



JDM1 Series
Counting Relay

User Instruction

Safety Warning

- ① Only professional technicians are allowed for installation and maintenance.
- ② Installation in any damp, condensed-phase environment with inflammable and explosive gas is forbidden.
- ③ When the product is being installed or maintained, the power must be switched off.
- ④ You are prohibited from touching the conductive part when the product is operating.
- ⑤ The product shall be stored, installed and used in accordance with the rated control power supply voltage and specified conditions indicated in the user instructions.
- ⑥ The products shall be properly wired in strict accordance with the wiring diagram.

1 Use Purpose

JDM1 series counting relay (hereinafter referred to as the counter) is mainly used as counting or counting control component in the control circuit with AC frequency of 50Hz/60Hz, rated control power supply voltage up to 380V and DC rated control power supply voltage up to 240V.

2 Key Technical Parameters

Table 1 Ambient Conditions

Normal use conditions	Ambient temp.: -5°C~+40°C; average value within 24h not exceeding +35°C; altitude not exceeding 2,000m.
Atmospheric conditions	RH shall not exceed 50% when maximum temperature is +40°C; in case of lower temperature, higher RH is allowed. Measures should be taken against occasional condensation due to temperature change.
Installation category	II
Transport and storage conditions	-25°C~+55°C

Table 2 Product Specifications and Main Technical Parameters

Model	JDM1-9L, JDM1-9H	JDM1-14L, JDM1-14LM, JDM1-14H, JDM1-14HM	JDM1-48L8, JDM1-48L8M, JDM1-48H8, JDM1-48H8M, JDM1-48L11, JDM1-48L11M, JDM1-48H11, JDM1-48H11M
Function code	L: low speed count 30 times/s; H: high speed count 200 times/s 8: 8 pins; 11: 11 pins None: without power-off memory; M: with power-off memory		
Counting digit	4 digits		
Counting mode	Add count		
Input signal	Contact input, NPN sensor input, optocoupler input		
External sensor power supply	12VCD, 30mA max		
Output mode	N		
Counting error	≤±1 time		
Reset mode	Panel button reset, external terminal reset		

Table 2 (continued)

Model	JDM1-9L, JDM1-9H	JDM1-14L, JDM1-14LM, JDM1-14H, JDM1-14HM	JDM1-48L8, JDM1-48L8M, JDM1-48H8, JDM1-48H8M, JDM1-48L11, JDM1-48L11M, JDM1-48H11, JDM1-48H11M
Installation method	Panel type		
Power-off memory	More than 10 years		
Number of contacts	1 group of change-over		

Table 3 Main Circuit and Auxiliary Circuit Technical Parameters

No.	Product model	JDM1-9, JDM1-14, JDM1-48		
1	Rated control supply voltage U_s (V), frequency (Hz)	AC/DC24V~48V, AC/DC100V~240V, AC220V, AC380V, 50Hz/60Hz		
2	Allowable fluctuation range of rated control power supply voltage	85% U_s ~110% U_s		
3	Agreed free air heating current I_{th} (A)	3		
4	Rated operating voltage U_e (V)	AC220V	AC380V	DC220V
5	Utilization category and rated operating current I_e (A)	AC-15	AC-15	DC-13
		0.75A	0.47A	0.27A
6	Rated insulation voltage U_i (V)	380V		
7	Rated impulse withstand voltage U_{imp} (kV)	4		
8	Enclosure protection class (if applicable)	IP20		
9	Pollution class	Class 3		
10	Type and maximum value of short circuit protection	RT36-00/6A		
11	Size of terminal tightening screw (or nut)	M3 (JDM1-9)		
12	Torque of terminal tightening screw (N·m)	0.5 (JDM1-9)		
13	Electrical life/mechanical life (10,000 times)	10/100		

Table 4 Immunity to Interference

No.	Test type	Test level
1	Electrostatic discharge immunity test	8kV (air discharge)
2	RF electromagnetic field immunity test	10V/m

Table 4 (continued)

No.	Test type	Test level
3	Electrical fast transient/burst immunity test	2kV/5kHz on the power supply side
4	Surge immunity test	1kV (wire to wire)

3 Installation

3.1 Outline and installation size: see Figure 1~ Figure 3, unit: mm.

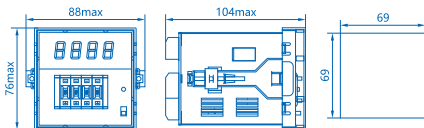


Figure 1 Outline and Installation Size of JDM1-9

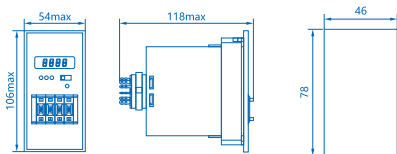


Figure 2 Outline and Installation Size of JDM1-14

3.2 Panel diagram: see Figure 4~ Figure 6; wiring method: see Figure 7~ Figure 9; wiring method: see Figure 10; working sequence diagram: see

Figure 11.

