HIOKI

CLAMP ON PROBE 3270 series
AC/DC CURRENT SENSOR CT6860 series

CLAMP SENSOR

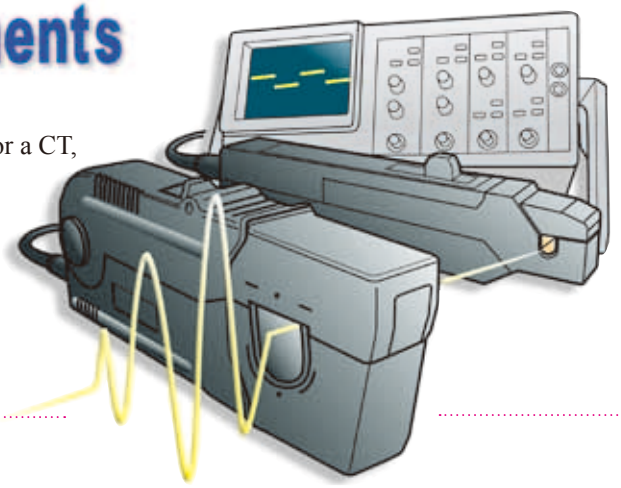
Wide-band Models from DC to 100 MHz

CLAMP ON PROBE 3276

CE

CLAMP ON PROBE 3273-50 to 3276

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

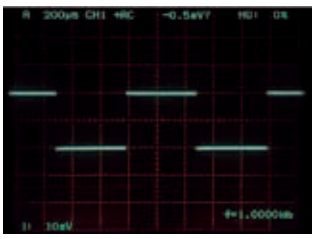


Because current measurement requires the insertion of a shunt or a CT, the task often becomes difficult due to breaks in the electrical path. The 3273-50 - 3276 CLAMP ON PROBEs only need to be connected directly into the BNC input on waveform observation equipment such as an oscilloscope or a recorder.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

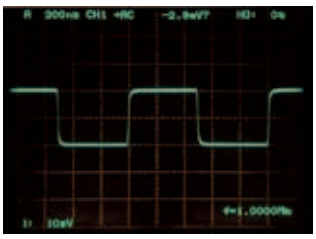
Important Characteristics

3273-50 DC to 50 MHz 3273-50

■ Square wave response

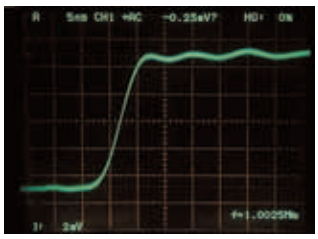


Input: 1 kHz square wave 200 mAp-p
(Oscilloscope bandwidth 400 MHz)



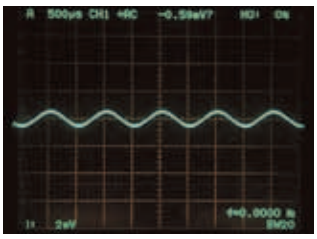
Input: 1 MHz square wave 200 mAp-p
(Oscilloscope bandwidth 400 MHz)

■ Transient response



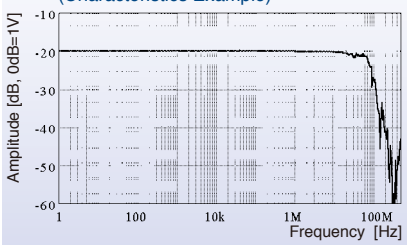
Input: 100 mAp-p
(Oscilloscope bandwidth 400 MHz)

■ Low-current measurement

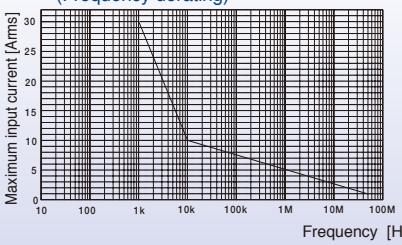


Input: 1 kHz sine wave 10 mAp-p
(Oscilloscope bandwidth 20 MHz)

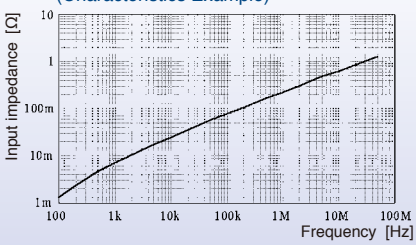
■ 1. Frequency response
(Characteristics Example)



■ 2. Continuous maximum input rating
(Frequency derating)

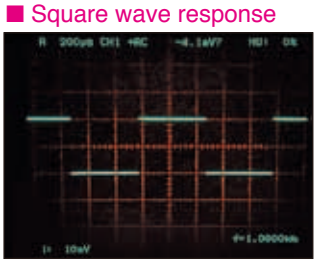


■ 3. Input impedance
(Characteristics Example)

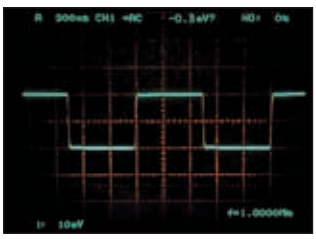


3276 DC to 100 MHz 3276

■ Square wave response

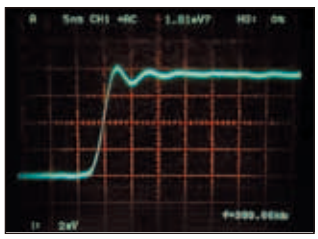


Input: 1 kHz square wave 200 mAp-p
(Oscilloscope bandwidth 400 MHz)



