

PROTECTION AND CONTROL

# RGU-10A / RGU-100A

Type A ultraimmunized residual current protection & monitoring relay

# An upgraded classic



The correct installation of residual current protection devices ensures both the protection of people and the continuity of service in facilities, avoiding decreases in productivity rates and economic losses due to service outages.

Many of the residual current trips in facilities are due to the new technologies in use in the connected loads. Many of them currently rely on power electronics for their control, which improve their performance but create a series of problems in the installation. One example is EMI filters, which, simply by virtue of being connected, generate earth leakage, which increases as the voltage in the installation goes up, and even in the presence of voltage harmonics, causing nuisance trips of the residual current protection.

Because of this, residual current relays must be designed to avoid unwanted trips caused by the normal operation of loads, and even other transitory phenomena that occur when loads are connected or disconnected.

# RGU-10A / RGU-100A

## Type A ultraimmunized residual current protection & monitoring relay

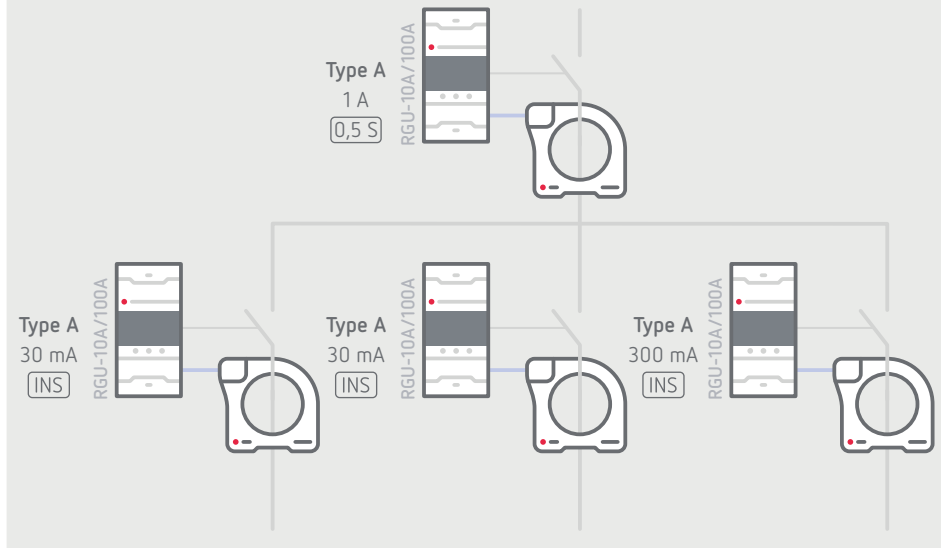
The RGU-10A / RGU-100A are an electronic relays for protecting and monitoring residual currents (IEC 60947-2 Annex M), and is compatible with the WGC series of toroidal transformers.

### Versatility

The wide range of sensitivities, from 30 mA to 30 A, and adjustable delays, from INS to 5 s, allows using the relays anywhere in the installation, whether at a specific location, in a distribution board or even in the header.

- ✓ Real-time display of residual current.
- ✓ Display of the residual current that tripped it.
- ✓ Preventive maintenance with alarms.
- ✓ Increased immunity through improved frequency response filter.
- ✓ Easy to install.

### Example of vertical selectivity



# The most complete protection

Avoid unwanted tripping with the ultraimmunized system



Trip margin between 85%-100% of the sensitivity range.

A residual current relay can trip above 50% of its rating (IEC 60947-2-M). Ultraimmunized devices trip at a minimum of 85%, **only acting when necessary.**



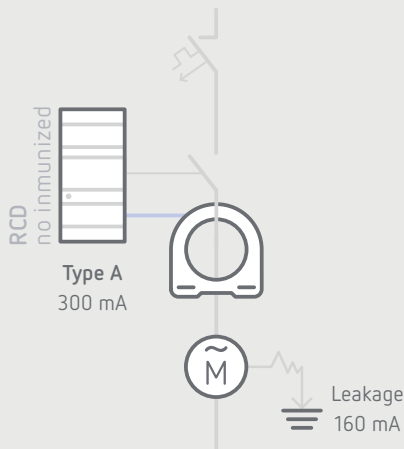
Frequency response with filtering of high-frequency leaks.

Filters the leakage current with frequencies above 50/60 Hz to **avoid trips caused by harmonics.**

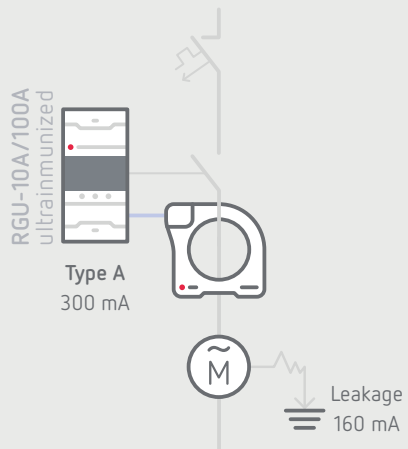


More immunity to grid transients up to 3 kA for 8/20  $\mu$ s pulses.

**Avoids unexpected trips** in the event of weather or transitory phenomena caused by the distribution grid.



It can trip!



