

PROTECTION & CONTROL RELAYS FOR YOUR POWER SYSTEMS

Always Innovating for a Better Future

WI Line

SELF-POWERED
PROTECTION RELAYS

WI Line

CUSTOMER-ORIENTED
DESIGN

The protection relays we introduce to you in this line were developed in close cooperation with our customers. This cooperation has resulted in products that will match any circuit breaker commonly available on the market. Because these relays work independent of auxiliary voltage, they are well suited for self-sustaining transfer and distribution stations, local grids, and ring main units.

FEATURES AND FUNCTIONS

- Application for medium-voltage distribution systems
- Self-powered (CT)
- Simple protection setting
- Provide solutions for low- and high- energy trip coils
- Suitable for rough environment conditions
- Best cost/performance ratio



WI Line | SELF-POWERED PROTECTION RELAYS



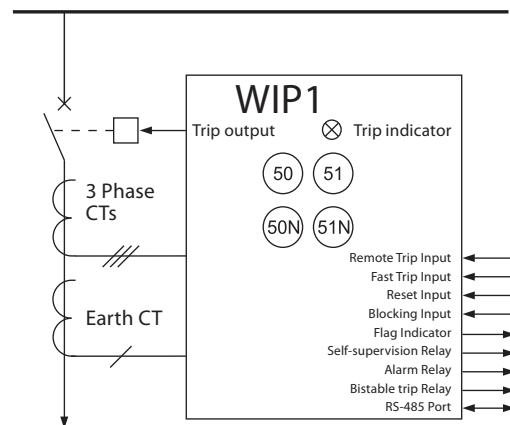
WIP1 | SELF-POWERED OVERCURRENT TIME RELAY FOR COMPACT RING MAIN UNITS

The self-powered protection relay WIP1 provides expanded functionality and is prepared to Smart Grid solutions. The WIP1 is suitable to work with many standard CTs and trip coils of CBs

