



संवाद  
Sanwaad

Online Workshop

for **Development of Local Suppliers**  
for sourcing of engineering items & raw materials

19<sup>th</sup> January 2021, 10.00 AM

#AatmaNirbharBharat




#VocalforLocal

Eighth Workshop – **Components Electrical & Electronics**

Hosted by Electronics Division (EDN), BHEL , Bangalore


# Components - Electrical & Electronics



Classification	Application	BHEL Specification	Requirement per annum (Rs. Cr.)	BHEL Unit	HSN Code	Required by any other clients	Photographs
Medium Voltage VFD (3.3kV, 6.6kV, 11kV) for Speed Control of motor	Variable Frequency drive for Induction motors	PS4452690 PS4452680 PS4452636	10 Cr	EDN	85044010	Power Plants Process Industries	


# Components - Electrical & Electronics



Classification	Application	BHEL Specification	Requirement per annum (Rs. Cr.)	BHEL Unit	HSN Code	Required by any other clients	Photographs
Static Frequency Converter (SFC) for Lift Irrigation system	Starting of large pumps (>100MW)	PS4452566	5 Cr	EDN	85359010	Lift Irrigation systems	


# Components - Electrical & Electronics



Classification	Application	BHEL Specification	Requirement per annum (Rs. Cr.)	BHEL Unit	HSN Code	Required by any other clients	Photographs
Motorised Off-load Disconnecter without earthing switch 75kv peak for 11 kv system, 5000 operating cycles	Isolation of HV electrical equipment	PS441132	10 lakhs	EDN	85353000	Lift Irrigation systems	

# Components - Electrical & Electronics




Classification	Application	BHEL Specification	Requirement per annum (Rs. Cr.)	BHEL Unit	HSN Code	Required by any other clients	Photographs
Traction Grade Power Supplies)	For Railways	POWER SUPPLY STRU-02 -VT-110-24/24-480-FM	13.61 Cr	EDN	85044010	-ABB -MEDHA -BOMBARDIER	

Power Supply

# Components - Electrical & Electronics




Classification	Application	BHEL Specification	Requirement per annum (Rs. Cr.)	BHEL Unit	HSN Code	Required by any other clients	Photographs
Power Capacitor for Traction application	For Railways	CAPACITOR (DRY TYPE-DC LINK) CAPACITOR C=750 $\mu$ F, Ue=2800V, In=150A	13.61 Cr	EDN	39219099	-ABB -MEDHA -BOMBARDIER	

Power Capacitor

# Components - Electrical & Electronics




Classification	Application	BHEL Specification	Requirement per annum (Rs. Cr.)	BHEL Unit	HSN Code	Required by any other clients	Photographs
Traction Grade Special Contactors	For Railways	CONTACTOR 2P NO 110VDC AUX.1NO+1 NC, Vertical Mounted, Minimum pick up control voltage pre- set at 60.5V	21 Cr	EDN	39219099	-ABB -MEDHA -BOMBARDIER	

Special Contactor

# Components - Electrical & Electronics




Classification	Application	BHEL Specification	Requirement per annum (Rs. Cr.)	BHEL Unit	HSN Code	Required by any other clients	Photographs
Traction Grade Compact MCBs with special tripping Characteristics	For Railways	MINIATURE CIRCUIT BREAKER K-Series	2.53 Cr	EDN	39219099	-ABB -MEDHA -BOMBARDIER	

Compact MCBs

# Components - Electrical & Electronics




Classification	Application	BHEL Specification	Requirement per annum (Rs. Cr.)	BHEL Unit	HSN Code	Required by any other clients	Photographs
Traction Grade Temp Management System	For Railways	AXIAL FAN 250M3/H 9,5W 48VDC	4 Cr	EDN	39219099	-ABB -MEDHA -BOMBARDIER	

Axial Fan

# Components - Electrical & Electronics




Classification	Application	BHEL Specification	Requirement per annum (Rs. Cr.)	BHEL Unit	HSN Code	Required by any other clients	Photographs
Traction grade Blower	For Railways	Centrifugal Fan Assy. for Traction/Aux Converter	8.6 Cr	EDN	90329000	-ABB -MEDHA -BOMBARDIER	

