

An easy solution to measure volume resistivity  
and bulk density of powders with the new compact probe.

## *Automatic Powder Resistivity Analyzer*

Measuring range  $10^{-4} \sim 10^{14} \Omega$

Powder resistivity is an important property as it is different  
from solid bulk properties as well as single particle properties.

If the powders are used to manufacture products  
where particle state is maintained,  
controlling powder resistivity can have an influence  
to final product specifications.

*Hresta-UX*



*Loresta-GX*



*Automatic Powder Resistivity Analyzer*

< MCP-PD600 >

# Automatic Powder Resistivity Analyzer

- Built-in load-cell that monitors the applied pressure up to 20kN with high accuracy.
- Direct measurement with quick release of probe unit.

## Control and Monitor the Characteristic of Powders via Resistivity

- A wide range of conductive powders can be measured under different pressures using the high accuracy pressure sensor and the unique probe unit (4-pin / ring electrode).
- Easy to measure powder resistivity and bulk density with precisely controlled pressure. Optimal for controlling properties of powders.

### Uses

- Research and Development
- Quality Control

### Applications

#### ■ Carbon Powders

Rechargeable battery electrode materials / Electronic parts materials (condensers, resistors, etc.) / Activated carbon / Cokes / Graphite / Carbon black / Carbon fibers / Carbon nanoparticles etc.

#### ■ Metal Powders

Rechargeable battery electrode materials / Thin film materials (copper powder, ITO powder, etc.) / Conductive pastes / Conductive paints and coatings

#### ■ Other Powders

Toners and related powders / Magnetic materials such as Ferrite / Food and pharmaceuticals / Automotive parts / Motor parts etc.

### Features

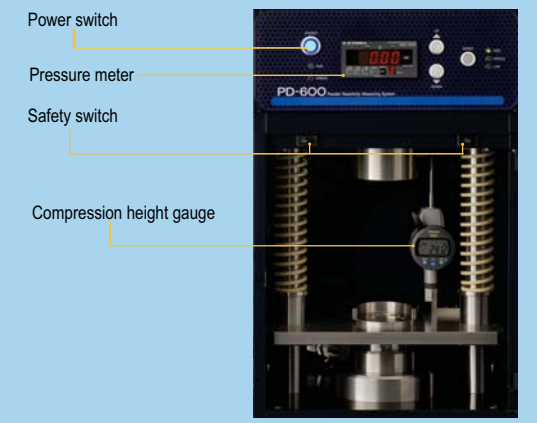
- Fully automatic, just input the load value and press START.
- Newly developed cylinder pump allows measuring from low load (0.01kN).
- High-pressure probe enables measuring at max. 250MPa.
- Better powder filling performance with the new suction pump. Improved repeatability of bulk density measurements.

### Specifications

- Maximum load to the powder unit / 20kN (max. 250MPa)
- Probe unit/Capacity:  $\phi 20$  or  $\phi 10 \times 40$ mm
- Electrode/4-pin method (Electrode interval: 2 or 3mm)  
/ Ring electrode method (Electrode diameter: 13mm)
- Main unit: Dimensions: W450 x D340 x H580mm, Weight: 42kg
- Hydraulic pump: Dimensions: W570 x D370 x H320mm, Weight: 29kg
- Power Source / AC100 - 240V (50 - 60Hz) 160VA
- Measuring range / Hiresta UX ( $10^3 \sim 10^{14} \Omega$ )  
/ Loresta GX ( $10^{-4} \sim 10^7 \Omega$ )

Measuring Range ( $\Omega$ )	$10^{-4}$	$10^{-3}$	$10^{-2}$	$10^{-1}$	$10^0$	$10^1$	$10^2$	$10^3$	$10^4$	$10^5$	$10^6$	$10^7$	$10^8$	$10^9$	$10^{10}$	$10^{11}$	$10^{12}$	$10^{13}$	$10^{14}$
Loresta-GX																			
Hiresta-UX																			

