

Model no.: **7in1** MS-CP20R



8in1 MS-BCP20R

Wireless Connectivity
(Bluetooth Integrated)

1. Contents

- Socket Tester
- Operating manual



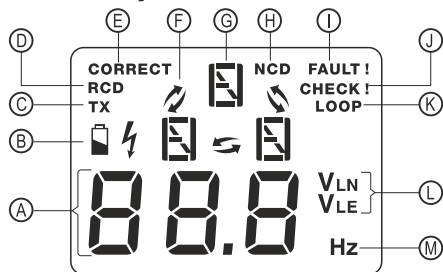
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3. Specifications

Model No.	MS-CP20R	MS-BCP20R
Measurable voltage	100-250VAC	
Low AC test current flow	<1mA except on RCD trip test, suitable for testing on high sensitive leakage socket	
Measurable frequency	40-70 Hz	
Identify wiring condition of electrical socket	Correct / LN Reverse / LE Reverse / E Fault / N Fault / E Fault / 'N' / 'E' Reverse or 'L' / 'E' 'High' loop impedance (through non-tripped RCD test function)	
LCD readout (@ every 5 secs. sampling)	L-N Voltage / L-E Voltage / Frequency	
RCD / ELCB trip with 5 secs delay executive feature	30mA approx. / 220V ~ 250V AC; >6mA / 110V AC / 250V AC	
N-E / L-E 'High' loop impedance fault check after approx. 5 secs. when RCD NOT tripped	Either 'N' / 'E' reversed OR 'L' / 'E' 'High' loop impedance	
Audible sound feedback	*	
NCD, alert detect	Audible and numerical display AC signal strength, when >50V AC	
Backlight	a) White for normal visual b) 'Red' for 'FAULT' c) 'Green' for 'CORRECT' d) Tri state at NCD	
White LED torch	*	
Auto hold measured data is convenient to tests on hard-to-reach sockets and recall back the test results		
Auto power off	1 minute after plugged off	
Transmit information to Smart phone / Tablet with iOS or Android apps.		*
Real time monitor voltage / frequency		*
Remote RCD trip test function		*
Data logging through Smart phone / Tablet		*
110 / 220V AC Dual voltage operation		*
Operating current	<25mA max.	
Rating	100-250V AC / 50 / 60 Hz / <0.1A / CAT. II	
Low battery indication	*	
Reset	For emergency stop testing RCD trip or operation	
Cal./ Rel.	Enable to reduce AC sensitivity to zero when at NCD mode	
Battery powered (battery is excluded)	2 x 1.5V AAA (R03 / LR03)	
Dimensions (L x W x D) mm, approx.	74 x 67 x 69	
Weight (approx.) grams, not include battery	115	

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5. Explanations for symbols



- (A) Voltage / Frequency reading display area
- (B) Low battery indication '🔋'
- (C) Wireless connecting function activated icon 'TX'
- (D) 'RCD' trip testing function activated
- (E) Properly wiring connected indication 'CORRECT'
- (F) Wrong wiring indication '🔌'
- (G) Wiring sequence indication 'E·N·L'
- (H) Non-Contact voltage detection activated 'NCD'
- (I) Wiring / RCD / 'High' loop impedance fault indication 'FAULT !'
- (J) Wiring / 'N-E reverse' / L-E 'High' loop impedance fault check indication 'CHECK !'
- (K) 'N-E reverse' / L-E 'High' loop impedance
- (L) Voltage between L-N / L-E
- (M) Hertz (frequency unit) 'Hz'

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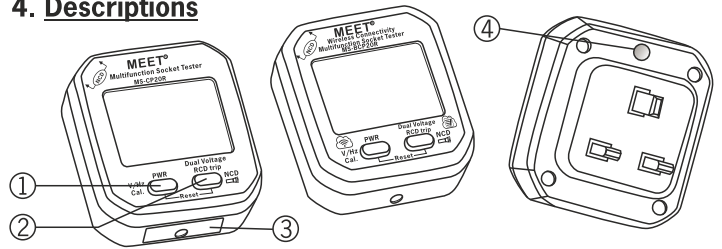
2. Introduction

MS-CP20R/MS-BCP20R, A multifunction Socket Tester for every electrician; DIY; etc. It is combined with 3 instruments for easy handling and testing, i.e.

