



**MULTI**

Let's Create  
New Concepts of  
Instruments

# CT SENSOR GENERAL CATALOG

## Ver.8

one step beyond tomorrow

**MULTI MEASURING INSTRUMENTS CO.,LTD.**

In this catalog, the general features & specifications of our standard products appear.

Please contact to our sales department, if you have any further questions or need more detailed information.

## ■ About Products

The products appeared in this catalog are implemented in March, 2019.

The product specifications are subject to change for improvement and or to discontinue the production without prior notice.

## ■ About Outer Dimensions

The indicated outer dimensions & weights are approximate values.

The outer dimension is indicated as width (W) x height (H) x depth (D) in order and excluding protrusions like as knob, rubber foot, handle, etc.

## ■ About Warranty

All our products are warranted for performance under normal use for one year after the date of shipment from us and we will repair or replace the defective products at free of charge in this period.

Even in the warranty period, however, this warranty does not cover the products which have been damaged by calamity, accident, negligence, misapplication and or modification.

Also, we cannot take responsibility for the secondary loss caused from the defect of our product.

## ■ About Customization

The customizations and change of specifications like as connector assembling, cable extension, etc. would be available.

Please consult with our sales department, if desirable.

The products appeared in this catalog are designed and produced for general industrial apparatus.

Please consult with our sales department in advance, when they are examined to use for the devices need high reliability (medical related instruments/transport equipment/lifeline related devices/nuclear apparatus).

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## INDUSTRY

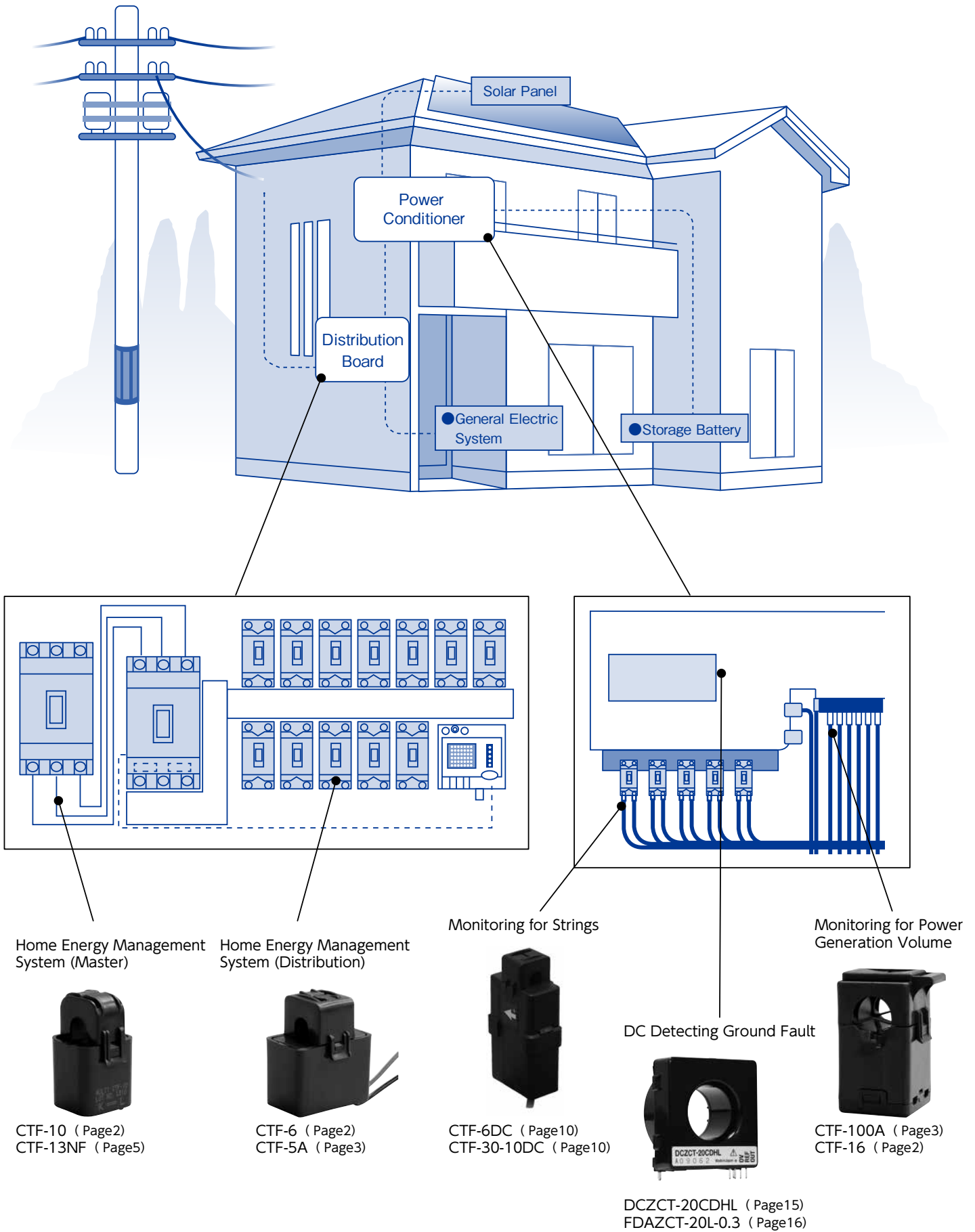
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# AC Load current (Split type)

## CTF Series



### FEATURES

For measuring electric power (split-core type)

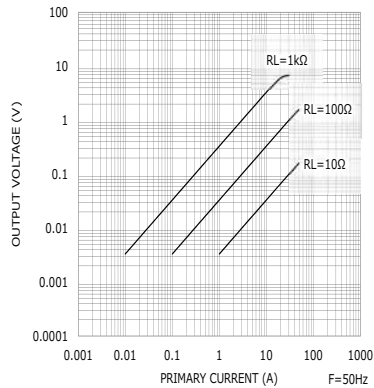
### SPECIFICATIONS

MODEL	CTF-6	CTF-10	CTF-16	CTF-24
Rated Primary Current	AC30A(50/60Hz)	AC60A(50/60Hz)	AC120A(50/60Hz)	AC200A(50/60Hz)
Applicable Current	0.1A ~ 30A	0.1A ~ 60A	0.1A ~ 100A	0.1A ~ 200A
Max. Capable Current	50A	100A	200A	300A
Nominal CT Ratio	3000 : 1			
CT Inside Diameter	φ 6mm	φ 9.5mm	φ 14.5mm	φ 24mm
Applicable Frequency	10Hz ~ 5kHz			
Output Example	AC100.0mV ± 1% (30A/10 Ω)	AC200.0mV ± 1% (60A/10 Ω)	AC333.3mV ± 1% (100A/10 Ω)	AC666.6mV ± 1% (200A/10 Ω)
Phase Accuracy	+2.5° ± 0.5° (30A/10 Ω /50Hz) +2.1° ± 0.5° (30A/10 Ω /60Hz)	+1.0° ± 0.5° (60A/10 Ω /50Hz) +0.8° ± 0.5° (60A/10 Ω /60Hz)	+0.7° ± 0.5° (100A/10 Ω)	+0.3° ± 0.5° (200A/10 Ω)
Open Protection	7.5V (Zener diode)			
Capable CT Open/Close	Approx. 100 times			
Output Part	Lead Wire: Approx. 200mm	Lead Wire: Approx. 150mm		
Rated Voltage	Less than AC600V for low voltage circuit of coated wires			
Withstanding Voltage	AC2200V/1 minute (between output terminal and outer case)			
Insulation Resistance	More than 50M Ω by 500V insulation tester (between output terminal and outer case)			
Operation Temperature	-20 ~ 60°C, less than 80%RH w/o condensation			
Dimension	19.3 × 31 × 26.4mm	26.4 × 43.3 × 25.5mm	32.5 × 46.2 × 30.5mm	48.4 × 69.5 × 35mm
Weight	Approx. 20g	Approx. 40g	Approx. 75g	Approx. 170g

CHARACTERISTIC OF OUTPUT VOLTAGE



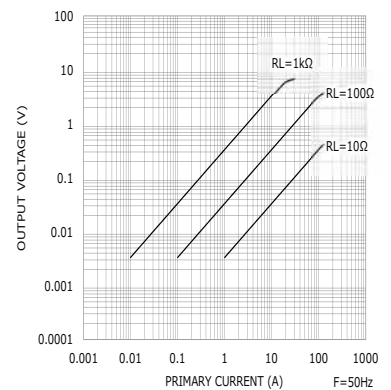
CTF-6



CHARACTERISTIC OF OUTPUT VOLTAGE



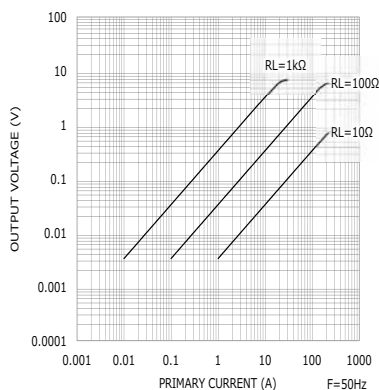
CTF-10



CHARACTERISTIC OF OUTPUT VOLTAGE



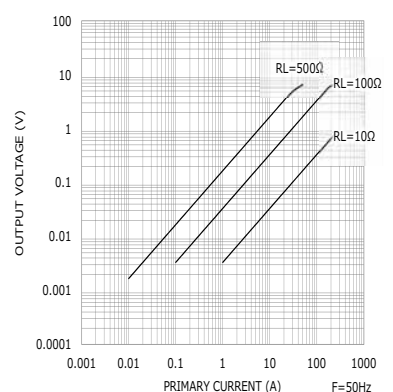
CTF-16



CHARACTERISTIC OF OUTPUT VOLTAGE



CTF-24



# AC Load current (Split type)

## CTF-A Series

**FEATURES** For measuring electric power (split-core type)

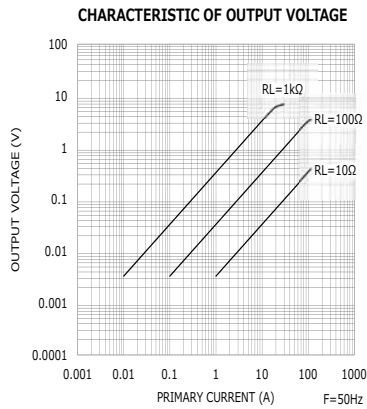


**SPECIFICATIONS**

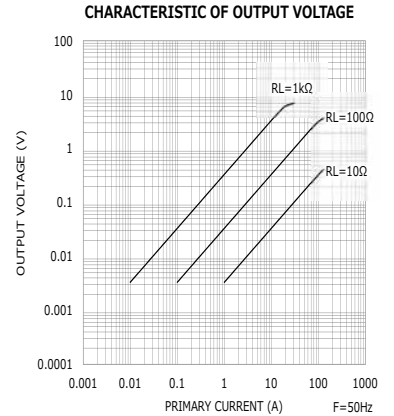
MODEL	CTF-5A	CTF-50A	CTF-100A
Rated Primary Current	AC5A (50/60Hz)	AC50A (50/60Hz)	AC100A (50/60Hz)
Applicable Current	0.01A ~ 5A	0.1A ~ 50A	0.1A ~ 100A
Max. Capable Current	100A		200A
Nominal CT Ratio	3000:1		
CT Inside Diameter	φ 7.9mm	φ 9.5mm	φ 14.5mm
Applicable Frequency	10Hz ~ 5kHz		
Output Example	AC16.66mV ± 1% (5A/10 Ω)	AC166.6mV ± 1% (50A/10 Ω)	AC333.3mV ± 1% (100A/10 Ω)
Phase Accuracy	+1.6°± 0.5° (5A/10 Ω /50Hz) +1.3°± 0.5° (5A/10 Ω /60Hz)	+1.6°± 0.5° (50A/10 Ω /50Hz) +1.3°± 0.5° (60A/10 Ω /60Hz)	+0.7°± 0.5° (100A/10 Ω)
Open Protection	7.5V (Zener diode)		
Capable CT Open/Close	Approx. 100 times		
Output Part	M3 Terminal		
Rated Voltage	Less than AC600V for low voltage circuit of coated wires		
Withstanding Voltage	AC2200V/1 minute (between output terminal and outer case)		
Insulation Resistance	More than 100MΩ by 500V insulation tester (between output terminal and outer case)		
Operation Temperature	-20 ~ 60°C, less than 80%RH w/o condensation		
Dimension	33 × 41.3 × 25.3mm	23 × 48 × 25.5mm	29.5 × 55 × 30.5mm
Weight	Approx. 45g		Approx. 85g



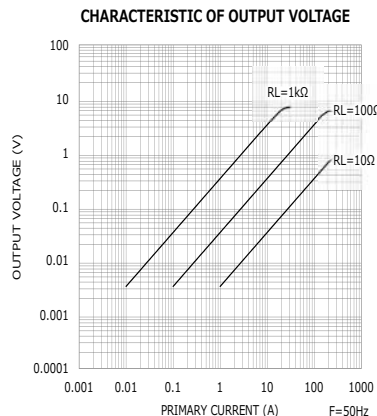
CTF-5A



CTF-50A



CTF-100A

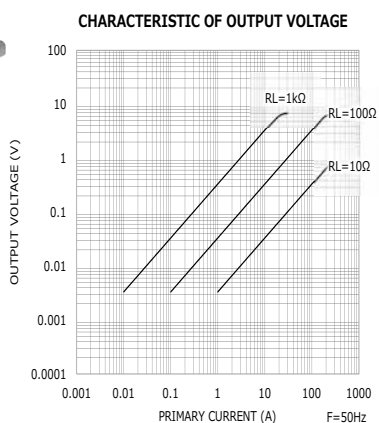


## SPECIFICATIONS

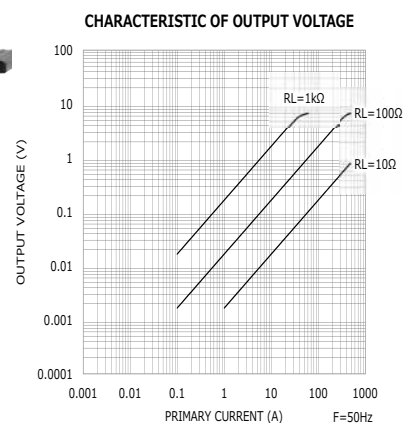
MODEL	CTF-200A	CTF-400A	CTF-600A
Rated Primary Current	AC200A (50/60Hz)	AC400A (50/60Hz)	AC600A (50/60Hz)
Applicable Current	1A ~ 200A	1A ~ 400A	1A ~ 600A
Max. Capable Current	300A	600A	800A
Nominal CT Ratio	3000:1	6000:1	9000:1
CT Inside Diameter	φ 24mm	φ 35.5mm	φ 35.5mm
Applicable Frequency	10Hz ~ 5kHz		
Output Example	AC666.6mV ± 1% (200A/10 Ω)	AC666.6mV ± 1% (400A/10 Ω)	AC666.6mV ± 1% (600A/10 Ω)
Phase Accuracy	+0.3°± 0.5° (200A/10 Ω)	+0.1°± 0.5° (400A/10 Ω)	0°± 0.5° (600A/10 Ω)
Open Protection	7.5V (Zener diode)		
Capable CT Open/Close	Approx. 100 times		
Output Part	M3 Terminal		
Rated Voltage	Less than AC600V for low voltage circuit of coated wires		
Withstanding Voltage	AC2200V/1 minute (between output terminal and outer case)		
Insulation Resistance	More than 100M Ω by 500V insulation tester (between output terminal and outer case)		
Operation Temperature	-20 ~ 60°C , less than 80%RH w/o condensation		
Dimension	45 × 76 × 35.5mm	62.5 × 94 × 35.5mm	
Weight	Approx. 190g	Approx. 310g	Approx. 360g



