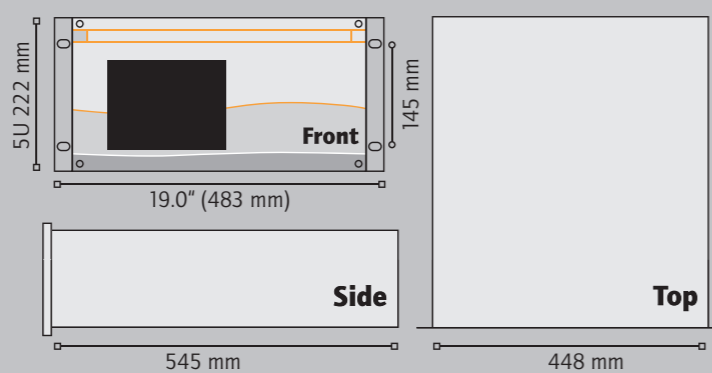


SPECIFICATIONS TCD500

Accuracy	Depend of the range used
Drift	1 % over 24 hours
Temperature drift	1 % per degree
Operating temperature	± 20°C without wide variations of temperature
Sampling gas	N₂, H₂, O₂, Ar, He, Air, CH₄, CO, CO₂
Sample gas connection	1/8" Swagelok SS
Sample flow rate	Approximately 3 to 5 l/h
Sample pressure	Lower than 100 mBar
Carrier gas	All gases, except corrosives ones
Carrier gas connection	1/8" Swagelok SS
Carrier gas pressure	from 4 to 10 bar
Carrier gas flow rate	4 l/h
Recommended quality	minimum 5.5
Power supply	220 Vac, 50-60 Hz
Power consumption	500 VA
4-20 mA output	Eight configurable outputs depending on the application
RJ-45 connection	Computerised system maintenance
Output relays (SPST 2 amperes / 250 Vac)	1 Analyser Failure Alarm contact 1 Alarm High contact 1 Alarm High High contact

Dimensions

Standard rack mount 5U
Height > 222 mm | Depth > 545 mm | Width > 483 mm



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Line 500



*A new generation
of intelligent detectors*

TCD500

Mixtures analysers

Analysis of H₂/O₂/AR/N₂/CH₄/CO/CO₂/
KR/NE/XE/HE in %level



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ORTHODYNE
GAS CHROMATOGRAPHY

TCD500

Mixtures analysers

The TCD500 is an analytical system that measures H_2 , O_2 , Ar , N_2 , CH_4 , CO , CO_2 , Kr , Ne , Xe , He in % level.

PRINCIPLE

The TCD is not as sensitive as other detectors but it is non-specific and non-destructive.

A TCD detector consists of an electrically-heated wire or thermistor (tungstenrhenium wire).

The temperature of the sensing element depends on the thermal conductivity of the gas flowing around it.

Changes in thermal conductivity, such as when organic molecules displace some of the carrier gas, cause a temperature rise in the element which is sensed as a change in resistance.

Response is universal and proportional to concentration

Best gases for TCD: H_2 or He , because of highest thermal conductivity (0.170 and 0.141 J/(K.m.s), respectively, to be compared with N_2 0.024 J/(K.m.s) for N_2).

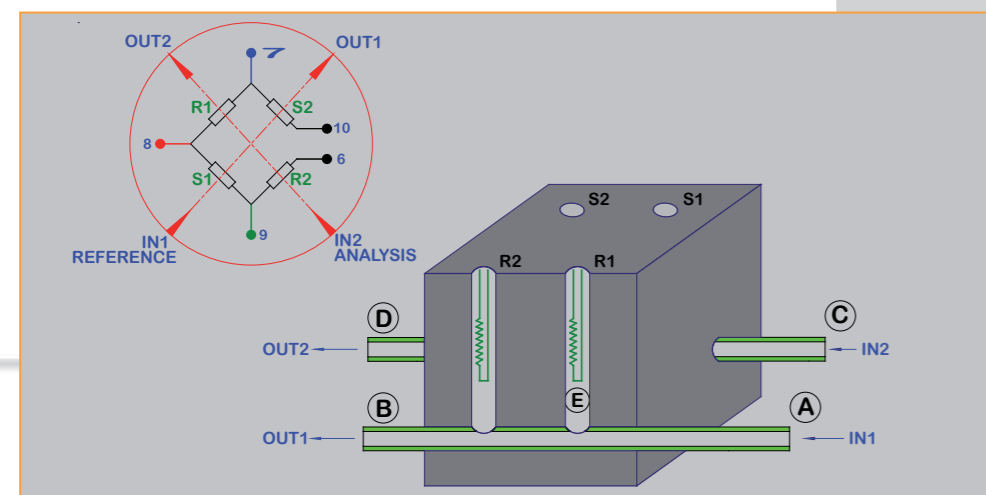
For Helium and Hydrogen the temperature conductivity lowers when solute is eluted.

The sensitivity is inversely proportional to flow rate : the detector is more sensitive at lower flow rates.

Detection limit : < 5 ppm.

To increase sensitivity, the temperature of the block should be maintained at lowest temperature that allows all the solutes remain gaseous.

TCD DETECTOR EXPLANATION



- A > Reference inlet
- B > Reference outlet
- C > Analysis inlet
- D > Analysis outlet
- E > Filament cell

FEATURES

- 5 ppm resolution guaranteed. (Limit detection level).
- User-friendly software.
- GC technology used for complete separation between each component.
- Adjustable alarm and oven settings.
- Fast response.
- Possibility of auto-calibration programming – ideal for unmanned plant conditions.
- Easy access to pressure and flow control devices.
- CE marked.

MEASUREMENT CAPABILITIES

- The range can be adjusted between 1 ppm and 100 % following to the request of the customer.



Type of configuration

- **TCD510** : 1 Valve / 1 column
- **TCD520** : 1 Valve / 2 columns
- **TCD530** : 2 Valves / 1 column
- **TCD540** : 2 Valves / 2 columns
- **TCD550** : 2 Valves / 2 columns + external rack

Applications

- Air separation plants
- Cryogenic truck loading station
- Specialty gas laboratories
- Process control
- Steel industry
- Filling plants

System overview