Blowers

# Components - Electrical & Electronics




Classification	Application	BHEL Specification	Requirement per annum (Rs. Cr.)	BHEL Unit	HSN Code	Required by any other clients	Photographs
Traction Grade Compact Relays	For Railways	Instantaneous Relay Coil Voltage (nominal): 110VDC. No. of NO/NC Changeover Contacts: 4 nos. Continuous Contact Current Rating: Minimum 10Amp	6.62 Cr	EDN	76161000	-ABB -MEDHA -BOMBARDIER	

Relays

# Components - Electrical & Electronics




Classification	Application	BHEL Specification	Requirement per annum (Rs. Cr.)	BHEL Unit	HSN Code	Required by any other clients	Photographs
Communication equipment	For Railways	Managed Backbone Routing Switch	11.25 Cr	EDN	39219099	-ABB -MEDHA -BOMBARDIER	

Routing Switch

# Components - Electrical & Electronics




Classification	Application	BHEL Specification	Requirement per annum (Rs. Cr.)	BHEL Unit	HSN Code	Required by any other clients	Photographs
Field Bus	For Power Plants	Profibus Power Supply Module	5.1 Cr	EDN	85249190	-NTPC -SEBs	

Profibus Module

# Components - Electrical & Electronics





Classification	Application	BHEL Specification	Requirement per annum (Rs. Cr.)	BHEL Unit	HSN Code	Required by any other clients	Photographs
DC-DC Converter	For Power Plants	24VDC/24VDC CONVERTER; I/P=24VDC (18-32VDC) WITH REVERSE PROTECTION. O/P=24VDC +/-1%,10A;	0.5 Cr	EDN	90329000	-NTPC -SEBs	

DC-DC Converter





# Components - Electrical & Electronics



Classification	Application	BHEL Specification	Annual Qty (Rs. Cr.)	BHEL Unit	HSN Code	Types	Photographs
Vibration Monitoring & Analysis System	For Power Plants	Measures behavior of the rotor train assembly by measuring vibrations , axial shifts , rotor & Casing expansion with the help of instruments under all operating conditions.	6.0 Cr	EDN	90328910	Turbo supervisory Major Rotating Machines Calibration equipment for vibration sensors	 






# Components - Electrical & Electronics



Classification	Application	BHEL Specification	Annual Qty (Rs. Cr.)	BHEL Unit	HSN Code	Types	Photographs
Coal Bunker Monitoring System	For Power Plants	Level monitoring system for the Coal Bunkers. Strain gauge sensor, Radar or Ultrasonic sensors & 3D Type sensors	2.66Cr	EDN	90261020	Strain Gauge Type Radar Type Ultrasonic Type 3D type	   



# Components - Electrical & Electronics



Classification	Application	BHEL Specification	Annual Qty (Rs. Cr.)	BHEL Unit	HSN Code	Types	Photographs
Transmitters & Hand held Communicators	For Power Plants	<p>Transmitter for measuring Level &amp; Temperature</p> <p>Communicators for calibrations adjustments of the transmitters</p>	3.8Cr	EDN	90328990	<p>Radar level</p> <p>DIN Rail mounted TT's</p> <p>Dual input TT's</p> <p>Guided Wave level</p> <p>Transmitters</p>	    


# Components - Electrical & Electronics



Classification	Application	BHEL Specification	Annual Qty (Rs. Cr.)	BHEL Unit	HSN CODE	Types	Required by any other clients	Photographs
Battery	For Power Plants	Battery for providing backup to UPS & 24V DC Charger System.	25.0Cr	EDN	85044010	Lead Acid Plante Fibre Plated Ni-Cd	-NTPC -SEBs	 


# Components - Electrical & Electronics



Classification	Application	BHEL Specification	Annual Qty (Rs. Cr.)	BHEL Unit	HSN CODE	Types	Photographs
Electro Pneumatic Converter	For Power Plants	Used for actuation of Control Valve and Control Dampers.	0.06 Cr	EDN	84819090	Fail Safe Fail Freeze	


# Components - Electrical & Electronics



Classification	Application	BHEL Specification	Annual Qty (Rs. Cr.)	BHEL Unit	HSN CODE	Types	Required by any other clients	Photographs
Positioner	For Power Plants	Used for Positioning of Control Valve and Control Dampers.	0.5 Cr	EDN	84818030	HART Compatible	-NTPC -SEBs	



# Components - Electrical & Electronics



Classification	Application	BHEL Specification	Annual Qty (Rs. Cr.)	BHEL Unit	HSN CODE	Types	Photographs
Impact Head Element	For Power Plants	For measuring of Cooling water flow in pipes.	0.5 Cr	EDN	90261020	Pipe diameter ranges from 600mm to 3000mm.	




