

4-20 mA Analog Transmitter Board

NGB-3A

Nemoto has developed a compact 4–20 mA analog transmitter board compatible with our electrochemical gas sensors. By integrating this board into your system, gas concentration signals can be output directly as a standard 4–20 mA current signal without requiring additional signal conditioning. A 1–5 V voltage output version is also available as an option.

- Designed for use with Nemoto's proven electrochemical gas sensors
- Compatible with various target gases including CO, H₂S, and NH₃
- Optional 1–5 V voltage output available
- Three connector configurations available:

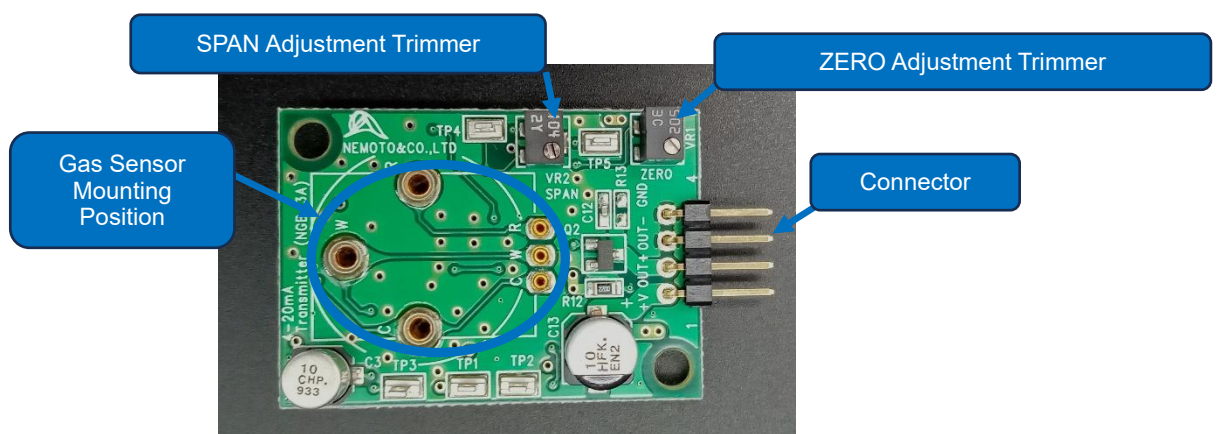
Straight Pin Header / Right-Angle Pin Header / Straight Connector



Package Contents

- 4–20 mA Analog Transmitter Board (Gas sensor sold separately)
- User Manual

Board Layout



Specifications

Model	4-20mA Analog Transmitter Board NGB-3A		
Measurement Principle	Electrochemical		
Detection Method	Diffusion Type		
Supported Sensors and Factory Calibration Ranges	Target Gas	Sensor Model	Factory Calibration Range
	CO	NAP-505R	0 - 1,000ppm
	CO	NE4-CO	0 - 1,000ppm
	H2S	NE4-H2S	0 - 100ppm
	NH3	NE4-NH3	0 - 100ppm
Sensor Protection During Power-Off	When power is removed, the sensing electrode is shorted to the reference electrode via a JFET to help protect sensor performance.		
Output Signal	4–20 mA		
Power Supply	DC 12–24 V $\pm 5\%$ (factory calibrated at DC 15 V)		
Sensor Performance	Refer to the individual sensor technical documentation		
Output Accuracy	$\pm 0.4\%$ F.S. (excluding sensor accuracy)		
Maximum Load Resistance	700 Ω @ DC 20 V		
Operating Conditions	Temperature: -20 to 50°C; Humidity: 15–90% RH (non-condensing)		
Storage Conditions	Temperature: -30 to 50°C; Humidity: 30–70% RH (non-condensing)		
Dimensions / Weight	40 mm $\times$ 28 mm; approx. 6 g		
Connector Options	Product Model	Connector Type	Connector Part Number
	NGB-3APS	Straight Pin Header	PSH-410256-04
	NGB-3APR	Right-Angle Pin Header	JLS-2504
	NGB-3ACS	Straight Connector	B4B-XH-A
Functions	● Zero Adjustment ● Span Adjustment (Factory settings are shown in the sensor table above.) ● Optional 1–5 V voltage output available		

Precautions

- Please read the instruction manual carefully before use.
- The ZERO adjustment trimmer (VR1) and SPAN adjustment trimmer (VR2) are factory-set to provide a 4–20 mA output range. Adjusting either trimmer will change the output scaling and calibration. Use caution when making adjustments.
- Specifications are subject to change without notice for product improvement purposes.

Connector Pin Assignment

Pin Name	Description
V+	Power Supply Input
OUT+	Current Output (+)
OUT-	Current Output (-)
GND	Ground

