Product description

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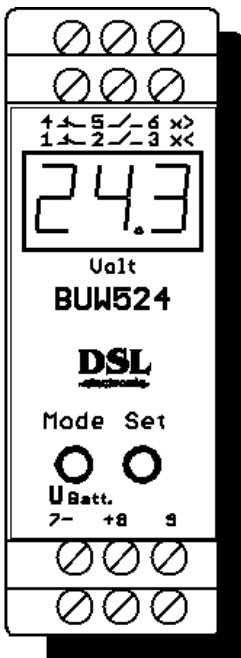www.dsl-electronic.de

DSL
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GmbH

DC Voltage Monitor BUW524 – E004
(Battery Under- and Overvoltage Monitor)
Display and monitoring unit for DC voltage supplies and batteries

- **Permanent voltage measurement and display**

- **Customer-friendly menu for setting the parameters**

- **Durable storage of the parameters**

- **Switching threshold, hysteresis and switching delay adjustable**

- **Optical display for voltages below the switching threshold set**

- **Optical display of relay energization after expiry of the delay time**

- **Simultaneous display of actual voltage when the unit is energized**

- **2 Potential-free change-over contacts 5A / 250V~**

- **Narrow top-hat rail housing**

Application:

The DC voltage monitor **BUW524-E004** is used for monitoring the lower and upper limit of a low DC voltage in the 10 – 33V range, for example the starter battery voltage in the genset field or the DC voltage supply of connected controls or systems.

BUW524-E004 does not require a separate auxiliary voltage, instead being supplied directly from the measuring voltage.The DC voltage measured is displayed constantly on the digital display. The relais with change-over contacts on the output side switches when the voltage passes the specified voltage limits and time delays.

The voltage threshold values, the hysteresis and the time delays can be changed with the help of a userfriendly operating menu (see below).

When an undervoltage occurs, display *L-1* (at overvoltage *H-1*) initially alternates with the instantaneous voltage. After expiry of the delay time, display *L-2* (acc. *H-2*) alternates with the instantaneous voltage by switching the corresponding output relay. If the voltage goes beyond the hysteresis and reaches the normal range again, the relay is switched back. The output terminals with potential separation can be evaluated by the user as desired.

Function of Undervoltagerelay:

DC voltage in the normal range:	Relay energized	Contacts: 1 – 2 open, 2 – 3 closed
DC voltage into undervoltage:	Relay is de-energized	Contacts: 1 – 2 closed, 2 – 3 open
	(After time delay)	
Back to normal range:	Relay is energized	Contacts: 1 – 2 open, 2 – 3 closed
	(Switches back without time delay)	

Function of Overvoltagerelay:

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DC voltage in the normal range:	Relay de-energized	Contacts: 4 – 5 closed, 5 – 6 open
DC voltage into undervoltage:	Relay energized	Contacts: 4 – 5 open, 5 – 6 closed
	(After time delay)	
Back to normal range:	Relay is energized	Contacts: 4 – 5 closed, 5 – 6 open
	(Switches back without time delay)	

Parameterization:

The „**Mode**" and „**Set**" keys are used to set the voltage threshold values, the hysteresis and the delay times for de-energization of the relay.
Each key must be pressed for approx. 1 second before data are taken over. The menu must be called up again for each value to be set.
If, during the setting process, no key is pressed after approx. 20 seconds, the program switches back to normal mode automatically. The unit does not react to changes to the measuring voltage occuring while settings are being made via the menu! When parameterization values falling outside of the valid range are saved, the unit reacts by displaying Er3. The value must be re-entered and can be saved if valid.

For changing of parameters first the **Mode** key must be pressed, displaying E00. Now 2 x pushing **Set** until E02 is displaying. Then **Set** must be pushed several times until achieving the desired menu point (see Menü guidance). With **Mode** the character place can be choosen and with **Set** the new character. With **Mode** you reach the end of menü. With **Set** key you must choose Break (**A**) or Safe (**S**), which have to be confirm with **Mode**.

