



Duct heaters are the most easily adaptable industrial heating solutions for most non-pressurized, air-heating systems. Duct heaters are ideal solutions for a variety of applications, including primary heating, supplementary heating (i.e., supporting a heat pump), auxiliary heating, humidity control or multi-zone heating. Duct heaters come in various sizes and dimensions to fit any compartment. There are three types of duct heaters available: open coil, tubular or finned tubular heating elements that are either flanged or inserted in the duct. Air duct heaters are primarily used in air flowing ventilation systems and comfort-heating applications while process duct heaters are mainly used for industrial process heating applications (ovens that require re-circulated air or forced circulation). Air duct heaters are used

for tempering forced air in many industrial processes. Heater wattage depends on air outlet temperature (up to 1200°F [650°C]) and air velocity. Smaller duct heaters can be tandem mounted in place of one large unit to meet space limitations and simple installation. Heavy wall incoloy tubular heating elements (field replaceable) provide protection against corrosive air environments and resistance to vibration when compared to open coil elements. Duct heaters can be designed specifically for high pressure and hazardous locations. Turnkey systems including the duct heater, power and temperature control panel, and the temperature and over-temperature sensors can also be provided.

## Application

Duct heaters are generally designed to be installed into ducting. They are usually installed through the side wall to cause air in the duct to be heated as it flows around and through the open-coil elements. Duct heaters used in forced air applications provide dedicated space heat or supplement existing heating systems.

- Heat treating
- Air drying operations
- Air handling equipment
- Forced air comfort heating
- Core drying
- Fan coils
- Booster air heater
- Air pre-heating
- Terminal reheating
- Multizone reheating
- Heat pump auxiliary systems
- Return air heating
- Resistor load banks
- Annealing

## Material Sheath Selection

- Stainless Steel 304
- Stainless Steel 316 L

# Duct Heater



**A** NEMA 1 terminal box enclosure with vented cover to help keep wiring cooler. Optional enclosures: NEMA 4 (moisture resistant), NEMA 7 (explosion resistant) and 12 (dust resistant).

**B** 3½ inches (89 mm) of mineral insulation in an aluminized steel enclosure minimizes heat losses while keeping the electrical wiring cooler.

**C** The heavy duty frame is composed of a ¼ inch (6 mm) thick steel mounting flange, stainless steel support plate and corner posts to securely hold the heating elements rigid in any mounting position.

**D** Field replaceable elements are held in place by a single screw quick release “V” clamp. Optional: Gas tight design using compression fittings to attach elements to the flange prevents leakage of ducted gas into terminal enclosure.

**E** ¼ inch (6 mm) inside diameter thermowell accessed through a 1/8” NPT tapped hole in the flange allows installation of an optional Type “J” or “K” thermocouple for sensing the element temperature. An excellent safeguard for your system.

**F** Elements are .430 inch (11 mm) diameter and have Incoloy™ sheaths for excellent corrosion resistance and scaling resistance at high temperatures. Elements hairpin bends are spanked in special dies to re-compact the MGO refractory to eliminate any electrical insulation voids and hot spots.

