

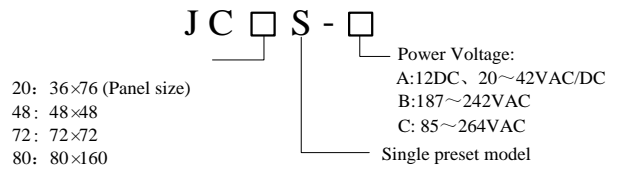
JC Series Electric Counter – User Manual

General Description

JC series electronic counter provides excellent performance by using the single chip micro-processor with high accuracy, wide counting range, digital display, soft contact operating key, data protection during blackout, strong anti-disturbance capability, modern design of appearance, etc.

JC series electronic counter can be used in many industrial applications such as packaging, printing, pharmacy, food, textile, papermaking, ceramic, petroleum, chemical engineering, metallurgy, etc. It can also display and control other parameters like rotating revolution and length.

Model series:



Technical Parameters and Functions

- Mounting: panel mounting or socket mounting.
- Power supply: 4.5W; Single input impedance: $\geq 5K\Omega$
- Maximum counting frequency: high speed: 5000times/s; medium speed: 250 times/s; low speed: 25 times/s. (duty ratio is 1:1)
- Counting type: counting up and counting down according to user selection
- Input signals and the frequency options:
 - Contact signal: For relay, distance switch, micro switch, the frequency should be set to low speed (30 times/s) when the signal duty ratio is 1:1.
 - Non-contact signal: For proximity switch, photoelectric switch, ect, the frequency can be set to either high (1000 times/s) or low(30 times/s) according to requirement when the signal duty ratio is 1:1.
 - Pulse signal: For TTL circuit and impulse voltage (low level VL=0~1.3V, high level VH=4.5~30V). The frequency can be set to either high (1000 times/s) or low (30 times/s) according to requirement.
- Modes for control output
 - F mode: When the meter counting value reaches its preset value, the output contact is emitted and continue counting.
 - mode: When the meter counting value reaches its preset value, the output contact is emitted and counting stops.
 - ⌈ mode: When the meter counting value reaches preset value, display is reset to zero automatically and meter counting repeats, and the control contact is activated until the mono-stable time is elapsed.

- ⌈ (R) mode: When the meter counting value reaches its preset value, counting stops ,control contact acts as output, the control contact is activated until the mono-stable time is elapsed, display is reset to zero automatically and meter counting repeats.
- anti-jamming intensity: 3 level (IEC801) .
 - Data backup (optional): > 10 year.
 - Reset (to zero) types: The display values and control output reset simultaneously.
 - Press the reset (to zero) key on the surface panel (only during counting);
 - Reset with the terminals(by short the RST and the COM pin),the width of the reset pulse $> 0.1S$;
 - Automatic reset with mono-stable delay:: select from 0~99.9s.
 - External power supply for sensor: DC12V, current value is listed in Table 1.
 - Contact capacity of the control output: 3A/250VAC (for resistance load) .
 - Operating environment: temperature 0~50°C; relative humidity $\leq 95\%$ (without dew).

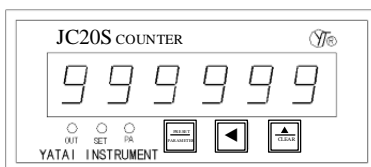
Specification

表 1

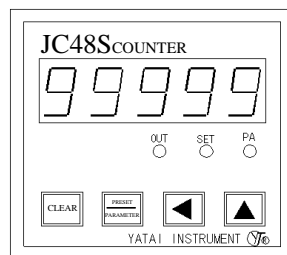
Model	Counting Range	Functional Description	DC output for sensors	Size (mm) (H×W×L)	Size of mounting hole(mm) (H×W)	Inserted depth(mm)
JC24S	0~999999	Options available including preset mode, counting frequency mode, counting mode, counting output mode, output mono-stable time delay, data back up with power failure	12VDC/20mA	24×48×62	22.5×45	58
JM20S	0~99999		12VDC/20mA	36×76×106(90)	33×73	100(84)
JM48S	0~999999		12VDC/30mA	48×48×85	45×45	78
JM72S	0~999999		12VDC/30mA	72×72×75	68×68	65
JC80S	0~999999		12VDC/60mA	80×160×80	76×152	65

NOTE: JC20S socket length:106mm, insert depth 100mm; terminal type length:90mm, insert depth 84mm.