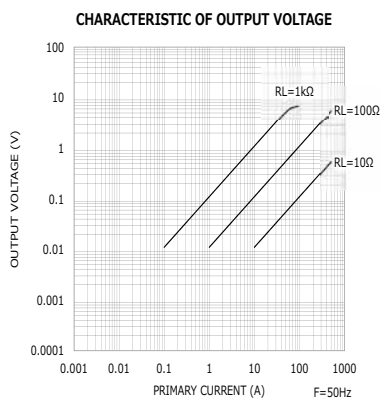
CTF-200A



CTF-400A



CTF600A



# AC Load current (Split type)

## CTF-NF Series

**FEATURES** For measuring electric power (split-core type)

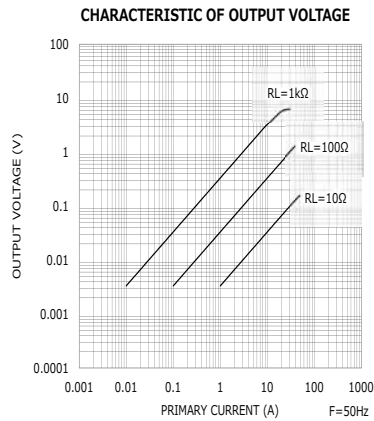


**SPECIFICATIONS**

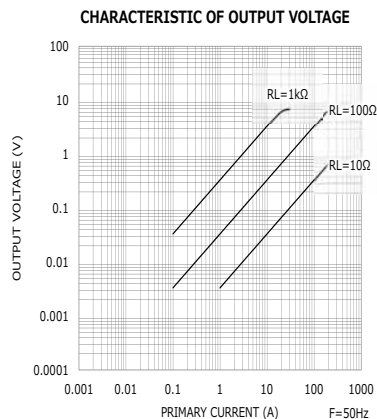
MODEL	CTF-7NF	CTF-13NF
Rated Primary Current	AC30A (50/60Hz)	AC100A (50/60Hz)
Applicable Current	0.1A ~ 30A	0.1A ~ 100A
Max. Capable Current	50A	150A
Nominal CT Ratio	3000:1	
CT Inside Diameter	φ 7mm	φ 13.8mm
Applicable Frequency	10Hz ~ 5kHz	
Output Example	AC100.0mV ± 1% (30A/10 Ω)	AC333.3mV ± 1.0% (100A/10 Ω)
Phase Accuracy	+2.5° ± 1.0° (30A/10 Ω)	+0.7° ± 0.5° (100A/10 Ω)
Open Protection	7.5V (Zener diode)	
Capable CT Open/Close	Approx. 100 times	
Output Part	Lead Wire: Approx. 200mm	Connector : S02B-PASK-2
Rated Voltage	Less than AC600V for low voltage circuit of coated wires	
Withstanding Voltage	AC1500V/1 minute (between output terminal and outer case)	AC2200V/1 minute (between output terminal and outer case)
Insulation Resistance	More than 50M Ω by 500V insulation tester (between output terminal and outer case)	
Operation Temperature	-20 ~ 60°C, less than 80%RH w/o condensation	
Dimension	25.6 × 26.8 × 21.2mm	37.5 × 44.2 × 38.9mm
Weight	Approx. 20g	Approx. 75g



CTF-7NF



CTF-13NF





# AC Load current (Through hole type)

## CTA Series



### FEATURES

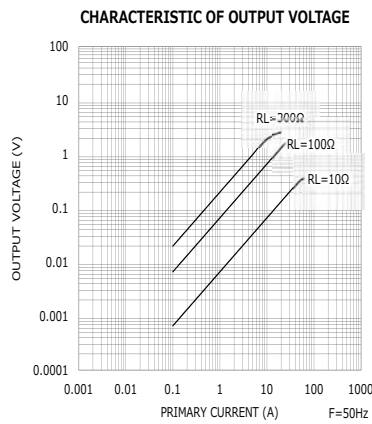
For measuring electric power (through hole type)

### SPECIFICATIONS

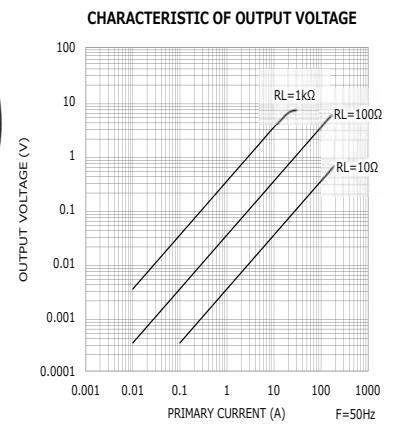
MODEL	CTA-30A	CTA-120A	CT-30AR
Rated Primary Current	AC30A (50/60Hz)	AC120A (50/60Hz)	AC30A (50/60Hz)
Applicable Current	0.1A ~ 30A	1A ~ 120A	1A ~ 30A
Max. Capable Current	50A	150A	60A
Nominal CT Ratio	1500:1	3000:1	1000:1
CT Inside Diameter	φ 6mm	φ 19.4mm	φ 9.3mm
Applicable Frequency	10Hz ~ 5kHz		50/60Hz
Output Example	AC136.0mV ± 0.3% (30A/6.8 Ω)	AC272.0mV ± 0.3% (120A/6.8 Ω)	AC297.0mV ± 1.0% (30A/10 Ω)
Phase Accuracy	+0.3° ± 0.3° (30A/6.8 Ω)	+0.4° (120A/6.8 Ω)	+0.7° ± 0.5° (30A/10 Ω)
Open Protection	7.5V (Zener diode)		—
Output Part	Lead Wire: Approx. 150mm		Lead Wire: Approx. 80mm
Rated Voltage	Less than AC600V for low voltage circuit of coated wires		
Withstanding Voltage	AC2200V/1 minute (between output terminal and outer case)		
Insulation Resistance	More than 100M Ω by 500V insulation tester (between output terminal and outer case)		
Operation Temperature	-10 ~ 60°C, less than 80%RH w/o condensation		
Dimension	21 × 25 × 10mm	40.4 × 40.4 × 13mm	22 × 22 × 8.8mm
Weight	Approx. 10g	Approx. 36g	Approx. 9g



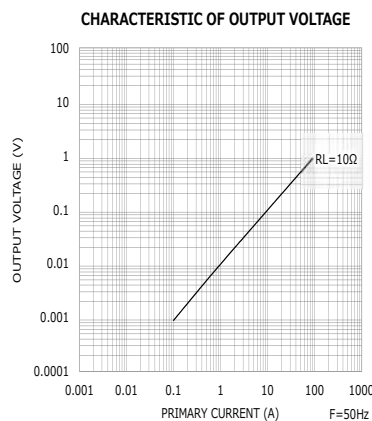
CTA-30A



CTA-120A



CT-30AR



# AC Load current (Through hole type)

## CTF-B Series



**FEATURES**

High precision through hole type for measuring electric power (energy management) fixing stand shape.

**SPECIFICATIONS**

MODEL	CTF-50B	CTF-100B	CTF-200B	CTF-400B	CTF-600B
Rated Primary Current	AC50A (50/60Hz)	AC100A (50/60Hz)	AC200A (50/60Hz)	AC400A (50/60Hz)	AC600A (50/60Hz)
Applicable Current	0.1A ~ 50A	0.1A ~ 100A	1A ~ 200A	1A ~ 400A	1A ~ 600A
Max. Capable Current	100A	200A	300A	600A	800A
Nominal CT Ratio		3000 : 1		6000 : 1	9000 : 1
CT Inside Diameter	8.4 × 9.0mm	14.1 × 14.1mm	23.5 × 24.1mm	34.5 × 32.9mm	
Applicable Frequency	10Hz ~ 5kHz				
Output Example	AC166.6mV ± 1% (50A/10 Ω)	AC333.3mV ± 1% (100A/10 Ω)	AC666.6mV ± 1% (200A/10 Ω)	AC666.6mV ± 1% (400A/10 Ω)	AC666.6mV ± 1% (600A/10 Ω)
Phase Accuracy	+1.6° ± 0.5° (50A/10 Ω / 50Hz) +1.3° ± 0.5° (50A/10 Ω / 60Hz)	+0.7° ± 0.5° (100A/10 Ω)	+0.3° ± 0.5° (200A/10 Ω)	+0.1° ± 0.5° (400A/10 Ω)	0° ± 0.5° (600A/10 Ω)
Open Protection	7.5V (Zener diode)				
Output Part	M3 Terminal				
Rated Voltage	Less than AC600V for low voltage circuit of coated wires				
Withstanding Voltage	AC2200V/1 minute (between output terminal and outer case)				
Insulation Resistance	More than 100MΩ by 500V insulation tester (between output terminal and outer case)				
Operation Temperature	-10 ~ 60°C, less than 80%RH w/o condensation				
Dimension	49 × 52.8 × 27.6mm	65 × 60.2 × 32.6mm	84 × 82.2 × 38.6mm	109 × 101 × 38.6mm	
Weight	Approx. 50g	Approx. 90g	Approx. 210g	Approx. 320g	Approx. 370g



CTF-50B



CTF-100B



CTF-200B



CTF-400B/600B

# Pulse detection

## CTF-05M/CTF-05K/CTF-05T/OKM-03

### FEATURES

For detecting current pulse with open collector output (for power pulse)



### SPECIFICATIONS

MODEL	CTF-05M	CTF-05K	CTF-05T	OKM-03
Applicable Current	8mA ~ 25mA			0.3mA ~ 1A
Max. Capable Current	25mA			1A
CT Inside Diameter	φ 6mm	φ 5.2mm		φ 3mm
Output Example	Open collector output (L (OFF) level at detection)			
Operating current	8mA			0.3mA
Detectable pulse width	Approx 10ms			
Power Supply	+12V ± 10%(Unipolar)			+5V ± 5%(Unipolar)
CT Structure	Through hole type	Split type		
Capable CT Open/Close	—	Approx. 100 times		
Output Part	M3 Terminal			Lead Wire : Approx. 150mm (with Connector : SMR-03V-B)
Wiring Method	R1:Output R0:COM 12V:+12V			Red:+5V White:Output Black:COM
Rated Voltage	Less than AC600V for low voltage circuit of coated wires			Less than AC200V for low voltage circuit of coated wires
Withstanding Voltage	AC2200V/1 minute (between output terminal and outer case)			AC1500V/1 minute (between output terminal and outer case)
Insulation Resistance	More than 100MΩ by 500V insulation tester (between output terminal and outer case)			
Operation Temperature	-20 ~ 70°C, less than 80%RH w/o condensation			-10 ~ 60°C, less than 80%RH w/o condensation
Dimension	33 × 77 × 22mm	33 × 79 × 22mm		28 × 26.6 × 18mm
Weight	Approx. 55g	Approx. 60g	Approx. 55g	Approx. 16g



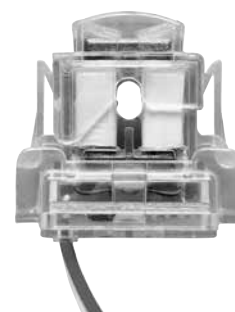
CTF-05M



CTF-05K



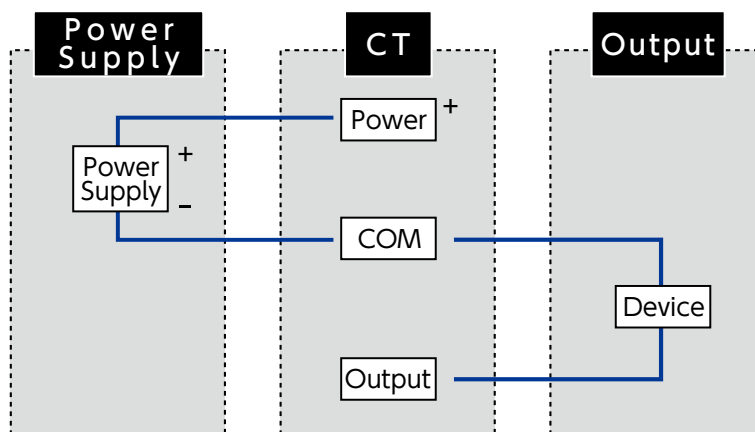
CTF-05T



OKM-03

### Connection Circuit

The output voltage is between 0V and + V



# Pulse detection

## PCT-06/CTF-05/CTF-03

**FEATURES** For detecting current pulse (for power pulse)



**SPECIFICATIONS**

MODEL	PCT-06	CTF-05	CTF-03
Rated Primary Current	AC10A (50/60Hz)		AC8A (50/60Hz)
Applicable Current	1mA ~ 10A		0.1mA ~ 8A
Max. Capable Current	15A		10A
Secondary Windings	800Turns		
CT Inside Diameter	φ 6mm	φ 5.2mm	φ 3mm
Applicable Frequency	10Hz ~ 5kHz		
Output Example	AC12.3mV ± 5% (1A/10 Ω)	AC12.4mV ± 5% (1A/10 Ω)	AC12.4mV ± 5% (1A/10 Ω)
CT Structure	Through hole type	Split type	
Capable CT Open/Close	—	Approx. 100 times	
Output Part	Lead Wire : Approx. 500mm	Lead Wire : Approx. 2000mm (with Y Terminal : V1.25-B3A)	Lead Wire : Approx. 150mm
Rated Voltage	Less than AC600V for low voltage circuit of coated wires		Less than AC250V for low voltage circuit of coated wires
Withstanding Voltage	AC2200V/1 minute (between output terminal and CT)	AC2200V/1 minute (between output terminal and outer case)	AC1000V/1 minute (between output terminal and outer case)
Insulation Resistance	More than 100MΩ by 500V insulation tester (between output terminal and CT)	More than 100MΩ by 500V insulation tester (between output terminal and outer case)	More than 100MΩ by 100V insulation tester (between output terminal and outer case)
Operation Temperature	-10 ~ 60°C, less than 80%RH w/o condensation		
Dimension	21 × 25 × 10mm	49.1 × 42.5 × 22mm	28 × 23.9 × 11.5mm
Weight	Approx. 5g	Approx. 95g	Approx. 8g



PCT-06



CTF-05



CTF-03

# DC Load current (Split type)

## CTF-DC Series

### FEATURES

For measuring current of solar battery strings (split-core type)



### SPECIFICATIONS

MODEL	CTF-6DC	CTF-30-10DC	CTF-60-10DC
Rated Primary Current	DC30A		DC60A
Applicable Current	+1A ~ +30A	± 1A ~ ± 30A	± 2A ~ ± 60A
Max. Capable Current	+33A	± 33A	± 66A
CT Inside Diameter	φ 6mm	φ 10mm	
Output Voltage	+4.5V (at +30A Input) +2.5V (at 0A Input)	+4.5V (at +30A Input) 2.5V (at 0A Input+) +0.5V (at -30A Input)	+4.5V (at +60A Input) +2.5 (at 0A Input) +0.5V (at -60A Input)
Accuracy	± 2% F.S		
Response Time	Approx. 10 μs		
Power supply	+5V ± 5%(Unipolar)		
Power consumption	Approx. 6mA		
Capable CT Open/Close	Approx. 100 times		
Output Part	Lead Wire : Approx. 200mm		
Wiring Method	Red:+5V White:Output Shield:COM		
Rated Voltage	Less than DC1000V for low voltage circuit of coated wires		
Withstanding Voltage	AC2000V/1 minute (between output terminal and outer case)		
Insulation Resistance	More than 100M Ω by 500V insulation tester (between output terminal and outer case)		
Operation Temperature	-10 ~ 65°C , less than 85%RH w/o condensation		
Dimension	19.3 × 59 × 30.5mm	25.9 × 65.2 × 31.1mm	
Weight	Approx. 23g	Approx. 36g	



