



XJ3 Phase-Failure and Phase-Sequence Protective Relay

1. General

XJ3 series phase failure and phase sequence protection relay is used to provide overvoltage, undervoltage and phase failure protection in three-phase AC circuits and phase failure protection in three-phase AC circuits and phase sequence protection in irreversible transmission devices and features reliable performance, wide application and convenient use.

The protector starts to function when it is connected to the power control circuit in accordance with the drawing. When the fuse of any phase of the three-phase circuit is open or when there is a phase failure in the power supply circuit, the XJ3 operates immediately to control the contact to cut off the power supply of the AC contactor coil of the main circuit so that the main contact of the AC contactor operates to provide the load with phase failure protection.

When the phases of a three-phase irreversible device with predetermined phase sequence are connected incorrectly due to maintenance or change of the power supply circuit, the XJ3 series will identify the phase sequence, stop supplying power to the power supply circuit and achieve the goal of protecting the device.

2. Type designation

XJ3 - □ / □

Rated power supply voltage

Remodel (derived model)

G: monochrome luminotron fault indication type;

S: two-color luminotron fault indication type;

D: multifunction protection, multimode indication type

Design sequence No.

Phase-failure and phase-sequence protective relay

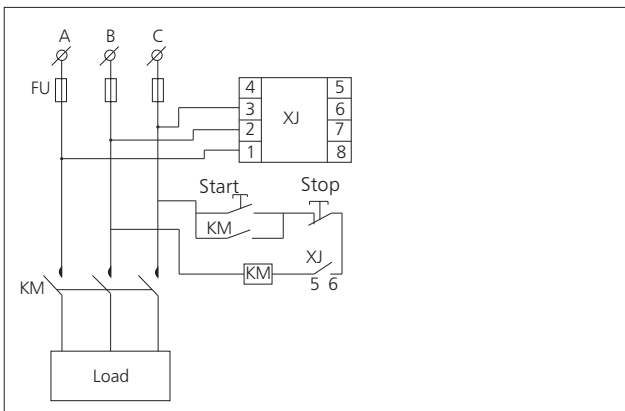
3. Technical data

| Type | XJ3-G | XJ3-S | XJ3-D |
|---|---|-------|---|
| Protection function | Phase-failure Phase-sequence error & Three phase voltage unbalance $\geq 8\% \sim 13\%$ | | Overvoltage Undervoltage Phase-failure Phase-sequence error |
| Overvoltage protection(AC) | | | 380V~460V 1.5s~4s (adjustable) |
| Undervoltage protection(AC) | | | 300V~380V 2s~9s(adjustable) |
| Operating voltage | AC 380V 50Hz/60Hz, Allowable fluctuating range $\pm 10\%$ | | AC 380V 50Hz |
| Contact number | 1 normally open & 1 normally close | | 1 group changeover |
| Contact capacity | Ue/Ie:AC-15 380V/0.95A; Ith:5A | | Ue/Ie:AC-15 380V/0.47A; Ith:3A |
| Phase-failure and phase-sequence protection | Reacting time $\leq 2s$ | | |
| Electrical life | 1×10^5 | | |
| Mechanical life | 1×10^6 | | |
| Ambient temperature | $-5^{\circ}\text{C} \sim 40^{\circ}\text{C}$ | | |
| Installation mode | TH35-7.5(thickness 1.0 mm)rail | | 35mm Track installation or soleplate mounting |

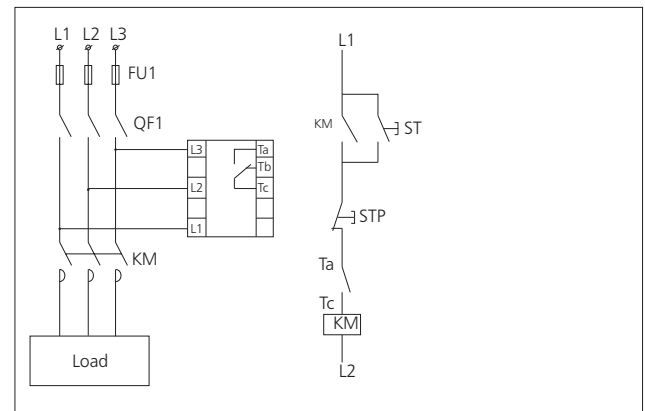
Note: in the example diagram for application circuit, protective relay can provide protection only under the condition of phase-failure occurring at terminal 1, 2, 3 and among three phase of power supply A, B, C.

