

Dear clients, thanks for choosing LIONPOWER Dm48 Series multi-function meter! Before installing and operating the products, please read this instruction manual carefully. For any questions, please contact our sales people immediately.

### PREREAD INSTRUCTIONS

#### ⚠ SAFETY CAUTIONS:

- Make sure the power is at "OFF" status before connecting the wires to avoid electric shock and strictly follow the connection diagram given out by the factory.
- Make sure the power OFF when cleaning the product.
- Working beyond the stated power supply (90-250V AC) is prohibited so as to avoid damage to the product or cause fire.
- Make sure the OUTPUT RELAY is used at the rated load and electrical life, if the contact of the output reply works against the electrical life, it may melt or burned or even cause fire.
- Install power switches and circuit breaker for power safety.

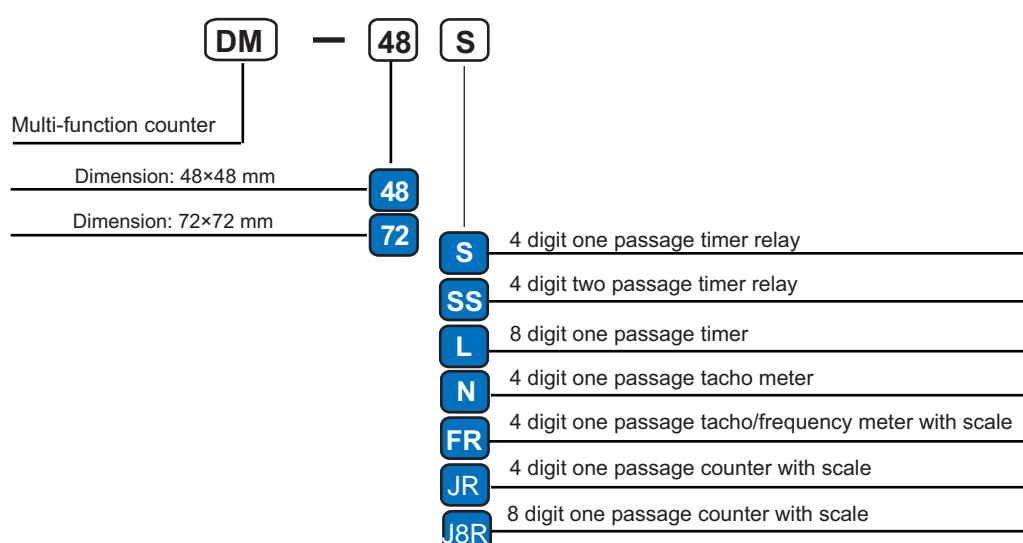
#### ⚠ STOCK AND MAINTAINENCE NOTICE:

- Try to avoid interfere headstream, input signals cable should not be too long, better to use twisted-pair shielded cable, shielded layer connected with singals low end.
- Prevent from violent vibration, shock and incursion of heavy dust.
- Stock long terms at 0~50 ℃ , under 35~85%RH environment.
- When instrument power supply has noises, paticularly when inductive voltage caused by relay or contact devices switch ONand OFF result in serious interference, must configure filter or rheostat or noises absorber.

## 1.FEATURES

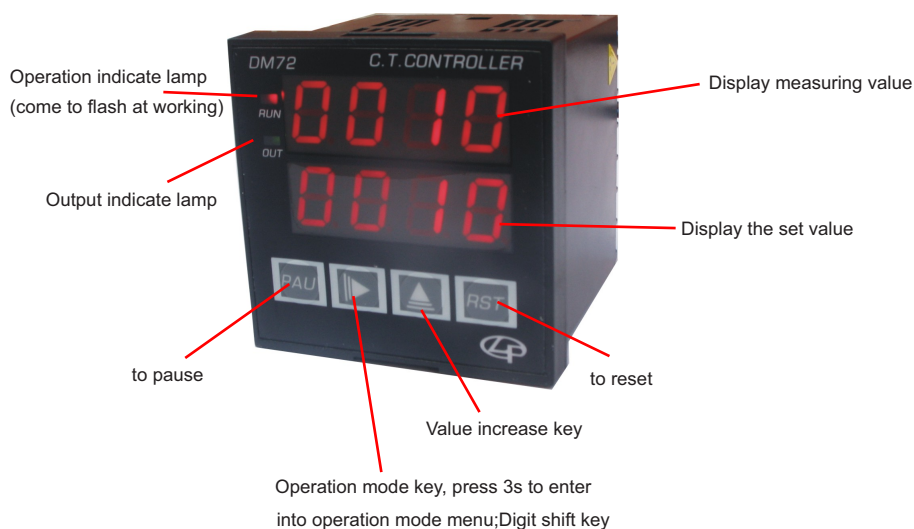
- Measuring object: counter,timer, frequency and tacho meter
- Red LED display
- Measuring range: max.9999(4 digit), 99999999(8 digit).
- Measuring frequency is selectable: 0-9999Hz
- Decimal point and modulus can be set freely;
- Power fail holing function, up to 10 years.
- Relay output (need custumed to drive solid state relay)

