HIOKI

2004

CLAMP SENSOR SERIES

CLAMP SENSOR

Wide-band Models from DC to 100 MHz

3276 CLAMP ON PROBE

New

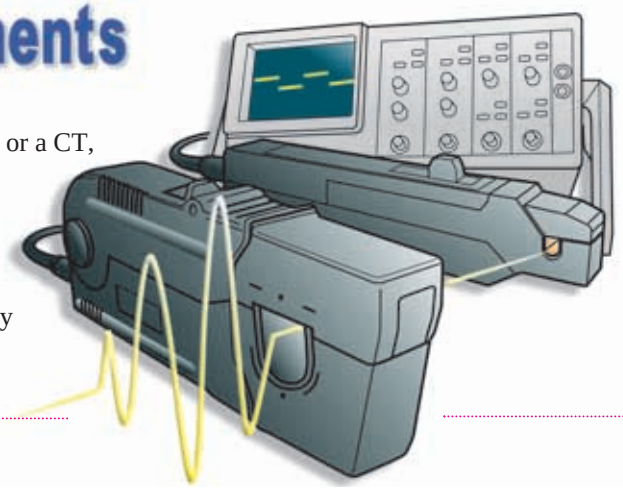
ISO14001
JQA-E-90091

http://www.hioki.co.jp/

HIOKI company overview, new products, environmental considerations and other information are available on our website.

3273-50 to 3276 CLAMP ON PROBE

From High Sensitivity (High S/N Ratio) to Large Current Measurements

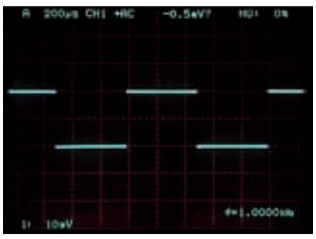


Because current measurement requires the insertion of a shunt or a CT, the task often becomes difficult due to breaks in the electrical path. The 3273-50 - 3276 CLAMP ON PROBEs only need to be connected directly into the BNC input on waveform observation equipment such as an oscilloscope or a recorder. Then simply clamp onto the conductor to be measured to easily observe current waveforms under a wide bandwidth and high sensitivity conditions.

Important Characteristics

3273-50 DC to 50 MHz 3273-50

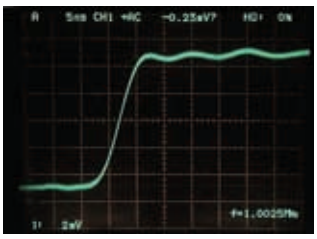
■ Square wave response



Input: 1 kHz square wave 200 mAp-p
(Oscilloscope bandwidth 400 MHz)

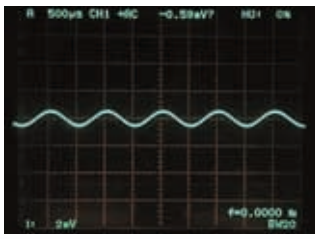
Input: 1 MHz square wave 200 mAp-p
(Oscilloscope bandwidth 400 MHz)

■ Transient response



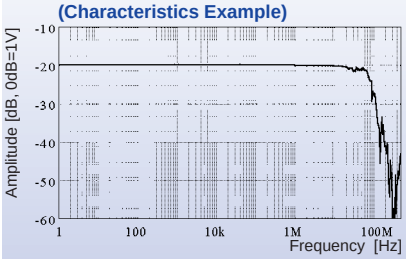
Input: 100 mAp-p
(Oscilloscope bandwidth 400 MHz)

■ Low-current measurement

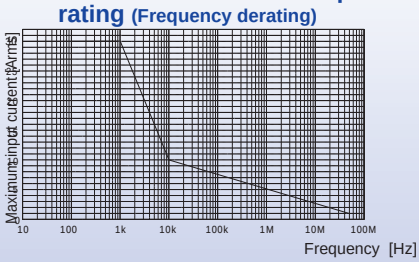


Input: 1 kHz sine wave 10 mAp-p
(Oscilloscope bandwidth 20 MHz)

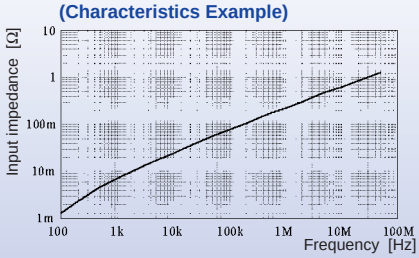
■ 1. Frequency response (Characteristics Example)



■ 2. Continuous maximum input rating (Frequency derating)

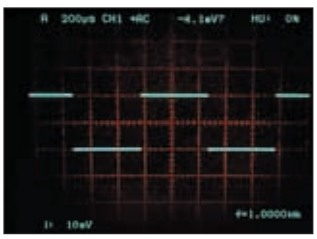


■ 3. Input impedance (Characteristics Example)

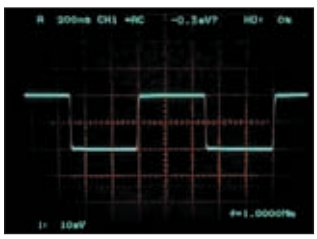


3276 DC to 100 MHz 3276

■ Square wave response

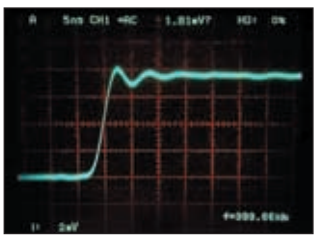


Input: 1 kHz square wave 200 mAp-p
(Oscilloscope bandwidth 400 MHz)