4. Wiring diagram

XJ3-G, S wiring diagram

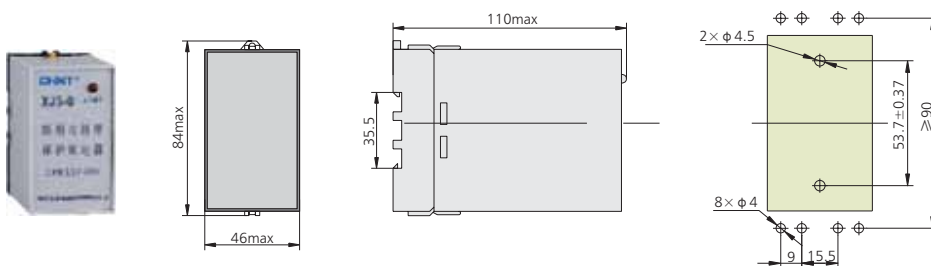


XJ3-D wiring diagram

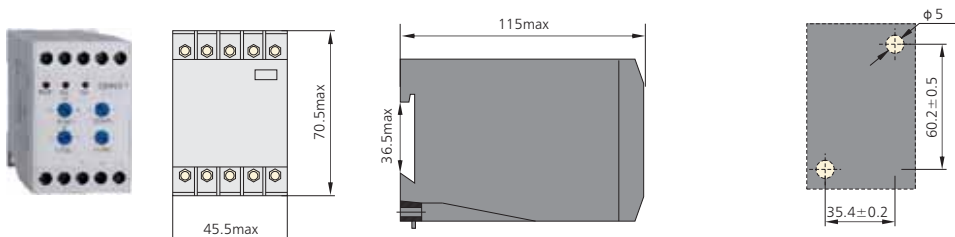


5. Overall and mounting dimensions (mm)

XJ3-G, S profile and installation dimension



XJ3-D profile and installation dimension





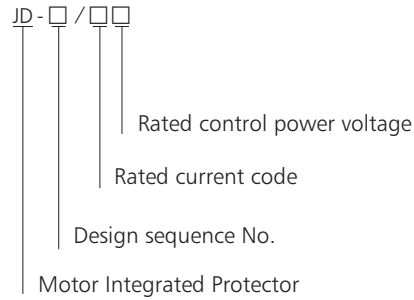
JD-5 Motor Integrated Protector

1. General

JD-5 Motor Integrated Protector (hereinafter referred to as protector) is applicable for overload and phase-failure protection of AC motor @ A.C.50Hz, less than AC690V rated insulation voltage and 0.5A~400A rated operating current for its continuous working or discontinuous working. Protector and AC contactor are generally used cooperatively.

This product meets the requirements of IEC 60947- 4-1.

2. Type designation



3. Operating conditions

3.1 Altitude $\leq 2000\text{m}$.

3.2 Ambient temperature Range: $-5^{\circ}\text{C} \sim +40^{\circ}\text{C}$, with daily average $\leq +35^{\circ}\text{C}$.

3.3 Atmospheric condition: when the highest temperature is $+40^{\circ}\text{C}$, the relative humidity of air shall be no more than 50%, higher relative humidity shall be allowable at lower temperature, for instance air humidity may reach 90% at $+20^{\circ}\text{C}$. As for dews, which contingently appear due to change of temperature, special steps should be taken.

3.4 Pollution Level: Level 3.

3.5 Inclination between installation plane and vertical plane shall $\leq \pm 5^{\circ}$.

3.6 In the media without explosive risk, and no gases that may be corrosive to metal and damage insulation in the media together with at places where much conducting dust being in existence.

