

# ELR-3B



## ELECTRONIC EARTH LEAKAGE RESIDUAL CURRENT PROTECTION AND MONITORING RELAY (Type B)

For AC, DC and AC/DC installations. Frequencies up to 1 kHz.

- FREQUENCY CONVERTERS
- MEDICAL DEVICES SUCH AS RADIOGRAPHY AND/OR TAC EQUIPMENT
- INVERTER FOR PHOTOVOLTAIC SYSTEMS (AC SIDE)
- POWER SUPPLY LIFTS
- TEST FACILITIES IN LABORATORIES
- PRODUCTION FACILITIES AT CONSTRUCTION SITES
- LOADING STATIONS AND FORKLIFT TRUCKS
- CRANES FOR INDUSTRY, CRAFTS AND TRADE
- MECHANICAL WORKSHOPS (ARC WELDING MACHINES)
- METALWORKING MACHINES FOR NUMERICAL CONTROL



CORRECT



ALARM

### INSTANTANEOUS DISPLAY

LCD display that enables quick viewing of the mean leakage current. Incorporates illuminated status change for instantaneous detection of the status of the installation.

STANDARDS

IEC 62020-IEC 60755  
IEC 60947-2 (annex M)

11 / 2017

**control** elettronica

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### Applications



HOSPITAL SEGMENT



UPS (Uninterruptible Power Supply Systems)



MOTOR CONTROL DEVICES, ETC.



PHOTOVOLTAIC INSTALLATIONS

### Description

**In the industrial, tertiary and medical sectors, the use of Class I users is increasingly frequent, such as frequency converters, hospital users (radiographs, TACs, etc.) and UPS.**

These loads, in the event of failure of the main isolation, may give rise to unidirectional continuous differential current failures not detectable by type A and AC circuit breakers.

The presence of continuous dispersion currents would lead to a premagnetization of the ferromagnetic core, which would work in an induction zone not at all (at saturation limit).

A possible measure of protection could be the use of heavy and expensive isolation transformers, or alternatively the new type B relays that represent a cost-effective, compact and technically sound solution.



UNIVERSAL EARTH LEAKAGE CURRENT MONITORING (type B)



PREVENTIVE CONTROL



EASY LEAKAGE DIAGNOSTICS



CORRECT



ALARM

INSTANTANEOUS DISPLAY  
LCD display that enables quick viewing of the mean leakage current. Incorporates illuminated status change for instantaneous detection of the status of the installation.