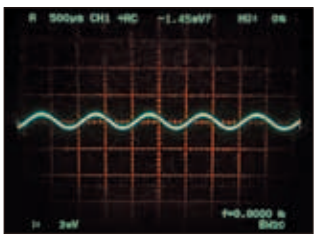
Input: 1 MHz square wave 200 mAp-p
(Oscilloscope bandwidth 400 MHz)

■ Transient response



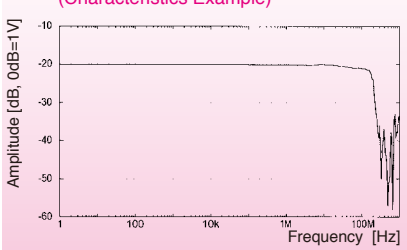
Input: 100 mAp-p
(Oscilloscope bandwidth 400 MHz)

■ Low-current measurement

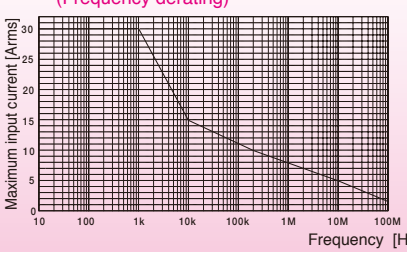


Input: 1 kHz sine wave 10 mAp-p
(Oscilloscope bandwidth 20 MHz)

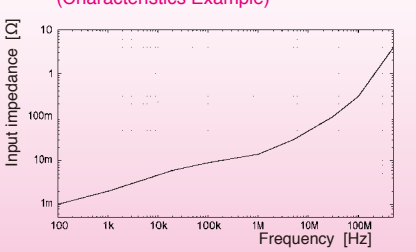
■ 1. Frequency response
(Characteristics Example)



■ 2. Continuous maximum input rating
(Frequency derating)



■ 3. Input impedance
(Characteristics Example)

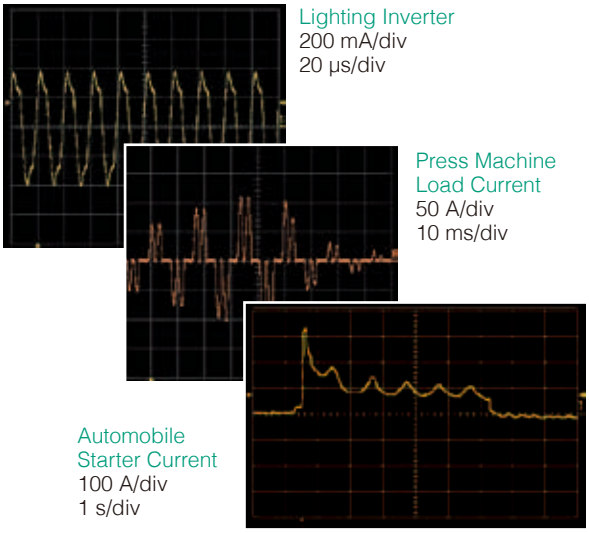


CLAMP ON PROBE 3273-50 to 3276

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



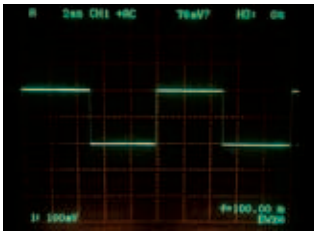
Lighting Inverter
200 mA/div
20 µs/div

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

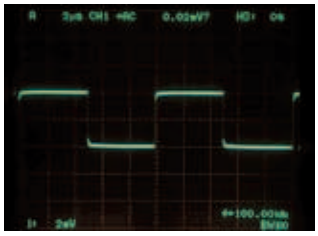
Automobile
Starter Current
100 A/div
1 s/div

3274 DC to 10 MHz 3274

■ Square wave response

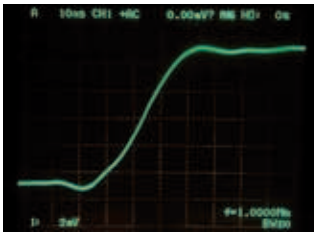


Input: 100 Hz square wave 20 Ap-p
(Oscilloscope bandwidth 100 MHz)



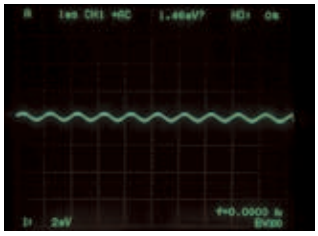
Input: 100 kHz square wave 400 mAp-p
(Oscilloscope bandwidth 100 MHz)

■ Transient response



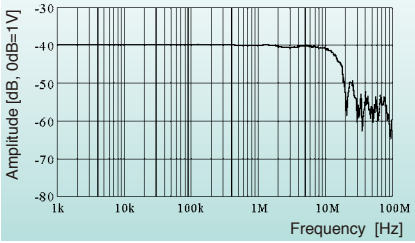
Input: 1 Ap-p
(Oscilloscope bandwidth 100 MHz)