3.7 At places where rain & snow proof facilities are equipped with and not being full of steam.

3.8 At places without prominence rock, impact and vibration.

3.9 Installation Category: III.

4. Technical data

4.1 Rated insulation voltage AC690V, rated frequency 50Hz, rated operating current 0.5A ~ 400A.

Table 1

| Type | Setting current range (A) | Voltage of control power supply (Supply Voltage) (V) | Suitable motor power (kW) |
|-------------------|---------------------------|--|---------------------------|
| JD-5/80 | 0.5~5 | 220V, 380V, | 0.25~2.5 |
| JD-5/80 | 2~20 | 220V, 380V, | 1~10 |
| JD-5/80 | 20~80 | 220V, 380V, | 10~40 |
| JD-5/400 | 80~200 | 220V, 380V, | 40~100 |
| JD-5/400 | 160~400 | 220V, 380V, | 80~200 |
| JD-5(with buzzer) | 1~80 | 220V, 380V, | 0.5~40 |

4.2 Control circuit: rated insulation voltage AC380V, rated frequency 50Hz, contact parameters refer to Table 2.

Table 2

| Use type | AC-15 | |
|----------------------------------|-------|------|
| Rated operating voltage (V) | 220 | 380 |
| Rated operating current (A) | 1.5 | 0.95 |
| Conventional thermal current (A) | 5 | |

5. Design features

5.1 Three-phase electronic type, tripping grade (trip class): 10A.

5.2 Equipped with function of phase-failure and overload protection.

5.3 Equipped with continuously adjustable device for setting current.

5.4 Three indicators indicate normal, overload and phase-failure status respectively.

5.5 Main circuit adopts feed through wiring.

5.6 Installation mode: use bolts for installation.

6. Protection features

6.1 Operation characteristics under three-phase balanced-load status (see Table 3)

Table 3

| S.N. | I/In | operating time | Test Condition | Ambient temperature |
|------|------|------------------|----------------|---------------------|
| 1 | 1.05 | <2h non-tripping | Cold Status | +20°C |
| 2 | 1.20 | <2h tripping | Hot Status | |
| 3 | 1.50 | <2 min tripping | | |
| 4 | 7.20 | 2s<Tp≤10s | Cold Status | |

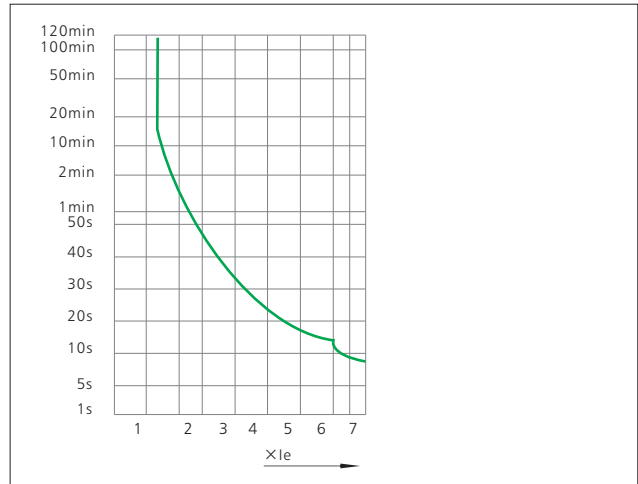
6.2 Operation characteristic under phase-failure status (see Table 4)

Table 4

| S.N. | Multiple of setting current | | operating time | Test Condition | Ambient temperature |
|------|-----------------------------|------------------|------------------|----------------|---------------------|
| | Any two phases | The Third phases | | | |
| 1 | 1.0 | 0.9 | <2h non-tripping | Cold Status | +20°C |
| 2 | 1.15 | 0 | ≤5s | Hot Status | |

