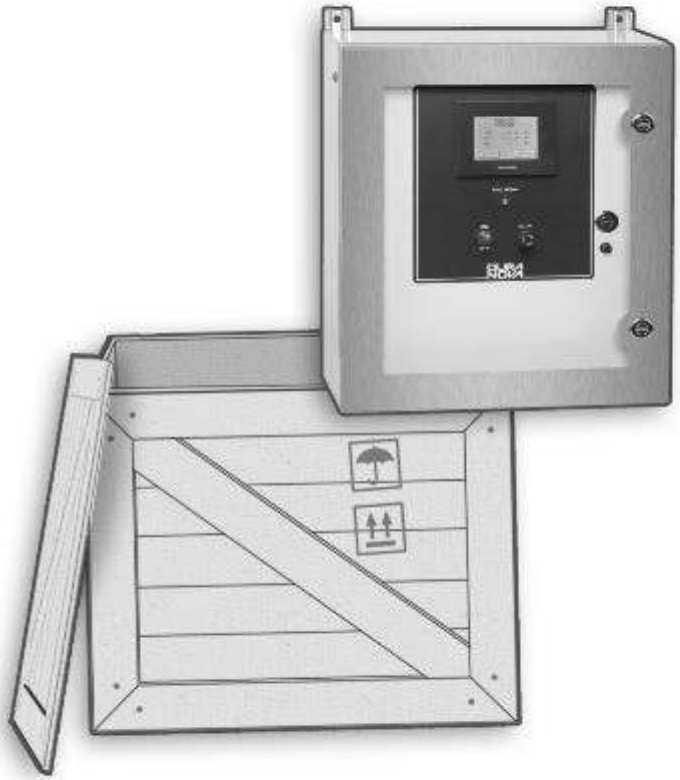
Quick Start Guide

DuraNOVA Series Analyzers

Nova Analytical Systems
JAN 2021

② - Quick Start Guide - Unpackaging & Inspection



Welcome to your new DuraNOVA Gas Analyzer!

Before you begin installation:

- **Carefully inspect the analyzer for any damage that may have incurred during transport.**
- **Ensure that any accessories & spare parts that you purchased are present.**
- **Notify NOVA immediately if any damage is observed or if any items appear to be missing.**
- **Contact info:**

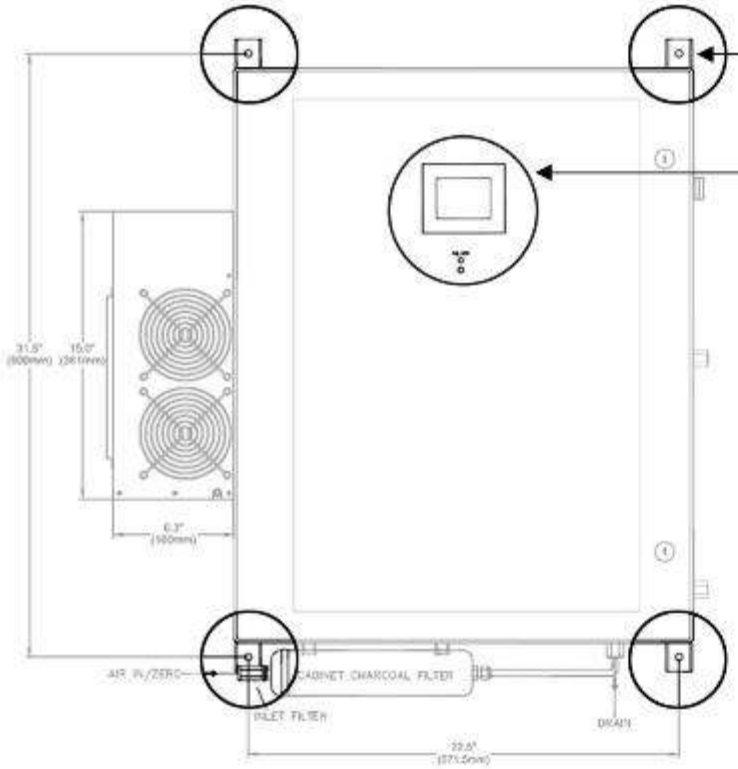
Customer Support Team
800 295 3771
customersupport@nova-gas.com

