

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

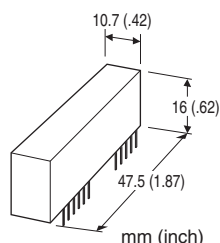
(high-accuracy, output isolation)

Functions & Features

- Being used for printed wiring board installation
- Up to 1500 V isolation between output to input or power input
- High-linearity
- Small installation area in printed wiring board
- Gain adjustable range, $\times 1$ to $\times 10$
- Power 15 V DC

Typical Applications

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

**MODEL: 20VS5-202-U****ORDERING INFORMATION**

- Code number: 20VS5-202-U

INPUT RANGE -10 – +10 V DC

OUTPUT RANGE -10 – +10 V DC

POWER INPUT**DC Power**

U: 15 V DC

GENERAL SPECIFICATIONS**Construction:** Hybrid IC**Housing material:** Flame-resistant resin (black)**Isolation:** Output to input or power**INPUT SPECIFICATIONS****DC Voltage****Input :** -10 – +10 V DC**Input resistance:** $\geq 1 \text{ M}\Omega$ (10 k Ω in power failure)**Overload input voltage:** $\pm 30 \text{ V DC}$ continuous**Input offset voltage:** $\pm 15 \text{ mV}$ **Input bias current:** 0.5 nA TYP. (@25°C)**OUTPUT SPECIFICATIONS****DC Voltage:** -10 – +10 V DC**Load resistance:** $\geq 5 \text{ k}\Omega$ **Output impedance:** $\leq 1 \Omega$ **REFERENCE VOLTAGE SOURCE****Output voltage:** $\pm 15 \text{ V DC TYP.}$ **Load current:** $\leq 2 \text{ mA}$ **INSTALLATION****Power input**

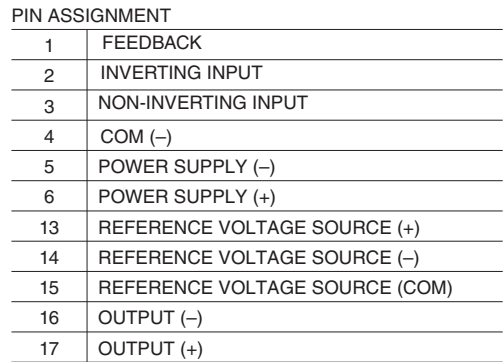
- **DC:** Operational voltage range: Rating $\pm 10 \%$, ripple 2 %p-p max.; Approx. 15 mA with no load

Operating temperature: -10 to +70°C (14 to 158°F)**Operating humidity:** 30 to 90 %RH (non-condensing)**Mounting:** Soldering to the printed wiring board**Weight:** 10g (0.35 oz)**PERFORMANCE in percentage of span**Unless otherwise specified, $G = 1$.**Linearity:** $\pm 0.01 \%$ TYP. ($\pm 0.015 \%$ max.)**Temp. coefficient:**

Offset drift 20 ppm/°C

Span drift 40 ppm/°C

Frequency characteristics: Approx. 3 kHz, -3 dB**Response time:** $\leq 150 \mu\text{sec.}$ (0 – 90 %)**Conversion gain:** $\times 0.98 \pm 5 \%$ **Gain adjustable range:** $\times 1$ to $\times 10$ **Line voltage effect:** $\pm 0.05 \%$ over voltage range**Insulation resistance:** $\geq 100 \text{ M}\Omega$ with 500 V DC**Dielectric strength:** 1500 V AC @1 minute (output or reference voltage source to input or power)**CMRR:** $\geq 100 \text{ dB}$ (500 V AC 50/60 Hz)

