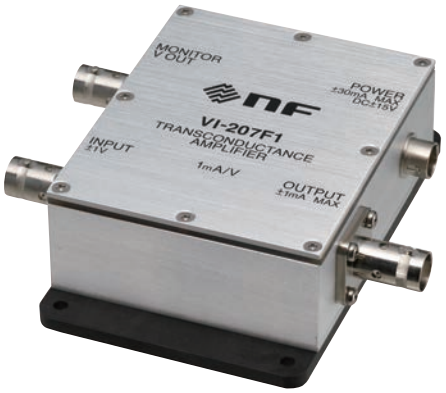
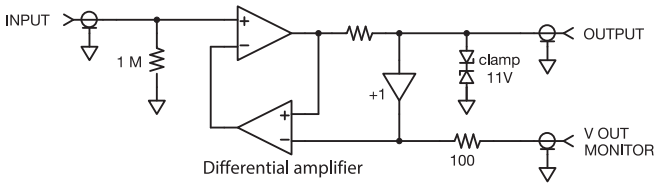
TRANSCONDUCTANCE AMPLIFIER VI-206F1/VI-207F1



The VI-200 series is a transconductane amplifier (voltage-to-current converter) which can output sink and source current.
VI-206F1: Transconductance 100 µA/V, Output current ±100 µA
VI-207F1: Transconductance 1 mA/V, Output current ±1 mA

	VI-206F1	VI-207F1
▼Absolute maximum ratings		
Supply voltage (±Vs)	±18 V	
Signal input voltage	±2 V	
▼Input		
Connector	BNC	
Input impedance	1 MΩ ± 5 % (f = 100 Hz)	
Input voltage range	±1 V	
▼Output		
Connector	BNC	
Output current	±100 µA (max)	±1 mA (max)
Output current Noise (Grounded input. BW = 10 kHz)	≤ 10 nArms	≤ 100 nArms
Output offset current	≤ ±1 µA	≤ ±10 µA
Clamping output voltage	approx. ±11 V	
▼Transconductance amplifier		
Transconductance	100 µA/V ± 3 %	1 mA/V ± 3 %
Load range	0 Ω to 100 kΩ	0 Ω to 10 kΩ
Frequency response (Refer to 10 Hz, +0.5 dB to –3 dB)	DC to 7 kHz RL = 100 kΩ, CL = 100 pF	DC to 10 kHz RL = 100 kΩ, CL = 100 pF
▼Output voltage monitor		
Connector	BNC	
Output impedance	100 Ω ± 10 %	
Output offset voltage	±7.5 mV	
Load impedance	≥ 100 kΩ	
Function	Unity gain buffer of OUTPUT voltage	
▼Power supply		
Connector	HR10-7R-4P(73) (HIROSE ELECTRIC)	
Operating voltage range	±15 V ± 1 V	
Quiescent current	±30 mA (max.)	
▼General		
Specified temperature	23 ˚C ± 5 ˚C	
Operating environment	0 ˚C to 40 ˚C, 5%RH to 95%RH (non-condensing)	
Storage environment	–10 ˚C to 50 ˚C, 5%RH to 85%RH (non-condensing)	
Dimensions (mm)	65×80×27.6 (not including protrusions and bottom plate)	
Weight (NET)	Approx. 200 g	
RoHS	Directive 2011/65/EU	
Accessories	Instruction manual	

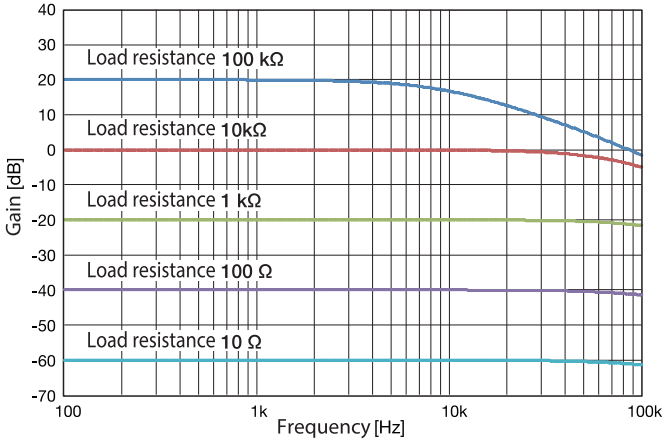
Block Diagram



Characteristics

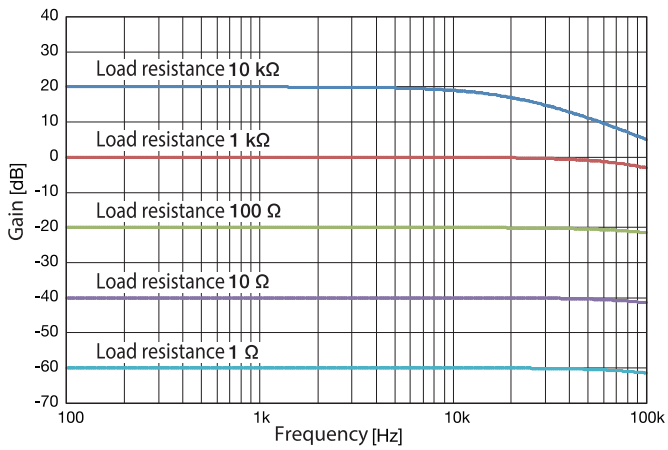
VI-206F1

Load voltage (Input 1 V / Output 100 µA) (O dB=1 V)



