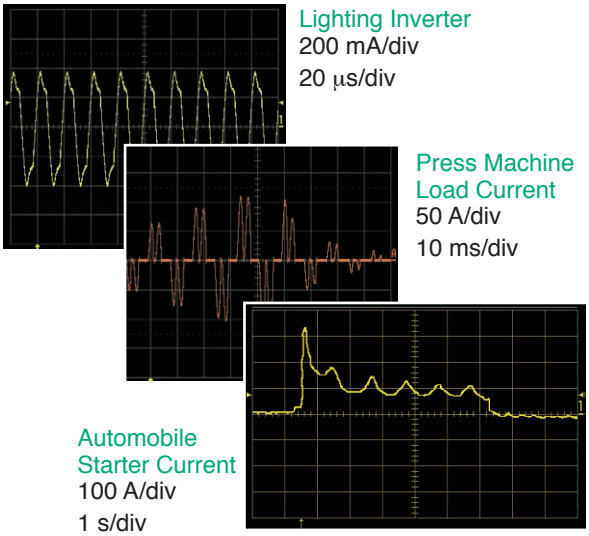
CLAMP ON PROBE 3273-50 to 3276

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



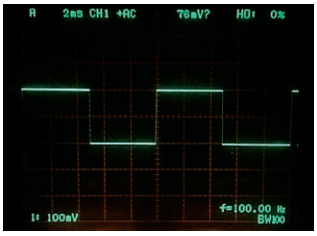
Lighting Inverter
200 mA/div
20 μs/div

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

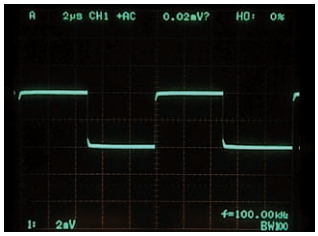
Automobile Starter Current
100 A/div
1 s/div

3274 DC to 10 MHz 3274

■ Square wave response

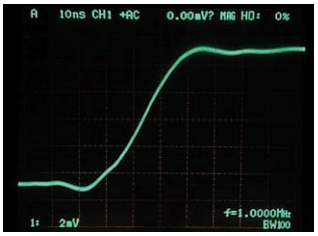


Input: 100 Hz square wave 20 Ap-p
(Oscilloscope bandwidth 100 MHz)



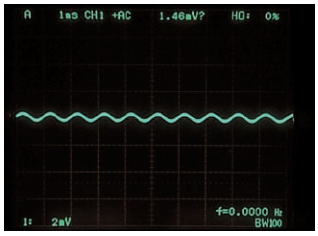
Input: 100 kHz square wave 400 mAp-p
(Oscilloscope bandwidth 100 MHz)

■ Transient response



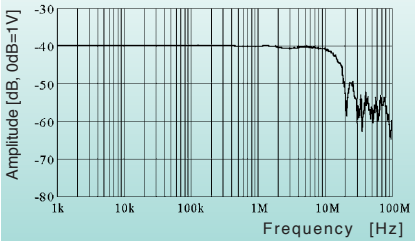
Input: 1 Ap-p
(Oscilloscope bandwidth 100 MHz)

■ Low-current measurement

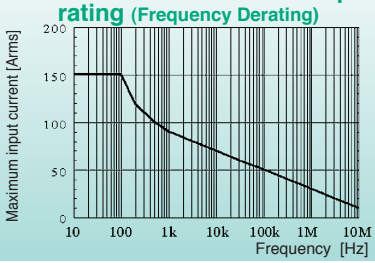


Input: 1 kHz sine wave 50 mAp-p
(Oscilloscope bandwidth 100 MHz)

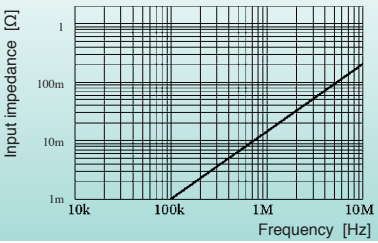
■ 1. Frequency response (Characteristics Example)



■ 2. Continuous maximum input rating (Frequency Derating)

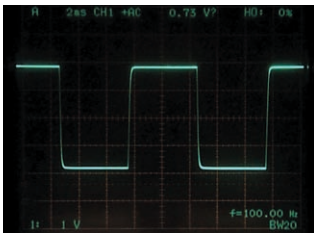


■ 3. Input impedance (Characteristics Example)