■ Low-current measurement

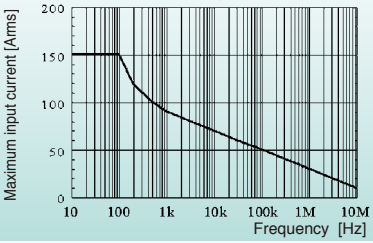


Input: 1 kHz sine wave 50 mAp-p
(Oscilloscope bandwidth 100 MHz)

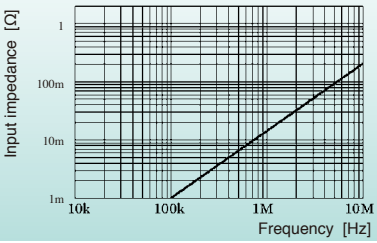
■ 1. Frequency response
(Characteristics Example)



■ 2. Continuous maximum input rating
(Frequency Derating)

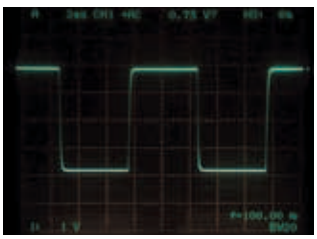


■ 3. Input impedance
(Characteristics Example)



3275 DC to 2 MHz 3275

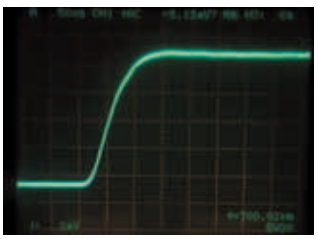
■ Square wave response



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

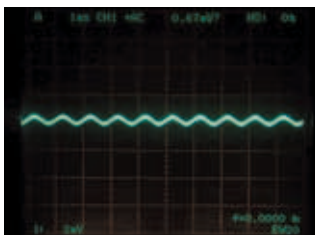
Input: 10 kHz square wave 400 mAp-p
(Oscilloscope bandwidth 20 MHz)

■ Transient response



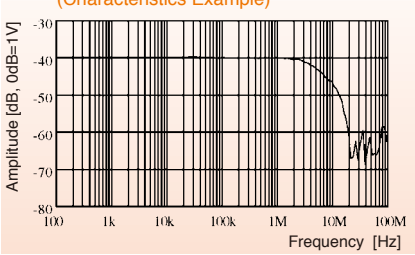
Input: 1 Ap-p
(Oscilloscope bandwidth 20 MHz)

■ Low-current measurement

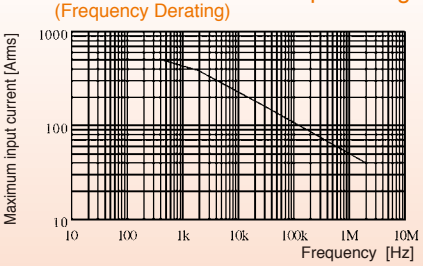


Input: 1 kHz sine wave 50 mAp-p
(Oscilloscope bandwidth 20 MHz)

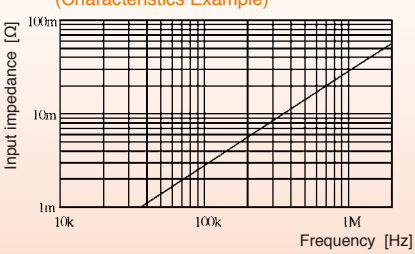
■ 1. Frequency response
(Characteristics Example)



■ 2. Continuous maximum input rating
(Frequency Derating)



■ 3. Input impedance
(Characteristics Example)



CLAMP ON PROBE 3273-50 to 3276


3273-50

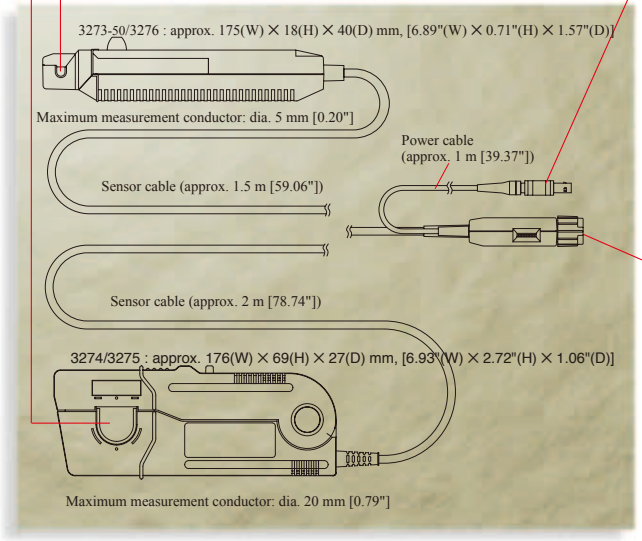

3276

■ 3273-50 / 3276 Specifications (Accuracy guaranteed for 1 year, Post-adjustment accuracy guaranteed for 6 months)

		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 Measurement category I (anticipated transient overvoltage 1500 V), Pollution Degree 2	EN 61010 Measurement category I (anticipated transient overvoltage 1500 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

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

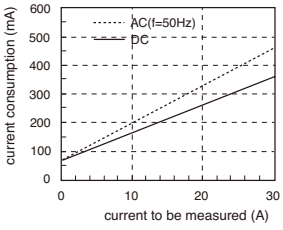
CLAMP ON PROBE 3273-50 to 3276

■ 3274 / 3275 Specifications (Accuracy guaranteed for 1 year, Post-adjustment accuracy guaranteed for 6 months)

