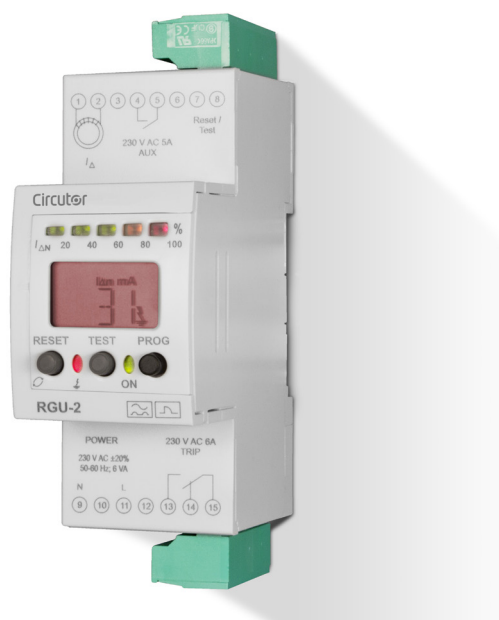


Circuitor

Earth leakage relay

RGU-2




INSTRUCTION MANUAL


(M98251301-03-19A)




SAFETY PRECAUTIONS


Follow the warnings described in this manual with the symbols shown below.

	<p>DANGER Warns of a risk, which could result in personal injury or material damage.</p>
---	---

	<p>ATTENTION Indicates that special attention should be paid to a specific point.</p>
---	--

If you must handle the unit for its installation, start-up or maintenance, the following should be taken into consideration:

	<p>Incorrect handling or installation of the unit may result in injury to personnel as well as damage to the unit. In particular, handling with voltages applied may result in electric shock, which may cause death or serious injury to personnel. Defective installation or maintenance may also lead to the risk of fire. Read the manual carefully prior to connecting the unit. Follow all installation and maintenance instructions throughout the unit's working life. Pay special attention to the installation standards of the National Electrical Code.</p>
---	---

	<p>Refer to the instruction manual before using the unit In this manual, if the instructions marked with this symbol are not respected or carried out correctly, it can result in injury or damage to the unit and /or installations.</p>
---	--

CIRCUTOR, SA reserves the right to modify features or the product manual without prior notification.

DISCLAIMER

CIRCUTOR, SA reserves the right to make modifications to the device or the unit specifications set out in this instruction manual without prior notice.

CIRCUTOR, SA on its web site, supplies its customers with the latest versions of the device specifications and the most updated manuals.

www.circutor.com



CONTENTS

SAFETY PRECAUTIONS	3
DISCLAIMER	3
CONTENTS	4
REVISION LOG.....	5
1.- VERIFICATION UPON RECEPTION	6
2.- PRODUCT DESCRIPTION	6
3.- DEVICE INSTALLATION	7
3.1.- PRIOR RECOMMENDATIONS.....	7
3.2.- INSTALLATION.....	8
3.3.- DEVICE TERMINALS.....	8
3.4.- CONNECTION DIAGRAM.....	9
3.4.1. AS A PROTECTION ELEMENT (MRCD)	9
3.4.2. AS A MONITOR (RCM).....	10
4.- START-UP	11
4.1.- DEFAULT CONFIGURATION.....	11
4.2.- BASIC SETUP	12
5.- OPERATION	12
5.1.- KEYBOARD FUNCTIONS.....	12
5.2.- DISPLAY	13
5.3.- LED INDICATORS.....	15
5.4.- INPUTS.....	15
5.5.- OUTPUTS	16
5.5.1. TRIP RELAY, TRIP.....	16
5.5.2. AUXILIARY RELAY, AUX	16
5.6.- PROGRAMMING	17
5.6.1 TRIP CURRENT $I_{\Delta n}$ and TRIP DELAY TIME t_d	17
5.6.2 PROGRAMMING THE AUXILIARY RELAY, AUX.....	18
5.6.3 FREQUENCY AND STATUS OF THE OUTPUT RELAY CONTACTS.....	18
5.6.4 LOCKING THE KEYBOARD.....	20
5.7.- TRIP EVENTS.....	21
5.7.1. EARTH LEAKAGE CURRENT INTENSITY TRIP	21
5.7.2. LOCAL / EXTERNAL TEST TRIP	22
5.7.3. UNDERVOLTAGE / POSITIVE SAFETY PROTECTION TRIP	22
5.7.4. INPUT SENSOR ERROR TRIP	22
5.8.- RECLOSING SYSTEM	23
5.8.1. "MANUAL" RECLOSING SYSTEM WITH THE RESET KEY	23
5.8.2. RECLOSING SYSTEM WITH THE EXTERNAL TEST/RESET INPUT	23
6.- TECHNICAL FEATURES	24
7.- MAINTENANCE AND TECHNICAL SERVICE.....	26
8.- WARRANTY.....	26
9.- CE CERTIFICATE.....	27
APPENDIX A: TRIP CURVES	30

REVISION LOG

Table 1: Revision log.

Date	Revision	Description
10/13	M98251301-03-13A	Initial Version
11/13	M98251301-03-13B	Modified Figure 1
05/16	M98251301-01-16A	Modification section: 2.- 3.3. - 3.4. - 5.6.1. - 5.7.1. - 5.7.2. - 6
04/18	M98251301-01-18A	Modification section: 6.- 9.
07/19	M98251301-01-19A	Modification section: Cover page - 2.

1.- VERIFICATION UPON RECEPTION

Check the following points when you receive the device:

- a) The device meets the specifications described in your order.
- b) The device has not suffered any damage during transport.
- c) Perform an external visual inspection of the device prior to switching it on.
- d) Check that it has been delivered with the following:
 - a seal to lock the programming button.
 - installation guide.



If any problem is noticed upon reception, immediately contact the transport company and/or **CIRCUTOR's** after-sales service.

2.- PRODUCT DESCRIPTION

RGU-2 is a protection and/or measurement relay (MRCD/RCM). It is a smart earth leakage protection system composed of the following elements:

- A detecting element or sensor,
- A relay,
- A circuit breaker,

The device is fully programmable. It is supplied with the following:

- **3 Keys**, used to TEST/RESET and program the device.
- **2 operation LEDs** that display the device's status.
- **LCD Display** that displays messages and operation values.
- **An LED Bar** that displays qualitative level of leakage information.
- **Plug-in terminal strips**.



The device is characterised by its reduced dimensions (2 modules mounted on a DIN rail).

It has been designed for single-phase, three-phase or three-phase with neutral low voltage electrical installations. It is suitable for all neutral rates (TT, TN, IT), either as the main protection element (MRCD) or for complementary purposes (RCM).

In the case of TT/TN-S systems, it can be used as a MRCD (IEC 60947-2) or a RCM (IEC 62020). It can only be installed as an RCM in other systems.

3.- DEVICE INSTALLATION

3.1.- PRIOR RECOMMENDATIONS



In order to use the device safely, it is critical that individuals who handle it follow the safety measures set out in the standards of the country where it is being used, use the personal protection device necessary, and pay attention to the various warnings indicated in this instruction manual.

The **RGU-2** device must be installed by authorised and qualified staff.

