

Product Specification of:

## NO<sub>2</sub> - Trace gas sensor / Type I-55D



### :: KEY FEATURE ::

**Factory programmed amperometric gas sensor with no warm-up time, designed to detect NO<sub>2</sub> concentrations in the low ppm/ppb range, digital I<sup>2</sup>C signal.**

*All characteristics are based on conditions at 25 °C, 50% RH and 1013 hPa, gas flow 300 mL/min.*

Operating Principle:	3-electrode potentiostatic driven cell	
Measurement Range:	30 ppb to 10 ppm	
Maximum Overload:	12 ppm	
Resolution:	15 Bit used (16 Bit processor, 1 Bit for algebraic sign)	
Output signal:	0 to 32768	
Power Consumption (maximum):	0.5 mW (12 ppm NO <sub>2</sub> test gas; 5.0 V supply voltage)	
Expected Operating Life:	24 months, depending on application	
Warm-Up Time	none	
Electrical Connector:	4 -pin Molex® (digital sensor output signal, I <sup>2</sup> C interface)	
Gas Connector:	fits for M16x1 DIN 13	
Sensitivity:	960 - 1900 Digits/ppm (depending on flow, flow feeding to the sensor, tubing system and dead spaces in manifold)	
Baseline:	< ± 150 Digits	
Response Time t <sub>90</sub> :	< 60 s (depending on flow, flow feeding to the sensor, tubing system and dead spaces in manifold)	
Drift:	< 10%/year, depending on application	
Repeatability:	< 2% (180 s test gas – 180 s zero gas – 180 s test gas; 1 ppm NO <sub>2</sub> bal. N <sub>2</sub> ; constant environmental conditions)	
Linearity Error:	< 5% (250 ppb – 10 ppm) < 10% (50 ppb – 250 ppb)	
Temperature Compensation:	NTC on sensor PCB (sensor signal is not temperature compensated [separate temperature read out]; compensation by software necessary)	
Operating Temperature:	0 to 40 °C	
Pressure Range:	500 to 1250 hPa (complete sensor exposed to under-/overpressure)	
Humidity Range:	30 to 80 % RH	
Interferences:	NO [20 ppm] < 1% of NO <sub>2</sub> sensitivity O <sub>2</sub> [100 Vol.%O <sub>2</sub> ] < 0.1% of NO sensitivity CO [249ppm] < 0.1% of NO sensitivity CO <sub>2</sub> [5 Vol.%] < 0.1% of NO sensitivity H <sub>2</sub> [480ppm] < 0.1% of NO sensitivity Ozone [4 ppm] < 14% of NO <sub>2</sub> sensitivity	
Weight:	26 - 28g	
Material in Contact with Media:	PVDF, PTFE, stainless steel, FKM	



### :: STORAGE CONDITIONS IN UNOPENED ORIGINAL PACKAGE ::

Temperature Range:	recommended: 5 to 25 °C maximum: -20 to 50 °C (< 72 hours)
Ambient Pressure:	500 to 1250 hPa
Humidity:	up to 100% rH, non-condensing

### :: RELATED PRODUCTS ::

Product	Part-No.	Housing Colour	Remarks
I-55D	48 01 48	-	potentiostat integrated, digital I <sup>2</sup> C-signal

*This data sheet is subject to change without prior notice. [I-55D-Rev04-2019\_0710.doc]*

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