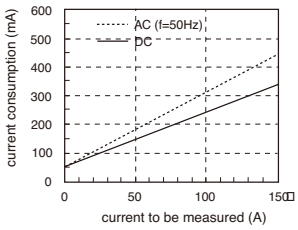
		3274	3275
Frequency bandwidth		DC to 10 MHz (-3 dB) * See Fig. 1 on page 2.	DC to 2 MHz (-3 dB) * See Fig. 1 on page 2.
Rise time		35 ns or less	175 ns or less
Continuous maximum input range		150 Arms * Frequency derating see Fig. 2 on page 2.	500 Arms * Frequency derating see Fig. 2 on page 2.
Maximum peak current value		Non-continuous 300 Apeak 500 A peak at pulse width of ≤ 30 µs	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

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

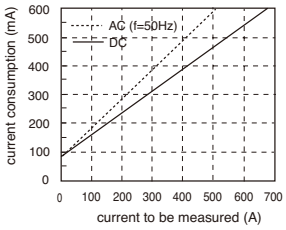
[3273-50]



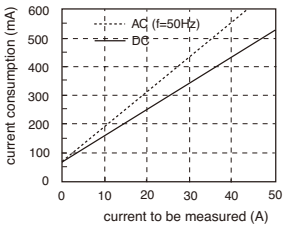
[3274]



[3275]

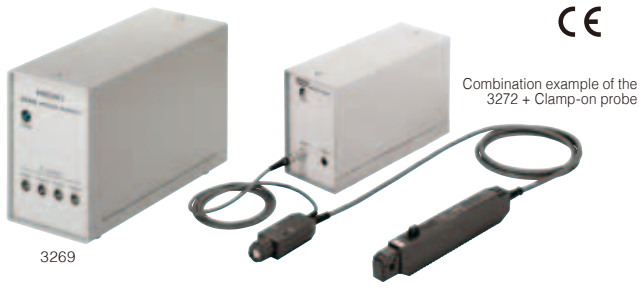


[3276]



Power Supply for Clamp-on Probes

POWER SUPPLY 3269, 3272


3269

Combination example of the 3272 + Clamp-on probe

- Power supply for the Clamp on probe 3273-50 - 3276, CT6700 series
- Supplies power when connected to a general-purpose instrument such as a recorder.

■ Basic specifications

	3269	3272
Compatible sensors	Model CT6700, CT6701, 3273-50, 3274, 3275 or 3276: up to 4 units Note: Also up to 4 units for the discontinued Model 3273	Model CT6700, CT6701: up to 2 units Model 3273-50, 3274, 3275 or 3276: up to 1 unit Note: May be used with up to 2 units of Model 3273 (not -50 type), and up to 2 units of Models 3273-50, 3274, 3275 or 3276 on condition that the measurement current is sufficiently low.
Number of power supply connectors	4	2
Output	±12 V ±0.5 V, ±2.5 A (sum total of all channels)	±12 V ±0.5 V, 600 mA (sum total of all channels)
Power supply	100 V to 240 V AC (free) 50/60 Hz 170 VA max.	100 V or 120/ 220/ 240 V AC (specify when ordering), 50/60 Hz 20 VA max.
Dimensions and mass	80 mm (3.15 in)W × 119 mm (4.69 in)H × 200 mm (7.87 in)D, 1.1 kg (38.8 oz)	73 mm (2.87 in)W × 110 mm (4.33 in)H × 186 mm (7.32 in)D, 1.1 kg (38.8 oz)
Accessories	Instruction manual ×1, Power cord ×1	Power cord ×1, Instruction manual ×1, Spare fuse ×1

Wide-Bandwidth, High-Precision and Large Current Measurements

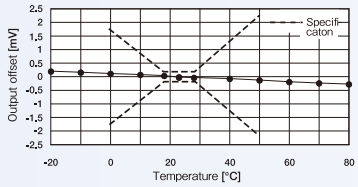
AC/DC CURRENT SENSOR **CT6865, 9709**

- 1000A large current measuring applications in the fields of electric and hybrid electric vehicles (CT6865)
- Operating temperature range of -30°C to 85°C (CT6865)
- Super high precision, ±0.05% amplitude accuracy, ±0.2° phase accuracy
- Wide-bandwidth DC to 20 kHz (CT6865), 100 kHz (9709) excellent frequency characteristics
- Ideal for evaluation of solar power generation and fuel cells to measure battery charge and discharge and the secondary side of inverters
- For observing waveforms to be used with the oscilloscopes or Memory HiCorders (use with SENSOR UNIT)

