

# N3C Intelligent Counter(DIN 36×72)



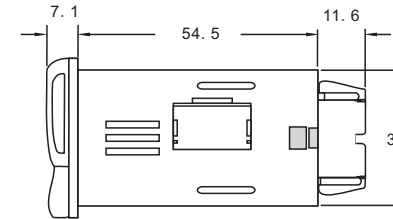
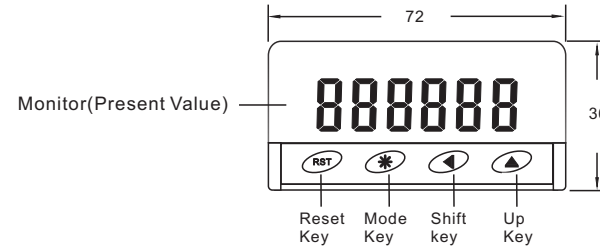
- Arc-Shape "black sunglasses" panel, attractive appearance, clear display.
- User-friendly interface, easy to operate.
- Powerful counter function and length meter function.
- Compatible with a wide variety of inputs, such as NPN/PNP universal input and DC 2-wire Sensors.
- Power supply freely selectable within a range of 100 to 240 VAC, as well as 12 to 24VAC/DC.



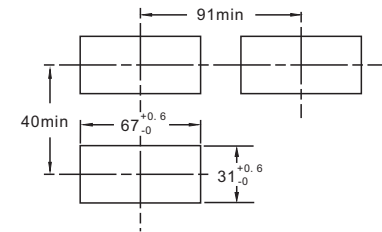
## ■ Ratings

Model	N3C-N	N3C-1P
Category	Indicator	1-stage preset counter
supply voltage	1: AC100~240V 50/60HZ 2: AC/DC12~24V(voltage range:85~110%)	
Power consumption	Approx. 5 VA at 264 VAC, Approx. 3.2 W at 12 VDC	
Display	7-segment, LED digital display Display range: -99999~999999	
Input modes	UP,UP/DOWN-A、B、C	UP,DOWN,UP/DOWN-A、B、C
Output modes	NO	N、F、C、R、L、K、D
Prescaling function	0.0001~99.9999	
Decimal point adjustment	Rightmost 4 digits	
Max. counting speed	5Hz,30Hz,1kHz,5kHz (selectable, ON/OFF ratio 1:1)	
Reset system	External, manual	External, manual, and automatic reset (internal according to C, R, and K mode operation)
Input signals	CP1、CP2、RESET	
Input method	No-voltage input/voltage input (switchable) No-voltage input. ON impedance: 1 kΩ max. (Leakage current: 5 to 20 mA at 0 Ω) ON residual voltage: 3 V max.OFF impedance: 100 kΩ min. Voltage input High (logic) level: 4.5 to 30 VDC Low (logic) level: 0 to 2 VDC (Input resistance: approx. 4.7 kΩ)	
Control output	NO	Relay:3A at 250 VAC/30 VDC, resistive load (cosφ=1)
External power supply	12VDC ±10% 100mA Max	
Memory backup	EEPROM (overwrites: 100,000 times min.) that can store data for 10 years min.	
Dielectric strength	AC2000V 50/60Hz 1min	
Ambient temperature	Operating: -10 to 55°C (with no icing or condensation) Storage: -25 to 65°C (with no icing or condensation)	

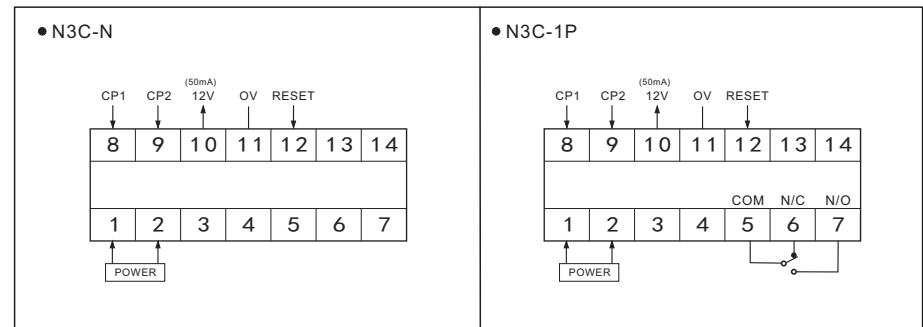
## ■ The panel and the size(mm)



