

Cimco Series 50

Hot Spot Indicator & Controller for Dry Type Air Cooled Transformers

CIMCO's Series 50 instruments provide hot spot temperature measurement, fan on-off control, alarm indication, and trip and alarm switches for dry-type transformers. These instruments will also measure and remember the maximum temperature that the three different transformer coils experience.

OPERATION

As the temperature of the transformer hot spot changes, the ambient compensated circuit provides accurate indication of the highest temperature which the 3 thermocouple junctions sense. The set points for the switch operation are energized from the same circuit which drives the indicator on the face of the panel. The alarm and trip relays have a 5°C hysteresis to help maintain overload and alarm information. The fan control has a 50°C hysteresis. The power light is green, the fans-on light is yellow, and the alarm light is red.

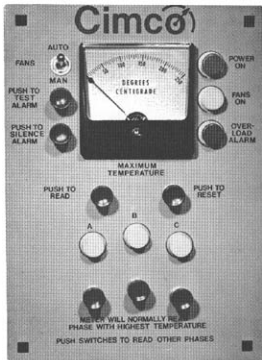
CONSTRUCTION

These instruments use a Type "T" thermocouple which is imbedded in the 1.2 KV dry-type coils and an electronic circuit which is ambient compensated with solid state components. All the necessary circuitry and relays are contained on a printed circuit board which is mounted in a small enclosure. An attractive face plate covers the container and is used to mount the instrument in the dry-type transformer sheet metal enclosure.

CONTROLS

The fan switch can be in the automatic or manual position. In automatic, fans turn on and off at the previously set fans on-and-off temperature. In the manual position, fans will be turned on at all times.

Two switches control the alarm circuit. The operator can choose to test both the local and remote alarms or silence the local alarm. The remote alarm continues until the alarm condition clears.



Series 50 (Front View)

CUTS INSTALLATION, CALIBRATION & WARRANTY COSTS

All of the control circuitry is wired to convenient terminal blocks on the back of the instrument. No additional relay schemes are required. Since the Series 50 instruments sense and indicate the temperatures inside the energized transformer coils, additional costs of test, calibration, or control circuitry can be avoided.

All solid state devices have been fully tested after installation of components in the instrument, assuring high reliability and accuracy. This instrument will indicate the temperature of the transformer coil without the transformer being energized. The accuracy can therefore be verified by the transformer user since the ambient temperature is indicated on the meter. This feature will also confirm that the indicator is operational without spending the time and money to load the transformer.



MOUNTING & INSTALLATION

This compact instrument can be panel mounted on either the dry-type transformer case, the transition compartments, or the low voltage switch gear compartments. Since the CIMCO Series 50 contains all the necessary components to accomplish the indicating and control functions, there is only one piece to install. Carriage bolts are included with the instrument for convenient mounting and to discourage tapering by unauthorized personnel. Electrical and thermocouple connections are easily made to the terminal blocks on the back of the instrument.

There are two alarm contacts: a SPDT contact for use with a local alarm, which can be silenced by pushing the "Push to Silence" switch and a SPDT contact which is not affected by the "Push to Silence" switch. There is also a SPDT shut-down contact. Both the alarm and the shut-down circuits have normally-open and normally-closed capability. The fan power is obtained from the input power and is turned on and off at the set points.

FEATURES

- Three lights and one switch mounted on the face plate; power-on light is green, fans-on light is yellow, and the alarm light is red. One switch for the operator to select the fan mode (manual or automatic).
- Two push button switches are in the alarm circuit mounted on the face plate; the operator can choose to test both the local and remote alarms or silence the local alarm.
- A maximum temperature memory function; this circuit remembers the highest temperature and will display the maximum temperature upon command. Two push button switches are mounted on the face plate, allowing the operator to either read the maximum temperature or clear the memory in the maximum memory circuit. While the maximum temperature is displayed all other functions work off of the actual temperatures.
- Three-thermocouple input circuit; this circuit will automatically select the highest temperature from a group of three thermocouples. Three push button switches on the faceplate enable the operator to read the temperature of any phase. While this reading is taking place all other functions operate normally.

FAIL-SAFE FEATURES

Circuitry in the CIMCO Series 50 instrument is designed to provide "fail-safe" protection for the transformer under the following conditions:

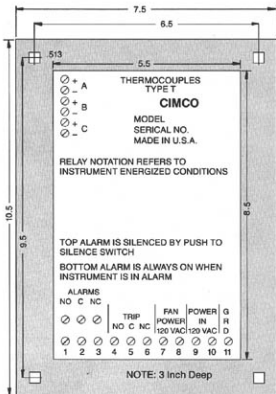
(1) If Auxiliary Power is Lost:

All of the lights turn off, the alarm circuit operates, and the shut-down circuit operates.

(2) Thermocouple Failure

If the thermocouple should open or remain disconnected, the fan will turn on, the alarm relay will operate, the trip circuit will operate, and the meter will read maximum scale.

SERIES 50 BACK VIEW



Attach copper (blue) wire to "+" terminals
Attach silver (red) wire to "-" terminals

SWITCH SET POINTS

Four set points are available on the Series 50 instruments. Standard set points are described below.

SERIES 50 SPECIFICATION TABLE

MODEL	POWER IN	FANS ON	FANS OFF	ALARM	TRIP	SCALE RANGE	
51	240 V.	200°C	150°C	220°C	230°C	0-250° C	
52	240	170	120	185	195		
53	240	140	90	155	165		
54	120	200	150	220	230		
55	120	170	120	185	195		
56	120	140	90	155	165		
57	240	Customer Specification					
58	120	Customer Specification					