Model: BUF-01

Dual Voltage Buffer
with High Current Drive

Features

- Dual Fully Independent Channels
- Output drive of 200 mA per Channel
- ±10 V True Differential Inputs
- Low pass filter to remove high frequency noise.
- 24 VDC Powered (9-36 VDC)
- DIN Rail Enclosure

Applications

- Valve driver
- High current drive output
- Differential to single-ended conversion
- High accuracy voltage buffering
- LVDT/RVDT Excitation

General Description

The BUF-01 Voltage Buffer is a dual channel buffer capable of driving up to 200 mA of current on each channel at up to ±10 V output.

The buffer has a 2nd order low pass filter with 3 dB point of 120kHz to remove high frequency noise.

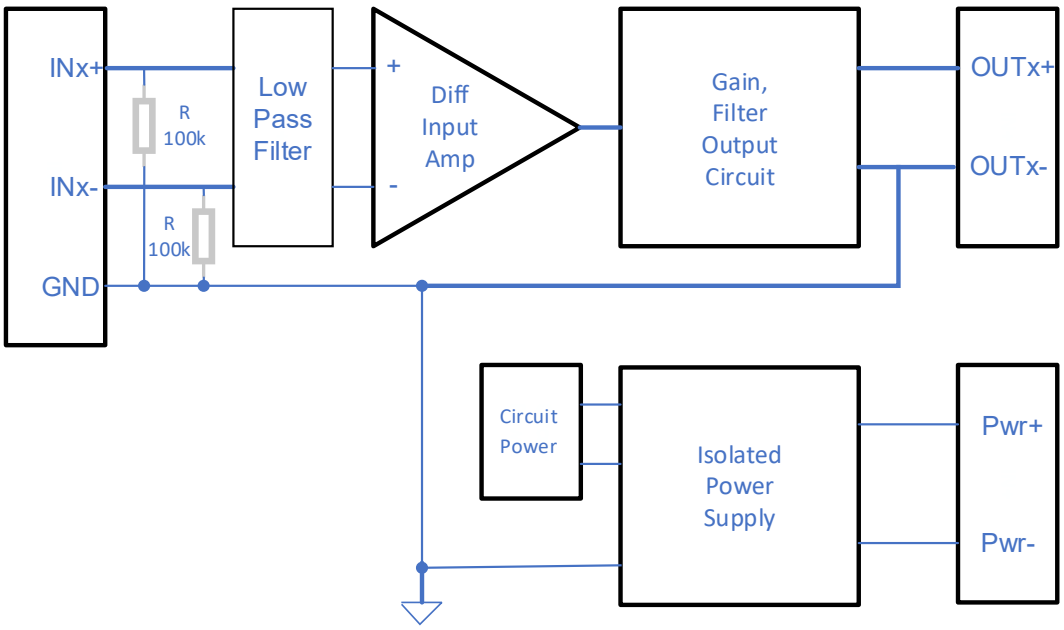
The unit's differential inputs are built to withstand high DC over-voltages up to ±50 VDC and greater than ±100 V transients. Gain of the unit is 1 allowing for minimal insertion issues.

Key Specifications

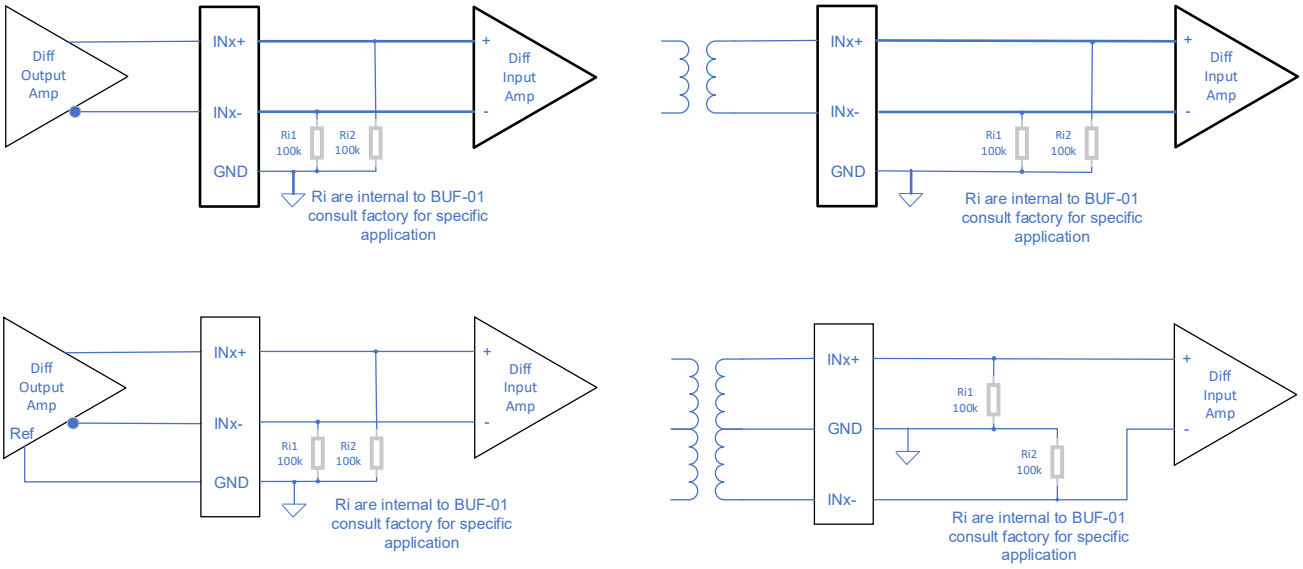
- Output ±10 V with up to 200 mA
- Gain accuracy to ±0.04%
- Voltage offset ±3 mV max
- Differential input with ±50 VDC input protection.
- 100kΩ input impedance.
- ±10 V output settles in 3 µS to 0.1%
- 24 VDC Powered

