

Description

The 'CGI 14S' Self Powered Numerical Protection Relay has been designed for use in unmanned substations, where dependable auxiliary power source is not available. The relay derives power for its operation from main current transformers. It also comprises integrated communication protocols for SCADA compliance.

The relay has feature of IDMT, as well as, instantaneous protection for both over current & earth elements. It accomplish Digital filtering of measured quantities by using discrete Fourier analysis to suppress high frequency harmonics and transient DC components induced by faults or system operations.

The front panel features a 8-button keypad & a 16x2 LCD display that provides an easy user interface.



Features

- Auxiliary power supply not required.
- Communication Ports: RS485 / RS232 (optional).
- Communication Protocols: MODBUS-RTU, & IEC 60870-5-103.
- Remote tripping via external voltage.
- Programming through local keypad.
- Selectable Definite Time or IDMT curves as per IEC standards.
- Password protection to guard against unauthorized access & editing of settings.
- Trip indication via external flag indicator with mechanical reset.
- Recording of latest 10 fault records with time stamping.

Protection Functions

IEEE / ANSI Code	IEC Symbol	Function Name
50/51	3I>,3I>>	Over Current Protection
50N/51N	I ₀ >,I ₀ >>	Earth Fault Protection

Applications

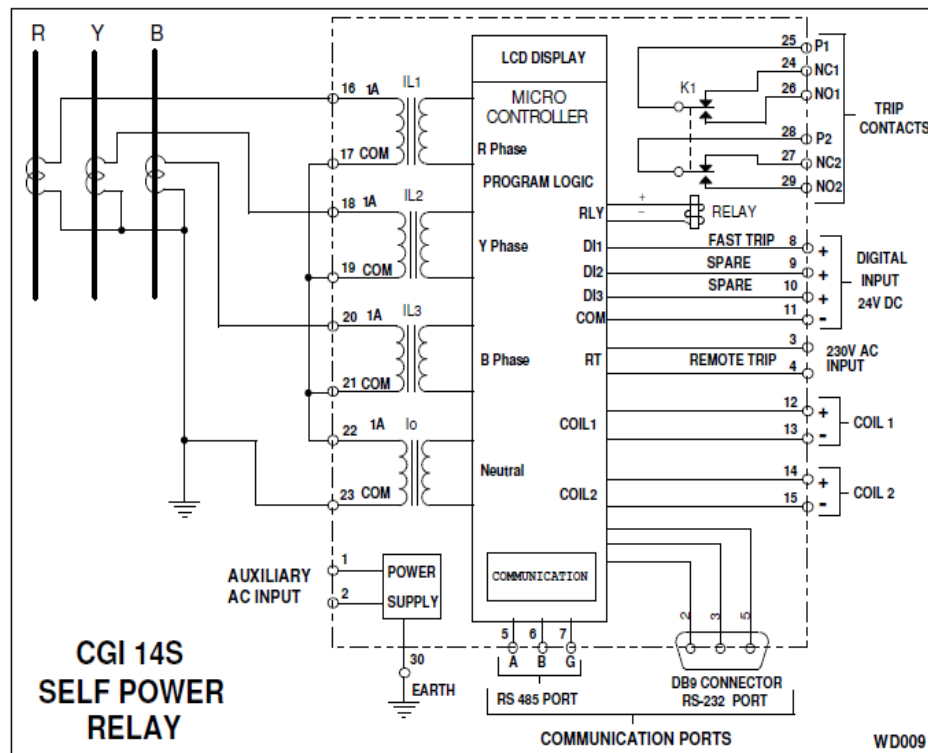
- Primary circuit protection on distribution networks at any voltage level.
- Backup/auxiliary protection for transformers, generators and motors.