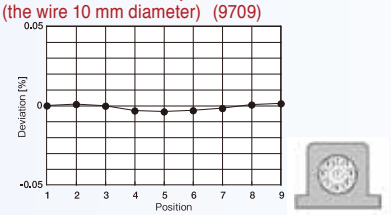
■ Basic specifications

	CT6865 (Accuracy guaranteed for 1 year, Post-adjustmentaccuracy guaranteed for 1 year)	9709 (Accuracy guaranteed for 6 months, Post-adjustment accuracy guaranteed for 6 months)
Rated current	1000 A AC/DC	500 A AC/DC
Max. allowable input	1200 A AC/DC (Continuous 1800 A peak, up to 100 Hz, up to 40 °C (104 °F), other requires derating characteristics)	700 Arms (1000 Apeak, requires derating at frequency)
Frequency characteristics	Amplitude: DC to 20 kHz Phase: DC to 1 kHz	Amplitude: DC to 100 kHz Phase: DC to 100 kHz
Amplitude and Phase accuracy	DC ±0.05 % rdg. ±0.01 % f.s. 16 Hz ≤ f ≤ 66 Hz ±0.05 % rdg. ±0.01 % f.s., Phase: ±0.2° Amplitude is defined to 20 kHz, Phase is defined to 1 kHz	DC, 45 Hz ≤ f ≤ 66 Hz (±0.05 % rdg. ±0.01 % f.s. (Phase: ±0.2°)) Defined to 100 kHz
Output voltage rate	2 V /rated current value (voltage output with the Sensor Unit, use with a device having a 1 MΩ input resistance or higher)	
Max. rated voltage to earth	1000 V AC/DC (50/60 Hz, CAT Ⅲ)	
Core diameter	φ 36 mm (1.42 in)	
Operating temperature, humidity	-30°C to +85°C (-22°F to 185°F) 80% rh or less (with no condensation)	0°C to +50°C (32°F to 122°F) 80% rh or less (with no condensation)
Power supply	±11 V to ±15 V DC (Power suppled via the Sensor Unit, which supports 100 to 240 V AC)	
Power consumption	7 VA max. (at 1000 A/55 Hz, ±12 V power requirement)	5 VA max. (at 500 A/55 Hz, ±12 V power requirement)
Dimensions and mass	160 mm (6.30 in)W × 112 mm (4.41 in)H × 50 mm (1.97 in)D, 980 g (34.6 oz), cord length 3 m (9.84 ft)	160 mm (6.30 in)W × 112 mm (4.41 in)H × 50 mm (1.97 in)D, 850 g (30.0 oz), cord length: 3 m (9.84 ft)
Accessories	Instruction manual ×1, Mark bands ×6	

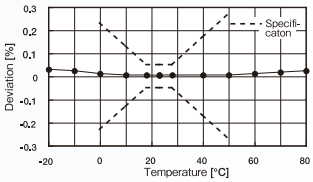
Offset - Temperature Characteristics (9709)



Effect of conductor position (the wire 10 mm diameter) (9709)



Sensitivity - Temperature Characteristics (9709)



Model : AC/DC CURRENT SENSOR CT6865

Model No. (Order Code)	(Note)
CT6865	(1000 A AC/DC)
CT6865-05	(1000 A AC/DC, 12 pin terminal)

Model : AC/DC CURRENT SENSOR 9709

Model No. (Order Code)	(Note)
9709	(500A AC/DC)
9709-05	(500 A AC/DC, 12 pin terminal)

Delivering Wide-bandwidth and High-precision Current Measurement

AC/DC CURRENT SENSOR **CT6862, CT6863**

- Super high precision, ±0.05% amplitude accuracy, ±0.2° phase accuracy
- Wide-bandwidth DC to 1 MHz (CT6862) excellent frequency characteristics
- Applications in the fields of electric and hybrid electric vehicles
- Wide operating temperature range fit for automobile applications
- Ideal for evaluation of solar power generation and fuel cells to measure battery charge and discharge and the secondary side of inverters
- For observing waveforms to be used with the oscilloscopes or Memory HiCorders (use with SENSOR UNIT)

■ Basic specifications (Accuracy guaranteed for 1 year, Post-adjustment accuracy guaranteed for 1 year)

	CT6862	CT6863
Rated current	50 A AC/DC	200 A AC/DC
Max. allowable input	100 A (requires derating)	400 A (requires derating)
Frequency characteristics	Amplitude: DC to 1 MHz Phase: DC to 300 kHz	Amplitude: DC to 500 kHz Phase: DC to 300 kHz
Amplitude and Phase accuracy	DC ±0.05 % rdg. ±0.01 % f.s. (Phase: Not defined) 16 Hz ≤ f ≤ 400 Hz ±0.05 % rdg. ±0.01 % f.s. (Phase: ±0.2°) Defined to 1 MHz	DC ±0.05 % rdg. ±0.01 % f.s. (Phase: Not defined) 16 Hz ≤ f ≤ 400 Hz ±0.05 % rdg. ±0.01 % f.s. (Phase: ±0.2°) Defined to 500 kHz
Output voltage	2 V /rated current value (voltage output with the Sensor Unit, use with a device having a 1 MΩ input resistance or higher)	
Max. rated voltage to earth	1000 V AC/DC (50/60 Hz, CAT III)	
Core diameter	φ 24 mm (0.94 in)	
Operating temperature, humidity	-30°C to +85°C (-22°F to 185°F), 80% RH or less (with no condensation)	
Power supply	±11 V to ±15 V DC (Power suppled via the Sensor Unit, which supports 100 to 240 V AC)	
Power consumption	5 VA max. (at 50 A/55 Hz, ±12 V power requirement)	6 VA max. (at 200 A/55 Hz, ±12 V power requirement)
Dimensions and mass	70 mm (2.76 in)W × 100 mm (3.94 in)H × 53 mm (2.09 in)D, 340 g (12.0 oz), cord length: 3 m (9.84 ft)	70 mm (2.76 in)W × 100 mm (3.94 in)H × 53 mm (2.09 in)D, 350 g (12.3 oz), cord length: 3 m (9.84 ft)
Accessories	Instruction manual ×1, Mark bands ×6	