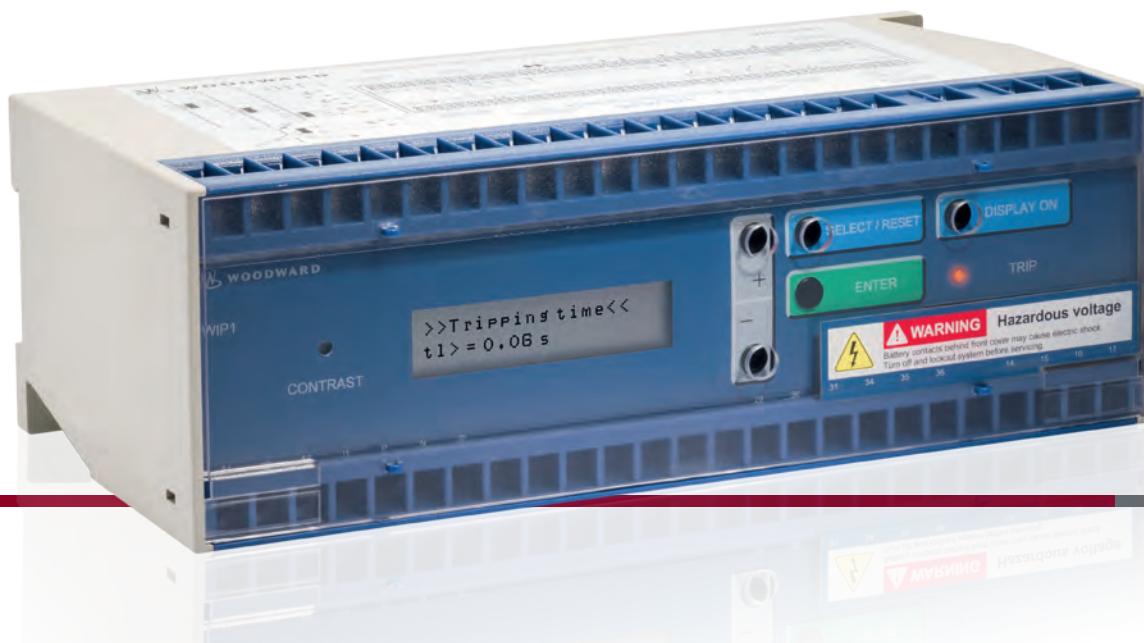
WIP1 CHARACTERISTICS AND SETTING RANGE

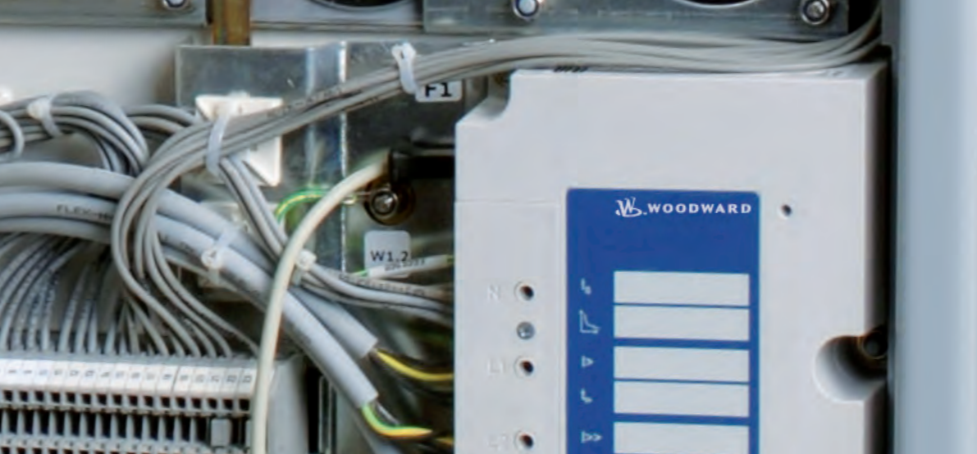
	Setting Range	Function
I>	0.5 x-2.5 x I _n	
tI>	0.06-300 s	definite time
	0.05-10	NINV, VINV, EINV, RI-INV, LI-INV, X [^] 2, X [^] 3, X [^] 4
tmin	0.06-2 s	minimum tripping time
I>>	1 x-35 x I _n	
tI>>	0.06-2 s	definite time
IE>	0.05*-2 x I _n	
tIE>	0.1-300 s	definite time
	0.05-10	NINV, VINV, EINV, RI-INV, LI-INV
tmin	0.06-2s	minimum tripping time
IE>>	1-9 x I _n	
tIE>>	0.06-2 s	definite time

*min. 0.5 A in one phase must be exceeded



Principle diagram WIP1





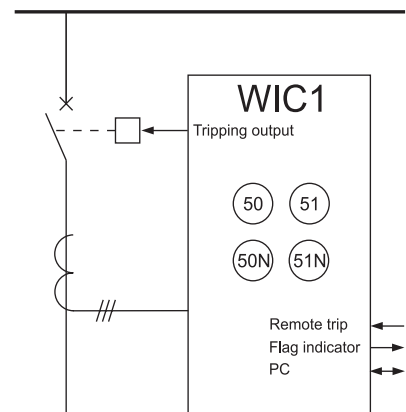
Full flexibility and easy handling.
The WI Line devices are the most convenient solution to your application.

WIC1 | SELF-POWERED OVERCURRENT TIME RELAY FOR COMPACT RING MAIN UNITS

The self-powered protection relay WIC1 provides reliable protection for medium-voltage grids and is especially designed for compact RMUs with integrated CB. Thanks to the low primary currents of the WIC1, the relay is able to be used with small transformers.

WIC1 CHARACTERISTICS AND SETTING RANGE

	Setting Range	Function
$I >$	$0.9 \times - 2.5 \times I_s$	
$tI >$	0.04 - 300 s	definite time
	0.05 - 10	NINV, VINV, EINV, RI-INV, LI-INV, HV-Fuse, FR-Fuse
$I >>$	$1 \times - 20 \times I_s$	
$tI >>$	0.04 - 3 s	definite time
$IE > (E)$	$0.2 - 2.5 \times I_s$	
$tIE >$	0.1 - 20 s	definite time



Principle diagram WIC1



Full equipped protection packages
to your individual application.

