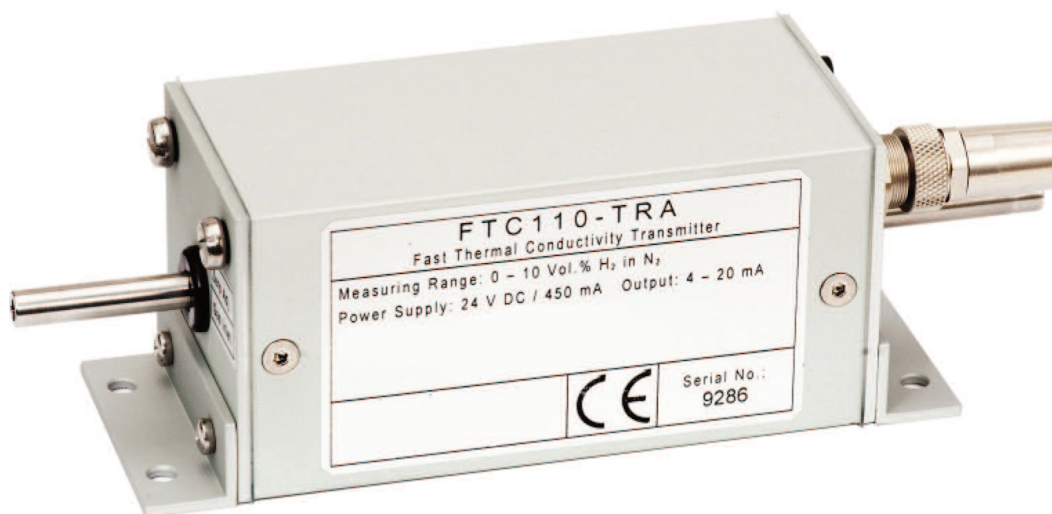




FTC110-TRA

Thermal Conductivity Detector



APPLICATION

- Extractive gas analysis
- Quality and process monitoring
- Continuous concentration determination of single gas components e.g. H₂, CO₂, O₂, He
- For the H₂-measurement at heat treatment in the metal industry
- For the H₂-measurement in miniplants

BENEFITS

- Precise and long-term stable thermal conductivity measurement
- Independent of gas flow and gas pressure
- High sensitivity independent of the ambient temperature
- Fast response time (T₉₀ approx. 1 s)
- Pressure resistant gas paths out of stainless steel (10 bara)
- Robust tight aluminium housing (IP65)
- Small dimensions
- Linear signal output 4 to 20 mA
- Easy calibration with 2 potentiometers
- Factory configuration and calibration

FEATURES

- Based on micromechanic silicon chip
- Detector mounted in a stainless steel housing
- Stainless steel housing and electronic mounted in a sealed aluminium housing
- Operation of the detector with two heating elements and a temperature sensor at constant 60°C
- Gas concentration corresponds to required compensation energy, depending on cooling of the chip due to varying thermal conductivity
- Especially good measuring results are achieved under following conditions:
 - at binary gas mixtures, e.g. CO₂ in N₂, O₂ in Ar or H₂ in N₂
 - if only two gas components at multi component mixtures vary in concentration, e.g. CO₂ in air
 - if the measured component has a significantly different thermal conductivity than the remaining gas components, e.g. H₂, He, CO₂ in air or impurities in H₂

TECHNICAL DATA

Model

FTC110-TRA

Description	Thermal conductivity detector
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Operation

	Min.	Typ.	Max.
Ambient temperature	-20°C	–	+55°C
Operating temperature	–	+60°C	+75°C
Operating pressure	0,4 bara	1 bara	10 bara
Gas flow	40 NI/hr	50 NI/hr	150 NI/hr
T ₉₀ -time at 100 NI/hr	–	< 1 s	–
Dead volume	–	approx. 3,5 cm ³	–
Warm-up time	–	approx. 30 min	–

Construction

Dimensions over all (W x H x D)	105 x 50 x 50 mm
Weight (without cable)	approx. 650 g
Sample gas inlet / outlet	Stainless steel pipe stubs 6 mm
Sample gas wetted materials	SS316Ti, Kovar, Si, SiOxNy, Gold, epoxy, Viton®

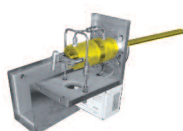
Electrics

Power supply	18 to 24 VDC (24 VDC recommended)
Current consumption	max. 450 mA
Output signal	4 to 20 mA
Connection cable	5 m long
Max. working resistance	800 Ω
Signal noise	< 0,1 % of measuring range
Drift at starting point	< 2 % of smallest measuring range / week
Repeatability	< 1 % of measuring range
Influence of ambient temperature	< 2 % of smallest range / 10°C
Influence of gas flow	at zero: < 1 % of smallest measuring range from 40 to 150 NI/h at end : < 2 % of smallest measuring range from 40 to 60 NI/h
Influence of pressure between 0,8 to 1,2 bara	< 0,4 % of smallest measuring range / 10 mbar < 0,04 % of largest measuring range / 10 mbar
Smallest measuring range	0,5 Vol.-% for H ₂ in N ₂

ORDER CODE

Order code	Description
FTC110-TRA	Thermal conductivity detector FTC110-TRA

Gas Sampling **Probes**



Heated Sample **Lines**



Sample Gas **Coolers**



Gas Conditioning **Systems**



NOx **Converter**



and solutions for

