

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.



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

- 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.

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

K8DT-PH

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	