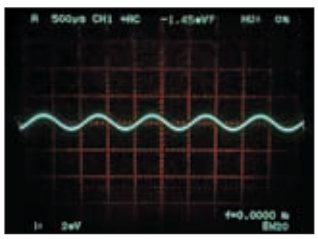
Input: 1 MHz square wave 200 mAp-p
(Oscilloscope bandwidth 400 MHz)

■ Transient response



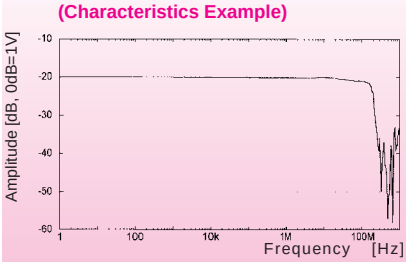
Input: 100 mAp-p
(Oscilloscope bandwidth 400 MHz)

■ Low-current measurement

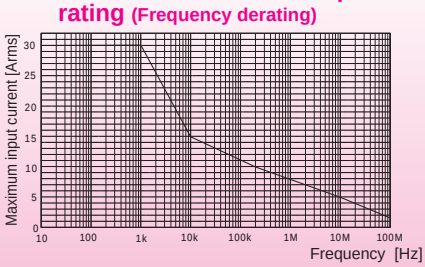


Input: 1 kHz sine wave 10 mAp-p
(Oscilloscope bandwidth 20 MHz)

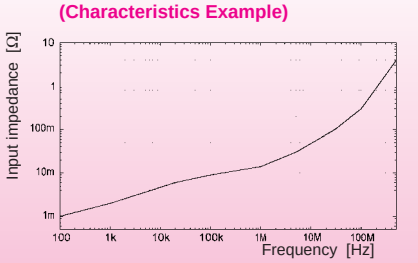
■ 1. Frequency response (Characteristics Example)



■ 2. Continuous maximum input rating (Frequency derating)



■ 3. Input impedance (Characteristics Example)

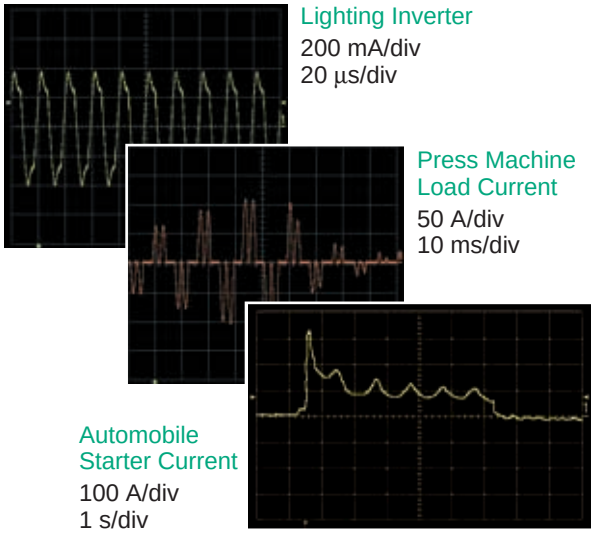


3273-50 to 3276 CLAMP ON PROBE

Features

- High S/N ratio: ideal for measuring milliampere waveforms (Model 3273-50)
- Capable of waveform monitoring from wide band and minute currents to large currents (Model 3274)
- Permits waveform observation of large current of up to 500 Arms (Model 3275)
- Wide-band waveform observations, from DC to 100 MHz (Model 3276)
- Direct connection to BNC input of oscilloscope
- Highly accurate current detection
- Newly developed indium-antimony (InSb) thin-film Hall element
- Simple overload protector prevents damage due to overheating
- Easy measurement
- The 3273-50 includes a soft case, the 3274 / 3275 /3276 includes a hard carrying case

■ Waveform Example



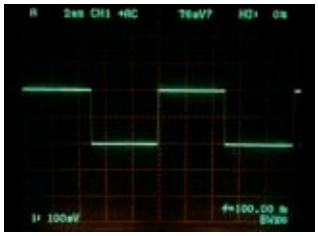
Lighting Inverter
200 mA/div
20 µs/div

Press Machine Load Current
50 A/div
10 ms/div

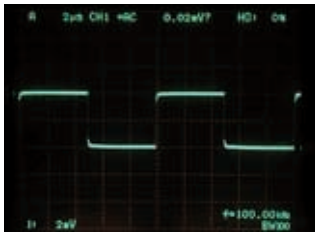
Automobile Starter Current
100 A/div
1 s/div

3274 DC to 10 MHz 3274

■ Square wave response

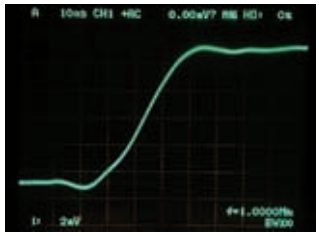


Input: 100 Hz square wave 20 Ap-p
(Oscilloscope bandwidth 100 MHz)



Input: 100 kHz square wave 400 mAp-p
(Oscilloscope bandwidth 100 MHz)

■ Transient response

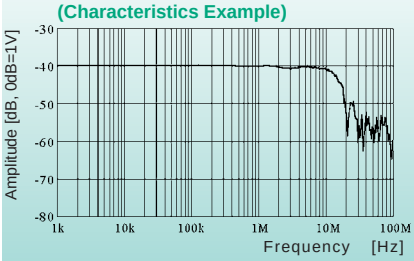


Input: 1 Ap-p
(Oscilloscope bandwidth 100 MHz)