Technical Specifications

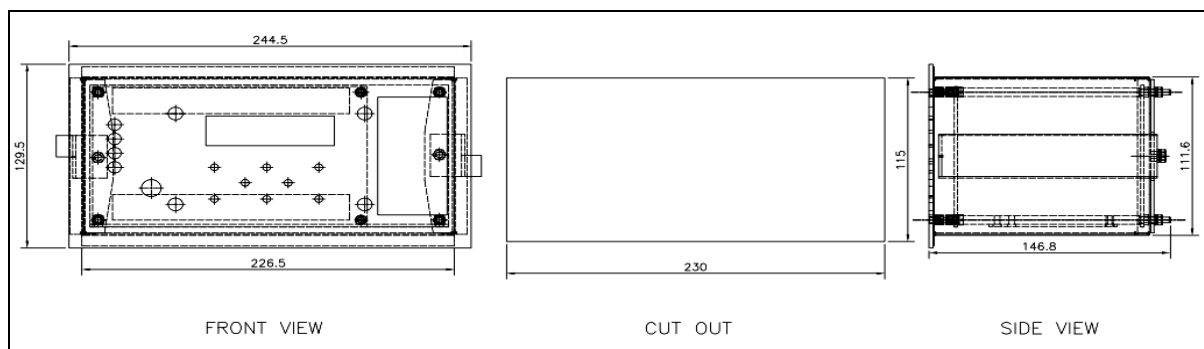
Measuring Circuitry	
CT Secondary	1A / 5A (As per ordering information)
Auxiliary Power Supply	Self Powered
Battery	3.7V/2000 mAh Li-ion EEMB LIR18650
Burden	As per the protection scheme
Over Load Capacity	2 x In continuously
	20 x In for 1 sec
Frequency	50Hz
Relay Settings	
Phase Fault I> (51)	20% to 250% (In steps of 1%),
Phase Fault TMS	0.010 to 1.50
Phase Fault I>> (50)	50% to 3200% (In steps of 1%)
Earth Fault Io> (51N)	10% to 250% (In steps of 1%)
Earth Fault TMS	0.010 to 1.50
Earth Fault Io>> (50N)	50% to 3200% (In steps of 1%)
Current/Time Characteristics as per IEC 60255-3	a) Standard Inverse (SI 3) 3s @ 10 times
	b) Standard Inverse (SI 1) 1.3s @ 10 times
	c) Very Inverse (VI) 1.5s @ 10 times
	d) Extremely Inverse (EI) 0.8s @ 10 times
	e) Long Time Inverse (LTI) 13.33s @ 10 times
	f) Definite Time (DT) upto 99.9s
Pickup Current	110% of set current
Reset Current	90% of set current
Indications	4 LED Indications for Power on, Alarm, Trip & Error
	16x2 character LCD for parameter display & settings
Communication	
Communication Ports	Front Port: RS-232 / USB (Protocol: Proprietary) Rear Port : RS-485 (Protocol: MODBUS / IEC 103)
Communication Protocols	MODBUS-RTU & IEC 60870-5-103
Digital Inputs & Digital Outputs	
Digital Inputs	4 DIs: 1 for Remote trip, 1 Fast trip & 2 spare.
Output Relay Contacts	Impulse O/p for tripping coil: 12-24 V DC (Energy < 0.1W/Sec)
	Potential free O/p contact: Two Change over contact for trip.



Typical Wiring Diagram



Dimensions (in mm)



NOTE: CG continuously strives to improve products and services. The technical information included in this document is subject to change without any notice.

CG Power and Industrial Solutions Limited
(Formerly Crompton Greaves Limited)
Switchgear Division: Power Systems
A-3 MIDC, Ambad, Nashik 422 010, Maharashtra, India
T: +91 253 238 2271-75 F: +91 253 238 1247

Registered Office:
CG House, 6th Floor, Dr Annie Besant Road, Worli, Mumbai 400 030, India
T: +91 22 2423 7777 F: +91 22 2423 7733 W: www.cgglobal.com
Corporate Identity Number: L99999MH1937PLC002641