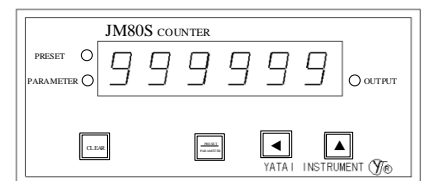
Display Panel



JC20S



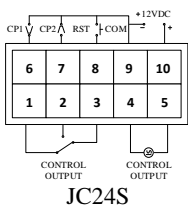
JC48S/JM72S



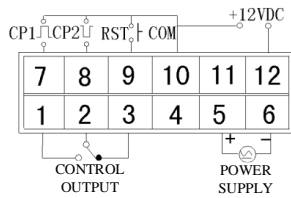
JC80S



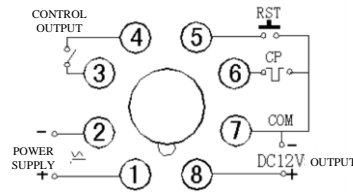
Wiring Terminals



JC24S

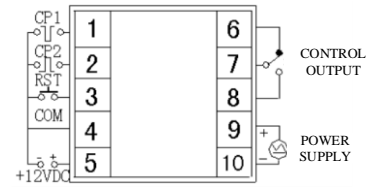


JC20S – FOR PANAL MOUNTING

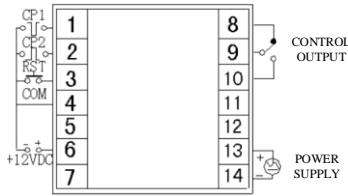


JC20S – FOR SOCKET MOUNTING

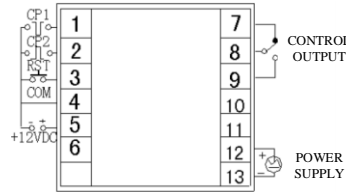
The CP terminals for this model are NPN type input unless specified



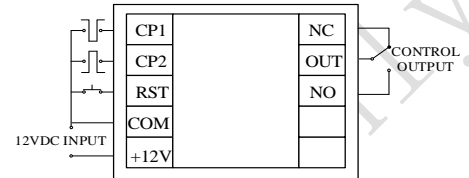
JC48S



JC72S



JC80S



JC □ S- A Model - 12VDC INPUT

NOTE: JC □ S- A Model – 12VDC wiring terminal is illustrated in the diagram, when external 12VDC power supply is connected from “+12V” and “COM” terminals (different from other power supply types), the wiring should refer to the diagram shown in bottom right. When use other types of power supply, they should be connected only from “power supply” terminal, and “+12V” terminal (internal 12VDC power output) is for sensors only (no external power supply is allowed to connect to the “+12V” terminal, otherwise the counter might be damaged).

Instruction:

1. How to set the preset value:

In the counter mode: press the “preset/parameter” key for < 3 seconds to enter the preset counter mode and the preset indicator “SET” will be on. At this stage, the single digit will flush, then press “◀” key to select the desired digit until it flashes, then press “▲” key to choose any number from 0→9 for the flashing digit. The valid range for preset value is 0~999999 (note: the valid range for JC48S is 0~99999). After the preset value is set and verified, press the “preset/parameter” < 3 seconds, the counter will automatically exit the preset mode and enter the counting mode, and the preset indicator will be off. The counter will remain in the existing settings if the preset value is not modified. New parameters will be applied immediately after the preset value is modified.

Note: For JC20S and JC24S, the “▲” key and the “clear” key are identical, under the counting mode, the key of “▲/clear” is used

to reset to zero, under the preset mode or parameter setting mode, “▲/clear” is used to change the preset value or values of parameters, it dose NOT function as clear key.

2. How to set the counting parameter:

JC series have six function parameters to choose including software lock \bar{d} , counting frequency Ft , increase/decrease counting mode AS , power failure protection on/off od , output control AN , output time mono-stable delay AA . Press the “preset/parameter” key more than 3s to enter the setting mode, the parameter indicator “PA” will be on. The screen will display software lock key \bar{d} . Press “preset/parameter” key for less than 3 seconds to choose the different function to modify according to the following order: $\bar{d} \rightarrow Ft \rightarrow AS \rightarrow od \rightarrow AN \rightarrow AA \rightarrow$

Please refer to Table 2 for the more detailed instruction on how to set and modify the function parameter.

