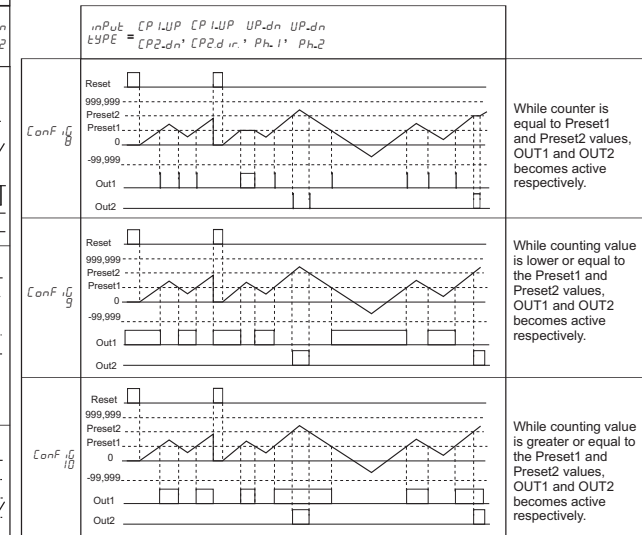


Input frequency should not exceed the values indicated above. Otherwise, counter value will be wrong.

### OUTPUT TYPES



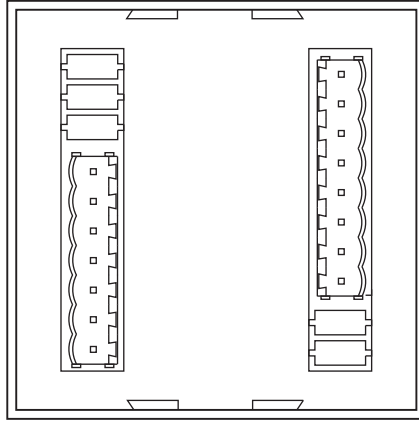
### OUTPUT TYPES



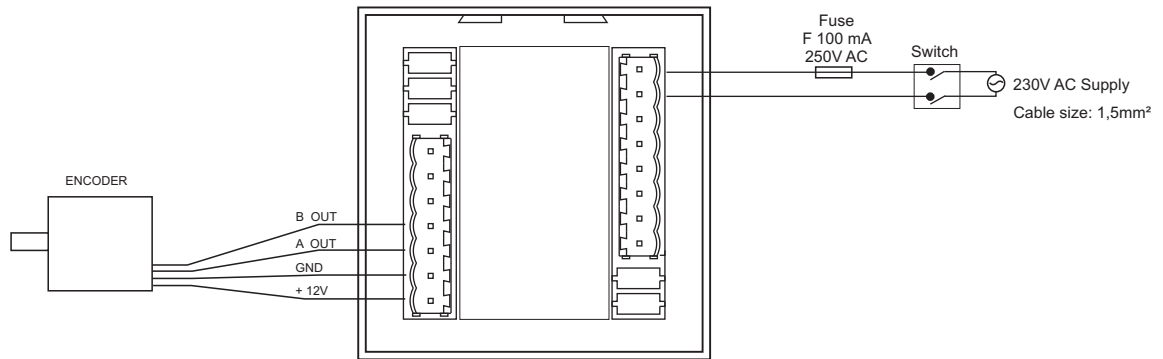
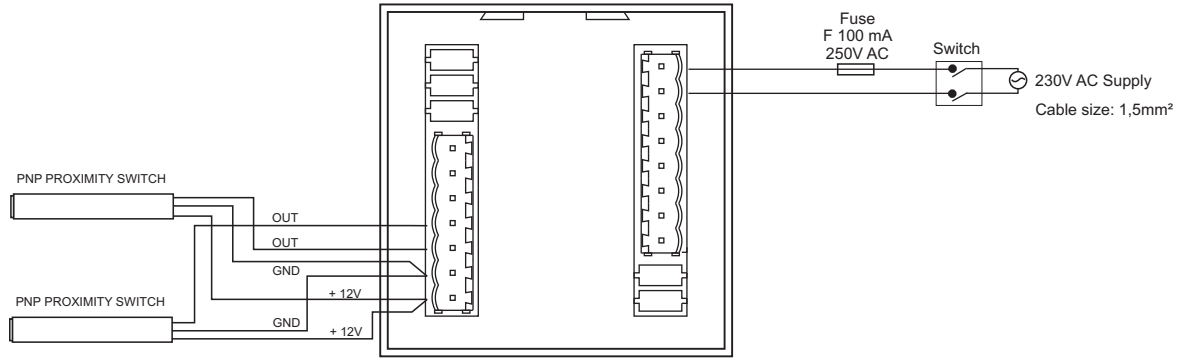
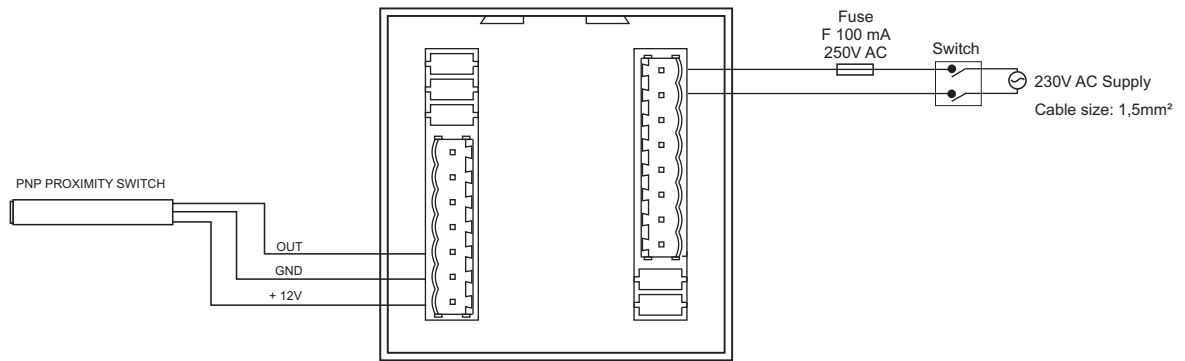
While Batch counter mode is selected, decimal point is not seen. Because, Preset2 and batch counting values are integer.

- Adjusting *out1* or *out2* to a value between 0.01 and 999.9 seconds, a pulse output is obtained.
- Adjusting *out1* or *out2* to 0.0, a continuous output is obtained.

## TERMINAL CONNECTIONS



## TYPICAL SENSOR CONNECTIONS



NOTE: NPN PROXIMITY SWITCH connection is the same as PNP PROXIMITY SWITCH connection.