



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.
- * 6 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.
- * Having CE mark according to European Norms.

Supply Voltage	Order Code
230V AC +10% -20%	EC762F
24V AC ±10%	EC762F-24AC
9-30V DC SMPS module	EC762F-24DC



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 : IP60 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, 50/60Hz or 24V AC ±%10, 50/60Hz or optional 9-30V DC SMPS module.
Power consumption	Max. 7VA
Wiring	2.5mm ² 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)

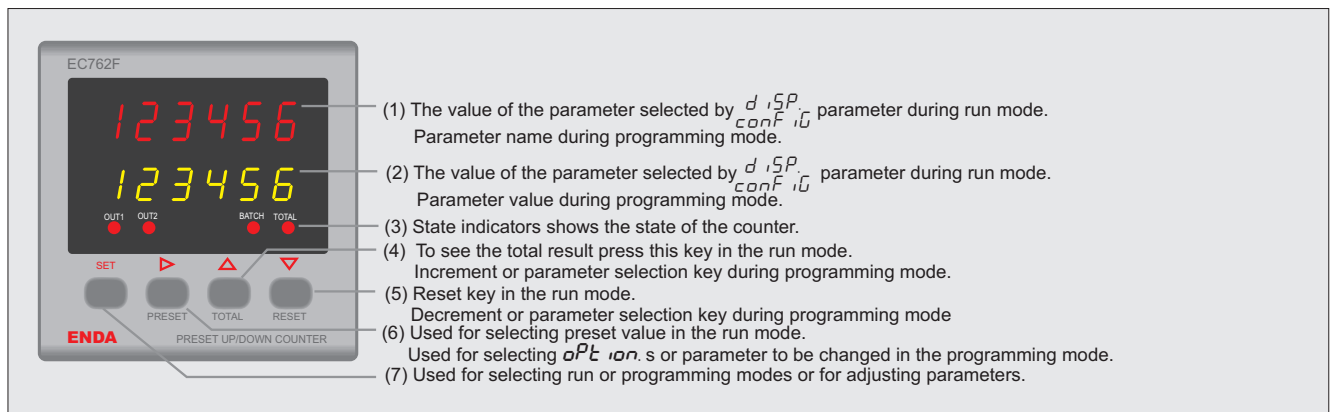
INPUTS	
Count inputs (CP1, CP2)	2 channels (Max. 7500Hz, 5V to 30V pulse)
Frequency (Hz)	25, 500, 1000, 2000, 5000, 7500Hz (selectable by programming)
Minimum On ans Off times for pulses	20ms for f=25Hz 1ms for f=500Hz 500 s for f=1kHz 250 s for f=2kHz 100 s for f=5kHz 67 s for f=7,5kHz
Reset input	PNP: 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