- 1) DMM: It measures AC voltage of L-N and L-E as well as frequency.
- 2) Socket Tester: Identify wiring connections of socket and tests 30mA (UK) / >6mA (US / Thai) RCD trip condition.
- 3) NCV Tester: NCD combined with numerical digital display of AC signal strength with high sensitivity and precisely locate live wires; broken point; fuse blown; check proper connection of electrical appliances as well as Ground / Earthing connection. Loud increasing audible sound with large white / green / red backlight enhancement extra sound and visual feedback.
- 4) MS-BCP20R is integrated with Wireless Connectivity Bluetooth to transmit data to Smart phone / Tablet to view data, record reading, capture picture with data and send the information to headquarter.

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4. Descriptions



① Power (PWR) button:

- Press and hold for 3 secs. to Power ON / OFF (wireless connectivity automatically is activated for MS-BCP20R model).
- After power ON, Press once to read out L-N voltage / L-E voltage / Frequency
- After the NCD function is activated, press once for NCD 'Cal.' mode (adjust the sensitivity to zero)
- Press the Power (PWR) + RCD / NCD / Flashlight button simultaneously to stop testing RCD or operation

② RCD / NCD / Flashlight button

- Long press for RCD trip when wiring properly connected or N-E reverse check; L-E loop impedance fault check
- After plugged off, long press for ON/OFF NCD detect function
- After plugged off, press once for white LED flash light / torch ON / OFF
- Press the Power (PWR) + RCD / NCD / Flashlight button simultaneously to stop testing RCD or operation

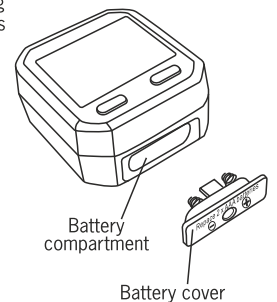
③ Battery compartment

④ Flashlight / Torch

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6. How to replace the battery

The accuracy can be impaired to measure by using very low power battery. When the icon '🔋' displays on the LCD, it is the time to replace 2 pcs. fresh AAA (R03 / LR03) alkaline type battery. Loosen the screw (anti-clockwise) and remove the battery cover of the unit, follow correct polarity indicated inside / on the battery cover. To avoid the chemical leakage from the battery, remove the battery if you are intended not to use the meter in a short period.



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7. Socket Wiring Check

- Plug the tester into the socket under test.
- Press and hold for 3 secs. to Power ON (wireless connectivity automatically is activated for MS-BCP20R model).
- The socket wiring test is immediately followed.
- The green LCD illuminated and a continuous tone indicate that the socket is correctly wired. Any other indication, such as open circuit or swapped connections, is shown by a red LCD illuminated accompanied by a warble tone. The socket is incorrectly wired and all further tests are inhibited.
- Check the indication displayed on the LCD against the below table for an indication of the wiring status.

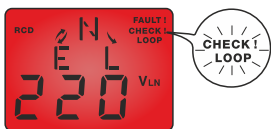


Wiring condition	Socket wiring / Terminal			LCD display / Back light	Buzzer
CORRECT	N	E	L	Green	Continuous
'L-E' FAULT !	N	L	NC (Not Connected)	Red	Intermittent
'E' FAULT !	N	NC (Not Connected)	L	Red	Intermittent

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8. RCD trip Test 30mA (UK) / >6mA (US / Thai, 110V / 250V) RCD

- If the wiring is properly connected, long press the button ② 'CHECK LOOP' until the icon 'RCD' appears and blinks on the top left.
- After approx. 5 secs., the RCD will tripped
- If the RCD is not tripped after 5 secs. (approx.), the icon 'CHECK LOOP' will appear and blinks with Red / Green back light, it means either 'N' / 'E' reversed or 'L' / 'E' 'High loop' impedance or Faulty RCD. Please check !



- Press the Power (PWR) ① 'V/Hz Cal.' + RCD / NCD / Flashlight ② 'Check Loop' button simultaneously to emergency stop the RCD test or operation.