# Components - Electrical & Electronics



Classification	Application	BHEL Specification	Annual Qty (Rs. Cr.)	BHEL Unit	HSN CODE	Types	Photographs
Steam & Water Analysis System	For Power Plants	maintaining the quality of Steam and Water to avoid corrosion.	11.0 Cr	EDN	90278090	<ul style="list-style-type: none"> <li>pH</li> <li>Conductivity</li> <li>Dissolved Oxygen</li> <li>Silica</li> <li>Sodium</li> <li>Hydrazine</li> <li>Chloride</li> <li>Iron</li> <li>Turbidity/Salinity</li> <li>Ammonia</li> <li>Chlorine</li> </ul>	 



# Components - Electrical & Electronics



Classification	Application	BHEL Specification	Annual Qty (Rs. Cr.)	BHEL Unit	HSN CODE	Types	Photographs
Analizers for measuring Emission Parameters	For Power Plants	Monitoring of parameters in the flue gas exiting the Chimney	24.4 Cr.	EDN	90271000	<ul style="list-style-type: none"> <li>• Low temperature Oxygen</li> <li>• High Temperature Oxygen</li> <li>• CO – High Dust application</li> <li>• SO2/NOx/CO/C O2</li> <li>• Mercury</li> <li>• Dust</li> <li>• HF</li> </ul>	  


# Components - Electrical & Electronics



Classification	Application	BHEL Specification	Annual Qty (Rs. Cr.)	BHEL Unit	HSN CODE	Types	Photographs
<p>Analyzers for measuring Ambient Air &amp; Weather Parameters</p>	<p>For Power Plants</p>	<p>Monitoring of parameters in the Ambient Air of the surrounding of power plant</p>	<p>2.4 Cr</p>	<p>EDN</p>	<p>90271000</p>	<ul style="list-style-type: none"> <li>• SO2</li> <li>• NOx</li> <li>• Particulate Matter</li> <li>• Mercury</li> <li>• CO</li> <li>• Ozone</li> <li>• Weather monitoring</li> </ul>	 



# Components - Electrical & Electronics



Classification	Application	BHEL Specification	Requirement per annum (Rs. Cr.)	BHEL Unit	HSN Code	Required by any other clients	Photographs
ICs- SMD and through hole components  Analog, digital and complex function	For Railways and C&I products	Comparators Multiplexers Timers Memory chips Regulators ADC and DAC, opto couplers Voltage rating: 3.3 V to 24 V	15Cr	EDN	85235100 85437099 85415000	Electronic module manufacturers such as BEL	



# Components - Electrical & Electronics



Classification	Application	BHEL Specification	Requirement per annum (Rs. Cr.)	BHEL Unit	HSN Code	Required by any other clients	Photographs
Discrete semiconductor s- SMD and through hole components	For Railways and C&I products	Diodes, Zeners, Mosfet, LED etc Up to 1000 V, up to 10 A	5Cr	EDN	85411000	Electronic module manufacturers such as BEL	 



# Components - Electrical & Electronics



Classification	Application	BHEL Specification	Requirement per annum (Rs. Cr.)	BHEL Unit	HSN Code	Required by any other clients	Photographs
Processors-SMD and through hole components	For Railways and C&I products	FPGA DSP Microcontroller Microprocessor	5Cr	EDN	85423100 84733010 85423900	Electronic module manufacturers such as BEL	 



# Components - Electrical & Electronics



Classification	Application	BHEL Specification	Requirement per annum (Rs. Cr.)	BHEL Unit	HSN Code	Required by any other clients	Photographs
High Power semiconductors	For Railways	IGBTs: Up to 1500 A and Up to 4500 V	Rs. 40 Cr	EDN	85413010	Power electronic module manufacturers	 



# Components - Electrical & Electronics



Classification	Application	BHEL Specification	Requirement per annum (Rs. Cr.)	BHEL Unit	HSN Code	Required by any other clients	Photographs
Discrete semiconductor s- SMD and through hole components	For Railways and C&I products	Diodes, Zeners, Mosfet, LED etc Up to 1000 V, up to 10 A	1.5Cr	EDN	85411000	Electronic module manufacturers such as BEL	 