Model : AC/DC CURRENT SENSOR CT6862

Model No. (Order Code)	(Note)
CT6862	(50 A AC/DC)
CT6862-05	(50 A AC/DC, 12 pin terminal)

Model : AC/DC CURRENT SENSOR CT6863

Model No. (Order Code)	(Note)
CT6863	(200 A AC/DC)
CT6863-05	(200 A AC/DC, 12 pin terminal)

Compatible models...CT6865 (-05), 9709 (-05)

Compatible models	CT6865	CT6865-05	9709	9709-05
Model PW6001	▲ (Requires CT9900) CT ratio: 2	✓	▲ (Requires CT9900)	✓
Model 3390	✓ CT ratio: 2	▲ (Requires CT9901) CT ratio: 2	✓	▲ (Requires CT9901)
Input unit model 9602 for 3193-10/ 3193/ 3194	✓ CT ratio: 2	▲ (Requires CT9901) CT ratio: 2	✓	▲ (Requires CT9901)
Model 8971	▲ (Requires 9318) CT ratio: 2	▲ (Requires 9318 and CT9901) CT ratio: 2	▲ (Requires 9318)	▲ (Requires 9318 and CT9901)
Model 8940	▲ (Requires 9318 and 9705) CT ratio: 2	▲ (Requires 9318, 9705, and CT9901) CT ratio: 2	▲ (Requires 9318 and 9705)	▲ (Requires 9318, 9705, and CT9901)

Compatible models...CT6862 (-05), CT6863 (-05)

Compatible models	CT6862	CT6862-05	CT6863	CT6863-05
Model PW6001	▲ (Requires CT9900)	✓	▲ (Requires CT9900)	✓
Model 3390	✓	▲(Requires CT9901)	✓	▲ (Requires CT9901)
Input unit model 9602 for 3193-10/ 3193/ 3194	✓	▲ (Requires CT9901)	✓	▲ (Requires CT9901)
Model 8971	▲ (Requires 9318)	▲ (Requires 9318 and CT9901)	▲ (Requires 9318)	▲ (Requires 9318 and CT9901)
Model 8940	N/A	N/A	▲ (Requires 9318 and 9705)	▲ (Requires 9318, 9705, and CT9901)

Shared options for CT6865, 9709, CT6862, and CT6863

Options A

SENSOR UNIT CT9555
Power supply for current sensors (1ch, with Waveform output)

SENSOR UNIT CT9556
Power supply for current sensors (1ch, with Waveform/RMS output)

SENSOR UNIT CT9557
Power supply for current sensors (4ch, with Waveform/Total Waveform/Total RMS output)

CONNECTION CORD L9217
Cord has insulated BNC connectors at both ends, 1.6 m (5.25 ft) length

CONNECTION CORD 9165
Cord has metallic BNC connectors at both ends, use at metallic terminal, 1.5 m (4.92 ft) length

Options B

The CT9903 connects up to 2 cables in series, Cannot be used in combination with the 9277 to 9279

CONVERSION CABLE CT9900
HIOKI PL23 (10 pin) to HIOKI ME15W (12 pin) connector

EXTENSION CABLE CT9903
5 m (16.41 ft) length, HIOKI PL23 (10 pin) - HIOKI PL23 (10 pin) connector

Options C

The CT9902 connects up to 2 cables in series

CONVERSION CABLE CT9901
HIOKI ME15W (12 pin) to HIOKI PL23 (10 pin) connector

EXTENSION CABLE CT9902
5 m (16.41 ft) length, HIOKI ME15W (12 pin) - HIOKI ME15W (12 pin) connector

Options D

For connecting to the F/V Unit 8940 or Current Unit 8971

CONVERSION CABLE 9705
0.2 m (0.66 ft) length, to connect the CT6841-6846, CT6863/6865, 9709, 9272-10 to the F/V Unit 8940, Cannot be used in combination with the CT6862

CONVERSION CABLE 9318
To connect the CT6841-6846, CT6865/63, 9277/78/79, 9270/71/72 to the 8971/40/51, 38 cm (14.96 in) length

Ideal for Measuring Current with Low Frequencies such as Inverter Control Devices

CLAMP ON SENSOR 9272-10

CE
CAT III 600 V

- Superior low frequency and phase characteristics suitable for testing the current and power of inverter control devices
- Wide 1 Hz to 100 kHz frequency bandwidth perfect for harmonic analysis, FFT analysis and waveform monitoring

■ Basic specifications (Accuracy guaranteed for 6 months, Post-adjustment accuracy guaranteed for 6 months)