The power supply plug must be disconnected and measuring systems switched off before handling, altering the connections or replacing the device. It is dangerous to handle the device while it is powered.

Also, it is critical to keep the cables in perfect condition in order to avoid accidents, personal injury and damage to installations.

The manufacturer of the device is not responsible for any damages resulting from failure by the user or installer to heed the warnings and/or recommendations set out in this manual, nor for damages resulting from the use of non-original products or accessories or those made by other manufacturers.

In the event an anomaly or malfunction is detected in the device, refrain from using it to make any measurements.

Inspect the work area before making any measurements. Do not take measurements in dangerous areas or where there is a risk of explosion.



Disconnect the device from the power supply (device and measuring system power supply) before maintaining, repairing or handling the device's connections. Please contact the after-sales service if you suspect that there is an operational fault in the device.

3.2.- INSTALLATION


The device is installed on a DIN rail.

All active conductors that supply the loads or the part of the installation where the earth leakage protection with this device is required must pass through the sensor associated with the device.

The device must be mounted inside an electric panel.

Likewise, it must be connected to a fuse-protected power circuit, in accordance with its power supply range and consumption. In turn, the power circuit must be fitted with a circuit breaker switch or an equivalent device, in order to be able to disconnect the device from the power supply mains.

Note: The connection diagram suggests a cable section of 1- 1.5 mm.
Recommended torque 0.5-0.6 Nm.

	<p>Terminals, opening covers or removing elements can expose parts that are hazardous to the touch while the device is powered</p>
---	--

3.3.- DEVICE TERMINALS

Table 2: Device terminals.

Device terminals	
1, 2 : External current sensor input.	8: External Test/Reset input with button.
3, 6, 10, 12: Not used	9, 11: Auxiliary Power Supply
4: Prealarm/Fault relay output: NO Contact	13: Trip relay output: NO Contact
5: Prealarm/Fault relay output: COM Contact	14: Trip relay output: NC Contact
7: External Test/Reset input with button.	15: Trip relay output: COM Contact

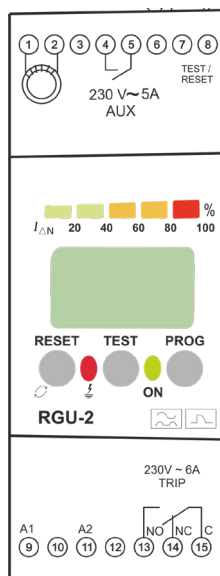


Figure 1: Device terminals.

3.4.- CONNECTION DIAGRAM

3.4.1. AS A PROTECTION ELEMENT (MRCD)

A.- SHUNT COIL TRIP (Manual reclosing system with RESET)

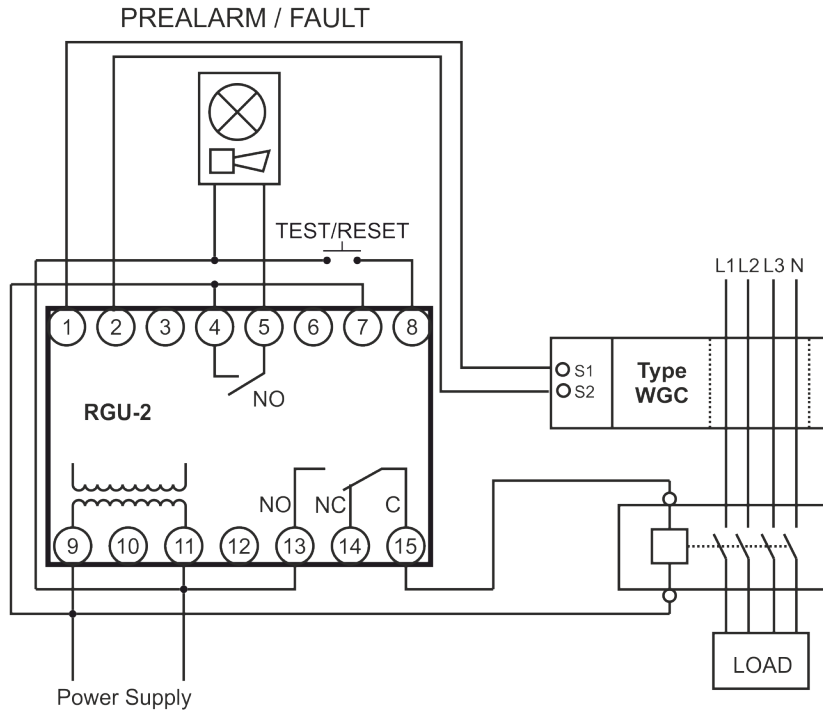


Figure 2: Connection diagram of the device as a protection element: shunt coil trip.

B.- UNDERVOLTAGE COIL TRIP (Manual reclosing system with RESET)

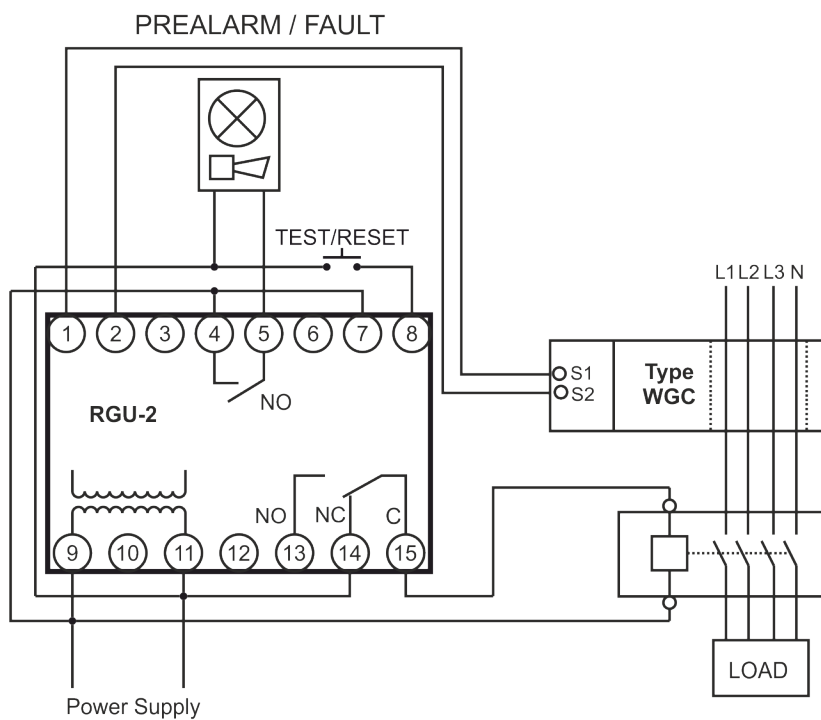


Figure 3: Connection diagram of the device as a protection element: undervoltage coil trip.

