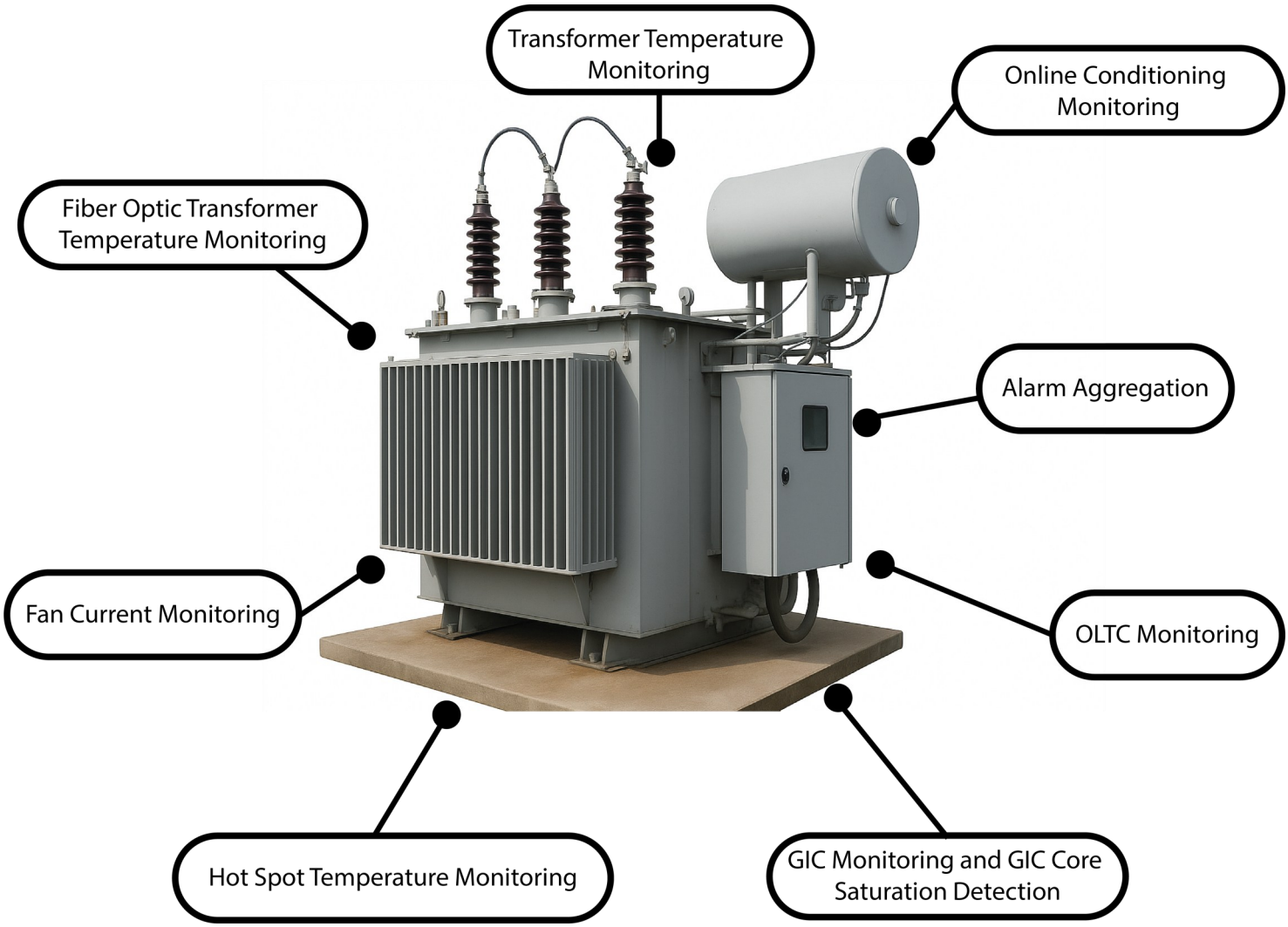
Advanced Power Technologies

A Complete Transformer Monitoring Solution For:



Lifetime Warranty™

Monitor With Confidence™

Product Overview

TTC-1000

- 3 Temperature Probe (RTD) Inputs
- 3 simultaneous winding hot spot temperature measurements (replaces three mechanical winding hot spot indicators)
- Up to eight-form C relay outputs for cooling control and alarms
- Our patented dual-algorithm OLTC condition monitor
- Online Condition Monitoring
- Up to 14 digital inputs for alarm point consolidation
- Various telemetry options available: Analog 0-1/4-20 mA and DNP 3.0 or Modbus RTU over fiber or RS485
- Up to 9 auxiliary CT inputs for monitoring windings, fan and pump motor monitoring and featuring our Patented pre-emptive cooling features for effective transformer pre-cooling and cooling system failure
- Operating Temperature Range: -50 °C to +85 °C, 95% Relative Humidity (non condensing)

NEMA 4X Enclosure

Dimensions:

Panel Mount

7.2” W x 3.558” H x 6” D

NEMA 4X Stainless Steel Enclosure

15.25” H x 7” W x 5.25” D

Total ECLIPSE

- Up to 7 Temperature Probe (RTD) Inputs
- Up to 16 Direct Fiber Winding Probe Inputs
- Up to 16 Relay Outputs
- Up to 32 Analog Inputs
- Up to 90 Digital Inputs
- OLTC Condition Monitoring
- Web based interface via front panel USB
- NERC CIP-007-6 compliant Security Suite
- Patented – Load Pickup Cooling
- Event and Data Logging
- 48 Point Built-In Annunciator
- DNP3/MODBUS/IEC61850 (GOOSE Messaging)
- IEC62439-3 PRP & HSR
- GIC Monitoring and GIC Core Saturation Detection
- Compliance with NERC TPL 007 Standard
- Embedded GIC Thermal Encrypted Models for Situational Awareness of GIC Thermal Impact
- Remote Engineering Access via built-in TLS web server
- Real-Time Loss of Life Calculation
- Operating Temperature Range: -50 °C to +85 °C, 95% Relative Humidity (non condensing)

Enclosure Dimensions:

8.028” W x 4.882” H x 6.40” D Chromated Steel

Front Panel Dimensions:

8.378” W x 5.686” H

Product Overview

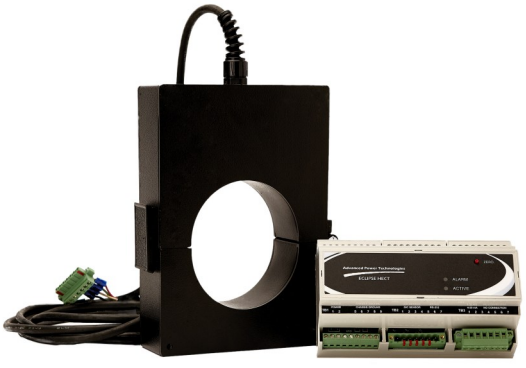
Partial ECLIPSE

- Up to 4 Temperature Probe (RTD) Inputs
- Up to 8 Relay Outputs
- Up to 9 CT Inputs
- Up to 8 Analog Inputs
- Up to 18 Digital Inputs
- Patented Dual-Algorithm OLTC Condition Monitoring
- Patented Sensorless OLTC Position Monitoring
- Patented Load Pickup Cooling
- Event and Data Logging
- Web based interface via front panel USB
- NERC CIP-007-6 compliant Security
- Automatic E-mail Notifications
- Real-Time “Loss-of-Life” Calculations
- Test Mode for Setting and operational check
- Support of three SCADA Protocols: DNV GL certified IEC61850 Edition 2 with GOOSE messaging, DNP3 and Modbus
- Operating Temperature Range: -50 °C to +85 °C, 95% Relative Humidity (non condensing)

Enclosure & Dimensions:
7.3” W x 3.7” H x 6” D Chromated Steel
Front Panel Dimensions:
7.559” W x 4.779” H

ECLIPSE HECT

- IP65 rated Split-Core or Solid-Core Hall Effect GIC sensor
- Compact DIN rail mount electronic package
- Operates from 38 to 290 VDC or 120 VAC
- Measurement range calibratable between +500 and -500 Amps DC
- 4 to 20 mA analog output faithfully follows the GIC signature up to 0.5 Hz
- Manual or autozero feature
- Built-in analog output alarm feature for sensor disconnect or sensor failure detection that drops the analog output to zero
- No special software required for custom setup



All Products are backed by our **Lifetime Warranty** and **Never Require Calibration.**

Lifetime Warranty™

Why Choose APT?

Lifetime Warranty

Each one of our products come with a lifetime warranty. With our warranty a single unit can remain in service for many years, increasing the longevity of both the unit itself and the transformers overall runtimes which can decrease downtimes and costs.

Plug & Play Service

Each one of our transformer monitors includes free programming based on customer needs and supplied drawings prior to leaving our factory, creating a Plug & Play application. Program revisions are also user friendly and can all be adjusted by the user.

Realtime Customer Support

Each one of our Application Engineers, dedicated to specific customers, are available to work closely with both the end user and OEMs. Our website, advpowertech.com, also provides a large library of supporting information for registered users.

Provide Actionable Information

Flexible programming is available to analyze data and alert users of abnormalities related to transformer health. Applications are endless and include functions like, LTC Condition Monitoring, Cooling System Health, etc.

Thermal Modeling During GMD Event

Advanced Power Technologies, in partnership with Hitachi Energy, has added the ability for both the ECLIPSE and Total ECLIPSE to track additional heating of the transformer's windings and structural parts caused by GIC.

***For more information on our products and services, please visit our website, advpowertech.com.**

Over 25 Years Experience and Tens of Thousands of Units in Service.

Advanced Power Technologies

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U.S. Patent No.: 6714022, 6222714, 7323852, 7417411, 8260472, 8274769, 9018962, 9482699 and Other US & Foreign Patents Pending