

DSR Digital RDE/RRDE Device



Key points of DSR rotator products are as follows:

- Encoder motor control and digital technology. More precise and stable rotation.
- Silver-graphite carbon brush (silver content > 80%). Low signal transmission loss.
- Integrated control and flexible operation. Convenient and aesthetical air-flow connection.

DSR Digital RDE/RRDE Device

Can be used together with rotating disc electrodes (RDE), rotating ring disc electrodes (RRDE), and rotating cylindrical electrodes (RCE).

Background

In order to study the distribution of current density on the surface of electrodes, reduce or eliminate the influence of diffusion layers and other factors, electrochemical researchers have developed a high-speed rotating electrode through comparing various electrodes and stirring methods. Since the working surface of this electrode looks like a disk, it is also called a rotating disk-ring electrode device.

Technology Advantages

Digital DSR: DSR was developed, along with the trend of digitization, on the basis of the new generation of digital information transmission technology. The motor speed and direction are accurately controlled with high precision, fast response, strong signal processing ability, and anti-interference stability. It is fundamentally different from imported instrument controlled by analog signal. Digital reading is intuitively and accurately displayed. It ensures finer speed tuning, better performance stability.

DSR works with silver graphite carbon brushes (silver content > 80%), which ensures non-destructive transmission, good wear resistance and lubrication, and greatly improved stability. DSR works with a collimated rotating rod (15 mm diameter), which ensures stable dynamic reaction conditions. DSR works with high-quality working electrodes manufactured in μm level. It ensures high collection efficiency and accurate calculation of electron transfer number. DSR is powered by Direct Current, which ensures low energy consumption, strong stability, and greatly reduced clutter interference from the power grid.

Precise Application

DSR is used in couple with electrodes and electrochemical workstations to satisfy diverse academic demands:

- Evaluation of Hydrogen Fuel Cell Catalysts
- Lithium Air Batteries
- Electrochemical kinetics
- Oxygen Reduction Reaction (ORR)
- Oxygen Evolution Reaction (OER)
- Hydrogen Evolution Reaction (HER)
- Carbon Dioxide Reduction Reaction (CO₂RR)
- Evaluation of corrosion inhibitors
- Research on corrosion potential of metal materials, etc

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Specification	
Rotation speed	50-10000rpm
Power	0.02 horsepower
Carbon brush	Environmentally friendly silver carbon brush
Control	Detachable structure, equipped with signal transmission and connection
Explosion proof	The latest explosion-proof design ensures personal and equipment safety
Rotating rod	Length 170 mm
Outer diameter	15mm, suitable for various electrolytic cells, easy to connect with other instruments
Disc electrode	External thread design, better contact, stable signal transmission
Disc electrode diameter	5.0 mm
Electrode OD	15 mm
Disc ring electrode	External thread design, better contact, stable signal transmission
Disc ring clearance	$\leq 320\mu\text{m}$
Precision for disk ring size	$\pm 0.01\text{mm}$
Disc diameter	5.61 mm
Electrolytic cell	Users can choose from standard electrolytic cells or custom designs
Inert gas flowmeter	Adjust the inert gas purge in the electrolytic cell
Oxygen flowmeter	Adjust oxygen flow into the electrolyte for oxygen saturation
Working temperature	Room temperature

Item	Description	
1	DSR Rotating Disk Ring Electrode System Main Unit Speed 0-10000 rpm, suitable for disk and ring-disk electrodes	Main
2	Internal thread on the rod. Matching Rotating Rod for Disk/Ring Electrodes Compatible with disk and ring-disk electrodes	Option
3	RDE electrode, Glassy Carbon - 5mm diameter	Option
4	Ceramic Sealing Ferrule, inner diameter 15mm	Option
5	Platinum Counter Electrode	Option
6	Silver/Silver Chloride Reference Electrode	Option
7	Electrolytic Cell (Double-layer) 150ml	Option
8	Polishing Kit	Option
9	Carbon Brush Pair	Option

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