3.4.2. AS A MONITOR (RCM)

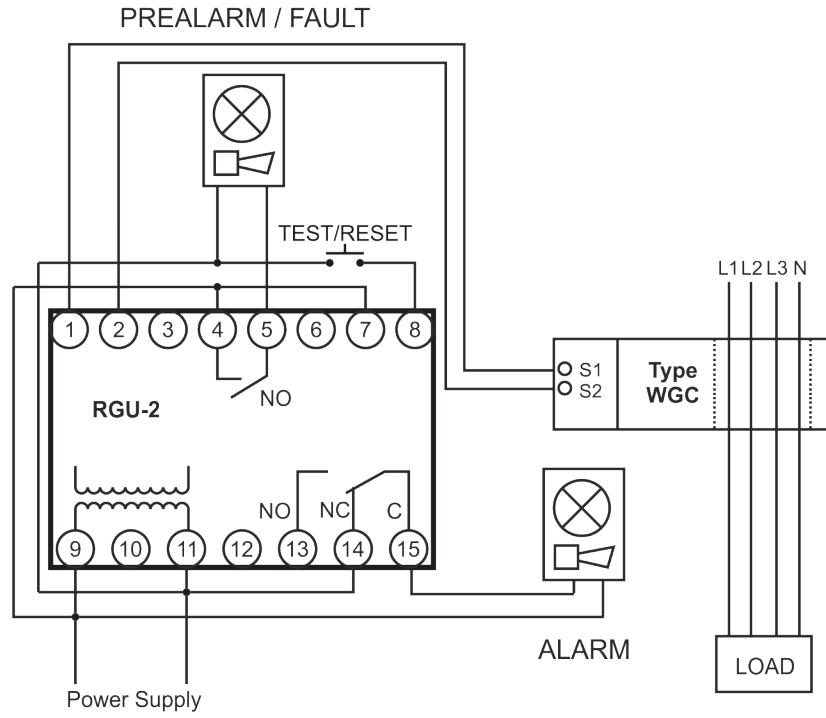


Figure 4: Connection diagram of the device as a monitor.

4.- START-UP

4.1.- DEFAULT CONFIGURATION

When the device is powered with auxiliary voltage, the **ON** LED is lit green and the **LCD** is backlit green.

The name of the model, firmware version and a fixed screen that shows the conditions in which the earth leakage protection is characterised will be displayed.

This screen is displayed by default when there are no external actions (**Figure 5**).

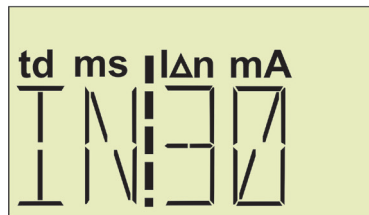


Figure 5: Earth leakage protection screen

The device is supplied with the following default factory configuration:

- Trip current scale (**I Δ n**) : 30mA
- Trip time scale (**td**) : Instantaneous curve (**IN**)
- Frequency: 50 Hz
- Auxiliary relay function: Fault relay
- Polarity of the trip relay: Standard
- Polarity of the auxiliary relay: Standard

In case a level of leakage has been detected, the LCD will show the earth leakage symbol, (**Figure 6**).

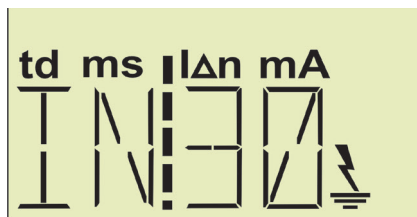


Figure 6: Earth leakage protection with leakage screen.

Finally, the following screen will be displayed when the AUX relay has been configured as a prealarm, (**Figure 7**).

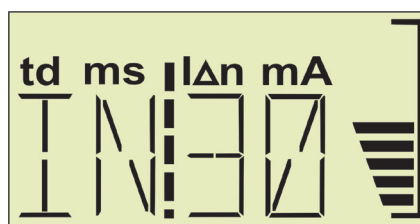


Figure 7: Earth leakage protection with prealarm screen.

4.2.- BASIC SETUP

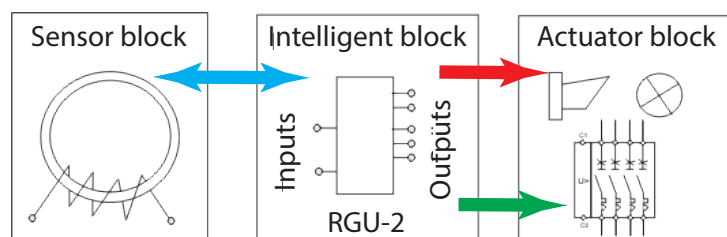
Once the device has been connected, it must be programmed in accordance with the installation's features.

The following basic parameters can be programmed:

- ✓ Adjust the trip current.
- ✓ Adjust the trip delay time.
- ✓ Select the frequency of the installation to be supervised.

5.- OPERATION

The **RGU-2** device helps control the electrical insulation level of an installation by controlling the intensity of the leakage current.



An external sensor detects and measures the earth leakage current. **Circuitor** offers the following device protection models in its current range of sensors: **WG/WGS/WGC/TP-WG**.

When the instantaneous leakage current has been measured, the **RGU-2** device will operate in accordance with the programmed parameters:

- Trip current (**I Δ n**)
- Trip delay time (**td**)

As a result, the status of the device's output contacts will be changed. The output of this contact will be used as follows, depending on the final application type:

- Earth leakage protection (IEC61008-1), the circuit breakers are activated.
- Earth leakage monitoring (IEC62020), alarm alerts, sound and/or visual devices.

5.1.- KEYBOARD FUNCTIONS

The device has 3 keys: **RESET**, **TEST** and **PROG**.

PROG Key

Pressing this key displays the different screens and opens the programming mode (hold down the key for 2 seconds) to adjust the different programming parameters.

This key is sealable; it is supplied with a small hole where the configuration can be physically disabled.

TEST Key

Press the **TEST** key to check the connection status of the sensor element and force the tripping of the device.

RESET key

Locally rearms the electronic relay, resetting the status of the output contacts to the normal standby status.

If the device is in standby status, it will scroll down the model and version (5s) on the green LCD.

5.2.- DISPLAY

The device has a green/red backlit LCD. The background will be green under normal conditions.

The display will be red in case of events that cause an action (protection trigger or circuit breaker being tripped).

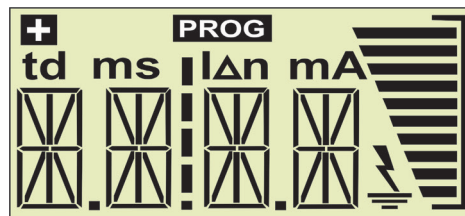


Figure 8:Display

The following are shown on the display by default:

- **IΔn**, Adjusted trip current and associated devices.
- **td**, Delay time of the adjusted trip and associated devices.
- Prealarm symbol (when active).

The device has different screens that can be set as the device's display:

✓ **Earth leakage protection screen (Figure 9)**

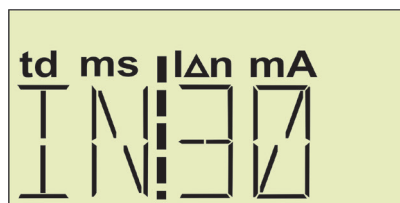


Figure 9:Earth leakage protection screen

✓Instantaneous current screen (Figure 10)

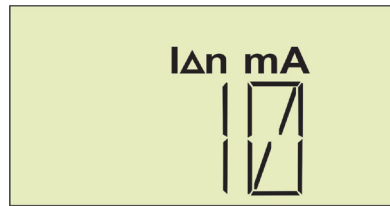


Figure 10: Instantaneous current screen

The trip current will be displayed when the protection element has been tripped (Figure 11):



Figure 11: Trip current screen (Example: 45mA trip current)

Floating screens can also be displayed; they will be shown during 5 seconds and then return to the fixed active screen, such as:

✓AUX relay prealarm screen (Figure 12).