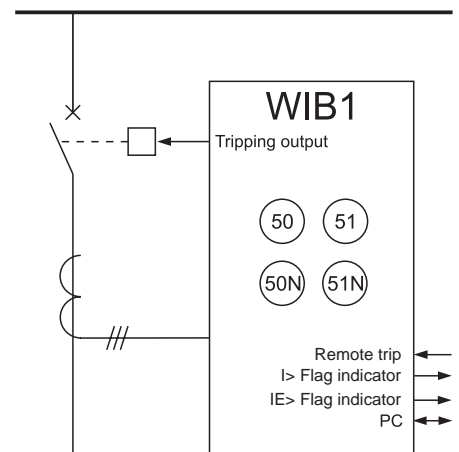


WIB1 | SELF-POWERED OVERCURRENT TIME RELAY FOR COMPACT RING MAIN UNITS

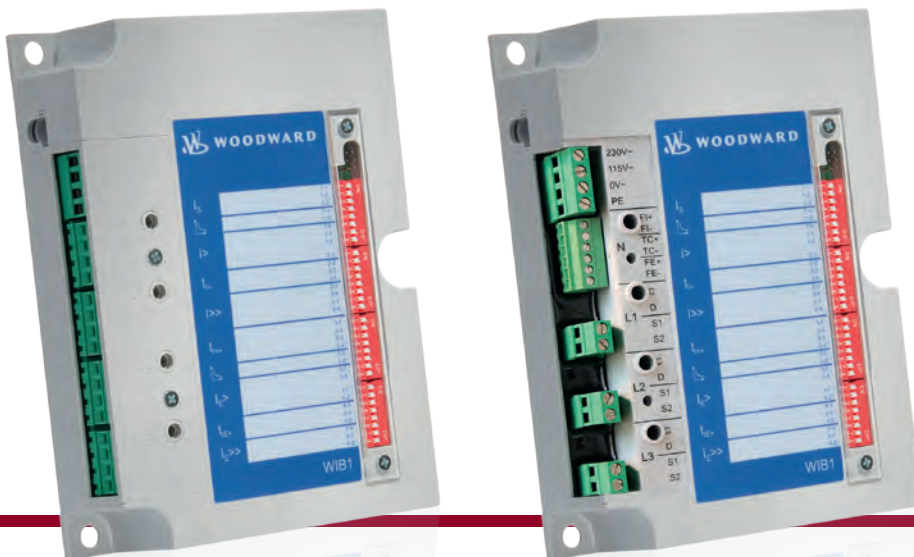
The self-powered protection relay WIB1 has similar properties to the WIC1. The WIB1 is customized according to the following conditions (depending on regional requirements).

WIB1 CHARACTERISTICS AND SETTING RANGE

	Setting range	Function
I>	0.9 x-2.5 x I _s	
tI>	0.1-2.0 s	definite time
	0.05-10	NINV, VINV, EINV
I>>	1 x-20 x I _s	
tI>>	0.04-3 s	definite time
IE>	0.2-2.5 x I _s	
tIE>	0.1-2.0 s	definite time
	0.05-1.0	NINV, VINV, EINV
IE>>	1-7 x I _s	
tIE>>	0.1s	definite time



Principle diagram WIB1



TWO VERSIONS

- WIB12PE
 - full version with CT connectors for test winding (left)
 - ENA-approval
- WIB12FE – without terminal cover and CT connectors

