

# DCL10 / DCL20R



## DIGITAL CLAMP METER

### INSTRUCTION MANUAL

**sanwa**

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#### [1] SAFETY PRECAUTIONS

Explanation of Symbols:

- ⚠ Attention! Refer to operation instructions.
- ☑ This instrument has double insulation.

#### ⚠ WARNING

1. This meter complies with IEC61010-1 CAT-III 300V, CAT-II 600V. Never use the meter on the power line that exceeds 600V to ground.
2. Use the meter only as described in this manual.
3. Do not apply more than the rated maximum current (AC300A).
4. Pay special attention when measuring the voltage of AC33V(46.7peak), DC70V or more to avoid injury.
5. Do not use meter if the meter is damaged or broken.
6. Do not use uncased meter.
7. Keep your fingers behind the finger guard.
8. Pay special attention when using meter around bare conductors. Avoid contact of metal of clamp transformers with the bare conductors to avoid electric shock.
9. Do not use the meter around explosive gas, solvent or dust.
10. Do not use the meter with wet hands or in a damp environment
11. Do not modify the meter nor use components not specified by the manufacturer.
12. The meter is for indoor use.

#### 2-2 Measurement Range and Accuracy

Accuracy assurance range: 23°C±5°C, 80%RH max. No condensation.

##### DCL10 (Average sensing)

RANGE		Accuracy (Sine wave)	
		50/60Hz	45 ~ 400Hz
60.00A 300.0A (Auto range)	0 ~ 7A	±(2.5%rdg + 5dgt)	±(3.0%rdg + 10dgt)
	7A ~ 200A	±(1.5%rdg + 5dgt)	
	200A ~ 300A	±(2.5%rdg + 5dgt)	

##### DCL20R (True RMS sensing, ac coupling)

RANGE		Accuracy * (Sine wave)	
		50/60Hz	45 ~ 400Hz
60.00A 300.0A (Auto range)	0 ~ 7A	±(2.5%rdg + 10dgt)	±(3.5%rdg + 10dgt)
	7A ~ 200A	±(1.9%rdg + 5dgt)	
	200A ~ 300A	±(2.5%rdg + 5dgt)	

\*True RMS for accuracy are specified from 5% to 100% of range.

\*Accuracy add±(2%rdg) on Crest Factor (CF) CF<3 at full scale & CF<6 at half scale.

\* rdg = reading, dgt = digit

#### [3] NAME OF FUNCTIONS

- ① Trans core
- ② Position mark
- ③ Finger guard
- ④ Data Hold button
- ⑤ Power ON/OFF button
- ⑥ Back Light button
- ⑦ LCD display
- ⑧ Clamp opening handle
- ⑨ Battery compartment cover
- ⑩ Screw for battery compartment cover
- ⑪ Hand strap

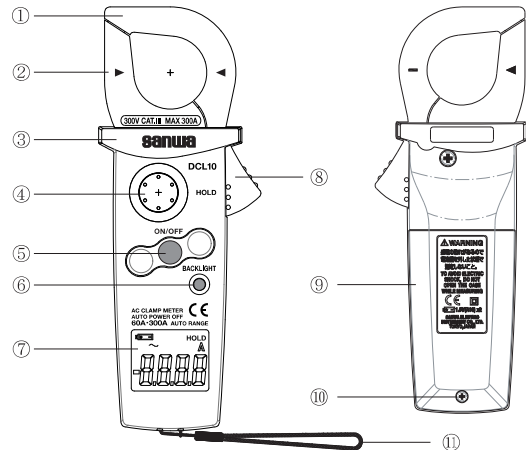
#### ⚠ CAUTION

1. Do not leave the meter under direct sunlight, and in a place of a high humidity, dew condensation, and near heat-generating devices (such as a soldering iron).
2. Do not store the meter, in a place that gives it excessive shock or vibration or where it may fall.
3. To ensure safety and maintain accuracy, calibrate and check the meter at least once a year.
4. Change the battery to avoid incorrect reading when the symbol appears in the LCD display.

#### [2] SPECIFICATIONS

##### 2-1 General Specification

Digital Display: 4 digits LCD display with maximum reading 6000  
AC sensing: DCL10 (Average sensing), DCL20R ( True RMS ac coupling)  
Over Load: When the indication is larger than the maximum reading (AC320A), the LCD will show OL and alarm will beep.  
Withstand voltage: AC3.7kV(50/60Hz) for a minute.  
Sample Rate: 2 times/sec  
Range: Auto Range, range shifts when the reading is in between approx. 55 ~ 60A  
Low Power Indication: When the battery is under the proper operation range, symbol will appear on the LCD display.  
Power Source: R03 1.5V battery x 2.  
Battery Life: DCL10: approx. 80 hr., DCL20R: approx. 50 hr  
Auto Power Off: The instrument will automatically turn its power off after 30 minutes of no operation.  
Backlight: LED with 10 seconds auto shutdown.  
Environmental conditions: Altitude up to 2000 meters.  
Operating temperature: 5°C ~ 40°C, <80% RH, No condensation  
Storage temperature: -10°C ~ 40°C, <80% RH, No condensation battery removed  
40°C ~ 50°C, <70% RH, No condensation battery removed  
Pollution degree: 2  
Approvals: IEC61010-2-032:2002 CAT-III 300V, CAT-II 600V  
IEC61326:1997+A1: 1998+A2:2001  
Clamp Opening Size: φ25mm  
Dimension (L x W x H) : 145x54x28mm  
Weight: 120g(battery included)  
Accessories: Instruction Manual, Carrying Pouch, Hand Strap, Battery 1.5Vx2