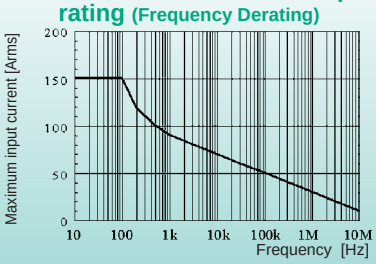
■ Low-current measurement

Input: 1 kHz sine wave 50 mAp-p
(Oscilloscope bandwidth 100 MHz)

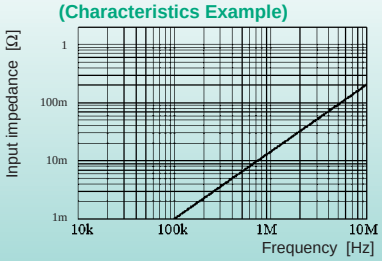
■ 1. Frequency response (Characteristics Example)



■ 2. Continuous maximum input rating (Frequency Derating)

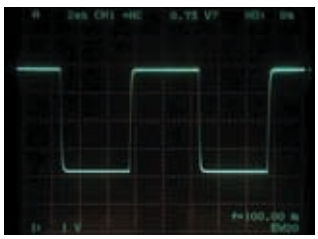


■ 3. Input impedance (Characteristics Example)



3275 DC to 2 MHz 3275

■ Square wave response



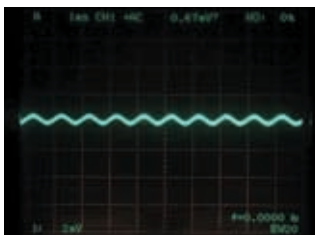
Input: 100 Hz square wave 300 Ap-p
(Oscilloscope bandwidth 20 MHz)

Input: 10 kHz square wave 400 mAp-p
(Oscilloscope bandwidth 20 MHz)

■ Transient response

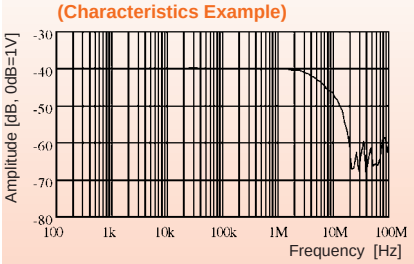
Input: 1 Ap-p
(Oscilloscope bandwidth 20 MHz)

■ Low-current measurement

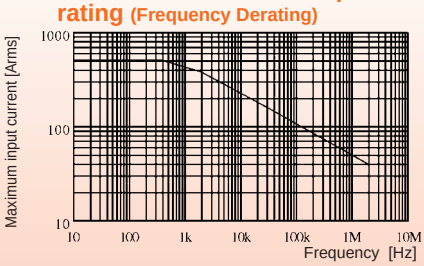


Input: 1 kHz sine wave 50 mAp-p
(Oscilloscope bandwidth 20 MHz)

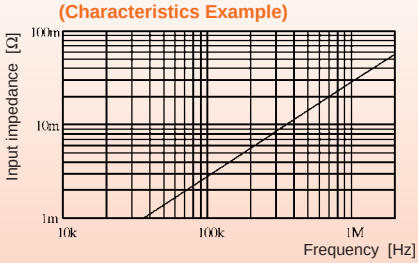
■ 1. Frequency response (Characteristics Example)



■ 2. Continuous maximum input rating (Frequency Derating)



■ 3. Input impedance (Characteristics Example)



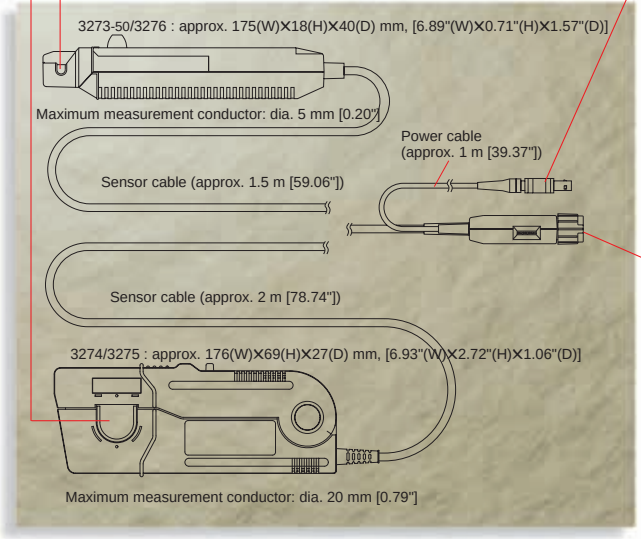
3273-50 to 3276 CLAMP ON PROBE

■ 3273-50 / 3276 Specifications (accuracy is guaranteed at 23±3˚C [73±5˚F] after the power has been on for 30 minutes)

