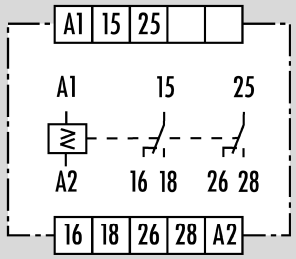
SUW 1001

Direct or alternating voltage monitor without auxiliary voltage

- For single-phase networks
- Large setting range and large operating range
- Adjustable maximum and minimum limit
- Standby current principle

Wiring diagram

SUW 1001 KS 0315



Notes:

- No galvanic separation between the metering and input circuit!

Setting ranges

Nominal voltage U_N	min. U_N	max. U_N
AC/DC 24 V	15 - 25 V	25 - 35 V
AC 230 V	140 - 240 V	210 - 310 V

Applications

- Monitoring of emergency power installations
- Protection of EDP installations
- Perimeter protection technology
- Protection of SPS robot systems
- RPM monitoring with generator
- Monitoring of generator voltages

Function

On the voltage monitor, a minimum and maximum limit value are set by the analog mode.
After the application of the supply voltage to the terminals A1/A2, the voltage monitor toggles to the active position (standby current principle). However, the prerequisite for this is that the applied voltage lies between the two preselected limit values. After falling below or exceeding the corresponding limit value, the device re-toggles to the Standby position.

- Additional auxiliary voltage is not required (dual-wire technology).
- The limit values are set by analog mode on the front.
- Fixed setting switch hysteresis.

Accessories

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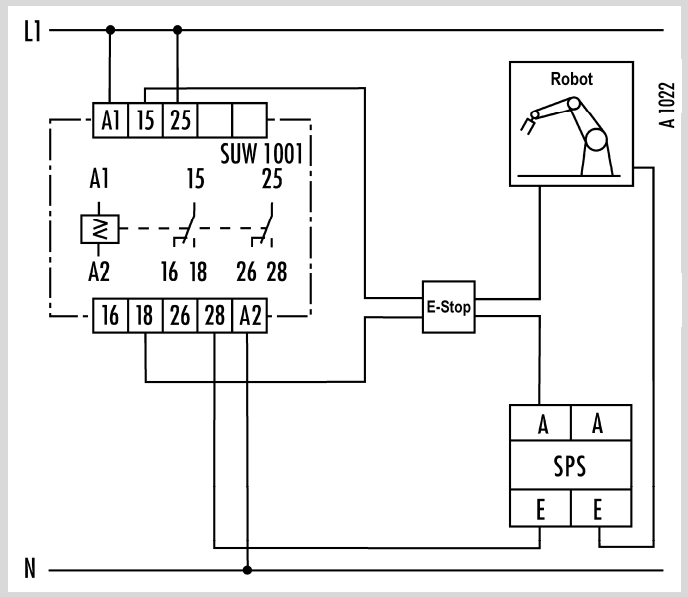
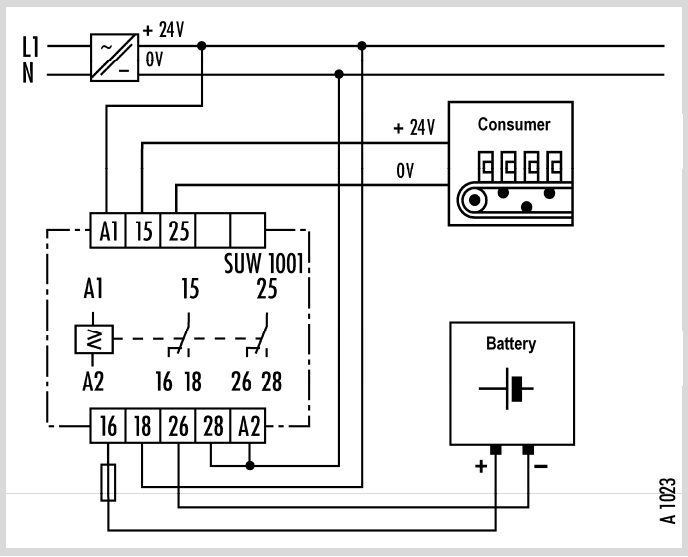
new release: 04 December 2013 / previour release: 2010 / datasheet SUW 1001 / subject to change without further notice

Application examples

Safeguarding of robot systems
In the event of excessive voltage fluctuations, the SUW 1001 prevents malfunctions in SPS robot systems.
In the event of limit value exceeding, damage control occurs in the SPS (adjustment to a safe state) and emergency stop for robots.

