HLVA6I23

Single-Phase Monitor

Description

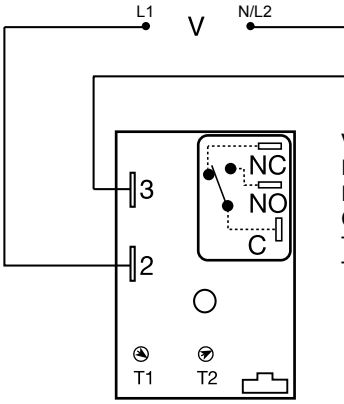
The HLVA6I23 is a single-phase undervoltage monitor designed to protect sensitive equipment from brownout or undervoltage conditions. Time delays are included to prevent nuisance tripping and short cycling. The 30A, 1hp rated, SPDT relay contacts allow direct control of motors, solenoids and valves. The output relay can be ordered with isolated SPDT contact to allow monitoring of one voltage and switching a separate voltage. Two undervoltage trip point ranges allow monitoring of 110 to 120VAC or 208 to 240VAC systems.

Operation

Upon application of input voltage the output relay remains de-energized. When the input voltage value is above the pull-in voltage, the restart delay begins. At the end of the restart delay, the output relay energizes. When the input voltage falls below the trip point, the trip delay begins. If the input voltage remains below the pull-in voltage for the entire trip delay the relay de-energizes. If the input voltage returns to a value above the pull-in voltage, during the trip delay, the trip delay is reset and the relay remains energized. If the input voltage falls below the trip point voltage during the restart delay, the delay is reset and the relay remains de-energized. Reset is automatic upon correction of an undervoltage fault.

Reset: Removing input voltage resets the output relay and the time delays.

Wiring Diagram



V = Voltage
NO = Normally Open
NC = Normally Closed
C = Common
T1 = Undervoltage Trip Point
T2 = Restart Delay

Features

- 30A, SPDT, NO output contacts
- 100 to 240VAC input voltage
- 70 to 220VAC adjustable undervoltage trip point in 2 ranges
- Restart delays from 3 - 300s
- Trip delay 1 - 20s fixed
- Isolated or non-isolated relay contacts

Accessories

P1015-13 (AWG 10/12), **P1015-64** (AWG 14/16)
Female Quick Connect
These 0.25 in. (6.35 mm) female terminals are constructed with an insulator barrel to provide strain relief.

P1023-6 Mounting bracket
The 90° orientation of mounting slots makes installation/removal of modules quick and easy.

P1015-18 Quick Connect to Screw Adapter
Screw adapter terminal designed for use with all modules with 0.25 in. (6.35 mm) male quick connect terminals.

C103PM (AL) DIN Rail
35 mm aluminum DIN rail available in a 36 in. (91.4 cm) length.

P1023-20 DIN Rail Adapter
Allows module to be mounted on a 35 mm DIN type rail with two #10 screws.

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Specifications

Input

Min & Max RMS Voltage	70 to 264VAC
AC Line Frequency	50/60 Hz
Power Consumption	AC ≤ 4VA

Undervoltage Sensing

Type	Peak voltage sensing
Ranges	
(4)	70 to 120VAC
(6)	170 to 220VAC
Pull-In Voltage	105% or trip point voltage
Trip Point Accuracy	± 3% of trip point

Time Delay

Restart Delays	3 - 300s adjustable
Trip Delay	1 - 20s fixed in 1s increments
Repeat Accuracy	±0.5% or 20ms, whichever is greater
Tolerance (Factory Calibration)	±5%
Reset Time	≤ 150ms
Time Delay vs. Temp. & Voltage	≤ ±10%

Output

Type	Electromechanical relay		
Form	SPDT		
Ratings		**SPDT-NO**	**SPDT-NC**
General Purpose	125/240VAC	30A	15A
Resistive	125/240VAC	30A	15A
	28VDC	20A	10A
Motor Load	125VAC	1 hp*	1/4 hp**
	240VAC	2 hp**	1 hp**
Life	Mechanical - 1 x 10^6		
	Electrical - 1 x 10^5, *3 x10^4, **6,000		

Protection

Surge	IEEE C62.41-1991 Level A
Circuitry	Encapsulated
Isolation Voltage	≥ 1500V RMS input to output; isolated units
Insulation Resistance	≥ 100 MΩ

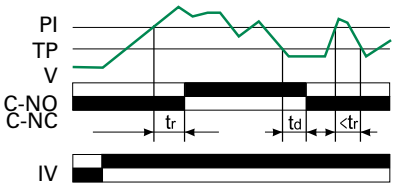
Mechanical

Mounting	Surface mount with one #10 (M5 x 0.8) screw
Dimensions	**H** 76.7 mm (3"); **W** 51.3 mm (2"); **D** 38.1 mm (1.5")
Termination	0.25 in. (6.35 mm) male quick connects

Environmental

Operating/Storage Temperature	-40° to 60°C / -40° to 85°C
Humidity	95% relative, non-condensing
Weight	≅ 3.9 oz (111 g)

Function Diagram



tr = Restart Delay
td = Trip Delay
PI = Pull-in 105% or trip point
TP = Trip Point
V = Monitored Voltage
IV = Input voltage
C-NO = Normally Open Contacts
C-NC = Normally Closed Contacts