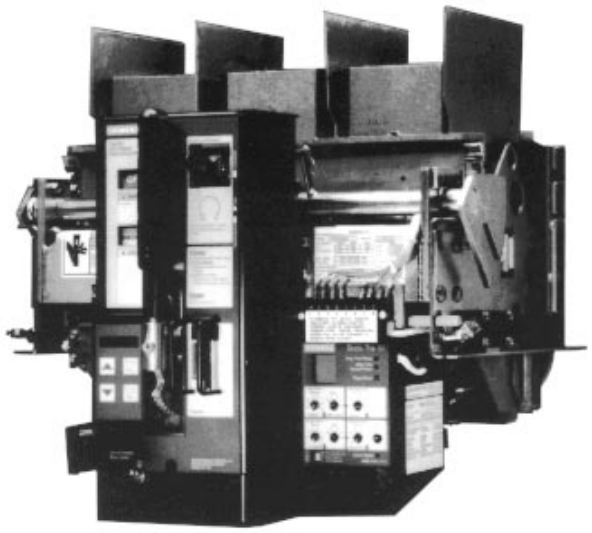
Static Trip III® Microprocessor-based Tripping System



Type RL Low Voltage Power Circuit Breaker With Static Trip III Trip Unit

Application

The trip units of the Static Trip III family are microprocessor controlled overcurrent protection devices for application with Siemens Type RL series of low voltage power circuit breakers and can also be refitted to other manufacturer's circuit breakers.

The Static Trip III trip unit can be used as a field level device on the ACCESS™ communication system providing essential electrical power system data.

Features

Four basic interchangeable families of models:

- Static Trip III models provides basic overcurrent protection.
- Static Trip III C versions add communications and current metering functions.
- Static Trip III CP devices add full power metering capability.
- Static Trip III CPX trip units incorporate extended protective relaying.

- RMS current sensing is standard for the Static Trip III trip units. Unlike peak-current sensing designs, RMS sensing measures the true heating potential of the current waveform. This allows for more accurate overcurrent protection and eliminates nuisance tripping due to harmonic distortion of the current waveform.

- Static Trip III trip units are also available with a universal mounting package for retrofit applications.

- Six basic overcurrent configurations
  - Long Time/Instantaneous (RMS-TI-T)
  - Long Time/Short Time (RMS-TS-TZ)
  - Long Time/Short Time/Instantaneous (RMS-TSI-TZ)
  - Long Time/Instantaneous/Ground Fault (RMS-TIG-TZ)
  - Long Time/Short Time/Ground Fault (RMS-TSG-TZ)
  - Long Time/Short Time/Instantaneous/Ground Fault (RMS-TSIG-TZ)

- A custom liquid crystal display (LCD) provides a visual indication of an overcurrent tripping action. Message retention is provided by capacitive stored energy. The displayed legends are:
  - OVERLOAD - long time delay tripping (phase)
  - SHORT CIRCUIT - Short time delay or instantaneous tripping (phase)
  - GROUND FAULT - Ground fault delay tripping
  - DISABLED - Watchdog circuit indicates protection microprocessor not functioning properly.

- Static Trip III C and Static Trip III CP trip units meter and communicate essential electrical power system parameters. See the table below for the metering functions.

Metering Functions		
Measured Parameters	Model	
	III C	III CP
Phase Current	•	•
Avg. Phase Current	•	•
Ground Current (1)	•	•
Neutral Current (2)	opt	opt
Phase Voltages (3)		•
Avg. Phase Voltage (3)		•
Line Voltages		•
Avg. Line Voltage		•
kW		•
kW Demand		•
kW Hours		•
kW Hours Reverse		•
kVA		•
kVAR		•
kVAR Hours		•
Power Factor		•
Frequency		•

(1) Included wnen ground fault protection specified
(2) Requires "N" option and neutral current sensor
(3) Only displayed for four wire systems

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- Two communication modes are available. Local monitoring can be done with a hand-held Siemens BDU Breaker Display Unit connected to a port on the front of the trip unit. The trip units can also be connected to the ACCESS system for networked data acquisition.