# Components - Electrical & Electronics



Classification	Application	BHEL Specification	Requirement per annum (Rs. Cr.)	BHEL Unit	HSN Code	Required by any other clients	Photographs
Passive components: SMD and Through hole	For Railways and C&I products	SMD resistors: Metal film, wirewound, precision resistors, power resistors etc	2 Cr	EDN	85331000	Electronic module manufacturers such as BEL	 

# Components - Electrical & Electronics

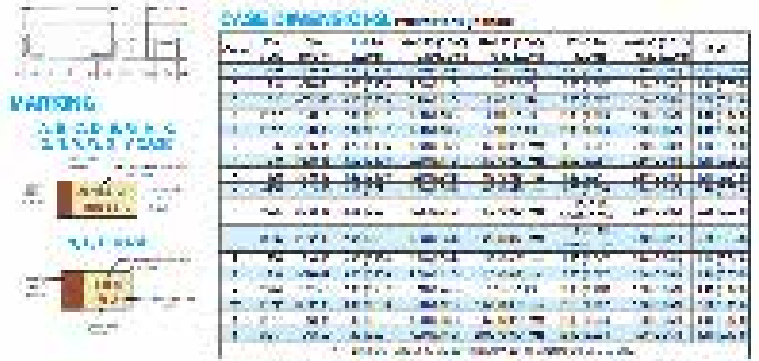



Classification	Application	BHEL Specification	Requirement per annum (Rs. Cr.)	BHEL Unit	HSN Code	Required by any other clients	Photographs
IGBT	For Railways	IGBT MODULE 1200V 449A.	114 Cr	EDN	85415000	-ABB -MEDHA -BOMBARDIER	

IGBT MODULE


# Components - Electrical & Electronics



Classification	Application	BHEL Specification	Requirement per annum (Rs. Cr.)	BHEL Unit	HSN Code	Required by any other clients	Photographs
Passive components: SMD and Through hole	For Railways and C&I products	SMD capacitors: MLCC, electrolytic, ceramic etc	3Cr	EDN	85321000	Electronic module manufacturers such as BEL	 



# Components - Electrical & Electronics



Classification	Application	BHEL Specification	Requirement per annum (Rs. Cr.)	BHEL Unit	HSN Code	Required by any other clients	Photographs
Passive components	For Railways and C&I products	SMD and through hole inductors, ferrite beads, chokes, filters etc Up to 100 V, 10 A	3 Cr	EDN	85045090 85045010	Electronic module manufacturers such as BEL	


# Components - Electrical & Electronics



Classification	Application	BHEL Specification	Requirement per annum (Rs. Cr.)	BHEL Unit	HSN Code	Required by any other clients	Photographs
High Power semiconductors	For Railways	IGBTs: Up to 1500 A and Up to 4500 V	Rs. 40 Cr	EDN	85413010	Power electronic module manufacturers	 



# Components - Electrical & Electronics



Classification	Application	BHEL Specification	Requirement per annum (Rs. Cr.)	BHEL Unit	HSN Code	Required by any other clients	Photographs
High Power semiconductor	For Railways	HV thyristors and Fast recovery diodes up to 1000 A and 4500 V	3 cr	EDN	85413010	Power electronic module manufacturers	

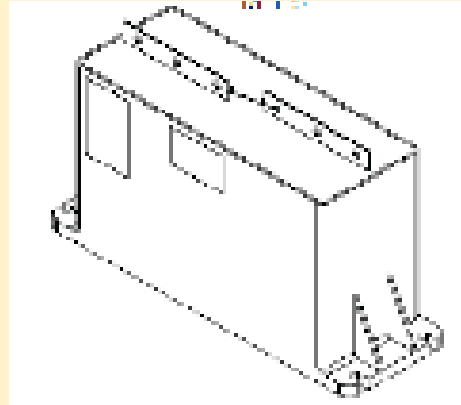

# Components - Electrical & Electronics



Classification	Application	BHEL Specification	Requirement per annum (Rs. Cr.)	BHEL Unit	HSN Code	Required by any other clients	Photographs
Voltage and current sensors	For Railways	Voltage sensors up to 3 kv and current sensors up to 5000 A	6Cr	EDN	85049090	Power electronic module manufacturers	 



# Components - Electrical & Electronics



Classification	Application	BHEL Specification	Requirement per annum (Rs. Cr.)	BHEL Unit	HSN Code	Required by any other clients	Photographs
Power electronic capacitors	For Railways	Poly propylene capacitors Voltage rating up to 3 kV Electrolytic capacitors up to 500 V	Rs. 3 Cr	EDN	85322990	Power electronic module manufacturers	 