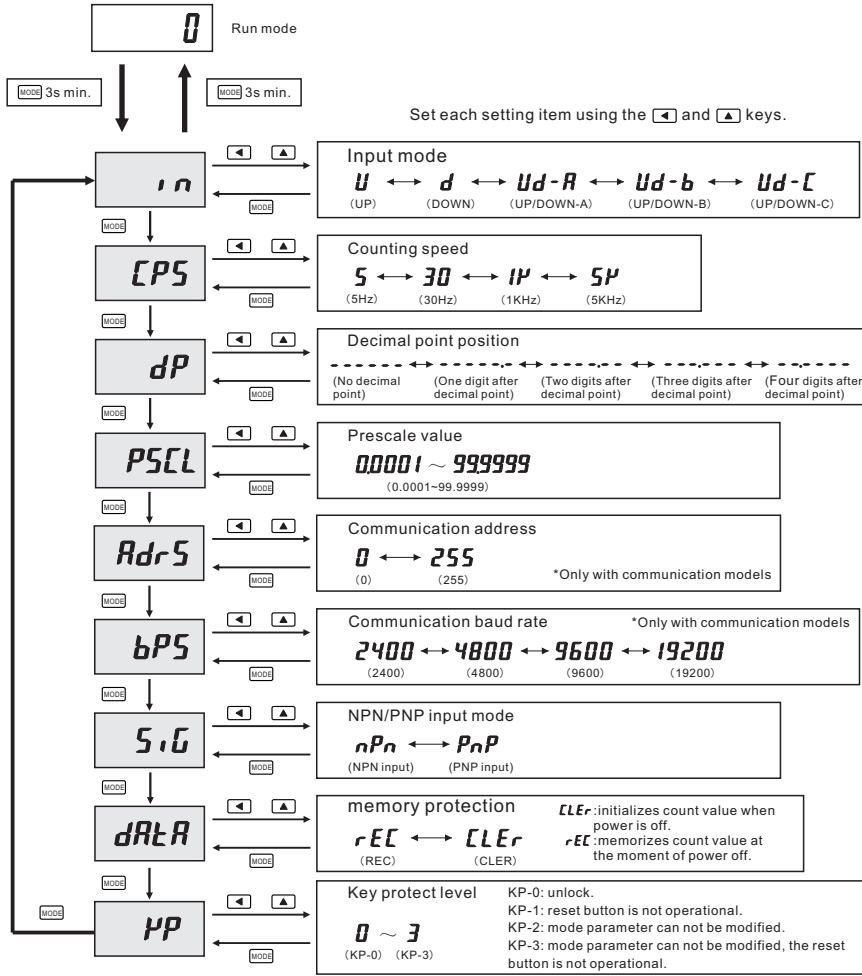
## Panel Cutouts :



