

# NanoTrace Moisture Analyzer Configuration Guide

Effective April 5, 2010

DF-750

## Standard Features & Specifications

### Performance

<b>Lowest Detection Level</b>	200 ppt
<b>Resolution</b>	
Analytical ( <i>Sensitivity-smallest detectable change</i> )	100 ppt
Display	10 ppt
<b>Accuracy (greater of)</b>	±3% of reading or ±0.2 ppb (Constant Conditions)
<b>Speed of Response (typically)</b>	10 minutes <i>Time to reach 90% of an upward step challenge</i>
<b>Upset Recovery Time</b>	< 5 minutes <i>Time from high ppb upset to within 10 ppb of the previously stable reading</i>
<b>Range</b>	0-20 ppm
<b>Ambient Operating Temperature</b>	50° to 105° F (10° to 40° C)
<b>Background Gas Compatibility</b>	All inert and passive gases including N <sub>2</sub> , He, H <sub>2</sub> , Ar, and O <sub>2</sub> Includes Scale Factor as standard which permits accurate read-out of moisture in background gases other than nitrogen.

### Gas Sample Conditions

<b>Sample Pressure</b>	
<i>Operating limits:</i>	30 to 150 psig (3.80 to 11.3 BarA)
<b>Sample Return Pressure</b>	Atmospheric Vent (optimal) Limits: -2 to 2 psig (0.88 BarA to 1.14 BarA)
<b>Flow Rate:</b>	
<i>Operating:</i>	1 to 4 slpm N <sub>2</sub> (Contact factory for other background gases)
<i>Bypass:</i>	0.25 to 2.5 slpm
<b>Sample Line Temperature</b>	
Heat Trace to 140°F (60°C)	Limits: 50° to 176°F (10° to 80°C) For best results, maintain sample line at 60° C
<b>Pneumatic Pressure</b>	60 to 100 psig (5.1 to 7.9 BarA)

### Gas Flow System

<b>Construction Materials</b>	300 Series stainless steel
<b>Gas Connections</b>	¼ inch VCR compatible inlet fitting ¼ inch compression outlet fitting to vacuum source ¼ inch compression bypass outlet fitting ⅛ inch compression fitting for pneumatic gas inlet
<b>Vacuum Source</b>	
<i>Aspirator (standard):</i>	¼ inch compression inlet/outlet fittings
<i>Pump (optional):</i>	¼ inch compression inlet/outlet fittings
<b>Aspirator Gas Supply</b>	
<i>Gas pressure</i>	80 ± 3 psig
<i>Gas flow rate</i>	15 slpm
<i>Back pressure on outlet stream</i>	<2 psig

### Gas Delivery System Components

Pneumatically actuated springless diaphragm valves, orbital butt welded assembly with zero dead volume for sensor isolation and zero verification  
High capacity moisture dryer provides moisture-free zero gas  
Heated and temperature controlled sample delivery system  
Integral pressure regulator with minimal wetted area  
Bypass loop with flow control

### Construction

<b>Enclosure:</b>	NEMA 1 in 19" Rack Mount
<b>Dimensions:</b>	19" (48.3cm) W x 10.5" (26.7 cm) H x 22.5" (57.2 cm) D
<b>Weight:</b>	68 lbs. (31 kg.)

### Maintenance & Logging

#### Data Logging & Graphing

*Analyzer can store years of continuous data, downloadable in monthly blocks*

#### Automatic Maintenance Log

*Self checking, maintains records satisfying many ISO 9000 requirements*

### Electrical

**Back Lighted Display** 7.4" VGA Monochrome (640x480)

#### Visual Alarm Status Indicators

4 moisture levels, temperature, moisture sensor diagnostic, loss of flow, zero verification-in-process, analyzer off-line, expanded range

#### Relays

*(Failsafe action upon loss of power to alarm condition)*

4 non-latching, independently assignable to alarms or indicators. SPDT contacts rated for 1A at 30 VDC.

#### Power Requirements

100-120 VAC @ 5A, 50/60 Hz (standard); 200-240 VAC @ 2.5A, 50/60 Hz (optional). Configurable at factory.

#### Output Signals

*Analog Outputs:*

Menu scaleable single output range of 0-2 ppb up to 0-20 ppm

Isolated 4-20 mADC, and choice of 0-1, 0-2, 0-5, or 0-10 VDC

Expanded Range Scales

*Two user selectable secondary analog output ranges for re-scaling the output once the primary range is exceeded*

*Digital Output:*

2-Way RS232 or RS485, configurable at factory

**CE Conformance:**

Added EMI/RFI and  
Conducted interference immunity

### Hydrogen Safety

Optional safety system for use with hydrogen includes Sample Delivery Interlock and Case Purge Valves for instrument housing and NEMA 4 enclosure and Z-purge protection system for optional external vacuum pump.

Optional Hydrogen Safety System can be ordered with or without the NEMA 4 enclosure and Z-Purge Protection System for the optional vacuum pump.

NEMA 4 pump enclosure is 16.6" (42.4cm) W x 14.5" (36.8 cm) H x 11.6" (29.5cm) D

NOTE: Hydrogen Safety system requires the dedicated use of one of the oxygen relays

*Specifications subject to change without notice.*

# NanoTrace Moisture Analyzer

Effective: April 5, 2101

DF-750

## Ordering Codes

### Base Model

**750-0020** NanoTrace Moisture Analyzer

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

### Outputs

(pick one Serial Communication)

**750-RS232** Two-Way Serial Communications

**750-RS485** Two-Way Serial Communications

(pick one VDC Output)

**750-OS-1** 0-1 VDC

**750-OS-2** 0-2 VDC

**750-OS-5** 0-5 VDC

**750-OS-10** 0-10 VDC

### Cabinet

**750-KYLK** Key Lock

### Plumbing

**750-HSS1** Hydrogen Safety System Purge with  
Optional Pump

Includes Sample Delivery Interlock and Case  
Purge valves for instrument housing, and  
enclosure with purge protection system for  
optional vacuum pump.

**750-HSS2** Hydrogen Safety System without Pump  
Purge

Same as above, except vacuum pump or  
aspirator is mounted on bracket only and does  
not include purge protection system.

**750-Pump** High capacity, rocking piston vacuum pump