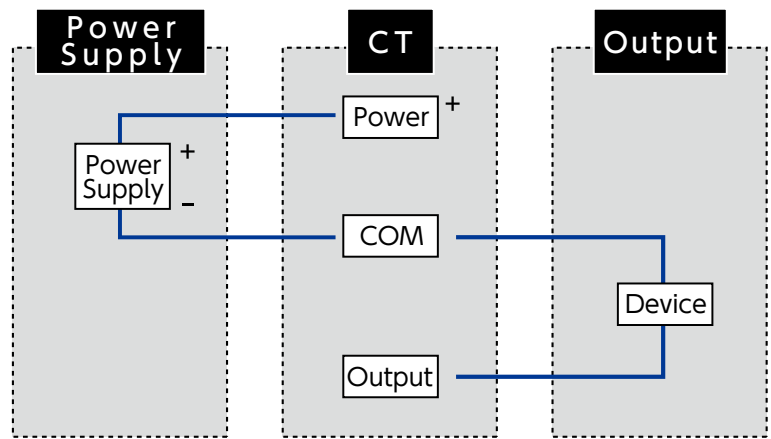
CTF-6DC



CTF-30-10DC · CTF-60-10DC

### Connection Circuit

The output voltage is between 0V and + V



# DC/AC Load current (Split type)

## CTF-DC Series

**FEATURES**

For measuring current of DC/AC power supply (split-core type)



**Bipolar Power Supply**

MODEL	CTF-5DC	CTF-50DC	CTF-100DC	CTF-200DC	CTF-500DC
Rated Primary Current	DC/AC5A	DC/AC50A	DC/AC100A	DC/AC200A	DC/AC500A
Applicable Current	± 1A ~± 5A	± 2.5A ~± 50A	± 5.0A ~± 100A	± 10A ~± 200A	± 25A ~± 500A
Max. Capable Current	± 7.5A	± 75A	± 150A	± 300A	± 750A
CT Inside Diameter	φ 14.5mm			φ 24mm	φ 35.5mm
Applicable Frequency	DC ~ 10KHz				
Output Voltage	± 4V F.S				
Accuracy	± 1% F.S				
Response Time	Approx. 3 μs				
Power supply	± 12V ± 5% (Bipolar)				
Power consumption	Approx. 7mA				
Capable CT Open/Close	Approx. 100 times				
Output Part	Lead Wire : Approx. 330mm				
Wiring Method	Red:+12V Black:-12V White:Output Green:COM				
Rated Voltage	Less than DC/AC500V for low voltage circuit of coated wires				
Withstanding Voltage	AC1500V/1 minute (between output terminal and outer case)				
Insulation Resistance	More than 100M Ω by 500V insulation tester (between output terminal and outer case)				
Operation Temperature	-10 ~ 60°C , less than 80%RH w/o condensation				
Dimension	29.5 × 55 × 30.5mm			45 × 76 × 35.5mm	62.5 × 94 × 35.5mm
Weight	Approx. 60g		Approx. 60g	Approx. 190g	Approx. 360g



CTF-5DC/50DC/100DC



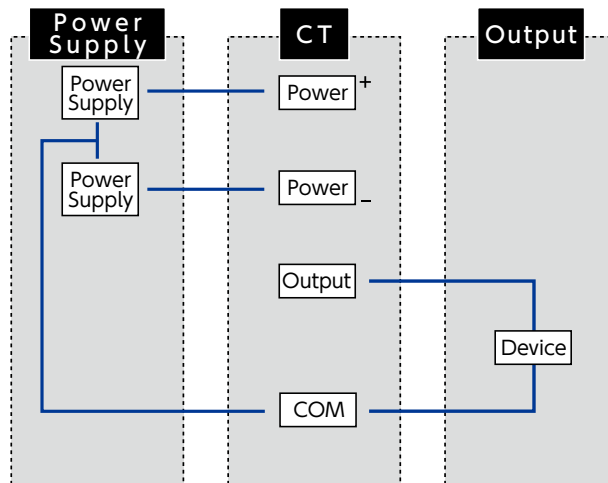
CTF-200DC



CTF-500DC

**Connection Circuit**

The output voltage is between - and + V with the center of 0V



# DC/AC Load current (Split type)

## CTF-DC Series



### FEATURES

For measuring current of DC/AC power supply (split-core type)

### Unipolar Power Supply

MODEL	DC24V			DC48V		
	CTF-50DC-U24V	CTF-100DC-U24V	CTF-200DC-U24V	CTF-50DC-U48V	CTF-100DC-U48V	CTF-200DC-U48V
Rated Primary Current	DC/AC50A	DC/AC100A	DC/AC200A	DC/AC50A	DC/AC100A	DC/AC200A
Applicable Current	± 2.5A ~ ± 50A	± 5.0A ~ ± 100A	± 10A ~ ± 200A	± 2.5A ~ ± 50A	± 5.0A ~ ± 100A	± 10A ~ ± 200A
Max. Capable Current	± 75A	± 150A	± 300A	± 75A	± 150A	± 300A
CT Inside Diameter	φ 14.5mm		φ 24mm	φ 14.5mm		φ 24mm
Applicable Frequency	DC ~ 10KHz					
Output Voltage	± 4V F.S (between OUT-0V 9V ± 4V, between OUT-REF 0V ± 4V)			± 4V F.S (between OUT-0V 12V ± 4V, between OUT-REF 0V ± 4V)		
Accuracy	± 1% F.S					
Response Time	Approx. 3 μs					
Power supply	+24V ± 5%(Unipolar)			+48V ± 5%(Unipolar)		
Power consumption	Approx. 7mA					
Capable CT Open/Close	Approx. 100 times					
Output Part	Lead Wire : Approx. 330mm					
Wiring Method	Red:+24V Black:COM White:Output Green:Ref			Red:+48V Black:COM White:Output Green:Ref		
Rated Voltage	Less than DC/AC500V for low voltage circuit of coated wires					
Withstanding Voltage	AC1500V/1 minute (between output terminal and outer case)					
Insulation Resistance	More than 100M Ω by 500V insulation tester (between output terminal and outer case)					
Operation Temperature	-10 ~ 60°C , less than 80%RH w/o condensation					
Dimension	29.5 × 55 × 30.5mm		45 × 76 × 35.5mm	29.5 × 55 × 30.5mm		45 × 76 × 35.5mm
Weight	Approx. 60g	Approx. 80g	Approx. 190g	Approx. 60g	Approx. 80g	Approx. 190g



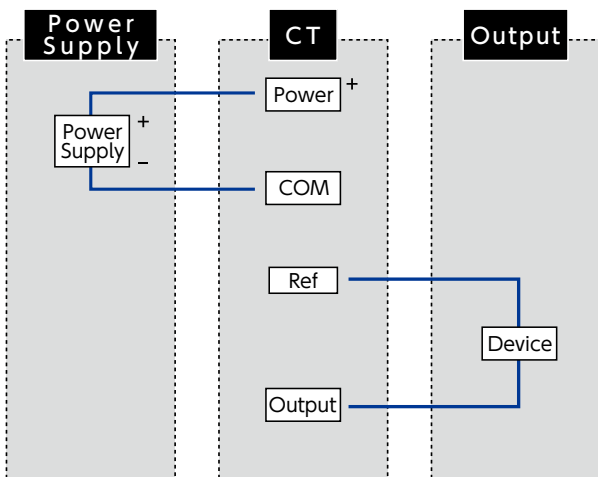
CTF-50DC-U24V/CTF-100DC-U24V  
CTF-50DC-U48V/CTF-100DC-U48V



CTF-200DC-U24V/CTF-200DC-U48V

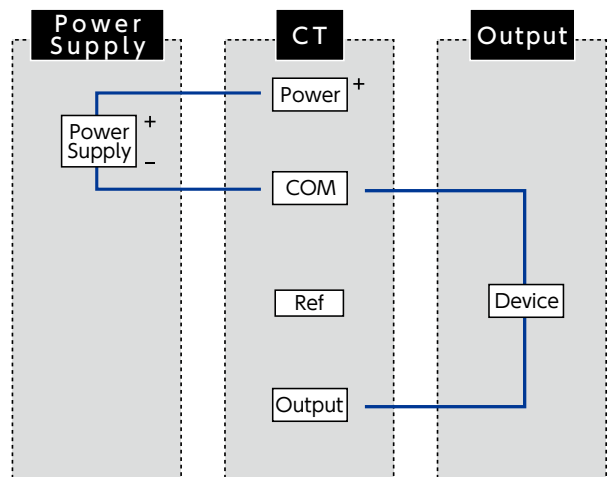
### Connection Circuit

The output voltage is between - and + V with the center of 0V



### Connection Circuit

The output voltage is between 0V and + V



# DC/AC Load current (Split type)

## FEATURES

For measuring DC current comply with watt-hour meter (split-core type)



## SPECIFICATIONS

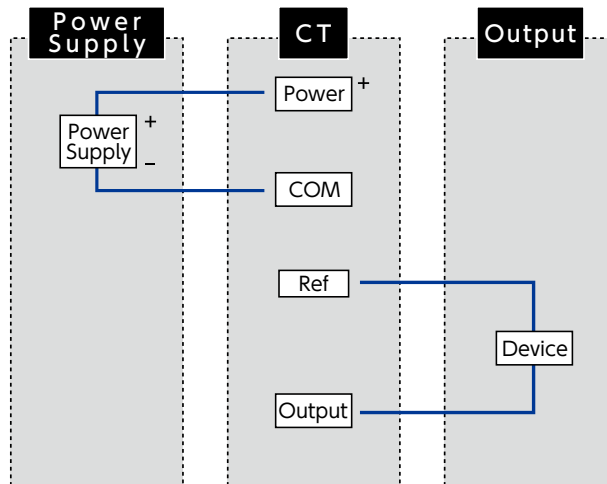
MODEL	DCT-17
Rated Primary Current	DC60A
Applicable Current	± 1A ~± 60A
Max. Capable Current	± 75A
CT Inside Diameter	φ 17mm
Output Voltage	± 2.0V F.S
Accuracy	± 0.5% F.S
Power supply	+5V ± 5%(Unipolar)
Power consumption	Approx. 15mA
Capable CT Open/Close	Approx. 30 times
Output Part	Lead Wire : Approx. 1500mm (with Connector : PHR-5)
Wiring Method	Red:+5V Brown:COM White:Output Black:Ref Green:No Connection
Rated Voltage	Less than DC500V for low voltage circuit of coated wires
Withstanding Voltage	AC2000V/1 minute (between output terminal and outer case)
Insulation Resistance	More than 100M Ω by 500V insulation tester (between output terminal and outer case)
Operation Temperature	-10 ~ 60°C , less than 85%RH w/o condensation
Dimension	78 × 70.5 × 37.8mm
Weight	Approx. 190g



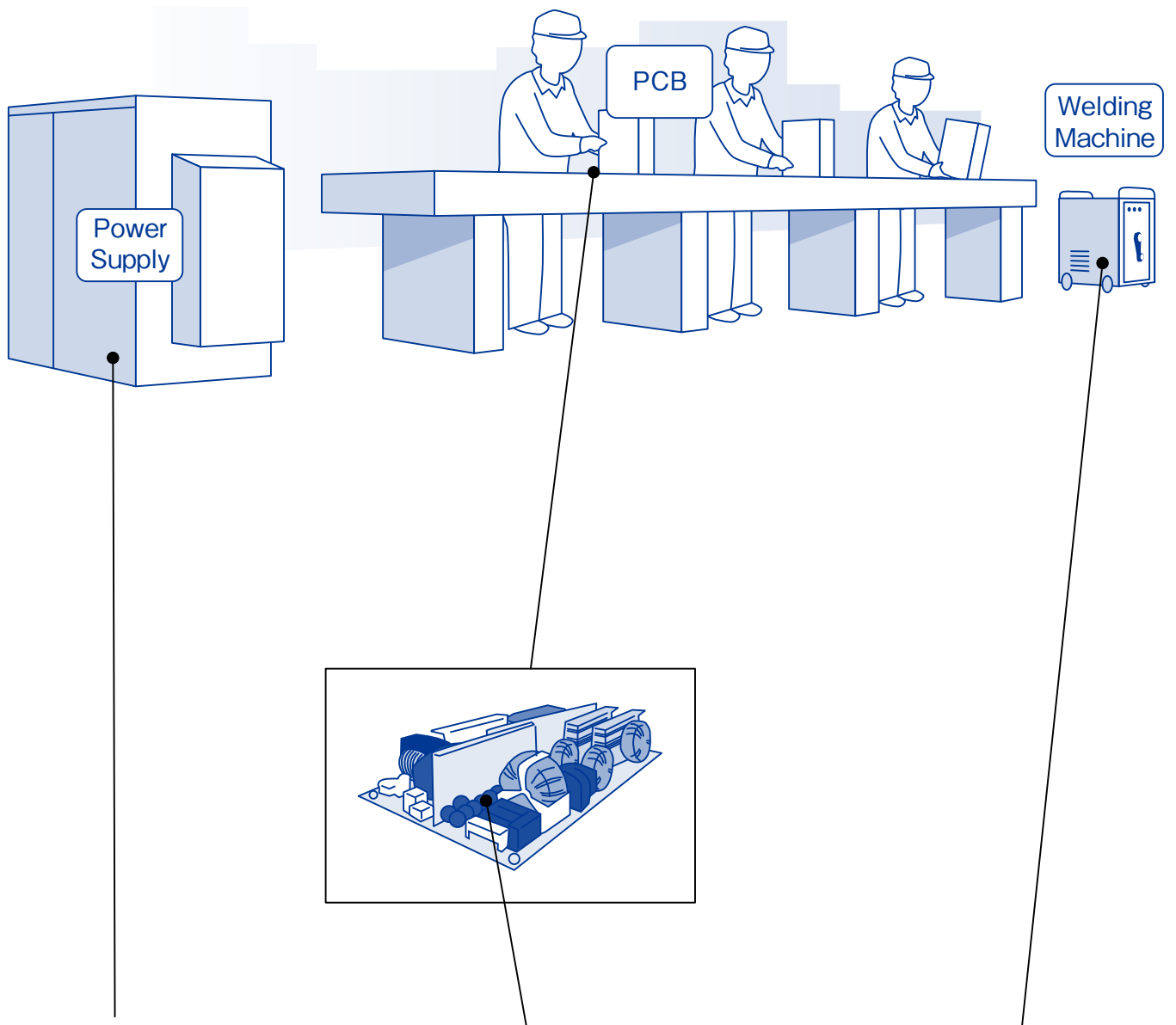
DCT-17

### Connection Circuit

The output voltage is between – and + V with the center of 0V







Load Current Measurement



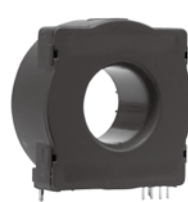
MOHT Series (Page21,22)

Device Control



CT-6K/6S (Page26)

Load Current Measurement



FDAZCT-20L Series (Page16)



MCHT Series (Page19,20)

# DC Leakage/Small current (PCB mount type)

**FEATURES**

For detecting DC ground fault current (PCB mount type)



