

The

SenzTx

Electrochemical Oxygen Analyzer

WITH 4-20mA ANALOGUE OUTPUT

Short Form User Manual



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1.1. General Information


1.1.2 Intended Use of the SenzTx


The Analyzer are designed to monitor a sample containing an oxygen content to be measured within the specified ppm or % ranges.

The Analyzer can be used in combination with the control system (PLC) or as a standalone oxygen-measuring-system.

1.1.3 The Measuring Cell/Sensor Element


This Analyzer uses an electrochemical measuring cell, which is specific to oxygen. There are nearly no cross sensitivities for other substances. But certain substances may damage the measuring cell or shorten its lifetime. The measuring cell is like a battery and is usually has an operating life of between one and two years, depending on Oxygen Hours exposure and or degree of exposure to aggressive gases/gas mixtures. Furthermore, the measuring cell may dry out in the extremely dry atmospheres necessitating early sensor replacement.

	<p>Note!</p> <p>Operating the ppm sensor at oxygen levels of >1000 ppm (e.g. in air) does not damage the sensor element irreversibly, but it should be avoided. If exposed to air, it will take several hours until the sensor will measure low oxygen levels correctly in inert gas. Longer exposure to high oxygen concentration will shorten the lifetime of the sensor.</p>
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CAUTION	
	<p>Risk of damage!</p> <p>The SenzTx should not be stored in a way that environmental air may reach the Sensor. This will considerably shorten the lifetime of the cell and should be avoided.</p> <p>The package should not be unwrapped until the SenzTx is ready to be put into service.</p>

1.1.4 Unintended Use of the SenzTx Analyzer

The Analyzer can also be used in other applications outside of those described in this manual. However, the user should check with the manufacture beforehand.


	CAUTION
	Risk of damage! The SenzTx Analyzer should only be operated in the way set out in this manual.

1.1.5 Construction

The **SenzTx Electrochemical** Oxygen Analyzer consists of a measuring cell and associated electronics, separated by a gastight clamp flange. The measuring cell (sensor) is mounted within a metal bracket, provided with a thread for easy changing of the measuring cell. The measuring cell is connected with the electronics by a vacuum-tight arrangement. The electronics is arranged in a metal housing, which is mounted directly on a flow through adapter. The Analyzer is powered by 24VDC and provides an analogue output signal of 4-20mA and other additional interface signals.

1.1.6 Calibration of the Measuring Instruments

The equipment is calibrated before shipping. The calibration cycles are dependent on the application and the applied gases.

	Note!
	Though the SenzTx Electrochemical Sensor is a depleting element Sensor. Ntron recommends a calibration check be made at least annually by suitably trained technicians. If it is determined that a re-calibration is required, please contact Ntron for details. Calibration is not within the scope of this manual. After changing of measuring cells, a recalibration is mandatory.

Electronics and measuring cell are calibrated with certified calibration gases by the manufacturer; there are no setting options available for the user.

1.2. Technical Description

1.2.1 Connection

The Oxygen measurement equipment is connected by a M12x1mm threaded-connecting plug (8pin).

Pin Assignment:

Pin-No.	Contact	Cable colour
1	Not used	N/A
2	Not used	N/A
3	4-20mA output Ground	Green
4	Serial RS485 (B)	Yellow
5	Serial RS485 (A)	Grey
6	Power Ground OVDC	White
7	Supply +24 VDC	Blue
8	4-20mA Output	Red

Industry standard 4-20mA interface required. Active 4-20mA output from the SenzTx


1.2.2 Technical Data


Mechanical Data	Dimensions:	Ø47mm x 143mm(L)(Depends on model)
	Process Connection	Typically, G 1/8" (Flow Through base)
	Weight:	0.260 kg
Electrical Data	Supply Voltage:	24 VDC \pm 10%, max. 50mA
	Protection Class:	IP 53
Environment	Ambient temperature:	+5 to +50 ° C
	Pressure:	800 to 1200 mbar (Differential pressure between Analyzer and electronics max. =100 mbar)
	Volumetric flow-rate:	0.25 LPM \pm 10% recommended
Measuring	Range:	0-1000ppm, 0-1%, 0-25%
	Sensitivity:	Better than +/-1% or range
	Response time in operation	<180s from 21% to 1000ppm O2 <10min from 1000ppm to 250ppm
	Cell Life ¹⁾ :	1 Year ²⁾
	Cross sensitivities	none for normal applications (no aggressive gases)

1) In absence of reactive gases. Dependent also on humidity and Oxygen level exposure.

2) Sensor life is typical but dependent on many factors. (See also chapter 1.1.2 Intended Use).