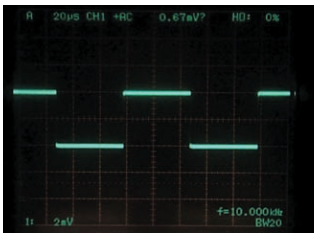


3275 DC to 2 MHz 3275

■ Square wave response

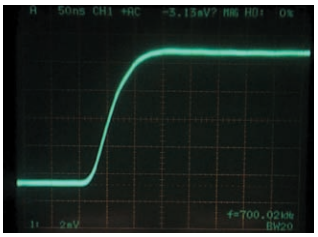


Input: 100 Hz square wave 300 Ap-p
(Oscilloscope bandwidth 20 MHz)



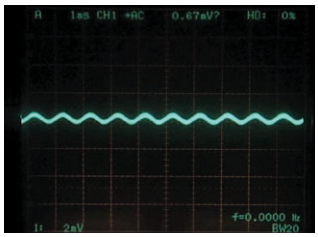
Input: 10 kHz square wave 400 mAp-p
(Oscilloscope bandwidth 20 MHz)

■ Transient response



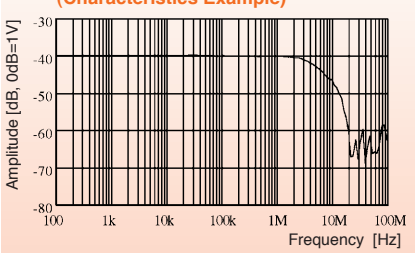
Input: 1 Ap-p
(Oscilloscope bandwidth 20 MHz)

■ Low-current measurement

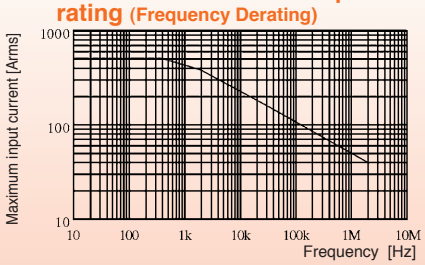


Input: 1 kHz sine wave 50 mAp-p
(Oscilloscope bandwidth 20 MHz)

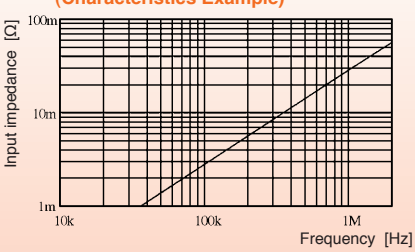
■ 1. Frequency response (Characteristics Example)



■ 2. Continuous maximum input rating (Frequency Derating)



■ 3. Input impedance (Characteristics Example)




3274


3275

CLAMP ON PROBE 3273-50 to 3276

■ 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 Overvoltage category Ⅱ, Ⅲ (anticipated transient overvoltage 4000 V), Pollution Degree 2	EN 61010 Overvoltage category Ⅱ, Ⅲ (anticipated transient overvoltage 4000 V), Pollution Degree 2
	EMC	EN 61326 EN 61000-3-2 EN 61000-3-3	EN 61326 EN 61000-3-2 EN 61000-3-3

■ POWER SUPPLY 3269 / 3272

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

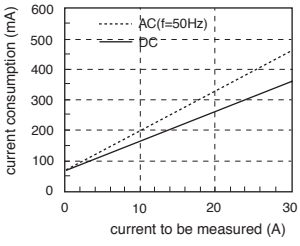
The 3269 is capable of powering 4 channels of high current sensors simultaneously.

■ 3269 / 3272 Specifications

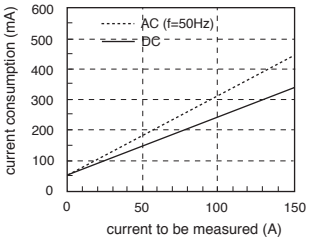
	3272	3269
Compatible sensors	3273-50/3274/3275/3276 CLAMP ON PROBE	
Number of power	2*	4
Output voltage	±12 V ±0.5 V	
Rated output current	600 mA (sum total of all channels and all output voltage)	±2.5 A (sum total of all channels)
Power requirements (50/60 Hz)	100V AC±10% (Specify 120, 220 or 240V power 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 (3272 only)	

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

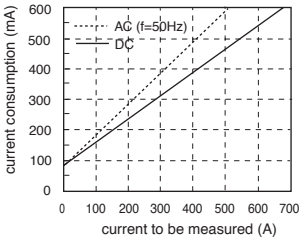
[3273-50]



[3274]



[3275]



[3276]