#### [4] FUNCTIONS

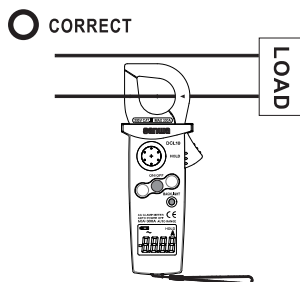
- Data Hold Function:  
At any time, the user can hold the present reading by press the "Hold" button and release the held data by pressing it again.
- Back Light Function:  
Press the "Back Light" button to turn back light on and press it once again to turn off. The meter will turn back light off after 10 second automatically if the "Back Light" button is not pressed.
- Disable Auto Power Off:  
Press and hold "HOLD" button and then press the power ON/OFF button, auto power off function will be disabled with three successive beeps.

## [5] MEASUREMENT PROCEDURE

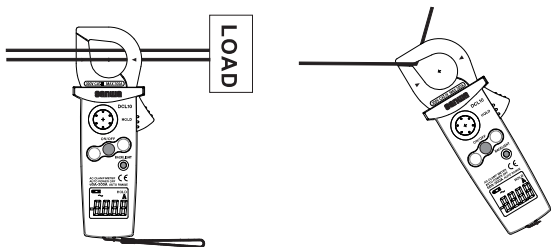
### ⚠ WARNING

1. Place conductor to be measured at center of clamp trans core.
2. Clamp one wire only to measure correctly.
3. If frequency of current is more than specified frequency in this manual, error of readings become larger.
4. Wave forms except sine wave of current could lead to error of readings when making measurement.

1. Press the ON/OFF button to turn on the power. DCL20R (RMS) requires longer time to obtain a zero reading due to its structure of the circuit. But there is no obstruction to make a measurement promptly.
2. Open the clamp by pressing the Clamp opening handle and insert the cable to be measured into the jaw.
3. Close the clamp and get the reading from the LCD display.



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## [7] AFTER-SALES SERVICE

### 7-1 Warranty and Provision

Sanwa offers comprehensive warranty services to its end-users and to its product resellers. Under Sanwa's general warranty policy, each instrument is warranted to be free from defects in workmanship or material under normal use for the period of one (1) year from the date of purchase.

This warranty policy is valid within the country of purchase only, and applied only to the product purchased from Sanwa authorized agent or distributor.

Sanwa reserves the right to inspect all warranty claims to determine the extent to which the warranty policy shall apply. This warranty shall not apply to fuses, disposables batteries, or any product or parts, which have been subject to one of the following causes:

1. A failure due to improper handling or use that deviates from the instruction manual.
2. A failure due to inadequate repair or modification by people other than Sanwa service personnel.
3. A failure due to causes not attributable to this product such as fire, flood and other natural disaster.
4. Non-operation due to a discharged battery.
5. A failure or damage due to transportation, relocation or dropping after the purchase.


### 7-2 Repair

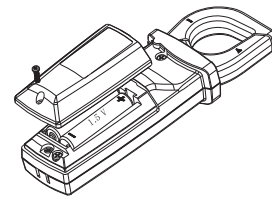
Customers are asked to provide the following information when requesting services:

1. Customer name, address, and contact information
2. Description of problem
3. Description of product configuration
4. Model Number
5. Product Serial Number
6. Proof of Date-of-Purchase
7. Where you purchased the product

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## [6] BATTERY REPLACEMENT and MAINTENANCE

1. When the battery voltage drops below proper operation range, the  symbol will appear on the LCD display and the batteries need to be replaced.
2. Before changing the battery, press ON/OFF button to turn off the power, and open the back cover by a screwdriver. Replace the old batteries with two new R03 batteries.
3. Close the back cover and fasten the screw.



### CAUTION

To avoid contamination or static damage, do not touch the circuit board without proper static protection.

### REMARK

- \* If the instrument is not going to be used for a long time, take out the battery and do not store the instrument in high temperature or high humidity environment.
- \* When making current measurement, keep the cable at the center of the clamp to get more accurate reading.

### CLEANING

Periodically wipe the case with a dry cloth and without detergent. Do not use abrasives or solvents on this meter.

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Please contact Sanwa authorized agent / distributor / service provider, listed in our website, in your country with above information. An instrument sent to Sanwa / agent / distributor without those information will be returned to the customer.

### Note :

- 1) Prior to requesting repair, please check the following: Capacity of the built-in battery, polarity of installation and discontinuity of the test leads.
- 2) Repair during the warranty period:  
The failed meter will be repaired in accordance with the conditions stipulated in 7-1 Warranty and Provision.
- 3) Repair after the warranty period has expired: In some cases, repair and transportation cost may become higher than the price of the product. Please contact Sanwa authorized agent / service provider in advance. The minimum retention period of service functional parts is 6 years after the discontinuation of manufacture. This retention period is the repair warranty period. Please note, however, if such functional parts become unavailable for reasons of discontinuation of manufacture, etc., the retention period may become shorter accordingly.
- 4) Precautions when sending the product to be repaired  
To ensure the safety of the product during transportation, place the product in a box that is larger than the product 5 times or more in volume and fill cushion materials fully and then clearly mark "Repair Product Enclosed" on the box surface. The cost of sending and returning the product shall be borne by the customer.

### 7-3

SANWA web site: <http://www.sanwa-meter.co.jp>  
E-mail: [exp\\_sales@sanwa-meter.co.jp](mailto:exp_sales@sanwa-meter.co.jp)

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