VARIMETER
Phase Sequence Relay
MK 9056N

0275083



Your Advantage
- Correct sense of rotation of motors
- Simple wiring

Features
- According to IEC/EN 60 255-1
- Detection of wrong phase sequence
- LED indication of rotation
- 2 changeover contacts
- Wire connection: also 2 x 1.5 mm² stranded ferruled, or 2 x 2.5 mm² solid DIN 46 228-1/-2/-3/-4
- As option with pluggable terminal blocks for easy exchange of devices
  - with screw terminals
  - or with cage clamp terminals
- Width 22.5 mm

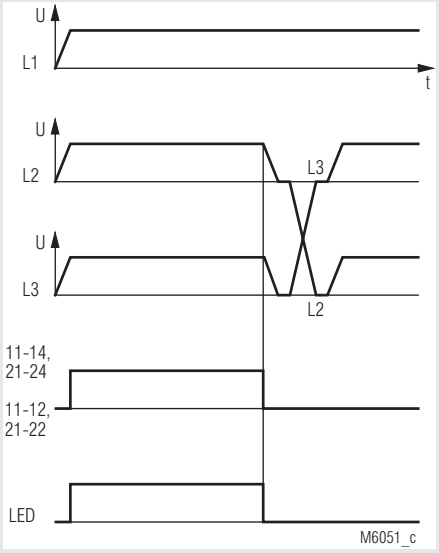
Product Description

The MK 9056N detect wrong phase sequence in 3-phase systems. To monitor phase failure it is more suitable to use an Asymmetry relay e.g. MK 9040N.

Approvals and Markings

A025518

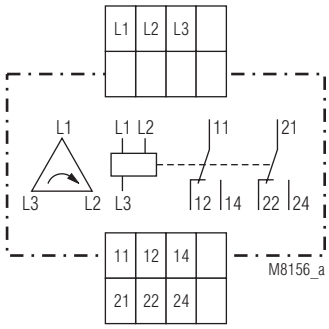
Function Diagram



Indicators

green LED:	on, when corresponding output relay is active

Circuit Diagram



Technical Data

Input

Nominal voltage U_N:	3 AC 42 ... 60 V, 100 ... 127 V 3 AC 220 ... 240, 380 ... 500 V
Voltage range:	0.9 ... 1.1 U_N
Nominal frequency of U_N:	50 / 60 Hz
Nominal consumption:	approx. 2 W

Output

Contact:	2 changeover contacts	
Operate / release delay:	< 100 / 50 ms	
Thermal current I_{th}:	5 A	
Switching capacity		
to AC 15		
NO contact:	3 A / AC 230 V	IEC/EN 60 947-5-1
NC contact:	1 A / AC 230 V	IEC/EN 60 947-5-1
to DC 13		
NO contact:	1 A / DC 24 V	IEC/EN 60 947-5-1
NC contact:	1 A / DC 24 V	IEC/EN 60 947-5-1
Electrical life		
to AC 15 at 3 A, AC 230 V:	5 x 10^5 switch. cycles	IEC/EN 60 947-5-1
Short circuit strength		
max. fuse rating:	4 A gL	IEC/EN 60 947-5-1
Mechanical life:	> 20 x 10^6 switching cycles	

General Data

Operating mode:	Continuous operation	
Temperature range:		
Operation:	- 20 ... + 60°C	
Storage:	- 20 ... + 60°C	
Altitude:	< 2.000 m	
Clearance and creepage distances		
rated impulse voltage / pollution degree:	4 kV / 2	IEC 60 664-1

Connection Terminals

Terminal designation	Signal designation
L1, L2, L3	Connection of the monitoring 3-phase system
11, 12, 14, 21, 22, 24	"incorrect phase sequence-signaling relais (2 changeover contacts)"

All technical data in this list relate to the state at the moment of edition. We reserve the rigth for technical improvements and changes at any time.

Technical Data

EMC

Electrostatic discharge:	8 kV (air)	IEC/EN 61 000-4-2
HF irradiation		
80 MHz ... 2.7 GHz:	10 V / m	IEC/EN 61 000-4-3
Fast transients:	2 kV	IEC/EN 61 000-4-4
Surge voltages		
between		
wires for power supply:	2 kV	IEC/EN 61 000-4-5
between wire and ground:	4 kV	IEC/EN 61 000-4-5
HF wire guided:	10 V	IEC/EN 61 000-4-6
Interference suppression:	Limit value class B	EN 55 011

Degree of protection

Housing:	IP 40	IEC/EN 60 529
Terminals:	IP 20	IEC/EN 60 529

Housing: Thermoplastic with V0 behaviour according to UL subject 94

Vibration resistance: Amplitude 0.35 mm, frequency 10 ... 55 Hz, IEC/EN 60 068-2-6

Climate resistance: 20 / 060 / 04 IEC/EN 60 068-1

Terminal designation: EN 50 005

Wire connection DIN 46 228-1/-2/-3/-4

Screw terminals (integrated):
1 x 4 mm² solid or
1 x 2.5 mm² stranded ferruled or
2 x 1.5 mm² stranded ferruled or
2 x 2.5 mm² solid

Insulation of wires or sleeve length: 8 mm

Plug in with screw terminals

max. cross section for connection:
1 x 2.5 mm² solid or
1 x 2.5 mm² stranded ferruled

Insulation of wires or sleeve length: 8 mm

Plug in with cage clamp terminals

max. cross section for connection:
1 x 4 mm² solid or
1 x 2.5 mm² stranded ferruled

min. cross section for connection: 0.5 mm²

Insulation of wires or sleeve length: 12 $^{\pm 0.5}$ mm

Wire fixing: Plus-minus terminal screws M 3.5 box terminals with wire protection or cage clamp terminals

Fixing torque: 0.8 Nm

Mounting: DIN rail IEC/EN 60 715

Weight: approx. 140 g

Dimensions

Width x height x depth:

MK 9056N:	22.5 x 90 x 97 mm
MK 9056N PC:	22.5 x 111 x 97 mm
MK 9056N PS:	22.5 x 104 x 97 mm

CCC-Data

Auxiliary voltage U_N: 3 AC 42-60 V, 3 AC 100-127V, 3 AC 220-240 V

Switching capacity to AC 15

NO contact: 1,5 A / AC 230 V IEC/EN 60 947-5-1

Technical data that is not stated in the CCC-Data, can be found in the technical data section.

Standard Types

MK 9056N.12 AC 380 ... 500 V 50 / 60 Hz

Article number:	0054183
• Output:	2 changeover contacts
• Nominal voltage U_N:	AC 380 ... 500 V
• Width:	22.5 mm

Ordering Ecample

MK 9056N. 12 _ _ / 3 AC 380 ... 500 V 50 / 60 Hz

- 50 / 60 Hz: Nominal frequency
- 3 AC 380 ... 500 V: Nominal voltage
- 12: Type of terminals
  without indication:
  terminal blocks fixed with screw terminals
  PC (plug in cageclamp):
  pluggable terminal blocks with cage clamp terminals
  PS (plug in screw):
  pluggable terminal blocks with screw terminals
- _ _: Contacts
- MK 9056N.: Type

Options with Pluggable Terminal Blocks



Screw terminal (PS/plugin screw)



Cage clamp (PC/plugin cage clamp)

Notes

Removing the terminal blocks with cage clamp terminals

1. The unit has to be disconnected.
2. Insert a screwdriver in the side recess of the front plate.
3. Turn the screwdriver to the right and left.
4. Please note that the terminal blocks have to be mounted on the belonging plug in terminations.

