



**THORNE &
DERRICK
INTERNATIONAL**

Thorne & Derrick
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Grid Solutions

OPTIMIZER3

**THE MOST ADVANCED BREAKER
MONITOR IN THE WORLD**

CIRCUIT BREAKER PERFORMANCE MONITOR & DATA ACQUISITION SYSTEM

30 Years of Breaker Monitoring Hardware Experience in Every Box

High Quality
5 Year Warranty



REAL UTILITY STRATEGIES

With Franklin Electric's Grid Solutions Monitoring

SUPPORTS MANY SENSOR TYPES INCLUDING:

- SF6 Dew Point
- SF6 Density
- SF6 Compensated Pressure
- Temperature
- Hydraulic Pressure
- Air Pressure
- AC/DC Voltage
- AC/DC Current
- LenSense
- Heater Function
- Cabinet Door

Defer Major Overhauls from 9 Years to 18

Extend Grease/Travel Test Intervals to 9 Years

Improve Safety by Reducing Truck Rolls

Identifying SF6 Leaks Sooner Enables Planned Outages vs. Forced Outages

Single Pole Replacement Rather Than Entire Asset

Provides Edge Intelligence by Processing Close to the Source Able to send notifications via email directly to stakeholders, bypassing SCADA, saving setup labor

Monitored Input Power AC or DC Input Voltage is Logged and Stored

Five Control Signal Inputs, Easily Configured for IPO or Ganged Mechanisms Both Legs Fused and Optically Isolated

Five Powered 4-20 ma Sensor Inputs

Three Dual-Mode Sensor Inputs 4-20 ma or Digital Multi-Parameter

Trip Coil Identifier Fault/Switching Threshold Logs Primary Line Current

Built-in Temp Sensor Ambient Temperature is Measured and Logged

Master & Slave RS485 Connections Used for Addressable Sensors and Legacy Scada Rtus

All Connections are Made to Pluggable Phoenix Connectors

No Software Required Secure HTTPS Web-Server
Multi-Level Passwords DNP 3.0
Offers Over 1000 Points

Internal WI-FI Capability with External Antenna

USB Port for Data Uploads, Downloads, and Firmware Upgrades; Supply Power to Accessories

Ethernet RJ-45 or Fiber Communication

Grid Solutions

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PRE-ENGINEERED ACCESSORIES FOR EVERY INSTALLATION NEED



SNAP-ON CURRENT TRANSDUCERS

Three are included in a set. Full-scale current sizes range from 20 to 160 amps and are 1% accuracy. They are open-core and clip on to the circuit breaker bushing CT secondary circuits.



RETROFIT SF6 PLUMBING KITS

Available for many popular circuit breakers. Reduced labor for installation of DSDP SF6 Gas Density Sensor on legacy circuit breakers



HYBRID SF6 GAUGE WITH ANALOG OUTPUT

SF6 Gauge/Controller for IEEE 63 function and includes 4-20 ma output, representing 0-10 bar abs. Superior Series-Reference-Chamber is proven by over 60,000 installations world-wide on Breakers and GIS. Not susceptible to Solar effects, no insulating cover needed. Uses snap-action switches with silver contacts for reliable action. Positive-going over-pressure alarm contact available. Accurate with any mixture of SF6.



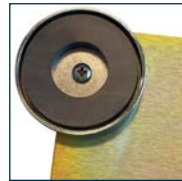
INCON TEE VALVES

Connection to SF6 Gas filling ports to install DSDP Density Sensors may be required and be the best option for a given installation. INCON Tee Valves attach to a DN8 or DN20 filling port, include a secondary fill connection, and a valved side entry for the SF6 Gas Density Sensor. The filling port has a dust cover that is tethered to the TEE so it will not be dropped into the dirt or be otherwise lost in use. Installation of the TEE is functionally equivalent to a permanently plumbed connection.



CURRENT TRANSDUCERS

Current Transducers for AC or DC current for monitoring motors, pumps, cabinet heaters, and other accessories.



MAGNET KITS

This labor-saving option consists of four large cup magnets, four speed nuts, and four stainless screws. They attach to the OPTIMIZER3 mounting holes. By mounting the monitor to the circuit breaker control cabinet with magnets, no holes need to be drilled in the control cabinet, no cleanup required, Fast installation



MODEL DSDP SF6 GAS DENSITY SENSOR

Quartz oscillator principle, no mechanical moving parts, MTBF of 50 years. High accuracy. No temperature compensation, the perfect choice for severe environments



TEMPSENSE

Tempense is a remote temperature sensor that connects to the OPTIMIZER3. It is a 4-20 ma loop-powered sensor that is qualified for utility environments. Useful for monitoring tank heater function.



LENSENSE™

LenSense™ is a retrofit lens for temperature-compensated SF6 pressure gauge like this one. Installation takes 5 minutes with a screwdriver. It adds continuous 4-20 ma sensor output to the gauge.



OM-DPS

Continuously monitors the present Dew Point temperature and the present SF6 temperature and sends these parameters to the OPTIMIZER3 via a proprietary digital signal. The data is compared to alarm settings for use by maintenance crews.



SF6 DRYER

The OM-NM-DN20 absorbs up to 40 milliliters of water from switch-gear SF6 gas.