

NanoTrace Configuration Guide

DF-550E

Optional Equipment

Base Model

PNT-0010 NanoTrace Oxygen Analyzer

-S (added to model number) *Stab-El Sensor System*

Enables operation with trace levels of acid gas or any ionic contamination (within limits-consult factory for guidelines)

-V (added to model number)
230 VAC/50-60 Hz Input Power

Plumbing

NT-PR1-5V ^{NOTE 1} *High Purity Pressure Regulator*

3000 psig inlet capacity; 0-15 psig adjustable outlet pressure; requires 5 psig minimum inlet pressure (1/4 inch VCR compatible fittings)

NT-PR1-5V-MNT *Regulator Mounting*

Welded tube assembly and bracket for mounting NT-PR1-5V regulator to analyzer cabinet

NT-FCV-UHP *High Purity Flow Control Valve*

Ultra high purity bellows valve for upstream isolation shut-off and flow control (1/4" VCR compatible fittings)

NT-ISO-DSV *Downstream Isolation Valve*

NT-SSOL ^{NOTE 2} *Stainless Steel Outlet Line*

Calibration

NT-CAL-A-CD *Automated Calibration System*

Provides menu driven automatic zero and span valve switching, pneumatic diaphragm valves and zero purifier in a small on-board package, only 12.5" depth behind location of optional panel (requires 70-100 psig pneumatic supply.)

NT-CAL-EXT *Auto Control of User-Cal Components*

Software with switched AC power for control of external, span/zero solenoids and valves.
(Switched 6 VDC if equipped with NT-CE)

NT-CAL-M *Manual Calibration System*

Provides manual quarter-turn springless diaphragm valves and zero purifier in an orbital butt welded assembly that is compactly integrated on the rear panel of the analyzer to optimize portability.

-HCP ^{NOTE 3} *High Capacity Purifier*
(Substitute for Standard Purifier)

Recommended for applications where source gas purity can be > 10 ppb or sample sources are frequently switched, such as in all portable applications. Provides 30 times higher capacity than the standard purifier.

Alarms (Audible/Visual)

NT-FLALM *Low Flow Alarm*

Cabinet

NT-N2CP-FS ^{NOTE 2} *N₂ Case Purge w/ Power Interlock*
(not compatible with NT-PNL)

NT-RMNT *Rack Mount* (19"Wx10.5"Hx10.1"D)

NT-PNL *Panel Mount* (13.9"Wx9.9"Hx10.1"D)

NT-KYLK *Key Lock*

Relay Contacts ^{NOTE 4} (Independently assignable)

NT-RLY1 *One Relay Contact*

NT-RLY2 *Two Relay Contacts*

NT-RLY3 *Three Relay Contacts*

NT-RLY4 *Four Relay Contacts*

Outputs

NT-4-20I *Isolated 4-20 mADC Output*

NT-RS232 *Two-way Serial Communications*

NT-RS485 *Two-way Serial Communications*

Miscellaneous

NT-NiCAD *Supplemental Battery Input Power*

Permits portable operation independent of AC power

NT-XTC-RS232 *Serial Port Adapter Cable (10 ft.)*

Analyzer RS232 Port to 9-pin D-sub connector (10 ft.)

NOTES:

1. Requires NT-PR1-5V-MNT or external support by user. External support not required when an Auto or Manual Calibration System is ordered.
2. Required when monitoring combustible samples such as H₂.
3. Add "-HCP" to either the NT-CAL-A-CD or NT-CAL-M option.
4. Used with Optional or Standard Alarms or Status Indicator

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Standard Features & Specifications

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Performance

Lowest Detection Level	200 ppt
Resolution	
Analytical (Sensitivity-smallest detectable change)	100 ppt
Display	100 ppt
Analog Output	10 ppt
Accuracy (greater of)	±3% of reading or ±0.5 ppb (Constant Conditions)
Response Time	<15 seconds
<i>Time to reach 90% of final reading</i>	
Upset Recovery Time	<5 minutes
<i>Time from high ppm upset to within 10 ppb of the previously stable reading</i>	
Range (Output Scale)	0-20 ppb (min) 0-10 ppm (max)
Ambient Operating Temperature	32° to 110° F (0° to 45° C)
Background Gas Compatibility	<i>All inert and passive gases including N₂, He, H₂, Ar, light hydrocarbons, halocarbons, etc.</i>

Gas Sample Conditions

Sample Pressure	
<i>Operating limits:</i>	15 to 25 psig (2.03 to 2.72 bar) Regulated by a critical orifice For over 25 psig – order option NT-PR1-5V
<i>Sensor overpressure damage limit:</i>	5 psig (1.36 bar)
Return Pressure	Atmospheric Vent (optimal)
<i>For H₂ and He</i>	Maximum limit: ± 1psig
<i>For N₂, Ar, and all other background gases</i>	Maximum limit: ± 2 psig
Flow Rate:	1.0 to 3.0 scfh (0.5 to 1.5 slpm)
Temperature (Gas Sample)	32° to 122° F (0° to 50° C)
Moisture	No limits (avoid condensation)

Gas Flow System

Construction Materials	300 Series stainless steel
Gas Connections	¼ inch VCR compatible inlet fitting Orbital butt welded sensor inlet assembly 1/8 inch compression outlet fitting

Calibration System Components

Pneumatically or manually actuated springless diaphragm valves, orbital butt welded assembly
 Oxygen scrubber provides <0.1 ppb oxygen-free zero gas
 ¼ inch VCR compatible span inlet fitting
 1/8 inch compression fittings for pneumatic actuator gas

Construction

Enclosure:	NEMA 1 standard
Weight:	18 lbs. (8 kg.) 40 lbs. (18 kg.) with calibration system

Electrical

Display	2.5" x 3.75" SuperTwist LCD graphics
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Audible/Visual Alarm Status Indicators

(Output relays available – See Options – Relay Contacts)
 4 oxygen levels, temperature and electrolyte condition (standard)
 Loss of flow alarm indicator (optional)

Relays (Optional)

(Failsafe action upon loss of power to alarm condition)
 Up to 4 non-latching, independently assignable to alarms or calibration-in-process indicator. SPDT contacts rated for 5 amps at 125/240 VAC. CE version contacts rated 5 amps at 30 VDC/VAC.

Power Requirements

100-120 VAC, 50/60 Hz (standard); 200-240 VAC, 50/60 Hz (optional); NiCAD battery (optional)

Output Signals

Analog Outputs:
 Menu scaleable single output range of 0-20 ppb up to 0-10 ppm
 4-20 mADC, 0-100 mVDC, 0-1, 0-5 VDC, or 0-10 VDC (standard)
 Isolated 4-20 mADC (optional)
 Expanded Range Scale (standard)
 (requires an optional relay for remote range identification)
User selectable secondary analog output range for re-scaling the output once the primary range is exceeded

Digital Output:

2-Way RS232 or RS485 (optional)

Calibration Control

Calibration-In-Process indication (requires an optional relay contact)
 Analog output freeze control during calibration

Certifications

CE Conformance