

Three-phase Voltage, Asymmetry, and Phase-sequence Phase-loss Relay K8DT-PZ

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

Detect overvoltages, undervoltages, voltage asymmetry, phase sequence, and phase loss for three-phase power supplies.

- Phase loss detection while the motor is operating.
 - Global power supply support. (Changed with a switch.)
 - 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 9.
Refer to pages 7 to 8 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

Three-phase Voltage, Asymmetry, and Phase-sequence Phase-loss Relay

Rated input voltage *	Output	Model
3-phase 3-wire mode 200, 220, 230, 240 VAC	Relay: SPDT contact output	K8DT-PZ1CN
	Transistor	K8DT-PZ1TN
3-phase 3-wire mode 380, 400, 415, 480 VAC	Relay: SPDT contact output	K8DT-PZ2CN
	Transistor	K8DT-PZ2TN

Note: The input range is set with a rotary switch.

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

Options (Order Separately)

Front Cover

Appearance	Model
	Y92A-D1A

K8DT-PZ

Ratings and Specifications

Ratings

Rated input voltage		K8DT-PZ1□N: Three-phase, three-wire Mode: 200, 220, 230, or 240 VAC K8DT-PZ2□N: Three-phase, three-wire Mode: 380, 400, 415, or 480 VAC
Input load		K8DT-PZ1: Approx. 1.7 VA K8DT-PZ2: Approx. 2.7 VA
Rated insulation voltage		528 VAC
Operating value setting range		Overvoltage/Undervoltage 2% to 30% of rated input voltage Asymmetry 5% to 22% of rated input voltage Note: The rated input voltage can be switched by using the DIP switches.
Operating value		Overvoltage/Undervoltage Operates at 100% of set value. Asymmetry Asymmetry operating value = Rated input voltage × Asymmetry set value (%) The asymmetry operation will function when the potential difference between the highest and lowest voltage phases equals or exceeds the asymmetry operating value.
Reset value		2% of operating value (fixed)
Reset method		Automatic reset
Operating time setting range	Overvoltage/Undervoltage	0.1 to 30 s
	Asymmetry	0.1 to 30 s
	Phase sequence	0.1 ±0.05 s
	Phase loss	0.1 s max.
Power ON lock time (LOCK)		1 s/5 s (switched by using the DIP switch)
Indicators		Power (PWR): Green, Output (OUT): Yellow, Alarm outputs (ALM): Red
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		50/60 Hz
Overload capacity		Continuous 528 V
Repeat accuracy	Operating value	±0.5% full scale (at 25°C and 65% humidity, rated power supply voltage)
	Operating time	±50 ms (at 25°C and 65% humidity, rated power supply 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 (GB 14048.5), 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