



**TELEDYNE**  
ANALYTICAL INSTRUMENTS  
Everywhere you look™

Series

# 7500Z and 7600Z

Non-Dispersive Infrared Analyzer

- Up to five (5) simultaneous, continuous measurements of CO, CO<sub>2</sub>, NO / NO<sub>x</sub>, SO<sub>2</sub>, CH<sub>4</sub> and O<sub>2</sub>
- Ranges from 0-10 ppm to 0-100% (gas-dependent)
- Luminescent LCD display showing all measurements and settings
- Low-profile 3U design to minimize rack space
- Oxygen measurement with paramagnetic or electrochemical sensor (optional)



## 7500Z and 7600Z Series - Non-Dispersive Infrared Analyzer

Teledyne's 7500Z and 7600Z Series Infrared (IR) Analyzers are capable of detecting up to four chosen, individual IR absorbing components (i.e. CO, CO<sub>2</sub>, CH<sub>4</sub>, SO<sub>2</sub>, NO or NO<sub>x</sub> with external converter) on a continuous basis. Conveniently packaged in either a 19" rack mount (Model 7500ZA / 7600ZA) or NEMA-4 wall mount enclosure (Model 7500ZB / 7600ZB), the analyzer can also be supplied with an oxygen sensor, providing the operator with a space saving, five in one, cost-effective design. The NEMA-4 enclosure can be purged to meet Class I Div 1 (Zone 1) or Class I Div 2 (Zone 2) hazardous area installation requirements.

A high-sensitivity mass flow type twin detector is utilized for infrared measurements. By using a single beam single path design in conjunction with a serial dual-layer transmission detector, the Series 7500Z delivers long term, drift-free performance. The Series 7600Z achieves greater performance through an internal sample-switching system which serves to cancel zero drift.

The oxygen concentration in the sample gas can be detected by either a built-in paramagnetic sensor or electrochemical sensor.

The concentration of the desired gases is displayed on a large, easy-to-read back-lit LCD. The user interface is very intuitive and the menu / mode selection buttons, which are readily accessible, provide the operator with dynamic control and extensive diagnostic capabilities.



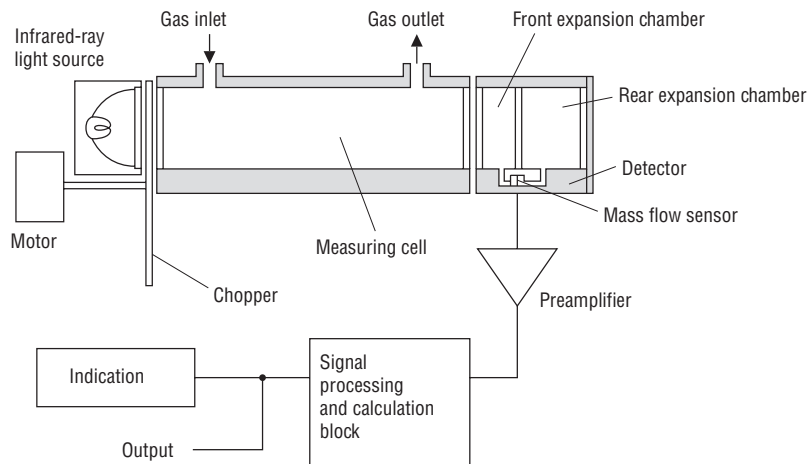
**NEMA-4 Wall-Mount Configuration**

### Available Analysis Gases and Ranges

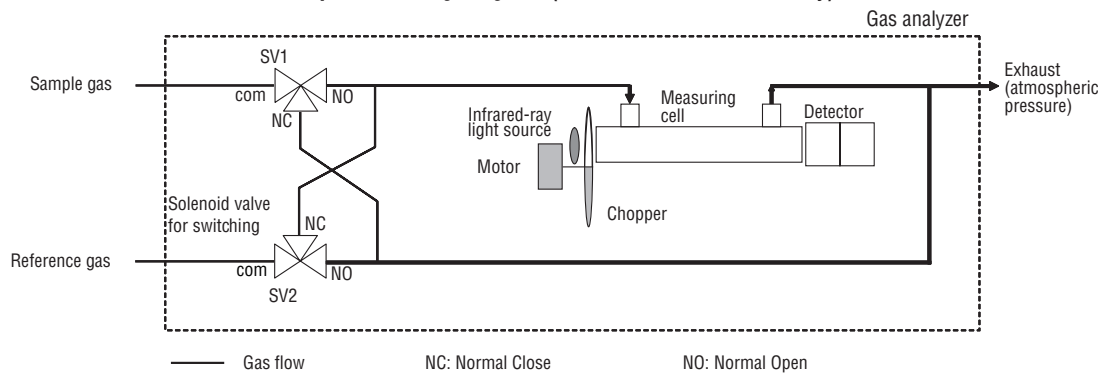
GASES	7500ZA/7500ZB	7600ZA/7600ZB	7600ZA-XL/7600ZB-XL
<b>NO</b> AVAILABLE RANGE	0 - 200 ppm to 0 - 5000 ppm	0 - 50 ppm to 0 - 5000 ppm	0 - 10 ppm to 0 - 100 ppm
<b>SO<sub>2</sub></b> AVAILABLE RANGE	0 - 200 ppm to 0 - 10%	0 - 50 ppm to 0 - 5000 ppm	0 - 10 ppm to 0 - 100 ppm
<b>CO<sub>2</sub></b> AVAILABLE RANGE	0 - 100 ppm to 0 - 100%	0 - 50 ppm to 0 - 25%	0 - 5 ppm to 0 - 50 ppm
<b>CO</b> AVAILABLE RANGE	0 - 200 ppm to 0 - 100%	0 - 50 ppm to 0 - 5000 ppm	0 - 5 ppm to 0 - 50 ppm
<b>CH<sub>4</sub></b> AVAILABLE RANGE	0 - 500 ppm to 0 - 100%	Not Available	Not Available
<b>O<sub>2</sub> (BUILT IN FUEL CELL)</b> AVAILABLE RANGE	0 - 10% to 0 - 25%	0 - 10% to 0 - 25%	0 - 10% to 0 - 25%
<b>O<sub>2</sub> (BUILT IN PARAMAGNETIC)</b> AVAILABLE RANGE	0 - 5% to 0 - 100%	95-100%	0 - 5% to 0 - 100%