		3273-50	3276
Frequency bandwidth		DC to 50 MHz (-3 dB) * See Fig. 1 on page 1.	DC to 100 MHz (-3 dB) * See Fig. 1 on page 1.
Rise time		7 ns or less	3.5 ns or less
Continuous maximum input range		30 Arms * Frequency derating see Fig. 2 on page 1.	30 Arms * Frequency derating see Fig. 2 on page 1.
Maximum peak current value		Non-continuous 50 Apeak	Non-continuous 50 Apeak
Output voltage rate		0.1 V/A	0.1 V/A
Amplitude accuracy		±1.0% rdg. ±1 mV (0 to 30 Arms / DC, 45 to 66 Hz) ±2.0% rdg. (30 Arms to 50 Apeak / DC, 45 to 66 Hz)	±1.0% rdg. ±1 mV (0 to 30 Arms / DC, 45 to 66 Hz) ±2.0% rdg. (30 Arms to 50 Apeak / DC, 45 to 66 Hz)
Noise		2.5 mArms or less (measured with 20 MHz bandwidth equipment)	2.5 mArms or less (measured with 20 MHz bandwidth equipment)
Input impedance		* See Fig. 3 on page 1.	* See Fig. 3 on page 1.
Sensitivity temperature characteristics		Within ±2% (At 50 Hz/30 Arms input, 0 to 40˚C [32 to 104˚F])	Within ±2% (from 0 to 40 ˚C [32 to 104 ˚F])
Maximum rated power		5.6 VA (Input within the maximum input range.)	5.3 VA (Input within the maximum input range.)
Power supply voltage		±12 V ±0.5 V	±12 V ±0.5 V
Operating temperature and humidity		0 to 40˚C [32 to 104˚F] , 80% rh or less (no condensation)	0 to 40˚C [32 to 104˚F] , 80% rh or less (no condensation)
Storage temperature and humidity		-10 to 50˚C [14 to 122˚F] , 80% rh or less (no condensation)	-10 to 50˚C [14 to 122˚F] , 80% rh or less (no condensation)
Effect of external magnetic fields		Max. 20 mA (equivalent) (DC and 60 Hz, Magnetic field of 400 A/m)	Max. 5 mA (equivalent) (DC and 60 Hz, Magnetic field of 400 A/m)
Max. rated voltage to earth		300 V, CAT-I (insulated conductor)	300 V, CAT-I (insulated conductor)
Measurement conductor		Diameter max. 5 mm [0.20"]	Diameter max. 5 mm [0.20"]
Dimensions and mass		Sensor: approx. 175(W)×18(H)×40(D) mm; 230 g [6.89"(W)×0.71"(H)×1.57"(D), 8.1 oz.] Termination unit: approx. 27(W)×55(H)×18(D) mm [1.06"(W)×2.17"(H)×0.71"(D)]	Sensor: approx. 175(W)×18(H)×40(D) mm; 240 g [6.89"(W)×0.71"(H)×1.57"(D), 8.5 oz.] Termination unit: approx. 27(W)×55(H)×18(D) mm [1.06"(W)×2.17"(H)×0.71"(D)]
Cable length		Sensor cable: approx. 1.5 m [59.06"] (BNC connector) Power cable: approx. 1 m [39.37"]	Sensor cable: approx. 1.5 m [59.06"] (BNC connector) Power cable: approx. 1 m [39.38"]
Supplied accessories		Soft case ×1	Hard case×1
Applicable standards	Safety standards	EN 61010-2-031: 1994, EN 61010-2-032: 1995 Measurement category I (anticipated transient overvoltage 1500 V), Pollution Degree 2	EN 61010-2-032:2002 Measurement category I (anticipated transient overvoltage 1500 V), Pollution Degree 2
	EMC	EN 61326:1997+A1:1998+A2:2001 EN 61000-3-2: 2000 EN 61000-3-3: 1995+A1:2001	EN 61326:1997+A1:1998+A2:2001 EN 61000-3-2: 2000 EN 61000-3-3: 1995+A1:2001

Sensor head

Composed of molded parts, ferrite and Hall elements. The thin-film of the Hall element especially improves detection sensitivity to realize wider bands and high sensitivity monitoring.



Power supply plug

Connects to the FET probe power supply outlet of an oscilloscope or to the optional 3269 / 3272 power supply unit.

(Provided that connector type, pin assignment, voltage, and capacity rating match, the 3273-50 to 3276 can be powered also from another source. For operation safety, be sure to refer to the specifications to ensure an exact match.)

Power supply plug pin assignment (Plug as seen from the front)

1 : Not connected
2 : GND
3 : V- (-12V)
4 : V+ (+12V)

* Connector type: LEMO inc./ FFA.0S.304.CLAC42Z

BNC output connector

Can be connected directly to the BNC input of an oscilloscope or level recorder or similar device.

Output voltage rate: 0.1 V/A (3273-50 / 3276)
0.01 V/A (3274 / 3275)

(Use only equipment with an input impedance of 1 MΩ or more.)

3274

3275

3273-50 to 3276 CLAMP ON PROBE

■ 3274/3275 Specifications (accuracy is guaranteed at 23±3˚C [73±5˚F] after the power has been on for 30 minutes)