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• Check Ground / Earth Connection of Electrical Appliances



Microwave oven / Oven Refrigerator / Wine cabinet Air-conditioner / Fan heater Electric water heater Electric kettle / Rice cooker / Toaster

Reading display > 2 approx. indicates NO Ground / Earth connected !

• Proper Connection Check

Testing on Hair Dryer



With the power OFF. Reading display > 2 approx. digits when the plug is inserted improperly, OR 'LIVE/HOT' wire is reversed connected to the socket



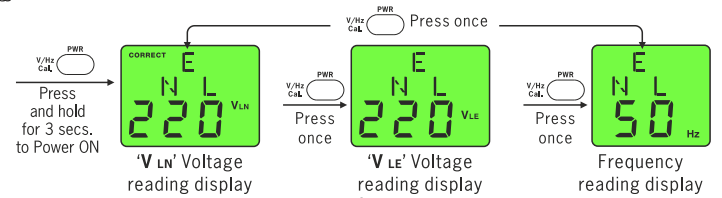
With the power OFF. Numerical reading '0' or very low indicates that wiring is properly connected

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'N' FAULT !	NC (Not Connected)	E	L	Red	Intermittent
'L-E' REVERSE	N	L	E	Red	Intermittent
'L-N' REVERSE	L	E	N	Red	Intermittent

* Will not detect 'N-E' reverse and 'L' Fault

L-N voltage / L-E voltage / Frequency reading selectable



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9. NCD, non contact AC voltage detection

- After plugged off, long press the button ② 'NCD' to ON the NCD detect function.
- Once detected voltage present, the AC voltage signal strength will be displayed in numerical digit accompany with different colour of back light and continuous audible sound.

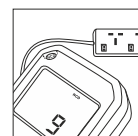


White LCD Backlight	0
Green LCD Backlight	1-2
Red LCD Backlight	3-9

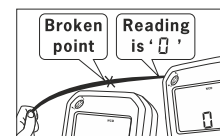
- If the NCD sensitivity is too high, press once the power button ① 'V/Hz Cal.' to adjust (Cal.) the reading to zero.

Advanced features of NCD (Must connect to the power source)

• Identify Polarity and Broken Point Location !



Highest Reading on the wire indicates Live wire

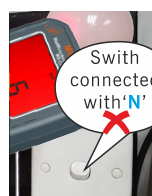


Numerical reading '0' or very low reading indicates broken point location

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• Switch / Socket Safety Check

Testing on Light Bulb



With the power OFF, Reading display > 2 approx. digits which indicates the switch is connected with 'Neutral' not 'Live' wire



With the power OFF. Numerical reading '0' or very low reading indicates the switch already cut off from the 'Live' wire and the wiring is properly connected !

• Instantaneously Check Fuse Blown

Testing on Fused Plug



Reading display > 2 approx. digits indicates AC voltage present



Numerical reading '0' or very low on the wire indicates fuse is blown !

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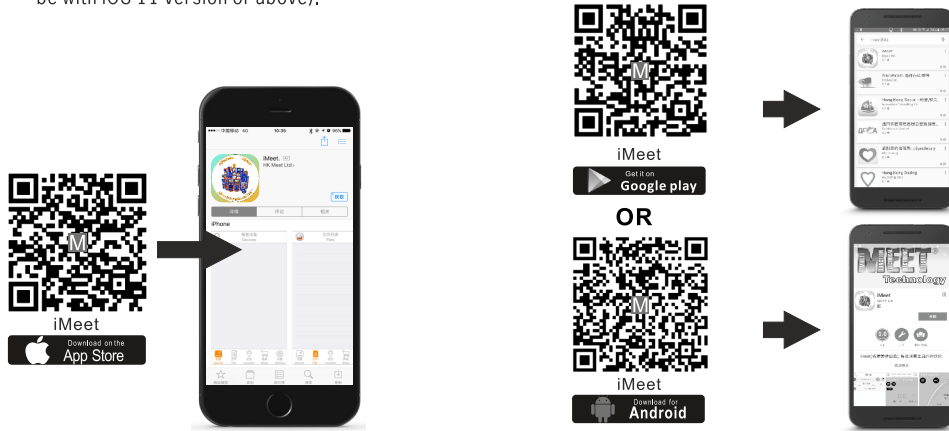
Wireless Connectivity Compatible

