

Phase-sequence Phase-loss Relay

K8DT-PH

Protect motors and other equipment from unstable voltages in the power supply system.

Protect motors and other equipment by detecting phase sequence and phase loss for three-phase power supplies.

- Phase loss detection while the motor is operating.
- Global application with power supply range of 200 to 480 V with one Relay.
- Greater resistance to inverter noise.
- Width of 17.5 mm to reduce space required in panels.
- Push-In Plus Terminal that reduce wiring work.

The use of cage clamps enables wiring with bare stranded wires.

Double-insertion holes for crossover wiring (all terminals).

- UL listed for easy shipping to North America.
- Certified for maritime standards (LR).
- Models added with transistor outputs for superior contact reliability.



Refer to *Safety Precautions* on page 7.

Refer to page 6 for commonly asked questions.



For the most recent information on models that have been certified for safety standards, refer to your OMRON website.

Ordering Information

Phase-sequence Phase-loss Relay

Function	Rated input voltage *	Relay output	Model
Phase sequence and phase loss monitoring	3-phase, 3-wire 200 to 480 VAC	Relay: SPDT contact output	K8DT-PH1CN
		Transistor	K8DT-PH1TN

* The power supply voltage is the same as the rated input voltage.

Options (Order Separately)

Front Cover

Appearance	Model
	Y92A-D1A

Ratings and Specifications

Ratings

Rated input voltage		3-phase, 200 to 480 VAC (3-wire)
Input load		Approx. 2.6 VA
Rated insulation voltage		528 VAC
Operating time	Phase sequence	0.1 s ±0.05 s
	Phase loss	0.1 s max. (when the voltage changes rapidly from 100% to 0% of rated voltage)
Reset method		Automatic reset
Indicators		Power (PWR): Green, Output (OUT): Yellow
Output form		Relay Output: SPDT contact Transistor Output: 1
Output relay ratings		Rated load 5 A at 250 VAC (Resistive load) 5 A at 30 VDC (Resistive load) 1 A at 250 VAC (Inductive load) 0.2 A at 48 VDC (Inductive load) Minimum load: 5 VDC, 10 mA (reference values) Mechanical life: 10 million operations min. Electrical life: 5 A at 250 VAC or 30 VDC: 50,000 operations 3 A at 250 VAC or 30 VDC: 100,000 operations
Transistor output ratings		Rated voltage: 24 VDC (maximum voltage: 26.4 VDC) Maximum current: 50 mA DC
Ambient operating temperature		–20 to 60°C (with no condensation or icing)
Storage temperature		–25 to 65°C (with no condensation or icing)
Ambient operating humidity		25% to 85% RH (with no condensation)
Storage humidity		25% to 85% RH (with no condensation)
Altitude		2,000 m max.
Applicable wires		Stranded wires, solid wires, or ferrules
Applicable wire size		0.25 to 1.5 mm ² (AWG24 to AWG16)
Wire insertion force		8 N max. for AWG20 wire
Screwdriver insertion force		15 N max.
Wire stripping length		8 mm
Ferrule length		8 mm
Recommended flat-blade screwdriver		XW4Z-00B (Omron) SZF 0.4 × 2.5 (Phoenix Contact) 210-719 (Wago) SDI 0.4 × 2.5 × 75 (Weidmuller)
Current capacity		10 A (per pole)
Number of insertions		50 times
Case color		N1.5
Case material		PC, UL 94 V-0
Weight		Approx. 100 g
Mounting		Mounts to DIN Track, or screw mounting
Dimensions		17.5 × 90 × 90 mm (W×D×H)

Specifications

Input frequency range		45 to 65 Hz
Overload capacity		Continuous 528 V
Phase loss detection level		80%±10% of rated input Calculation Formula = 1 – ((Highest phase-to-phase voltage – Lowest phase-to-phase voltage)/ Average three-phase phase-to-phase voltage)
Applicable standards	Conforming standards	EN 60947-5-1 Installation environment (pollution level 2, Overvoltage category III)
	EMC	EN 60947-5-1
	Safety standards	UL 60947-5-1 (Listing), Korean Radio Waves Act (Act 10564), CCC (GB14048.5), LR (Category ENV1.2)
Insulation resistance		20 MΩ min. Between external terminals and case Between input terminals and output terminals
Dielectric strength		2,000 VAC for one minute Between external terminals and case Between input terminals and output terminals
Impulse withstand voltage		6 kV (between live terminals and exposed, non-charged metal parts)
Noise immunity		1,500 V power supply terminal common/normal mode Square-wave noise of 1 μs/100 ns pulse width with 1-ns rise time
Vibration resistance		Frequency: 10 to 55 Hz, 0.35-mm single amplitude 10 sweeps of 5 min each in X, Y, and Z directions
Shock resistance		100 m/s ² , 3 times each in 6 directions along 3 axes
Degree of protection		Terminals: IP20