		3274	3275
Frequency bandwidth		DC to 10 MHz (-3 dB) * See Fig. 1 on page 2.	DC to 2 MHz (-3 dB) * See Fig. 1 on page 2.
Rise time		35 ns or less	175 ns or less
Continuous maximum input range		150 Arms * Frequency derating see Fig. 2 on page 2.	500 Arms * Frequency derating see Fig. 2 on page 2.
Maximum peak current value		Non-continuous 300 Apeak 500 A peak at pulse width of ≤ 30 ms	Non-continuous 700 Apeak
Output voltage rate		0.01 V/A	0.01 V/A
Amplitude accuracy		±1.0% rdg. ±1 mV (0 to 150 Arms / DC, 45 to 66 Hz) ±2.0% rdg. (150 Arms to 300 Apeak / DC, 45 to 66 Hz)	±1.0% rdg. ±5 mV (0 to 500 Arms / DC, 45 to 66 Hz) ±2.0% rdg. (500 Arms to 700 Apeak / DC, 45 to 66 Hz)
Noise		25 mArms or less (measured with 20 MHz bandwidth equipment)	25 mArms or less (measured with 20 MHz bandwidth equipment)
Input impedance		* See Fig. 3 on page 2.	* See Fig. 3 on page 2.
Sensitivity temperature characteristics		Within ±2% (At 55 Hz/150 A input, 0 to 40˚C [32 to 104˚F])	Within ±2% (At 50 Hz/500 A input, 0 to 40˚C [32 to 104˚F])
Maximum rated power		5.5 VA (Input within the maximum input range.)	7.2 VA (Input within the maximum input range.)
Power supply voltage		±12 V ±1 V	±12 V ±0.5 V
Operating temperature and humidity		0 to 40˚C [32 to 104˚F] , 80% rh or less (no condensation)	0 to 40˚C [32 to 104˚F] , 80% rh or less (no condensation)
Storage temperature and humidity		-10 to 50˚C [14 to 122˚F] , 80% rh or less (no condensation)	-10 to 50˚C [14 to 122˚F] , 80% rh or less (no condensation)
Effect of external magnetic fields		Max. 150 mA (equivalent) (DC and 60 Hz, Magnetic field of 400 A/m)	Max. 800 mA (equivalent) (DC and 60 Hz, Magnetic field of 400 A/m)
Max. rated voltage to earth		600 V CAT-Ⅱ, 300 V CAT-Ⅲ (insulated conductor)	600 V CAT-Ⅱ, 300 V CAT-Ⅲ (insulated conductor)
Measurement conductor		Diameter max. 20 mm [0.79"]	Diameter max. 20 mm [0.79"]
Dimensions and mass		Sensor: approx. 176(W)×69(H)×27(D) mm; 500 g [6.93"(W)×2.72"(H)×1.06"(D), 17.6 oz.] Termination unit: approx. 27(W)×55(H)×18(D) mm [1.06"(W)×2.17"(H)×0.71"(D)]	Sensor: approx. 176(W)×69(H)×27(D) mm; 520 g [6.93"(W)×2.72"(H)×1.06"(D), 18.3 oz.] Termination unit: approx. 27(W)×55(H)×18(D) mm [1.06"(W)×2.17"(H)×0.71"(D)]
Cable length		Sensor cable: approx. 2 m [78.74"] (BNC connector) Power cable: approx. 1 m [39.37"]	Sensor cable: approx. 2 m [78.74"] (BNC connector) Power cable: approx. 1 m [39.37"]
Supplied accessories		Hard case×1	Hard case×1
Applicable standards	Safety standards	EN 61010-2-031: 1994, EN 61010-2-032: 1995 Overvoltage category Ⅱ, Ⅲ (anticipated transient overvoltage 4000 V), Pollution Degree 2	EN 61010-2-031: 1994, EN 61010-2-032: 1995 Overvoltage category Ⅱ, Ⅲ (anticipated transient overvoltage 4000 V), Pollution Degree 2
	EMC	EN 61326-1: 1997+A1:1998 EN 61000-3-2: 1995+A1:1998+A2: 1998 EN 61000-3-3: 1995	EN 61326-1: 1997+A1:1998 EN 61000-3-2: 1995+A1:1998+A2: 1998 EN 61000-3-3: 1995

■ 3269/3272 POWER SUPPLY

Dedicated power supplies for the Clamp Sensor series-ideal when power is not available from the oscilloscope, or when using the probes for common measurement applications.

3272

*The total current output of the 3272 is 600mA (for two channels). Depending on the current of the measurement object, simultaneous use of both channels may not be available.

3269

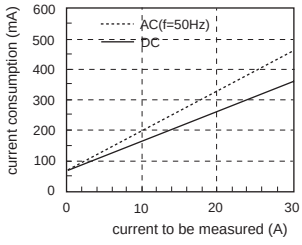
The 3269 is capable of powering 4 channels of high current sensors simultaneously.

■ 3269 / 3272 Specifications

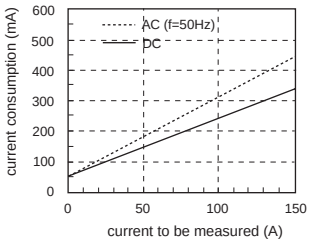
	3272	3269
Compatible sensors	3273-50/3274/3275/3276 CLAMP ON PROBE	
Number of power	2*	4
Output voltage	±12 V ±0.5 V	
Rated output current	600 mA (sum total of all channels and all output voltage)	±2.5 A (sum total of all channels)
Power requirements (50/60 Hz)	100V AC±10% (Specify 120, 220 or 240V power supply when ordering.)	AC100 to 240 V±10%
Maximum rated power	20 VA	170 VA
Dimensions	Approx. 73W×110H ×186D mm	Approx. 80W×119H ×200D mm
Mass	Approx. 1.1 kg	Approx. 1.1 kg
Accessories	Power cord, Spare fuse	

■ Current consumption of the 3273-50 to 3276 (sum of real values).

