■ Input section

Input type	DC coupling unbalanced input
Input connectors	Isolated BNC receptacle. Input switchable between front panel and rear panel.
Non-destructive maximum input current	±30 mA

Gain setting (V/A)	Maximum rated input current Output amplifier gain setting		Input impedance (Supplementary value)	Input-referred noise current density*1 (Supplementary value)
	×1	×10		
10 G	±1 nA	±100 pA	30 kΩ (@100 Hz)	2.5 fA/√Hz (@55 Hz)
1 G	±10 nA	±1 nA	10 kΩ (@1 kHz)	6 fA/√Hz (@200 Hz)
100 M	±100 nA	±10 nA	3 kΩ (@1 kHz)	15 fA/√Hz (@200 Hz)
10 M	±1 µA	±100 nA	1 kΩ (@1 kHz)	45 fA/√Hz (@1 kHz)
1 M	±10 µA	±1 µA	400 Ω (@1 kHz)	150 fA/√Hz (@1 kHz)
100 k	±100 µA	±10 µA	300 Ω (@1 kHz)	750 fA/√Hz (@1 kHz)
10 k	±1 mA	±100 µA	10 Ω (@1 kHz)	6 pA/√Hz (@1 kHz)

* Note 1: When input: open, input: front, filter setting: 300 µs (10 G V/A), 30 µs (1 G V/A to 10 kV/A), with no additional input capacitance.

■ Current suppression section

Range		6 ranges (8 nA, 80 nA, 800 nA, 8 µA, 80 µA, 800 µA) or OFF
Setting range	8 nA range	−8.000 nA to +8.000 nA setting resolution 1 pA
	80 nA range	−80.00 nA to +80.00 nA setting resolution 10 pA
	800 nA range	−800.0 nA to +800.0 nA setting resolution 100 pA
	8 µA range	−8.000 µA to +8.000 µA setting resolution 1 nA
	80 µA range	−80.00 µA to +80.00 µA setting resolution 10 nA
	800 µA range	−800.0 µA to +800.0 µA setting resolution 100 nA
Setting accuracy (Supplementary value)	8 nA range	± (| 3.0% of setting | + 0.15% of range)
	80 nA range	± (| 1.5% of setting | + 0.15% of range)
	800 nA range	± (| 0.8% of setting | + 0.15% of range)
	8 µA range and higher	± (| 0.6% of setting | + 0.15% of range)

*Note: Auto suppression function is available to automatically select and set the current suppression range and current value required to cancel the input current.

■ Amplification section

Gain and accuracy (DC)		
Setting (V/A)	Output amplifier gain setting ×1	Output amplifier gain setting ×10
10 G	1×10^{10} ±1.0%	1×10^{11} ±1.0%
1 G	1×10^{9} ±1.0%	1×10^{10} ±1.0%
100 M	1×10^{8} ±0.5%	1×10^{9} ±0.5%
10 M	1×10^{7} ±0.3%	1×10^{8} ±0.3%
1 M	1×10^{6} ±0.25%	1×10^{7} ±0.25%
100 k	1×10^{5} ±0.25%	1×10^{6} ±0.25%
10 k	1×10^{4} ±0.25%	1×10^{5} ±0.25%

Frequency characteristics (When output amplifier gain: ×1, filter: OFF, with no additional input capacitance)			
Setting (V/A)	within +0.5 dB / −3 dB	Response speed*2 (Supplementary value)	Reference frequency
10 G	DC to 14 kHz	25 µs	1 Hz
1 G	DC to 70 kHz	5 µs	10 Hz
100 M	DC to 175 kHz	2 µs	
10 M	DC to 350 kHz	1 µs	
1 M	DC to 500 kHz	0.7 µs	
100 k			
10 k			

Output amplifier gain		Switchable between x1 and x10, gain of the converted current-voltage
Filter	Setting range	Response speed (rise time): 1 µs to 300 ms, 1 to 3 sequences, or OFF
	Setting accuracy	Within ±20% of set time (10% to 90% of rise time) (Supplementary value)
	Filter characteristics	Low-pass filter (LPF), linear phase type
	Attenuation slope	12 dB/oct
Input/output phase		Reverse phase (When current flows into the input connector, output has negative potential.)