# Components - Electrical & Electronics



Classification	Application	BHEL Specification	Requirement per annum (Rs. Cr.)	BHEL Unit	HSN Code	Required by any other clients	Photographs
Fibre optic components	For Railways and C&I products	Transmitters and receivers	Rs. 4 Cr	EDN	90011000	Power electronic module manufacturers	 



# Components - Electrical & Electronics



Classification	Application	BHEL Specification	Requirement per annum (Rs. Cr.)	BHEL Unit	HSN Code	Required by any other clients	Photographs
SMD and through hole Relays	For Railways and C&I products	Electromechanical and photomos Relays up to 110 V	4Cr	EDN	85364100	Electronic module manufacturers	 


# Components - Electrical & Electronics



Classification	Application	BHEL Specification	Requirement per annum (Rs. Cr.)	BHEL Unit	HSN Code	Required by any other clients	Photographs
SMD and through hole connectors	For Railways and C&I products	PCB mountable	3Cr	EDN	85369090	Electronic module manufacturers	 


# Components - Electrical & Electronics



Classification	Application	BHEL Specification	Requirement per annum (Rs. Cr.)	BHEL Unit	HSN Code	Required by any other clients	Photographs
Opto pipes	For Railways and C&I products	PCB mountable	2Cr	EDN	39269099	Electronic module manufacturers	


# Components - Electrical & Electronics



Classification	Application	BHEL Specification	Requirement per annum (Rs. Cr.)	BHEL Unit	HSN Code	Required by any other clients	Photographs
Other SMD and through hole components	For Railways and C&I products	PCB mountable Transformers,	5Cr	EDN	85043100	Electronic module manufacturers	


# Components - Electrical & Electronics



Classification	Application	BHEL Specification	Requirement per annum (Rs. Cr.)	BHEL Unit	HSN Code	Required by any other clients	Photographs
SIL pads	For Railways and C&I products	For electronic components for electrical isolation and thermal conduction	4Cr	EDN	85043100	Electronic module manufacturers	

# Components - Electrical & Electronics




Classification	Application	BHEL Specification	Requirement per annum (Rs. Cr.)	BHEL Unit	HSN Code	Required by any other clients	Photographs
Laminated Copper Bus Bars (Multilayered)	For Power Inverter & Converter applications	PS407401 – 900A to 1450A upto 2200 V peak, 1800V DC,	0.75 Cr	HEP Bhopal	85369090	EDN Bengaluru, Other Inverter Manufacturers	

Laminated busbar



# Components - Electrical & Electronics



Classification	Application	BHEL Specification	Requirement per annum (Rs. Cr.)	BHEL Unit	HSN Code	Required by any other clients	Photographs
High Sped Cooling Fan (Centrifugal)	Railway application	PS407416 – 400V 3 Phase , 2030 Cubic Meter / Hr at 659Pa	0.12 Cr	HEP Bhopal	84141000	Other industries Panel	



# Components - Electrical & Electronics



Classification	Application	BHEL Specification	Requirement per annum (Rs. Cr.)	BHEL Unit	HSN Code	Required by any other clients	Photographs
Plug-in Relays	Railways and Defence for High Vibration and Shock environment	PS407415	0.20 Cr	HEP Bhopal	85364900	Railways, Panel Builders	 


# Components - Electrical & Electronics



Classification	Application	BHEL Specification	Requirement per annum (Rs. Cr.)	BHEL Unit	HSN Code	Required by any other clients	Photographs
Current & Voltage Transducers	Current and Voltage measurement for Power Electronics based system	Voltage Measurement upto 2000V AC/DC Current Measurement upto 2000A AC/DC	0.75 Cr	HEP Bhopal	90303330	EDN Bengaluru, Power Converter Manufacturers	 