Figure 12: Prealarm screen.

✓AUX relay fault screen (Figure 13).



Figure 13: Fault relay screen.

5.3.- LED INDICATORS

The device has the following LEDs:

✓LED ON

Green LED, indicates that the device is voltage-fed.
The LED flashes when problems have been detected in the sensor.

✓LEAKAGE LED

Red LED indicates that the protection element has been tripped as a result of a residual current intensity value that is higher than the current threshold required to trip the protection element.

✓LED Bar

LED Bar indicates the leakage current level of the installation. The current levels are displayed as a %, in accordance with the selected trip scale:

Table 3: LED Bar.

Leakage current level (%)	Color LED bar
20% - 40% - 60%	Green
80%	Yellow
100%	Red

5.4.- INPUTS

The device has two inputs:

✓**External current sensor input** (terminals 1 and 2 in **Figure 1**). With this input the device checks every 5 seconds whether the connection with the external sensor is correct by means of an inductive test.

✓**External test input with button** (terminals 7 and 8 in **Figure 1**).

Input activated by level. When voltage is applied, this forces the tripping of the device; when it is no longer applied the device returns to the previous state.

The keyboard reset function will be disabled when this input is active.

5.5.- OUTPUTS

The device has two independent output relays:

5.5.1. TRIP RELAY, TRIP

Switched contact relay (terminals 13, 14 and 15 in **Figure 1**)

The device can be programmed to modify the logical status of the contact (*refer to “5.6.3 FREQUENCY AND STATUS OF THE OUTPUT RELAY CONTACTS”*) from the standard NC/NO status to the NO/NC positive safety status.

The positive safety status is shown on all screens that refer to the **TRIP**, with the + sign (**Figure 14**). The prealarm/fault screen will not be affected by this.

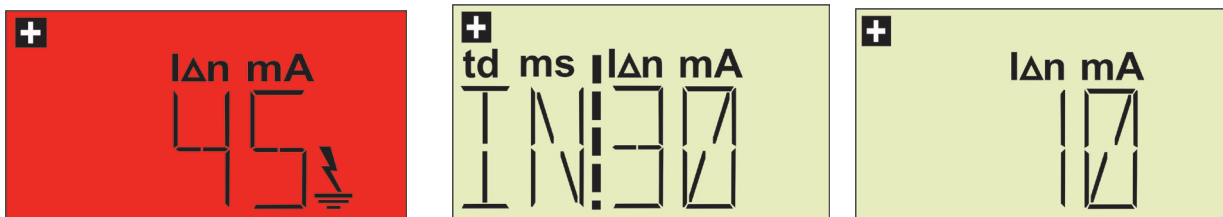


Figure 14: Positive safety status screen

5.5.2. AUXILIARY RELAY, AUX

Simple contact relay (terminals 4 and 5, and **Figure 1**) non-interlocking. Its operation can be programmed as a prealarm or fault relay (*refer to “5.6.2 PROGRAMMING THE AUXILIARY RELAY, AUX”*)

✓ **Prealarm (ALAR)**, activated when the $I\Delta > 0.5 \cdot I\Delta_n$, in 200 milliseconds. The logical status of the contact (*refer to “5.6.3 FREQUENCY AND STATUS OF THE OUTPUT RELAY CONTACTS”*) can be changed from the NO standard status to the NC positive safety status.

✓ **The Fault relay (AUXF)**, is activated to notify fault events in the device, such as undervoltages (the voltage is below the device's operation voltage - the device turns off below this voltage) or faults in the external sensor.

In this case, the relay operates with the positive safety status.

Positive safety is shown with the + sign (only in the screens that refer to the **AUX** relay).

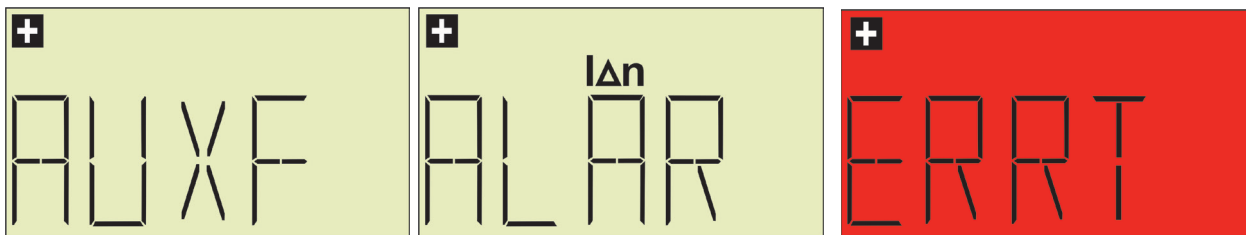
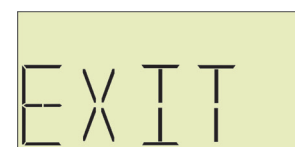
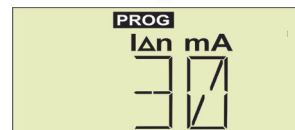
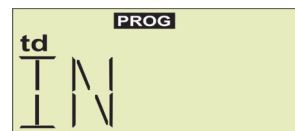
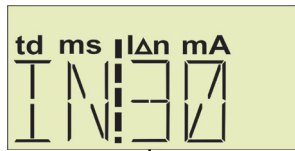


Figure 15: Screens with a positive safety status.

5.6.- PROGRAMMING

5.6.1 TRIP CURRENT $I_{\Delta n}$ and TRIP DELAY TIME t_d

The earth leakage protection screen must be displayed to program the current and delay time of the trip. Hold down the **PROG** key for 2 seconds.



Trip delay time, t_d

The current value will start flashing. Press the **RESET** key gradually to browse all programming values (Table 4). Accept with the **PROG** key.

Trip current, $I_{\Delta n}$

The current value will start flashing. Press the **RESET** key gradually to browse all programming values (Table 4). Accept with the **PROG** key.

PROG If changes have been applied, **SAVE** will be displayed for 3 seconds and the unit will exit the programming screens.

If changes have not been applied, **EXIT** will be displayed for 3 seconds and the unit will exit the programming screens.

Note: If you reach the last value of the Trip current to be configured and you do not press the **PROG** key to accept the changes, the device will exit the programming screen after 5 seconds and the changes will not be saved.

Table 4: Relationship of Currents and Trip Times to be programmed.

Trip current $I_{\Delta n}$	Trip time t_d
30mA	IN (Instantaneous) ⁽¹⁾
0.1A	SE (Selective) ⁽¹⁾
0.3A	0.1s
0.5A	0.2s
1A	0.3s
2A	0.5s
3A	0.8s
5A	1s
	2s
	3s

table 4 (Continuation): Relationship of Currents and Trip Times to be programmed.