**SPECIFICATIONS**

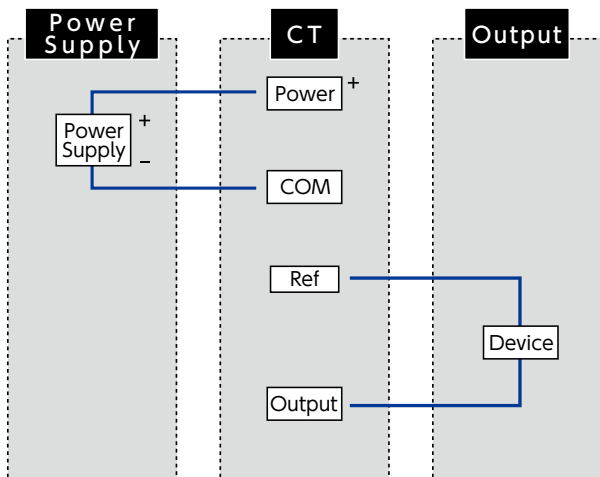
MODEL	DCZCT-20CDHL
Rated Primary Current	DC200mA
Applicable Current	0 ~ ± 200mA
Max. Capable Current	± 10A
CT Inside Diameter	φ 20mm
Output Voltage	± 2V F.S
Accuracy	± 1.0% F.S. ± 10mV
Response Time	Approx. 100ms
Power supply	+5V ± 5%(Unipolar)
Power consumption	Approx. 30mA
Wiring Method	+:+5V 0V:COM REF:Ref OUT:Output
Rated Voltage	Less than DC500V for low voltage circuit of coated wires
Withstanding Voltage	AC3700V/1 minute (between output terminal and CT)
Insulation Resistance	More than 100MΩ by 500V insulation tester (between output terminal and CT)
Operation Temperature	-20 ~ 80°C , less than 85%RH w/o condensation
Dimension	42.9 × 42.4 × 22.3mm
Weight	Approx. 27g



DCZCT-20CDHL

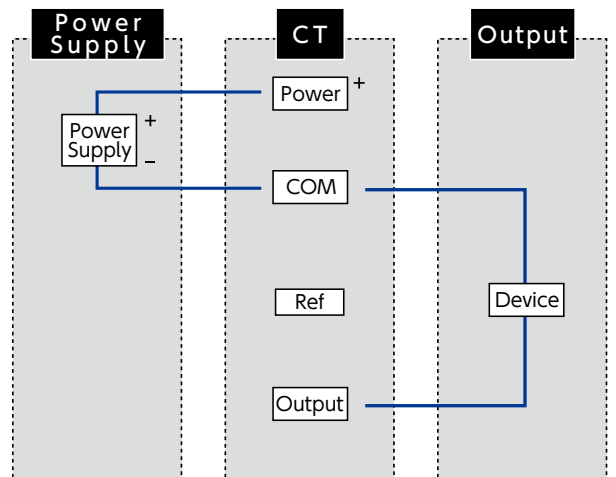
**Connection Circuit**

The output voltage is between - and + V with the center of 0V



**Connection Circuit**

The output voltage is between 0V and + V



# DC/AC Leakage/Small current (PCB mount type) FDAZCT-20L Series

## FEATURES

For detecting DC/AC ground fault current  
(PCB mount type)



## SPECIFICATIONS

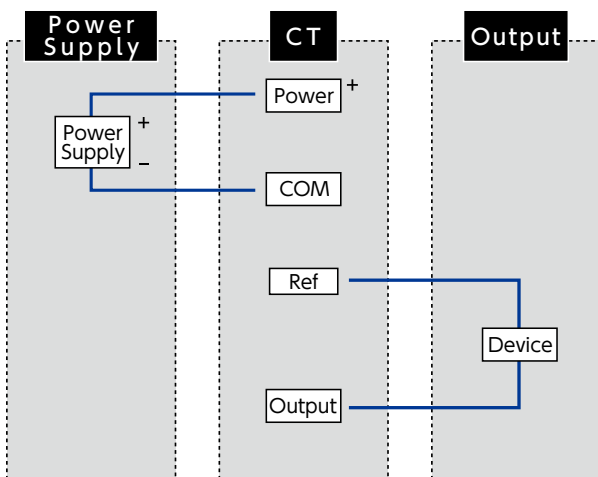
MODEL	FDAZCT-20L-0.3	FDAZCT-20L-0.6	FDAZCT-20LSP-0.3	FDAZCT-20LSP-0.6
Rated Primary Current	DC/AC300mA	DC/AC600mA	DC/AC300mA	DC/AC600mA
Applicable Current	0 ~ ± 500mA	0 ~ ± 850mA	0 ~ ± 500mA	0 ~ ± 850mA
Max. Capable Current	± 500mA	± 850mA	± 500mA	± 850mA
CT Inside Diameter	φ 20mm			
Applicable Frequency	DC ~ 3.5kHz			
Output Voltage	± 1200mV F.S (between Ref. and Out.)	± 1485mV F.S (between Ref. and Out.)	± 1200mV F.S (between Ref. and Out.)	± 1485mV F.S (between Ref. and Out.)
Accuracy	± 1.9% F.S			
Response Time	Approx. 50 μs			
Power supply	+5V ± 5%(Unipolar)			
Power consumption	Approx. 17.5mA			
Wiring Method	+:+5V 0V:COM Ref:Ref Out:Output			
Rated Voltage	Less than DC/AC600V for low voltage circuit of coated wires			
Withstanding Voltage	AC5400V/1 minute (between output terminal and CT)			
Insulation Resistance	More than 100MΩ by 500V insulation tester (between output terminal and CT)			
Operation Temperature	-40 ~ 105°C, less than 75%RH w/o condensation			
Dimension	44.8 × 44.7 × 21.7mm		44.8 × 44.7 × 17.9mm	
Weight	Approx. 30g			



FDAZCT-20L series

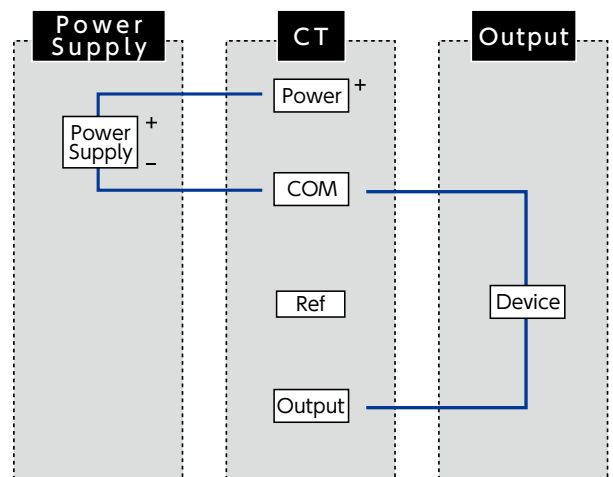
### Connection Circuit

The output voltage is between - and + V with the center of 0V



### Connection Circuit

The output voltage is between 0V and + V



DC/AC Leakage/Small current  
(PCB mount type) **FDAZCT-11L-0.4**

**FEATURES**

For detecting DC/AC ground fault current  
(PCB mount type)



**SPECIFICATIONS**

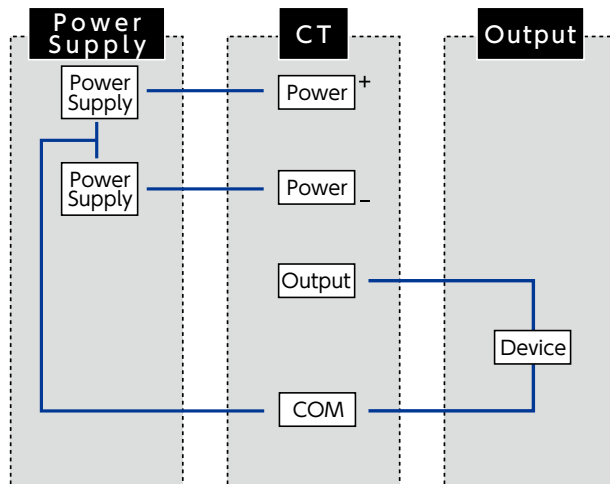
MODEL	FDAZCT-11L-0.4
Rated Primary Current	DC/AC400mA
Applicable Current	0 ~ ± 800mA
Max. Capable Current	± 800mA
CT Inside Diameter	φ 11mm
Applicable Frequency	DC, 40Hz ~ 18kHz
Output Voltage	± 5V F.S
Accuracy	± 1% F.S
Response Time	Approx. 60ms
Power supply	DC ± 15V ± 5% (Bipolar)
Power consumption	Approx. 30mA
Wiring Method	M:Output COM:COM -Vcc:-15V +Vcc:+15V
Rated Voltage	Less than DC/AC500V for low voltage circuit of coated wires
Withstanding Voltage	AC2500V/1 minute (between output terminal and outer case)
Insulation Resistance	More than 500MΩ by 500V insulation tester (between output terminal and CT)
Operation Temperature	-20 ~ 85°C , less than 75%RH w/o condensation
Dimension	30x30x19.2mm
Weight	Approx. 25g



FDAZCT-11L-0.4

**Connection Circuit**

The output voltage is between – and + V with the center of 0V



# DC Leakage / Small current (PCB mount type) DCZCT-11M



## FEATURES

For detecting DC ground fault current  
(PCB mount type)

## SPECIFICATIONS

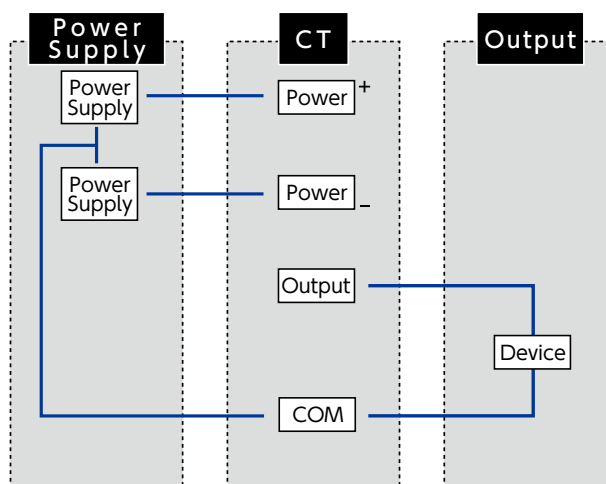
MODEL	DCZCT-11M
Rated Primary Current	DC10mA
Applicable Current	0 ~ ± 25mA
Max. Capable Current	± 25mA
CT Inside Diameter	φ 11mm
Output Voltage	± 1.5V F.S
Accuracy	± 2% F.S
Response Time	Approx. 100ms
Power Supply	DC ± 12V ± 5% (Bipolar)
Power Consumption	Approx. 10mA
Wiring Method	M:Output COM:COM -VCC:-12V +VCC:+12V
Rated Voltage	Less than DC/AC500V for low voltage circuit of coated wires
Withstanding Voltage	AC2500V/1 minute (between output terminal and outer case)
Insulation Resistance	More than 100MΩ by 500V insulation tester (between output terminal and CT)
Operation Temperature	-20 ~ 85°C, less than 85%RH w/o condensation
Dimension	30x30x19.2mm
Weight	Approx. 18g



DCZCT-11M

### Connection Circuit

The output voltage is between - and + V with the center of 0V



# DC/AC Load current (Through hole type) MCHT Series



### FEATURES

For measuring current of inverter power supply (closed loop method)

### SPECIFICATIONS

MODEL	MCHT-200B	MCHT-200B/4P	MCHT-300B	MCHT-300B/4P
Rated Primary Current	DC/AC200A		DC/AC300 A	
Rated Secondary Current	100mA		150mA	
Applicable Current	0 ~± 420A		0 ~± 500A	
Max. Capable Current	± 420A		± 500A	
Nominal CT Ratio	1:2000			
CT Inside Diameter	φ 15.5mm		φ 20mm	
Applicable Frequency	0 ~± 100kHz			
Accuracy	± 0.5% F.S		± 0.47% F.S	
Response Time	Approx. 1 μs			
Power supply	± 12V ~± 15V ± 5% (Bipolar)		± 12V ~± 20 V± 5% (Bipolar)	
Power consumption	17mA+Output (at ± 15V)		26mA+Output (at ± 20V)	16mA+Output (at ± 20V)
Output Part	Molex 6410	Molex Mini Fit Jr5566	Molex 6410	Molex Mini Fit Jr5566
Wiring Method	+:+12 ~ +15V M:Output -:12 ~ -15V		+:+12 ~ +20V M:Output -:12 ~ -20V	
Rated Voltage	Less than DC/AC500V for low voltage circuit of coated wires			
Withstanding Voltage	AC3500V/1 minute (between output terminal and CT)			
Insulation Resistance	More than 100MΩ by 500V insulation tester (between output terminal and CT)			
Operation Temperature	-40°C ~ +85°C, less than 75%RH w/o condensation			
Dimension	49.3 × 52.4 × 25.9mm		54 × 56.5 × 26mm	
Weight	Approx. 78g		Approx. 95g	

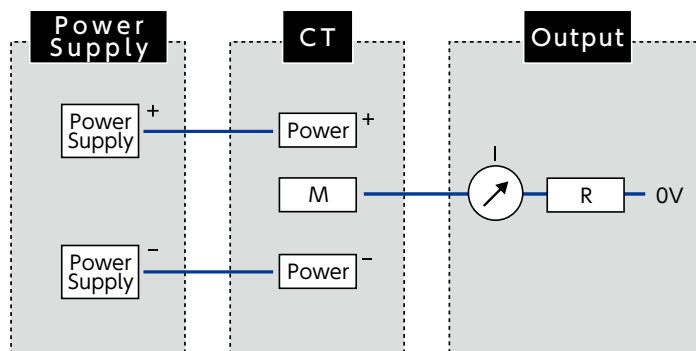


MCHT-200B·MCHT-200B/4P



MCHT-300B·MCHT-300B/4P

### Connection Circuit



## SPECIFICATIONS

MODEL	MCHT-500B	MCHT-500B/4P	MCHT-1000B	MCHT-1000B/4P
Rated Primary Current	DC/AC500 A	DC/AC650 A	DC/AC1000A	
Rated Secondary Current	100mA	186mA	200mA	250mA
Applicable Current	0 ~± 800A	0 ~± 920A	0 ~± 1500A	0 ~± 1800A
Max. Capable Current	± 800A	± 920A	± 1500A	± 1800A
Nominal CT Ratio	1:5000	1:3500	1:5000	1:4000
CT Inside Diameter	φ 30.2mm		40.5 × 38.5mm	
Applicable Frequency	0 ~± 100kHz		0 ~ 150kHz	
Accuracy	± 0.6% F.S	± 0.5% F.S	± 0.4% F.S	± 0.6% F.S
Response Time	Approx. 1 μs			
Power supply	± 15V ~± 24V ± 5% (Bipolar)	± 15V ± 5% (Bipolar)	± 15V ~± 24V ± 5% (Bipolar)	
Power consumption	24mA+Output (at ± 18V)	21mA+Output (at ± 15V)	Approx. 350mA	Approx. 400mA
Output Part	Molex 6410	Molex Mini Fit Jr5566	Molex 6410	Molex Mini Fit Jr5566
Wiring Method	+:+12 ~ +24V M:Output -:12 ~ -24V	+:+15V M:Output -:15V	+:+15 ~ +24V M:Output -:15 ~ -24V	
Rated Voltage	Less than DC/AC500V for low voltage circuit of coated wires			
Withstanding Voltage	AC3500V/1 minute (between output terminal and CT)			
Insulation Resistance	More than 100MΩ by 500V insulation tester (between output terminal and CT)			
Operation Temperature	-40°C~+70°C, less than 75%RH w/o condensation	-40°C~ +85°C, less than 75%RH w/o condensation		-25°C~+70°C, less than 75%RH w/o condensation
Dimension	70x70x31mm		90 × 95 × 34mm	
Weight	Approx. 230g		Approx. 520g	

