

FECS42-20 - for the Detection of Nitrogen Dioxide

Features:

- * High sensitivity/selectivity to NO₂
- * Quick response to NO₂
- * Linear output
- * Long life
- * Stable baseline
- * Unique leak-proof structure

The FECS42-20 is a unique electrochemical-type nitrogen dioxide sensor. Its most notable feature is its unique leak-proof structure, making it ideal for NO₂ monitors and detectors in various fields.

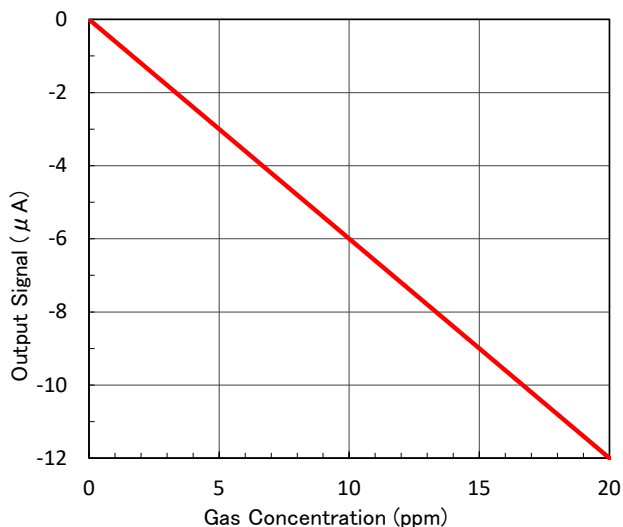
Applications:

- * Portable and fixed installation NO₂ monitors
- * NO₂ detectors
- * Ventilation control for indoor parking garages



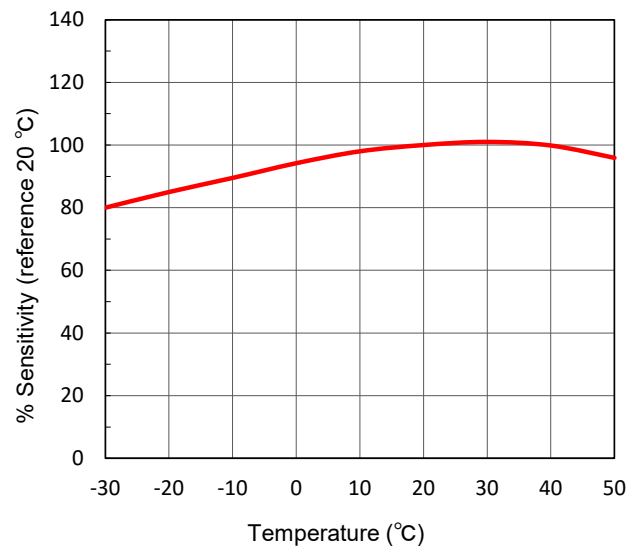
Sensitivity Characteristics:

Typical characteristics (linearity) of FECS42-20 (20°C) are shown below.



Temperature Dependency:

Typical characteristics (temperature dependency) of FECS42-20 are shown below.



Specifications:

Detection Gas	Nitrogen Dioxide
Detection Range	0 ~ 20 ppm
Maximum Overload	150 ppm
Output Signal	-600 ± 150 nA/ppm (*1)
Repeatability	±2% (*1)
Resolution	0.1 ppm (*1)
Baseline Range (Clean air)	±0.2 ppm (*1)
Response Time (t ₉₀)	< 25 sec (*1)
Baseline Shift (-20 ~ 40°C)	< 0.2 ppm (*1)
Long Term Output Drift	< 2% /month (*1)
Expected Life Time	> 2 years (*1,*2)
Operating Temperature	-20 ~ 50°C
Operating Humidity	15 ~ 90% RH
Operating Pressure Range	1013 hPa ±10%
Recommended Load Resistor	33Ω
Bias Voltage	Not required
Position Sensitivity	None
Recommended Storage Temp.	0 ~ 20°C
Cap Color	Black
Weight	4.5g (approx.)

*1 Factory test data conditions: 20°C, 50%RH and 1013 hPa.

*2 Life expectancy in normal air under the factory test conditions is defined as the period until sensor output drops to 60% of its original value.

Cross Sensitivity Data :

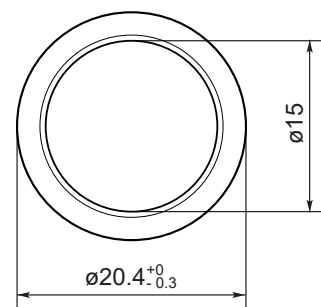
Table1 shows the typical response of FECS42-20 to interference gases.

Table1 Cross Sensitivity of FECS42-20 (20°C)

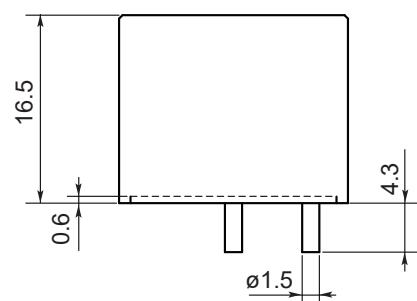
Gas	Concentration (ppm)	Typical Nitrogen Dioxide Concentration(ppm)Equivalent
Nitrogen Dioxide	20	20
Hydrogen	1,000	0
Carbon Monoxide	300	0
Carbon Dioxide	5,000	0
Sulphur Dioxide	20	0
Hydrogen Sulfide	10	-0.7 ~ 0.3
Nitric Oxide	30	0
Ammonia	100	0
Ethanol	100	0
Chlorine	1	1

Dimensions:

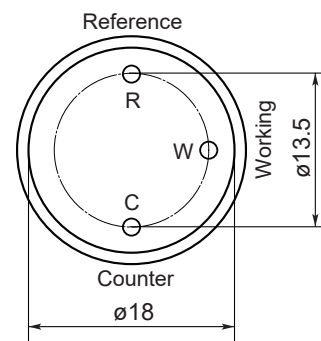
Top view



Side view



Bottom view



Unit: mm

All tolerance ± 0.1mm unless otherwise stated.

The following are the recommended socket pins of FECS-series gas sensors:

Recommended specifications:

- Basically fitting male pin diameter is $\phi 1.5$ mm
- Male pin insertion depth is 4.3 mm or more

Socket pins (example):

S.E.R. Corporation: SS 6000-00

Mac Eight Co., Ltd: PD-152