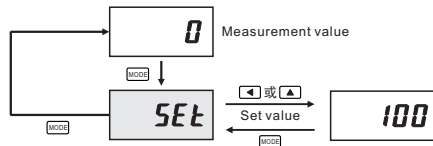
## ■ Wiring diagram



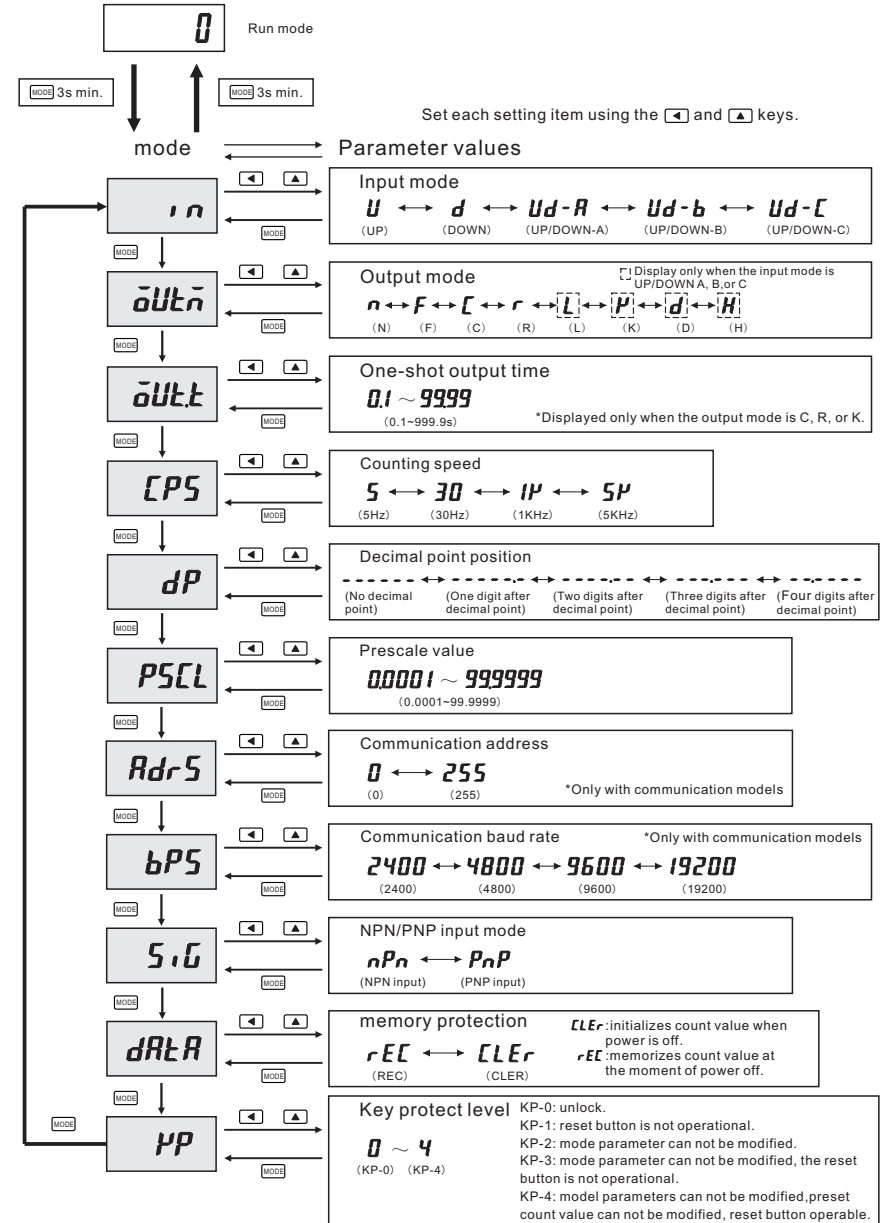
## ■ N3C-N Settings for All Functions



## ■ N3C-1P Preset count value (N3C-N doesn't have this set)



## ■ N3C-1P Settings for All Functions



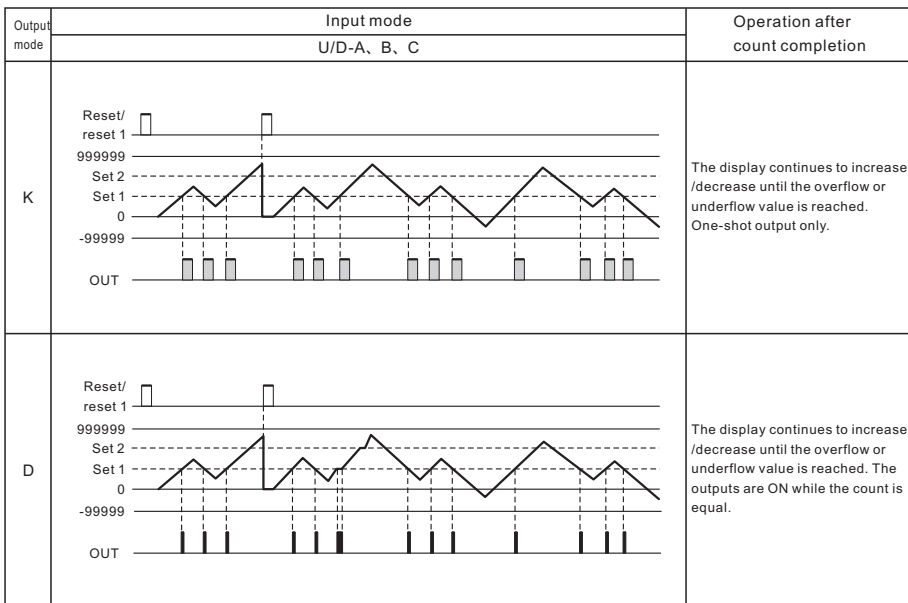
## Input Modes and Present Value

UP (Increment) Mode	DOWN (Decrement) Mode									
<p>CP1: Count input; CP2: Prohibit (gate) input</p> <p>Ⓐ must be greater than the minimum signal width. (See note 2.)</p>	<p>CP1: Count input; CP2: Prohibit (gate) input</p> <p>Ⓐ must be greater than the minimum signal width. (See note 2.)</p>									
<p>CP1: Prohibit (gate) input; CP2: Count input</p> <p>Ⓐ must be greater than the minimum signal width. (See note 2.)</p>	<p>CP1: Prohibit (gate) input; CP2: Present value</p> <p>Ⓐ must be greater than the minimum signal width. (See note 2.)</p>									
UP/DOWN A Command Input Mode	UP/DOWN B Individual Input Mode									
<p>CP2 did not enter CP1 plus count, the CP2 input is valid CP1 count down</p> <p>Ⓐ must be greater than the minimum signal width. (See note 2.)</p>	<p>input CP1 UP count, input CP2 count down</p>									
UP/DOWN C Quadrature Input Mode	<p>Note: 1. If the configuration selection is set to dual counter, CP1 and CP2 input will operate in the same way as the count input (CP1) of UP (increment) mode.                  2. Ⓐ must be greater than the minimum signal width and Ⓑ must be at least 1/2 the minimum signal width. If they are less, a count error of ±1 may occur.                  Minimum signal width: 100 ms (when maximum countingspeed = 5 Hz)                  16.7 ms (when maximum countingspeed = 30 Hz)                  500 μs (when maximum countingspeed = 1 kHz)                  100 μs (when maximum countingspeed = 5 kHz)                  3. Counting starts when the CP1 is turned ON after turning ON the power.                  