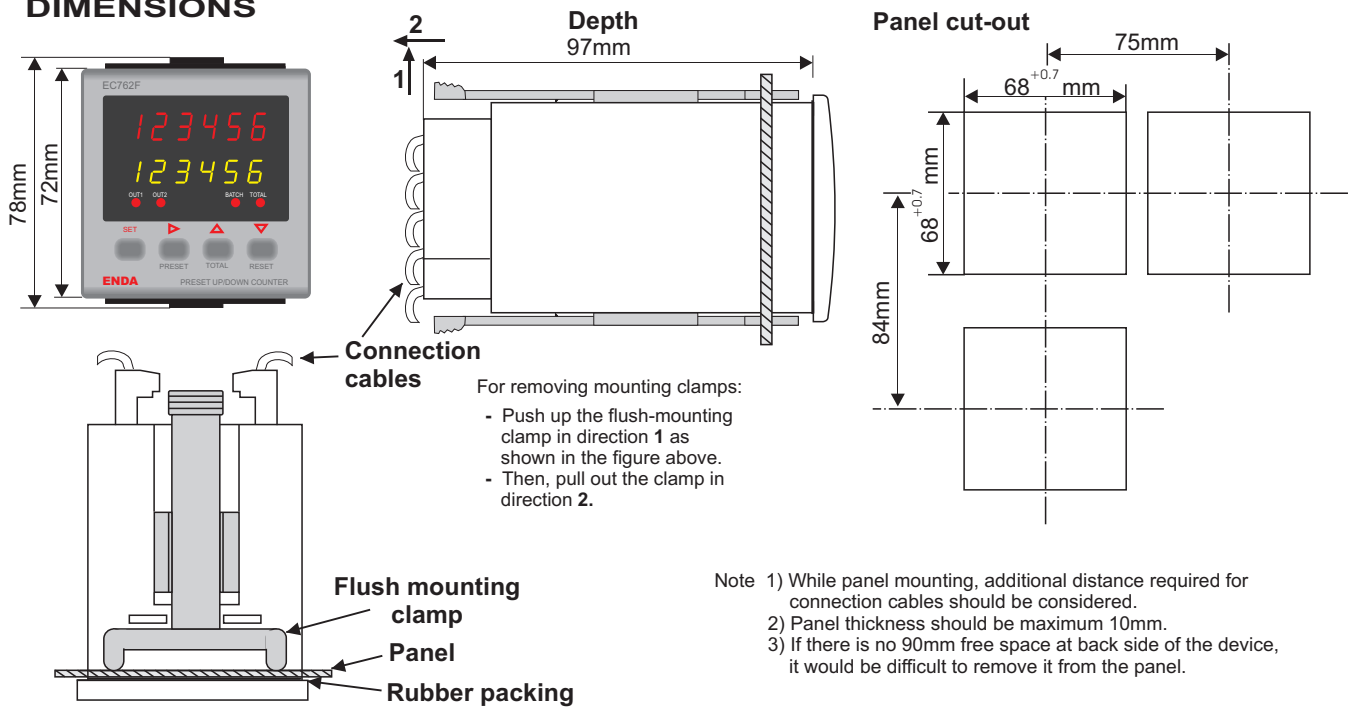
While cleaning the device, solvents (thinner, benzine, acid etc.) or corrosive materials must not be used.

TERMS



(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

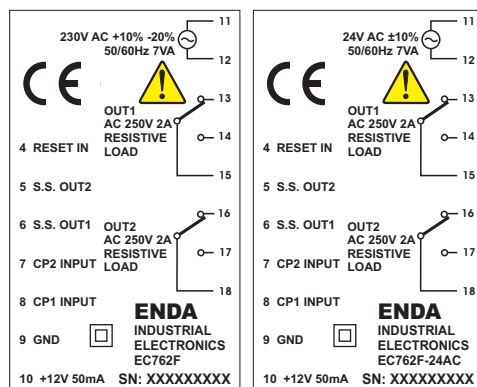


Note 1) While panel mounting, additional distance required for connection cables should be considered.
2) Panel thickness should be maximum 10mm.
3) If there is no 90mm free space at back side of the device, it would be difficult to remove it from the panel.

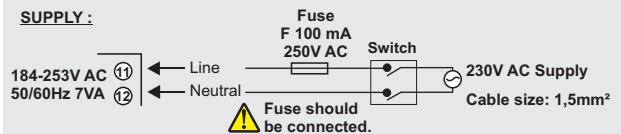
CONNECTION DIAGRAM



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 :



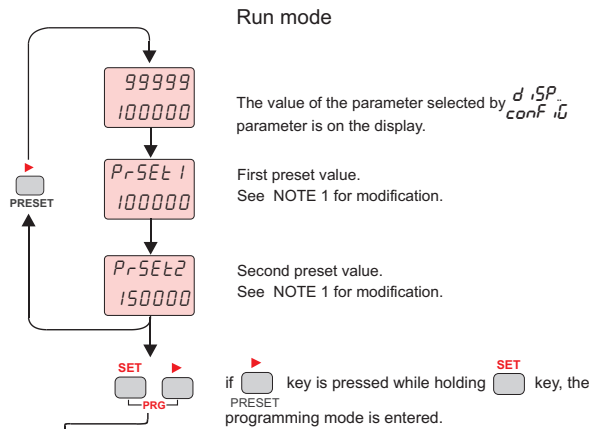
Note : 1) Mains supply cords shall meet the requirements of IEC 60227 or IEC 60245.
2) In accordance with the safety regulations, the power supply switch shall bring the identification of the relevant instrument and it should be easily accessible by the operator.



