

Hybrid IC Isolation Amplifiers 20 Series**ISOLATION AMPLIFIER**

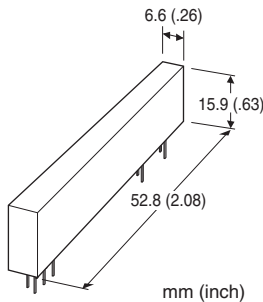
(small size, input isolation, SIP type)

Functions & Features

- Being used for printed wiring board installation
- High-linearity
- High speed response of 150 μ sec.
- Isolating between input and output or power
- Isolation between input and output or power supply up to 3000 V AC
- Power 15 V DC

Typical Applications

- Isolating the field and I/O circuit of microprocessor to reduce noise from field
- Available for manufacturers of small-lot products to omit the development of isolation circuit

**MODEL: 20VS8-202Y[1]-U****ORDERING INFORMATION**

- Code number: 20VS8-202Y[1]-U
- Specify a code from below for [1].
(e.g. 20VS8-202YL-U)

TYPE**202Y:** Input isolation

INPUT RANGE -5 - +5 V DC

OUTPUT RANGE -5 - +5 V DC

[1] LINEARITYJ: ± 0.05 %K: ± 0.025 %L: ± 0.012 %**POWER INPUT****DC Power**

U: 15 V DC

GENERAL SPECIFICATIONS**Construction:** Hybrid IC**Housing material:** Flame-resistant resin (black)**Isolation:** Input or reference voltage source to output or power supply**INPUT SPECIFICATIONS****DC Voltage****Input :** -5 - +5 V DC**Input resistance:** ≥ 1 M Ω (10 k Ω in power failure)**Overload input voltage:** ± 15 V DC continuous**Input offset voltage:** ± 2 mV @ G = 1**Input bias current:** 25 pA TYP. (@25°C)**OUTPUT SPECIFICATIONS****DC Voltage:** -5 - +5 V DC**Load resistance:** ≥ 1 M Ω **Output impedance:** ≤ 5 k Ω **REFERENCE VOLTAGE SOURCE****FOR INPUT****Output voltage:** ± 8.5 V DC ± 1 V (@ 15 V DC power supply)**Load current:** ≤ 1 mA**INSTALLATION****Power input****DC:** Rating ± 5 %; approx. 7.5 mA with no load**Operating temperature:** -25 to +85°C (-13 to +185°F)**Operating humidity:** 30 to 90 %RH (non-condensing)**Mounting:** Soldering to the printed wiring board**Weight:** 13 g (0.46 oz)**PERFORMANCE in percentage of span**

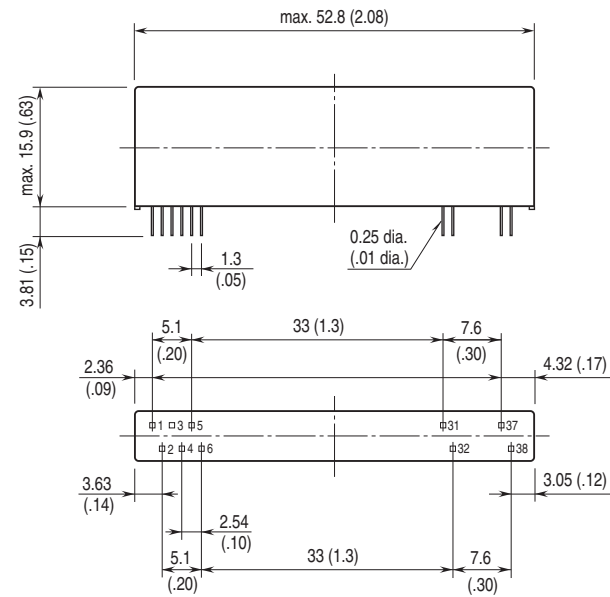
Unless otherwise specified, G = 1.

Linearity: ± 0.05 % (20VS8-202YJ) ± 0.025 % (20VS8-202YK) ± 0.012 % (20VS8-202YL)**Temp. coefficient:** ± 25 ppm/°C (0°C - 70°C; 32 - 158°F) ± 50 ppm/°C (-25°C - +85°C; -13 - +185°F)**Frequency characteristics:** Approx. 2 kHz, -3 dB**Response time:** ≤ 150 μ sec. (0 - 90 %)**Conversion gain:** $\times 1 \pm 1.5$ %**Gain adjustable range:** $\times 1$ to $\times 100$ **Line voltage effect:** ± 0.02 % over voltage range**Insulation resistance:** ≥ 100 M Ω with 500 V DC**Dielectric strength:** 3000 V AC @ 1 minute

(input or reference voltage source to output or power supply)

