

VAPOR CONDENSER

PRODUCT DATA SHEET—110

Air-cooled heat exchanger for continuous removal of solvent and water vapors
For solvent-based processing systems

Introduction

The Neutronics Vapor Condenser is an air-cooled heat exchanger designed to remove vapors and condensate from the sample gas stream. To deliver accurate and reliable gas measurement, oxygen sensors require a sample gas stream that is free of vapors and contaminants. Removal of entrained vapors is critical to ensuring proper sensor performance and a long service life. An essential component in the sample conditioning package, the Vapor Condenser is designed for sample gas streams operating at temperatures ranging from ambient to slightly above.

Operation

The Vapor Condenser consists of a heat exchanger powered by a vortex cooler. The vortex cooler, with no moving parts, provides the refrigeration for the unit. Powered by compressed air or gas with a supply pressure of 30 psig, the vortex cooler splits the air flow into a cold stream and a hot stream. The cold stream flows into the condenser shell to collect heat from the sample gas that is moving through the tube side. With a temperature drop of 20 to 30 degrees F, entrained vapors are condensed on the tube wall. The condensate drips down and is discharged from the bottom of the tube. The hot air discharge from the vortex tube is combined with the cold air discharge from the condenser shell prior to venting from the system.

The Vapor Condenser splits the sample gas flow into a sample flow and a bypass flow. The sample flow travels up through the tube side of the heat exchanger where it releases condensate as it cools. Bypass flow travels down through the tube side where it flushes out the collected condensate. This downward flow provides for increased sample draw, allowing the sample gas to be pulled from a long distance without long lag times in the sensor response.

Installation

For reliable and extended service life, the compressed air or drive gas supply must be free of moisture, oil and particulates that could clog the vortex tube and nozzles. A vortex drive filter/regulator is included in the sample conditioning package to ensure that instrument quality drive gas is supplied to the vapor condenser.



Maintenance

The Vapor Condenser contains no moving parts. The assembly is factory set and requires no field adjustments. Periodic inspection is required in accordance with standard preventative maintenance procedures and schedules.

Features

- Robust design – air-cooled heat exchanger powered by a vortex cooler provides continuous removal of entrained solvent vapors from the sample gas stream
- High efficiency vortex cooler – driven by compressed air or gas, the vortex cooler supplies the refrigeration necessary to condense entrained vapors
- Intrinsically safe – with no moving parts, the pneumatically-powered vapor condenser is suitable for hazardous area locations
- Low maintenance – precision machined components and high quality construction minimizes maintenance costs and unplanned downtime
- Factory set – requires no field adjustments
- Corrosion resistant materials of construction – Stainless steel tube with copper jacket or Hastelloy tube with Stainless steel jacket

VAPOR CONDENSER—SPECIFICATIONS

Wetted parts

Shell/jacket MOC

Dimensions

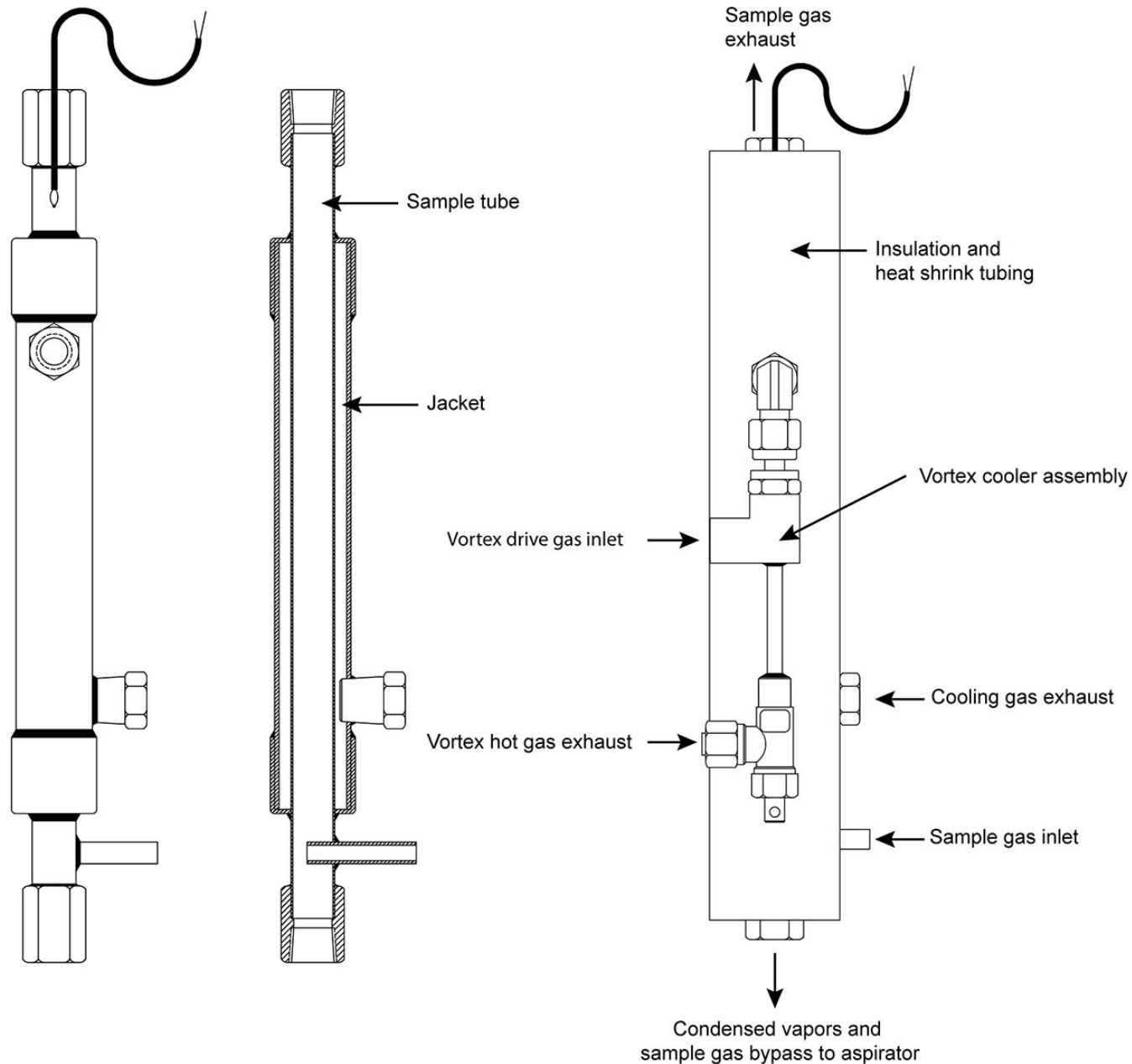
Weight

Stainless steel or Hastelloy tube

Copper or Stainless steel

9.00" OAL

2 lbs (0.9kg)



Order information

Part No. 8-02-1000-00-0

Part No. 8-02-1000-00-1

Vapor condenser assembly

Vapor condenser assembly

Stainless steel tube, copper jacket

Hastelloy tube, Stainless steel jacket



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