### Features

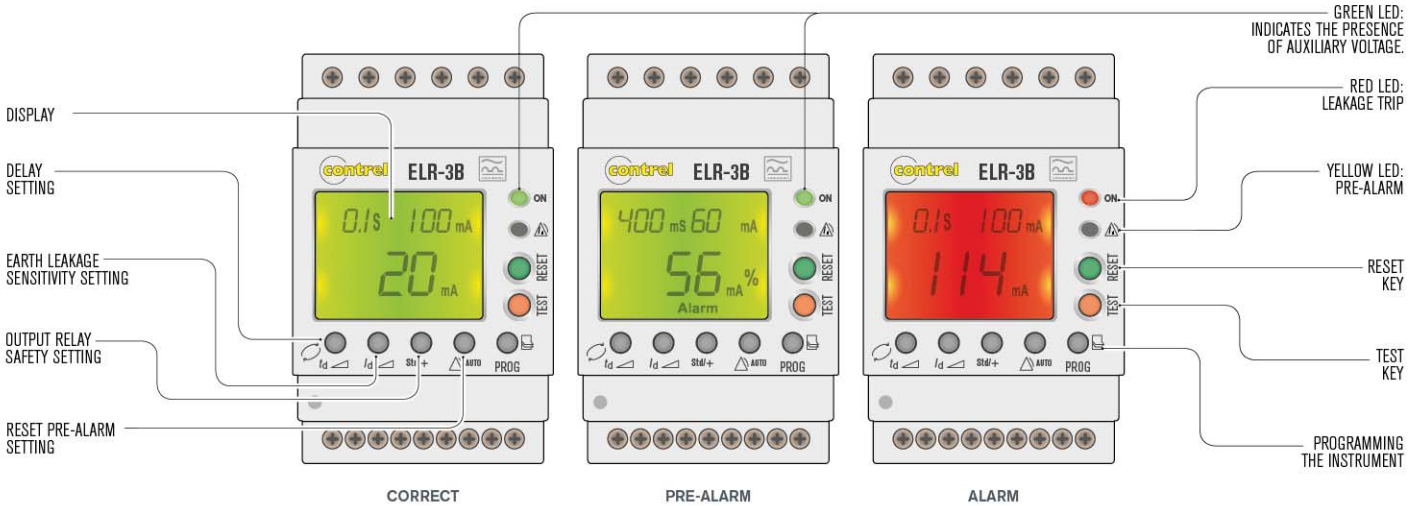
- MEASURES IN AC, DC OR MIXED CURRENT, TYPE B (IEC 60755).
- MEASURES THE INTENSITY OF THE CURRENT BY CONNECTING TO AN EARTH LEAKAGE TRANSFORMER OF THE CTB SERIES.
- PROGRAMMABLE WITH BACKLIGHT LCD DISPLAY:
  - Trip current (red display when tripped).
  - Parameter programming.
  - Instantaneous leakage current.
  - Disconnection of external transformer.
- STATUS SIGNALLING VIA 2 LEDS.
- FEATURES TWO INDEPENDENT PROGRAMMABLE OUTPUTS (MAIN AND PREALARM).
- INCLUDES A REMOTE-CONTROL INPUT.
- ASSEMBLY ON DIN 46277 RAIL (EN 50022), 3 MODULES.

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## ELECTRONIC EARTH LEAKAGE RESIDUAL CURRENT PROTECTION AND MONITORING RELAY (Type B)



### Operators and alarms with visual indications



### Technical features

Type	B (IEC 60755)
Adjustments tripping set-point ( $I_{\Delta}$ )	0.03 ... 3A
Adjustments tripping time (t)	0.1 ... 10 s
Earth leakage transformer	External, CTB series
Test e reset	Using button T and R
Remote and control	Remote test and reset possible
LED indicators	<ul style="list-style-type: none"> <li>Power supply voltage</li> <li>Prealarm</li> <li>Leakage trip (TRIP)</li> </ul>
Display	<ul style="list-style-type: none"> <li>Leakage current (instantaneous value)</li> <li>Trip current (red LCD)</li> <li>Parameter programming</li> <li>CTB transformer disconnection</li> </ul>
Remote signalling	<ul style="list-style-type: none"> <li>Alarm</li> <li>Pre-alarm</li> </ul>

### Electrical features

Auxiliary power supply	230 VAC $\pm$ 20% 50 / 60 Hz, 6 VA
Output contacts	250 VAC, 6A
Operating temperature	-10 °C...+50 °C

