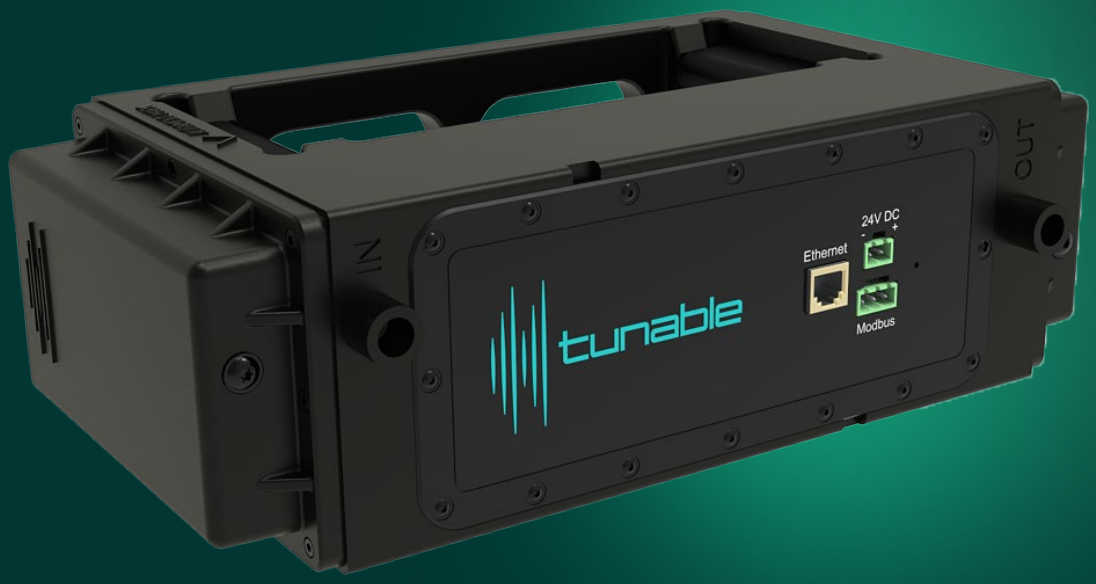
tunable

T2500-30

CEMS analyser

Product Data Sheet



tunable.com contact@tunable.com

Overview

All-in-one emissions analyser for industrial and marine applications.

Gases analysed:
CO, CO_2, SO_2, NO, NO_2, CH_4

This analyser by Tunable offers unique performance and stability in a compact design. The proprietary MEMS technology provides real-time gas analysis with no need for consumables.

Description

The T2500 is a compact process emission gas analyser based on infrared (IR) absorption spectroscopy. The analyser is designed for use with cold-dry extractive sampling systems.

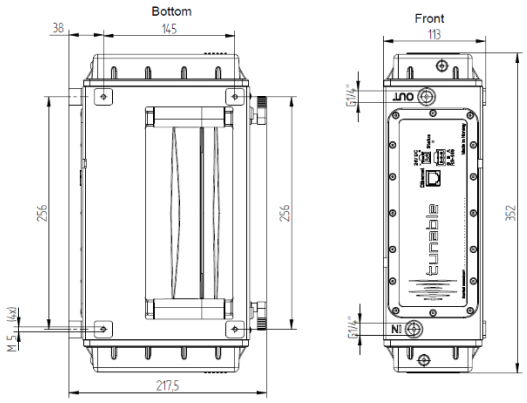
The analyser does not require any consumables such as carrier and calibration gases. The sample gas is analysed directly as it flows through the optical path within the analyser.

The T2500 analyser incorporates an ultra-stable solid-state IR source with proven long lifetime from demanding offshore applications. The IR source does not require replacement.

The sample cell is designed to be easily detachable for simplified cleaning and maintenance. Service indicators are provided in the digital data stream to aid maintenance planning.