[3273-50]



[3274]



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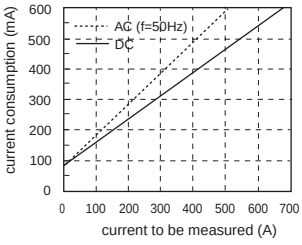

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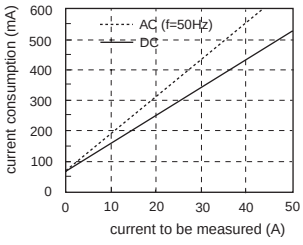


9274/9276 CLAMP ON AC/DC SENSOR

DC to MHz Range

A wide range of current waveforms from DC to MHz can be observed at high precision. The 3270 is a DC/AC amplifier that can be connected to the 9274/9276 to enable current waveforms to be recorded and easily observed by connecting a recorder or oscilloscope.

● Incorporates our custom-developed InSb thin-film Hall element

The high degree of electron mobility in InSb makes it ideal for our highly sensitive thin-film Hall element. We have adapted these qualities for measuring a wide range of current, as well as for very low levels.

The probe cannot be used alone: the 3270 is required.

■ 9274/9276 CLAMP ON AC/DC SENSOR Specifications

(Accuracy is guaranteed at 23±3˚C [73±5˚F] after the power has been on for 30 minutes)

	9274	9276
Rated current	20 A (AC+DC)	150 A (AC+DC)
Output voltage	2 V/20 A (AC+DC)	1.5 V/150 A (AC+DC)
Output resistance	50 Ω	
Input impedance	0.1 mΩ or less at 55Hz	0.02 mΩ or less at 55Hz
Continuous maximum input range	20 A	150 A
Maximum peak current value	50 A non-continuous (peak value)	400 A non-continuous (peak value)
Amplitude accuracy	±0.5% rdg. ±0.1% f.s. (DC and 45 to 66Hz)	
Phase accuracy	±0.2˚ (45 to 66Hz)	
Frequency bandwidth (-3dB)	DC to 10 MHz	DC to 1 MHz
Sensitivity temperature characteristics (0 to 40˚C)	±0.1% f.s./˚C or less	±0.05% f.s./˚C or less
Power consumption	1.5 VA Max. (at rated input)	2 VA Max. (at rated input)
Power supply voltage	±12 V ±1 V	
Operating temperature and humidity	0 to 40˚C [32 to 104˚F] , 80% RH or less (no condensation)	
Storage temperature and humidity	-10 to 50˚C [14 to 122˚F] , 80% RH or less (no condensation)	
Effect of external magnetic fields (in 400 A/m AC)	20 mA equivalent maximum	1 A equivalent maximum
Influence of conductor position	within ±0.2%	within ±1%
Withstand voltage	2200 V AC for 1 minute (electrical circuits to case)	
Insulation resistance	At least 100 MΩ at 500 V DC (electrical circuits to case)	
Max. rated voltage to earth	600 V peak (insulated wire)	
Measurement conductor	Diameter max. 5 mm [0.20"]	Diameter max. 20 mm [0.79"]
Cable length	Approx. 1.5 m [59.06"]	
Dimensions and mass	Approx. 175(W)×40(H)×18(D) mm, 230 g [6.9"(W)×1.6"(H)×0.7"(D), 8.1 oz.]	Approx. 145(W)×60(H)×33(D) mm, 300 g [5.9"(W)×2.4"(H)×1.3"(D), 10.6 oz.]
Supplied accessories	Soft case	Carrying case

■ 3270 Specifications

(Accuracy is guaranteed at 23±3˚C [73±5˚F] after the power has been on for 30 minutes)

Applicable sensor : 9274/9276

Measurement ranges : 0.1/0.2/0.5/1/2/5/10A (using 9274)
1/2/5/10/20/50/100A (using 9276)

Output voltage : 1 V per range

Functions : Zero adjust, degaussing, filter, coupling functions and overload indication

Amplitude accuracy : ±0.5% rdg. ±0.05% f.s.(DC and 45 to 66Hz) (input up to 100% of range)
±1.2%rdg. (DC and 45 to 66Hz) (input up to 200% of range)

Frequency band width : DC; DC to 10 MHz (-3dB)
AC; 0.2 Hz to 10 MHz (-3dB)

Crest factor : Not more than 5.5 of range

Output resistance : 50 Ω

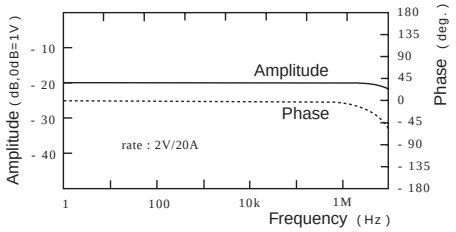
Power supply : 100V AC (50/60Hz), (120, 220, and 240V require specification)

Power consumption : 15 VA max.

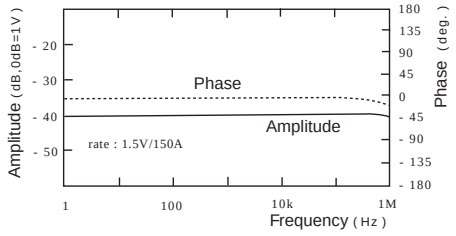
Dimensions and mass : Approx. 80(W)×125(H)×260(D) mm, 1750 g [3.15"(W)×4.92"(H)×10.23"(D), 61.7 oz.]

Accessories : Power cord, spare fuse, 9177 input/output cord

9274 Frequency characteristics



9276 Frequency characteristics



9277 to 9279 UNIVERSAL CLAMP ON CT

DC to 100 kHz (9277/9278)

When used together with the 9555 SENSOR UNIT, current waveforms can be observed from DC to 100 kHz (Models 9277/9278). Controlled zero drift allows for stable, long-duration measurements.

