

# RELAY FOR 100% GENERATOR STATOR EARTH FAULT PROTECTION

## UB0/100

  
Microelettrica Scientifica

CAT. B5-94

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### GENERAL CHARACTERISTICS

The relay UB0-100 is sensitive to the 3rd harmonic component of the neutral-to-ground voltage of the generator. When a fault occurs close to the neutral is experienced, the 3rd harmonic voltage between neutral and ground will reduce nearly to zero.

In high resistance earthed generators, measurement of this voltage discriminates the fault condition the more clearly the closer the fault is to the neutral point. It efficiently protects the zone between 90 and 100% of the winding.

Protection against faults occurring at points farther away from the neutral (less than 90%) is performed by the normal stator ground fault relays (UB0/A, UB0).

### SETTINGS

Settings are made on front face by means of two 8-poles DIP-SWITCHES that allow to obtain a wide and accurate setting range for the trip level as well as for the trip time delay.

### SIGNALIZATIONS

- 1 Green led for signalization of auxiliary supply presence and relay regular operation.
- 1 Red led for trip signalization.
- 1 Yellow led for trip memory.

### COMMANDS

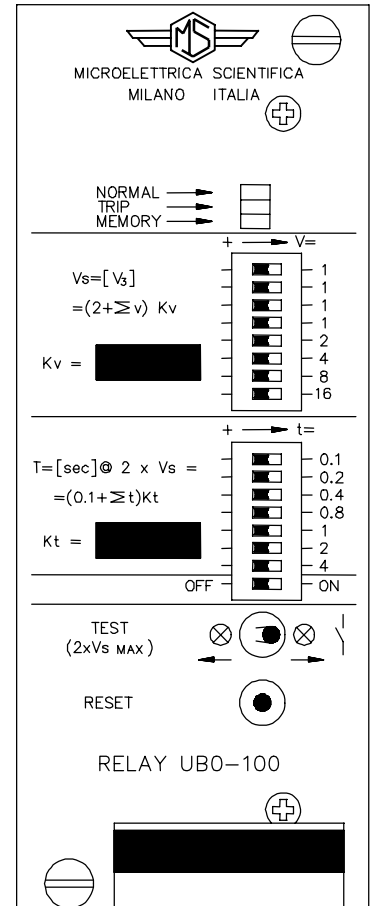
- Test spring lever switch: when pressed it simulates a measured voltage of 2 times the maximum set voltage and allows the complete functional check of the relay and of the trip time delay. In one position test function does not operate the output relays; in the other it also operates the output relays.
- ON-OFF switch that enables or blocks the tripping of the main output relay.
- Output relays reset after trip can be:
  - manual by reset push button on front face
  - manual by remote push button connected to the relevant terminals provided on the relay.
  - automatic by connecting a bridge on remote reset terminals.

The trip memory led can be reset only by the front face reset push button.

### OUTPUT RELAYS

- Trip signal: 1 relay with two Change-over contacts rating 5A.
- Blocking output or time start signal: 1 relay with one Change-over contact rating 5A.

The output relays are normally deenergized (energized on trip).  
On request they can be normally energized (deenergized on trip).



### ORDERING DATA

- Relay Type
- Rated Input Voltage
- Auxiliary Power Supply
- Setting ranges
- Output Relays Configuration
- Execution
- Options on Request

## OPTIONS

On request are provided:

- Blocking input (**BI**).
- Blocking output (**BO**) relay R2.
- Time start output (**TO**) relay R2.

The blocking input is normally controlled by an external relay which monitors the voltage or the current at generator's terminals. This way it is possible to deactivate the relay when the generator voltage is off or during start-up when the voltage is below a minimum operation level.

## OVERALL DIMENSIONS

See Overall Dimensions - 1 Module Relay.

## ELECTRICAL CHARACTERISTICS

Rated input voltage	: 100 V	Burden on input voltage	: 0.2VA @ Vn = 100V
		Burden on supply voltage	: 3W(d.c.); 6VA(a.c.)
Auxiliary power supply	:	Type 1	: 24-110 V d.c./a.c. ± 20% permanent
		Type 2	: 90-220 V d.c./a.c. ± 20% permanent

## STANDARD SETTING RANGES (Different on request)

### VOLTAGE SETTINGS

- $V_s = [2+(0 \div 34)] \times K_v$  step 1xKv
- $K_v = 0.1 : V_s = (0.2 \div 3.6) V_3$  (\*)
- $K_v = 0.2 : V_s = (0.4 \div 7.2) V_3$

### TRIP TIME DELAY

- $T = [0.1+(0 \div 8.5)] \times K_t$  [s.]
- $K_t = 0.5 : T = (0.05 \div 4.3) s$
- $K_t = 1 : T = (0.1 \div 8.6) s$  (\*)

Relay operation starts when the 3<sup>rd</sup> harmonic component of the input voltage drops below the set level Vs.

(\*) Standard setting range

## WIRING DIAGRAM