Does not trip until 250 mA (85% of its sensitivity)

## Real-time display and monitoring

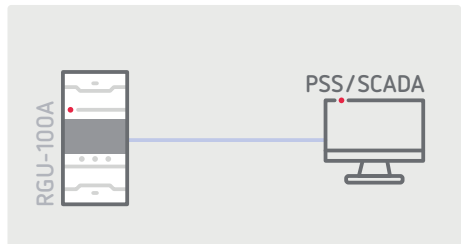
Real-time leakage monitoring to keep track of the current in the installation. The display is backlit in red when it trips, making it easier to identify the line

containing the fault. The operational mode of the device at any given moment is easily identifiable thanks to the backlighting on the new display.



### Preventive maintenance

The RGU-10A / RGU-100A has a display pre-alarm and fully adjustable relay that can be set at a value from 20% to 100% of the adjusted trip point sensitivity, so that preventive maintenance can be carried out during a scheduled outage before the trip point is reached.



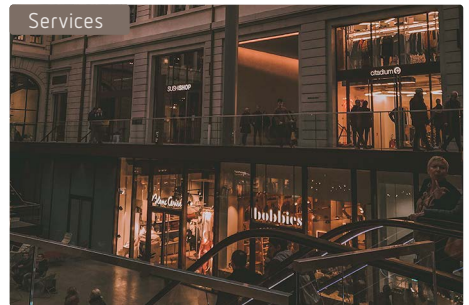
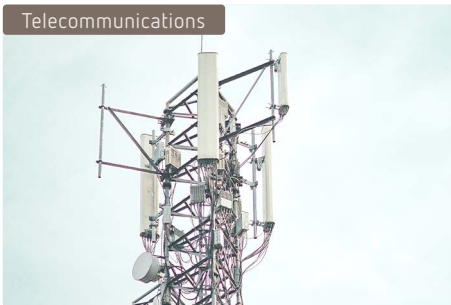
### Monitor your current leaks with RGU-100A

RGU-100A has a RS-485 channel to communicate through Modbus RTU protocol with your SCADA system. Remotely visualize the current leakage from your residual current relay to stay ahead of any issues, creating alarms before the device triggers, avoiding indirect costs due to line or load disconnection.

# Use cases for ultraimmunized protection

The RGU-10A / RGU-100A relays are the most complete type-A protection to guarantee the safety of people and ensure continuity of supply in electrical installations.

Its ultraimmunized system guarantees that a trip will only occur when it is absolutely necessary, avoiding financial losses due to unwanted trips.



## Compatible transformers



WGC Closed core



TP-WGC Open core

## Technical specifications

Protection and monitoring	Type	A (ultraimmunized)
	Sensitivity range $I_{\Delta n}$	0.03... 30 A
	t $\Delta$ delay	INS, SEL, 0,1...5 s
	Transformer type	External, <b>WGC</b> series
	Remote signalling	Pre-alarm, alarm
Characteristics specifications	Auxiliary power supply	230 VAC $\pm$ 15% (50/60 Hz)
	Consumption	6.5 VA
	Installation category	Cat III 300V
2 Relay Outputs	Maximum voltage	230 VAC
	Maximum current	6 A
	Maximum switching power	1500 VA
Digital input	Type	Voltage 230 VAC
	Insulation	3 kV
Mechanical Characteristics	Attachment	<b>DIN 46277 (EN 50022)</b> rail or Panel with accessory
	Dimensions	52.5 x 118 x 74 mm (3 modules)
	Protection rating	IP 30 terminals, Front IP 40
	Enclosure	Self-extinguishing V0 plastic
Standards	IEC 60947-2-M	

## References

Type	Code	$I_{\Delta n}$	Delay	Power Supply	Communication
RGU-10A	P11A70.	0,03 ... 30 A	INS, SEL , ... 5 s	230 Vca	-
RGU-100A	P11A71.	0,03 ... 30 A	INS, SEL , ... 5 s	230 Vca	Modbus RTU / RS-485

Panel Adapter, code: **M5ZZF00000E3**

## Compatible transformers

Type	Code	Useful cross-section	$I_{\Delta n}$	Weight
WGS-20	P10131.	20 mm	63 A	0.06 kg
WGS-30	P10132.	30 mm	63 A	0.07 kg
WGC-25	P10151.	25 mm	63 A	0.08 kg
WGC-35	P10152.	35 mm	80 A	0.11 kg
WGC-55	P10153.	55 mm	160 A	0.17 kg
WGC-80	P10154.	80 mm	250 A	0.29 kg
WGC-110	P10155.	110 mm	400 A	0.41 kg
WGC-140	P10156.	140 mm	630 A	0.68 kg
WGC-180	P10157.	180 mm	800 A	0.91 kg
WGC 220x105	P10158.	220x105 mm	1250 A	3.90 kg
WGC-350x150	P10159.	350x150 mm	2000 A	6.80 kg
WGC 500x200	P10160.	500x200 mm	4000 A	11.00 kg

**Circutor**

Vial Sant Jordi, s/n  
08232 Viladecavalls  
Barcelona (Spain)  
t. +34. 93 745 29 00  
info@circutor.com

CIRCUTOR, SAU reserves the right to modify any  
information contained in this catalogue.