DOLD Measuring Relays

Phase Monitor Relays

Overview

RL 9877, RN 9877 Varimeter Series

RL 9877 and RN 9877 VARIMETER series measuring relays monitor overvoltage, undervoltage, voltage range, phase asymmetry and phase sequence in 3-phase or single-phase systems. The measurement is very simple and without extensive wiring as there is no auxiliary power supply necessary. The monitoring functions are easily selectable using a single turn switch without complex menu structure. The early detection of up-coming break downs and preventive maintenance avoid expensive damages. As the user, you profit from the reliability and availability of your plant.

RL 9877

RN 9877

Features

RL 9877, RN 9877

- According to IEC/EN 60255-1
- For monitoring of AC 3- and single-phase with 50 /60 Hz
- Detection of
  - Overvoltage
  - Undervoltage
  - Voltage range excess
  - Phase failure
  - Phase asymmetry
  - Missing neutral e.g. broken neutral wire
  - And phase sequence in 3-phase systems
- With or without neutral
- Without separately auxiliary voltage (internal supply from all 3 phases)
- Output: 1 changeover contact
- De-energized on trip
- Adjustable hysteresis for reset
- Adjustable switching delay
- Fast fault detection
- Width:
  - RL 9877: 35 mm
  - RN 9877: 52.5 mm

Application

- Monitoring of three-phase voltage systems to identify overvoltage and undervoltage
- Indication of phase sequence in 3-phase systems, phase failure, and voltage asymmetry
- Monitoring of voltage systems with motors
- Changeover to emergency supply after failure detection

Approvals

RL 9877, RN 9877

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Phase Monitor Relays			
Part Number	***Price***	***Description***	***Drawing Link***
RL9877-11	$120.00	DIN rail mount, 80-230 VAC input voltage, SPDT, 5A contact rating, screw terminal(s), LED indicator(s), phase reversal, phase unbalance, overvoltage, undervoltage, voltage range and neutral protection.	PDF
RL9877-11-120	$116.00	DIN rail mount, 80-230 VAC input voltage, SPDT, 5A contact rating, screw terminal(s), LED indicator(s), phase reversal, phase loss and phase unbalance protection.	PDF
RN9877-0103P3W525V	$121.00	DIN rail mount, 175-525 VAC input voltage, SPDT, 5A contact rating, screw terminal(s), LED indicator(s), phase reversal, phase unbalance, overvoltage, undervoltage and voltage range protection.	PDF
RN9877-1203P4W525V	$110.00	DIN rail mount, 175-525 VAC input voltage, SPDT, 5A contact rating, screw terminal(s), LED indicator(s), phase reversal, phase loss and phase unbalance protection.	PDF
RN98773P4W525V	$122.00	DIN rail mount, 175-525 VAC input voltage, SPDT, 5A contact rating, screw terminal(s), LED indicator(s), phase reversal, phase unbalance, overvoltage, undervoltage, voltage range and neutral protection.	PDF

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Technical Specifications						
Part Number		***RL9877-11***	***RL9877-11-120***	***RN9877-0103P3W525V***	***RN9877-1203P4W525V***	***RN98773P4W525V***
Input Voltage Range		3/N AC 80-230V / 45-130V 1- or 3-phase without / with neutral 3 AC 80-230V 3-phase without neutral		3/N AC 175-525V / 100-300V 1- or 3-phase without / with neutral 3 AC 175-525V 3-phase without neutral		
Phase Loss		No	Yes	No	Yes	No
Voltage Monitoring		Yes	No	Yes	No	Yes
Measuring Voltage		3/N AC 80-230V/ 45-130V	3 AC 80-230V	3/N AC 175-525V/ 100-300V	3 AC 175-525V	
Voltage Range		0.85 UN-1.1 UN				
Phase Unbalance		Unit trips if sequence of the three phases is anything other than A-B-C				
Hysteresis		Infinite adjustable 4 ... 20 %				
Phase Asymmetry Value		Infinite adjustable 4 … 20 %				
Life*	***Electrical***	To AC 15 at 1 A, AC 230V: Typ. 3 x 105 switching cycles				
	Mechanical	> 30 x 106 switching cycles				
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				
Response Times		Infinite adjustable instantaneous, 2-30 s				
Power Consumption		Approx. 7VA				
Temperature		Operation: - 4 to + 131 °F Storage: - 13 to + 140 °F Relative air humidity: 93 % at 104 °F				
Mounting		DIN rail IEC/EN 60715				
Indicator LED		Green LED ON: "On, when supply connected" Red LED U: "On, when overvoltage" Red LED <U: "On, when undervoltage" Yellow LED Asym.“Indicates a voltage asymmetry in 3-phase systems or loss of neutral" Yellow LED L1L2L3: "Indicates wrong phase sequence in 3-phase systems or loss of neutral"				
Switching delay		0-30 s				
Weight (lb)		Approx. 0.25		Approx. 0.28		
Wire Size		AWG 24-12		For terminals 11, 12, 14: AWG 24 - 12 Sol/Str terminals L1, L2, L3, N: AWG 30 - 10 Sol/Str T		
Tightening Torque		0.6 Nm	0.7 Nm	For terminals 11, 12, 14: AWG 24 - 12 Sol/Str Torque 0.6 Nm For terminals L1, L2, L3, N: AWG 30 - 10 Sol/Str Torque 0.7 Nm	For terminals 11, 12, 14: AWG 24 - 12 Sol/Str Torque 0.6 Nm For terminals L1, L2, L3, N: AWG 30 - 10 Sol/Str Torque 0.7 Nm	For terminals 11, 12, 14: AWG 24 - 12 Sol/Str Torque 0.6 Nm For terminals L1, L2, L3, N: AWG 30 - 10 Sol/Str Torque 0.7 Nm
Approvals		cULus, CE				

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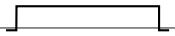
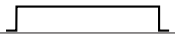
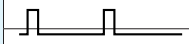
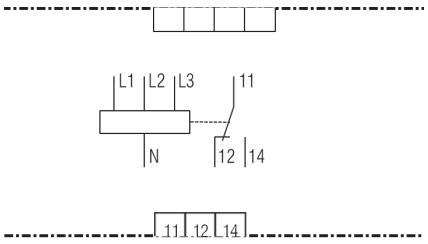
PMRRL-TL LED Indication

Table - LED Indication		
LED Status*	***Indicator***	
Green Steady		Normal (Relay ON)
Green Flashing		Restart (Delay)
Red Steady		Reversal
Red Flashing		Loss
		Low Volt (Undervoltage)

RN9877, RL9877 LED Indication

Table - LED Indication	
LED Status*	***Indicator***
Green	Normal (Relay ON)
Yellow	Voltage Asymmetry
Red	Overvoltage/ Undervoltage (Relay ON)
Red L1	Phase 1 failure
Red L2	Phase 2 failure
Red L3	Phase 3 failure
Yellow L123	Wrong phase sequence in 3-phase systems

Wiring Diagrams



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Typical Connections