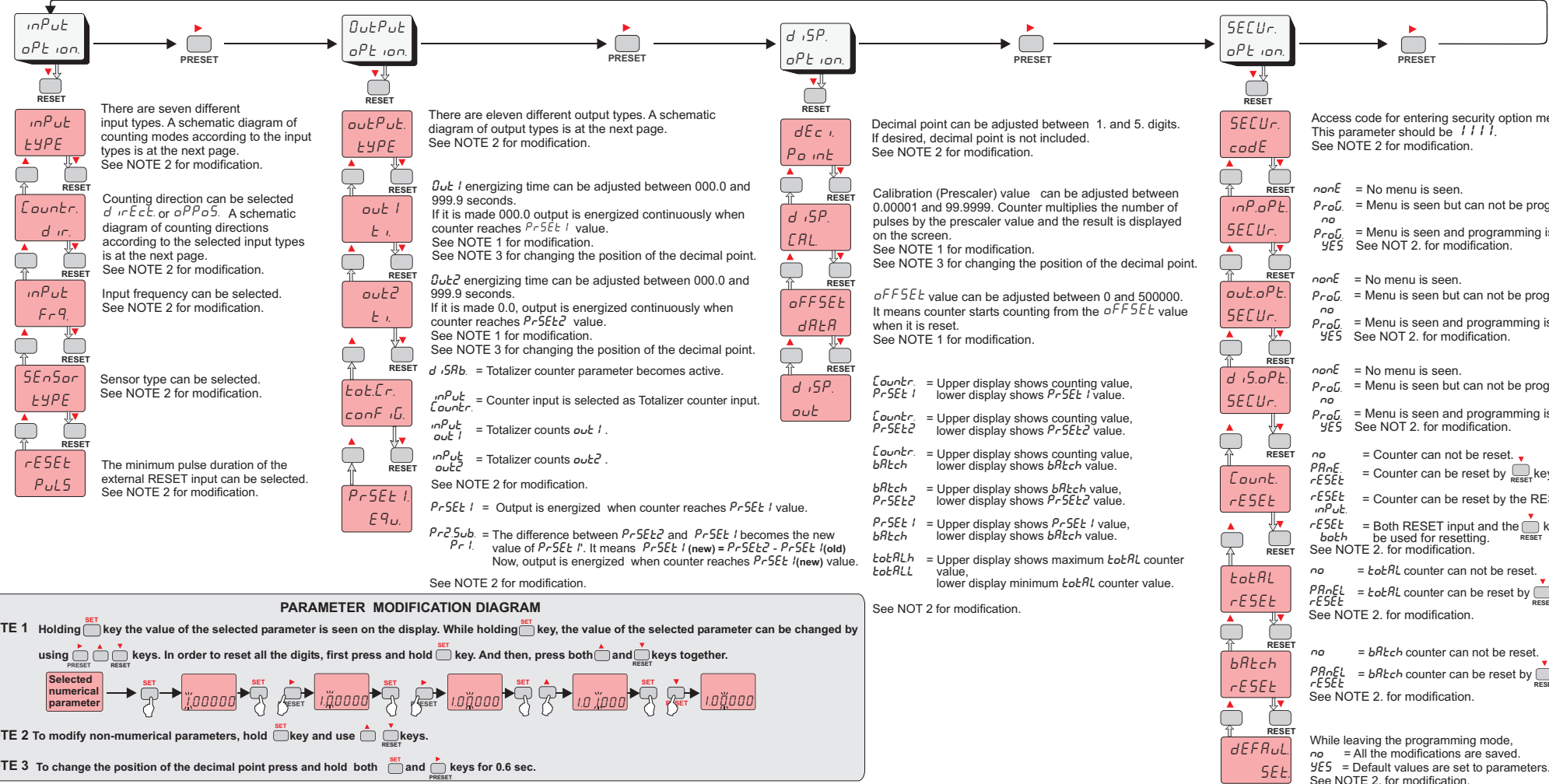
Holding screw 0.4-0.5Nm



