

Hydro-Trans Thermal Conductivity Transmitter

Process Online Gas analyzer

The Model HydroTransmitter resets the standard for thermal conductivity detector-based applications within the process control industry. As a flameproof enclosure transmitter, packaged within a rugged, weatherproof housing, the HydroTrans is suitable for use in harsh, hazardous outdoor environments. Using a novel, solid-state thermal conductivity sensor, this cost-effective transmitter can be configured to detect H₂, He, N₂, Ar, CO₂ or a number of other gases of interest in binary or multi-component sample gas mixtures.

☺ Features of the analyzer

- Unique, long-life, solid-state, TC sensor design
- No reference gas requirements
- Temperature controlled TCD providing excellent zero and span stability over a wide temperature range
- Flameproof enclosure design allowing for use in hazardous areas
- Robust, weatherproof housing suitable for outdoor installations
- Linearized 4-20 mA signal output
- Small, space-saving, compact design
- Simple to install

☺ Applications

- Power plant: H₂ purity analysis on turbine generator purge gas
- Petrochemical plant: H₂ purity analysis on H₂ / HC recycle gas streams, redensulfurization, and tail gas treatment processes
- Air separation plant: Bulk gas purity monitoring and welding / diving / cal gas cylinder verification
- Heat treating: Annealing furnace blanket gas monitoring
- Electrolysis: H₂ purity analysis in O₂
- Fuel cell development: Methane feed gas purity analysis and reformer efficiency



☺ Sensor operating principle

The thermal conductivity sensor measures the concentration of a specific gas between a hot surface resistor and an ambient temperature reference resistor using the thermal conductivity coefficient of the gas itself.

☺ Sensor description

The sensor structure consists of an integrated heater located on a thin electrical and thermal insulating membrane. Two thin film resistors are used for heating and measuring the temperature of the membrane. Two resistors are integrated on the silicon beside the membrane for the compensation of the ambient temperature changes. Gases which have a lower density than air (CH₄) cause a decrease on the surface membrane temperature. On the other hand, gases with densities heavier than air (CO₂) increase the temperature of the measuring resistor.

☺ Features

- Stable long term operation
- Physical method for gas concentration measurement
- Low power consumption



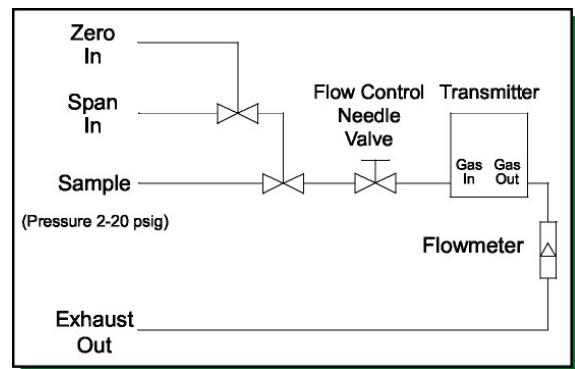
Spezifikation

Ranges:	Customer specified
Accuracy:	±2% of full scale at constant temp; ±5% of full scale over 0-50° C
Response time:	10-90% in less than 30 seconds with a flow rate of 300 ccm
System operating temperature:	0 to 50° C
Sensor type:	Silicon micro-machined thermal conductivity sensor
Signal output:	4 - 20 mADC output signal, linear with the gas concentration
Cell material:	Nickel plated brass block, stainless steel tubing
Max load impedance:	700 Ohms for current output
Reference gas:	Not required
Tube connections:	6mm
Materials in contact with sample:	Nickel plated brass cell block, stainless steel tubing and connectors; NACE compliant / stainless steel wetted parts available as option
Span drift:	Typically ±1% over 48 hours
Mounting:	
Electronic:	24 VDC
Output :	2x 4 -20 mA/ 4x relais 3A
Sample gas flow rate:	Recommended between 0.4 to 2 l/min
Zero drift:	Typically ±1% over 48 hours
Area classification:	flameproof enclosure ATEX II G Ex db IIC T6/T5

Warranty

Instrument is warranted for 1 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.



Pro-Chem Analytik GmbH & Co.KG

Neuer Bruchweg 1, 46509 Xanten

Tel.: 02801/ 98510-70

Fax: 02801/ 98510-71

info@prochem-online.com

www.prochem-online.com