Table 2: Parameter setup

Steps	Function parameter	Display	Instruction	Details
Step 1	Enter the setting mode	Press “preset/parameter” key for more than 3 seconds to enter the setting mode, the indicator “PA” is on, enter the following setting mode.		
Step 2: Press “preset/parameter” key < 3s, select and modify the parameter as required	(1) \bar{d} software lock	$\bar{d}1234$	Press “◀” to select the digits until it flashes, the press “▲” to modify	1234 : both the preset value and parameter value can be modified; 1111 : only the preset value can be modified. Parameter value cannot be modified except the software lock key; 0000 : All value cannot be modified except the software lock key.
	(2) Ft counting frequency	$Ft L$	Press “▲”, modify single digit as following: $L \rightarrow n \rightarrow H$	L : maximum counting frequency is 23/second n : maximum counting frequency is 250/second H : maximum counting frequency is 5000/second
	(3) AS counting up and down	$AS \uparrow$	Press “▲”, modify single digit as following: $\uparrow \rightarrow -$	\uparrow : counting up mode $-$: counting down mode
	(4) od power failure protection on/off	$od \uparrow$	Press “▲”, modify single digit as following: $\uparrow \rightarrow n$	n : The counting value is not backup after the power failure, the counter will start from 0 when the power is back on (the values of the presetting and function are not changed) \uparrow : The counting value is backup for the power failure, the counter will restart with the existing value when the power is back on.

	(5)	AA output control		Press "▲", modify single digit as following: F → n → [→ e	Please refer to Table 3 for details of F、n、[、e.
	(6)	AA output control with mono-stable time		Press the "◀" key to select the digits need to be modified until it flashes, then press the "▲" key to modify the value	Unit is second, the range of delay can select from 0-99.9s. Note: this function is only available if the control output is [or e. For F or n, this function is not available.
Step 3	(7)	Exiting the function parameter setting mode	After the preset value is set and verified according to the Step 1 and Step 2, the press the "preset/parameter" <3s again, the counter will automatically exit the parameter setting mode and enter the counting mode, and the preset indicator will be off. If the parameter is not modified, the counter will remain in existing conditions. If the parameter is modified, the counter will reset to zero and the modified parameters are saved and restart with new parameters.		

TALBE 3: Output Action

Output	Increase	Decrease	Action after reaches preset value
F			When RST is set to low level(L), it will be reset, all digital display reset to 0, contact opens; RST is set to high level(H), meter starts counting. When the meter counting value reaches preset value, the contact output is emitted and counting keeps operating until RST is in reset status
n			When RST is set to low level(L), it will be reset, all digital display reset to 0, contact opens; RST is set to high level(H), meter starts counting. When the meter counting value reaches preset value, the contact output is emitted and counting stops until RST is in reset status
[When RST is set to low level(L), it will be reset, all digital display reset to 0, contact opens; RST is set to high level(H), meter starts counting. When the meter counting value reaches preset value, the contact output is emitted and the contact output releases when the mono-stable delay is ended.
e			When RST is set to low level(L), it will be reset, all digital display reset to 0, contact opens; RST is set to high level(H), meter starts counting. When the meter counting value reaches preset value, the contact output is emitted, counting stops and the contact output releases when the mono-stable delay is ended.
NOTE: mono-stable time delay output (0~99.9seconds set) MAINTAIN ITS OWN STATUS WITH OUTPUT			

Additional Information

- Please wiring according to terminals wiring diagram on the meter case strictly and ensure the actual power supply is consistent with the rating value.
- The connection of sensor and counter must be robust. The signal lines shall not be placed parallel with the power lines of electric supply and control lines.
- please select the sensor reasonably according to requirement and wiring correctly.
 - For NPN kind sensor (negative pulse input) or contact counting signal, the wiring method is shown as Figure 1.
 - For PNP kind sensor (positive pulse input), the wiring method is shown as following

- COM terminal is not only public GND, but also output power supply 0V terminal.
- For contact sensors, please select low speed (0 – 25Hz) frequency
- After power is connected, by selecting the required counting frequency, the counter will enter the normal counting mode.