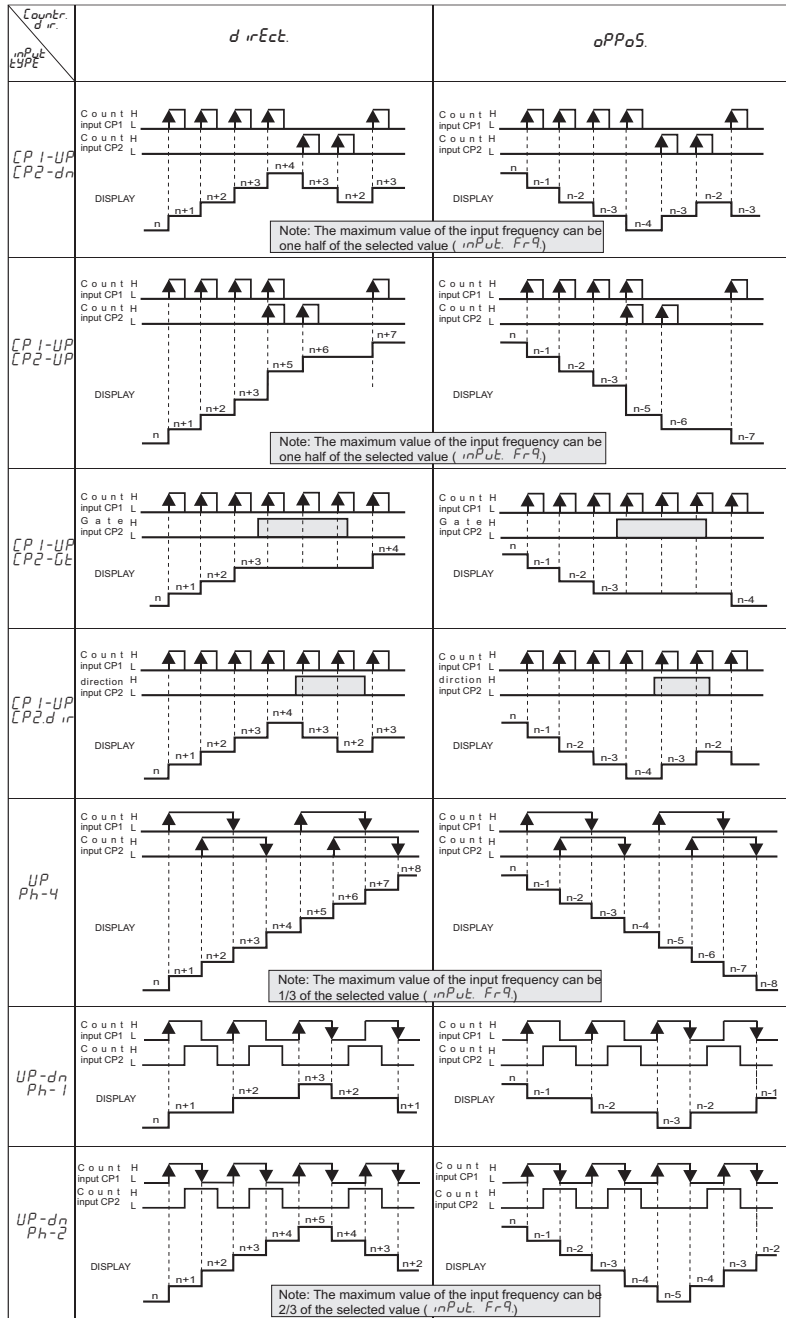
Equipment is protected throughout by DOUBLE INSULATION.