Trip current $I\Delta n$	Trip time t_d
	5s

⁽¹⁾ The trip curves are shown in Appendix A

5.6.2 PROGRAMMING THE AUXILIARY RELAY, AUX

Open the auxiliary output screen and hold down the **RESET** key for 2 seconds to program the operation of the auxiliary relay.



Prealarm (ALAR)

This is activated when $I\Delta > 0.5 \cdot I\Delta n$, in 200 milliseconds.



Fault relay (AUXF)

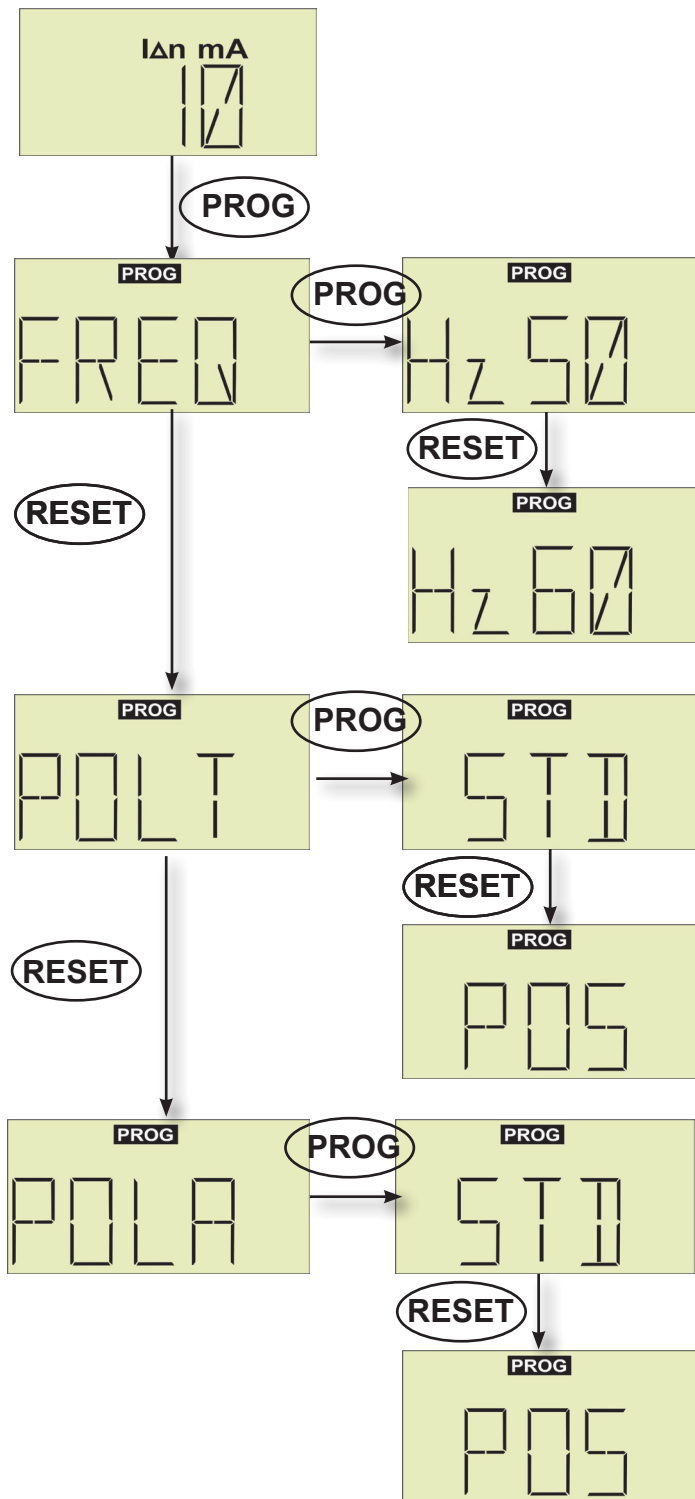
Shows fault events in the unit, such as undervoltages or faults in the external sensor.

Operates in the positive safety status.



5.6.3 FREQUENCY AND STATUS OF THE OUTPUT RELAY CONTACTS

To program the frequency and status of the output relay contacts, **TRIP** and **AUX**, open the instantaneous current screen and hold down the **PROG** key for 2 seconds.



Frequency (50Hz by default)
 Select the frequency: 50Hz or 60Hz.

Accept with the **PROG** key.

Status of the TRIP relay contact (STD, by default)

STD: Standard NC/NO status
POS: NO/NC positive safety status
 When this option is activated, the + sign will appear on all screens that refer to the **TRIP** relay.

Accept with the **PROG** key.

Status of the AUX relay contact (STD, by default)

STD: Standard NO status.
POS: NC positive safety status.
 When this option is activated, the + sign will appear on all screens that refer to the **AUX** relay.

Accept with the **PROG** key.

SAVE

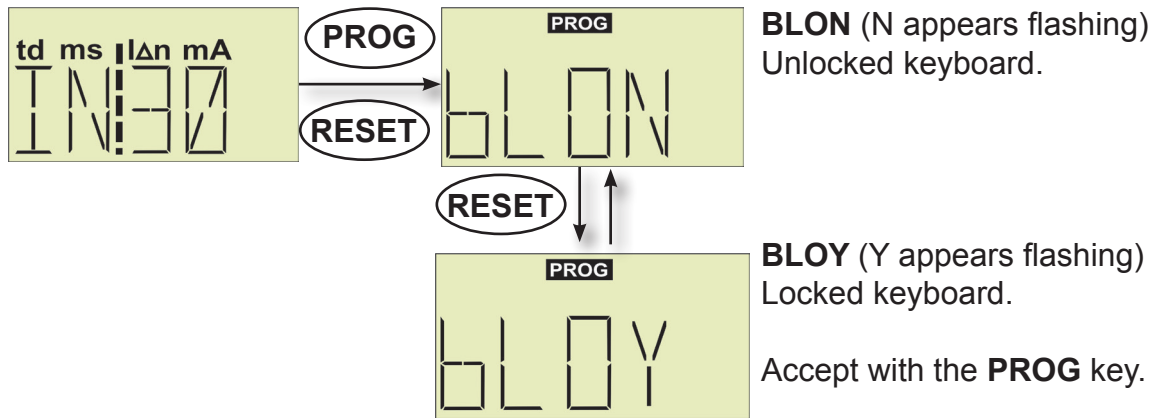
*If changes have been applied, **SAVE** will be displayed for 3 seconds and the unit will exit the programming screens.*

EXIT

*If changes have not been applied or the keyboard has been inactive during 5 seconds, **EXIT** will be displayed for 3 seconds and the unit will exit the programming screens.*

5.6.4 LOCKING THE KEYBOARD

The device has a series of devices that can be used to disable the programming operations (sealable **PROG** button). However, the **PROG** key can be locked with the device's software by holding down the **RESET** and **PROG** keys for 2 seconds.



*If changes have been applied, **SAVE** will be displayed for 3 seconds and the unit will exit the programming screens.*



*If changes have not been applied or the keyboard has been inactive during 5 seconds, **EXIT** will be displayed for 3 seconds and the unit will exit the programming screens.*

When the **PROG** key is locked, a floating message will appear on the display to show that it is protected if it is pressed.