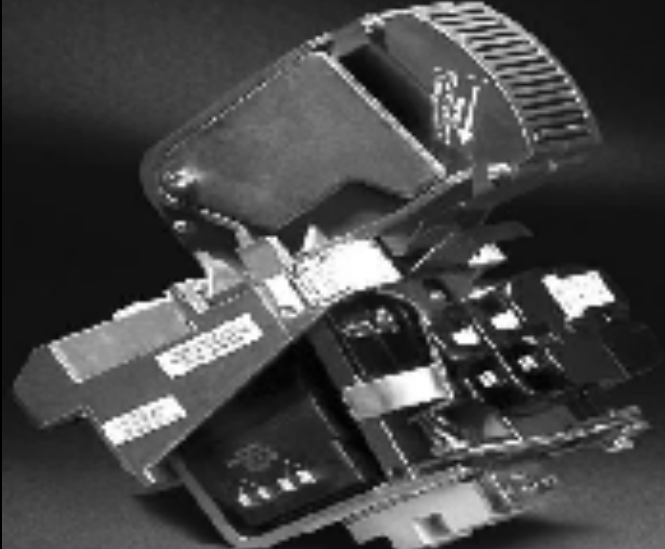
# Components - Electrical & Electronics



Classification	Application	BHEL Specification	Requirement per annum (Rs. Cr.)	BHEL Unit	HSN Code	Required by any other clients	Photographs
Armature Reversing Contactor	Oil Rigs SCR Drive Panels	1100A, 1000VDC, 74VDC Control	0.15 Cr	HEP Bhopal	85365010	Oil Exploration equipment manufacturers	



# Components - Electrical & Electronics



Classification	Application	BHEL Specification	Requirement per annum (Rs. Cr.)	BHEL Unit	HSN Code	Required by any other clients	Photographs
Assignment Contactor (DC)	Oil Rigs SCR Drive Panels	1250A, 750VDC, 74VDC Control	0.30 Cr	HEP Bhopal	85365010	Oil Exploration equipment manufacturers	


# Components - Electrical & Electronics



Classification	Application	BHEL Specification	Requirement per annum (Rs. Cr.)	BHEL Unit	HSN Code	Required by any other clients	Photographs
Automatic Voltage Regulator Controllers	Industrial Generator & Motor (Brush type) Controls	CEE20022	0.75 Cr	HEP Bhopal	90328990	Control Panel Manufacturers	
Automatic Voltage Regulator Controllers	Industrial Generator & Motor (Brush less type) Controls	CEE20023	0.30 Cr	HEP Bhopal	90328990	Control Panel Manufacturers	


# Components - Electrical & Electronics



Classification	Application	BHEL Specification	Requirement per annum (Rs. Cr.)	BHEL Unit	HSN Code	Required by any other clients	Photographs
DC Power Capacitors	DC Link for Power Inverter and Converter applications	PS407397 PS407398 PS407399	0.75 Cr	HEP Bhopal	85322990	Power Converter and Inverter Manufacturer	


# Components - Electrical & Electronics



Classification	Application	BHEL Specification	Requirement per annum (Rs. Cr.)	BHEL Unit	HSN Code	Required by any other clients	Photographs
Liquid Cold plates (Heat Sinks)	Power Converter and Inverter applications	PS407413	0.65 Cr	HEP Bhopal	85049090	EDN Bengaluru & Other Power Converter Manufacturer	 <p>Heat Sinks</p>




# Components - Electrical & Electronics



Classification	Application	BHEL Specification	Requirement per annum (Rs. Cr.)	BHEL Unit	HSN Code	Required by any other clients	Photographs
IGBT Power Modules	Power Converter and Inverter applications	PS407414	0.50 Cr	HEP Bhopal	85412900	EDN Bengaluru & Other Power Converter Manufacturer	

# Components - Electrical & Electronics



Classification	Application	BHEL Specification	Requirement per annum (Rs. Cr.)	BHEL Unit	HSN Code	Required by any other clients	Photographs
Single/Multi-pin Heavy duty Plugs & sockets	Oil Filed applications	900A, 1000VDC/AC Single Pin and 20A, 415VAC/DC multi-pin (3-20pins) in Hard Anodised Aluminium Housing suitable for Oil Field applications	0.25 Cr	HEP Bhopal	85366990	Oil Rig Exploration equipment manufacturer	 
DC High Speed Circuit breaker	Protection Control Panels for Defence for Protection of DC Motors and Generators	PS407417 – 8000A, 900VDC Single Pole	1 Cr	HEP Bhopal	85362010	Data not available	



# DIAGNOSTIC EQUIPMENTS FOR TRANSFORMER/REACTOR HEALTH





# ON LINE DISSOLVED GAS MONITORING DEVICE

**Purpose :** The equipment is suitable for online dissolved gas monitoring, required for detection of incipient fault in oil filled equipment i.e. transformers and reactors. The equipment continuously monitors PPM value of dissolved gases such as H<sub>2</sub>, CO, CO<sub>2</sub>, CH<sub>4</sub>, C<sub>2</sub>H<sub>2</sub>, C<sub>2</sub>H<sub>4</sub>, C<sub>2</sub>H<sub>6</sub>, O<sub>2</sub>, N<sub>2</sub> and water content (moisture) of transformer oil.

