

-90 -80 -70 -60 -50 -40 -30 -20 -10

-10

-20

Voltage Guard SW-12 / SW-24





1 General remarks

The voltage guards SW-12 / SW-24 monitors, dependent on the respective device, a DC mains voltage for under- or overvoltage. The switching threshold is adjustable through the potentiometer. The device is in operation as soon as the auxiliary voltage is applied (green power LED 'Betrieb' lights). In operation mode the relay is picked up.

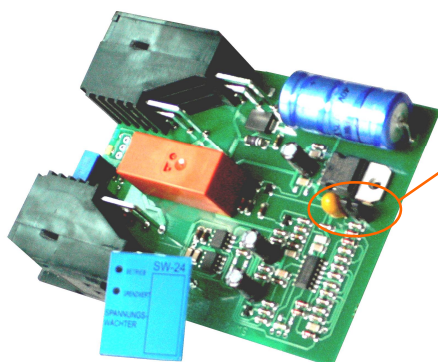
When the limit value is exceeded, what in case of 'SW-12 *Undervoltage*' means that the voltage sinks below the adjusted value, the yellow LED 'Grenzwert' (limit value) starts blinking. After expiration of the delay time the relay releases and the yellow limit value LED lights constantly.

The switching hysteresis of the unit is 10 %, i.e. in case of the 'SW-12 *Undervoltage*' the adjusted voltage has to be exceeded by 10 %, to let the unit switch back into operating mode.

Analogous to the procedure described above the relay of the 'SW-24 *Overvoltage*' (monitoring overvoltage) releases after exceeding of the preset voltage and picks up again when the voltage is fallen under the corresponding value.

Example:

	SW-12 <i>Undervoltage</i>	SW-24 <i>Undervoltage</i>	SW-24 <i>Overvoltage</i>	
Adjusted voltage	12 V	24 V	24 V	
Under- resp. Over-voltage detection	$U \leq 12\text{ V}$	$U \leq 24\text{ V}$	$U \geq 24\text{ V}$	Relay releases after 60 seconds
Normalvoltage detection	$U \geq 13,2\text{ V}$	$U \geq 26,4\text{ V}$	$U \leq 21,6\text{ V}$	Relay picks up again

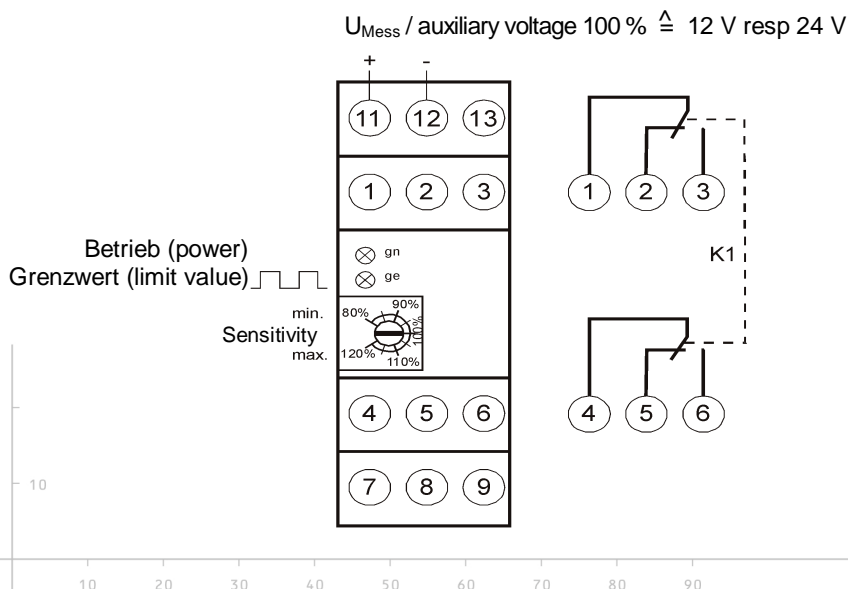


The pre-adjusted delay time can be changed by a jumper on the board of the dismantled SW-12 / 24 unit from 60 seconds (jumper on) to 180 seconds (jumper off).



Note: To prevent damage, these settings have to be done in a voltage free status of the device.

2 Connection diagram





Potentiometer-scale [%]	SW-12 Undervoltage		SW-24 Undervoltage		SW-24 Overvoltage *	
	Release - voltage [V]	Voltage to pick up again [V]	Release - voltage [V]	Voltage to pick up again [V]	Release - voltage [V]	Voltage to pick up again [V]
80	9,6	10,6	19,2	21,1	–	–
85	10,2	11,2	20,4	22,4	–	–
90	10,8	11,9	21,6	23,8	21,6	19,4
95	11,4	12,5	22,8	25,1	22,8	20,5
100	12	13,2	24	26,4	24	21,6
105	12,6	13,9	25,2	27,7	25,2	22,7
110	13,2	14,5	26,4	29	26,4	23,8
115	13,8	15,2	27,6	30,4	27,6	24,8
120	14,4	15,8	28,8	31,7	28,8	25,9

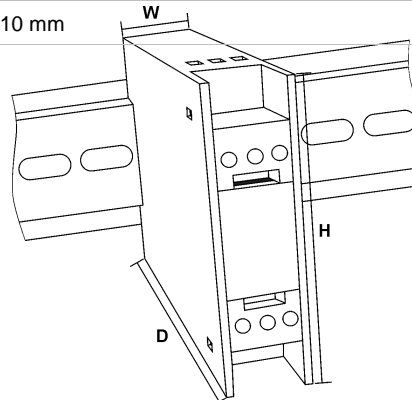
* The lower limit of sensitivity setting is located at approx. 90%.

3 Technical data



Installation and first commissioning only by trained experts.
Connection in accordance with VDE 0160.

	SW-12 Undervoltage	SW-24 Undervoltage	SW-24 Overvoltage
Auxiliary voltage	12V DC (9 ... 18 V)	24 V DC (18 ... 32 V)	
Power consumption (Relay picked up)	approx. 60 mA	approx. 30 mA	
Relay outputs	230 V / 5 A / AC		
Release voltage	9,6 V ... 14,4 V	19,2 V ... 28,8 V	21,6 V ... 28,8 V
(adjustable)	equivalent to 80 % ... 120 %		equivalent to 90 % ... 120 %
Delay time (internal Jumper)	optionally either 60 s or 180 s		
Ambient temperature	-20 ... 55 °C		
Case dimensions W / H / D	23 x 75 x 110 mm		



3.1 Ordering information

Voltage Guard SW-12 / SW-24	Part number
12 V – undervoltage (SW-12):	E1351
24 V – undervoltage (SW-24):	E1252
24 V – overvoltage (SW-24):	E1253