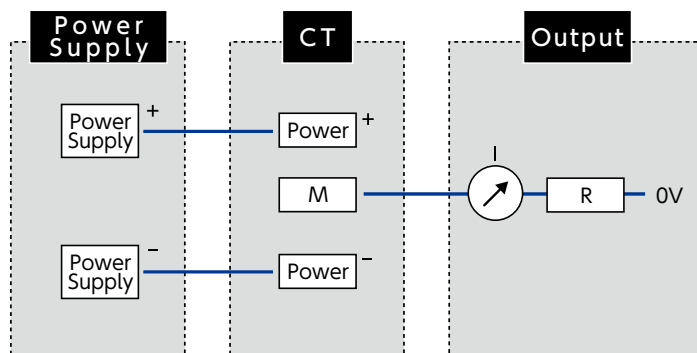


MCHT-500B·MCHT-500B/4P



MCHT-1000B·MCHT-1000B/4P

## Connection Circuit



# DC/AC Load current (Through hole type) MOHT Series

**FEATURES**

For measuring current of inverter power supply  
(open loop method)



**SPECIFICATIONS**

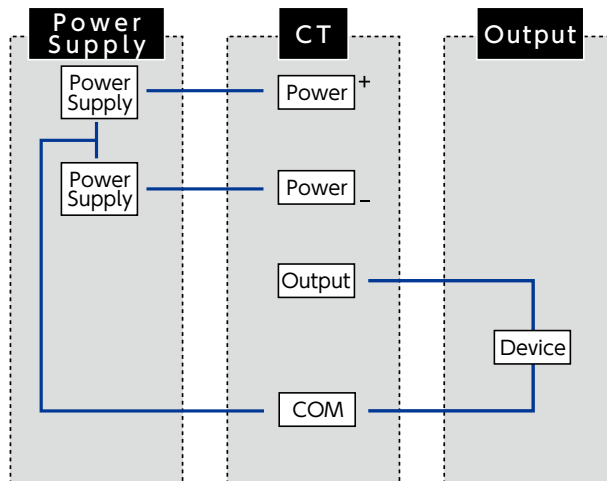
MODEL	MOHT-200B	MOHT-400B	MOHT-500B	MOHT-600B
Rated Primary Current	DC/AC200A	DC/AC400A	DC/AC500A	DC/AC600A
Applicable Current	0 ~ ± 600A	0 ~ ± 1200A	0 ~ ± 1500A	0 ~ ± 1800A
Max. Capable Current	± 600A	± 1200A	± 1500A	± 1800A
CT Inside Diameter	40.5 × 30.5mm			
Applicable Frequency	DC ~ 25kHz			
Output Voltage	± 4V F.S			
Accuracy	± 1% F.S			
Response Time	Approx. 5 μs			
Power supply	± 15V ± 5% (Bipola)			
Power consumption	Approx. 30mA			
Output Part	Molex 5045-04A			
Wiring Method	+:+15V -:-15V OUT:Output GND:COM			
Rated Voltage	Less than DC/AC1100V for low voltage circuit of coated wires			
Withstanding Voltage	AC4900V/1 minute (between output terminal and CT)			
Insulation Resistance	More than 1000MΩ by 500V insulation tester (between output terminal and CT)			
Operation Temperature	-40 ~ 105°C , less than 85%RH w/o condensation			
Dimension	70 × 65 × 24mm			
Weight	Approx. 300g			



MOHT series

**Connection Circuit**

The output voltage is between - and + V with the center of 0V





## SPECIFICATIONS

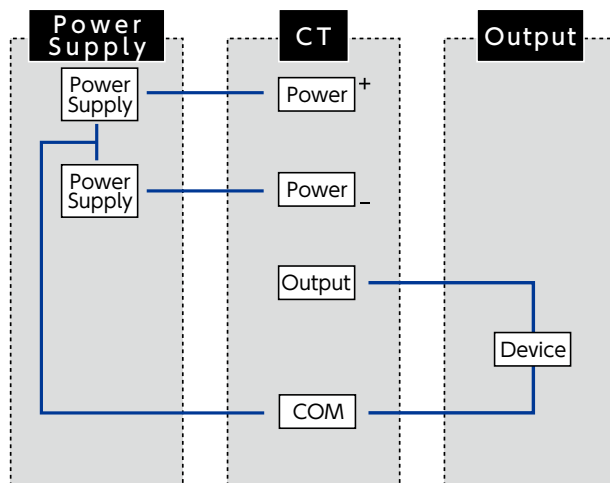
MODEL	MOHT-800B	MOHT-1000B	MOHT-1200B	MOHT-1500B
Rated Primary Current	DC/AC800A	DC/AC1000A	DC/AC1200A	DC/AC1500A
Applicable Current	0 ~ ± 2400A		0 ~ ± 2500A	
Max. Capable Current	± 2400A		± 2500A	
CT Inside Diameter		40.5 × 30.5mm		
Applicable Frequency		DC ~ 25kHz		
Output Voltage		± 4V F.S		
Accuracy		± 1% F.S		
Response Time		Approx. 5 μs		
Power supply		± 15V ± 5% (Bipolar)		
Power consumption		Approx. 30mA		
Output Part		Molex 5045-04A		
Wiring Method		+:+15V -:-15V OUT:Output GND:COM		
Rated Voltage		Less than DC/AC1100V for low voltage circuit of coated wires		
Withstanding Voltage		AC4900V/1 minute (between output terminal and CT)		
Insulation Resistance		More than 1000MΩ by 500V insulation tester (between output terminal and CT)		
Operation Temperature		-40 ~ 105°C, less than 85%RH w/o condensation		
Dimension		70 × 65 × 24mm		
Weight		Approx. 300g		



MOHT series

## Connection Circuit

The output voltage is between – and + V with the center of 0V



# DC Leakage/Small current (Through hole type) DCZCT Series

**FEATURES**

For measuring DC leakage current (split-core type)



**SPECIFICATIONS**

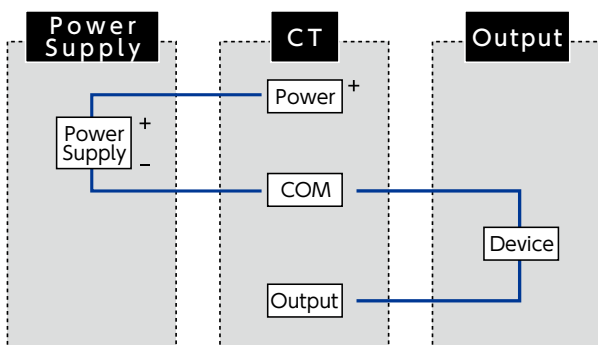
MODEL	DCZCT-20M	DCZCT-20MH	DCZCT-20CDH
Rated Primary Current	DC1000mA	DC200mA	
Applicable Current	± 1mA ~± 1000mA	± 1mA ~± 200mA	
Max. Capable Current	± 10A		
CT Inside Diameter	φ 20mm		
Output Voltage	± 1V F.S		
Accuracy	± 1% F.S		
Response Time	Approx. 300ms		Approx. 100ms
Power supply	+5V ± 5%(Unipolar)	+5V ± 5% (Unipolar)	± 12V ± 5% (Bipolar)
Power consumption	Approx. 10mA		Approx. 12mA
Output Part	Lead Wire : Approx. 150mm (with Connector : SMR-03V-B)		
Wiring Method	Red:+5V White:Output Black:COM		Red:+12V Black:-12V White:Output Green:COM
Rated Voltage	Less than DC500V for low voltage circuit of coated wires		
Withstanding Voltage	AC2000V/1 minute (between output terminal and CT)		
Insulation Resistance	More than 100MΩ by 500V insulation tester (between output terminal and CT)		
Operation Temperature	-20 ~ 80°C , less than 80%RH w/o condensation		
Dimension	41 × 56 × 17mm		
Weight	Approx. 60g		



DCZCT-20M/DCZCT-20MH/DCZCT-20CDH

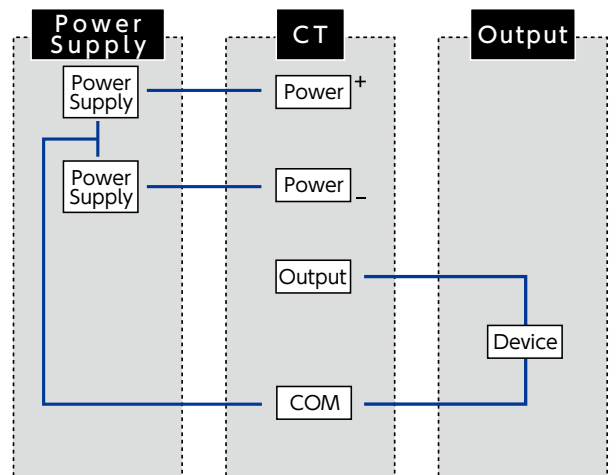
**Connection Circuit (Unipolar)**

The output voltage is between 0V and + V



**Connection Circuit (Bipolar)**

The output voltage is between - and + V with the center of 0V



## SPECIFICATIONS

MODEL	DCZCT-45NK	DCZCT-60NK	DCZCT-45SH
Rated Primary Current	DC100mA		DC/AC3000mA
Applicable Current	$\pm 1\text{mA} \sim \pm 100\text{mA}$		$\pm 1\text{mA} \sim \pm 3000\text{mA}$
Max. Capable Current	$\pm 10\text{A}$		
CT Inside Diameter	$\phi 45\text{mm}$	$\phi 60\text{mm}$	$\phi 45\text{mm}$
Output Voltage	$\pm 2.5\text{V F.S}$		
Accuracy	$\pm 1\% \text{ F.S}$		0 ~ 500mA: $\pm 0.2\% \text{ F.S}$ 500mA ~ 3000mA: $\pm 2.0\% \text{ F.S}$
Response Time	Approx. 2s		—
Power Supply	+24V $\pm 10\%$ (Unipolar)	+24V $\pm 10\%$ (Unipolar)	$\pm 15\text{V} \pm 5\%$ (Bipolar)
Power Consumption	Approx. 17.5 m A	Approx. 10mA	Approx. 20mA
Output Part	Lead Wire : Approx. 150mm (with Connector : SMR-03V-B)		Connector : 43025-0600, Holder : 43045-0601
Wiring Method	Red:+24V Black:COM White:Output Green:Ref		1:+15V 2:COM 3:-15V 4:Output 5:Test Wire Out 6:Test Wire In
Rated Voltage	Less than DC500V for low voltage circuit of coated wires		Less than DC/AC500V for low voltage circuit of coated wires
Withstanding Voltage	AC2000V/1 minute (between output terminal and CT)		
Insulation Resistance	More than 100M $\Omega$ by 500V insulation tester (between output terminal and CT)		
Operation Temperature	-20 ~ 80°C , less than 80%RH w/o condensation		
Dimension	106 × 143 × 47mm	120 × 157 × 51mm	106 × 143 × 47mm
Weight	Approx. 1800g	Approx. 1900g	Approx. 1800g



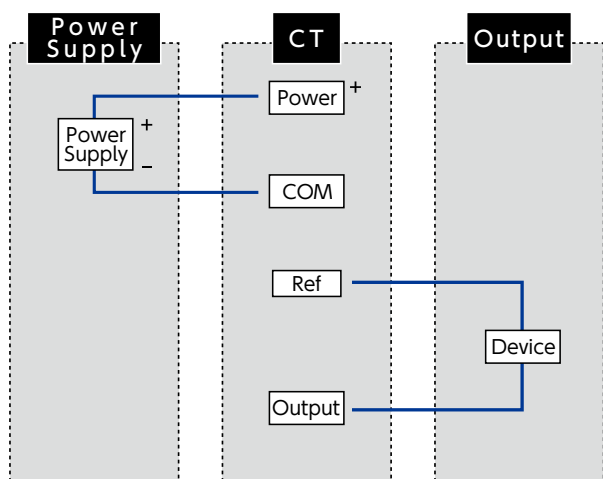
DCZCT-45NK/DCZCT-45SH



DCZCT-60NK

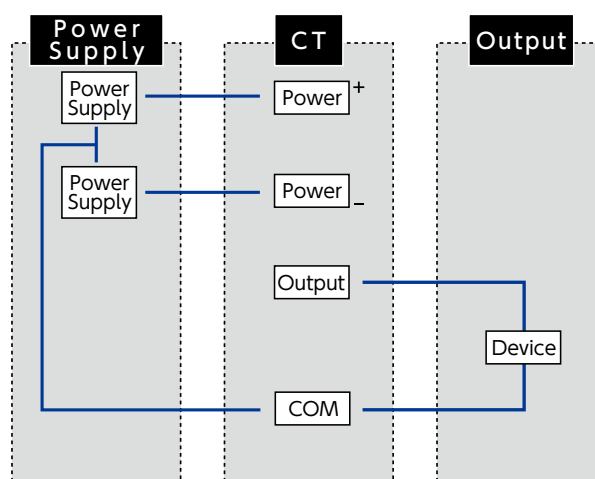
## Connection Circuit (Unipolar)

The output voltage is between - and + V with the center of 0V



## Connection Circuit (Bipolar)

The output voltage is between - and + V with the center of 0V



# AC Load current (Through hole type)



**FEATURES**

For measuring current of inverter power supply (through hole type)

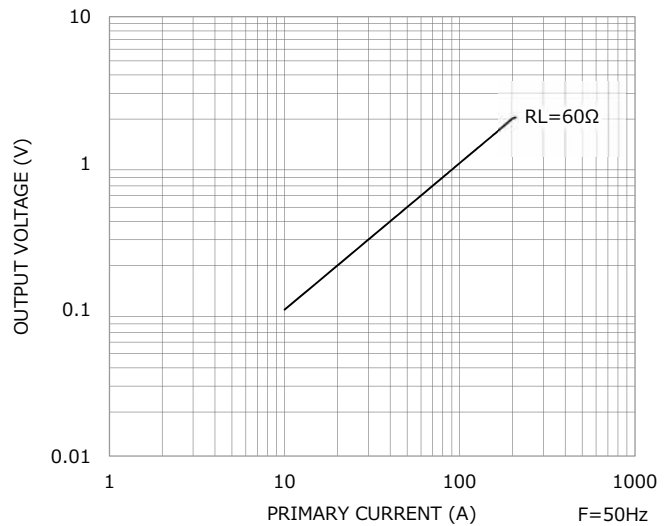
**SPECIFICATIONS**

MODEL	CT-13K
Rated Primary Current	AC50A (50/60Hz)
Applicable Current	1A ~ 50A
Max. Capable Current	100A
Nominal CT Ratio	6000:1
CT Inside Diameter	φ 12.7mm
Applicable Frequency	40Hz ~ 120Hz
Output Example	AC500mV ± 3% (50A/60 Ω)
Output Part	Lead Wire : Approx.150mm
Rated Voltage	Less than AC600V for low voltage circuit of coated wires
Withstanding Voltage	AC2200V/1 minute (between output terminal and CT)
Insulation Resistance	More than 100MΩ by 500V insulation tester (between output terminal and CT)
Operation Temperature	-20 ~ 60°C , less than 85%RH w/o condensation
Dimension	37.5 × 42 × 13.8mm
Weight	Approx. 45g



CT-13K

**CHARACTERISTIC OF OUTPUT VOLTAGE**



# AC Load current (PCB mount type) CT Series



## FEATURES

For measuring current generally (through hole type)

## SPECIFICATIONS

MODEL	CT-6K	CT-6S
Rated Primary Current	AC80A (50/60Hz)	
Applicable Current	0.1A ~ 80A	
Max. Capable Current	80A	
Nominal CT Ratio	800:1	
CT Inside Diameter	φ 5.8mm	
Applicable Frequency	10Hz ~ 100kHz	
Output Example	AC125mV ± 1% (10A/10 Ω)	
Output Part	# 110 Faston Terminal	
Rated Voltage	Less than AC500V for low voltage circuit of coated wires	
Withstanding Voltage	AC2000V/1 minute (between output terminal and CT)	
Insulation Resistance	More than 100MΩ by 500V insulation tester (between output terminal and CT)	
Operation Temperature	-20 ~ 70°C, less than 80%RH w/o condensation	
Dimension	21 × 25 × 10mm	
Weight	Approx. 15g	Approx. 14g