MS-BCP20R

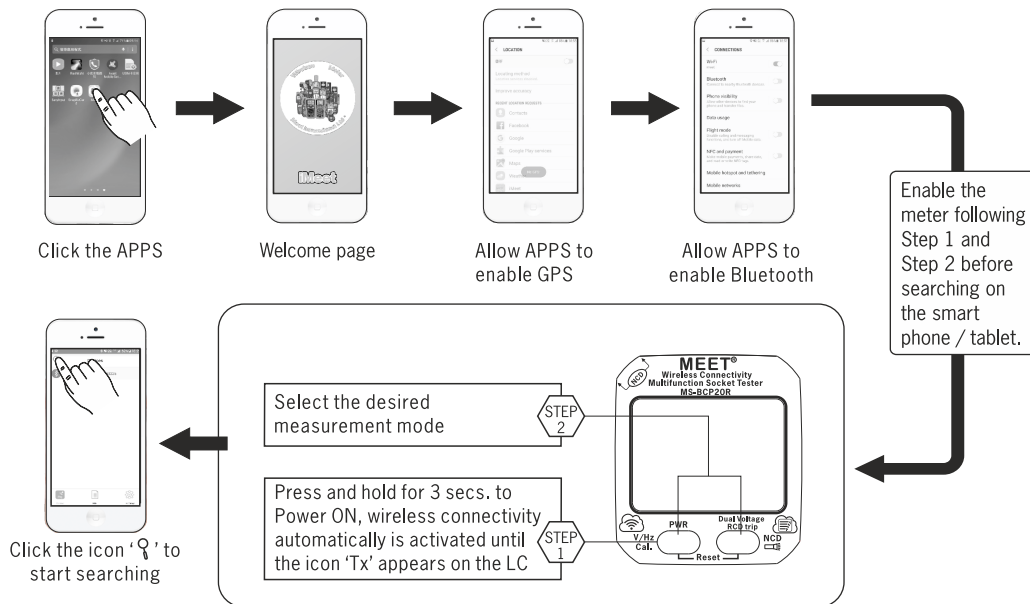
1. Operating the Smart phone / Tablet and the meter

- Download free 'iMEET' iOS APPS from App Store or scan below QR code (the Smart phone / Tablet must be with iOS 11 version or above).

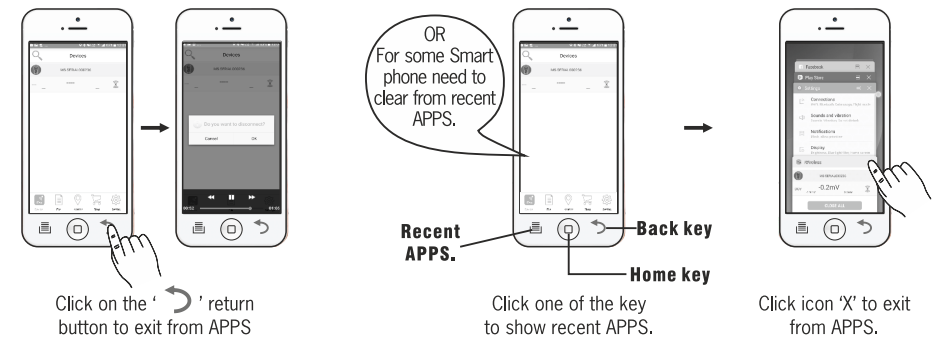
- Download free 'iMEET' Android APPS from Google Play Store or scan below QR code (The Smart phone / Tablet must be with Android 9.0 or above).



2. Reading display on Smart phone / Tablet



3. Exit from wireless connectivity function



Notes:

1. Remember to disconnect the 'Wireless connectivity' APPS from the Smart phone / Tablet when not in use.
2. You may connect the 'Wireless connectivity' if you need to always monitor the meter, but this will restrict the other user can't use the meter at same time.

4. Data logging

- Data logger compatible
- Setting option for data logging is included in same APPS.
- Smart Phone / Tablet must be keep connected with the meter



Data Logger Compatible