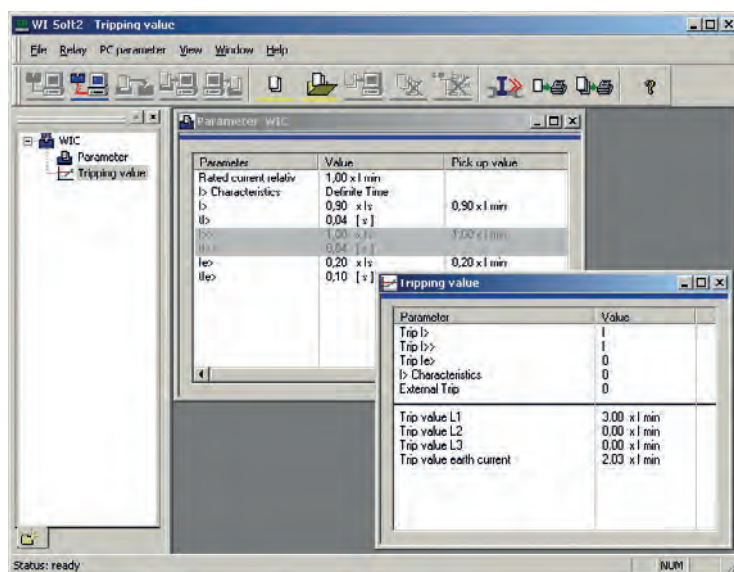


WI-Soft | DIAGNOSIS AND SETTING SOFTWARE

We provide diagnosis and setting software for the WI Line as well. WI-Soft2 and WISoft1.0 assist in setting and reading parameters, reading fault memory, storage of parameter sets to PC, and offline parameterizing.

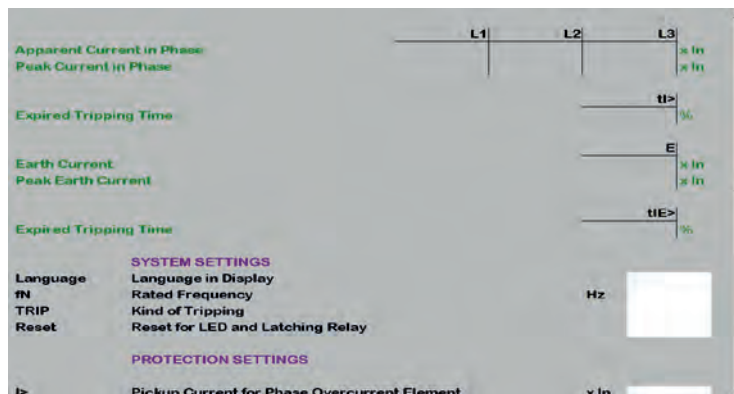
WI-Soft2

- Diagnosis software for WIC1 and WIB1
- Parameterizing tool for WIC11 version
- Reading trip cause and trip values (all versions)



WISoft1.0

- Diagnosis and setting software for WIP1–3



Overview

WI Line

BASIC
INFORMATION

WIP1

- With dual-powered supply
- Works with CT .../1 A
- Suitable for low- and high-energy trip coils up to 1.5 J (Ws)
- Battery-powered for parameter setting via button and display
- Self-supervision contact
- Flag indicator onboard and flag indicator output
- Alarm and trip contacts
- Remote trip input
- Digital inputs
- Modbus RTU communication
- Fault memory with time stamp

WIC1

- Maintenance free for 25 years
- IEC inverse and fuse characteristics
- Works with wide-range CT
- Suitable for low-energy trip coils up to 0.1 J (Ws)
- Setting via DIP and HEX switches and settings via PC are possible
- Remote trip input

WIB1

- Maintenance free for 25 years
- Two flag indicator outputs
- IEC inverse characteristics
- Works with wide-range CT
- Suitable for low-energy trip coils up to 0.1 J (Ws)
- Setting via DIP switch
- Remote trip input

ACCESSORY

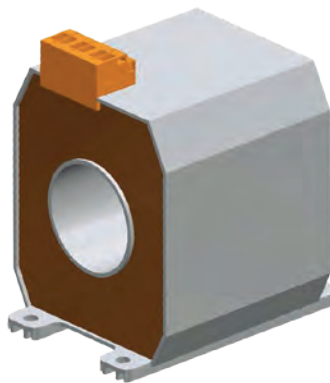


- WIC1TU, suitable for on-site diagnostic



- WIC1PC3, needed for PC communication via USB port

CURRENT TRANSFORMER



- AS1 type, wall- mounting type

ENABLING ELECTRICAL POWER SYSTEMS INTEGRATION

The shift to distributed generation is changing long-established concepts about how electricity should be produced, transmitted, and used. Power flow through the grid is becoming more decentralized and bidirectional. Local measurement, fault detection, and remote control are now essential for stability and intelligent load management. A new approach is needed: one that encourages greater use of renewable sources and facilitates interconnection of distributed power generation using advanced monitoring, communication, and control. Woodward is recognized as a leader in the field of advanced power generation and distribution control products. We continue to build on our legacy by creating cutting-edge control and protection devices, designed to work in complex systems to meet the needs of tomorrow's smart grids. Our global strategy is melding all aspects of power generation and distribution to enable electrical power systems integration.



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