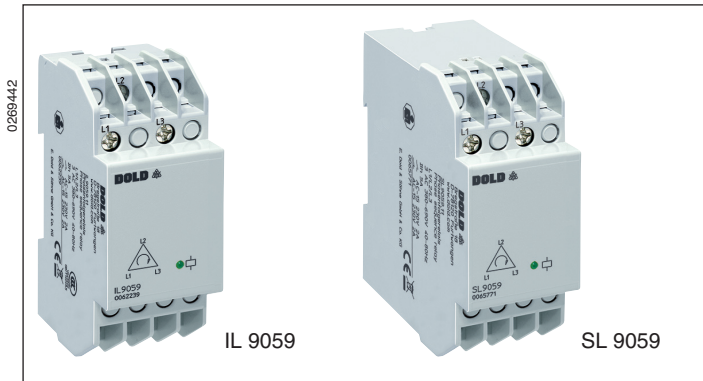


VARIMETER Phase Sequence Module IL 9059, SL 9059

Translation
of the original instructions



Your Advantages

- Protects mobile equipment against damage or destruction coming from wrong phase sequence

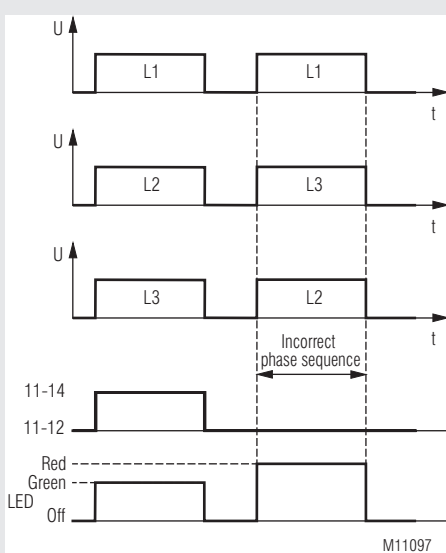
Features

- According to IEC/EN 60255-1
- Detection of incorrect phase sequence
- No separately auxiliary voltage necessary
- Nominal voltage range 3 AC 380 ... 690 V
- Suitable for operation with inverters (f = 40 ... 80 Hz)
- Relay output: 1 changeover contact
- Extended temperature range
- Devices available in 2 enclosure versions:
 - IL 9059: Depth 59 mm, with terminals at the bottom for installation systems and industrial distribution systems according to DIN 43880
 - SL 9059: Depth 98 mm, with terminals at the top for cabinets with mounting plate and cable duct
- Width: 35 mm

Product Description

The phase sequence relays IL and SL 9059 of the VARIMETER series monitor compliance with the correct phase sequence L1 - L2 - L3 and the presence of the three phase voltages in a three-phase system.

Function Diagrams



Approvals and Markings

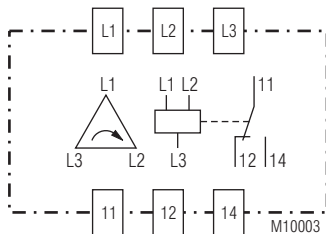


*) only IL 9059

Applications

In many application with pumps, conveyors and fans efficient monitoring systems should help to detect failures and misfunctions in time, to avoid damage and long times of non-operation. Besides speed and frequency the monitoring of phase sequence is very important. The phase sequence relay with it's wide voltage range of 3AC380-690V detects a wrong phase sequence and signals via a galvanically separated relay contact the wrong rotation of a motor. By integrating the relay output into the enabling circuit of a plant, the unit disables the start of the plant in the case of wrong phase sequence. especially portable equipment can be protected in this way.

Circuit Diagrams



Indicators

- 2-colour LED
- Green: Correct phase sequence contacts 11-14 closed
- Red: Incorrect phase sequence contacts 11-12 closed

Connection Terminals

Terminal designation	Signal description
L1, L2, L3	Input circuit L1 (red), L2 (blue), L3 (grey)
11,12,14	Changeover contact

Technical Data

Input circuit

Nominal voltage U_N:	3 AC 380 ... 690 V
Voltage range:	0.85 ... 1.1 U_N (3 AC 320 ... 760 V)
Nominal frequency:	Approx. 3 VA
Frequency range:	40 ... 80 Hz (main frequency); suitable for operation with inverters with independent pulse frequency

Output

Contact	
IL/SL 9059:	1 changeover contacts
OA 9059:	1 NC contact
Contact material:	AgNi 0.15 gold plated
Switching voltage:	AC 250 V
Thermal current I_{th}:	5 A
Switching capacity	
to AC 15:	2 A / AC 230 V IEC/EN 60947-5-1
To DC 13:	2 A / DC 24 V IEC/EN 60947-5-1
Electrical life:	1.5 x 10 ⁵ switching cycles
Short circuit strength	
max. fuse rating:	4 A gG / gL IEC/EN 60947-5-1
Mechanical life:	≥ 30 x 10 ⁹ switching cycles

General Data

Operating mode:	Continuous operation	
Temperature range		
Operation:	- 30 ... + 70 °C	
Storage:	- 40 ... + 70 °C	
Relative air humidity:	93 % at 40 °C	
Altitude:	≤ 2000 m	
Clearance and creepage distances		
Rated rated impulse voltage voltage / pollution degree;		
Output to Input:	6 kV / 3	IEC 60664-1
EMC		
Electrostatic discharge (ESD):	8 kV (air)	IEC/EN 61000-4-2
HF irradiation		
80 MHz ... 1 GHz:	10 V / m	IEC/EN 61000-4-3
1 GHz ... 2 GHz:	3 V / m	IEC/EN 61000-4-3
2 GHz ... 2.7 GHz:	3 V / m	IEC/EN 61000-4-3
Fast transients:	2 kV	IEC/EN 61000-4-4
HF-wire guided:	30 V / m	IEC/EN 61000-4-6
Surge voltages:	2 kV	IEC/EN 61000-4-5
Interference suppression:	Limit value class B	EN 55011
Degree of protection		
Housing:	IP 40	EN 60529
Terminals:	IP 20	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:	30 / 070 / 04 IEC/EN 60068-1	
Wire connection:	2 x 2.5 mm ² solid DIN 46228 2 x 1.5 mm ² stranded ferruled DIN 46228-1 /-2 /-3	
Wire fixing:	Flat terminals with self-lifting clamping piece EN 60999	
Fixing torque:	0.8 Nm	
Mounting:	DIN rail IEC/EN 60715	
Weight:		
IL 9059:	Approx. 215 g	
SL 9059:	Approx. 245 g	

Dimensions

Width x height x depth:	
IL 9059:	35 x 90 x 59 mm
SL 9059:	35 x 90 x 98 mm

Standard Types

IL 9059.11 3 AC 380 ... 690 V 40 ... 80 Hz
for mounting in consumer units or industrial distribution systems

Article number:	0062239
• Output:	1 changeover contact
• Nominal voltage U_N :	3 AC 380 ... 690 V
• Frequency range:	40 ... 80 Hz
• De-energized on trip	
• Width:	35 mm

SL 9059.11 3 AC 380 ... 690 V 40 ... 80 Hz
for cabinets with mounting plate

Article number:	0065771
• Output:	1 changeover contact
• Nominal voltage U_N :	3 AC 380 ... 690 V
• Frequency range:	40 ... 80 Hz
• De-energized on trip	
• Width:	35 mm