4. The meaning of the H and L symbols in the tables is explained below.</p> <table border="1"> <thead> <tr> <th>Input method Symbol</th> <th>No-voltage input (NPN input)</th> <th>Voltage input (PNP input)</th> </tr> </thead> <tbody> <tr> <td>H</td> <td>Short-circuit</td> <td>DC4.5~30V</td> </tr> <tr> <td>L</td> <td>Open</td> <td>DC0~2V</td> </tr> </tbody> </table>	Input method Symbol	No-voltage input (NPN input)	Voltage input (PNP input)	H	Short-circuit	DC4.5~30V	L	Open	DC0~2V
Input method Symbol	No-voltage input (NPN input)	Voltage input (PNP input)								
H	Short-circuit	DC4.5~30V								
L	Open	DC0~2V								
<p>Automatically determine the forward or reverse</p> <p>Ⓑ must be at least 1/2 the minimum signal width. (See note 2.)</p>										

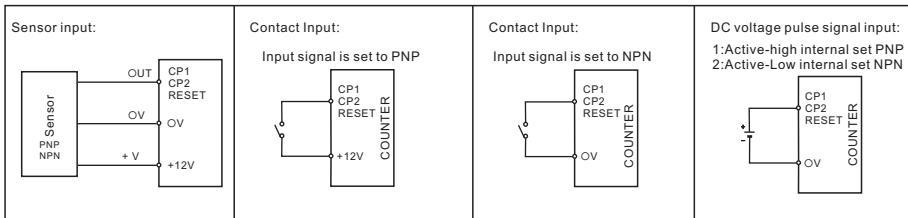
## Input/Output Mode Settings

	Output Hold	One-shot output (The one-shot output time 0.01 to 99.99s.)			
Output mode		UP	DOWN	U/D-A, B, C	Operation after count completion
N					The outputs and present value display are held until reset is input.
F					The present value display continues to increase/decrease. The outputs are held until reset is input.
C					As soon as the count reaches SV, the present value display returns to the reset start status. The present value display does not show the present value upon count-up. The outputs repeat one-shot operation.
R					The present value display returns to the reset start status after the one-shot output time. The outputs repeat one-shot operation.
L					The display continues to increase/decrease until the overflow or underflow value is reached. OUT is held while the present value is greater than or equal to set value.

