

.: KEY FEATURE .:

Factory programmed amperometric gas sensor with no warm-up time, designed to detect NO₂ concentrations in the low ppm/ppb range, digital I²C sensor output signal, EEPROM and temperature sensor on PCB.

All characteristics are based on conditions at 25°C, 50% RH, 1013 hPa and gas flow 300 mL/min. All digital values are based on a gain factor of 1 (AD-Converter).

Operating Principle:	3-electrode potentiostatic driven cell (potentiostat integrated, battery buffered)	
Warm-Up Time	none	
Measurement Range:	30 ppb to 10 ppm	
Maximum Overload:	12 ppm	
Expected Operating Life:	24 months, depending on application	
Sensitivity:	960 - 1900 Digits/ppm (800 - 1583 nA/ppm, depending on flow, flow feeding to the sensor, tubing system and dead spaces in manifold, gain factor AD-Converter 1)	
Baseline (zero offset):	< ± 150 Digits (125 nA, digital electronic offset compensated, gain factor AD-Converter 1)	
Response Time t₉₀:	< 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 ₂ bal. N ₂ ; constant environmental conditions)	
Linearity Error:	< 5% (250 ppb – 10 ppm); < 10% (50 ppb – 250 ppb)	
Resolution:	15 Bit used (16 Bit processor, 1 Bit for algebraic sign)	
AD-C Output Range:	-32768 to +32767 Digits	
Electrical Connector:	4 -pin Molex®	
Electrical Interface:	I ² C, digital sensor output signal	
EEPROM:	24LC32A, 32 Kbit, I ² C interface	
Power Consumption:	< 0.5 mW (12 ppm NO ₂ ; 5.0 V supply voltage)	
Supply Voltage:	+3.3 V (verified), +5.0V (possible), >5.5 V (PCB damage)	
Gas Connector:	fits for M16x1 DIN 13	
Temperature Compensation:	MCP9808 on sensor PCB (sensor signal is not temperature compensated; 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 ₂ sensitivity
	O ₂ [100 Vol.%O ₂]	< 0.1% of NO ₂ sensitivity
	CO [249ppm]	< 0.1% of NO ₂ sensitivity
	CO ₂ [5 Vol.%]	< 0.1% of NO ₂ sensitivity
	H ₂ [480ppm]	< 0.1% of NO ₂ sensitivity
Weight:	26 - 28g	
Material in Contact with Media:	PVDF, PTFE, stainless steel, FKM	



:: STORAGE CONDITIONS IN UNOPENED ORIGINAL PACKAGE ::

Temperature Range:	recommended: 15 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.	Remarks
I-55D	48 01 48	potentiostat integrated, digital I ² C sensor output signal, EEPROM and temperature sensor on PCB