## 2.ORDERING CODE



### 3.PANEL INSTRUCTIONS

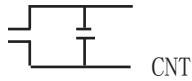
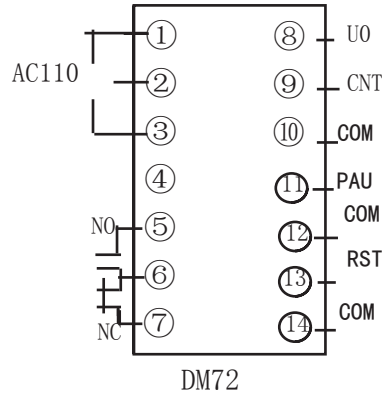
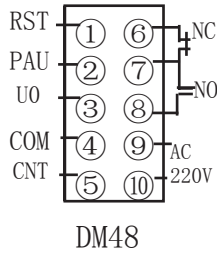
72×72mm panel instructions



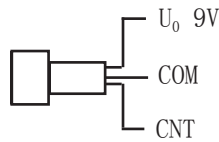
### 4.TECHINCAL SPECIFICATIONS

Power supply:	90~250V AC 50/60HZ
Power consumption:	≤ 5VA
Transmitter supply	12V DC ±10% max.50mA
Measuring range	When measuring range=1KHz: 0.11~1KHz When measuring range=10KHz: 0.11~10KHz
Input signals:	Contact input, volate input, transducer input Input signals low voltage: 0~2V, high voltage: 4~30V, input resistance: 5KΩ
Counting signals	input impedance ≥100 KΩ input level $H \geq 5V$ $L \leq 2V$ Max.input:50V
Display range:	0~9999 (4 digit) / 0~99999999(8 digit)
Over flow indication	"----"(4 digit) / "-----"(8 digit)
Insualtion strength	100MΩ/min (use 500V DC MΩ meter to measure)
Withstand voltage	AC 2000V, 50/60 Hz (1m)
Ambient temperature	0~50℃ 35~85%(RH)

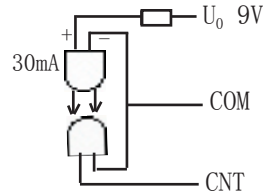
#### 5. ELECTRICAL CONNECTION DRAWING



mechanical Signal contact





proximity sensor



photoelectric cell con

#### Note:

- For mechanical contact signal, additional capacity is necessary for customer.
- For photoelectric cell, one 360  $\Omega$  electric resistance need to be connected in circuit.
- If the connection drawing doesn't correspond to the drawing on the product, please according to the drawing on the product.
- For relay output terminals,  stand for being close and  stand for being open under normal conditions.

#### DM72

- ①, ②, ③ power input; ① ③ 220VAC; ① ② 110VAC;
- ⑤, ⑥, ⑦ output ( Relay output: ⑤ open, ⑥ public, ⑦ close); CCCCC
- ⑧, ⑨, ⑩ sensor connect end ( ⑧ +12V output, ⑨ public , ⑩ signal input);
- ⑬ reset, ⑭ ⑮ grounding ⑯ pause.

#### DM48

- ⑨, ⑩ power input;
- ⑥, ⑦, ⑧ output ( Relay output: ⑥ open, ⑦ public, ⑧ close);
- ①, ④, ⑤ sensor connect end (① signal input, ④ public , ⑤ +12V output);
- ② reset; ③ pause;