③ - Quick Start Guide - Installation Recommendations

- Only qualified personal should attempt to install or commission this analyzer.
- Ensure that local health and safety guidelines are followed during commissioning
- It is strongly recommended that the supplied analyzer manual is also consulted in addition to this Quick Start Guide.
- Failure to do so could result in an improper installation, calibration or operation of the analyzer.
- Contact info:

Customer Support Team
800 295 3771
customersupport@nova-gas.com

④ - Quick Start Guide - Cabinet Mounting



- **Analyzer is mounted via 4 factory installed cabinet mounting brackets**
- **When mounting the analyzer on a wall or metal framing, ensure that the analyzer HMI (digital display) is at eye level for easy viewing.**
- **If analyzer is being mounted outdoors, it is to be protected from direct exposure to the elements via the use of a sun/wind shelter**
- **NOTE: Ensure that the cabinet mounting location does not conflict with the NEMA rating of the enclosure**

⑤ - Quick Start Guide - Connection to Sample Extraction Point

Standpipe, Valve, & Pre-Filter

In some applications such as landfill or biogas, a standpipe arrangement is required. Install a ¾" or 1" standpipe about 12" (300 mm) long on the top side of the gas line. This standpipe will allow any excess liquid to run back into the process line.

Install an isolation valve to the side of the standpipe near the top. For now, leave the isolation valve closed.

Install the pre-filter that ships with the analyzer on a short pipe after the valve.

Connect ⅜" stainless steel tubing between the sample outlet fitting of the pre-filter to the inlet of the analyzer cabinet.

Probe, Pre-Filter & Sample Line

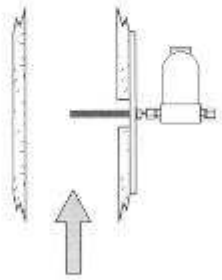
Some applications, such as flue gas, require a probe and pre-filter to extract the sample gas. Install the probe that ships with the analyzer so that it samples from the center third of the stack pipe diameter.

Attach the pre-filter that ships with the analyzer in the inverted position (bowl upright) to the end of the probe. The inverted filter will allow any remaining liquids to pass through and be disposed of at the analyzer.

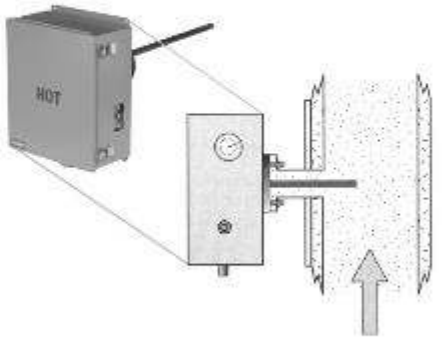
Note: Installation and proper maintenance of the pre-filter is critical to the long-term reliability of the analyzer.

In applications with high particulate content, a probe and heated filter system are installed at the stack. Proper procedure for installation is discussed in the manual that ships with the analyzer.

Connect ⅜" stainless steel tubing between the sample outlet fitting of the pre-filter or heated filter system to the inlet of the analyzer cabinet.

