

Phase asymmetry Relay Type PS2DK

Monitoring of Phase-Asymmetry and Phase Sequence

Phasenasymmetrierelais PS2DK



Part number: **P227105**

Phase asymmetry relays PS2DK are used for the protection of electric motors against asymmetries in the 3-phase mains without neutral and for monitoring the phase-sequence.

The switching-point is adjustable and can be adapted to the situation in the mains.

If a motor, running with 2 phases, creates the 3rd phase, the sensitivity can be increased.

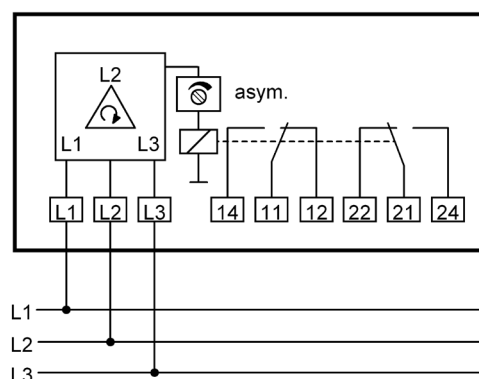
With mains with high harmonics it can be necessary to reduce the sensitivity.

When the sensitivity is reduced to minimum (25% = potentiometer turned fully right), the device works as a phase-sequence relay. It trips only at wrong phase-sequence or missing phase.

If there is a wrong phase-sequence when switching on the device, the relay does not pick up. Monitoring of phase-asymmetry

Functions:

- Monitoring of phase-sequence
- Adjustable sensitivity 5...25 %
- Output-relay with 2 change-over contacts
- Switching delay adjustable 0,1 ... 5 s
- LED for display state of operation



Technical Data

Rated supply voltage Us:	3 AC 400V 50/60Hz
Tolerance	0,85 Us ... 1,1 Us
Power consumption	< 3 VA
Switching point:	
Adjustable asymmetry	from approx. 5 ... 25%, set ex works approx. 15%
Response delay	0.1 ... 5 s
Actuation time	Approx. 0.2 s after phase return
Hysteresis	Approx. 5%
Output relay K1, K2	2 x 1 changeover contact:
Switching voltage	max. AC 400V
Switching current	max. 6A
Switching capacity max. AC cos φ = 1	2000 VA (ohmic load)
Switching capacity max. DC (ohmic)	120W at DC 24V
Nominal operating current i _e for changers	3A AC-15, 250V; 2A DC-13, 24V
Mechanical contact lifespan	3x10 ⁷ switching cycles
Electrical contact lifespan	1x10 ⁵ switching cycles at 240V / 6A 1x10 ⁶ switching cycles at 240V / 2A
Reduction factor at cos φ = 0.3	0.5

Subject to technical changes

EMC-tests			
Emission	EN 61000-6-3 Class B		
Immunity	EN 61000-6-2 industrial environment		
Electrical fast transient/Burst	EN 61000-4-4 ±4 kV Pulse 5/50 ns, f = 5 kHz, t = 15 ms, T = 300 ms		
SURGE immunity	IEC 61000-4-5 ±2 kV		
Electrostatic discharge	IEC 61000-4-2 ± 6 kV contact discharge, ± 8 kV air		
Reliability - failure rate			
EN 61709 / SN29500			
Ambient conditions	Local operation in dry rooms		
Operation time 24/7/365	8760 h/a		
Tu = Tref (component not in operation)	Tu = 40 °C	Tu = 60 °C	Tu = 80 °C
Failure rate (FIT)	781 FIT	1499 FIT	3060 FIT
	100 (146) years	76 years	37 years
Installation conditions			
Permissible ambient temperature	- 20 °C ... + 60 °C		
Permissible storage temperature	- 20 °C ... + 70 °C		
Installation height	≤ 2000 m over N.N.		
Climatic conditions	5-85% rel. F, no condensation		
Permissible wiring temperature	-5 °C ... +70 °C		
Vibration resistance EN 60068-2-6	2 ... 25 Hz ±1,6 mm	25 ... 150 Hz 5 g	
Contact termination			
Push-In spring-type terminal			
Protection class terminals	IP20		
Actuation type	Push-Button		
Number of levels	1		
Solid conductor	1 x 0,14 mm² ... 1,5 mm² / AWG 28 ... 16		
Fine-stranded conductor	1 x 0,14 mm² ... 1,5 mm² / AWG 26 ... 14		
Fine-stranded with insulated ferrule	1 x 0,25 mm² ... 0,75 mm²		
Fine-stranded with uninsulated ferrule	1 x 0,25 mm² ... 1,5 mm²		
Strip length	8 ... 9 mm / 0.31 ... 0.35 inches		
Housing			
Type K			
Dimensions (W x H x D)	22,5 x 75 x 115 mm		
Width	1 M		
Protection class housing	IP40		
IK-Code	IK06 (1 J impact energy)		
Mounting	Snap mounting on 35 mm standard rail EN60715 or M4 screws (additional bar not included)		
Mounting position	any		
Weight	app. 150 g		