

PROTECTION AND CONTROL

# WGB

Residual current transformers  
for Type B relays

# Why use type B residual current protection?

In recent years the use of loads with power electronics has become widespread. Type B residual current protection is the only protection that safeguards people and loads against AC, DC and AC/DC leakages.

Type A and AC residual current protection devices do not detect continuous residual currents, which are so common in loads such as variable speed drives, UPS's, EV chargers, photovoltaic installations, etc.



## AC type protection

Sinusoidal alternating current



## Type A protection

Pulsating sinusoidal current  
Pulsating alternating current



## Type B protection

Sinusoidal alternating current  
Pulsating alternating current  
Direct current

## Load types with DC components



VSD



UPS



Active Filters



Electric vehicle charging



Non-B type residual current protection devices become more sensitive and could even lock up when a pulsating residual current is coupled with a direct current. Those devices can be triggered unexpectedly or be blocked, affecting the service continuity and **creating a serious risk to the installation and/or people.**

# WGB

## Residual current transformers for Type B relays

The residual current transformers of the **WGB** range are especially designed to protect and monitor B-type loads (**IEC 60755**), and are suitable for measuring AC, DC and pulsating leakage currents.

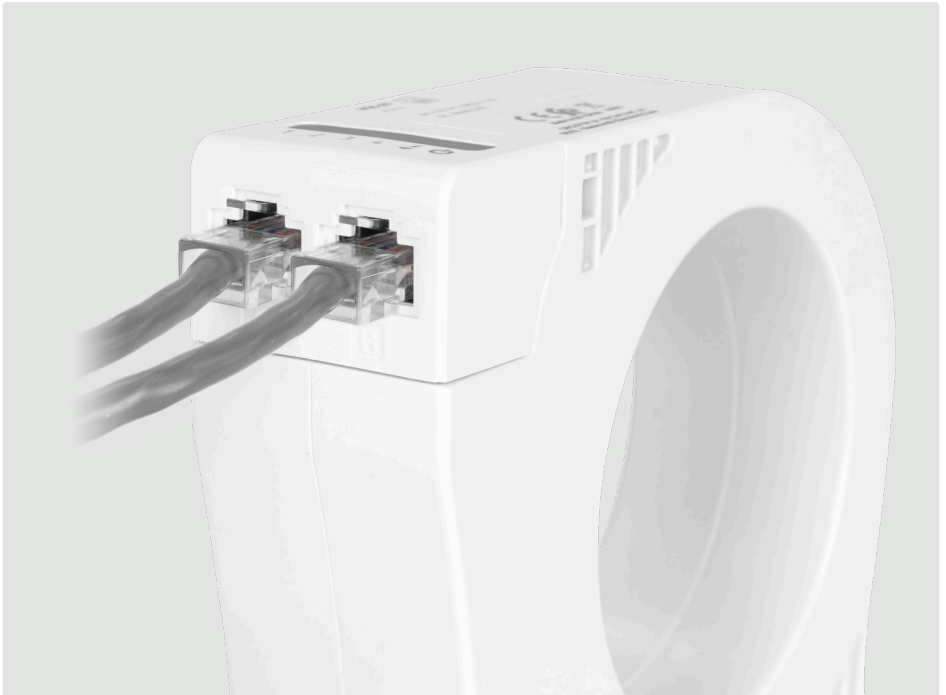


- ✓ Maximum protection for any type of load
- ✓ Large range of selectable sensitivities and hourly energy curves
- ✓ Maximum service continuity

# All the convenience

## Easy installation and simple assembly

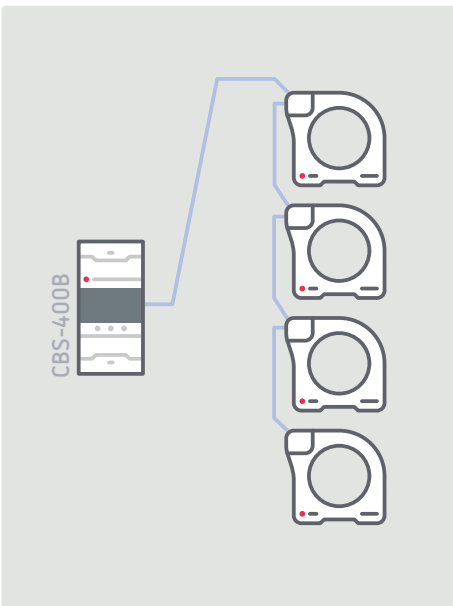
Connecting the **WGB** residual current transformers to the (**RGU-100B** or **CBS-400B**) relay is Plug & Play: using an RJ-45 connector, which is quick and convenient. No need for additional power or wiring. Additionally, the transformers have an accessory for convenient installation on a DIN rail.





### Versatility

The wide range of selectable sensitivities and delays, as well as a wide range of diameters, allows **WGBs** to be used at any point in the installation, from load end point (30 mA INS protection available for the entire range of transformers) to subframe protection or even used generally upstream.



### Up to 4 transformers

Up to 4 **WGB** of any size can be connected to have 4 independent channels in the CBS-400B relay centre.

# Applications

WGB transformers together with RGU-100B or CBS-400B relays protect and monitor all those electrical installations where full continuity of electrical service is required for unforeseen situations:

Conveyor belts



Electric vehicle charging points, photovoltaic installations, etc.



Heavy industry, Data Centres, etc.



Industrial sector, control of critical production processes, lifts/elevators, etc.



## Technical specifications

Electrical characteristics	Auxiliary power supply	230 Vac $\pm$ 15% 50/60 Hz using an Ethernet cable with an <b>RGU-100B</b> or <b>CBS-400B</b> relay
	Consumption	2.4 W
	Installation category	Cat III
Electrical insulation	Safety	<b>IEC 61869-1 / IEC 61869-3</b>
	Maximum operating voltage	720 kV
	Impulse voltage / pollution	3 kV / III
Measurement circuit*	Measurement characteristics (according to <b>IEC 60755</b> )	Type B
	Nominal frequency	0... 1000 Hz
	Measurement accuracy	30 mA $\rightarrow$ $\pm$ 2 mA 100 mA $\rightarrow$ $\pm$ 5 mA 300 / 500 mA $\rightarrow$ $\pm$ 20 mA 1 / 3 A $\rightarrow$ $\pm$ 200 mA
Time behaviour	Response time for 1 x I $\Delta$ n	$\leq$ 180 ms
	Response time for 5 x I $\Delta$ n	$\leq$ 30 ms
Mechanical characteristics	LED Indicator	Power supply voltage, Trip, Channel number
	Connection type	RJ-45 connector
	Enclosure	Self-extinguishing V0 plastic
	Colour	RAL 7035
	Assembly	Panel (includes accessory), DIN (optional accessory, see references table)
Environmental characteristics	Humidity	Up to 95%
	Maximum altitude	2000 m
	Operating temperature	-10...+55 °C
Standards	<b>IEC 62020, IEC 60755, IEC 60947-2-M, IEC 61869-2</b>	

## References

Type	Code	Useful cross-section	I $\Delta$ n	Weight
WGB-35	P11B52.	35	0.03... 3 A	230 g
WGB-55	P11B53.	55	0.03... 3 A	360 g
WGB-80	P11B54.	80	0.03... 3 A	570 g
WGB-110	P11B55.	110	0.03... 3 A	750 g
PA-WGB	P19924.	DIN Rail Adapter for <b>WGB</b> transformers		

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