

# Inert Air Systems

LASTING PROTECTION FOR POWER TRANSFORMER OIL

Waukesha® positive pressure Inert Air Systems are designed to protect transformer oil in the main tank from oxidation and moisture absorption by keeping pressure in the tank at proper preset levels. Systems utilize a replaceable nitrogen tank and three-stage pressure gauge for low gas supply. Pressure alarms are provided for both low and high tank pressure.

## MAINTAIN TRANSFORMER TANK PRESSURE

By utilizing preset gauges and valves, Waukesha® Inert Air Systems maintain transformer tank pressure between 0.5 psi and 5.0 psi. If tank pressure drops below 0.5 psi, nitrogen gas is sent from the nitrogen supply cylinder through the reducing valve assembly and into the transformer tank. As the pressure is restored to near the 0.5 psi level, the flow of nitrogen gas is slowly reduced to zero to stabilize as the 0.5 psi set point is reached. If tank pressure rises above 5.5 psi, a pressure relief valve automatically opens to bleed off excess tank pressure.

## ALARM SYSTEM SIGNAL

Contacts are provided for installation of an alarm system to signal if gas pressure at the supply cylinder should drop below 200 psi. A visual indicator of supply cylinder pressure is provided by means of a pressure gauge. Alarm provisions are also available to signal when transformer tank pressure exceeds 5.5 psi and when tank pressure drops below 0.2 psi. Tank pressure contacts are located on the terminal block.

## THREE-STAGE PRESSURE REDUCER ADJUSTMENT

The pressure reducer assembly regulates the flow of nitrogen gas from supply cylinder to transformer tank in three stages:

**Stage 1** Reduces nitrogen gas flow pressure from the cylinder from 2000 psi to 100 psi.

**Stage 2** Reduces gas pressure from 100 psi to 7 psi.

**Stage 3** Reduces gas pressure from 7 psi to 0.5 psi and controls the flow of gas to the transformer tank. This third stage also includes a pressure relief system that maintains tank pressure between 0.2 psi and 5.5 psi.

## TANK PURGING

The nitrogen gas pressurizing system may be used to quickly purge the transformer tank of contaminated gas or air. After evacuation of gas in the gas space through the transformer outlet purge valve, turning the by-pass regulating valve to the by-pass position allows fresh nitrogen to flow directly from the 2nd stage regulator, through a by-pass line, to the tank inlet.



Supply and tank pressure gauges on the Inert Air System are easily viewed through a large viewing port on the cabinet door.



**Standard Cabinet**  
Nitrogen tank mounted externally (tank NOT included)



**Full Length Cabinet**  
Nitrogen tank enclosed in lockable cabinet (tank NOT included)

## CABINET SPECIFICATIONS (1/2" cabinet mounting hardware not included)

**Material:** Cabinet - 12 gauge carbon steel; Hinge - Stainless steel, piano type, full length of enclosure; Cabinet Handle - Stainless steel with provision for locking

**Sealing Provisions:** Rain shield and rubber door gasket

**Viewing Port:** 5-1/4" x 7-1/2" polycarbonate

**Vents:** 1" screened aluminum louvers

**Regulator Panel Finish:** Epoxy primer with white polyurethane topcoat; 3 mil. total thickness

**Exterior Finish:** Epoxy primer with ANSI 70 (gray) polyurethane topcoat; 5 mil. total thickness

**External Seams:** Continuously welded

**Wiring:** FEP wire with ring tongue terminals