* Note 2: Rise time of the square wave output waveform (10% to 90%).

Option

Rack mount brackets (Single-unit, inch)
Rack mount brackets (Double-unit, inch)
Rack mount brackets (Single-unit, metric)
Rack mount brackets (Double-unit, metric)

■ Output section

Output type	DC coupling unbalanced output
Output connectors	Provided on front and rear panels. Same signal is output to isolated BNC receptacle connectors on front and rear panels.
Maximum output voltage	±10 V (no load)
Maximum output current	±10 mA, Total current of front and rear connectors.
Output impedance	50 Ω (Supplementary value)
Output offset voltage	within ±30 mV (Gain setting: 10 G V/A) within ±20 mV (Gain setting: 10 k to 1 G V/A) (input: open, current suppression: OFF, output gain: ×1)

■ DC bias voltage output section

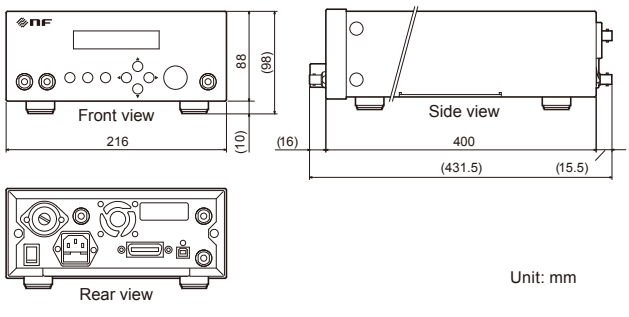
Output type	DC coupling unbalanced output
Output connectors	Provided on front and rear panels. Same signal is output to isolated BNC receptacle connectors on front and rear panels.
Setting range	−8.000 V to +8.000 V, setting resolution: 0.001 V
Setting accuracy	± (|1.0% of setting| +20 mV) (no load)
Maximum output current	±2 mA, Total current of the front and rear connectors.
Output impedance	50 Ω (Supplementary value)

*Note: DC bias voltage polarity is reversed when output.
Example: With a +1.000 V setting, the DC bias voltage output at the BNC connector is −1.000 V.

■ General

Display		Monochrome LCD, with 3-level backlight brightness setting (including OFF)
Setting memory		10 sets (1 set is fixed for use by factory default settings)
Input and output ground		Input (CURRENT INPUT), output (INVERTING OUTPUT), bias output (INVERTING BIAS OUTPUT) signal grounds are insulated from the chassis. (Signal grounds are common.) Breakdown voltage between signal ground and chassis: 42 Vpk maximum (DC + AC peak)
External control		GPIB: IEEE488.1 USB: USB 1.1 full speed, device class CDC *Note: USB driver can be downloaded from our website.
Power supply		100/120/220/240 VAC ±10% (250 V or less) 50 Hz/60 Hz ±2 Hz, Power consumption: 40 VA or less Overvoltage category: II
Temperature and humidity range	Rated performance	23°C ± 5°C, 5% to 85% RH (Absolute humidity: 1 to 25 g/m³, non-condensing)
	Operation	0°C to +40°C, 5% to 85% RH (Absolute humidity: 1 to 25 g/m³, non-condensing)
	Strorage	−10°C to +50°C, 5% to 95% RH (Absolute humidity: 1 to 29 g/m³, non-condensing)
Dimensions		216 (W) × 88 (H) × 400 (D) mm (excluding protrusions)
Weight		Approx. 5.0 kg (excluding accessories)
Accessories		Power cord: 1, fuse: 1, instruction manual: 1

■ Dimensions



*Note: The contents of this catalog are current as of July 4, 2019.
- Product appearance and specifications are subject to change without notice.
- Before purchase, contact us to confirm the latest specifications, price and delivery date.

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