### Main Unit

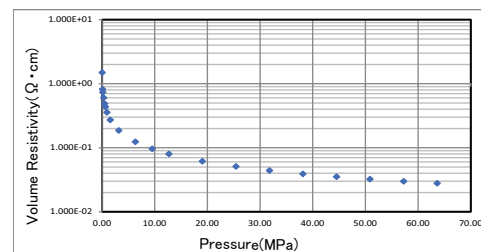


### Probe Unit

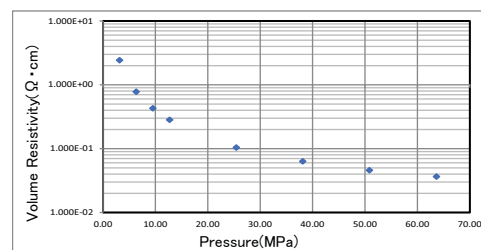


For Low Resistivity  
(4 pin method)

For High Resistivity  
(Ring electrode method)



Results									
Sample name Carbon Black									
No.	Load (kN)	Pressure (MPa)	Thickness (mm)	RCF	Resistance ( $\Omega$ )	Resistivity ( $\Omega \cdot \text{cm}$ )	Conductivity (S/cm)	Density (g/cm <sup>3</sup> )	
1	0.01	0.03	11.60	1.460	OK 8.804E-01	1.491E+00	6.706E-01	1.388E-01	
2	0.03	0.10	10.94	1.539	OK 4.869E-01	8.199E-01	1.220E+00	1.472E-01	
3	0.05	0.16	10.40	1.610	OK 4.378E-01	7.332E-01	1.364E+00	1.548E-01	
4	0.10	0.32	9.58	1.730	OK 3.639E-01	6.032E-01	1.658E+00	1.681E-01	
5	0.15	0.48	9.03	1.819	OK 2.969E-01	4.878E-01	2.050E+00	1.783E-01	
6	0.20	0.64	8.72	1.874	OK 2.663E-01	4.354E-01	2.297E+00	1.846E-01	
7	0.29	0.92	8.21	1.972	OK 2.206E-01	3.569E-01	2.802E+00	1.963E-01	
8	0.49	1.56	7.50	2.121	OK 1.713E-01	2.724E-01	3.671E+00	2.148E-01	
9	1.00	3.18	6.47	2.372	OK 1.213E-01	1.863E-01	5.368E+00	2.488E-01	



Results									
Sample name Iron Powder									
No.	Load (kN)	Pressure (MPa)	Thickness (mm)	RCF	Resistance ( $\Omega$ )	Resistivity ( $\Omega \cdot \text{cm}$ )	Conductivity (S/cm)	Density (g/cm <sup>3</sup> )	
1	0.99	3.15	4.19	3.096	OK 1.875E+00	2.433E+00	4.110E-01	3.039E+00	
2	1.99	6.33	4.02	3.155	OK 6.127E-01	7.777E-01	1.286E+00	3.166E+00	
3	2.99	9.52	3.90	3.200	OK 3.442E-01	4.291E-01	2.330E+00	3.269E+00	
4	3.99	12.70	3.78	3.241	OK 2.309E-01	2.827E-01	3.537E+00	3.371E+00	
5	7.99	25.43	3.46	3.349	OK 8.970E-02	1.039E-01	9.624E+00	3.682E+00	
6	11.97	38.10	3.23	3.424	OK 5.725E-02	6.330E-02	1.580E+01	3.944E+00	
7	15.97	50.83	3.05	3.479	OK 4.331E-02	4.594E-02	2.177E+01	4.177E+00	
8	19.99	63.63	2.91	3.520	OK 3.560E-02	3.647E-02	2.742E+01	4.376E+00	

### Note:

Follow instructions in manuals to correctly install, connect and operate the instruments. Contents of catalogues are subject to change without prior notice when improvements are made in performance. The actual color of the goods may appear different from color printed. All screen images are simulated.

\*Company and product names contained herein are the trademarks or registered trademarks of the company concerned.

## Nittoseiko Analytech Co., Ltd.

7-10-1 Chuo-rinkan, Yamato, Kanagawa 242-0007, JAPAN  
Tel: +81(0)46-278-0056  
URL: <https://www.n-analytech.co.jp/global>

REFERIMENTO PER L'ITALIA



Qi srl  
t +39 06 9105461  
[www.qitech.it](http://www.qitech.it) | [SalesQi@qitech.it](mailto:SalesQi@qitech.it)

CAT NO.29050220401E