

OPTimizer²[™]



The OPTimizer² uses patented technology to continuously monitor in-service circuit breaker performance and SF₆ gas density. SF₆ gas emissions due to leakage are totalized and reported.

APPLICATIONS

- High voltage circuit breakers to 765 kV
 - Generator
 - Transmission
 - Distribution
 - Circuit Switchers
- SF₆ and oil types, any mechanism type
- Live tank and dead (grounded) tank

BENEFITS

- Every breaker operation is examined; Logs in-service performance metrics
- Reduces need for off-line time/travel testing of circuit breakers
- Displays SF₆ Density & Contact life remaining in simple RED YELLOW GREEN format
- No moving parts, reliable in temperature extremes, eliminates nuisance alarms
- Provides IEEE function 63, low gas alarm lockout
- Reports fault operations and switching operations separately
- Forecasts SF₆ refill deadline for use as a maintenance planning driver
- Total unit cost can be recouped by avoiding emergency gas service calls
- Integrates using SmartGrid DNP 3.0 Communication
- No PC software to maintain, only a Web browser is needed

CAPABILITIES

- Applicable system-wide to OCBs, minimum oil, vacuum, SF₆ puffer, and circuit switchers
- Accurately times arc duration, trip, close, & clearing
- Reports days since last operation
- Monitors phase-segregated line current during interruption to gauge contact life, detects restrikes
- Gives precise time, in days, until breaker will lock-out on low gas alarm
- Up to three SF₆ density sensors may be used with a single OPTimizer²
- Totalizes mass of SF₆ lost to atmosphere for breaker lifetime, useful in EPA reporting
- May be installed temporarily, as-needed, on problem breakers for diagnosis
- All performance metrics may be exported to MS Excel for detailed review
- Provides IEEE function 49, -40 °C definite temperature lockout

FEATURES

- Powered from AC or station battery
- Accurate for 50 or 60 Hz Power Systems
- Secure - Digital Signing Encryption Layers TCP/IP
- Fast installation - field retrofit in less than two hours
- Auto-resets alarms after a gas fill operation, no user interaction required
- Fast Functions: Using the USB port and a memory stick, in seconds, the user may:
 - Clone any OPTimizer²
 - Batch program multiple OPTimizer² units for a specific breaker type
 - Retrieve breaker performance history data
 - Reset parameters after a breaker service or rebuild
- 16 user-defined PdM alarms
- Remote communication using Ethernet TCP/IP or DNP 3.0 or RS485 DNP 3.0

Circuit Breaker Performance and SF6 Density Monitor

OPTimizer²

Specifications

POWER SUPPLY

Nominal Input Voltage: 110 to 264 V AC/DC 50/60 Hz

Power Dissipation: 15 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

CURRENT TRANSFORMERS

Ranges: 0-20, -30, -50, -100, -160, -250, -400, -800 Amps

Accuracy: +/-1% of Full Scale

CONTROL SIGNAL INPUTS

Auxiliary Control Signal: 48 to 250 Volts DC

Input Resistance: 500K Ohms

CURRENT DATA ACQUISITION

Event Duration: 10 Cycles Nominal

Line Frequency: 50/60 Hz Programmable

Sampling Rate Per Phase: 32 times per line cycle

SF6 INPUTS

Sensor Type: True Density™ or Temperature-Compensated Pressure

Sensor Signal: 4-20mA Analog or Digital

Sensor Power: 20 VDC (Provided)

Measurement Range: 0-60 Grams/Liter, (-50 to +80°C)

Sampling Rate: Once per second

RELAY OUTPUT

2 each, Form C: 3A at 250 VAC or 30VDC

1 each, Form-A: 3A at 250 VAC or 30 VDC

ISOLATION

CT Input Phase to Enclosure: 1500 Vrms

CT Input Phase to Enclosure: 2500 Vrms

Auxiliary Input to Enclosure: 1500 Vrms

Relay Contacts to Enclosure: 1500 Vrms

SURGE WITHSTAND

Exceeds: IEEE 472-1972 & ANSI C37.90a

USER INTERFACE

LED Panel Indicators: Power, Breaker Position, Alarms, Contact Life Remaining, Gas Density

Computer Ports: RS-232, RS-485 Full Duplex, Ethernet, USB

OPERATING ENVIRONMENT

Temperature: -40 to +150 °F (-40 to 65 °C)

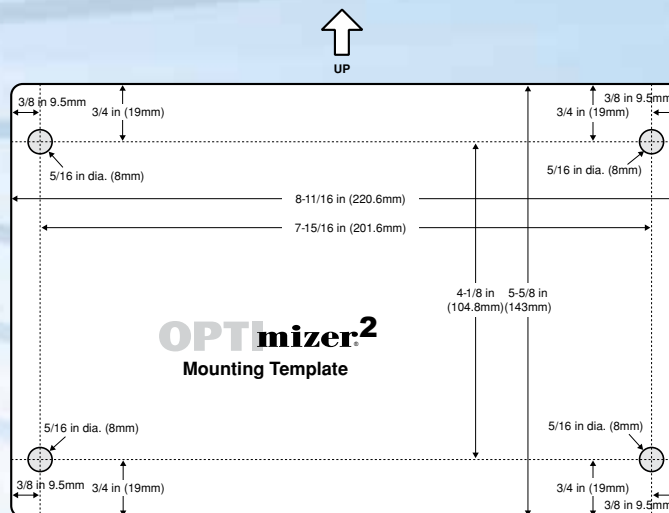
Humidity: 85% non-condensing, maximum

WEIGHT AND DIMENSIONS

Shipping Weight: 2.63 kg (5.80 lbs)

Dimensions: 22.1L x 14.3W x 7.62H cm (8.69L x 5.63W x 3.00H in.)

Mounting Weight: 1.80 kg (3.95 lbs.)



Ordering Information

OPTimizer²

Model OM2 CB Monitor

Model OM2D CB Monitor with SF6 Density

ACCESSORIES

Model CT-20 CT Pickup Coil 20 Amps

Model CT-30 CT Pickup Coil 30 Amps

Model CT-50 CT Pickup Coil 50 Amps

Model CT-100 CT Pickup Coil 100 Amps

Model CT-160 CT Pickup Coil 160 Amps

Model CT-250 CT Pickup Coil 250 Amps

Model CT-400 CT Pickup Coil 400 Amps

Model CT-800 CT Pickup Coil 800 Amps

Model DSDP SF6 Density Sensor, Digital, G3/8 Parallel Thread

DSDN SF6 Digital Sensor 3/8" NPT Thread

Model OMX-3-115 or OMX-3-230 Input Expansion Module for use with redundant trip circuits or individual pole operation breakers



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PO Box 638, Saco, Maine 04072 ■ Tel: 800-872-3455 / 207-283-0156 ■ Fax: 207-283-0158

000-0360 Rev. B 03/12