## 6.All functions lists for DM48/72 multi-function counter

Model	Model	Range	Remarks
01	DM48S-6/ DM72S-6	0.01S-99.99S	Counting up
02	DM48S-1/ DM72S-1	0.01S-99.99S	Counting down
03	DM48S-10/ DM72S-10	1M-9999M	Counting up
04	DM48S-5/ DM72S-5	1M-9999M	Counting down
05	DM48S-7/ DM72S-7	1S-9999S	Counting up
06	DM48S-2/ DM72S-2	1S-9999S	Counting down
07	DM48S-8/ DM72S-8	1S-99M59S	Counting up
08	DM48S-3/7 DM72S-3	1S-99M59S	Counting down
09	DM48S-9/ DM72S-9	1M-99H59 M	Counting up
10	DM48S-4/ DM72S-4	1M-99H59M	Counting down
11	DM48SS-8/DM72SS-8	1M-99H59M	Counting up
12	DM48SS-4/7 DM72SS-4	1M-99H59M	Counting down
13	DM48SS-6/ DM72SS-6	1S-99M59S	Counting up
14	DM48SS-2/ DM72SS-2	1S-99M59S	Counting down
15	DM48SS-5/ DM72SS-5	1S-9999S	Counting up
16	DM48SS-1/ DM72SS-1	1S-9999S	Counting down
17	DM48SS-7/ DM72SS-7	1M-9999M	Counting up
18	DM48SS-3/ DM72SS-3	1M-9999M	Counting down
19	DM48L-4/ DM72SS-4	0-99H59M59.99S	Reset at once
20	DM48L-1/ DM72L-1	0-99H59M59.99S	Reset at 8 seconds interval
21	DM48L-5/ DM72L-5	0-9999H59M59S	Reset at once
22	DM48L-2/ DM72L-2	0-9999H59M59S	Reset at 8 seconds interval
23	DM48L-6/ DM72L-6	0-9999D23H59M	Reset at once
24	DM48L-3/ DM72L-3	0-9999D23H59M	Reset at 8 seconds interval
25	DM48F-1/ DM72F-1	1Hz-9999 Hz	
26	DM48F-2/ DM72F-2	0.1 Hz-999.9 Hz	
27	DM48N/ DM72N	60—9999RPM	
28	DM48FR/ DM72FR	0—9999	
29	DM48J/ DM72J	0—9999	
30	DM48JR/ DM72JR	9999—0 (Short circuit between COM and PAU for counting down)	
31	DM48J8/ DM72J8	0—99999999	
32	DM48J8R/ DM72J8R	99999999-0 (Short circuit between COM and PAU for counting down)	

## 7.OPERATION INSTRUCTIONS

There are 32 kinds of functions in total for DM48/72. But, it is quite simple to operate due to the reasonable menu design. Keeping the >> key pressed for 10 seconds, the upper digit tube come to flash like XY-Z. XYZ are all figures. XY stand for the function No. (the No. in function lists above), which range from 01 to 32. the Z stand for the working type of relay, which from 1 to 6. Notes: the interval between the steps of setting shouldn't exceed 8 seconds. Now the relative operation instructions are as follows:

## a. DM48S/DM72S 4 digit one passage timer relay

1. Keeping the >> key pressed for 10 seconds, the upper digit tube come to flash like XY-Z. For XY, 01-10 is available. As for the details, pls ref the above function lists. To change the XY value, press the  $\Delta$  key. The setting will be saved automatically after the XY keep flashing for 10 seconds.
2. Pressing the >>> key, the Z digit tube will come to flash. To change the Z value, press the  $\Delta$  key. The setting will be saved automatically after the Z keep flashing for 10 seconds.

For the relay working type , pls ref the following lists.

No.	Relay working type
1	work with power on.the relay come to be close when more than the set value.
2	doesn't work with power on(make it work by the RST key ).the relay come to be close when more than the set value.
3	work with power on.the relay come to be open when more than the set value.
4	doesn't work with power on(make it work by the RST key ).the relay come to be open when more than the set value .
5	work with power on.the relay come to be close when more than the set value. Instrument reset automatically after 5 seconds.
6	doesn't work with power on (make it work by the RST key ).the relay come to be close when more than the set value Instrument reset automatically after 5 seconds.

3.Upper window display the current value and the other display the setting value when instrument is working.

4.For the RST key, instrument will come to reset by the key.

5.For PAUSE key, instrument will come to pause by the key.

#### b. DM48SS/DM72SS 4 digit two passage timer relay

1. Keeping the >> key pressed for 10 seconds,the upper digit tube come to flash like XY-Z.For XY, 11-18 is available.As for the details,pls ref the above function lists. To change the XY value , press the  $\Delta$  key.The setting will be saved automatically after the XY keep flashing for 10 seconds.

2.Pressing the>>key, the Z digit tube will come to flash.To change the Z value , press the  $\Delta$  key.The setting will be saved automatically after the Z keep flashing for 10 seconds.

For the relay working type , pls ref the following lists.

No.	Relay working type
1	work with power on.the relay come to be close when more than the set value.
2	doesn't work with power on(make it work by the RST key ).the relay come to be close when more than the set value.