6.3 Tripping feature

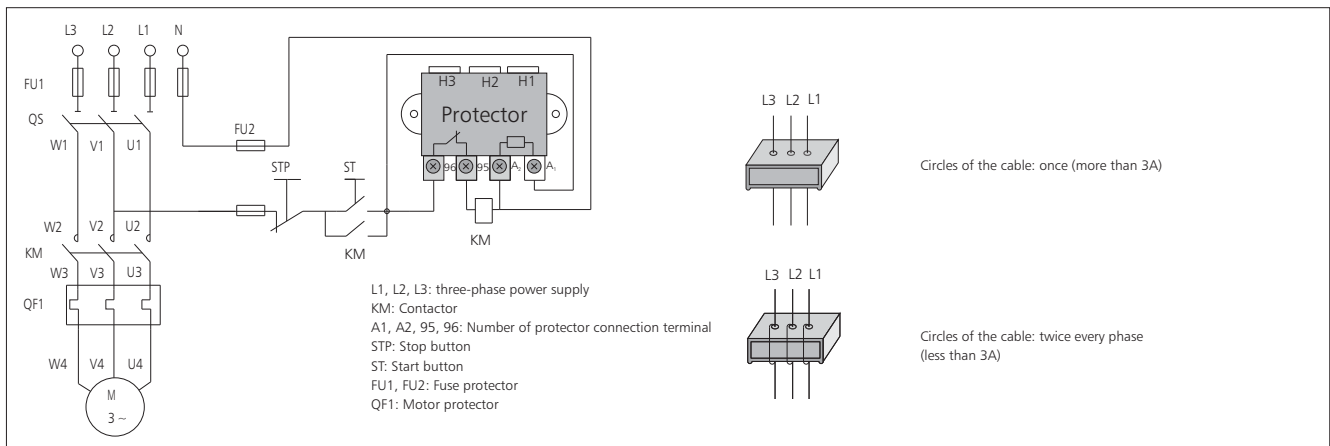
Figure 1



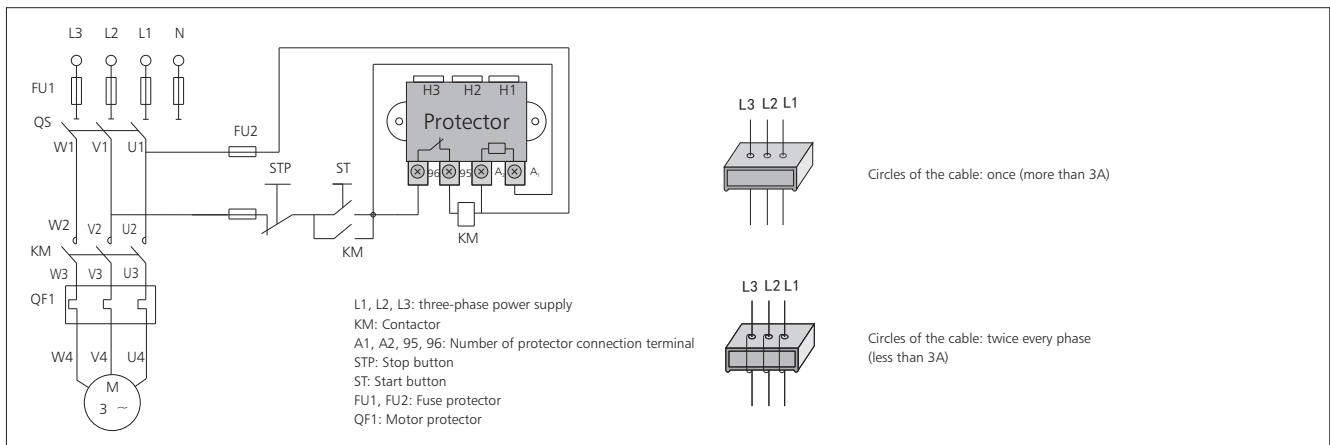
6.4 Reset mode: de-energizing reset

7. Wiring diagram

7.1 Wiring diagram for control power supply @ AC220V voltage

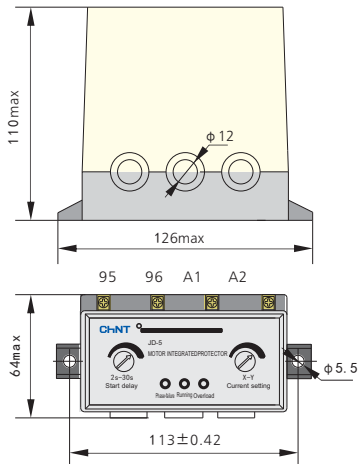


7.2 Wiring diagram for control power supply @ AC380V voltage

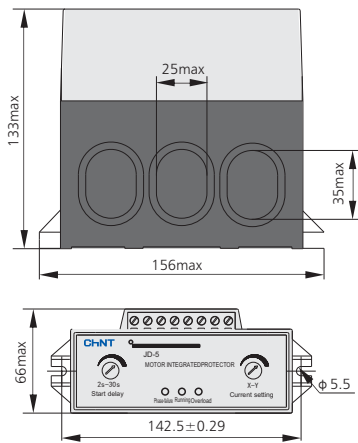


8. Overall and mounting dimensions (mm)

JD-5/80



JD-5/400



9. Ordering information

9.1 Designation, type and specification of protector, select controlling current and voltage (AC220V, AC380V,), setting current range (0.5A~5A, 2A~20A, 20A~80A, 80A~200A 160A~400A, etc) according to operating requirements.

9.2 Order Quantity.