

Vertex™ Edge

QUICK REFERENCE GUIDE

System Overview

The Honeywell Analytics Vertex Edge System continuously monitors up to 72 remote locations for toxic gases, and can be set up to:

- Trigger alarms and opening event windows to warn operators of high concentrations
- Display the location, gas type and gas concentration
- Store the alarm information in a database

The Vertex Edge System provides fast response to a wide range of gases. Each location may be up to 400 ft (122 m) from the Vertex Edge System. The system uses one or more of Honeywell Analytics' Chemcassette® analyzers to provide a monitoring system tailored to meet the requirements of the facility.

The Vertex Edge System incorporates a range of redundant and protective features for maximum uptime. See Manual for specifics.



WARNING

Risk of Electric shock

Hazardous voltages are present in the Vertex Edge.

- 1) Ensure power is disconnected prior to servicing with the exception of the removable analyzers.
- 2) Ensure proper separation between circuits in accordance with the local electrical codes.
- 3) Use solid or stranded wire certified to appropriate ratings but minimum 300 V. Power wiring should be minimum 14 AWG. Communication wiring should be maximum 14 AWG.



WARNING

Risk of affecting concentration readings of monitor

- 1) Improper installation of the tubes into the connectors can result in dilution of the gas sample
- 2) Excess amounts of dirt in the external filters reduces the gas sample flow



WARNING

Risk of exposure to toxic gases

Carefully check for proper connections and/or leaks in the exhaust tubing.



WARNING

Risk of Electromagnetic Interference

- 1) Follow the guidelines in the EMC Considerations section of the manual
- 2) All relay cables should include a braided shield. Twisted pair cabling with a foil shield surrounding each pair plus foil and 90% braid shielding around the bundle has been found to be suitable.
- 3) Make certain all fasteners are reinstalled and firmly tightened to ensure a proper ground path.
- 4) Do not switch DC current with the relay contact unless you are using counter electromotive force (CEMF) protection such as a suppression diode.



CAUTION

Risk of impaired Monitor Performance

Do not connect an external network to the Ethernet hub. Use only the external Ethernet connection on the back of the data acquisition computer.

General Safety

Follow all installation and operational instructions to ensure the safe and reliable operation of this unit.

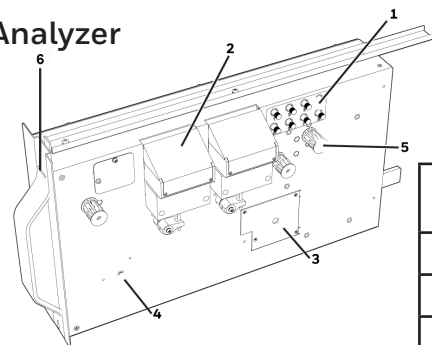
If this monitor is used in a manner not specified by Honeywell Analytics Inc., the protection provided by the equipment may be impaired.

UL has investigated the Vertex Edge concerning the risk of fire, shock, and injury to persons. UL did not investigate (the equipment covered by the certification) for Life Safety Applications and did not investigate the efficacy or performance.

System Components

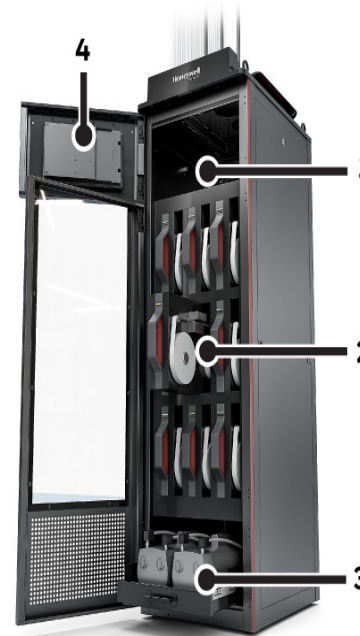
The following photos illustrate Vertex Edge System components, ports, connections and controls.

Analyzer



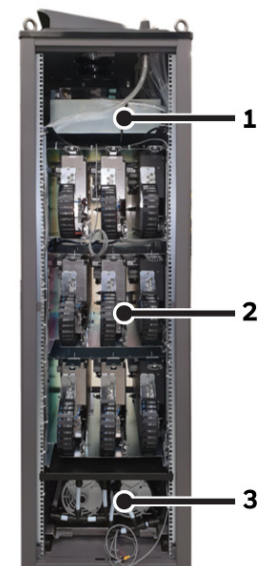
1	Needle Valve for flow adjustment
2	Optics Block
3	RFID reader
4	Take-up reel
5	Tape encoder roller
6	Status LED

Vertex Edge - front



1	Smart Power Distribution Unit
2	Analyzer
3	Pump
4	HMI PC with touch screen

Vertex Edge- back



1	Smart Power Distribution Unit
2	Analyzer
3	Pump

Analyzer Modules

The Vertex Edge System is populated with Chemcassette type analyzer modules. Modules are installed in slots on one of three tiers. Each tier includes three slots for a total of nine slots.

Vertex Edge

Tier 1	CC	CC	CC
Tier 2	CC	CC	CC
Tier 3	CC	CC	CC
	Slot 1	Slot 2	Slot 3

Vertex Edge Module Tier Structure

Chemcassette® modules occupy one slot each.