5.7.- TRIP EVENTS

When a circuit breaker has been activated, the LEDs, output contacts and display will indicate the cause that generated this situation.

5.7.1. EARTH LEAKAGE CURRENT INTENSITY TRIP

✓LED

ON LED, fixed.

LEAKAGE LED, fixed.

✓OUTPUT RELAYS

The **TRIP** relay (terminals 13,14,15) changes its status, $I_{\Delta n} > 0,85 \cdot I_{\Delta n}$, in accordance with the programmed times

The **AUX** relay (terminals 4,5) only changes its status if it has been configured as a pre-alarm

✓DISPLAY

Fixed red screen that shows the leakage with the earth leakage symbol (**Figure 16**).

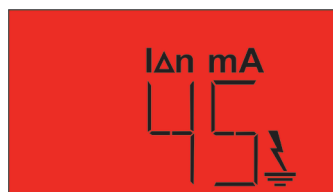


Figure 16:Leakage screen

Prealarm symbol when this function has been activated (**Figure 17**).



Figure 17:Leakage with prealarm screen

Note : Press the *PROG* key to modify the current and trip time. (refer to “5.6.1 TRIP CURRENT $I_{\Delta n}$ and TRIP DELAY TIME t_d ”)

If the value is off the scale ($> 5 \cdot I_{\Delta n}$), **OVR** and the pre-alarm symbol will be displayed (**Figure 18**).



Figure 18: Off the scale screen

5.7.2. LOCAL / EXTERNAL TEST TRIP

✓LED

ON LED, fixed.

LEAKAGE LED, fixed.

✓OUTPUT RELAYS

The **TRIP** relay (terminals 13,14,15) changes its status.

The **AUX** relay (terminals 4,5), only changes its status if it has been configured as a prealarm

✓DISPLAY

Red screen that shows that the cause has been as a result of the **TEST** (Figure 19),



Figure 19: Test screen

5.7.3. UNDERVOLTAGE / POSITIVE SAFETY PROTECTION TRIP

✓OUTPUT RELAYS

The **AUX** relay (terminals 4,5), only changes its status if it has been configured in the fault mode with positive safety. When the power supply voltage is below the minimum operating voltage of the device, the relay output will change its status to standby.

5.7.4. INPUT SENSOR ERROR TRIP

✓LED

ON LED, flashing

LEAKAGE LED, fixed.

✓OUTPUT RELAYS

The **TRIP** relay (terminals 13,14,15) changes its status.

The **AUX** relay (terminals 4,5), only changes its status if it has been configured in the fault mode.

✓DISPLAY

Red screen that shows that the cause has been an inductor error in the input sensor (Figure 20).



Figure 20: Input sensor error screen

5.8.- RECLOSING SYSTEM

The reclosing system varies after a leakage or test trip, in accordance with the unit's connection diagram.

5.8.1. "MANUAL" RECLOSING SYSTEM WITH THE RESET KEY

The unit's power supply must be connected before the circuit breaker.

1. In the event of tripping, the unit is set to tripping conditions and the circuit breaker (MCB/MCCB with coil) is set to **OFF**.
2. The unit returns to the normal operating conditions after the **RESET** key has been pressed.
3. Finally, the **ON** circuit breaker is activated manually.

***Note:** In case a contactor is used as a circuit breaker, reclosing the **RGU-2** recloses the system with no need to perform any other operations.*

5.8.2. RECLOSING SYSTEM WITH THE EXTERNAL TEST/RESET INPUT

The unit also can reconnect with the external Test/Reset input (terminals 7 and 8 in **Figure 1**).

6.- TECHNICAL FEATURES

Power Supply	
Voltage	120 ... 230V ~
Frequency	50 Hz - 60 Hz
Maximum consumption	6 VA (230V ~)
Voltage pulse	4KV
Installation category	CAT III 300V
Current measurement circuit	
Sensor input	Transformer type TP-WG, WG o WGC to 500/1
Frequency	50Hz -60Hz
Accuracy in measurement	
Accuracy current measurement	< 10%
Characteristics of trip relay TRIP ⁽¹⁾	
Maximum voltage open contacts	1000V ~
Isolation voltage	2500V ~
Thermal current, I _{th}	10A
Maximum switching power	2500 ~
Electrical life (3A)	30*10 ³
Characteristics of auxiliar relay AUX	
Maximum voltage open contacts	1000V ~
Isolation voltage	2000V ~
Thermal current, I _{th}	5A
Maximum switching power	1250 VA, 150W
Electrical life (3A)	10 ⁵
Environmental characteristics	
Work temperature	-10°C ... +50°C
Storage temperature	-25°C ... 70°C
Humidity (without condensation)	5 ... 95%
Maximum altitude	2000 m
Pollution resistance	Category 2
Protection degree	IP40
Mechanical characteristics	
Dimensions	35x112x84 mm (Figure 21)
Weight	150gr
Housing	Polycarbonate V0
Standards	
Low-voltage switchgear and controlgear . Part 2: Circuit-breakers	IEC 60947-2 Anexo M: 2011
Electrical accessories - Residual current monitors for household and similar uses (RCMs)	IEC 62020: 1998

⁽¹⁾**CIRCUITOR** guarantees that the **RGU-2** device complies with a response time of less that 30 ms to 5I_n, and in combination with the selected cutting element must guarantee a total cutt-off time of less that 40 ms to comply with the IEC 60947-2-M standard.

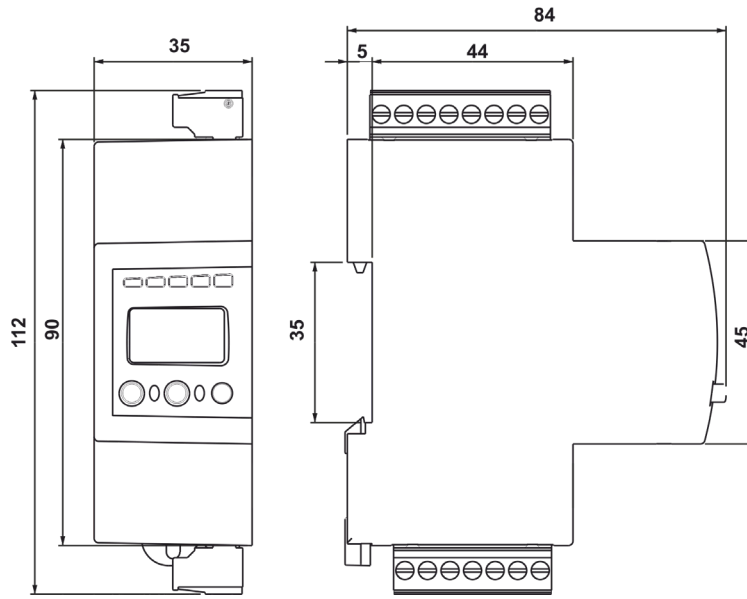


Figure 21:Dimensions of the RGU-2

7.- MAINTENANCE AND TECHNICAL SERVICE

In the case of any query in relation to device operation or malfunction, please contact the **CIRCUTOR, SA** Technical Support Service.

