



Three-Phase Voltage Monitor

Three-Phase Rated Voltage AC 400 V without Neutral Connection and Auxiliary Supply
Undervoltage Detection of One, Two or All Three Phases
Adjustable Undervoltage Detection Between 285 and 360 V
Detection of Phase Failure for One, Two or All Three Phases
Reaction Time ≤ 35 ms
Closed-Circuit Principle
Number of Contacts: 2 Changeover

SUW 3001



For Example

- ▶ Checking three-phase and undervoltage faults as well as phase failure of machines or installation e.g.:
 - Machines with reversal of the direction of rotation (cranes, robots, pumps, conveyors systems ...)
 - Chemical processes
 - Test and calibration systems

Function

The SUW 3001 monitors the external line voltages (its own three-phase supply) L1, L2, L3 for: under voltage and phase failure. It functions without neutral connection and auxiliary supply.

After applying the external line voltages L1, L2, L3 which values are greater than the voltage limit value, the SUW switches into the operating position (closed-circuit connection). The green LED lights up.

If the voltage falls below the preselected voltage limit value, the relay switches into its de-energized position. The green LED is extinguished.

The rated voltage for the three phase network is 3 AC 400 V with a large rated voltage range. The set value of the lower voltage limit can be preselected with a potentiometer between 285 and 360 V.

If a fault occurs, the relay switches into its off position with a reaction time ≤ 35 ms. The green LED is extinguished. After elimination of the fault, the SUW switches automatically into the operating position taking in consideration the fixed hysteresis value of 10V. The LED lights up.

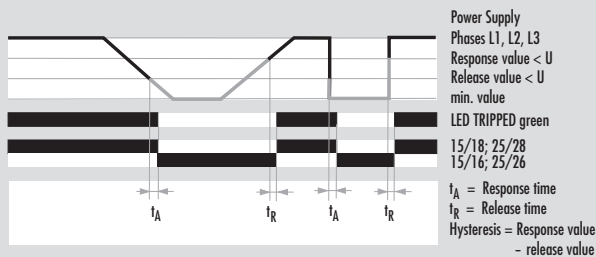
The fault detection occurs respectively at:

- Phase failure of one, two, or all three phases
- Under voltage detection of one, two, or all three phases related to the pre-selected voltage 3 AC 285 V to 360 V.

Function Diagram

FD 0134 W1

SUW 3001



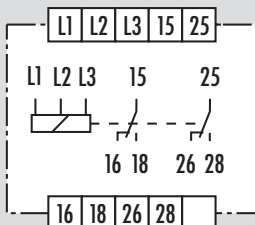
Adjustment Ranges

The three phase rated voltage range between 3 AC 285 V and 360 V of all three phases is steplessly adjustable with the integrated potentiometer.