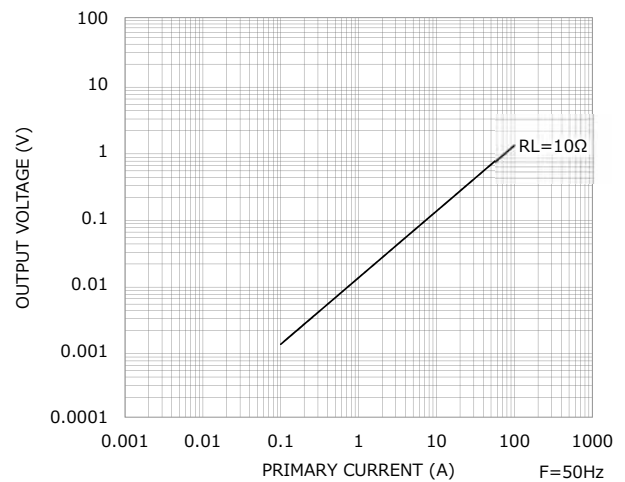


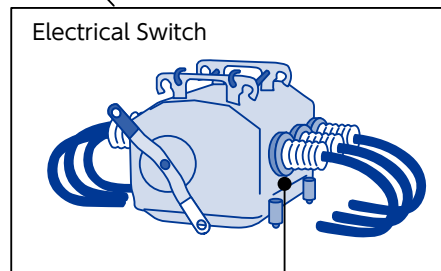
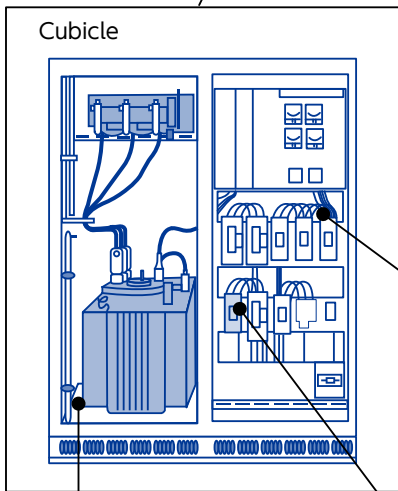
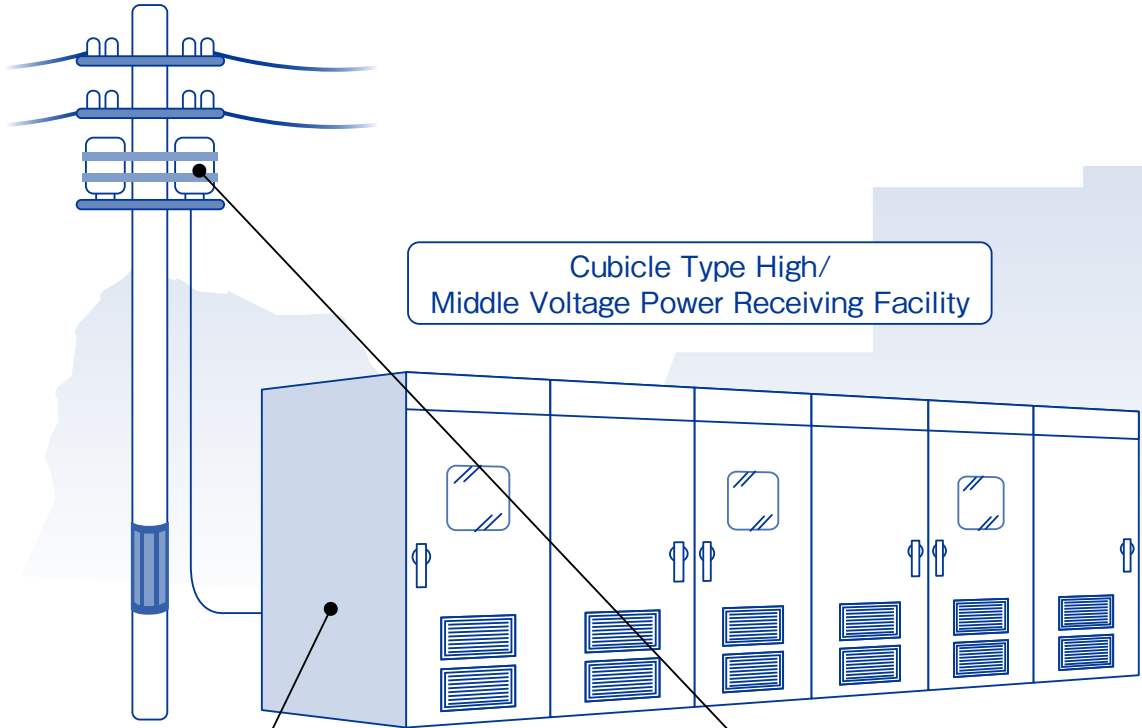
CT-6K



CT-6S

## CHARACTERISTIC OF OUTPUT VOLTAGE





Zero Phase  
Current Transformer



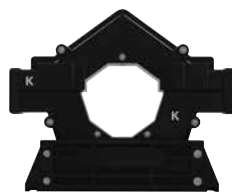
Track Shape CT (Page34)

For Insulation Monitoring Device



ZCT-22 (Page31)  
ZCT-22F (Page31)

Zero Phase Current Transformer



MZL Series (Page33)

Instrument Current Transformer



CTS Series (Page28)  
CTF-T Series (Page29)

# AC Low voltage current transformer (Split type) CTS Series



## FEATURES

High precision split-core type for measuring electric power (measurement power at secondary side)

## SPECIFICATIONS

MODEL	CTS-100	CTS-200	CTS-300	CTS-400	CTS-600
Rated Primary Current	AC100A	AC200A	AC300A	AC400A	AC600A
Rated Secondary Current	1A		5A		
Max. Capable Current	120A	240A	360A	480A	720A
CT Inside Diameter	37 × 34.5mm				
Applicable Frequency	50/60Hz				
Comparative Error	± 1.0% In / ± 1.5% 0.2 In / ± 3.0% 0.05In				
Phase Accuracy	± 1.0° In / ± 1.5° 0.2In / ± 3.0° 0.05In				
Overcurrent Intensity	40 times (against Rated Primary Current)				
Rated Burden (VA)	0.2VA		5VA		
Open Protection	With output Short-Circuit Switch				
Capable Mount/Dismount CT	Approx. 100 times				
Output Part	M3 Terminal				
Rated Voltage	Less than AC600V for low voltage circuit of coated wires				
Withstanding Voltage	AC2200V/1 minute (between output terminal and CT)				
Insulation Resistance	More than 100MΩ by 500V insulation tester (between output terminal and CT)				
Operation Temperature	-10 ~ 50°C, less than 80%RH w/o condensation				
Dimension	127 × 95 × 40mm				
Weight	Approx. 540g				



CTS series

AC Low voltage current transformer (Split type) CTF-T Series

FEATURES

Split-core type for measuring electric power (measurement power at secondary side)



SPECIFICATIONS

MODEL	CTF-100T	CTF-200T	CTF-400T
Rated Primary Current	AC100A	AC200A	AC400A
Rated Secondary Current		1A	
Max. Capable Current	120A	240A	400A
CT Inside Diameter	φ 24mm	φ 35.5mm	
Applicable Frequency	50/60Hz		
Comparative Error	± 1.0% In		
Phase Accuracy	± 1.0° In		
Rated Burden (VA)	0.2VA		
Open Protection	3.0V (Zener diode)		
Capable CT Open/Close	Approx. 100 times		
Output Part	M3 Terminal		
Rated Voltage	Less than AC600V for low voltage circuit of coated wires		
Withstanding Voltage	AC2200V/1 minute (between output terminal and outer case)		
Insulation Resistance	More than 100MΩ by 500V insulation tester (between output terminal and outer case)		
Operation Temperature	-20 ~ 60°C , less than 80%RH w/o condensation		
Dimension	45 × 76 × 35.5mm	62.5 × 94 × 35.5mm	
Weight	Approx. 190g	Approx. 310g	



CTF-100T



CTF-200T/CTF-400T



# AC Low voltage current transformer (Split type)

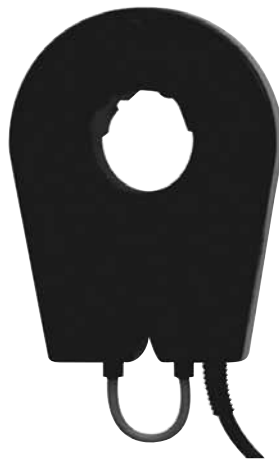


## FEATURES

Split-core water-proof type for measuring current (comply with outdoor use)

## SPECIFICATIONS

MODEL	CT-41B
Rated Primary Current	AC800A (50/60Hz)
Rated Secondary Current	0.2A
Max. Capable Current	800A
CT Inside Diameter	φ 41mm
Applicable Frequency	50 ~ 2kHz
Comparative Error	± 0.5% In
Phase Accuracy	± 1.0° In
Overcurrent Intensity	12.5kA / 2s
Rated Burden (VA)	0.64VA
Open Protection	24V (Zener diode)
Output Part	Lead Wire: Approx. 7000mm
Rated Voltage	Less than AC600V for low voltage circuit of coated wires
Withstanding Voltage	AC2000V/1 minute (between output terminal and Core)
Insulation Resistance	More than 100MΩ by 500V insulation tester (between output terminal and CT)
Operation Temperature	-20 ~ 60°C
Dimension	97 × 134 × 42mm
Weight	Approx. 600g



CT-41B

# AC Leakage/Small current (Split type) ZCT-22 Series



**FEATURES**

Split-core type for measuring leakage current (for insulation monitoring device)

**SPECIFICATIONS**

MODEL	ZCT-22F	ZCT-22
Rated Primary Current	AC100A (50/60Hz)	
Applicable Current	1mA ~ 100A	
Max. Capable Current	100A	
Nominal CT Ratio	4500 : 1	2060 : 1
CT Inside Diameter	φ 22mm	
Applicable Frequency	10Hz ~ 5kHz	
Output Example	AC19.1mV ± 5% (200mA/430 Ω)	AC19.4mV ± 2% (200mA/200 Ω)
Output Part	Lead Wire : Approx. 4000mm (with Y Terminal: V1.25-B3A)	
Rated Voltage	Less than AC600V for low voltage circuit of coated wires	
Withstanding Voltage	AC2200V/1 minute (between output terminal and CT)	
Insulation Resistance	More than 100MΩ by 500V insulation tester (between output terminal and CT)	
Operation Temperature	-10 ~ 60°C , less than 80%RH w/o condensation	
Dimension	57.5 × 66.3 × 22mm	54 × 58 × 29.5mm
Weight	Approx. 200g	



ZCT-22F



ZCT-22

# AC Leakage/Small current (Split type)

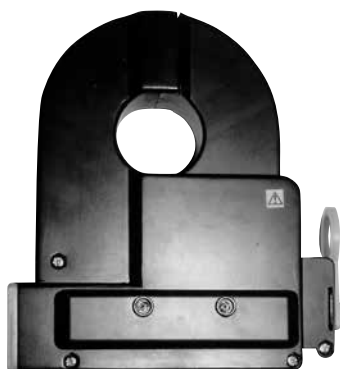
## FEATURES

Split-core type for measuring leakage current for arrester



## SPECIFICATIONS

MODEL	ALCL-40D
Rated Primary Current	AC50A
Applicable Current	1 $\mu$ A ~ 50A
Max. Capable Current	60A
Nominal CT Ratio	2400 : 1
CT Inside Diameter	$\phi$ 37mm
Applicable Frequency	45Hz ~ 65Hz
Output Example	AC1.66mV $\pm$ 2% (20mA/200 $\Omega$ )
Output Part	Lead Wire: Approx. 7000mm (with Connector : E5-120J)
Rated Voltage	Less than AC600V for low voltage circuit of coated wires
Withstanding Voltage	AC2200V/1 minute (between output terminal and CT)
Insulation Resistance	More than 100M $\Omega$ by 500V insulation tester (between output terminal and CT)
Operation Temperature	-10 ~ 50°C, less than 80%RH w/o condensation
Dimension	134.5 $\times$ 165.5 $\times$ 61mm
Weight	Approx. 1000g



ALCL-40D

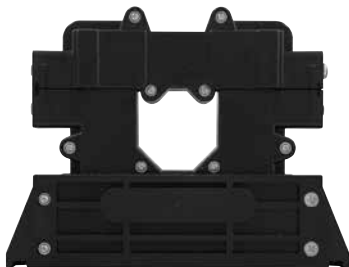
AC Zero phase current transformer (Split type) **MZL Series**

**FEATURES** Split-core type for measuring zero phase current

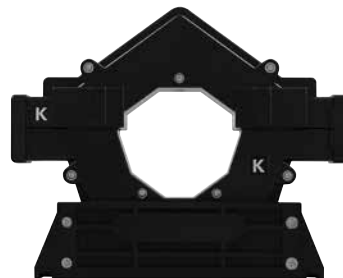


**SPECIFICATIONS**

MODEL	MZL-30	MZL-45	MZL-65
Rated Primary Current	AC100A	AC200A	AC400A
CT Inside Diameter	φ 31mm	φ 48mm	φ 66mm
Applicable Frequency	50/60Hz		
Output Characteristic (RL=530 Ω)	Primary Input Current 0.1A / Criterion Output 50mV / Tolerance +5%-10% Primary Input Current 0.2A / Criterion Output 100mV / Tolerance +5%-10% Primary Input Current 0.4A / Criterion Output 200mV / Tolerance +5%-10% Primary Input Current 0.8A / Criterion Output 400mV / Tolerance +5%-10%		
Load Resistance	530 Ω		
Equilibrium Characteristic	Less than 30mV (max. residual voltage when AC42mA is piled up to the rated current)		
Output Part	M4 Terminal		
Applicable Circuit	Single Phase/Three Phase		
Rated Voltage	Less than AC600V for low voltage circuit of coated wires		
Withstanding Voltage	AC2200V/1 minute (between output terminal and CT)		
Insulation Resistance	More than 50MΩ by 500V insulation tester (between output terminal and CT)		
Operation Temperature	-10 ~ 60°C, 45 ~ 80%RH w/o condensation		
Dimension	130 × 100.5 × 34.7mm	167.6 × 128.5 × 34.7mm	182 × 152 × 34.7mm
Weight	Approx. 560g	Approx. 660g	Approx. 1850g



MZL-30



MZL-45



MZL-65

## Zero phase current transformer (Track shape)



### SPECIFICATIONS

MODEL	Track Shape ZCT
Rated Primary Current	AC400A (50/60Hz)
Load Resistance	100 Ω
Applicable Frequency	50/60Hz
Zero Phase Primary Current	AC 200mA
Output Example	AC19.4mV ± 5%
Remanence Voltage	Less than AC5mV (3 φ 400A)
Dimension	350 × 120 × 10mm

### FEATURES

For measuring current of switch for power distribution cable



Track Shape ZCT

## Load current (Round shape)



### SPECIFICATIONS

MODEL	Round Shape CT Sensor
Rated Primary Current	AC600A
CT Inside Diameter	φ 68mm
Nominal CT Ratio	2000:1
Load Resistance	1 Ω
Applicable Frequency	50/60Hz
Output Voltage	AC300mV ± 5%
Dimension	φ 126 × 30mm