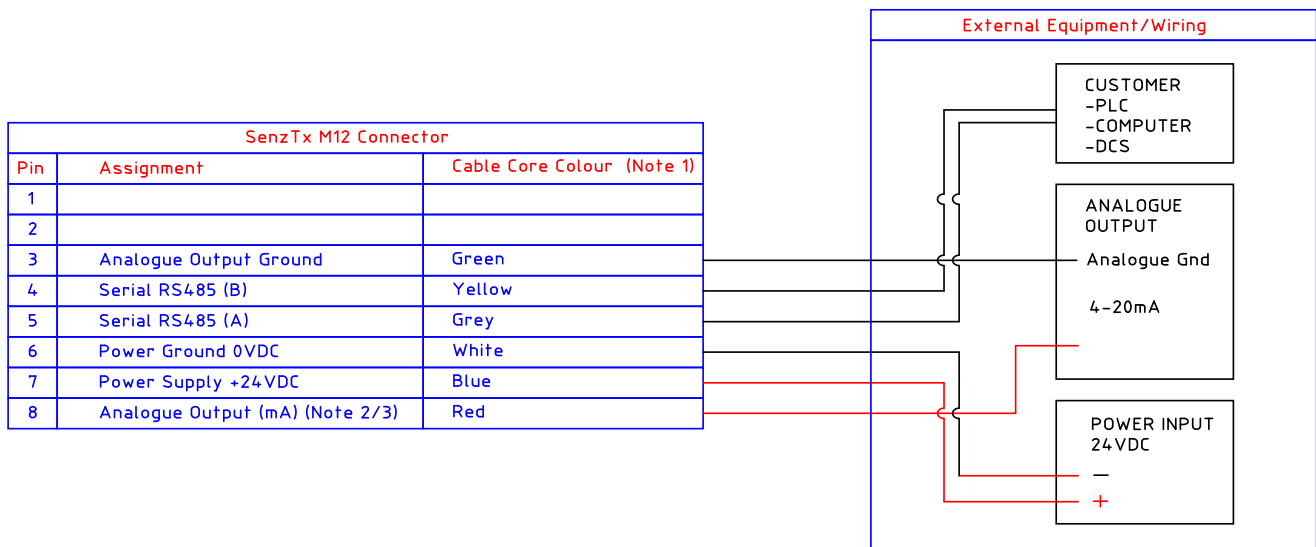
1.2.3 Installation

	<p>Note!</p> <p>The SenzTx should be mounted vertically if possible, into the process to ensure the maximising of operational life. It should never be mounted upside down.</p> <p>Before connecting voltage, the SenzTx Oxygen Analyzer should be exposed to inert gas for at least 1 minute.</p>
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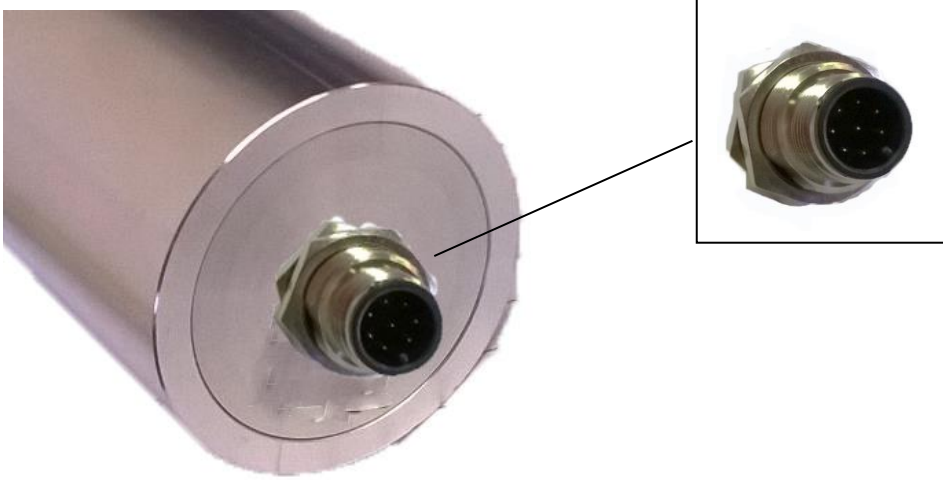
CAUTION	
	<p>Risk of damage!</p> <p>The SenzTx Electrochemical Oxygen Analyzer should not be subjected to moisture in the sample gas stream. Solvents or other aggressive substances can damage the Sensor and should be filtered out of the sample stream before being presented to the Sensor.</p>

Typical connection diagram.

Note: any unused cable cores must be suitable insulated



Connector position on the top of the SenzTx housing. A connecting cable is supplied with the SenzTx.



M12 connector

1.3. Maintenance and Calibration of Measuring Cells

All SenzTx Oxygen Analyzers undergo a certified calibration before shipping.

User calibration is not within the scope of this manual

The Sensor connection orifice should never be cleaned with compressed Air. Cleaning is to limited to general surface/housing cleaning.

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