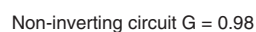


SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM

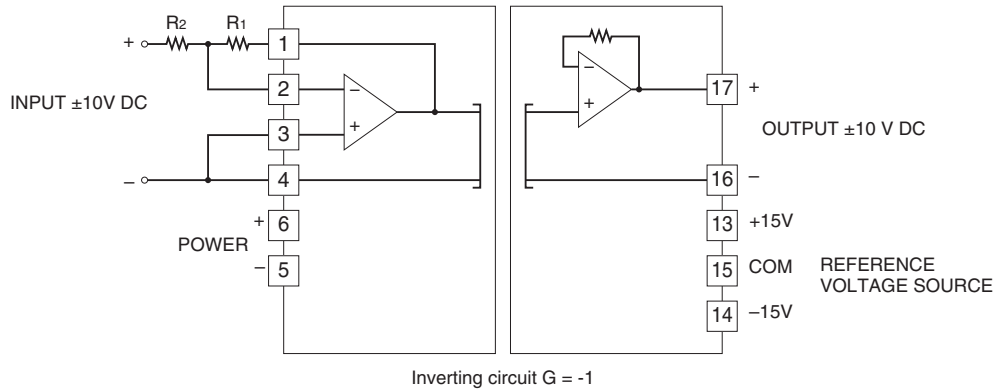


APPLICATION EXAMPLE

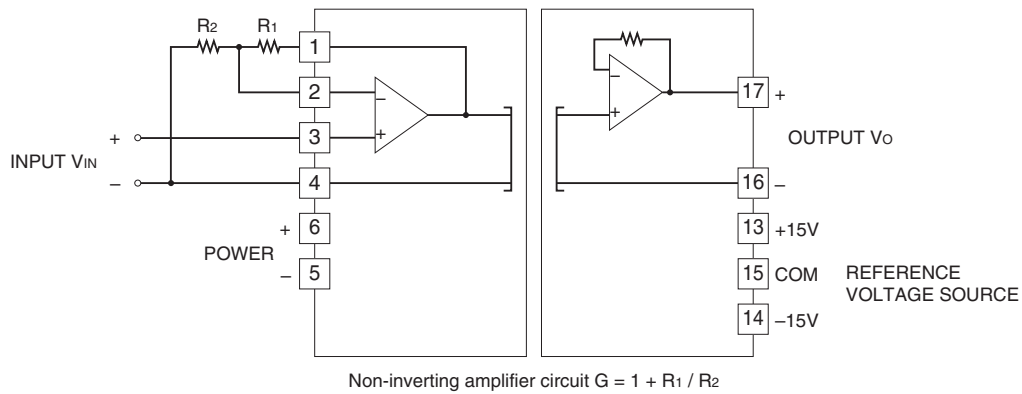
■ Non-inverting amplifier circuit: Basic example of $G = 0.98$



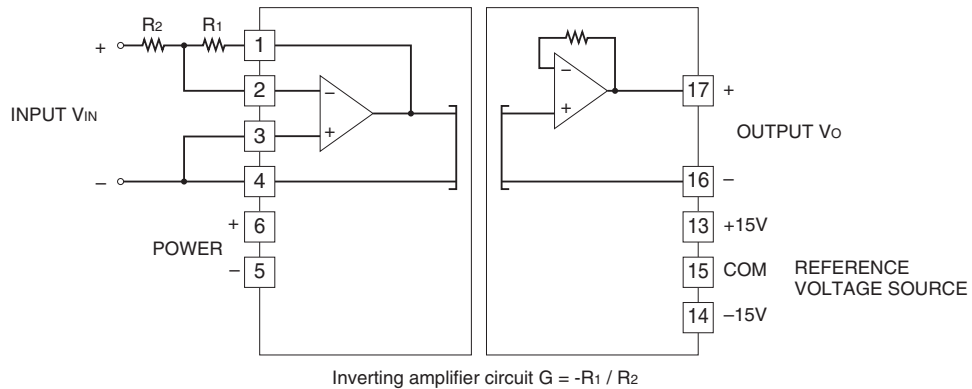
■ Inverting amplifier circuit: Basic example of $G = -1$ (output inverted to the input) ($R_1 \approx R_2$)



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



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



Specifications are subject to change without notice.