BUW524 Menu guidance
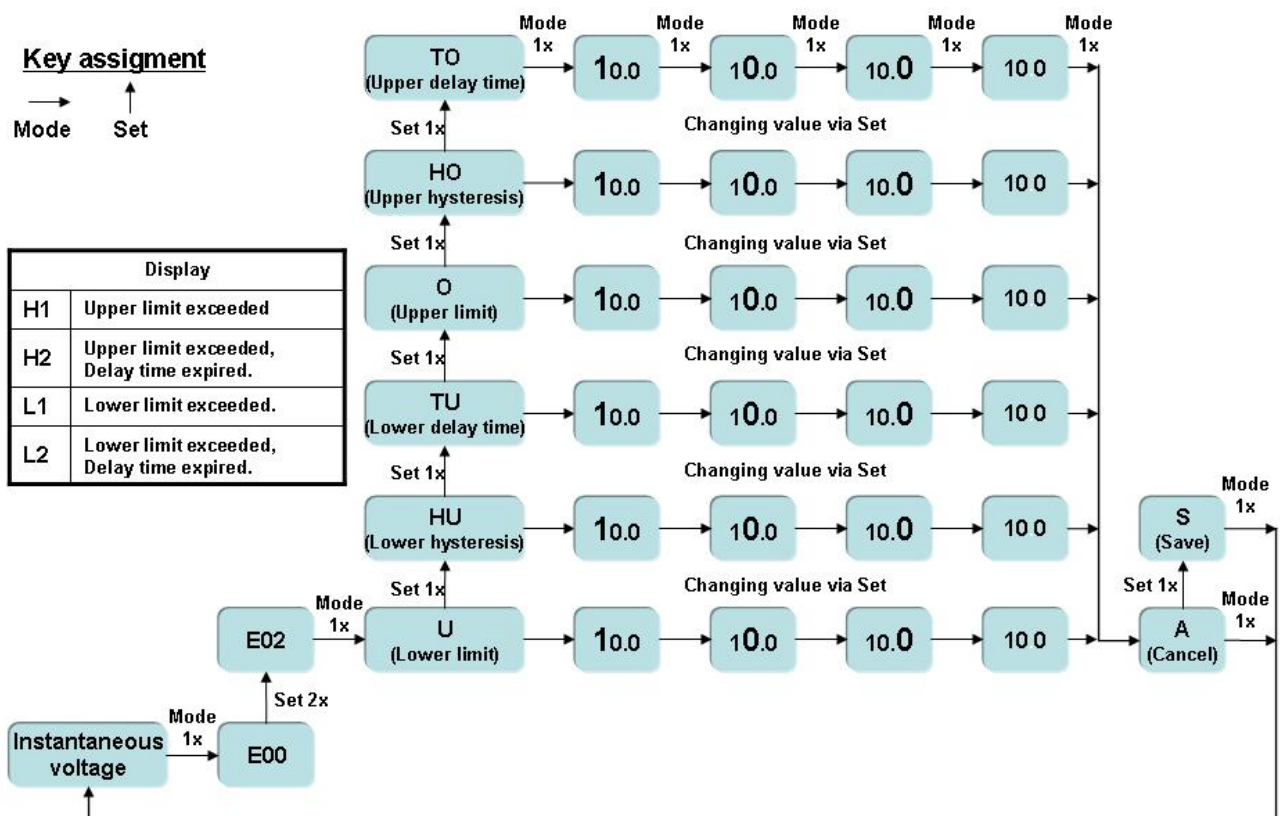
Factory settings:

Untervoltage (U): 24,0V	**Hysteresis** (HU): 0,3V	**Delay time** (TU): 1 Sekunde
Overvoltage (U): 28,0V	**Hysteresis** (HU): 0,3V	**Delay time** (TU): 1 Sekunde

Error messages:

Er1:   Eeprom code does not match program specification.
Er2:   ID in Eeprom missing (blank Eeprom).
Er3:   Parameter entry falls outside of the valid range. Repeat entry with new parameter.

Technical Data :

Type	DC voltage monitor BUW524-E004
Design	Plastic housing PA on 35 mm hat rail acc. to DIN EN 50022 / DIN 46277
Material of housing	ABS with fire protection UL 94 V-O
Dimensions, weight	26x75x110,8mm (WxHxD), 113g
Auxiliary / measuring voltage	8,5 – 33 VDC, with reverse battery protection
Switching hysteresis	Maximum hysteresis up to 3,3V (10% of Umax)
Switching delay of relay	Adjustable 0 – 120 Sec. in steps of 1 sec.
Repeat accuracy	< 1% +/- 1 Digit
Power consumption	Uin = 12V: ca. 40mA (50mA), Uin = 24V: appr. 20mA (30mA) (in brackets: 1 relay energized)
„On" period	100 %
On-switching delay	Unit ready after approx. 5 sec. after auxiliary voltage is switched on, display: „dsl"
Contact load	6A permanent/250VAC , Contacts AgSnO , min. switching load 500mW, 12V 10mA,
Proof voltage	4000V (coil-contact), 1000V (open contact)
Connecting terminals	Potentialfree, for connecting 2 wires up to 2,5 mm² each per terminal
Protection class	Housing IP 40 , terminals IP 20 (or VDE 0106T100/VBG4)
Ambient temperature	-40 °C bis +55°C, 95% humidity
General regulations	EN 50 178 (Electronic equipment for use in power installations)
Noise suppression acc. to	EN 55 022/B
EMC acc. to	EN 61000 and EN V 50 140
Installation position	Any position
Maintenance	Maintenancefree

Connection diagram :

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