ECOFIT 50/51 Single Phase Retrofit Relay

Solutions Designed for Plug and Play Retrofit Applications

10 year Warranty

The Schneider Electric ECOFIT™ 50/51 single phase or ground time overcurrent relays are direct plug and play replacements for many GE IAC electromechnical, GE DIAC and Basler BE1-50/51B replacements for GE IAC relays.

Features

- Replaces 1Ph GE IAC E/M, GE DIAC and Basler BE1-50/51B replacements for GE IAC relays
- Self-powered from 50 or 60 Hz systems
- Available in 5 amp or 1 amp CT secondary versions
- Designed to be one to one replacement for existing electromechanical or digital relays
- 10-year warranty with final assembly and test in the USA
- 30 Built-in protection curves DT, GE (IAC51, IAC53, IAC55, IAC66, IAC77), Basler (I1, I2, V1, V2, S1, S2, L1, L2, E1, E2), ABB (CO-2, CO-5, CO-7, CO-8, CO-9, CO-11), SEL (U1, U2, U3, U4, U5), IEEE (MI, VI, EI)
- Disturbance recording (10 seconds)
- Fault recording (20 records)
- Event logs (200 events)
- Manual Trip Mode with status LED
- Active LED to indicate relay health
- TIME and TIMEBak 51/50 O/C elements
- INST 50 O/C element
- Time/Date is retained for 36 hours after power loss
- Display current measurement in primary or secondary values
- Mirrors electromechnical reset
- Inrush blocking of 2nd harmonic
- CB diagnostics (∑ Trips, ∑ Amps n)
- Current measurement accuracy ± 2%
- 2 magnetic flags
- 2 output relays C37.90 rated
- USB configuration port and password protection
- Rear RS-485 2-wire port for Modbus RTU and IEC 60870-5-103 communications (optional new case with additional terminals)

Benefits

- Plug and play reduces install time and saves existing wiring
- Self-powered requires no battery or auxiliary power
- Extended time between retesting saves cost associated with electromechnical testing intervals
- Multi-vendor curves can retrofit a variety of legacy electromechanical and digital relays, without having to perform new coordination studies and allows easier coordination with upstream protection
- Disturbance recording, fault records and event logs allow for post fault analysis and network event identification
- No battery provides maintenance free operation
- Manual Trip Mode trips on protection function and times out after 10 minutes, to exit manual mode and return to automatic mode
- LED's can notify if power loss for longer than 36 hours
- Additional TIMEBak element can be used as a second stage TOC element or as a more sensitive IOC element
- CB diagnostics can be preloaded with historical data
- Mirroring of electromechanical reset allows for easy coordination with existing protection
- Magnetic flags resettable from front panel when relay is powered or USB port using software.
- Magnetic flags not dependent on output relay load for operation
- Setting ranges allow for phase or ground fault use

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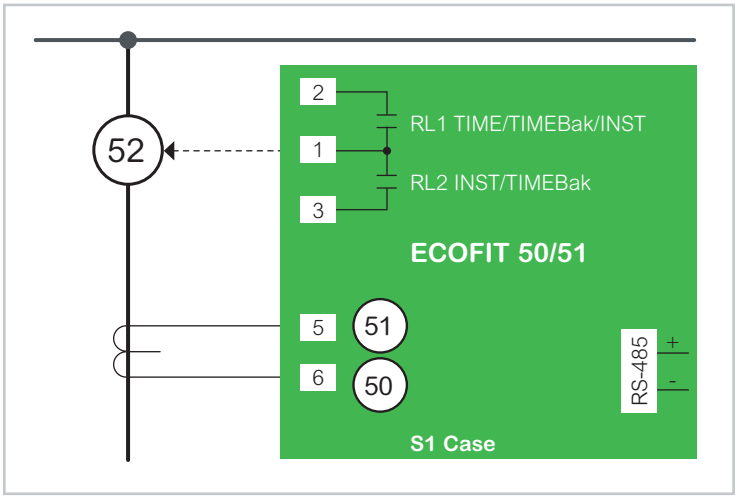
Functional Block Diagram



The ECOFIT 50/51 offers both 1 amp and 5 amp versions with different pickup ranges for each protection element.

Time Delay Settings					
Rated Current	Protection Element	Delay Type	Relay Output	Pick-up Setting Range	Time Delay Setting Range
1 A	TIME	TOC	RL1	0.2 - 38 A	0.05 - 200.00 s
1 A	TIMEBak	TOC	RL1 or RL2	0.4 - 38 A	0.05 - 200.00 s
1 A	INST	IOC	RL1 or RL2	1 - 38 A	Instantaneous
5 A	TIME	TOC	RL1	1 - 190 A	0.05 - 200.00 s
5 A	TIMEBak	TOC	RL1 or RL2	2 - 190 A	0.05 - 200.00 s
5 A	INST	IOC	RL1 or RL2	5 - 190 A	Instantaneous

Physical	
Weight	2.25 kg (4.95 lbs)
Case Size	S1

Order Code

ECOFIT51S1 * 0200 * 0A

1	1 A rated current
5	5 A rated current
0	Base relay in S1 cradle
1	c/w new S1 10 terminal case

Technical Specifications

AC Current Circuit Inputs	
Rated current	1 or 5 A (ordering option)
Fundamental frequency	50 or 60 Hz
RMS measurement range	40 Hz – 1 kHz
Fundamental harmonic measurement range	40 Hz – 70 Hz
Operating range	0.2 – 40 or 1-200 Amps
Nominal Burden at 100% rated current	< 2.3 VA
Thermal withstand	1 s @ 100 x rated current 2 s @ 40 x rated current 10 s @ 30 x rated current cont. @ 3 x rated current

Type Tests	
Marking and mechanical structure	EN60255-1: 2010
Insulation	EN60255-27: 2014
Creepage distances and clearances	EN60255-27: 2014
High Voltage (dielectric) withstand	EN60255-27: 2014 ANSI/IEEE C37.90
Impulse voltage withstand	EN60255-27: 2014
1 MHz burst high frequency disturbance	EN61000-4-18: 2010
Electrostatic discharge	EN61000-4-2: 2009
Electrical fast transient or burst requirements	EN61000-4-4: 2012
Surge immunity test	EN61000-4-5: 2014
Surge withstand capability	ANSI/IEEE C37.90.1
Radiated electromagnetic energy	EN61000-4-3: 2010 ANSI/IEEE C37.90.2
Radiated immunity from digital radio telephones	EN61000-4-3: 2010
Immunity to Conducted Disturbances Induced by Radio Frequency Fields	EN61000-4-6: 2014
Power Frequency Magnetic Field Immunity	EN61000-4-8: 2010
Pulse magnetic field immunity	EN61000-4-9: 2001
Radiated Emissions	EN55022: 2011 (CISPR 11)
Phase current input thermal withstand	EN60255-27: 2014
Output contact continuous carry (not switched), make, carry, and break ratings	EN60255-1: 2010
Output contact make and carry	ANSI/IEEE C37.90
Durability	EN60255-1: 2010
Ambient temperature range	EN60255-1: 2010 EN60068-2-1: 2007 EN60068-2-2: 2007
Ambient humidity range	EN60068-2-78: 2013 EN60068-2-30: 2005
Vibration	EN60255-21-1: 1995
Shock and bump	EN60255-21-2: 1995
Seismic	EN60255-21-3: 1995
Enclosure protection	EN60529: 2013

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