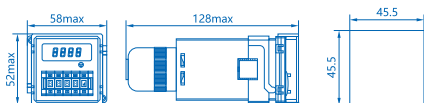


Figure 3 Outline and Installation Size of JDM1-48

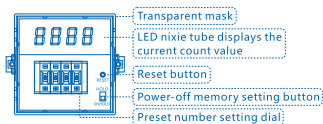


Figure 4 Panel Diagram of JDM1-9

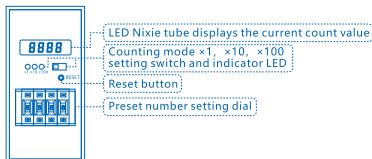


Figure 5 Panel Diagram of JDM1-14

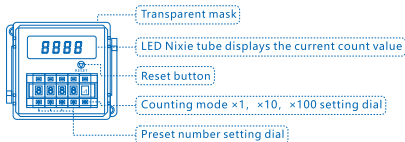


Figure 6 Panel Diagram of JDM1-48

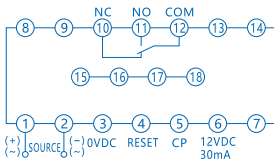


Figure 7 Wiring Diagram of JDM1-9

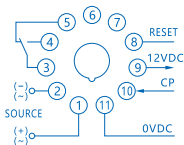


Figure 8 Wiring Diagram of JDM1-14, JDM1-48 (11 pins)

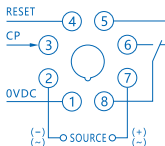


Figure 9 Wiring Diagram of JDM1-48 (8 pins)

Counting wiring method				Reset wiring method
CP signal input	Contact input	Sensor input	Optocoupler input	
		<p>NPN type sensor</p>		

Figure 10 Wiring Method

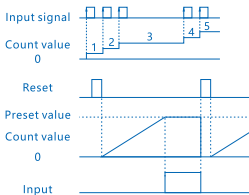


Figure 11 Working Sequence Diagram

Notes:

- 1) The product uses the panel type installation. If you want to realize the rail type installation, CZF11A-E base can be used to support JDM1-14 and JDM1-48 (11 pins) and CZS08C base can be used to support JDM1-48 (8 pins). When the base is installed and used, it must be aligned with the foot position, and the plug boss on the counter should be aligned with the groove of the base.
- 2) If contact input is used for counting signal, the device with good contact reliability should be selected. In case of extra counting due to poor contact or rebound of the contact, add $1\mu\text{F}\sim 10\mu\text{F}$ capacitance (typical value is $4.7\mu\text{F}$) at the input end. The width of the pulse voltage signal should be greater than or equal to 10ms, the duty cycle should be 1:1, and the voltage amplitude should be 5V~30V. Input the counting signal after the counter is powered on or reset for 50ms, otherwise counting instability may occur, and the duration of the external reset signal should be greater than 50ms.
- 3) During the counting process, it is not appropriate to toggle the dial switch of the counter. To recount, the counter should be reset first.
- 4) The input wire of counting signal and reset signal of the counter should be double stranded shielded wire. The shielding layer should be grounded at the signal input end close to the counter. The connecting wire should not be too long, and should be wired separately from the strong current wire, and shall not be twisted or use the same-line pipe with the strong current wire.
- 5) Necessary measures shall be taken for the variable frequency motor to prevent the interference with the counter.
- 6) The power supply should be connected by relay or switch, instead of by voltage regulator slowly.

4 Maintenance

4.1 The terminal of the counter should be tightened on a regular basis.

4.2 Avoid squeezing the product; the product should be stored in a well-ventilated place.

4.3 For equipment that may cause material economic losses or personal safety, safety measures such as secondary circuit protection should be taken.

Table 5 Fault Analysis and Troubleshooting

Symptoms	Cause analysis	Troubleshooting method
The nixie tube does not display	Whether the wire and the terminal are in reliable contact, and whether the power terminal is correctly wired.	Connect wires reliably according to the user instructions.
The product fails to count	Incorrect wiring.	Check whether the wiring is correct according to Figure 10.

5 **Environmental Protection**

In order to protect the environment, the product or product parts should be disposed of according to the industrial waste treatment process, or be sent to the recycling station for assortment, dismantling and recycling according to local regulations.

CHINT

QC PASS

JDM1 series
Counting Relay
IEC/EN 60947-5-1

JDQ Check 10

Test date: Please see the packing

ZHEJIANG CHINT ELECTRICS CO., LTD.

CHINT

CHINT ELECTRICS

JDM1 series Counting Relay User Instruction

Zhejiang Chint Electronics Co., Ltd.

Add: No.1, CHINT Road, CHINT Industrial Zone, North Baixiang,
Yueqing, Zhejiang 325603, P.R.China

E-mail: global-sales@chint.com

Website: <http://en.chint.com>