■ 9277 to 9279 UNIVERSAL CLAMP ON CT Specifications

	9277	9278	9279
Rated current (AC/DC)	20 A	200 A	500 A
Output voltage (AC/DC)	2 V f.s.		
Accuracy (23 ± 3˚C) [73 ± 5˚F] DC and 45Hz to 66Hz	After demagnetization and at least 30 min. warm-up Amplitude: ±0.5% rdg. ±0.05% f.s. Phase:within ±0.2˚(DC has no provision)		
Frequency characteristics (amplitude) (deviation from accuracy)	DC to 1 kHz : within ±1.0% 1 k to 50 kHz : within ±2.5% 50 k to 100 kHz : within ±5%		DC to 1 kHz: within ±1.0% 1 k to 10 kHz: within ±2.5% 10 k to 20 kHz: within ±5%
Frequency characteristics (phase) (DC has no provision)	DC to 1 kHz : within ±0.5˚ 1 k to 50 kHz : within ±2.5˚ 50 k to 100 kHz : within ±5.0˚		DC to 1 kHz: within ±0.5˚ 1 k to 10 kHz: within ±2.5˚ 10 k to 20 kHz: within ±5.0˚
Output resistance	50Ω		
Input resistance(DC)	0.05 mΩ or less	0.002 mΩ or less	0.001 mΩ or less
The maximum permissible input range(DC to 3kHz)*1	50 Arms (75 Apeak)	350 Arms (500 Apeak)	650 Arms (920 Apeak)
Temperature characteristics (0 to 40˚C)	Sensitivity: within ±0.05% rdg./˚C Offset: within ±0.005% f.s./˚C		
Operating temperature and humidity	0 to 40˚C [32 to 104˚F] , 80% RH or less (no condensation)		
Effect of external magnetic fields*2	Max. 0.2 A	Max. 1 A	Max. 2 A
Influence of conductor position	within ±0.5% (DC, 55 Hz)	within ±1.5% (DC, 55 Hz)	
Withstand voltage	2200 V AC for 1 minute (electrical circuits to case, electrical circuits to core)		
Insulation resistance	At least 100 MΩ at 500V DC (electrical circuits to case, electrical circuits to core)		
Max. rated voltage to earth	600 Vrms (850 Vpeak)insulated wire		
Measurement conductor	Diameter max.20 mm [0.79"]		Diameter max.40 mm [1.57"]
Cable length	Approx. 1.5m [59.06"]		
Power supply voltage	±12 V to ±15 V		
Power consumption	3.6 W max.	7.2 W max.	
Dimensions and mass	Approx. 176(W)×63(H)×34(D) mm; 430 g [6.92"(W)×2.48"(H)×1.34"(D), 15.2 oz.]		Approx. 220(W)×103(H)×43.5(D) mm; 860 g [8.66"(W)×4.06"(H)×1.71"(D), 30.3 oz.]
Supplied accessories	9375 Carrying case		

*1 Maximum non-destructive input above 3 kHz is specified separately.
*2 DC and 55 Hz, Magnetic field of 400A/m.

The probe cannot be used alone: the 9555 is required.

■ 9555 Specifications

Output voltage : 2 Vf.s.
Power capacity : ±12 V, ±0.6 A Max.
Operating temperature and humidity : 0 to 40˚C [32 to 104˚F] , 80% RH or less (no condensation)
Storage temperature and humidity : -10 to 50˚C [14 to 122˚F] , 80% RH or less (no condensation)
Power supply : 85 to 250 V AC(47 to 440 Hz)
Power consumption : Approx. 1.7 W (at no load)
Withstand voltage : 1500 V AC for 1 minute (power input to case, power input to core)
Insulation resistance : At least 100 MΩ at 500 V DC (output terminal to core)
Dimensions and mass : Approx. 50(W)×100(H)×180(D) mm, 700g [1.97"(W)×3.93"(H)×7.09"(D), 24.7 oz.]
Accessories : Power cord ×1, 9177 input/output cord×1, spare fuse ×1, rubber foot ×4, rack mounting fittings ×2