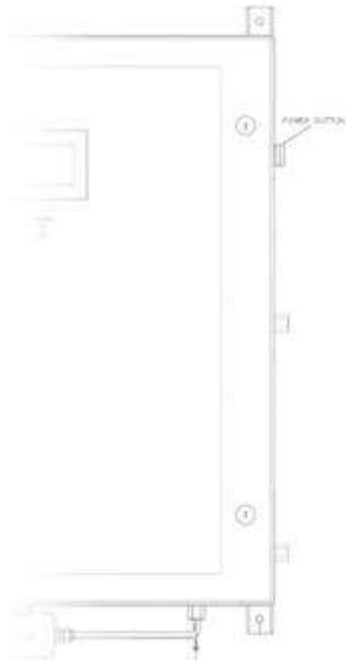


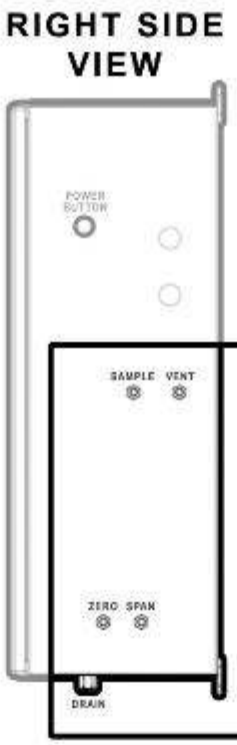
Probe & pre-filter



Probe & heated filter system

⑥ - Quick Start Guide - Tubing Connections





SAMPLE IN: Install 3/8" stainless steel tubing from sample extraction point to SAMPLE IN port on the analyzer cabinet.

VENT: Connect 3/8" stainless steel tubing to VENT port on the analyzer cabinet. This line should be vented outside or to a location where no personnel are present

SPAN: Connect the outlet of the calibration gas cylinder with regulator to the port marked SPAN. When connected to the analyzer, set the cylinder regulator pressure to 5-10psi. Then check for leaks using soapy water.

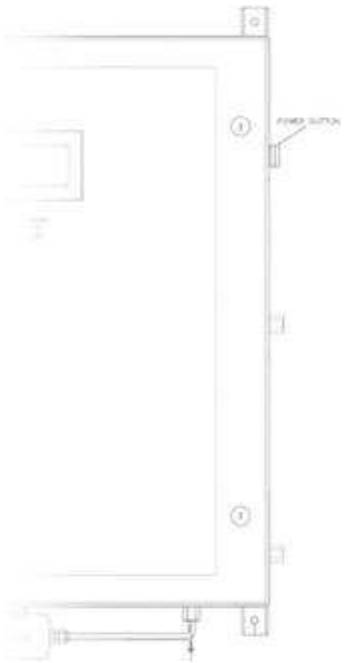
ZERO: In some cases, the ZERO calibration may be performed on bottle Nitrogen. Connect in the same manner as the SPAN gas.

DRAIN: Connect tubing to the DRAIN port to direct condensate down and away from the analyzer.

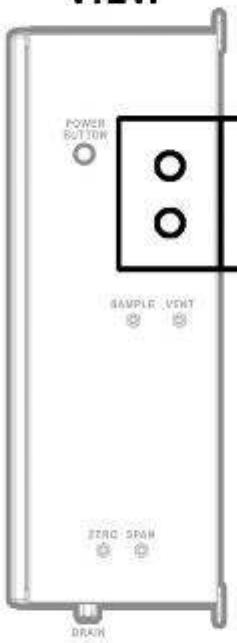
NOTES:
If any tubing is exposed to freezing ambient temperatures, it will have to be heat-traced and insulated right up to the analyzer's ports for freeze protection.

All of the tubing connection ports are 1/4" FNPT (Female NPT Thread). NOVA recommends the use of 3/8" stainless steel tubing.

