Monitoring Technique

VARIMETER Phase Sequence Relay MK 9056N

Translation of the original instructions





Your Advantage

- Correct sense of rotation of motors
- Simple wiring

Features

- According to IEC/EN 60255-1
- 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 46228-1/-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

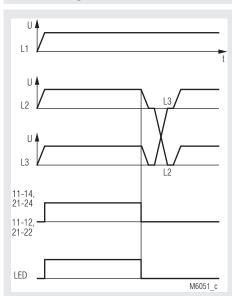
The MK 9056N detect wrong phase sequence in 3-phase systems. To monitor phase failure it is more suitable to use an Asymmetry relay e.g. MK 9040N.

Approvals and Markings





Function Diagram



Indicators

Green LED: On, when corresponding output relay is

active

Technical Data

Input

Nominal voltage U_N: 3 AC 42 ... 60 V, 100 ... 127 V 3 AC 220 ... 240, 380 ... 500 V

0.9 ... 1.1 U_N Voltage range: Nominal frequency of U_N: 50 / 60 Hz Nominal consumption: Approx. 2 W

Output

2 changeover contacts Contact: Operate / release delay: < 100 / 50 ms

Thermal current I,: 5 A

Switching capacity To AC 15

NO contact: 3 A / AC 230 V IEC/EN 60947-5-1 NC contact: 1 A / AC 230 V IEC/EN 60947-5-1

To DC 13

NO contact: 1 A / DC 24 V IEC/EN 60947-5-1 NC contact: 1 A / DC 24 V IEC/EN 60947-5-1

Electrical life

To AC 15 at 3 A, AC 230 V: Short circuit strength

5 x 105 switch. cycles IEC/EN 60947-5-1

Max. fuse rating: Mechanical life:

IEC/EN 60947-5-1 4 A gG/gL

> 20 x 10⁶ switching cycles

General Data

Operating mode: Temperature range: Continuous operation

Operation: Storage: Altitude:

- 20 ... + 60°C - 20 ... + 60°C < 2000 m

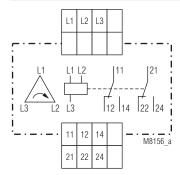
Clearance and creepage

distances

Rated impulse voltage / 4 kV / 2 pollution degree:

IEC 60664-1

Circuit Diagram



Connection Terminals

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

Technical Data

EMC

Electrostatic discharge: 8 kV (air) IEC/EN 61000-4-2

HF irradiation

80 MHz ... 2.7 GHz: 10 V / m IEC/EN 61000-4-3 Fast transients: 2 kV IEC/EN 61000-4-4

Surge voltages

Between

wires for power supply:2 kVIEC/EN 61000-4-5Between wire and ground:4 kVIEC/EN 61000-4-5HF wire guided:10 VIEC/EN 61000-4-6Interference suppression:Limit value class BEN 55011

Degree of protection

 Housing:
 IP 40
 IEC/EN 60529

 Terminals:
 IP 20
 IEC/EN 60529

Housing: Thermoplastic with V0 behaviour according to UL subject 94

Vibration resistance: Amplitude 0.35 mm,

frequency 10 ... 55 Hz, IEC/EN 60068-2-6

Climate resistance: 20 / 060 / 04 IEC/EN 60068-1

Terminal designation: EN 50005
Wire connection DIN 46228-1/-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:

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

Mounting: DIN rail IEC/EN 60715

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 60947-5-1



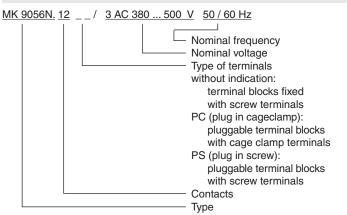
Technical data that is not stated in the CCC-Data, can be found in the technical data section.

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



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.
- Please note that the terminal blocks have to be mounted on the belonging plug in terminations.