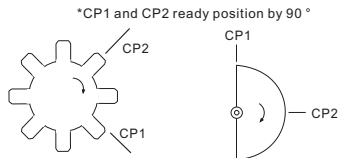
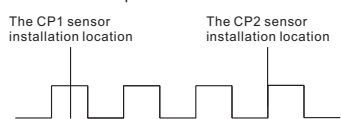
 Self-holding output    
  Instantaneous(equals) output    
  One-shot output    
 (The one-shot output time can be set in the range 0.01 to 99.99s.)



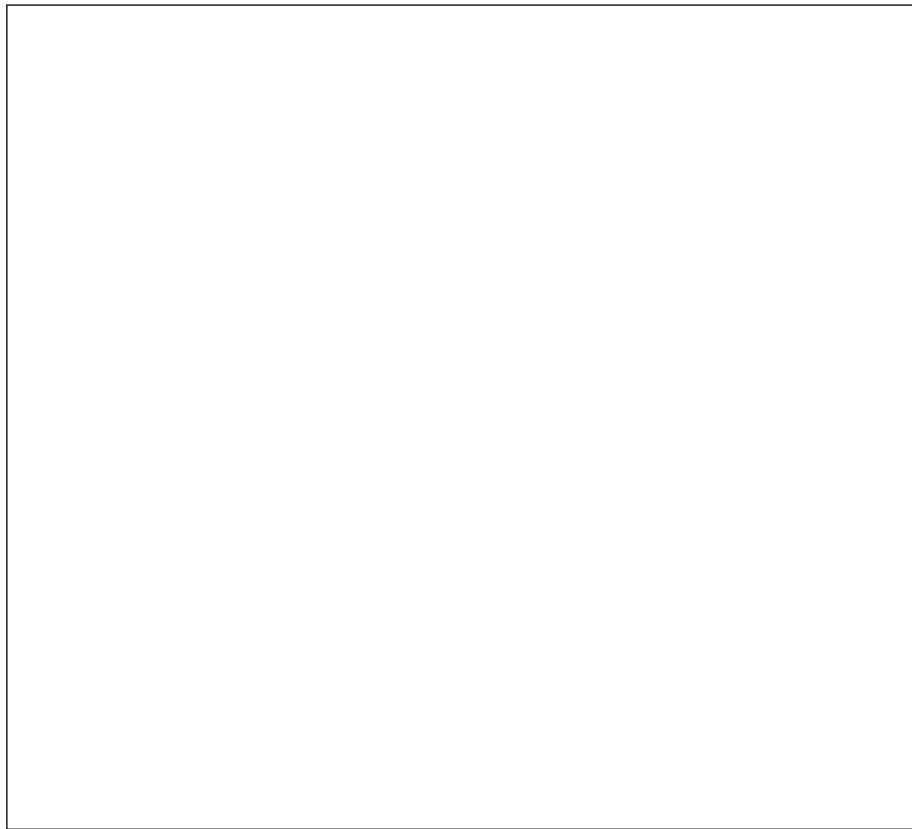
### Signal input connection diagram



The UP / DOWN-C output mode of the sensor installation method:



\*The UP / DOWN-C mode can automatically determine the forward reverse movement, Forward will be added to UP count, the reverse will count down.



### Before the use of attention

- 1: before use, make sure that the voltage and connection, to avoid lead to instrument damage due to incorrect wiring.
- 2: Avoid the instrument used in high temperature, flammable, explosive, corrosive, dust, severe shock, humidity, static electricity, oil and other occasions.
- 3: Twist of the instrument signal lines and power lines may cause interference Please try to stay away from these strong electric wires, to conduct an independent wiring, and signal lines as far as possible to shorten the wiring distance.
- 4: Contact signal input, the CPS count rate should be set for low-speed 30Hz, can Prevent switch bounce error count. Reasonable speed settings, you can make the count more accurate.
- 5: Output relay, please do not exceed the switching capacity, according to the rated load, otherwise it would contact burned, such as an external high current relay or contactor exceeds its capacity.