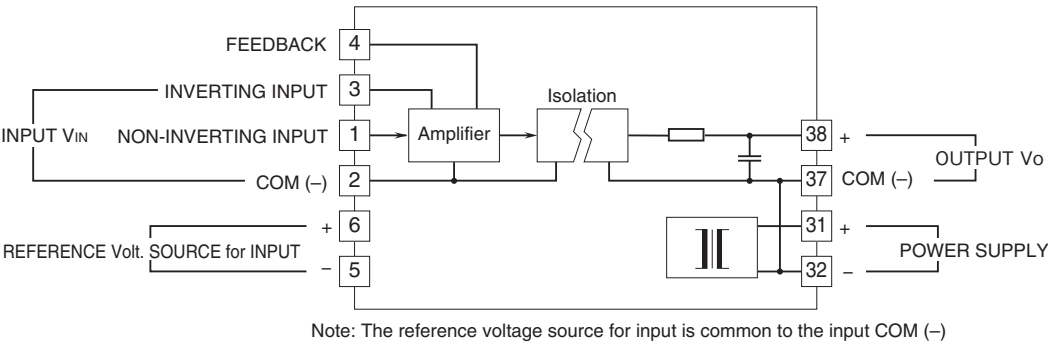
CMRR: ≥ 120 dB (500 V AC 50/60 Hz)

EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENTS unit: mm (inch)



PIN ASSIGNMENTS	
1	Non-inverting Input
2	Input COM (-)
3	Inverting Input
4	Feedback
5	Reference Voltage Source (-)
6	Reference Voltage Source (+)
31	Power Supply (+)
32	Power Supply (-)
37	Output COM (-)
38	Output (+)

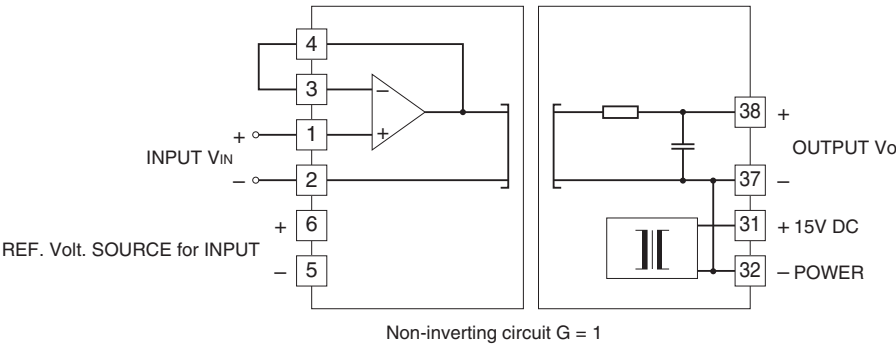
SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



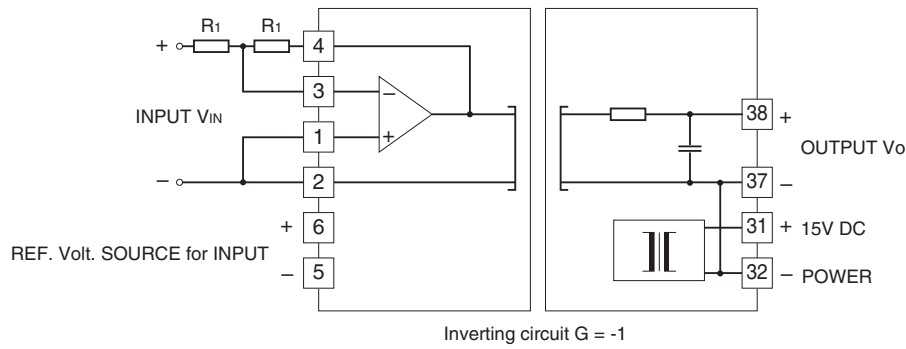
APPLICATION EXAMPLE

$10\text{ k}\Omega \leq (R_1 + R_2) \leq 1\text{ M}\Omega$

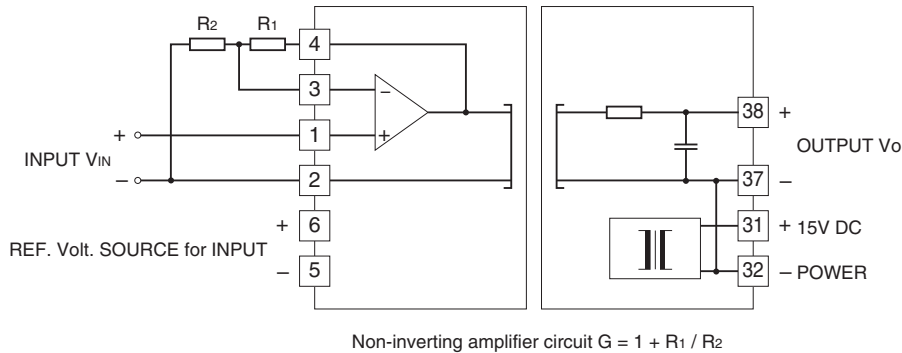
■ Non-inverting amplifier circuit: Basic example of $G = 1$