# 7500Z and 7600Z Series - Non-Dispersive Infrared Analyzer

## NDIR principle diagram



## Sample switching diagram (for 7600Z series units only)



### Explanation of the sample switching method

The analyzer electronics performs automated sample switching between sample and reference gas, correcting in real-time by reducing zero drift and interferences within the sample.

## Features

- Steel case for indoor installation
- Wetted materials: 304SS sample cell, chloroprene rubber seals, CaF<sub>2</sub> optical windows, Tygon / Teflon / Polypropylene tubing
- 1/4" NPT gas connections (1/4" RC optional)
- 1 or 2 ranges per gas with auto-ranging and remote-range selection (optional) capabilities
- Integral auto-calibration and remote calibration functionality with solenoid valves to be provided by end user (integral auto-calibration valves available as option)
- O<sub>2</sub> correction calculation available
- Reading averaging capability available
- Integral compensation for atmospheric pressure changes available
- CE marked, conforms to Low Voltage Directive and EMI/RFI standards

## Included I/O

- 4-20mA (isolated) analog per measurement (or 0-1 VDC optional)
- RS-485 MODBUS<sup>®</sup> RTU™ half-duplex serial communications
- 1 x system alarm, Form-C type, rated 1A / 24 VDC
- 2 x concentration alarms, Form-C type, rated 1A / 24 VDC
- Range identification contact, Form-A type

# 7500Z and 7600Z Series - Non-Dispersive Infrared Analyzer

SPECIFICATIONS	7500ZA/7500ZB	7600ZA/7600ZB	7600ZA-XL/7600ZB-XL
<b>REPEATABILITY</b>	±0.5% of full scale	±0.5% of full scale	±0.5% of full scale
<b>LINEARITY</b>	1% of full scale prior to atmospheric pressure correction (option)	±1% of full scale prior to atmospheric pressure correction (option)	±1% of full scale prior to atmospheric pressure correction (option)
<b>ZERO DRIFT</b>	±2.0% of full scale/week In the case of Auto Zero calibration use for 500ppm or less range	±0.5% of full scale/week (measurable component of NDIR) ±2.0% of full scale/week (O2 analyzer)	±0.5% of full scale/week (measurable component of NDIR) ±2.0% of full scale/week (O2 analyzer)
<b>SPAN DRIFT</b>	±2% of full scale/week	±2.0% of full scale/week	±2.0% of full scale/week
<b>RESPONSE TIME (T90)</b>	1 to 15 sec electrical response. Within 10-30 seconds including replacement time of sampling gas. Gas replacement time depends on the number of measuring components, and measuring range.	30 seconds or better Response interval may be changed depending on timing of the switching gas by sample switching operation. (Td=5-20 seconds)	30 seconds or better Response interval may be changed depending on timing of the switching gas by sample switching operation. (Td=5-20 seconds)
<b>OPERATING TEMPERATURE</b>	23 to 113°F (-5 to 45°C)	23 to 113°F (-5 to 45°C)	23 to 113°F (-5 to 45°C)
<b>SAMPLE PRESSURE</b>	Less than 1.5 psig, vent to atmospheric pressure	Less than 1.5 psig, vent to atmospheric pressure	Less than 1.5 psig, vent to atmospheric pressure
<b>SAMPLE FLOW</b>	1.0 SCFH (0.5 SLPM)	1.0 SCFH (0.5 SLPM)	1.0 SCFH (0.5 SLPM)
<b>UTILITY GASES</b>	Not required	N2 or Air (CO <sub>2</sub> -free for CO <sub>2</sub> unit), 2 SCFH (1 SLPM)	N2 or Air (CO <sub>2</sub> -free for CO <sub>2</sub> unit), 2 SCFH (1 SLPM)
<b>POWER</b>	100 – 240 VAC, 50 / 60 Hz, 100 VA max	100 – 240 VAC, 50 / 60 Hz, 100 VA max	100 – 240 VAC, 50 / 60 Hz, 100 VA max
<b>RACK-MOUNT DIMENSIONS &amp; WEIGHT</b>	19.00" L x 5.22" H x 15.04" D (483 x 133 x 382 mm) Approx. 25 pounds	19.00" L x 5.22" H x 15.04" D (483 x 133 x 382 mm) Approx. 29 pounds	19.00" L x 5.22" H x 15.04" D (483 x 133 x 382 mm) Approx. 25 pounds
<b>WALL-MOUNT DIMENSIONS &amp; WEIGHT</b>	24.00" L x 24.00" H x 12.00" D (610 x 610 x 305 mm), Approx. 60 pounds	24.00" L x 24.00" H x 12.00" D (610 x 610 x 305 mm), Approx. 60 pounds	24.00" L x 24.00" H x 12.00" D (610 x 610 x 305 mm), Approx. 60 pounds

**NOTE:** Contact factory for application concerns regarding corrosive, condensing or particulate-laden streams, or potential IR interferences.



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**Warranty**  
Instrument is warranted for one year against defects in material or workmanship

**NOTE:** Specifications and features will vary with application. The above are established and validated during design, but are not to be construed as test criteria for every product. All specifications and features are subject to change without notice.

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