Viewpoint Systems, Inc., 800 West Metro Park, Rochester, New York 14623
Phone: (585) 475-9555 ViewpointUSA.com sales@viewpointusa.com

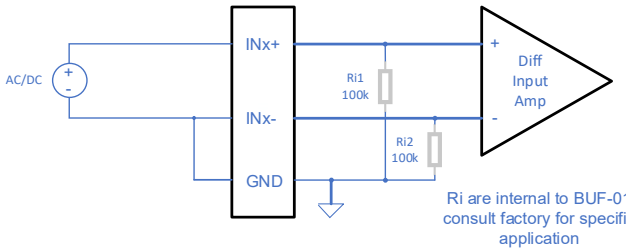
Rev E



Block Diagram



Differential Input Connections



Single ended Input connection

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Input (Channel 1, 2)

Input Range: ±10 Volts, true differential input

Absolute Max input: ±50 Volts DC; 100 V impulse

Input Impedance : 100kΩ, 30 GΩ available (consult factory)

Outputs (Channel 1, 2)

Voltage Outputs: ±10 Volts at 200 mA output current max, 200ma at 25°C at higher operating temperatures current rolls off to 100mA at 70°C

Input to Output Step response Settle time to 0.1%: 3 µS typical including propagation delay, 10 V Change

Propagation Delay: 50nS typ

Maximum Slew Rate: 15 V/µS (-10V to 10V in 1.33µS)

Output drive stage is capacitive load tolerant and contains flyback diode protection.

Power

Input: 24 VDC Nominal (9-36 VDC Range)

Power Consumption: 15 W max, 1.2 W typical with no load.

Isolation: 1500 VDC, Power to Input or Output

Filter

The 2nd order filter has a 120kHz 3 dB (±10 %) operating

Accuracy

Gain Accuracy (G=1, DC Input) : ±0.04%

Voltage Offset (G=1) : ±3mV max;

Voltage Offset Temperature Drift : ±7 uV/°C typ

Filter attenuation effect at 10% of 3 dB cut-off: -0.037 dB

Environment

-40 to 70 °C operating, -40 to 85 °C storage

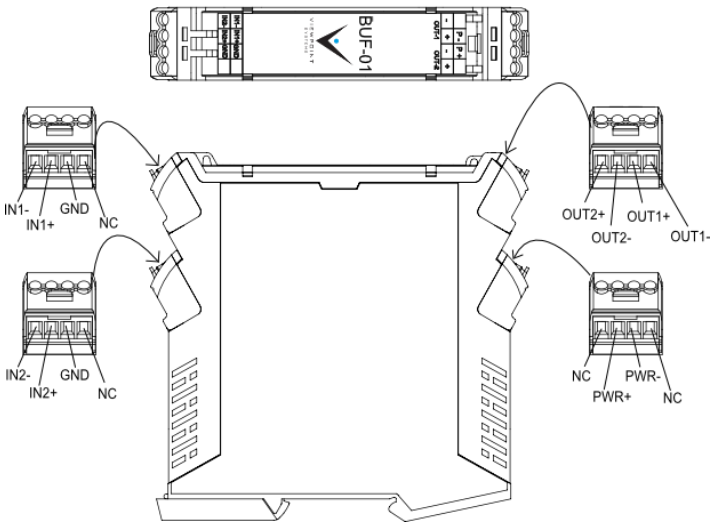
Options

Custom Low pass filter 3 dB point (consult factory)

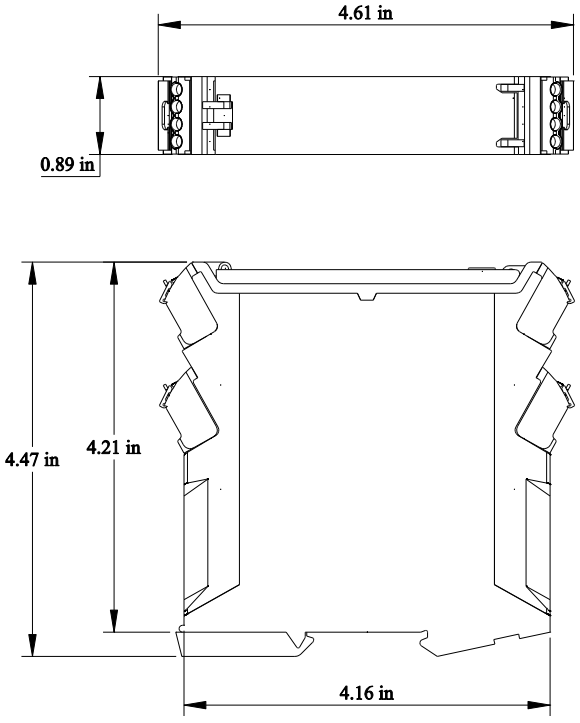
Custom gains (consult factory)

Higher output current (up to 400mA) (consult factory)

Custom Input Impedance (consult factory)



Wiring Diagram



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