⑦ - Quick Start Guide - Wire Connections



RIGHT SIDE VIEW

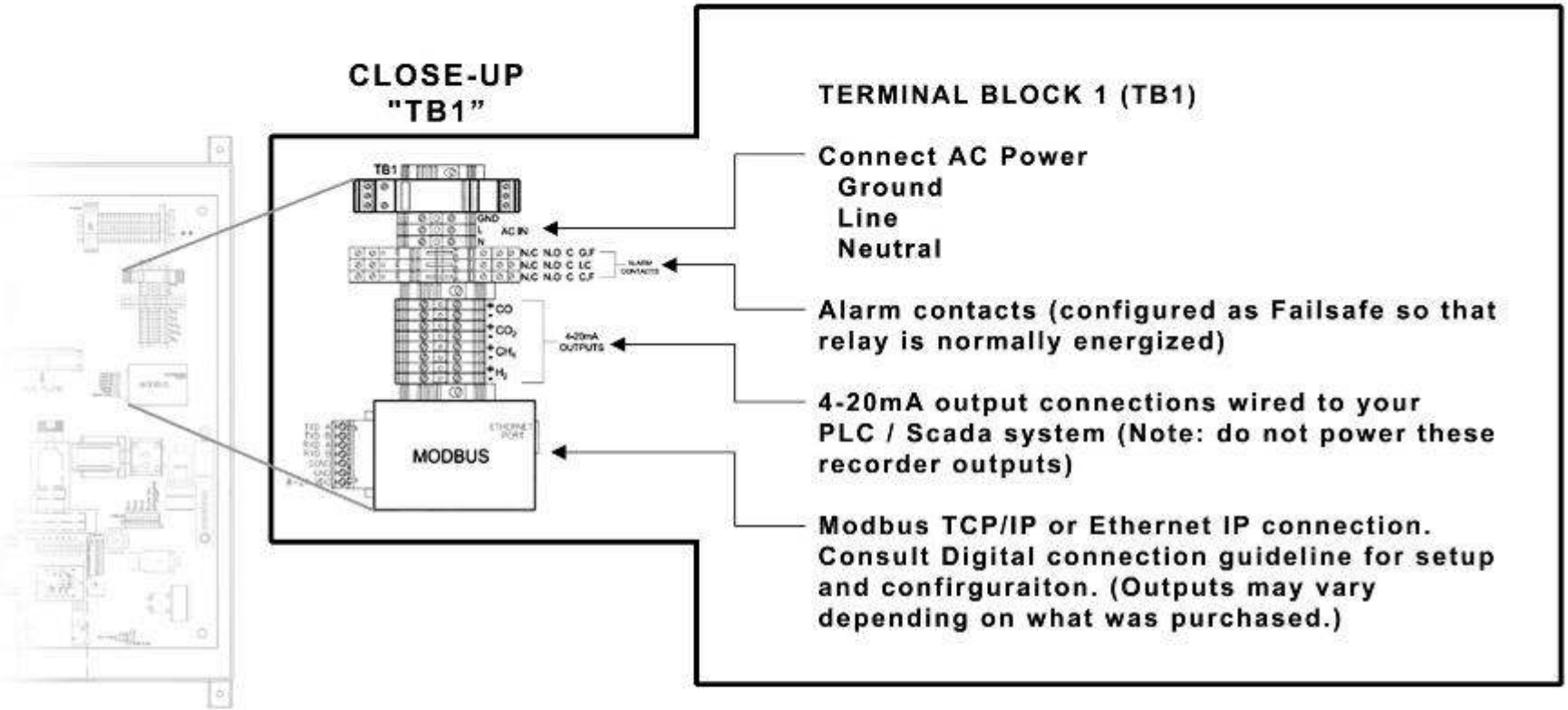


- Prior to starting any electrical work, ensure that the electrical connections from main power supply are properly locked out.
- Customer wiring is predominately connected at "TB1" terminal block station, which is located inside the analyzer.
- All Nova Analytical analyzers come pre-punched with two 1-1/8" conduit holes on the right side of the analyzer. One hole is for conduit to carry AC power wires. The other hole is for conduct to carry signal and/or CAT5 wires.
- Ensure that all local relevant safety procedures are followed when wiring the analyzer.
- AC power should only be applied to the analyzer once all the wiring is complete and has been verified.
- Analyzer current rating and voltage can be found on the right side of the analyzer.