Rated current	20 A AC, or 200 A AC (selectable)
Max. allowable input	50 A rms (at 20 A range), 300 A rms (at 200 A range)
Frequency characteristics	1 Hz (±2 % rdg. ±0.1 % f.s.) to 100 kHz (±30 % rdg. ±0.1 % f.s.)
Amplitude and Phase accuracy	Amplitude: ±0.3 % rdg. ±0.01 % f.s. Phase: ±0.2 ° (45 to 66 Hz)
Output voltage	2 V/20 A rated current range, or 2 V/200 A rated current range (voltage output with the Sensor Unit, use with a device having a 1 MΩ input resistance or higher)
Max. rated voltage to earth	600 V rms (CAT III)
Core diameter	φ 46 mm (1.81 in)
Power supply	±11 V to ±15 V DC (Power suppled via the Sensor Unit, which supports 100 to 240 V AC)
Power consumption	5 VA Max. (when measuring 200 A)
Dimensions and mass	78 mm (3.07 in)W × 188 mm (7.40 in)H × 35 mm (1.38 in)D, 430 g (15.2 oz), cord length: 3 m (9.84 ft)
Accessories	Carrying case 9355 ×1, Instruction manual ×1, Mark bands ×6

Model 9272-10 Compatibility (use with the connection cord)

Compatible models	Status	Note
3193-10, 3193, 3194 (use with the 9602)	✓	Directly connectable, Add 0.1% rdg. to accuracy
MR8827, MR8847s (use with the 8971)	✓	To connect via the Conversion Cable 9318
Model 8940 for Memory HiCorders	✓	Need the Conversion Cable 9705, and use with the Conversion Cable 9318 to connect Model 9272-10 to the F/V Unit 8940. (Not necessary when using Model 9272 due to different output wiring specifications.)

Model : CLAMP ON SENSOR 9272

Model No. (Order Code)	(Note)
9272-10	(20/200 A AC)

Note: This product cannot be used alone. The optional Sensor Unit is required in order to supply power and connect the clamp to a Memory HiCorder or other instrument. The clamp can be directly connected the compatible Power Meter.

Bundled accessories

CARRYING CASE 9355
For the 9272-10, 9270s, or other models

Options A

SENSOR UNIT CT9555
Power supply for current sensors (1ch, with Waveform output)

SENSOR UNIT CT9556
Power supply for current sensors (1ch, with Waveform/RMS output)

SENSOR UNIT CT9557
Power supply for current sensors (4ch, with Waveform/Total Waveform/Total RMS output)

CONNECTION CORD L9217
Cord has insulated BNC connectors at both ends, 1.6 m (5.25 ft) length

CONNECTION CORD 9165
Cord has metallic BNC connectors at both ends, use at metallic terminal, 1.5 m (4.92 ft) length

Options B

The CT9903 connects up to 2 cables in series, Cannot be used in combination with the 9277 to 9279

CONVERSION CABLE CT9900
HIOKI PL23 (10 pin) to HIOKI ME15W (12 pin) connector

EXTENSION CABLE CT9903
5 m (16.41 ft) length, HIOKI PL23 (10 pin) - HIOKI PL23 (10 pin) connector

Options D

*The Clamp Sensor 9272-10 has different output wiring than the previous 9272. Both the 9318 and 9705 are required in order to connect to the F/V Unit 8940.

CONVERSION CABLE 9705
0.2 m (0.66 ft) length, to connect the CT6841-6846, CT6863/6865, 9709, 9272-10 to the F/V Unit 8940, Cannot be used in combination with the CT6862

CONVERSION CABLE 9318
To connect the CT6841-6846, CT6865/63, 9277/78/79, 9270/71/72 to the 8971/40/51, 38 cm (14.96 in) length

Power supplies for high-precision current sensors

SENSOR UNIT CT9555, CT9556, CT9557

CT9555, CT9556

- Power supplies for high-precision current sensors with waveform output functionality

CT9557

- Power supply for high-precision current sensors with waveform output functionality
- Output a single waveform from an aggregate of input waveforms

■ Basic specifications (Accuracy guaranteed for 1 year, Post-adjustment accuracy guaranteed for 1 year)

Model	CT9555	CT9556	CT9557
Image			
Compatible sensor	Current sensors with a Hioki ME15W (male) output connector (CT686x-05, CT684x-05, etc.)	Current sensors with a Hioki ME15W (male) output connector (CT686x-05, CT684x-05, etc.)	Current sensors with a Hioki ME15W (male) output connector (CT686x-05, CT684x-05, etc.)
Output Terminal	BNC Terminal	BNC Terminal	BNC Terminal
Power supply	AC Adapter Z1008 (100 to 240 V AC, 50/60 Hz, 45 VA)	AC Adapter Z1008 (100 to 240 V AC, 50/60 Hz, 45 VA)	AC Adapter Z1002 (100 to 240 V AC, 50/60 Hz, 155 VA)
Dimensions and mass	33 mm (1.30 in)W × 67 mm (2.64 in)H × 132 mm (5.20 in)D, 200 g (7.1 oz)	33 mm (1.30 in)W × 67 mm (2.64 in)H × 132 mm (5.20 in)D, 200 g (7.1 oz)	116 mm (4.57 in)W × 67 mm (2.64 in)H × 132 mm (5.20 in)D, 420 g (14.8 oz)

Model : ENSOR UNIT

Model No. (Order Code)	(Note)
CT9555	(For the CT6841-05, etc., using Hioki ME15W connector)
CT9556	(For the CT6841-05, etc., using Hioki ME15W connector)
CT9557	(For the CT6841-05, etc., using Hioki ME15W connector)

Accessories: CT9555, CT9556: AC Adapter Z1008 ×1, Power cord ×1, Instruction manual ×1, CT9557: AC Adapter Z1002 ×1, Power cord ×1, Instruction manual ×1