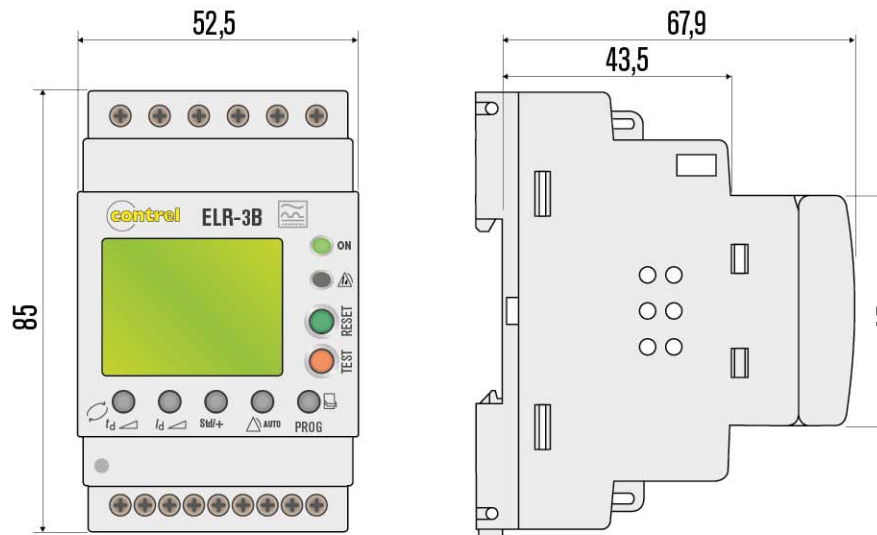
### Mechanical features

Dimensions	3 modules DIN
Weight	260 g
Protection degree	IP 20 terminals   IP 41 back panel
Reference standards	IEC 62020, IEC 60755, IEC 60947-2 (Annex M)

### Mechanical dimensions (mm)

#### Only 3 modules

Saves space in the electric panel with its reduced size.  
Assembly on DIN Rail..

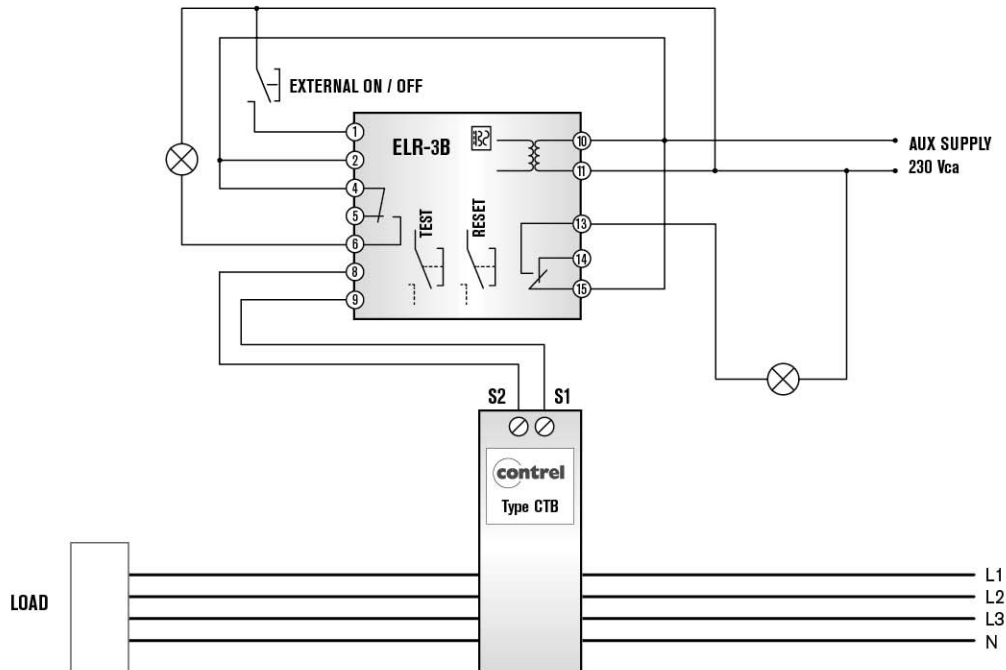


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## Wiring connection



## Current transformers

The choice of the transformer depends on the diameter of the hole through which all active conductors of the line to be protected must pass and the minimum value of the leakage current to be detected.



TYPE	Diameter (Ø mm)	Minimum current measured (mA)	Weight (g)
<b>CTB-1/22</b>	20	30	60
<b>CTB-1/28</b>	28	30	60
<b>CTB-1/35</b>	35	30	110
<b>CTB-1/60</b>	60	300	110
<b>CTB-1/80</b>	80	500	156
<b>CTB-1/110</b>	110	500	110
<b>CTB-1/160</b>	160	500	110
<b>CTB-1/210</b>	210	500	156