### FEATURES

For measuring current of switch for power distribution cable



Round Shape CT Sensor

# Leakage/Small current (Clamp type)

**MODEL ZCT-18 / ZCT-18S**



**SPECIFICATIONS**

Rated Primary Current	AC20A	
Applicable Current	0.1mA ~ 20A	
Max. Capable Current	30A	
Secondary Windings	2200Turns	
CT Inside Diameter	φ 18mm	
Applicable Frequency	10Hz ~ 5kHz	
Output Example	AC45.4mV ± 2% (10A/10 Ω)	
Recommendable Load Resistor	1 ~ 200 Ω	
Output Part	Lead Wire : Approx. 200mm	
Rated Voltage	Less than AC600V for low voltage circuit of coated wires	
Withstanding Voltage	AC2200V/1 minute (between output terminal and CT)	
Insulation Resistance	More than 100M Ω by 500V insulation tester (between output terminal and CT)	
Operation Temperature	0 ~ 60°C , less than 80%RH w/o condensation	
Dimension	45 × 140 × 20.4mm	45 × 101 × 23mm
Weight	Approx. 70g	Approx. 65g

**MODEL ZCT-110 / ZCT-110S**



**SPECIFICATIONS**

Rated Primary Current	AC20A	
Applicable Current	0.01mA ~ 20A	
Max. Capable Current	30A	
Secondary Windings	Leakage Current (Red/Black) 1600Turns Load Current (White/Green) 3200Turns	
CT Inside Diameter	φ 30mm	
Applicable Frequency	10Hz ~ 5kHz	
Output Example	AC29.7mV ± 2% (10A/10 Ω /White · Green)	
Recommendable Load Resistor	10 Ω	
Output Part	Lead Wire : Approx. 200mm	
Rated Voltage	Less than AC600V for low voltage circuit of coated wires	
Withstanding Voltage	AC2200V/1 minute (between output terminal and CT)	
Insulation Resistance	More than 100M Ω by 500V insulation tester (between output terminal and CT)	
Operation Temperature	0 ~ 60°C , less than 80%RH w/o condensation	
Dimension	58 × 158 × 23mm	58 × 117 × 23mm
Weight	Approx. 105g	Approx. 95g

**MODEL ZCT-340L / ZCT-340SL**



**SPECIFICATIONS**

Rated Primary Current	AC20A	
Applicable Current	0.01mA ~ 20A	
Max. Capable Current	30A	
Secondary Windings	2000Turns	
CT Inside Diameter	φ 40mm	
Applicable Frequency	10Hz ~ 5kHz	
Output Example	AC49.5mV ± 2% (10A/10 Ω)	
Recommendable Load Resistor	10 Ω	
Output Part	Lead Wire : Approx. 200mm	
Rated Voltage	Less than AC600V for low voltage circuit of coated wires	
Withstanding Voltage	AC2200V/1 minute (between output terminal and CT)	
Insulation Resistance	More than 100M Ω by 500V insulation tester (between output terminal and CT)	
Operation Temperature	0 ~ 60°C , less than 80%RH w/o condensation	
Dimension	68 × 179 × 30mm	68 × 136 × 23mm
Weight	Approx. 120g	Approx. 115g

## MODEL ZCT-30 / ZCT-30S



## SPECIFICATIONS

Rated Primary Current	AC100A	
Applicable Current	1mA ~ 100A	
Max. Capable Current	120A	
Secondary Windings	2000Turns	
CT Inside Diameter	φ 30mm	
Applicable Frequency	10Hz ~ 5kHz	
Output Example	AC52mV ± 2% (10A/10 Ω)	
Recommendable Load Resistor	1 ~ 200 Ω	
Output Part	Lead Wire : Approx. 200mm	
Rated Voltage	Less than AC600V for low voltage circuit of coated wires	
Withstanding Voltage	AC2200V/1 minute (between output terminal and CT)	
Insulation Resistance	More than 100M Ω by 500V insulation tester (between output terminal and CT)	
Operation Temperature	0 ~ 60°C , less than 80%RH w/o condensation	
Dimension	58 × 158 × 20.4mm	58 × 117 × 23mm
Weight	Approx. 100g	Approx. 95g

## MODEL ZCT-140L / ZCT-140LS



## SPECIFICATIONS

Rated Primary Current	AC300A	
Applicable Current	1mA ~ 300A	
Max. Capable Current	360A	
Secondary Windings	2000Turns	
CT Inside Diameter	φ 40mm	
Applicable Frequency	10Hz ~ 5kHz	
Output Example	AC40.2mV ± 2% (10A/10 Ω)	
Recommendable Load Resistor	1 ~ 200 Ω	
Output Part	Lead Wire : Approx. 200mm	
Rated Voltage	Less than AC600V for low voltage circuit of coated wires	
Withstanding Voltage	AC2200V/1 minute (between output terminal and CT)	
Insulation Resistance	More than 100M Ω by 500V insulation tester (between output terminal and CT)	
Operation Temperature	0 ~ 60°C , less than 80%RH w/o condensation	
Dimension	64 × 162 × 23mm	64 × 122 × 23mm
Weight	Approx. 130g	Approx. 125g

## MODEL HFCT-34



## SPECIFICATIONS

Rated Primary Current	AC20A	
Applicable Current	1mA ~ 20A	
Max. Capable Current	24A	
Secondary Windings	108Turns	
CT Inside Diameter	φ 34mm	
Applicable Frequency	4kHz ~ 200kHz	
Output Example	AC926mV ± 2% (10A/10 Ω)	
Recommendable Load Resistor	0 ~ 200 Ω	
Output Part	Lead Wire : Approx. 2500mm	
Rated Voltage	Less than AC600V for low voltage circuit of coated wires	
Withstanding Voltage	AC3700V/1 minute (between output terminal and CT)	
Insulation Resistance	More than 100M Ω by 500V insulation tester (between output terminal and CT)	
Operation Temperature	0 ~ 40°C , less than 85%RH w/o condensation	
Dimension	91 × 165 × 38mm	
Weight	Approx. 460g	

MODEL **ZCT-40SQ**



**SPECIFICATIONS**

Rated Primary Current	AC50A
Applicable Current	1mA ~ 50A
Max. Capable Current	60A
Secondary Windings	4000Turns
CT Inside Diameter	φ 40mm
Applicable Frequency	10Hz ~ 5kHz
Output Example	AC24.5mV ± 2% (10A/10 Ω)
Recommendable Load Resistor	10 Ω
Output Part	Lead Wire : Approx. 200mm
Rated Voltage	Less than AC600V for low voltage circuit of coated wires
Withstanding Voltage	AC2200V/1 minute (between output terminal and CT)
Insulation Resistance	More than 100M Ω by 500V insulation tester (between output terminal and CT)
Operation Temperature	0 ~ 60°C , less than 80%RH w/o condensation
Dimension	98 × 164.7 × 25.4mm
Weight	Approx. 155g

MODEL **ZCT-80**



**SPECIFICATIONS**

Rated Primary Current	AC1000A
Applicable Current	1mA ~ 1000A
Max. Capable Current	1200A
Secondary Windings	2000Turns
CT Inside Diameter	80 × 74mm
Applicable Frequency	10Hz ~ 5kHz
Output Example	AC50.4mV ± 2% (10A/10 Ω)
Recommendable Load Resistor	1 ~ 200 Ω
Output Part	Lead Wire : Approx.1000mm
Rated Voltage	Less than AC600V for low voltage circuit of coated wires
Withstanding Voltage	AC2200V/1 minute (between output terminal and CT)
Insulation Resistance	More than 100M Ω by 500V insulation tester (between output terminal and CT)
Operation Temperature	0 ~ 60°C , less than 80%RH w/o condensation
Dimension	138 × 224.5 × 34mm
Weight	Approx. 500g

MODEL **ZCT-80H**



**SPECIFICATIONS**

Rated Primary Current	AC10A
Applicable Current	0.1mA ~ 10A
Max. Capable Current	12A
Secondary Windings	1960Turns
CT Inside Diameter	φ 78.8mm
Applicable Frequency	50/60Hz
Output Example	AC50.6mV ± 2% (10A/10 Ω)
Recommendable Load Resistor	10 Ω
Output Part	Lead Wire : Approx. 200mm
Rated Voltage	Less than AC600V for low voltage circuit of coated wires
Withstanding Voltage	AC2200V/1 minute (between output terminal and CT)
Insulation Resistance	More than 100M Ω by 500V insulation tester (between output terminal and CT)
Operation Temperature	0 ~ 60°C , less than 80%RH w/o condensation
Dimension	123.2 × 240.3 × 53mm
Weight	Approx. 600g



MODEL **ZCT-1100****SPECIFICATIONS**

Rated Primary Current	AC3000A
Applicable Current	1mA ~ 3000A
Max. Capable Current	3600A
Secondary Windings	1mA ~ 30A (Red/Black) 3080Turns 30A ~ 3000A (White/Green) 2000Turns
CT Inside Diameter	128 × 108mm
Applicable Frequency	10Hz ~ 5kHz
Output Example	AC51.1mV ± 2% (10A/10 Ω /White · Green)
Recommendable Load Resistor	1 ~ 200 Ω
Output Part	Lead Wire : Approx. 1000mm
Rated Voltage	Less than AC600V for low voltage circuit of coated wires
Withstanding Voltage	AC2200V/1 minute (between output terminal and CT)
Insulation Resistance	More than 100M Ω by 500V insulation tester (between output terminal and CT)
Operation Temperature	0 ~ 60°C , less than 80%RH w/o condensation
Dimension	194 × 341.5 × 52mm
Weight	Approx. 1800g

MODEL **ZCT-150T****SPECIFICATIONS**

Rated Primary Current	AC50A
Applicable Current	1mA ~ 50A
Max. Capable Current	60A
Secondary Windings	2000Turns
CT Inside Diameter	32 × 150mm
Applicable Frequency	10Hz ~ 1kHz
Output Example	AC52.1mV ± 2% (10A/10 Ω)
Recommendable Load Resistor	10 Ω
Output Part	M4 Terminal
Rated Voltage	Less than AC600V for low voltage circuit of coated wires
Withstanding Voltage	AC2200V/1 minute (between output terminal and CT)
Insulation Resistance	More than 100M Ω by 500V insulation tester (between output terminal and CT)
Operation Temperature	0 ~ 60°C , less than 80%RH w/o condensation
Dimension	220 × 114 × 50mm
Weight	Approx. 1300g

MODEL **ZCT-23 / ZCT-23S****SPECIFICATIONS**

Rated Primary Current	AC120A	
Applicable Current	1A ~ 120A	
Max. Capable Current	150A	
Secondary Windings	2000Turns	
CT Inside Diameter	φ 23mm	
Applicable Frequency	10Hz ~ 5kHz	
Output Example	AC50.7mV ± 2% (10A/10 Ω)	
Recommendable Load Resistor	1 ~ 10 Ω	
Output Part	Lead Wire : Approx. 200mm	
Rated Voltage	Less than AC600V for low voltage circuit of coated wires	
Withstanding Voltage	AC2200V/1 minute (between output terminal and CT)	
Insulation Resistance	More than 100M Ω by 500V insulation tester (between output terminal and CT)	
Operation Temperature	0 ~ 60°C , less than 80%RH w/o condensation	
Dimension	47 × 146 × 20mm	47 × 106 × 23mm
Weight	Approx. 70g	Approx. 65g

## Load current (Clamp type)

## MODEL ZCT-33 / ZCT-33S



## SPECIFICATIONS

Rated Primary Current	AC150A	
Applicable Current	1A ~ 150A	
Max. Capable Current	180A	
Secondary Windings	2000Turns	
CT Inside Diameter	φ 33mm	
Applicable Frequency	10Hz ~ 5kHz	
Output Example	AC50.2mV ± 2% (10A/10 Ω)	
Recommendable Load Resistor	1 ~ 10 Ω	
Output Part	Lead Wire : Approx. 200mm	
Rated Voltage	Less than AC600V for low voltage circuit of coated wires	
Withstanding Voltage	AC2200V/1 minute (between output terminal and CT)	
Insulation Resistance	More than 100M Ω by 500V insulation tester (between output terminal and CT)	
Operation Temperature	0 ~ 60°C , less than 80%RH w/o condensation	
Dimension	54 × 154.5 × 20.4mm	54 × 114 × 23mm
Weight	Approx. 80g	Approx. 75g

## MODEL ZCT-40P / ZCT-40PS



## SPECIFICATIONS

Rated Primary Current	AC500A	
Applicable Current	1A ~ 500A	
Max. Capable Current	600A	
Secondary Windings	2000Turns	
CT Inside Diameter	φ 40mm	
Applicable Frequency	10Hz ~ 5kHz	
Output Example	AC49.5mV ± 2% (10A/10 Ω)	
Recommendable Load Resistor	1 ~ 10 Ω	
Output Part	Lead Wire : Approx. 200mm	
Rated Voltage	Less than AC600V for low voltage circuit of coated wires	
Withstanding Voltage	AC2200V/1 minute (between output terminal and CT)	
Insulation Resistance	More than 100M Ω by 500V insulation tester (between output terminal and CT)	
Operation Temperature	0 ~ 60°C , less than 80%RH w/o condensation	
Dimension	68 × 179 × 30mm	64 × 128 × 23mm
Weight	Approx. 120g	Approx. 115g

## MODEL CT-80PB



## SPECIFICATIONS

Rated Primary Current	AC500A	
Applicable Current	1A ~ 500A	
Max. Capable Current	600A	
Secondary Windings	2000Turns	
CT Inside Diameter	80 × 74mm	
Applicable Frequency	10Hz ~ 5kHz	
Output Example	AC50.4mV ± 2% (10A/10 Ω)	
Recommendable Load Resistor	1 ~ 10 Ω	
Output Part	Lead Wire : Approx. 1000mm	
Rated Voltage	Less than AC600V for low voltage circuit of coated wires	
Withstanding Voltage	AC2200V/1 minute (between output terminal and CT)	
Insulation Resistance	More than 100M Ω by 500V insulation tester (between output terminal and CT)	
Operation Temperature	0 ~ 60°C , less than 80%RH w/o condensation	
Dimension	138 × 224.5 × 34mm	
Weight	Approx. 500g	

## MODEL CT-23 / CT-23S



## SPECIFICATIONS

Rated Primary Current	AC200A	
Applicable Current	1A ~ 200A	
Max. Capable Current	240A	
Secondary Windings	2000Turns	
CT Inside Diameter	φ 23mm	
Applicable Frequency	10Hz ~ 5kHz	
Output Example	AC53.5mV ± 2% (10A/10 Ω)	
Recommendable Load Resistor	1 ~ 100 Ω	
Output Part	Lead Wire : Approx. 200mm	
Rated Voltage	Less than AC600V for low voltage circuit of coated wires	
Withstanding Voltage	AC2200V/1 minute (between output terminal and CT)	
Insulation Resistance	More than 100M Ω by 500V insulation tester (between output terminal and CT)	
Operation Temperature	0 ~ 60°C , less than 80%RH w/o condensation	
Dimension	48 × 146 × 20mm	47 × 106 × 23mm
Weight	Approx. 70g	Approx. 65g

## MODEL CT-33 / CT-33S



## SPECIFICATIONS

Rated Primary Current	AC200A	
Applicable Current	1A ~ 200A	
Max. Capable Current	240A	
Secondary Windings	2000Turns	
CT Inside Diameter	φ 33mm	
Applicable Frequency	10Hz ~ 5kHz	
Output Example	AC44.8mV ± 2% (10A/10 Ω)	
Recommendable Load Resistor	1 ~ 100 Ω	
Output Part	Lead Wire : Approx. 200mm	
Rated Voltage	Less than AC600V for low voltage circuit of coated wires	
Withstanding Voltage	AC2200V/1 minute (between output terminal and CT)	
Insulation Resistance	More than 100M Ω by 500V insulation tester (between output terminal and CT)	
Operation Temperature	0 ~ 60°C , less than 80%RH w/o condensation	
Dimension	54 × 154.5 × 20.4mm	54 × 114 × 23mm
Weight	Approx. 80g	Approx. 75g