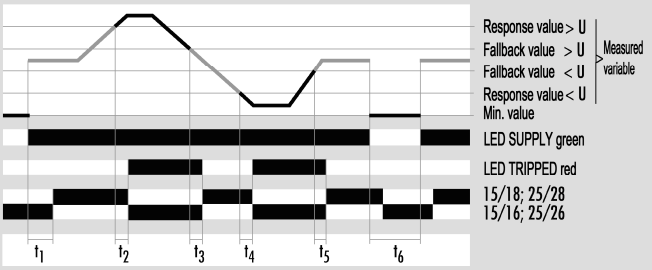


Emergency power supply monitoring
The SUW 1001 monitors the main voltage.
In the event of failure or a deviation from the main voltage from the target value, a toggle to backup voltage (battery) occurs (contacts 15-16, 25-26).



Function diagram

SUW 1001 FD 0125 W1

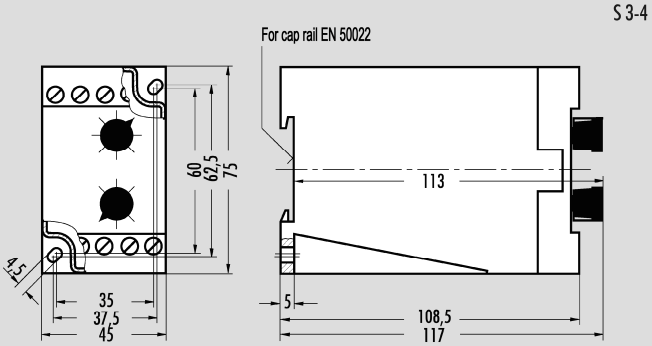


t_1 Application of supply voltage until excitation SUW ≈ 150 ms
t_2 Exceeding the response value > U until drop-out SUW ≈20 ms
t_3 Falling below the fallback value > U until excitation SUW ≈ 50 ms
t_4 Falling below the response value > U until drop-out SUW 30 ms
t_5 Exceeding the fallback value > U until excitation SUW ≈ 50 ms
t_6 Switch-off time must be > readiness for running time = 700ms

Hysteresis = |response value – fallback value|

Dimensional drawing

S 3-4



Technical Data		SUW 1001
Function type according to DIN EN 60255-6:11.94		Voltage monitor without auxiliary voltage, upper and lower limit value adjustable, standby current principle
Function check		1 LED green, 1 LED red
Function diagram		FD 0125 W1
Supply circuit		
Nominal voltage U_N	AC/DC	**24 V**
	AC	**230 V**
Rated output at 50 Hz and U_N (AC)		1.2 VA 1.6 VA
Rated output at 50 Hz and U_N (AC)		0.9 W 1.4 W
Nominal frequency		50 to 60 Hz
Operating voltage range		0.5 to 1.1 x U_N
Parallel consumer loads permissible		yes
Measurement circuit		
Galvanic separation facing the supply circuit		no
Setting / Quantity of operating ranges		analog / 1
Setting ranges		see Table "Setting ranges"
Switch hysteresis		fixed, ≈ 3 % of the end value max. U
Scatter		≤ ± 0.5 %
Influence of the supply voltage		≤ ± 0.02 % / % ΔU_N
Influence of the ambient temperature		≤ ± 0.05 % / KΔT
Output circuit		
Contact allocation		2 changers
Contact material		Ag alloy, gold-plated
Switching nominal voltage U_n		AC/DC 230/230 V
max. steady current I_n per current path		5 A
Usage category according to EN 60947-5-1:1991		AC-15: U_e 230 V AC, I_e 3 A DC-13: U_e 24 V DC, I_e 2 A
Short circuit safeguard, max. fuse insert Class gG		6 A
Permissible frequency of operation		≤ 6000 switching cycles/h
Mechanical service life		30 x 10^6 switching cycles
Operate time t_1		150 ms
Operate time t_2		20 ms
Operate time t_4		30 ms
Fallback interval t_3/t_5		50 ms
Standby reactivation interval		700 ms
General Data		
Air and creep sections between the electric circuits		According to DIN VDE 0110-1:04.97
Rated voltage impulse		4 kV
Excess voltage category		III
Degree of contamination		3 exterior, 2 interior
Rated voltage		250 V AC
Testing voltage U_{eff} 50 Hz according to DIN VDE 0110-1, Table A.1		2.21 kV
Safety class for casing / terminals according to DIN VDE 0470 Section 1:11.92		IP 30 / IP 20
Interference resistance according to IEC 61000-4		Test acuity 3
Ambient temperature, work area		–20 to +60 °C
Dimensional drawing		S 3-4
Wiring diagram		KS 0315
Connector cross-sections, fine wire / single core or fine wire with wire end ferrules		2 x 0.75 to 1.5 mm² / 2 x 0.75 to 2.5 mm² 1 or 2 x 0.5 to 1.5 mm²
Permissible tightening torque		0.8 to 1 Nm
Weight		0.26 kg
Accessories		Cover Z 29

Device overview / Order numbers

Type	Rated voltage	Order number
SUW 1001	AC 24 V 50-60 Hz	R3.184.0029.0
	AC 230 V 50-60 Hz	R3.184.0019.0