



JTCD-300

Fast Thermal Conductivity Analyzer



APPLICATION

- Extractive gas analysis
- Process and quality monitoring
 - LEL monitoring
 - safety measurements
- Continuous measurement of components like H₂, CO₂, O₂, He, Ar, CH₄, N₂, NH₃, CO, SF₆ and more
 - used in gas, food, glass and many more industries

BENEFITS

- High sensitivity e.g. 0 to 0.5 Vol.-% H₂ in N₂; noise < 10 ppm H₂ in N₂
- Durable measuring cell
- Multi gas mode
- Offsetting the cross sensitivity of an interfering component possible
- Quick response time (T₉₀ < 1 s)
- Comfortable menu and operator navigation at calibration and parameterisation
- Classic two-point calibration or one-point calibration
- RS232-access to all (measuring) data and parameters
- Corrosion and condensate protection for sample gas path available
- Up to 6 years lifetime for optional O₂ sensor

FEATURES

- Precise and long-term stable gas analysis according to the thermal conductivity measuring principle
- Microprocessor based
- 128 x 64 point graphic display
- Operation via 3 keys or PC-based service program
- Small robust aluminum housing for field operation (protection class IP65)
- Linear electrically isolated current output 4 to 20 mA, start and end point concentration freely selectable
- 3 configurable relays for alarm message and device status
- Precise linearisation for binary gas mixtures like e.g. H₂, He, CO₂, CH₄ in N₂ or Ar in the permanent storage; additional customer specific linearisation with polynomial of 6th order
- Indication in ppm or Vol.-%, resolution adjustable up to 1 ppm
- Pressure resistant and vacuum leaktight gas path out of stainless steel (SS316Ti)



TECHNICAL DATA

MODEL

JTCD-300

Technology	fast thermal conductivity and fuel cell for O ₂ measurement
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MEASUREMENT

Gas to be measured	see table "Gas to be measured and ranges", O ₂
Measurement range(s)	see table "Gas to be measured and ranges" with O ₂ sensor: 0 – 5 Vol.%...0 – 100 Vol.% O ₂
Measurement unit(s)	ppm or %
Zero drift	< 1 % per month, averaged across 12 months
Accuracy	ambient temperature: < 1 % of smallest range per 10 K temperature change flow: < 1 % of smallest range per 10 l/h pressure (800 hPa < p < 1,200 hPa): < 1 % of smallest range per 10 hPa
Repeatability	< 1 % of range O ₂ sensor: +/- 1 Vol.% @ 100 % O ₂
Response time (T90)	< 1 sec at flow rate higher 60 l/h (applicaiton dependend) for O ₂ sensor: < 10 sec

OPERATION

Ambient temperature	–20 °C to +50 °C (–4 °F to +122 °F) with glass balls filling: –5 °C to +50 °C (23 °F to 122 °F) with O ₂ sensor: 0° to +45 °C
Sample flow rate	60 – 80 NI/h (option: 10 – 150 l/h)
Sample gas pressure requirement	0.8 to 1.2 bara <u>option (not available with O₂ sensor):</u> standard version: max. 20 bara for flammable gases: max. 3 bara
Sample gas temperature requirement	max. 80 °C at 25 °C ambient temperature / max. 50 °C at 50 °C ambient temperature min. –20 °C for version without glass beads / min. –5 °C for version with glass beads dry, non-condensing sample gas

CONSTRUCTION

Dimensions (W x H x D)	144 x 80 x 85 mm without accessories with O ₂ sensor: approx. 230 x 200 x 85 mm
Weight	approx. 1.1 kg without accessories with O ₂ sensor: 1.6 kg
Sample inlet connection	6 mm OD pipe stubs
Sample outlet connection	6 mm OD pipe stubs
Mounting	wall mounting
Protection class	IP65
Area classification	safe zone
Flammable gas protection	glass balls filling available
Sample gas path protection	corrosion and / or condensate protection available
Approvals	CE

ELECTRICS

Power supply	21...30 VDC
Power consumption	typical: 500 mA / max: 1 A
Measurement signal output	1 x analog output 4...20 mA 3 x relay contact 2 x analog output 0...10 V and 2 x analog input (option)
Communication / Interface	RS 232 digital interface
Cross sensitivity correction	availalbe against source from external analyzer or integrated O ₂ measurement

GAS TO BE MEASURED AND RANGES

Measuring Gas	Carrier Gas	Basic range	Smallest range	Smallest suppressed zero range	Multi Gas Mode
H ₂	O ₂	0% - 100%	0% - 0.5%	98% - 100%	Yes
H ₂	N ₂ / air	0% - 100%	0% - 0.5%	98% - 100%	Yes
H ₂	Ar	0% - 100%	0% - 0.4%	99% - 100%	Yes
H ₂	He	20% - 100%	20% - 40%	85% - 100%	On request
H ₂	CH ₄	0% - 100%	0% - 0.5%	98% - 100%	On request
H ₂	CO ₂	0% - 100%	0% - 0.5%	98% - 100%	On request
He	N ₂ / air	0% - 100%	0% - 0.8%	97% - 100%	Yes
He	Ar	0% - 100%	0% - 0.5%	98% - 100%	Yes
CO ₂	N ₂ / air	0% - 100%	0% - 3%	96% - 100%	Yes
CO ₂	Ar	0% - 60%	0% - 10%	-	Yes
Ar	N ₂ / air	0% - 100%	0% - 3%	96% - 100%	Yes
Ar	CO ₂	40% - 100%	-	80% - 100%	Yes
CH ₄	N ₂ / air	0% - 100%	0% - 2%	96% - 100%	Yes
CH ₄	Ar	0% - 100%	0% - 1.5%	97% - 100%	Yes
O ₂	N ₂	0% - 100%	0% - 15%	85% - 100%	Yes
O ₂	Ar	0% - 100%	0% - 2%	97% - 100%	Yes
N ₂	Ar	0% - 100%	0% - 3%	97% - 100%	Yes
N ₂	CO ₂	0% - 100%	0% - 4%	96% - 100%	On request
NH ₃	H ₂	0% - 100%	0% - 5%	95% - 100%	On request
CO ₂	H ₂	0% - 100%	0% - 2%	99% - 100%	On request
SF ₆	N ₂ / air	0% - 100%	0% - 2%	96% - 100%	On request

DIMENSIONAL DRAWING

dimensions in mm