## MODEL CT-40



## SPECIFICATIONS

Rated Primary Current	AC600A	
Applicable Current	1A ~ 600A	
Max. Capable Current	720A	
Secondary Windings	3600Turns	
CT Inside Diameter	φ 40mm	
Applicable Frequency	10Hz ~ 5kHz	
Output Example	AC25.1mV ± 2% (10A/10 Ω)	
Recommendable Load Resistor	1 ~ 10 Ω	
Output Part	Lead Wire : Approx. 200mm	
Rated Voltage	Less than AC600V for low voltage circuit of coated wires	
Withstanding Voltage	AC2200V/1 minute (between output terminal and CT)	
Insulation Resistance	More than 100M Ω by 500V insulation tester (between output terminal and CT)	
Operation Temperature	0 ~ 60°C , less than 80%RH w/o condensation	
Dimension	68 × 179 × 30mm	
Weight	Approx. 90g	

## MODEL CT-80



### SPECIFICATIONS

Rated Primary Current	AC1800A
Applicable Current	1A ~ 1800A
Max. Capable Current	2200A
Secondary Windings	4000Turns
CT Inside Diameter	80 × 74mm
Applicable Frequency	10Hz ~ 5kHz
Output Example	AC24.4mV ± 2% (10A/10 Ω)
Recommendable Load Resistor	1 ~ 100 Ω
Output Part	Lead Wire : Approx. 1000mm
Rated Voltage	Less than AC600V for low voltage circuit of coated wires
Withstanding Voltage	AC2200V/1 minute (between output terminal and CT)
Insulation Resistance	More than 100M Ω by 500V insulation tester (between output terminal and CT)
Operation Temperature	0 ~ 60°C , less than 80%RH w/o condensation
Dimension	138 × 224.5 × 34mm
Weight	Approx. 500g

## MODEL CT-3000



### SPECIFICATIONS

Rated Primary Current	AC3000A
Applicable Current	1A ~ 3000A
Max. Capable Current	3600A
Secondary Windings	2000Turns
CT Inside Diameter	128 × 108mm
Applicable Frequency	10Hz ~ 5kHz
Output Example	AC51.2mV ± 2% (10A/10 Ω)
Recommendable Load Resistor	1 ~ 100 Ω
Output Part	Lead Wire : Approx. 1000mm
Rated Voltage	Less than AC600V for low voltage circuit of coated wires
Withstanding Voltage	AC2200V/1 minute (between output terminal and CT)
Insulation Resistance	More than 100M Ω by 500V insulation tester (between output terminal and CT)
Operation Temperature	0 ~ 60°C , less than 80%RH w/o condensation
Dimension	194 × 341.5 × 52mm
Weight	Approx. 1800g

## MODEL ACT-5H / ACT-50H



### SPECIFICATIONS

Rated Primary Current	AC5A	AC50A
Applicable Current	0.1A ~ 5A	1A ~ 50A
Max. Capable Current	7.5A	75A
CT Inside Diameter	φ 23mm	
Applicable Frequency	50/60Hz	
Output Voltage	DC5V F.S	
Accuracy	± 2%	
Power supply	+24V(Unipolar)	
Input Resistance	More than 1M Ω	
Output Part	Lead Wire : Approx. 3000mm (with M4 Round Terminal)	
Wiring Method	Red:+24V Black:COM White:Output Green: Shield	
Rated Voltage	Less than AC600V for low voltage circuit of coated wires	
Withstanding Voltage	AC2200V/1 minute (between output terminal and CT)	
Insulation Resistance	More than 100M Ω by 500V insulation tester (between output terminal and CT)	
Operation Temperature	0 ~ 60°C , less than 80%RH w/o condensation	
Dimension	48 × 146 × 20mm	
Weight	Approx. 85g	

**MODEL DCZCT-18S / DCZCT-110S**

**SPECIFICATIONS**

Rated Primary Current	DC100mA	
Applicable Current	$\pm 0.1\text{mA} \sim \pm 100\text{mA}$	
Max. Capable Current	150mA	
CT Inside Diameter	$\phi 18\text{mm}$	$\phi 30\text{mm}$
Output Voltage	$\pm 2.5\text{V F.S}$	
Accuracy	$\pm 1\% \text{ F.S}$	
Power supply	$\pm 5\text{V} \pm 5\%$	
Output Part	Lead Wire : Approx. 150mm	
Wiring Method	Red:+5V Black:-5V White:Output Green:COM	
Rated Voltage	Less than DC500V for low voltage circuit of coated wires	
Withstanding Voltage	AC2000V/1 minute (between output terminal and CT)	
Insulation Resistance	More than 100M $\Omega$ by 500V insulation tester (between output terminal and CT)	
Operation Temperature	$-10 \sim 60^{\circ}\text{C}$ , less than 85%RH w/o condensation	
Dimension	45 × 101 × 23mm	58 × 117 × 23mm
Weight	Approx. 90g	Approx. 120g

**MODEL LAD-240**

**SPECIFICATIONS**

Rated Primary Current	DC200A	
Applicable Current	0 ~ 200A	
Max. Capable Current	220A	
CT Inside Diameter	$\phi 30\text{mm}$	
Applicable Frequency	DC only	
Output Voltage	200mV F.S	
Accuracy	0 ~ 150A $\pm (2.0\% \text{rdg} + 0.5\% \text{ F.S})$ 150 ~ 200A $\pm (2.5\% \text{rdg} + 0.5\% \text{ F.S})$	
Power supply	LR-44 × 2	
Input Resistance	More than 1M $\Omega$	
Output Part	Lead Wire : Approx. 1200mm (with Banana Plug)	
Wiring Method	Red:Output + Black:Output-	
Rated Voltage	Less than DC250V for low voltage circuit of coated wires	
Withstanding Voltage	AC1500V/1 minute (between output terminal and CT)	
Insulation Resistance	More than 100M $\Omega$ by 500V insulation tester (between output terminal and CT)	
Operation Temperature	0 ~ 40 $^{\circ}\text{C}$ , less than 80%RH w/o condensation	
Dimension	44 × 146 × 20.5mm	
Weight	Approx. 100g	

**MODEL LAD-250**

**SPECIFICATIONS**

Rated Primary Current	DC200A/1000A, AC200A/1000A	
Applicable Current	0 ~ $\pm 200\text{A} / \pm 1000\text{A}$	
Max. Capable Current	DC/AC200A Range : 220A DC/AC1000A Range : 1100A	
CT Inside Diameter	$\phi 40\text{mm}$	
Applicable Frequency	50/60Hz	
Output Voltage	DC/AC200A Range : $\pm 200\text{mV F.S}$ DC/AC1000A Range : $\pm 100\text{mV F.S}$	
Accuracy	$\pm 3.0\% \text{ F.S}$	
Power supply	LR-44 × 2	
Input Resistance	More than 1M $\Omega$	
Output Part	Lead Wire : Approx. 1200mm (with Banana Plug)	
Wiring Method	Red:Output + Black:Output-	
Rated Voltage	Less than DC/AC250V for low voltage circuit of coated wires	
Withstanding Voltage	AC1500V/1 minute (between output terminal and CT)	
Insulation Resistance	More than 100M $\Omega$ by 500V insulation tester (between output terminal and CT)	
Operation Temperature	0 ~ 50 $^{\circ}\text{C}$ , less than 80%RH w/o condensation	
Dimension	68.5 × 175 × 30mm	
Weight	Approx. 140g	

MODEL **RCT-18**



**SPECIFICATIONS**

Rated Primary Current	AC10mA/100mA
Applicable Current	0.1 ~ 10mA/100mA
Max. Capable Current	AC10mA Range : 15mA AC100mA Range : 110mA
CT Inside Diameter	φ 18mm
Applicable Frequency	50/60Hz
Output Voltage	100mV F.S
Accuracy	± 2% F.S
Power supply	LR-44 × 2
Input Resistance	More than 1M Ω
Output Part	Lead Wire : Approx. 1200mm (with Banana Plug)
Wiring Method	Red:Output + Black:Output -
Rated Voltage	Less than AC600V for low voltage circuit of coated wires
Withstanding Voltage	AC2200V/1 minute (between output terminal and CT)
Insulation Resistance	More than 100M Ω by 500V insulation tester (between output terminal and CT)
Operation Temperature	0 ~ 60°C , less than 80%RH w/o condensation
Dimension	45 × 140 × 20.4mm
Weight	Approx. 100g

Injection (Clamp type)

MODEL **INJ-34**



**SPECIFICATIONS**

Secondary Windings	50Turns
CT Inside Diameter	φ 34mm
Applicable Frequency	4KHz ~ 200KHz
Output Part	Lead Wire : Approx. 2500mm
Rated Voltage	Less than AC600V for low voltage circuit of coated wires
Withstanding Voltage	AC3700V/1 minute (between output terminal and CT)
Insulation Resistance	More than 100M Ω by 500V insulation tester (between output terminal and CT)
Operation Temperature	0 ~ 40°C , less than 85%RH w/o condensation
Dimension	91 × 165 × 38mm
Weight	Approx. 440g

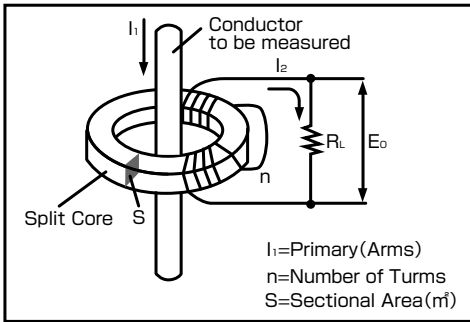
MODEL **INJ-80**



**SPECIFICATIONS**

Secondary Windings	203Turns
CT Inside Diameter	φ 80mm
Applicable Frequency	4.3kHz
Output Part	Lead Wire : Approx. 200mm
Rated Voltage	Less than AC600V for low voltage circuit of coated wires
Withstanding Voltage	AC2200V/1 minute (between output terminal and CT)
Insulation Resistance	More than 100M Ω by 500V insulation tester (between output terminal and CT)
Operation Temperature	0 ~ 60°C , less than 80%RH w/o condensation
Dimension	123.2 × 240.3 × 53mm
Weight	Approx. 600g

## PRINCIPLE OF AC CURRENT SENSOR



$E_0 = K \cdot I_1 / n \cdot R_L$   
(The factor K is depends on the core material and CT structure)

The split type AC current sensor is the current transformer with ratio of " n:1 " for the input current to be measured, when the secondary wound coils are " n " turns. The secondary output current signal ( $I_2$ ) is converted to the voltage signal ( $E_0$ ) by load resistance ( $R_L$ ). The load resistance value should be selected according to the range to be measured.

However, when the core material of CT is saturated by the over current flowing to the conductor, the linearity of secondary output current will be distorted and the error of phase angle will be caused.

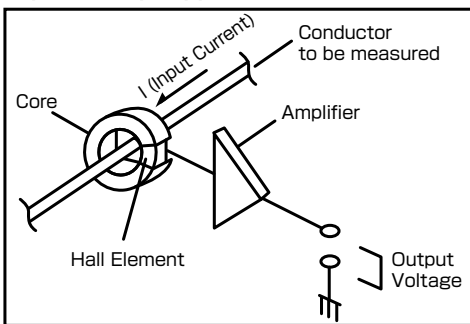
Before using of our current sensor, please refer to the specifications and output characteristic graph.

We recommend your right selection of appropriate sensor for your measuring application.

For your reference, the various current sensors are provided in our homepage like current sensor with DC voltage output, high frequency current sensor for injection/measurements and pulse current sensor, etc.

## PRINCIPLE OF HALL ELEMENT CURRENT SENSORS

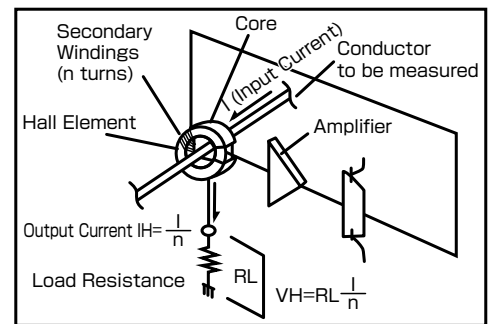
### Open Loop Type



Direct detection of the magnetic fields generated by current ( $I$ ) of the conductor to be measured. Hall element installed in the gap of core detects the magnetic fields generated by the input current ( $I$ ) and converts it to the voltage. As the output voltage of hall element is very small, it will be amplified by the amplifier in the latter circuit.

### Closed Loop Type

This method is letting feedback current flow to the secondary windings, in order to make always magnetic fields generated by input current ( $I$ ) to zero. Hall element is installed in the gap of core and the secondary windings ( $N$  turns) are wound around the core. The feedback circuit is letting the feedback current ( $I/N$ ) flow to the secondary windings in order to make always the output of hall element to zero and cancels the magnetic fields generated by input current. By converting this feedback current to the voltage through load resistance, the voltage in proportion to the input current can be gained.

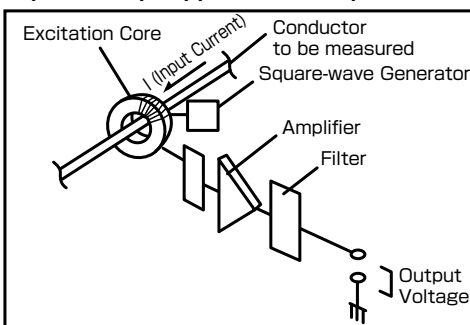


### Features

- \* Wide ranges with very high accuracy.
- \* Good linearity and temperature characteristics.
- \* Hardly receiving influences of outer magnetic fields.
- \* Very low output noise.

## PRINCIPLE OF FLUXGATE METHOD CURRENT SENSORS

### Open Loop Type (DC Only)



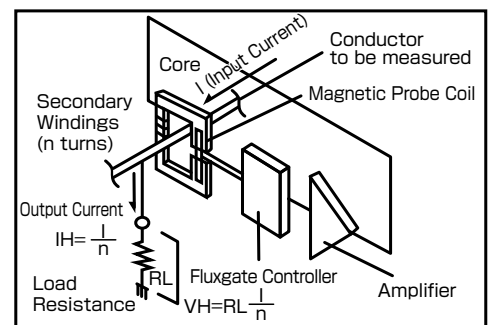
By letting DC current flow to the exciting coil excited by square-wave generator, DC magnetic fields are detected and are converted to the voltage. As the output is small, it is amplified by voltage amplifier in the latter circuit and DC voltage component is outputted through filter.

### Features

- \* Can detect very small DC current.
- \* Can realize less magnetizing DC current sensor by setting the exciting current to the most appropriate value.

### Closed Loop Type

This fluxgate method is letting feedback current flow to the secondary windings, in order to make magnetic fields generated by input current ( $I$ ) to zero. In this method, the magnetic probe coil is placed in a part of core surrounding bus bar, and the secondary windings ( $N$  turns) are wound around the core to cancel the magnetic fields generated by input current. As the feedback circuit is letting the feedback current ( $I/N$ ) always flow to the secondary windings to make the output of magnetic probe coil to zero, the voltage in proportion to the detected current can



be gained by converting this feedback current to the voltage through internal load resistance ( $R_L$ ).

### Features

- \* Superior temperature characteristics.
- \* High speed response and wide bandwidth.

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