

MANUAL

Basic Line | PROTECTION TECHNOLOGY
MADE SIMPLE

BUA1 | VOLTAGE AND VOLTAGE BALANCE RELAY



VOLTAGE AND VOLTAGE BALANCE RELAY

Original document

English

Revision: B

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Application

Supervision of voltage unbalance in three-phase systems, phase failure, phase sequence and under-/overvoltage.

Function

The relay BUA1 measures amplitude and angle of three phase voltages. The angle of the phasors determine the phase sequence. Unbalance and phase loss are detected by the measurement of amplitude and angle.

ΔU characterizes the difference of the lowest to the highest phase-to-phase voltage related to nominal voltage. The underfrequency element trips if the frequency falls below 45 Hz.

Technical data

rated voltage U_n :	110 V, 230 V, 400 V AC
frequency range:	45 - 66 Hz
hysteresis:	2% U_n
power consumption:	4 VA
thermal load carrying capacity:	continuously 1,3 x U_n
returning time:	600 ms
minimum operating time:	650 ms

Output relays:

max. breaking capacity	
ohmic:	250 V AC/120 W DC
inductive:	500 V AC/75 W DC
rated current:	5 A
making current (16ms):	20 A

System data:

regulations:	VDE 0435 part 303
temperature range at storage and operation:	- 25°C to + 70°C

Mechanical stress:

shock:	class 1 acc. to DIN IEC 255-21-2
vibration:	class 1 acc. to DIN IEC 255-21-1
degree of protection:	IP 40 at closed front cover
weight:	approx. 0,5 kg
mounting position:	any

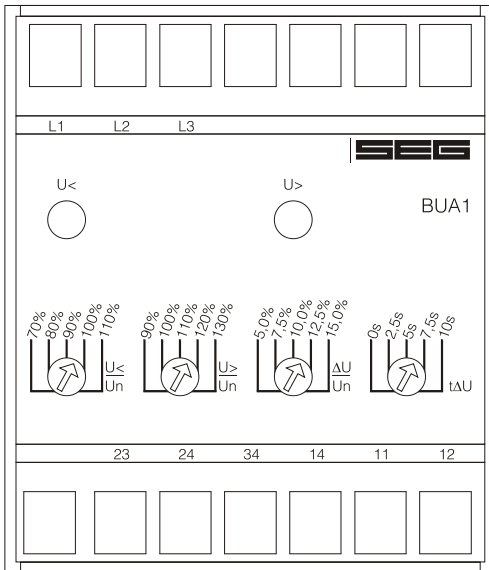


Figure 1: Front plate

The unit BUA1 is designed to be fastened onto a DIN-rail acc. to DIN EN 50022 same as all units of the BASIC LINE.

The front plate of the unit is protected with a sealable transparent cover (IP40).

Please remove the transparent cover with a screw driver to adjust the relay.

LED

LED U< is used to indicate operation without fault with steady light. The LED U> indicates overvoltage tripping with steady light. At undervoltage, ΔU or underfrequency tripping the LED U< extinguishes.

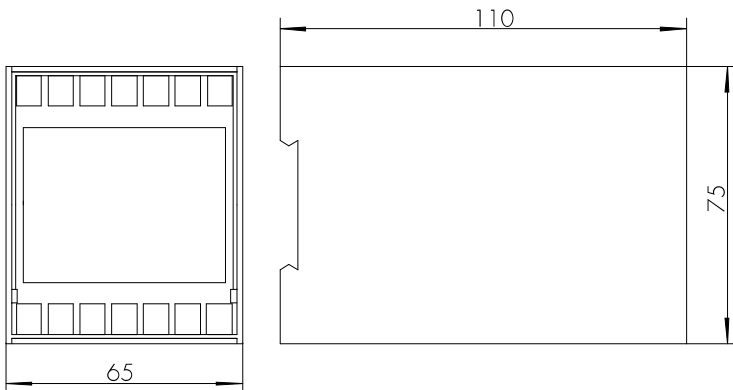


Figure 2: Dimensional drawing of BUA1

Auxiliary voltage supply

The unit BUA1 needs no separate auxiliary voltage supply. The supply voltage can be formed directly from the measuring quantity.

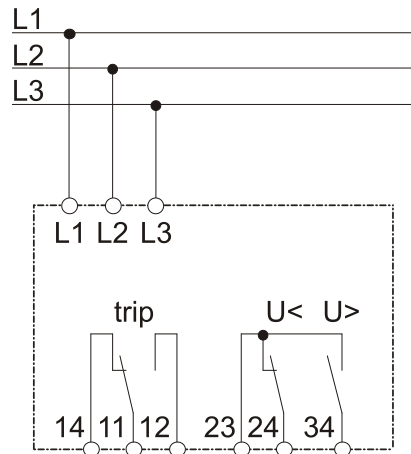


Figure 3: Connection diagram

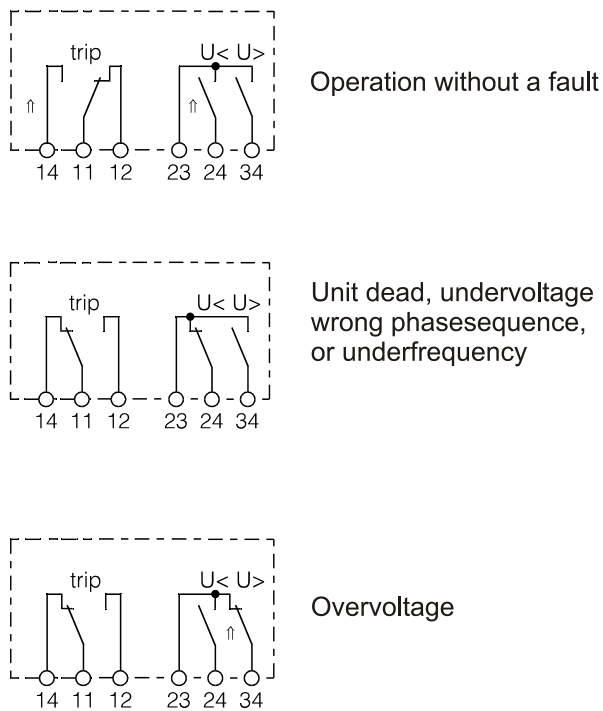


Figure 4: Contact positions

Connection terminals

The connection up to a maximum of 2 x 2,5 mm² cross-section conductors is possible. For this procedure the transparent cover of the unit has to be removed.

Setting ranges

ΔU : 5 - 15 % U_n

$t\Delta U$: 0 - 10 s

$U<$: 70 - 110 % U_n

$U>$: 90 - 130 % U_n

Order form

Voltage- and voltage balance relay		BUA1	
Rated voltage	110 V/AC		110
	230 V/AC		230
	400 V/AC		400