

**BRAND INDIA ENGINEERING  
E-CATALOGUE**

Date: 04-09-2025

# **PIONEER ELECTRICAL WORKS**

**Pioneer Electrical Works, Plot No. 58, B/h.  
Kalapi Printers, Vasai Taluka Ind. Co-Op.  
Estate Ltd, Gauraipada, Vasai (E),  
MUMBAI  
PIN - 401208**

**DHAVAL SHAH  
PHONE - +91 22  
9820852903  
EMAIL -  
[dhaval.shah@pew-  
india.in](mailto:dhaval.shah@pew-india.in)  
WEB - [WWW.PEW-  
INDIA.IN](http://WWW.PEW-INDIA.IN)**

Leaders in resistance starters and speed regulators for slipring induction motors. PIONEER ELECTRICAL WORKS stands for consistent high quality and continuous development. DNA of PEW is Research, Design, Development and successful Deployment. Our philosophy is to deliver a full service solution in Liquid Resistance Starters, Grid Resistance Speed Regulators, Neutral Grounding Resistors and other Power Resistors.

Products Description

**LIQUID ROTOR STARTER**

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### Technical Details

The range of PIONEER liquid rheostats – type LRS – is designed for controlling of large KW slip ring motors and extends, up to 10,000 kW, or any higher rating required. PIONEER type LRS rheostats unique design, with horizontal movement of the moving contact system, enable a wide variation of the resistance. This coupled with current sensing relay which synchronizes the change of resistance to the motor acceleration, ensures smooth progressive acceleration of the drive. With the use of Computer Aided System Engineering (CASE), wide range of specific requirements can be created to including twin drive rheostats for large drives and speed variation by control slip. PIONEER type LRS rheostats incorporate: – Tank for electrolyte – available in discrete frame sizes, according to KW rating, – Horizontal movement contact system, and – Control panel, All mounted on a common frame. Electrolyte Tank The tank for the electrolyte is of welded construction, made from mild steel of adequate thickness and strengthened by gussets – where needed. The inner surface of the tank is lined with FRP or Epoxy coating to provide greater corrosion resistance. The tank can be filled from the top and drained through a drain plug provided at the bottom of the tank. Level gauge, with over flow spout, is provided for visual indication of the electrolyte level. Rheostat System Three mild steel electrodes, mounted on a channel to form star point, move on two parallel guide rails between the mild steel fixed electrodes. The fixed electrodes are connected by copper bus to the rotor terminals. The area of the electrode system plates are designed for low current density of 1 amps/cm<sup>2</sup> A 0.37 kW, induction motor coupled by a worm reducer to a chain and sprocket arrangement moves the electrode carriage on the horizontal guide rails. The motor is coupled through a clutch arrangement which enables emergency manual operation of the electrode carriage by hand wheel provided for this purpose. On completion of the contact carriage system are signaled by limit switches, which also serve to interlock the carriage movement so that it remains in the resistance shorted position, so long as the controlled motor is operating, and returns carriage corresponding to greatest resistance position, when motor is switched off. Polypropylene barriers between phase fixed to one end of the tank, increase insulation levels and reduce cross currents. The other end of the barrier being free allows circulation of liquid to maintain temperature and concentration of electrolyte uniform. Adequately dimensioned cable box houses the rotor terminals which can conventionally accept two or four runs of cable terminated on L shaped tinned copper terminal. Control System: The control system is housed in a control panel constructed out of sheet and having ingress protection IP54/55. The pilot motor speed of the moving contact system control by Variable Frequency Drive. The acceleration time of main motor can be controlled by varying the frequency of pilot motor. A supervisory timer is provided to switch off the main motor in case the starting time is abnormally prolonged. Low level & High Temperature indication and interlock with main motor starting are also provided. Optional control equipment can also be incorporated on request.

ITC HS Codes	85334090
Certification/ Standard	IEC
Issuing Agency	---
Date of Issue	01-07-2019

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Date of Expiry  
End Use Sectors  
Product Images

04-07-2019

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### GRID RESISTANCE REGULATOR

Technical Details

The GRR is housed in an industry grade enclosure manufactured out of heavy gauge sheet steel painted with two coats of anti-corrosive paint and one coat of final paint. The GRR is designed in two compartments, front and back. 1. Front compartment will be dust and vermin proof, provided with suitable gaskets and will be housed with Power Contactors and other switchgear. 2. Back compartment will be well ventilated, forced cooled type, and will be housed with resistance banks. The resistance will be stainless steel coil type with high thermal capacity and will be designed for temperature rise 350°C. The resistance coils will be mounted on angle iron structure with proper support to absorb the vibration and stresses that occur during transit/fault. The Rotor Regulator contactor panel and Resistance box are mounted in the same unit with partition in between. Connection between the resistance box and contactors are done by solid copper jumpers through polypropylene sheets. Adequate number of cooling fans provided to take away the heat generated during regulation.

ITC HS Codes

85334090

Certification/ Standard

IEC

Issuing Agency

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30-09-2020

End Use Sectors

CEMENT , SLIRING MOTOR MANUFACTURER

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Product Images

### VAPROMATIC TYPE LRS

#### Technical Details

This is based on the difference in resistivity between a liquid electrolyte and its vapour, contained in an electrode chamber. The passage of the initial rotor current causes immediate partial vaporization of the electrolyte and instantaneously adjusts resistance and starting torque to optimum values. During the run-up to speed, the thermal interchanges which occur progressively decrease the resistance. A limited contactor then short circuits the low residual resistance. The starting torque is determined according to the requirements of the driven machine or the current limitation.

ITC HS Codes	85334090
Certification/ Standard	IEC
Issuing Agency	---
Date of Issue	01-07-2019
Date of Expiry	30-11-2019
End Use Sectors	CEMENT,SUGAR,STEEL

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Product Images



Sectors of Interest	HIGH VOLTAGE SLIPRING MOTOR
Is OEM Supplier?	Yes
Is After Sales Service Provider?	No
Importance of niche products	
Potential market of niche products	
Product Supply Record	
Patented Technologies	
Awards/Accolades	