Ratings and performance

Component	Range	Repeatability @ 0/LDL[1]
Carbon dioxide, CO_2	0 - 15 %-vol	≤ 0.004 %-vol
Carbon monoxide, CO	0 - 2000 ppm-vol	≤ 4 ppm-vol
Water, H_2O	0 - 10 000 ppm-vol	≤ 15 ppm-vol
Nitrogen oxide, NO	0 - 2000 ppm-vol	≤ 5 ppm-vol
Nitrogen dioxide, NO_2	0 - 500 ppm-vol	≤ 1 ppm-vol
Methane, CH_4	0 - 10 000 ppm-vol	≤ 15 ppm-vol
Sulphur dioxide, SO_2	0 - 250 ppm-vol	≤ 2 ppm-vol
Repeatability at span	≤ 1 % FS (Full Scale)	
Zero drift	≤ 0.5 % FS	per 24 hrs
Span drift	≤ 1 % FS per 7 days	zeroing every 24 hrs
Linearity / Lack of fit	≤ 1 % FS [2]	
Response - T_R (T10-T90)	≤ 30 seconds	flow ≥ 0.6 l/min
Update frequency	15 seconds	



Design and interfaces

Service	Process/emission gas analyser	Modbus RTU (RS485)	5.08mm - 3-way connector
Measurement principle	Infrared absorption	Modbus TCP (Ethernet)	RJ45 female
Measurement method	Extractive, cold	Service (Ethernet)	RJ45 female
Mounting orientation	Horizontal	Dimensions WxDxH	352 x 218 x 113 mm
Ingress protection	IP20	Weight	4.2 kg
Material, housing	Aluminium (Coated)	Mounting arrangement	M5 threaded, 256 x 145 mm
Materials, process wetted	Aluminium, POM[3], CaF_2 lenses, FKM[4] seals, Stainless steel	Power / $24V_{DC}$	5.08mm - 2-way connector
		Gas inlet and Gas outlet	G ¼″ threaded female

[1] Repeatability at zero / Lower Detection Limit (LDL): std of 30 measured datapoints at 28°C
[2] H_2O excluded
[3] Polyoxymethylene (POM), acetal, polyacetal.
[4] Fluorinated hydrocarbon copolymer

Operating conditions and environment

Ambient conditions – operation		**Ambient conditions – storage**	
Temperature	+15°C to +45°C	Temperature	- 20°C to +55°C
Humidity	< 100 % RH (non-condensing)	Humidity	< 100 % RH (non-condensing)
Pressure (ambient)	Atmospheric	Pressure (ambient)	Atmospheric

Sample gas and auxiliary gas conditions	
Pressure (compensated range)	0.9 to 1.1 bar absolute
Gas temperature	+15°C to +45°C
Humidity	< 1 %-vol (non-condensing)
Permissible gas flow	≥ 0.2 l/min
Zeroing gas	N_2
Zeroing interval / period	Configurable - recommended: 24hrs
Calibration gas	If required, concentrations per application needs

Power requirements	
Supply voltage	24 V_{DC} (+/- 10 %)
Power consumption - operating	≤ 5 W
Power consumption - start up	≤ 20 W
Protective Earth (PE)	Via chassis

Environmental and electromagnetic compliance	
Electromagnetic compatibility - Directive 2014/30/EU	EN 61000-6-4:2007 + A1:2011 EN IEC 61000-6-2:2019
ESD immunity	IACS E10 Rev.8:2021 DNVGL-CG-0339:2021 IEC/EN 60945:2002 + Cor1:2008 EN 61000-4-2:2009, Ed.2.0
Vibration (Sinusoidal)	IEC/EN 60945:2002 + Cor1:2008 IACS E10 Rev.8:2021 DNV-CG-0339:2021 EN 60068-2-6:2008, Ed.7.0
Power Supply Variation	IEC/EN 60945:2002 + Cor1:2008 IACS E10 Rev.8:2021 EN IEC 61000-4-11:2020, Ed.3.0
Low Temperature	EN 60068-2-1:2007, Ed.6.0
Dry Heat	EN 60068-2-2:2007, Ed.5.0

Ordering information

contact@tunable.com
Tunable AS - Kabelgata 8B, NO-0580 Oslo, Norway

CE