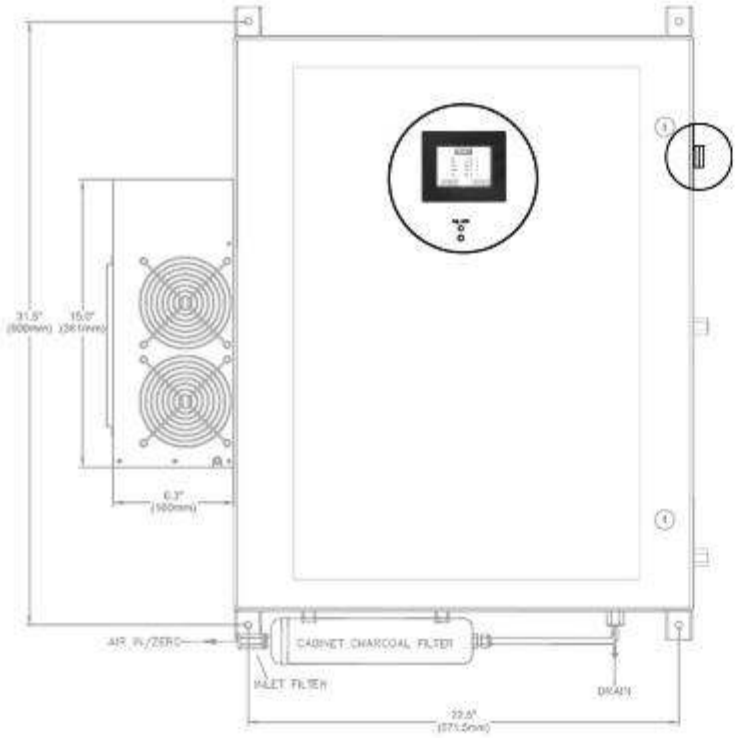
NOTES:

- Use good electrical workmanship to maintain a water seal where conduit enters the cabinet and ensure that conduit junctions are sealed internally when wired is complete.
- Do not punch holes in the top of the analyzer or the warranty will be voided.

⑧ - Quick Start Guide - Wire Connections



⑨ - Quick Start Guide - Start-Up

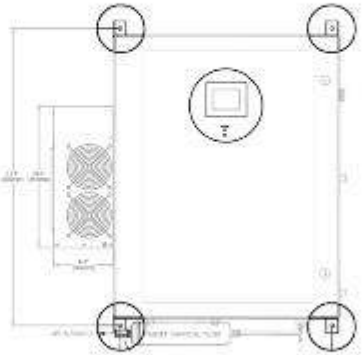


- After wire connections are checked for correctness, AC power main to analyzer can be switched on.
- Power switch on right side of analyzer cabinet can be switched on.
- Consult printed manual now for information on analyzer warm-up time, and starting operations using HMI touch-screen menus.

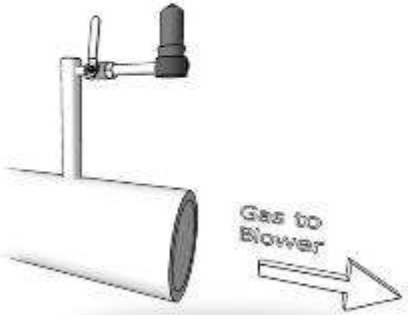
⑩ - Quick Start Guide

▪ Unpacking

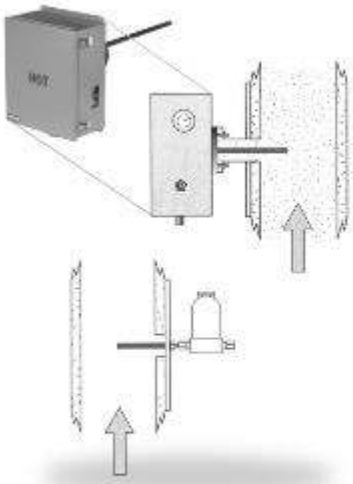
▪ Before you start



▪ Cabinet mounting

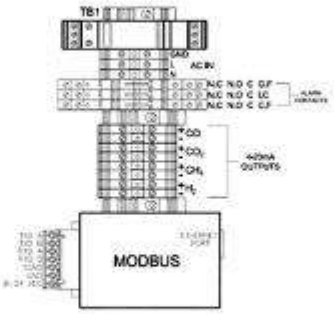


▪ Process lines

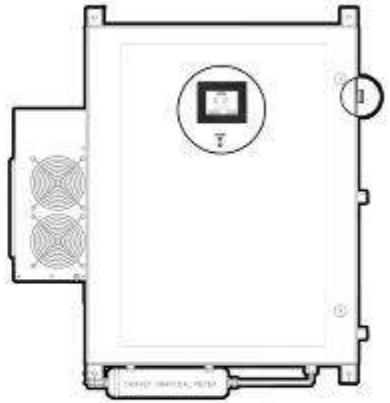


▪ Stack extraction

▪ Tubing connections



▪ Wire connections



▪ Start up