

COD ANALYZER

BASED ON THE MEASUREMENT OF SUGARS IN EFFLUENT WATERS

OD 01

The **OD-01** analysis system provides continuous COD trend monitoring of effluent discharge from beverage production plants. It measures effluent where the organic content derives primarily from sugars.

The COD value is calculated using a proprietary algorithm based on individual measurements of refractive index, pH and conductivity. This provides a reliable analysis solution that is faster and more economical than complex, conventional methods that use chemical reagents.

The **OD-01** is designed to operate reliably in typical effluent plant environments without the need for continual maintenance or adjustments. It comprises the following components:

- UR24 digital refractometer
- DP01 prism cleaning system
- pH measurement system
- Conductivity measurement system
- MR02 calculation and management unit
- Electrical cabinet
- Hydraulic cabinet

The analyser is a stand-alone system designed to be connected to a submersible pump in the effluent flow or sump. Effluent is then circulated through the self-contained analysis unit. Analyzer cleaning and pump flushing cycles are controlled automatically.

The analyzer can be installed on the effluent water outlet of a specific process or on the main collection manifold.

The following hook-ups are required for operation of the **OD-01** analysis system:

- Electrical power supply
- Compressed air supply
- Water supply

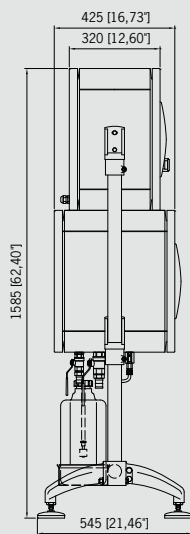
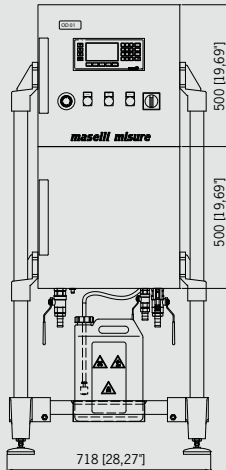
Measurement data is available via 4-20mA analogue outputs and a digital communications interface. The system can be programmed with alarm thresholds to signal high COD effluent values.

The system will also interface with the Maselli Multilab data acquisition system. This provides real-time data and trend displays with data storage for historical analysis and reporting.



OD 01

Dimensions



MASELLI MISURE s.p.a.

43125 Parma - Italy
Via Baganza 4/3
Tel. +39.0521.257411
Fax +39.0521.250484
info@masellimisure.com
www.masellimisure.com

GENERAL SPECIFICATIONS

MEASUREMENT LIMITS

Equivalent COD

Measurement limits: 0...958800 mg/l-O₂
Accuracy*: ±800 mg/l-O₂
* in the range 0...100.000 mg/l-O₂ or equivalent COD

Brix

Measurement limits: 0.10...85.00 Brix
Accuracy: 0.3% of Scale Range; maximum accuracy (±0.05 Brix).

pH

Measurement limits: 0.00...14.00 pH
Accuracy: ±0.05 pH

Conductivity

Measurement limits: 0...5000 µS/cm (20 °C)
Accuracy: ±30 µS/cm

TEMPERATURE COMPENSATION:

- Automatic temperature compensation using Pt100 sensors.

INTERFACES

Digital

- RS422/485 for connection to PC
- RS422 interface to Maselli Multilab data acquisition and remote control system.
- PROFIBUS DP (optional).

Analogue

Inputs:

1 auxiliary channel for data acquisition (optional)

Outputs

4 fully independent channels
0...20mA or 4...20mA (into 470Ω), configurable scale range for association with the required measurement variable.

CONTACTS

- 1 'Line Stopped' input (optional)
- 1 relay output rated 1A/24V DC/AC, N.O. contact for signalling HI/LOW measurement alarms
- 1 relay output rated 1A/24V DC/AC, changeover contact, for signalling 'General System Alarm'

CONSTRUCTION FEATURES

EXECUTION:

The system is composed of:

- **Electrical Cabinet** for management of the system power supply, measurement units and sensors; the operator controls are located on the front panel. The cabinet houses the MR02 receiver and the transmitters for pH and conductivity measurements.
- **Hydraulic Cabinet** containing the integrated measurement cell accommodating the measuring devices and unions for hook-ups to the inlet and outlet lines of the effluent to be analysed, the wash water, and the compressed air required to drive the valves.
- **Special integrated cell** containing the pH electrode and the conductivity probe. The refractometric unit and DPO1 wiper device are installed on the front of the cell by means of a 3" "Tri-Clamp" attachment. The cell is equipped with a small sample cock that is also used for cell emptying in preparation for maintenance procedures.
- **Fluid lines** made of ARMOVIN® transparent food grade spiral rubber hose, Ø19 mm and Ø16 mm.

CONNECTIONS

- **Effluents:** Inlet and return by means of ¾" GAS hose connection for Ø27 mm hoses, located on the base of the hydraulic cabinet.
- **Water:** ½" GAS hose connection for Ø17 mm hoses, located on the base of the hydraulic cabinet.
- **Compressed air:** Quick coupler for 6 x 4 hoses, located on the base of the hydraulic cabinet.

UTILITIES:

- Electrical:
230V AC ±10% 50Hz ±2% 350VA
115V AC ±10% 60Hz ±2% 350VA
- Pneumatic:
5...10 bar (73...145 psi)
- Hydraulic:
Washing water
3...4 bar (43...58 psi)
20...30 l/min (5...8 gpm)

WEIGHT:

- 65 kg

DIMENSIONS:

- 720 (w) x 1585 (h) x 550 (d)

FLUID LIMIT CONDITIONS:

Temperature:

0...60 °C (32...140 °F);
max. 50 °C (122 °F) in the version equipped with submersible pump.

Pressure:

max. 5 bar (73 psi) at 20 °C (68 °F)

Flow rate:

max. 60 l/min (16 gpm)