Connection Diagram

SUW 3001

KS 0236/1



Approval



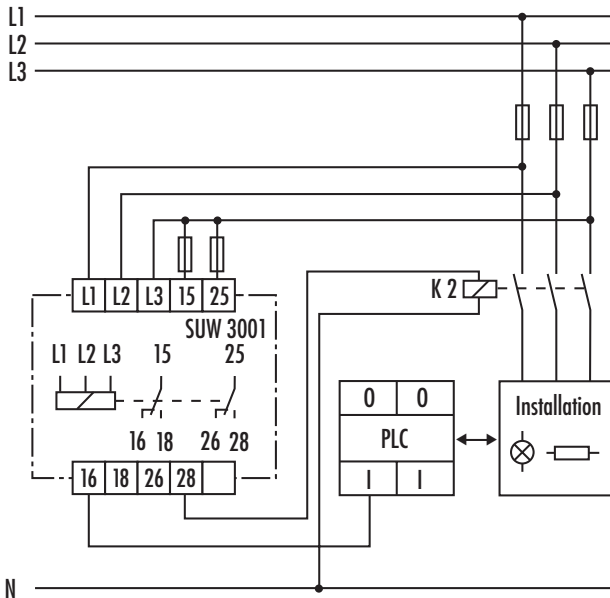


SUW 3001

Application Example

A 1070

Monitoring of an Installation



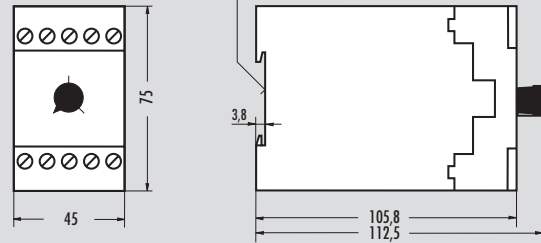
The SUW 3001 monitors the exceeding of the preselected under voltage value or the phase failure of a three phase network in an installation. If the SUW 3001 detects a fault, the relay K2 switches into the off position. The installation is switched off, the PLC evaluates the indication as it is specific for this installation.

Dimension Diagram

S7-5

SUW 3001

for DIN-Rail acc. to EN 50022



Order Example

SUW 3001 3 AC 400 V

Type Rated Voltage

2



TECHNICAL DATA

FUNCTION According to DIN EN 60255-6:11.94

Function Display
Function Diagram

POWER SUPPLY

Rated Voltage U_N	3 AC V
Rated Consumption at 50 Hz and U_N (3 AC)	VA
Rated Consumption at 50 Hz and U_N (3 AC)	W
Rated Frequency	Hz
Operating Voltage Range	

MEASURING CIRCUIT

Setting	
Under Voltage Detection Range	3 AC V
Dispersion	%
Influence Of The Supply Voltage	%/% ΔU_N
Influence Of The Ambient Temperature	% /K ΔT

OUTPUT CIRCUIT

Contact Equipment	
Contact Material	
Switching Voltage U_n	V AC/DC
Maximum Rated Current I_n per Contact	A
Application Category According to EN 60947-5-1:1991	
Short-Circuit Protection, Max. Fuse Element Class gG	A
Permissible Switching Frequency	Switching Cycle/h
Mechanical Lifetime	Switching Cycles
Response Time t_A	ms
Release Time t_R	ms
Hysteresis in Case of Under Voltage Detection	V

GENERAL DATA

Creepage and Clearance Distances Between Circuits According to DIN VDE 0110-1:04.97: Rated Withstand Voltage	kV
Over-Voltage Category	
Contamination Level	
Design Voltage	V
Test Voltage U_{eff} 50 Hz acc. to DIN VDE 0110-1, Table A.1	kV
Protection Class Housing/Terminals acc. to DIN VDE 0470 Sec. 1:11.92	
Radiated Noise	
Noise Immunity	

Ambient Temperature, Working Range	°C
Dimension Diagram	
Connection Diagram	
Weight	kg
Approvals	

GENERAL TECHNICAL SPECIFICATIONS

SUW 3001

Three Phase Voltage Monitor
Without Auxiliary Supply
Closed Circuit Principle
1 LED green
FD 0134 W1

400

	3,8
	3,5
	50 to 60
	0,65 to 1,15 x U_N

analog	
285 to 360	
$\leq \pm 0,5$	
$\leq 0,02$	
$\leq 0,05$	

2 Changeover	
Ag-Alloy; Gold-Plated	
230/230	
≤ 5	
AC-15: U_e 230 V AC, I_e 3 A	
DC-13: U_e 24 V DC, I_e 2 A	
6	
6000	
30×10^6	
$< 25 \pm 10$ ms Acc.to Phase Angle	
< 100	
≈ 10	

6	
III	
3 Outside, 2 Inside	
500	
3,25	
IP 30/IP 20	
EN 50081-1:03.93, -2:03.94	
EN 50082-2:1995	

-20 to + 60	
S 7 - 5	
KS 0236/1	
0,26	
CSA	

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