

OPTimizer+[®]

Circuit Breaker Wear and Condition Monitor



APPLICATIONS

The OPTimizer+ from INCON continuously monitors power circuit breaker wear and condition using innovative, patented technology. The OPTimizer+ indicates status, issues alarms, and provides a data history of breaker operations. It interfaces readily with virtually any breaker both in retrofit and new installations. With Optimizer+ intelligence you can:

- **Postpone Scheduled Maintenance** and be confident that a breaker is operating satisfactorily and has not exceeded its wear limits.
- **Perform Just-In-Time (JIT) Maintenance** when problems are detected, acting only on indication of breaker impending misoperation or failure.
- **Implement a Reliability Centered Maintenance (RCM) Program** using historical intelligence gathered continuously in real time.
- **Initiate Breaker Failure Mitigation** operating plans by implementing proactive contingency measures when a breaker goes into alarm.

The OPTimizer+ offers reliable, cost effective circuit breaker predictive maintenance, in service and on-line.

CAPABILITIES

The OPTimizer+ monitors, records, and reports information on the three critical power circuit breaker operating parameters and other condition information.

1. **Mechanism Time**—By timing the interval between either the trip command or the opening of the “a” contact, and the closing of the “b” contact, changes in operating characteristics of the trip coil, latch, and mechanical components are quantified, alarmed, and trended.
2. **Arc Duration Time**—By timing the interval from initial main contact separation to arc extinction, problems within the arc chamber are quantified, alarmed, and trended. Arc restrikes are also detected and recorded.
3. **Contact Interrupting Duty**—By accumulating the I²T duty of the main contacts, erosion of the main contacts is quantified, alarmed, and trended.

FEATURES

- Visual, digital, or analog outputs available at the breaker or inside the control house
- RS-232 port for remote HMI via standard SCADA, relay, wireless, or other communication system
- Easy, non-invasive installation and simple, menu-driven programming
- Rugged, robust, utility style construction for long life and carefree operation
- Low capital cost, low installed cost, rapid ROI

ADVANTAGES

- By monitoring line currents at every breaker operation, the Optimizer+ can record line, feeder, and transformer through-fault information, including date, time, magnitude, and duration, all on a per-phase basis. This intelligence can have significant value for system operations, planning, and protection groups performing reliability, power quality, and asset management studies.
- While digital protective relays offer breaker wear and condition monitoring features, the information is often inaccurate, incomplete, or inaccessible. The OPTImizer+ from INCON supplies more information, gathered and processed for quick understanding, with easy access for Operations Maintenance personnel.
- Expensive breaker monitors include monitored points that can affect breaker operating reliability and add cost and overhead in monitor maintenance, software training, and data analysis. The three critical wear and condition parameters monitored by the OPTImizer+ are the best solution to optimize your circuit breaker maintenance savings and in-service reliability.

SPECIFICATIONS

POWER SUPPLY

Nominal Input Voltage: 115 or 230 VAC +/- 20%
Power Dissipation: 10 W maximum

CURRENT INPUTS

VA Burden @ 20% Full Scale: 0.1 VA
Continuous Input Current: CT Full Scale Rating
Full Scale Peak Current: CT Full Scale Rating
Maximum Peak Input Current: 200% Full Scale for 1s
Isolation to Enclosure: 2500 Vrms
Isolation to Phases: 2500 Vrms

CURRENT TRANSFORMERS

Ranges: 0-10, -20, -30, -50, -100, -160 Amps
Accuracy: +/- 5% Full Scale

AUXILIARY CONTACT INPUT

Auxiliary Control Signal: Supply Voltage
Input Resistance: 16 kOhms
Isolation to Enclosure: 1500 Vrms
Isolation to Phases: 2500 Vrms
Auxiliary to Main Contact Timing: -50 to +100 ms

CURRENT DATA ACQUISITION

Measurable Arc Duration: 16 cycles, maximum
Line Frequency: 50 or 60 Hz, programmable
Sampling Rate Per Phase: 32 times line frequency

RELAY OUTPUT

Output: 3A at 250 VAC or 30VDC
Isolation: 1500 Vrms

ANALOG OUTPUT (Optional)

I²T percent or limit: 0-1 mA, 10 kOhm max burden

SURGE WITHSTAND

Exceeds: IEEE 472-1974 & ANSI C37.90a

USER INTERFACE

Panel Lamps: Power status, breaker position, warnings, alarms, and percent wear
Computer Port: RS-232, menu-driven ASCII format

OPERATING ENVIRONMENT

Temperature: -20 to +150°F (-28 to 65°C)
Humidity: 85% non-condensing, maximum

WEIGHT AND DIMENSIONS

Shipping Weight: 16.5 kg (7.5 lbs)
Dimensions: 18.4l x 14.6w x 7.62h cm (7.25l x 5.75w x 3.00h in.)

FOR MORE INFORMATION CALL:

800-872-3455

74 Industrial Park Road, P.O. Box 638, Saco, Maine 04072
Phone: 207-283-0156/Fax: 207-283-0158
www.intelcon.com/e-mail: sales@intelcon.com