3.Upper window display the set value of being open for relay and the other display the set value of being close for relay when instrument is under setting condition.And the Upper window display the current value and the other display the setting value when instrument is working. For example, setting the value of being open for relay as 10s and the value of being close as 20s,the relay will keep being open for 10s and being close for 20s . Then instrument will restart automacally if you set the Z as 1.

4.For the RST key, instrument will come to reset by the key.

5.For PAUSE key, instrument will come to pause by the key.

#### c. DM48L/DM72L 8 digit one passage timer

1. Keeping the >> key pressed for 10 seconds,the upper digit tube come to flash like XY-Z.For XY, 19-24 is available.As for the details,pls ref the above function lists. To change the XY value , press the  $\Delta$  key.The setting will be saved automatically after the XY keep flashing for 10 seconds.

2.Pressing the>>key, the Z digit tube will come to flash.To change the Z value , press the  $\Delta$  key.The setting will be saved automatically after the Z keep flashing for 10 seconds.

For the relay working type , pls ref the following lists.

No.	Relay working type
1	work with power on.the relay come to be close when more than the set value.
2	doesn't work with power on(make it work by the RST key ).the relay come to be close when more than the set value.
3	work with power on.the relay come to be open when more than the set value.
4	doesn't work with power on(make it work by the RST key ).the relay come to be open when more than the set value .
5	work with power on.the relay come to be close when more than the set value. Instrument reset automatically after 5 seconds.
6	doesn't work with power on (make it work by the RST key ).the relay come to be close when more than the set value Instrument reset automatically after 5 seconds.

3.For DM48L/DM72L 8 digit one passage timer, 8 digit tube(upper 4 digit and lower 4 one) display the set value when setting and display the current add-time when instrument is working.Notes:pressing the >> key under working condition ,instrument will display the setting value and escape automatically after 8s.

For example,when the XY-Z=20-1,you can set the add-time as 01 hour 06 minutes 58.00 seconds .Instrument will come to work when power on.at the time of 01 hour 05 minutes 58.00 seconds ,power is off and the value will be saved . instrument will go on working on the basic of the 01 hour 05 minutes 58.00 seconds.(it is available by pressing the RST key within 8s ,and instrument will restart from zero if accceed 8s

4.For the RST key, instrument will come to reset by the key.

5.For PAUSE key, instrument will come to pause by the key.

#### d. DM48N/DM72N 4 digit one passage tacho meter

1. Keeping the >> key pressed for 10 seconds,the upper digit tube come to flash like XY-Z.For XY, 27 is available.As for the details,pls ref the above function lists. To change the XY value , press the  $\Delta$  key.The setting will be saved automatically after the XY keep flashing for 10 seconds.

2.Pressing the>>>key, the Z digit tube will come to flash.To change the Z value , press the  $\Delta$  key.The setting will be saved automatically after the Z keep flashing for 10 seconds.

For the relay working type , pls ref the following lists.

No.	Relay working type
1	work with power on.the relay come to be close when more than the set value.
3	work with power on.the relay come to be open when more than the set value.

3.Upper window display the current value and the other display the setting value when instrument is working.

4.For the RST key, it is not available here.

5.For PAUSE key, it is not available here.

6.For connection,pls ref the electrical connection drawing on the page 3 .

7.Input: per impulse Cycle: 1s Measure range:60-9999 rpm

## e. DM48FR/DM72FR 4 digit one passage tachofrequency meter with scale

1. Keeping the >> key pressed for 10 seconds, the upper digit tube come to flash like XY-Z. For XY, 28 is available. As for the details, pls ref the above function lists. To change the XY value, press the  $\wedge$  key. The setting will be saved automatically after the XY keep flashing for 10 seconds.

2. Pressing the >>> key, the Z digit tube will come to flash. To change the Z value, press the  $\wedge$  key. The setting will be saved automatically after the Z keep flashing for 10 seconds.

For the relay working type, pls ref the following lists.

No.	Relay working type
1	work with power on. the relay come to be close when more than the set value.
3	work with power on. the relay come to be open when more than the set value.

press the >> key once and the upper digit tube (setting value) come to flash. to change the value one by one, press the >>,  $\wedge$  key. the lower digit tube (a---to set the scale) come to flash. to change the value one by one, press the >>,  $\wedge$  key. go on with the >>> key, and the upper one (b---to set the scale) come to flash again. to change the value one by one, press the >>,  $\wedge$  key. the setting will be saved automatically after 8s.

