

MANUAL

Basic Line | PROTECTION TECHNOLOGY
MADE SIMPLE

BU1-AC | VOLTAGE RELAY



VOLTAGE RELAY

Original document

English

Revision: B

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Application

Over- and undervoltage supervision of 1- and 3-phase systems.

Function

Unit BU1-AC is equipped with an independent over- (U \gt) and undervoltage supervision (U \lt) with separate adjustable pickup values and common trip delay (t) and hysteresis (DIFF). The voltages are compared with the set reference values.

For three-phase overvoltage supervision the highest voltage in each phase is evaluated, for undervoltage supervision the lowest in each phase.

Pickup of supervision circuit U \gt or U \lt is indicated by flashing of the corresponding LED.

At U \lt - tripping LED U \lt extinguishes, at U \gt - tripping. LED U \gt is steady lit.

At voltages $< 60\% U_n$ no trip delay takes place.

Technical data

rated voltage U_n :	110 V, 230 V, 400 V AC
rated frequency range:	45 - 66 Hz
power consumption in voltage circuit:	3.5 VA
thermal load carrying capacity of the voltage circuit:	constant $1.3 \times U_n$
dropout to pickup ratio:	dependent on the set hysteresis
dropout time:	300 ms
minimum operating delay:	300 ms

Output relay

maximum breaking capacity:	ohmic 250 V AC/120 W DC inductive 500 V AC/75 W DC
rated current:	5 A
making current:	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 unit front:	IP 40 at closed front cover
weight:	approx. 0.5 kg
mounting position:	any

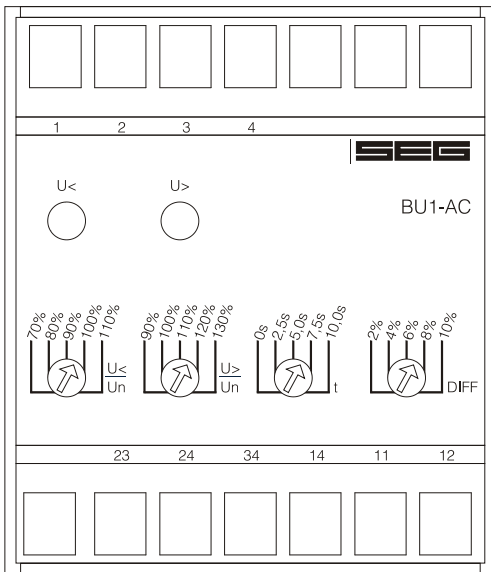


Figure 1: Front plate

Unit BU1-AC is designed to be fastened onto a DIN-rail acc. to DIN EN 50022 same as all units of the BASIC LINE.

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

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

LEDs

LED U< is used to indicate trouble free operation with steady light. LEDs U> and U< indicate pickup of the re-lay by flashing. At undervoltage tripping LED U< extinguishes. LED U> indicates tripping at overvoltage (steady light).

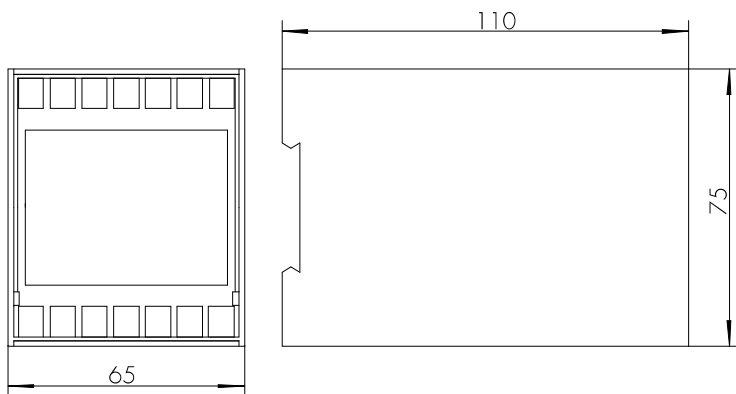
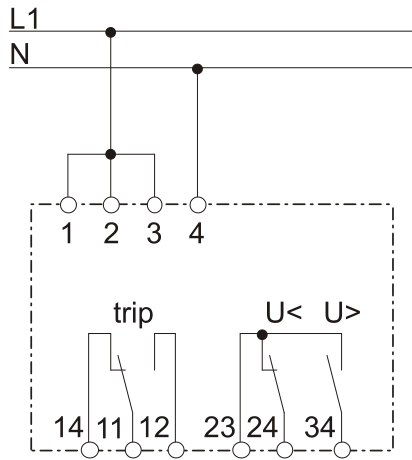


Figure 2: Dimensional drawing BU1-AC

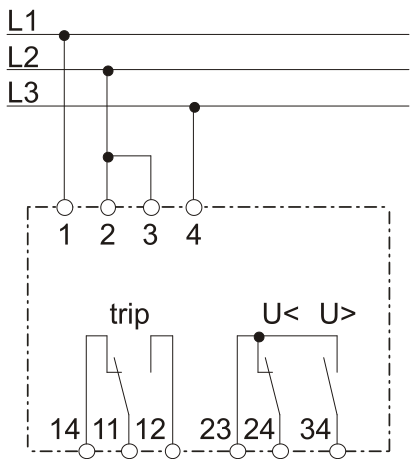
Auxiliary voltage supply

Unit BU1-AC needs no separate auxiliary voltage supply. The supply voltage can be formed directly from the measuring quantity.

A) Two-wire system



B) Three-wire system



C) Four-wire system

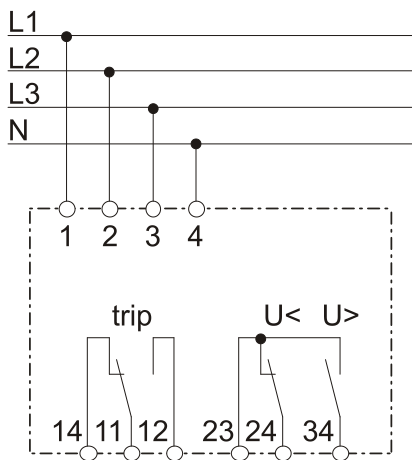


Figure 3: Connection diagrams

System	Relay type	Connection diagram
3-phase 110 V	BU1-110	B
3-phase 400 V	BU1-400	B
3-phase 400/230 V with N	BU1-230	C or A (A for single-phase measuring)
3-phase 690/400 V with N	BU1-400	A (only single-phase measuring possible)



Figure 4: Contact positions

Connecting terminals

The connection up to a maximum of 2 x 2.5 s mm² cross-section conductors is possible. For this procedure the transparent cover of the unit has to be removed.

Setting ranges

- U<: 0.7 - 1.1 Un
- U>: 0.9 - 1.3 Un
- t: 0 - 10 s
- DIFF: 2 - 10 %
- fn: 45 - 66 Hz

AC voltage relay	BU1AC	
Rated voltage 110 V/AC		110
120 V/AC		120
400/230 V/AC (400 V four-wire-/two-wire-system)		230
690/400 V/AC (690 V two-wire-system/400 V three-wire-system)		400

The rated voltage of the unit is determined and defined by the voltage that was measured between terminals 1 and 4, 2 and 4, 3 and 4.

Basic Line

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