Technical Assistance Service

Vial Sant Jordi, s/n, 08232 - Viladecavalls (Barcelona)

Tel: 902 449 459 (España) / +34 937 452 919 (outside of Spain)

email: sat@circutor.com

8.- WARRANTY

CIRCUTOR guarantees its products against any manufacturing defect for two years after the delivery of the units.

CIRCUTOR will repair or replace any defective factory product returned during the guarantee period.



- No returns will be accepted and no unit will be repaired or replaced if it is not accompanied by a report indicating the defect detected or the reason for the return.
- The guarantee will be void if the units has been improperly used or the storage, installation and maintenance instructions listed in this manual have not been followed. "Improper usage" is defined as any operating or storage condition contrary to the national electrical code or that surpasses the limits indicated in the technical and environmental features of this manual.
- **CIRCUTOR** accepts no liability due to the possible damage to the unit or other parts of the installation, nor will it cover any possible sanctions derived from a possible failure, improper installation or "improper usage" of the unit. Consequently, this guarantee does not apply to failures occurring in the following cases:
 - Overvoltages and/or electrical disturbances in the supply;
 - Water, if the product does not have the appropriate IP classification;
 - Poor ventilation and/or excessive temperatures;
 - Improper installation and/or lack of maintenance;
 - Buyer repairs or modifications without the manufacturer's authorisation.

9.- CE CERTIFICATE



CIRCUTOR, SA – Vial Sant Jordi, s/n
08232 Viladecavalls (Barcelona) Spain
(+34) 937 452 900 – info@circutor.com



DECLARACIÓN UE DE CONFORMIDAD

La presente declaración de conformidad se expide bajo la exclusiva responsabilidad de CIRCUTOR con dirección en Vial Sant Jordi, s/n – 08232 Viladecavalls (Barcelona) España

Producto:

Reles diferenciales para transformadores WGC, tipo A ultraimmunizados, 2 módulos y display

Serie:

RGU-2

Marca:

CIRCUTOR

EL objeto de la declaración es conforme con la legislación de armonización pertinente en la UE, siempre que sea instalado, mantenido y usado en la aplicación para la que ha sido fabricado, de acuerdo con las normas de instalación aplicables y las instrucciones del fabricante

2014/35/UE: Low Voltage Directive 2014/30/UE: Electromagnetic Compatibility Directive
2011/65/UE: RoHS2 Directive

Está en conformidad con la(s) siguiente(s) norma(s) u otro(s) documento(s) normativos(s):

IEC 60947-2:2006/AMD1:2009/AMD2:2013 IEC 61412 Annex M IEC 62020:1998 Ed 1.0

Año de marcado "CE":

2013



EU DECLARATION OF CONFORMITY

This declaration of conformity is issued under the sole responsibility of CIRCUTOR with registered address at Vial Sant Jordi, s/n – 08232 Viladecavalls (Barcelona) Spain

Product:

Earth leakage relays for WGC transformers, 2 modules, display

Series:

RGU-2

Brand:

CIRCUTOR

The object of the declaration is in conformity with the relevant EU harmonisation legislation, provided that it is installed, maintained and used for the application for which it was manufactured, in accordance with the applicable installation standards and the manufacturer's instructions

2014/35/UE: Low Voltage Directive 2014/30/UE: Electromagnetic Compatibility Directive
2011/65/UE: RoHS2 Directive

It is in conformity with the following standard(s) or other regulatory document(s):

IEC 60947-2:2006/AMD1:2009/AMD2:2013 IEC 61412 Annex M IEC 62020:1998 Ed 1.0

Year of CE mark:

2013



DÉCLARATION UE DE CONFORMITÉ

La présente déclaration de conformité est délivrée sous la responsabilité exclusive de CIRCUTOR dont l'adresse postale est Vial Sant Jordi, s/n – 08232 Viladecavalls (Barcelona) Espagne

Produit:

Relais différentiels pour transformateurs WGC, 2 modules avec display

Série:

RGU-2

Marque:

CIRCUTOR

L'objet de la déclaration est conforme à la législation d'harmonisation pertinente dans l'UE, à condition d'avoir été installé, entretenu et utilisé dans l'application pour laquelle il a été fabriqué, conformément aux normes d'installation applicables et aux instructions du fabricant

2014/35/UE: Low Voltage Directive 2014/30/UE: Electromagnetic Compatibility Directive
2011/65/UE: RoHS2 Directive

Il est en conformité avec la(les) suivante(s) norme(s) ou autre(s) document(s) réglementaire(s):

IEC 60947-2:2006/AMD1:2009/AMD2:2013 IEC 61412 Annex M IEC 62020:1998 Ed 1.0

Année de marquage « CE »:

2013



Viladecavalls (Spain), 17/04/2018
General Manager: Ferran Gil Torné



CIRCUTOR, SA – Vial Sant Jordi, s/n
08232 Viladecavalls (Barcelona) Spain
(+34) 937 452 900 – info@circutor.com


KONFORMITÄTSERKÄRUNG UE

Vorliegende Konformitätserklärung wird unter alleiniger Verantwortung von CIRCUTOR mit der Anschrift, Vial Sant Jordi, s/n – 08232 Viladecavalls (Barcelona) Spanien, ausgestellt

Produkt:

Differenzstromrelais für Wandler WGC, 2 Module mit Display

Serie:

RGU-2

Marke:

CIRCUTOR

Der Gegenstand der Konformitätserklärung ist konform mit der geltenden Gesetzgebung zur Harmonisierung der EU, sofern die Installation, Wartung und Verwendung der Anwendung seinem Verwendungszweck entsprechend gemäß den geltenden Installationsstandards und der Vorgaben des Herstellers erfolgt.

2014/35/UE: Low Voltage Directive 2014/30/UE: Electromagnetic Compatibility Directive
2011/65/UE: RoHS2 Directive

Es besteht Konformität mit der/den folgender/folgenden Norm/Normen oder sonstigem/sonstiger Regelwerk/Regelwerken

IEC 60947-2:2006/AM1:2009/AM2:2013/CS1/64:2/Am2/M IEC 62020:1998 Ed 1.0

Jahr der CE-Kennzeichnung:

2013


DECLARAÇÃO DA UE DE CONFORMIDADE

A presente declaração de conformidade é expedida sob a exclusiva responsabilidade da CIRCUTOR com morada em Vial Sant Jordi, s/n – 08232 Viladecavalls (Barcelona) Espanha

Produto:

Relés diferenciais para transformadores WGC, 2 modulos

Série:

RGU-2

Marca:

CIRCUTOR

O objeto da declaração está conforme a legislação de harmonização pertinente na UE, sempre que seja instalado, mantido e utilizado na aplicação para a qual foi fabricado, de acordo com as normas de instalação aplicáveis e as instruções do fabricante.