3. Upper window display the current value and the other display the setting value when instrument is working. the current value = the actual frequency value  $\times a \div b$  (set the scale by a, b)

4. For the RST key, it is not available here.

5. For PAUSE key, it is not available here.

6. For connection, pls ref the electrical connection drawing on the page 3.

7. Cycle: 1s Measure range: 0-9999 Hz

## f. DM48JR/DM72JR 4 digit one passage counter with scale

1. Keeping the >> key pressed for 10 seconds, the upper digit tube come to flash like XY-Z. For XY, 29-30 is available. As for the details, pls ref the above function lists. To change the XY value, press the  $\wedge$  key. The setting will be saved automatically after the XY keep flashing for 10 seconds.

2. Pressing the >>> key, the Z digit tube will come to flash. To change the Z value, press the  $\wedge$  key. The setting will be saved automatically after the Z keep flashing for 10 seconds.

For the relay working type , pls ref the following lists.

No.	Relay working type
1	work with power on.the relay come to be close when more than the set value.
2	doesn't work with power on(make it work by the RST key ).the relay come to be close when more than the set value.
3	work with power on.the relay come to be open when more than the set value.
4	doesn't work with power on(make it work by the RST key ).the relay come to be open when more than the set value .
5	work with power on.the relay come to be close when more than the set value. Instrument reset automatically after 5 seconds.
6	doesn't work with power on (make it work by the RST key ).the relay come to be close when more than the set value Instrument reset automatically after 5 seconds.

3.press the >> key once and the upper digit tube(setting value) come to flash. to change the value one by one,press the  $\Delta$  key . go on with the >>key, and the lower one(the scale:0.001-9.999)come to flash again.to change the value one by one,press the >> ,  $\Delta$  key .the setting will be saved automatically after 8s.

4.For the RST key, instrument will come to reset by the key.

5.For PAUSE key, it is not available here.

6.Connecting the PAU to COM terminal,instrument will come to count down.For connection,pls ref the electrical connection drawing on the page 3 .

7. Max. counting speed:10000 pcs Scale:0.001-9.999 Measure range:0-9999 /9999-0

#### f. DM48J8R/DM72J8R 8 digit one passage counter with scale

1. Keeping the >> key pressed for 10 seconds,the upper digit tube come to flash like XY-Z.For XY, 31-32 is available.As for the details,pls ref the above function lists. To change the XY value , press the  $\Delta$  key.The setting will be saved automatically after the XY keep flashing for 10 seconds.

2.Pressing the>>>key, the Z digit tube will come to flash.To change the Z value , press the  $\Delta$  key.The setting will be saved automatically after the Z keep flashing for 10 seconds.

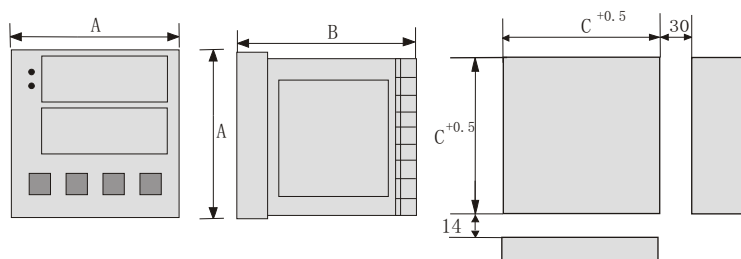
For the relay working type , pls ref the following lists.

No.	Relay working type
1	work with power on.the relay come to be close when more than the set value.
3	work with power on.the relay come to be open when more than the set value.
5	work with power on.the relay come to be close when more than the set value. Instrument reset automatically after 5 seconds.



- 3.For DM48J8R/DM72J8R 8 digit one passage counter with scale, 8 digit tube(upper 4 digit and lower 4 one) display the set value when setting and display the current value when instrument is working.
- 4.For the RST key, instrument will come to reset by the key.
- 5.For PAUSE key, it is not available here.
- 6.Connecting the PAU to COM terminal,instrument will come to count down.For connection,pls ref the electrical connection drawing on the page 3 .
7. Max. counting speed:10000 pcs Scale:0.001-9.999 Measure range:0-9999 /9999-0

## 8.DIMENSION AND INSTALLATION HOLE DIMENSION( unit: mm)



型号 Model	A	B	C
DM48	48mm	78mm	45mm
DM72	72mm	78mm	68mm

## 9 PACKAGING NOITICE

- a, Complete packaging includes: instrument, instrument supports brackets and screws, instrument user manual, product label, connection drawing label,
- b, Guarantee peroid: 12 months from date of shipping.