- Static Trip III CPX trip units provide seven extended protective relaying functions each with independent pickup thresholds and delays. These functions are shown in the accompanying table.

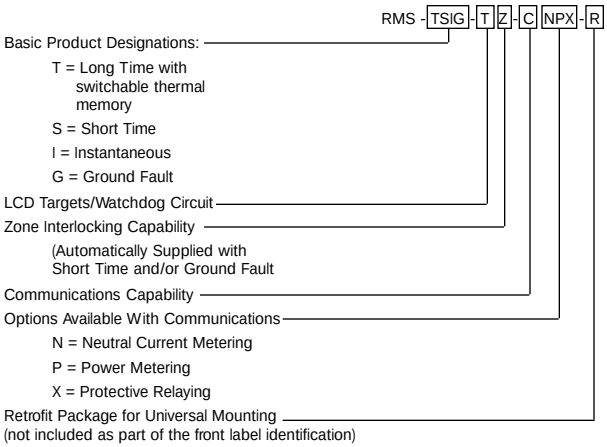
Static Trip III CPX Protective Relay Functions		
Protective Function	**Pickup Setting Range (SET=)**	**Time Delay Range (DLY=)**
Current Unbalance	5-50%	1-15 seconds
Voltage Unbalance	5-50%	1-15 seconds
Overvoltage	6-660V	1-15 seconds
Undervoltage	6-660V	1-15 seconds
Reverse Power	10-2000kW	1-15 seconds
Overfrequency	50-70Hz	1-15 seconds
Underfrequency	45-60Hz	1-15 seconds

- Static Trip III C/CP/CPX model trip units include several logging functions for recording tripping events, pickup conditions, alarm activity and minimum and maximum measured values.

- A standard feature on Static Trip III C/CP/CPX trip units is an alarm output. Any of the trip unit's measured parameters can be set to activate the output based on threshold and delay set-points.

- Static Trip III C/CP/CPX trip units can be wired to open and/or close an electrically operated circuit breaker on command via the RS-485 communications port from Siemens ACCESS system software.

Catalog Numbers



Functions/Static Trip III Model	III	III C	III CP	III CPX
Self-Powered Overcurrent Protection	•	•	•	•
RMS Sensing	•	•	•	•
Switchable Thermal Memory	•	•	•	•
Ground Fault Protection	opt	opt	opt	opt
LCD Target	•	•	•	•
Protective Microprocessor Watchdog	•	•	•	•
Pickup LEDs	•	•	•	•
Zone Interlocking (1)	opt	opt	opt	opt
Retrofit Universal Mounting Package	opt	opt	opt	opt
RS-485 Communications Port		•	•	•
Breaker Display Unit Port (2)		•	•	•
Communications Microprocessor Watchdog		•	•	•
Comm Watch LED		•	•	•
Backup "Shadow" Protection		•	•	•
Trip Log		•	•	•
Alarm Relay Output (1)		opt	opt	opt
Trip Unit Status Indication		•	•	•
Breaker Position Indication		•	•	•
Breaker Operation Counter		•	•	•
Communication Open/Clcse/Trip (1) (5)		opt	opt	opt
Event Log		•	•	•
Phase Current Metering (3)		•	•	•
Neutral Current Metering (4)		•	•	•
Min/Max Current Log		•	•	•
Power Metering Functions			•	•
Min/Max Power Log			•	•
Extended Protective Relaying				•
Extended Trip Log				•

(1) Requires additional wiring to meet specific application.
(2) Supports optional Breaker Display Unit accessory.
(3) Included when ground fault protection specified.
(4) Requires "N" option and neutra current sensor.
(5) Open command uses alarm relay output and restricts use for other alarm functions. Close command requires electrically operated breaker.

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