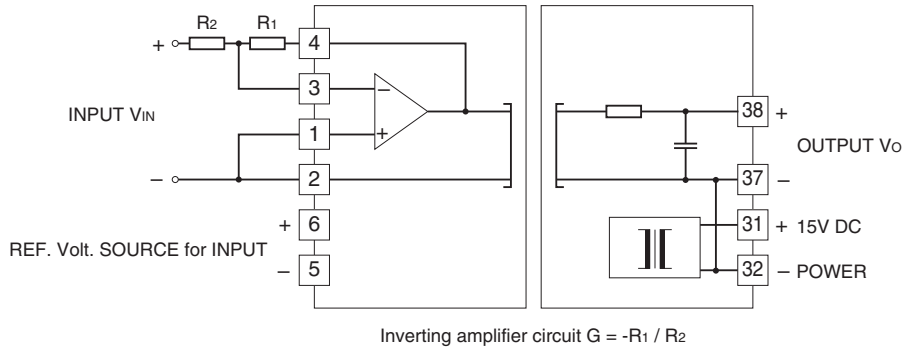
■ Inverting amplifier circuit: Basic example of $G = -1$ (output is inverted from the input)



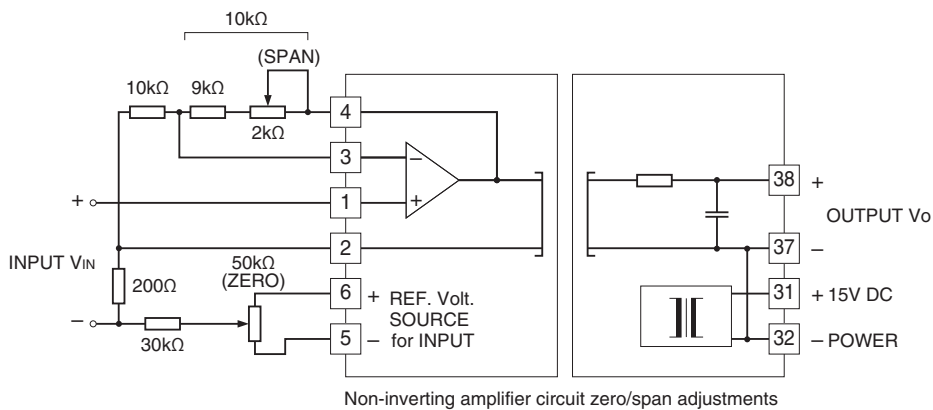
■ Non-inverting amplifier circuit: Example of $G = 1 + R_1 / R_2$



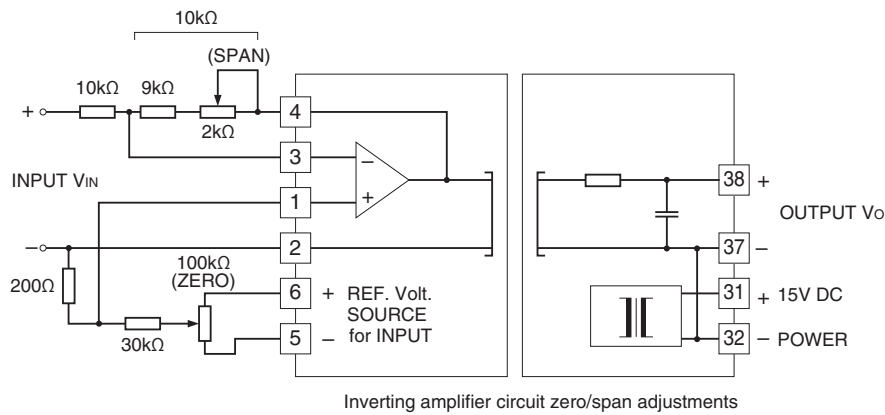
■ Inverting amplifier circuit: Example of $G = -R_1 / R_2$ (output is inverted from the input)



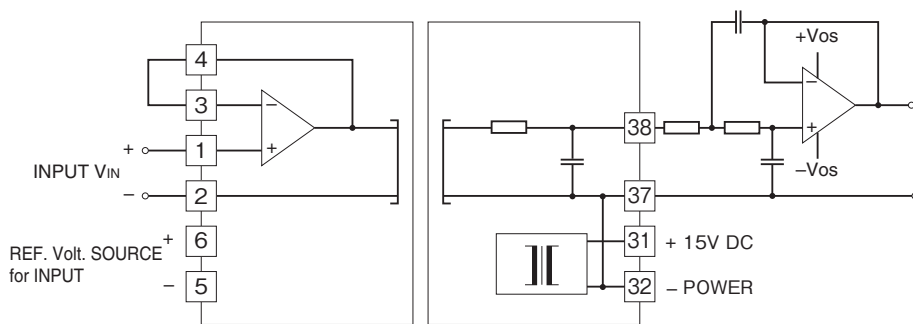
■ Non-inverting amplifier circuit with external adjustments: Example of $G = 2$



■ Inverting amplifier circuit with external adjustments: Example of $G = -1$ (output is inverted from the input)



■ Non-inverting amplifier circuit: With noise filter



Specifications are subject to change without notice.