

PDL 200 Series NON-TRIP LOOP, SOCKET, VOLTAGE AND POLARITY TESTER

User Manual

Issue no. 03/06





We strongly advise reading and understanding this guide before the instrument is used. In particular note the safety issues that follow:-

Although fully protected up to 600V AC this tester is for use on 230V AC circuits only

Always check the tester on a known correctly wired live socket outlet before and after use.

The loop test notes given on page 8 are for guidance only - always refer to company operating procedures.

Before use - check your tester for any damage to the plug, leads and case.



At Socket & See our Engineers constantly look for improvement. If there is any aspect of your Socket & See tester you would like to comment on please visit our website at www.socketandsee.co.uk or email davidh@kewt.co.uk or Free Fax at 0800 7831385 with any suggestions.

We promise all communications will be acknowledged. We value YOUR opinion.

Operation Overview

Your Socket & See tester has a special polarity test function.

It is a little known fact that a system can be reverse wired with Live (Phase) to earth/neutral and earth/neutral to Live (Phase) The sockets will all work and conventional loop testers will show and test that everything is correct despite this very dangerous wiring condition.

Although extremely rare, this miswire condition can exist so if your test shows this fault re-test using an alternative socket (preferably on a different circuit). If the fault is identified from both test points advise the customer to urgently contact their electricity supplier. Do not proceed with any electrical work.

If the fault is only found at one test point advise the customer to contact a competent electrician to investigate. Do not proceed with any electrical work.



The PDL 200 Series is a multifunction tester, testing Earth Fault Loop, Mains Voltage, Correct Socket Wiring and Correct Polarity.

On plugging in and powering up your Socket & See PDL 200 Series Loop Tester the tester will first go through a brief self check routine and then check that the socket is correctly wired by showing three green (green for GO) LED's with a continuous tone - if there is anything other than three green LED's do not proceed (the tester will be automatically prevented from further tests).

In addition the tester will show the live-neutral voltage by LED indication.

If everything is correct pushing the test button will carry out a resistance test on the earth fault loop path that should not trip a healthy RCD installation. If the RCD does trip advise the customer to contact a competent electrician to investigate.

Finally - always touch the polarity test pad to double check the total system is correctly wired (see previous page).

Operation - A Detailed View PDL 200 Series





Your PDL 200 Series tester is equipped with two methods of connecting to a mains supply.

This test lead is used for connecting to sockets.

This fused test lead is used to connect in situations where you need to test but only have access to connectors or similar e.g. appliance connections and spur outlets.

WARNING isolate the mains supply before removing covers or making any first connections.

Please note: The test lead is colour coded to the new standards Brown=live Blue=neutral Green=earth.

(As a reminder the strain relief at the back of the prod is in the old colours of black and red).



At the Socket Test stage the PDL 200 Series also accurately measures and displays the Mains Voltage on one of the three LED's.

The voltage is banded to directly reflect the new Mains Supply Harmonised Standards BS 7697 HD 42S1.



The measurement result is

The Front panel of the tester gives a short reminder of Correct Socket Wiring (three GREEN LED's and continuous tone) and also indicates four of the most common Wiring problems (RED LED(s) and warble alarm tone).

If the three socket LED's are GREEN (correct) and the GREEN Mains Voltage LED is illuminated (correct) you can proceed to Loop Test by pressing the Loop Test Button. The three test LED's will flash ORANGE to indicate a (non-trip) Loop Measurement Test is being made and unlike other non-trip Loop Testers the result will be given in a few seconds - if you wish the test can be repeated to check the result.

For Guidance Only - Refer to company operating procedures.

1 of 5 LED's will illuminate to display the Loop Test result.



Reasons for the Polarity Test are covered in detail at the front of this User Guide.

To carry out the test apply firm (thumb) pressure to the Polarity Test Pad. (Please note this is a fixed pad it will not depress). The three Socket Test LED's should flash GREEN - this confirms the system is correctly wired and the polarity is satisfactory (live and earth/neutral are in the right place).

If the LED's change to RED when you operate the Touch Pad - it is possible a very dangerous condition is present and the customer should urgently inform their electricity supply company.

This Polarity indication diagram is a reminder for the correct and incorrect polarity conditions.



PDL 200 Series Wiring Test

Detects missing E or N ($>15k\Omega$)

Detects L-E or L-N swap

Detects Live (Phase) - Neutral/Earth phase reversal by use

of touch pad

Fault indicated by chart on front of instrument

Phase neutral voltage measurement accuracy ±2% and

displayed on three LED's

Orange	<207V AC	LOW
Green	207-253V AC	CORRECT
Red	>253V AC	HIGH

PDL 200 Series Loop Test

Continuous reading loop resistance with result displayed

on five LED's

Test current <15mA at 253V AC (No trip)	
Range	
<1Ω	
<2Ω	
<100Ω	
<200Ω	
>200Ω	
Each breakpoint has an accuracy of \pm 10% \pm 0.3 Ω	

Test stops within 30ms if measured EARTH potential rise is >25V AC

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Condition Number	on Wiring Condition	Supply Terminal [LED Display	Buzzer
-		Ν	E	L		
Socket Wiring						
1	Correct	Ν	E	L	•••	Continuous
2	L-E reverse	Ν	L	E	•••	Warble
3	L-N-E miswire	E	L	Ν	•••	Warble
4	L-N reverse	L	E	Ν	•••	Warble
5	L-N-E miswire	L	N	E	•••	Warble
6	Faulty N / L-E miswire	NC	L	Ν	•••	Warble
7	Faulty N / E miswire	NC	Ν	L	•••	Warble
8	Faulty N	NC	E	L	•••	Warble
9	Faulty N / L-E reverse	NC	L	E	•••	Warble
10	Faulty E / L-N reverse	L	NC	Ν	•••	Warble
11	Faulty E	Ν	NC	L	•••	Warble
12	Faulty E / N miswire	E	NC	L	•••	Warble
13	Faulty E / L-N miswire	L	NC	E	•••	Warble
14	Faulty L / N-E miswire	L	Ν	NC	•••	Warble
15	Faulty L / E miswire	Ν	L	NC	•••	Warble
16	Faulty L / N-E miswire	E	L	NC	•••	Warble
17	Faulty L / N miswire	L	E	NC	•••	Warble
18	No Mains	NC	NC	NC	•••	None

LED's will flash to indicate fault condition NC=No Connection