

## GENERAL CHARACTERISTICS

The relay features a complete and efficient protection against earth faults in the field winding of synchronous machines. Being the rotor normally isolated from earth the first fault does not affect the operation of the machine, but a second one would put the machine out of service and could cause serious damages to the rotor.

The relay UB0/CR, connected as showed in the attached diagram, applies through a limiting resistor a small d.c. voltage between rotor winding and earth thus producing, when fault is experienced, a current flow detected by the device itself. The relay, notwithstanding its high sensitivity, can permanently withstand the full field voltage up to and over 600V.

Two basic versions are available:

- ❑ **UB0/CR-D** function 64R definite time
- ❑ **UB0/CR-I** function 64R inverse time

All versions can be fitted with start time output.

## 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 of the trip current level as well as of 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 current flow of 2 times the maximum set level and allows the complete functional check of the relay and of the trip time delay. In one position the 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.

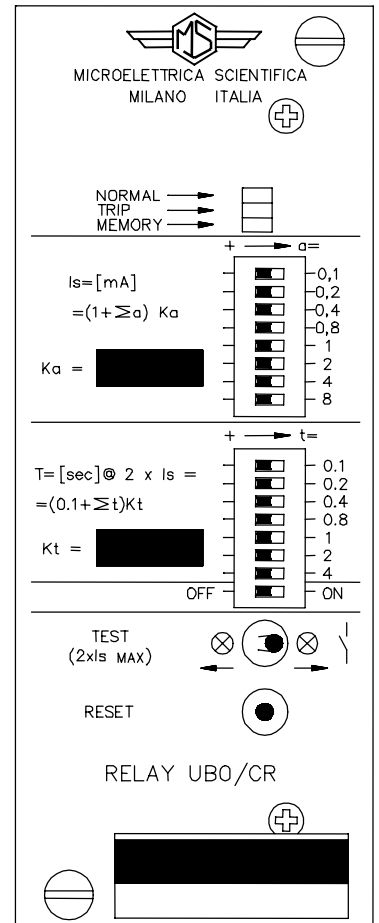
The trip memory led can be reset only by the front face reset push button.

## OUTPUT RELAYS

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

The output relays are normally deenergized (energized on trip).

On request R1 relay 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:

- ☐ Start time output (**TO**) relay R2.
- ☐ Blocking output (**BO**) relay R2.
- ☐ Blocking input (**BI**).

## OVERALL DIMENSIONS

See Overall Dimensions - 1 Module Relay.

## ELECTRICAL CHARACTERISTICS

Output voltage	: 20 V	Burden on input voltage	: 3W(d.c.); 6VA(a.c.)
Auxiliary power supply	:	Type 1	: 24-110 V d.c./a.c. $\pm$ 20% permanent
		Type 2	: 90-220 V d.c./a.c. $\pm$ 20% permanent
Input circuits overload	: 1,5 Vn x 10 sec. 1,2 Vn continuously		
Max Field Rated Voltage	Vg = 600V		

Additional Resistor: For  $I_s = (1 \div 17.5) \text{ mA}$  :  $15000 > R_{AD} > (15V_g) \Omega$        $W \geq 2 \frac{V_g^2}{R_{AD}} \text{ W}$   
 For  $I_s = (2 \div 35) \text{ mA}$  :  $8000 > R_{AD} > (11V_g) \Omega$

## STANDARD SETTING RANGES (Different on request) - time/current curves (page 78-79)

**Trip level** :  $I_s = (1 + 17.5) \times K_a [\text{mA}]$

- ☐  $K_a = 1$  :  $I_s = (1 \div 17.5) \text{ mA}$  step 0.1 mA (\*)
- ☐  $K_a = 2$  :  $I_s = (2 \div 35) \text{ mA}$  step 0.2 mA

**Trip time delay** :  $T = (0.1 + 8.6) K_t [\text{s}]$

- ☐  $K_t = 2$  :  $T = (0.2 \div 17.2) \text{ s}$  step 0.2 s. (\*)

*Note:* for inverse time versions the trip time delay T is that corresponding to an actual current flow of 2 times the set current:  $T = \text{sec} @ 2 \times I_s$ , according to the time/current curves (see page 78-79).

(\*)Standard version

## WIRING DIAGRAM