	Number of Points	Installed into Slots	Total Possible per Vertex Edge System
Chemcassette®	8	1, 2 or 3	9

Vertex Edge Required Slots

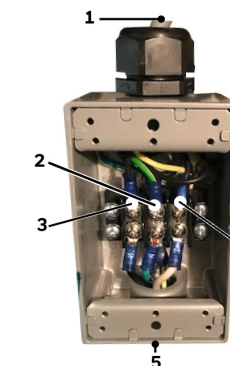
Connecting AC Power

- The Vertex Edge power terminals are accessible from the front panel. See manual for details.
 - 230 VAC, 15 A, 50/60 Hz

An easily accessible service disconnect/power switch must be installed near the instrument, and the switch must be marked as the main disconnect rated 20A.

Vertex Edge Wiring

Input power cable should be #14 AWG minimum. The safety ground wire must be the same or larger gauge as the line wires. Connect the AC power connection to the terminal block inside the junction box as shown. The Vertex Edge System requires a dedicated AC source rated at 230VAC @50/60Hz, 15 Amp single phase providing hot, neutral, and ground lines. Line voltage should fluctuate no more than +/-10%.



1. To power outlet.
2. Green Ground.
3. Black Live line
4. White Neutral
5. Vertex Edge side, prewired.

Power On/Off

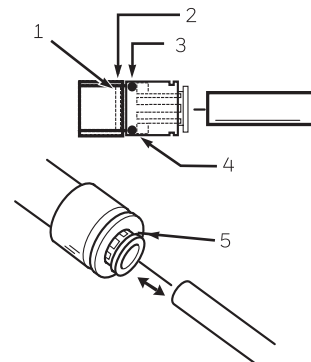
An internal rack power switch is located behind the door. After performing self-diagnostics, the Vertex Edge System main screen opens and the system returns to the same state it was in prior to power down.

Communications, Data Acquisition, Ethernet

See manual for complete details on wiring and programming these functions.

Sample Line Connections

1. Tubing Stop
2. Correct - Fully Inserted
3. Incorrect - Not Fully Inserted
4. O-Ring
5. Grey Locking Insert



Sample Line Inlet Connections

To prepare for installation of sample lines, remove the FEP Teflon tubing from the packaging. The top of the unit includes 73 connections.

- 72 Sample Inlets for Vertex Edge.
- Point legend follows and is in proper sequence.
- Exhaust Outlet.

Each inlet has a quick connect/disconnect fitting with an internal O-ring and an external grab ring. To install a tube into a sample line inlet, insert the tube far enough into the fitting to ensure that the tube has passed through both the external grab ring and the internal O-ring and is firmly seated against the stop. The insertion depth for a correctly installed sampling line is 1/2 in. to 5/8 in. (12 mm -16 mm). Verify the insertion depth by holding the tube and marking with your thumb where it emerges from the fitting. Remove the tube to measure the insertion depth.

Note: Unused points do require a Filter Kit to be installed (Part Number 1295A0702).

Installing Sample Line Particulate Filters

You MUST attach a sample line filter to the sampling end of the line for all locations because there are no filters inside the analyzer.

Installing Pump Exhaust Line

This section describes exhaust connections and installation. The Vertex Edge Systems are equipped with a vacuum pump that is located in the bottom of the Vertex Edge System cabinet. The pump exhaust line connects to the manufacturing facility central toxic exhaust system.

Exhaust Line Installation Requirements

Follow these general requirements when installing exhaust lines:

- The length of the line should not exceed 50 ft. (15.2m). If longer distances are required, contact Honeywell Analytics.
- Do not crimp exhaust lines, or place them in an area where weight could collapse the tubing, or bend them to less than a 12 in. (30.5 cm) radius.
- Where possible, leave as many bends exposed for periodic visual inspection of the line for kinked or damaged tubing.
- Varying exhaust pressure can induce pump failure or flow faults.

Exhaust Line Connection

The instrument includes 20 ft. (6 m) of 3/8 in. (10 mm) I.D. x 1/2 in. (13 mm) O.D. Teflon tubing. Insert the tubing into the exhaust port on the top of the unit to the depth of 0.9 in. (23 mm).

To ensure a leak-free installation:

- Use a polypropylene tube with outside diameter 0.375 in. (9.525mm) +/- .005 in. (0.127mm).
- Verify that the external surface of the tube is free of score marks and scratches that could compromise the O-ring seal used in the fitting over the insertion depth.
- Cut the tube end perpendicular to its length 0.062 in (1.5mm) from its end.
- Insert the tube in the fitting to a depth of 0.95 in. (24.13mm) ±0.05 inches (1.27mm)

With the system running, verify the leak integrity with a small amount of leak test fluid.

Network Computer Security

Vertex Edge is a Linux based computer. While remote login and unused network ports are blocked, we recommend using an external firewall to isolate the monitor from any malicious ethernet traffic.

Validating the System

Commissioning of the gas detection system is not complete until it is tested to verify it functions according to its design objectives or specifications. For validation or commissioning after installation by gas exposure, these Technical Notes are available upon request from Honeywell Analytics:

1998-0837 *Calibration and Verification*

1998-0219 *Detector Testing Protocols*

Operating Conditions

Indoor use only.

Altitude: Up to 6000ft

Temperature: 15°C to 35°C

Relative humidity: 20~65%RH

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Scan this code for further reference to Vertex Edge Systems on Honeywell Analytics website

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