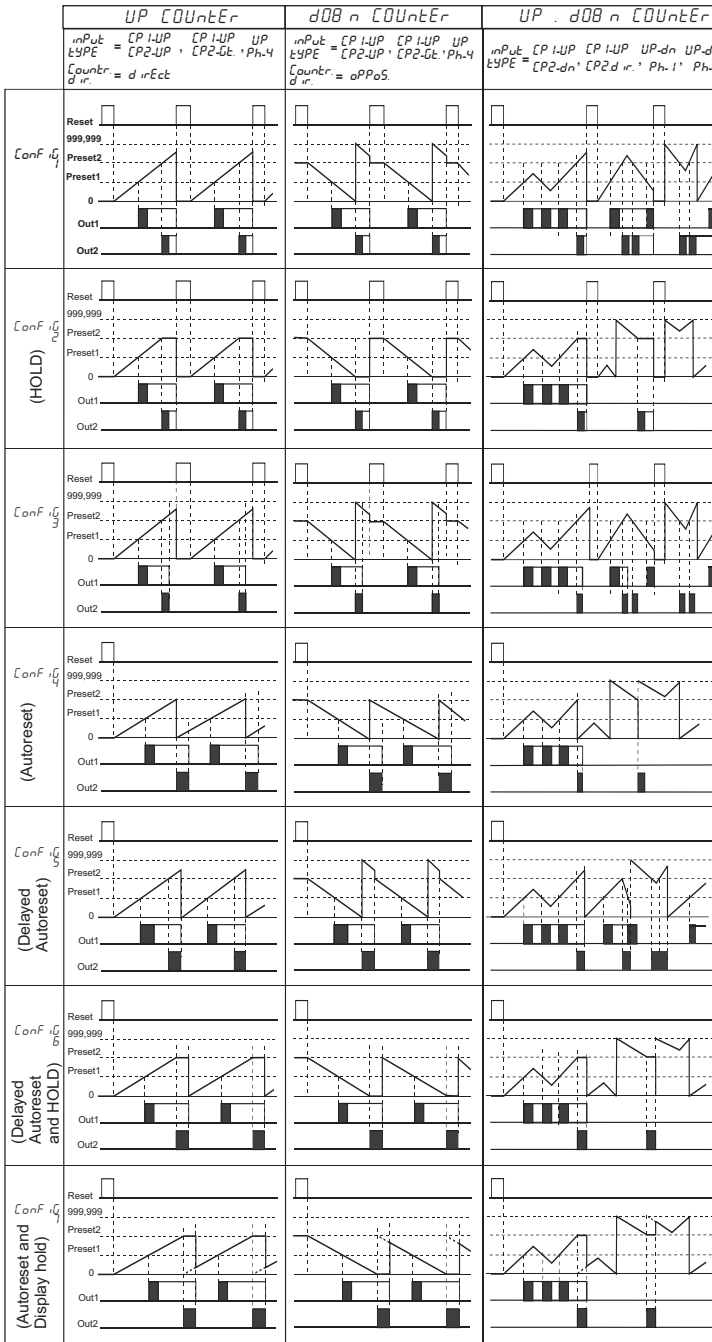
PARAMETER TABLE													
inPut TYPE	CP 1-UP CP2-dn	CP 1-UP CP2-UP	CP 1-UP CP2-0t	CP 1-UP CP2-d ir	UP Ph-4	UP-dn Ph-1	UP-dn Ph-2						
Count. d ir.	d irEct	oPPoS.											
inPut Frq.	25 HErt.	500 HErt.	1000 HErt.	2000 HErt.	5000 HErt.	7500 HErt.							
SEnSor TYPE	nPn	PnP	Encod.										
rESEt PuLS	0.002 SEcond	0.005 SEcond	0.010 SEcond	0.020 SEcond	0.050 SEcond								
outPut 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		
out 1 t. i.	000.0	---	999.9										
out 2 t. i.	000.0	---	999.9										
totALr. CONF iG	d iSAb.	inPut Count.	inPut out 1	inPut out 2									
PrSEt 1. Equ.	PrSEt 1.	Pr2Sub. Pr 1.											
dEc. Point	0	0.0	---	0.00000									
d iSP CAL	0.00001	---	99.9999										
oFFSEt dAtA	0	---	500000										
d iSP CONF iG	Count. PrSEt 1	Count. PrSEt 2	Count. bAtch	bAtch PrSEt 2	PrSEt 1 bAtch	totALh totALL							
SECUR. codE	1111												
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	PARnEL rESEt	inPut rESEt										
totALr. rESEt	no	PARnEL rESEt											
bAtch rESEt	no	PARnEL rESEt											
dEFALt SEt	no	YES											