2014/35/UE: Low Voltage Directive 2014/30/UE: Electromagnetic Compatibility Directive
2011/65/UE: RoHS2 Directive

Está em conformidade com a(s) seguinte(s) norma(s) ou outro(s) documento(s) normativo(s):

IEC 60947-2:2006/AM1:2009/AM2:2013/CS1/64:2/Am2/M IEC 62020:1998 Ed 1.0

Ano de marcação "CE":

2013


DICHIARAZIONE DI CONFORMITÀ UE

La presente dichiarazione di conformità viene rilasciata sotto la responsabilità esclusiva di CIRCUTOR, con sede in Vial Sant Jordi, s/n – 08232 Viladecavalls (Barcelona) Spagna

prodotto:

Relè differenziali per trasformatori WGC, tipo A ultraimmunizzati, 2 moduli e display

Serie:

RGU-2

MARCHIO:

CIRCUTOR

L'oggetto della dichiarazione è conforme alla pertinente normativa di armonizzazione dell'Unione Europea, a condizione che venga installato, mantenuto e utilizzato nell'ambito dell'applicazione per cui è stato prodotto, secondo le norme di installazione applicabili e le istruzioni del produttore.

2014/35/UE: Low Voltage Directive 2014/30/UE: Electromagnetic Compatibility Directive
2011/65/UE: RoHS2 Directive

È conforme alle seguenti normative o altri documenti normativi:

IEC 60947-2:2006/AM1:2009/AM2:2013/CS1/64:2/Am2/M IEC 62020:1998 Ed 1.0

Anno di marcatura "CE":

2013



Viladecavalls (Spain), 17/04/2018
General Manager: Ferran Gil Torné



CIRCUITOR, SA – Vial Sant Jordi, s/n
08232 Viladecavalls (Barcelona) Spain
(+34) 937 452 900 – info@circutor.com



DEKLARACJA ZGODNOŚCI UE

Niniejsza deklaracja zgodności wydana na wyłączną odpowiedzialność firmy CIRCUITOR z siedzibą pod adresem: Vial Sant Jordi, s/n – 08232 Viladecavalls (Barcelona) Hiszpania

produkt:

Przełączniki różnicowo-prądowe dla przekładników WGC, Typu A

Seria:



RGU-2

marka:

CIRCUITOR

Przedmiot deklaracji jest zgodny z odnośnymi wymaganiami prawodawstwa harmonizacyjnego w Unii Europejskiej pod warunkiem, że będzie instalowany, konserwowany i użytkowany zgodnie z przeznaczeniem, dla którego został wyprodukowany, zgodnie z mającymi zastosowanie normami dotyczącymi instalacji oraz instrukcjami producenta

2014/35/UE: Low Voltage Directive 2014/30/UE: Electromagnetic Compatibility Directive
2011/65/UE: RoHS2 Directive

Jest zgodny z następującą(y)mi) normą(ami) lub innym(i) dokumentem(ami) normatywnym(i):

IEC 60947-2:2009/AMD1:2009/HV02:2003/CSV16:4:2:AmexM IEC 62020:1:1998 E d 1.0

Rok oznakowania "CE":

2013

Viladecavalls (Spain), 17/04/2018
General Manager: Ferran Gil Torné



APPENDIX A: TRIP CURVES

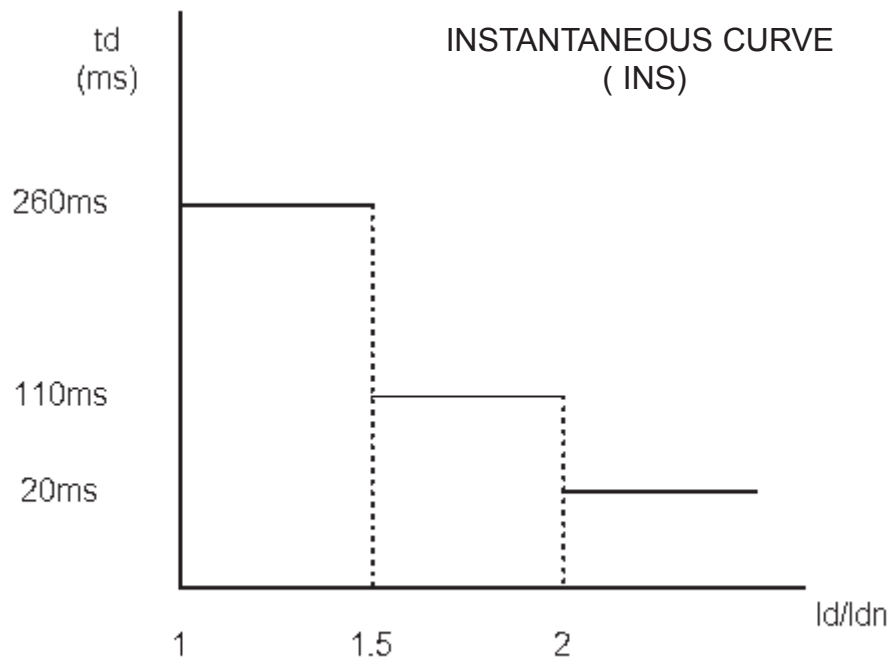


Figure 22: Instantaneous Trip Curve.

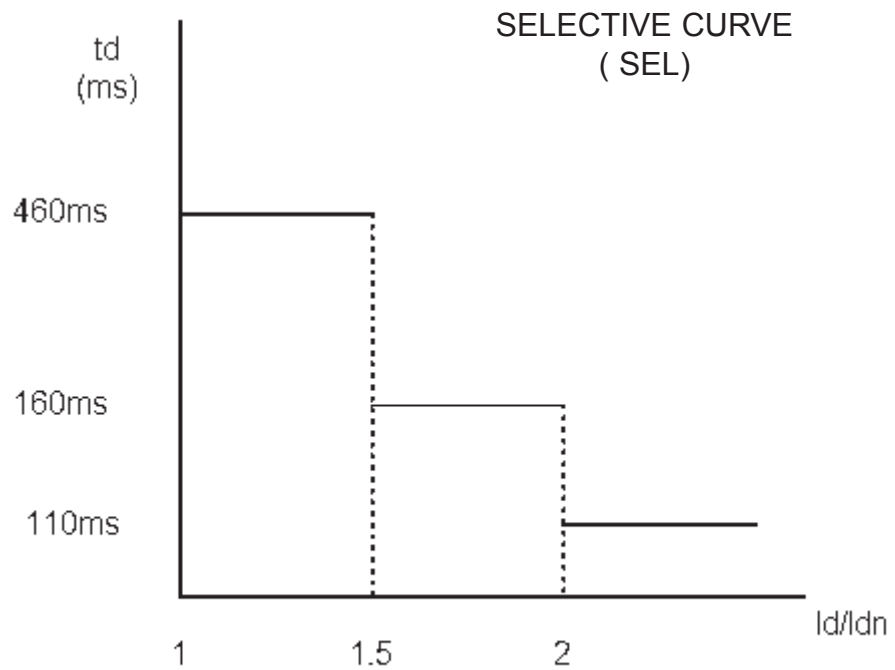


Figure 23: Selective Trip Curve.

CIRCUTOR, SA

Vial Sant Jordi, s/n

08232 - Viladecavalls (Barcelona)

Tel.: (+34) 93 745 29 00 - Fax: (+34) 93 745 29 14

www.circutor.es central@circutor.com