Shared options for CT9555, CT9556 and CT9557

Options

CONNECTION CABLE CT9904
HIOKI ME15W (12 pin) terminal to ME15W (12 pin) terminal, 1 m (3.28 ft) length (for connecting CT9557 total output to PW6001 or PW3390 only)

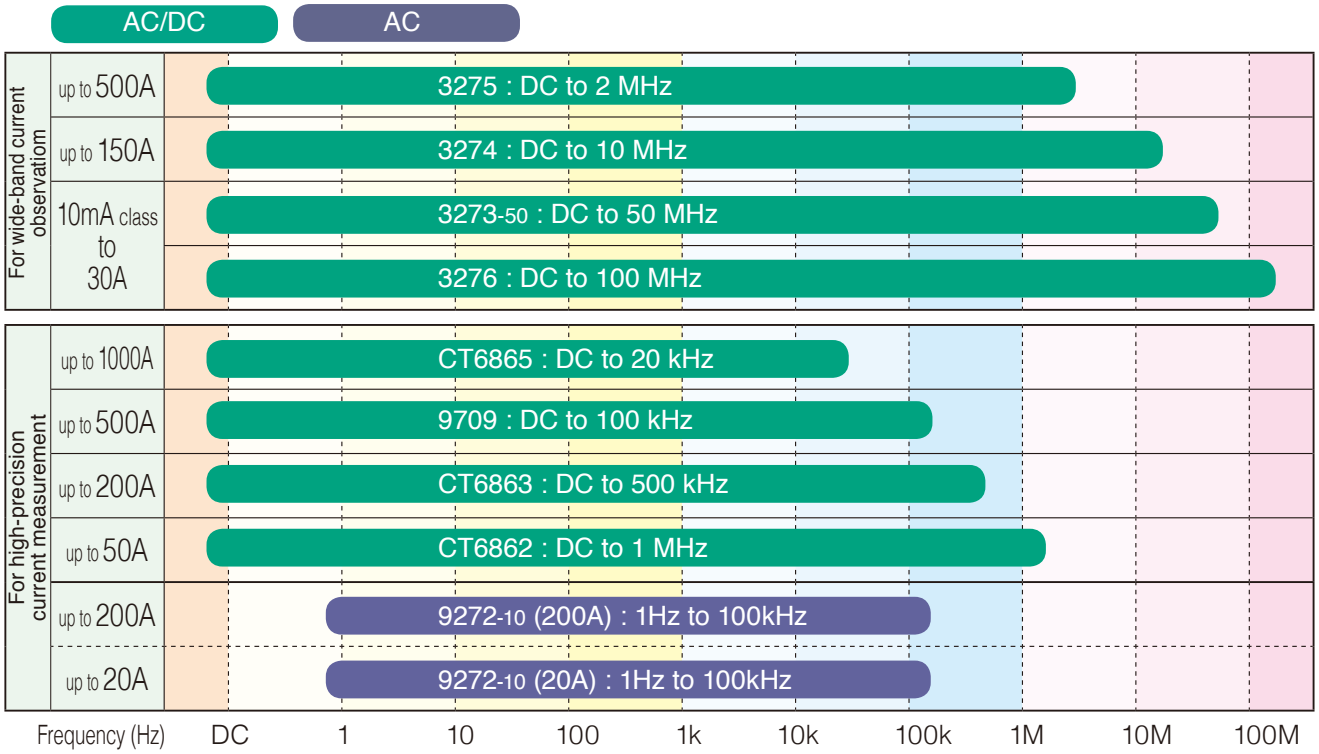
CONNECTION CORD L9217
Cord has insulated BNC connectors at both ends, 1.6 m (5.25 ft) length

CONNECTION CORD 9165
Cord has metallic BNC connectors at both ends, use at metallic terminal, 1.5 m (4.92 ft) length

CONVERSION CABLE CT9900
HIOKI PL23 (10 pin) to HIOKI ME15W (12 pin) connector

CONVERSION CABLE CT9901
HIOKI ME15W (12 pin) to HIOKI PL23 (10 pin) connector

■ Rated current & Frequency characteristics



Wide-Band Current Probe Allows Direct Input to Oscilloscope

CLAMP ON PROBE 3273-50, 3274, 3275, 3276

Insulated conductor

Note: Use the Power Supply 3269/3272 for general measurements or when power is not available from the Memory Hicorder. When performing continuous measurements, be aware of offset voltage drift.

Model : CLAMP ON PROBE 3273

Model No. (Order Code)	(Note)
3273-50	(DC to 50 MHz, 30 Arms)

Model : CLAMP ON PROBE 3274

Model No. (Order Code)	(Note)
3274	(DC to 10 MHz, 150 Arms)

Model : CLAMP ON PROBE 3275

Model No. (Order Code)	(Note)
3275	(DC to 2 MHz, 500 Arms)

Model : CLAMP ON PROBE 3276

Model No. (Order Code)	(Note)
3276	(DC to 100 MHz, 30 Arms)

Options

POWER SUPPLY 3272
For single sensor, 120/ 220/ 240 V AC, specify when ordering

POWER SUPPLY 3269
For four sensors, 100 V to 240 V AC

CONVERSION CABLE 9319
To connect the 3273-50 and the 8940, Note: cannot be used with the 3274, 3275, 3276 to connect the 8940 via this cable 9319

⚠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.

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