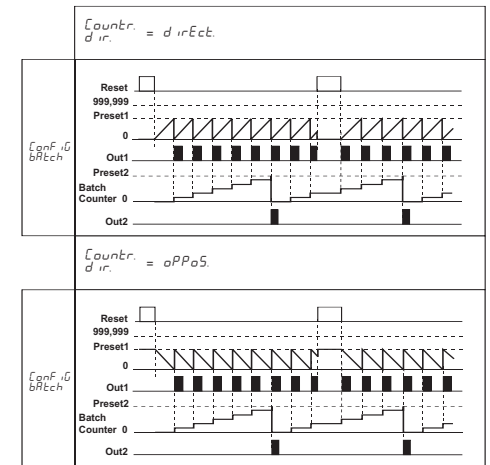
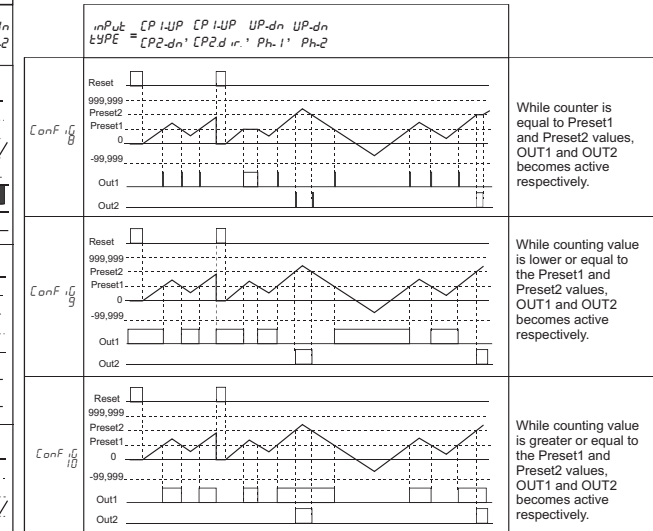
INPUT TYPES



OUTPUT TYPES



OUTPUT TYPES



While batch counter mode is selected, decimal point is not seen. Because, Preset1 and batch counting values are integer.

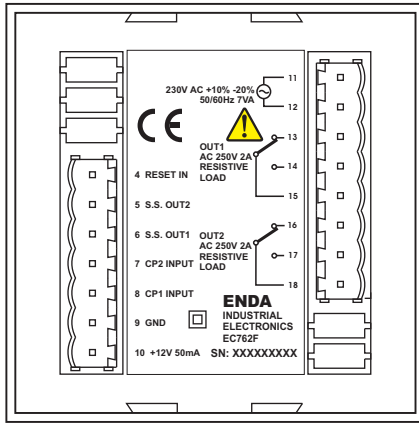
- Adjusting out1 or out2 to a value between 0.01 and 999.9 seconds, a pulse output is obtained.
- Adjusting out1 or out2 to 0.0, a continuous output is obtained.

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 inPULFrq 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.