9270 to 9272 CLAMP ON SENSOR

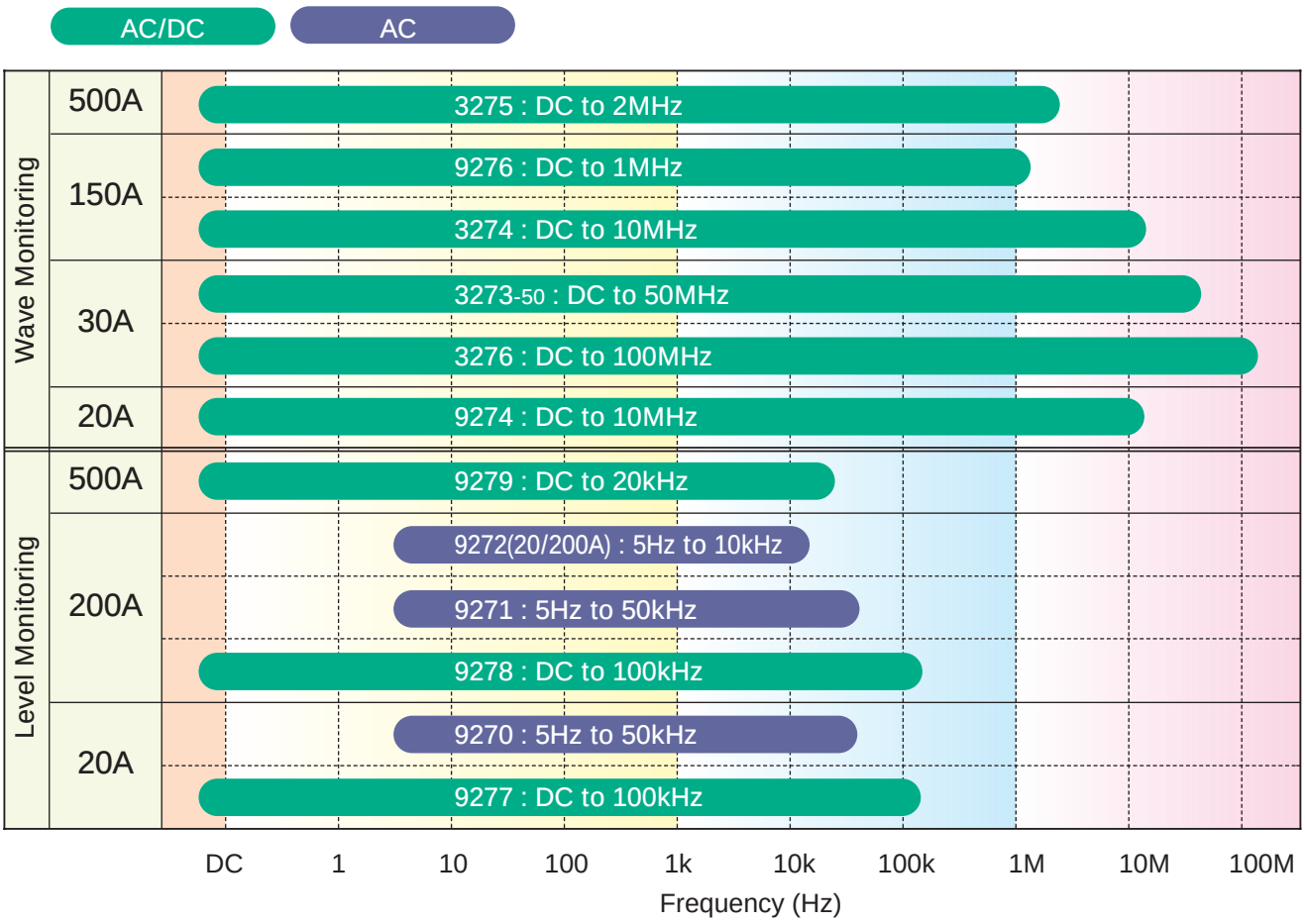
5Hz to 50kHz (9270/9271)

The probe cannot be used alone: the 9555 is required.

■ 9270 to 9272 CLAMP ON SENSOR Specifications

	9270	9271	9272
Rated current	20 A AC	200 A AC	20/200 A AC
Continuous maximum input range	50 Arms	300 Arms	60 Arms/300Arms
Amplitude accuracy	±0.5 %rdg. ±0.05 %f.s. (45 to 66 Hz)		
Phase accuracy	within ±0.2˚ (45 to 66Hz)		
Frequency characteristics (deviation from accuracy)	10 Hz to 30 kHz: ±1.0% 10 Hz to 20 kHz: within ±0.5˚ 5 Hz to 50 kHz: ±2.5% (within ±1.0˚)		10 Hz to 1 kHz: ±1.0% (±0.5˚) 5 Hz to 10 Hz: ±2.5% (±2.0˚)
Output voltage	2 Vf.s. (rated current)		
Max. rated voltage to earth	600 Vrms (insulated wire)		
Measurement conductor	Diameter max. 20 mm [0.79"]		Diameter max. 46 mm [1.81"] 50×20 mm [1.97"×0.79"] bus bar
Cable length	Approx. 3 m [118.11"]		
Power supply voltage	±12V to ±15V		
Dimensions and mass	Approx. 145(W)×60(H)×33(D) mm; 230 g [5.71"(W)×2.36"(H)×1.30"(D), 8.1 oz.]		Approx. 62(W)×174(H)×33(D) mm; 420 g [2.44"(W)×6.85"(H)×1.30"(D), 14.8 oz.]
Supplied accessories	9355 Carrying case		

■ Rated current & Frequency characteristics



⚠ WARNING

1. To avoid short circuits and electric shock accidents when using a clamp-on sensor, use only with power lines carrying voltages within the rating limit of the sensor.
2. To avoid short circuits and electric shock accidents when the clamp-on sensor is open, do not use on bare conductors.

3273-50 CLAMP ON PROBE
3274 CLAMP ON PROBE
3275 CLAMP ON PROBE
3276 CLAMP ON PROBE
9270 CLAMP ON SENSOR
9271 CLAMP ON SENSOR
9272 CLAMP ON SENSOR
9274 CLAMP ON AC/DC SENSOR
9276 CLAMP ON AC/DC SENSOR
9277 UNIVERSAL CLAMP ON CT
9278 UNIVERSAL CLAMP ON CT
9279 UNIVERSAL CLAMP ON CT

■ Option

3269 POWER SUPPLY (for 3273-50 to 3276, 4ch)
3272 POWER SUPPLY (for 3273-50 to 3276, 2ch)
3270 CURRENT MONITOR (for 9274 / 9276)
9555 SENSOR UNIT (for 9270 to 9272 / 9277 to 9279)
9165 CONNECTION CORD (for 3270, BNC-BNC)

3269 3272 3270 9555

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