VI-207F1

Load voltage (Input 1 V / Output 100 mA) (O dB=1 V)



TRANSCONDUCTANCE AMPLIFIER VI-309F1

The VI-309F1 is a transconductane amplifier (voltage-to-current converter) which has two input connectors designed for mixing signals. H-GAIN INPUT makes 5 mA/V and L-GAIN INPUT makes 50 µA/V converting between DC to 10 kHz. Output switch OFF makes OUTPUT grounded. It is safe to remove the charged load such as inductors and/or capacitors.

Absolute maximum ratings

Supply voltage (±Vs)	±18 V
Signal input voltage	±Vs

Input

Connector	SMA
Input impedance	10 kΩ ± 3 % (f = 100 Hz)
Input voltage range	±10 V

Output

Connector	SMA
Output current	±50 mA (max.)
Output offset current	≤ ±15 µA
Output current noise (Grounded input. BW = 10 kHz)	≤ 1 µArms
Clamping output voltage	Approx. ±4 V
Output switch	ON: Output on OFF:Output off (Output is grounded.)

Transconductance amplifier

Transconductance	H-GAIN INPUT 5 mA/V ± 3 % (0 Ω to 30 Ω load) L-GAIN INPUT 50 µA/V ± 3 % (0 Ω to 30 Ω load)
Load range	0 Ω to 30 Ω (at 50 mA output), Output current needs derating when load is more than 30 Ω
Frequency response	DC to 10 kHz (refer to 10 Hz, between +0.5 dB and −3 dB, Load=1 Ω)

Output voltage monitor

Connector	BNC
Output impedance	100 Ω ± 10 %
Output offset voltage	±1 mV
Load impedance	≥ 100 kΩ
Function	Unity gain buffer of output voltage

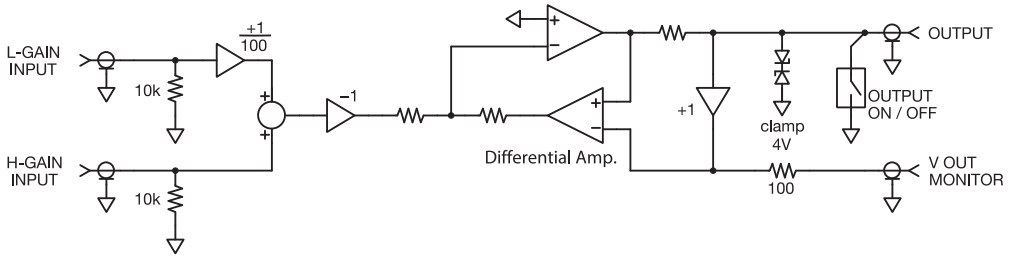
Power supply

Connector	HR10-7R-4P (73) (HIROSE ELECTRIC)
Operating voltage range	±15 V ± 1 V
Supply current	≤ ±30 mA (Quiescent) ±100 mA (max.)

General

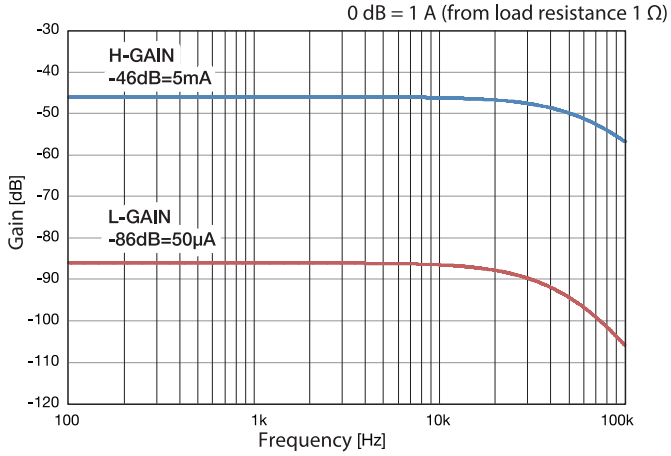
Specified temperature	23 °C ± 5 °C
Operating environment	0 °C to 40 °C, 5 % RH to 95 % RH (non-condensing)
Storage environment	−10 °C to 50 °C, 5 % RH to 85 % RH (non-condensing)
Dimensions (mm)	80×65×27.6 (not including protrusions and bottom plate)
Weight (NET)	Approx. 200 g
Accessories	Instruction manual

Block Diagram



Characteristics

Load voltage under input 1 V and output load 1 Ω (0 dB = 1 V)
0 dB = 1 A (from load resistance 1 Ω)



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