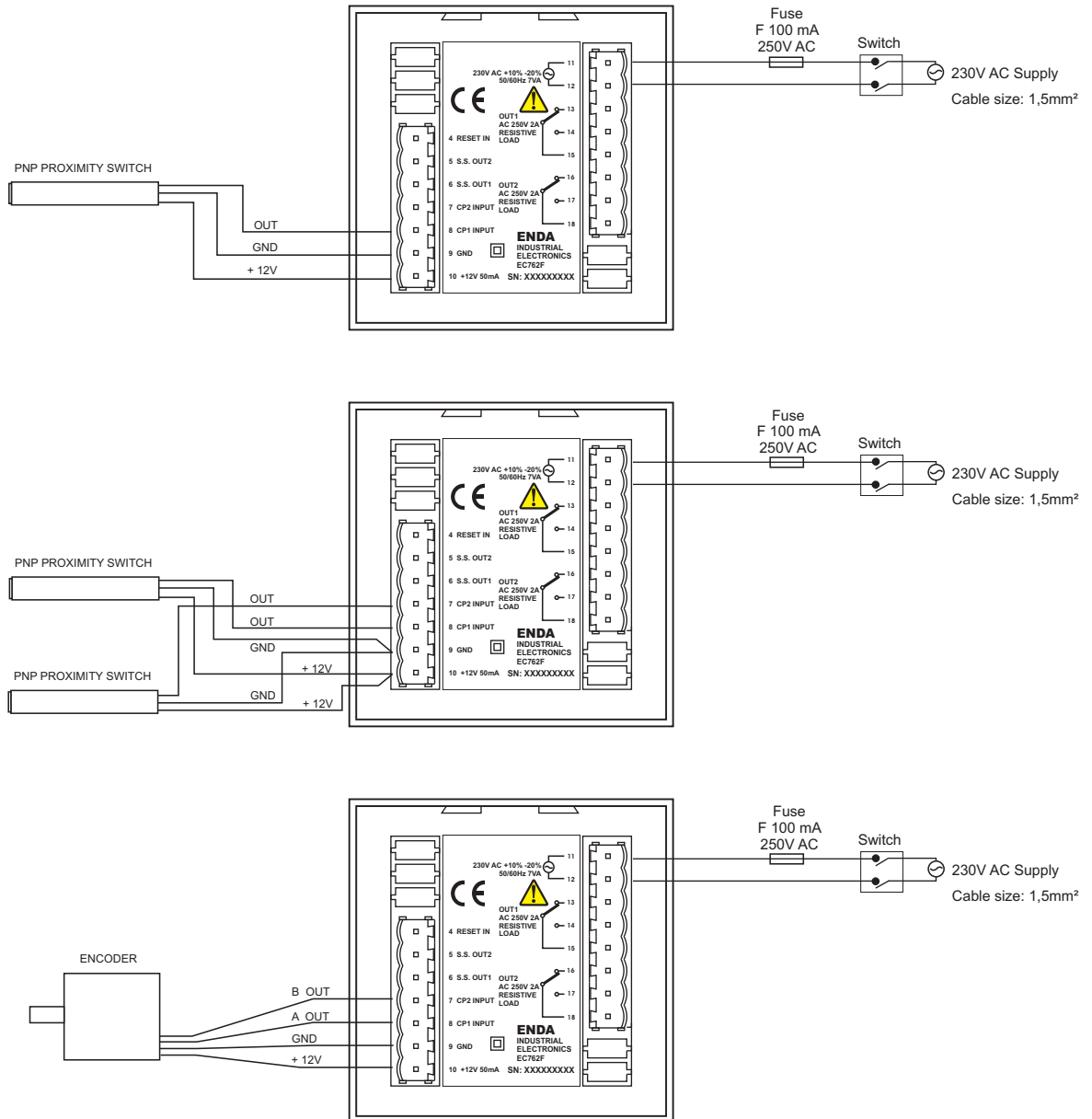
TERMINAL CONNECTIONS



Terminal descriptions

- 4 : Reset input.
- 5 : Solid state out2 (Max 30V 100mA open collector NPN)
- 6 : Solid state out1 (Max 30V 100mA open collector NPN)
- 7 : Input for clock pulse 2 (Max 30V 7.5kHz)
- 8 : Input for clock pulse 1 (Max 30V 7.5kHz)
- 9 : GND
- 10 : +12V 50mA auxiliary power supply for sensors.
- 11,12 : SUPPLY inputs.
- 13,14,15 : 1. relay output (Max 2A 250V AC)
- 16,17,18 : 2. relay output (Max 2A 250V AC)

TYPICAL SENSOR CONNECTIONS



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