## Present Sources:

- A. Eberle GmbH & Co. Germany
- CIC Ltd, India
- Doble Engg. Co. USA
- MTE India Pvt Ltd, India
- Qualitrol, USA

Requirement Per Annum	
Number	Rs Crores
90	15.30
Other data	
Whether required by other manufacturers	HSN Code
YES	90273090





# ON LINE INSULATING OIL DRYING SYSTEM

**Purpose :** The equipment is suitable for online moisture removal from transformer oil, required for oil filled transformers/reactors. The system is designed for very slow removal of moisture that may enter the oil system or generated during cellulose decomposition. Oil flow to the equipment is controlled through pump of suitable capacity.

**Present Sources :**

- Cee Dee Vacuum Equip. Pvt. Ltd. India
- PTSS Pvt. Ltd. India
- Transec (UK) Ltd. UK

Requirement Per Annum	
Number	Rs Crores
16	0.80
Other data	
Whether required by other manufacturers	HSN Code
YES	84212190



## PORTABLE DISSOLVED GAS ANALYZER

**Purpose :** The equipment is suitable for dissolved gas analysis (DGA) of a small quantity of mineral insulating oil of oil filled equipment i.e. transformers and reactors. The equipment is robust in design and of portable type so that the same can be used at site conditions. The equipment consists of oil sampling device, oil collecting bottles, sensing and analysis unit, display unit, calibration kit and is complete in all respects to carry out on the spot DGA at site.

### Present Sources :

- CIC Pvt. Ltd. India
- Morgan Schafer Inc. USA

Requirement Per Annum	
Number	Rs Crores
4	1.12
Other data	
Whether required by other manufacturers	HSN Code
YES	90273090



# FREQUENCY RESPONSE ANALYZER

**Purpose :** The equipment is used for scanning geometrical and mechanical movements & distortion of transformer and reactor windings due to transportation damages, short circuit, lightning impulse or any other mechanical stresses. The equipment broadly consists of variable frequency voltage source, network analyser, necessary software, inbuilt display unit or separate laptop for display and cabling.

## Present Sources :

- Doble Engg. Co. USA
- Haefely Test A.G. Switzerland
- Megger Ltd. UK
- Omicron Electronics USA

Requirement Per Annum	
Number	Rs Crores
4	0.44
Other data	
Whether required by other manufacturers	HSN Code
YES	8471



# PARTIAL DISCHARGE DETECTOR

**Purpose :** The instrument is used for monitoring the oil filled Power transformers and reactors for partial discharges in the transformer dielectrics using Acoustic emission method or UHF method of partial discharge detection.

**Present Sources :**

- Qualitrol Company LLC USA
- Power PD USA

Requirement Per Annum	
Number	Rs Crores
4	1.72
Other data	
Whether required by other manufacturers	HSN Code
YES	85049010





## CAPACITANCE & TAN DELTA MEASURING KIT

**Purpose :** The instrument is used for measurement of capacitance and tan delta of EHV class transformer winding, condenser bushings, shunt reactor winding, bus and line CVTs. The equipment is complete with measuring bridge, HV power supply unit of 10kV standard capacitor.

**Present Sources :**

- Doble Engg. Co. USA
- Haefely Test A.G. Switzerland
- Megger Ltd. UK
- Om Technical Solutions India
- Sivananda Electronics India

Requirement Per Annum	
Number	Rs Crores
4	0.704
Other data	
Whether required by other manufacturers	HSN Code
YES	8504



# TRANSFORMER TURN RATIO METER

**Purpose :** The instrument is used for measurement of turns ratio of transformer windings without requiring any manual balance of decades and has facility for vector group detection and excitation current measurement.

## Present Sources :

- Haefely Test A.G. Switzerland
- H.Tinsley & Co. UK
- Megger Ltd. UK
- Sivananda Electronics India

Requirement Per Annum	
Number	Rs Crores
8	0.48
Other data	
Whether required by other manufacturers	HSN Code
YES	9030



## PORTABLE KARL FISCHER TEST SET

**Purpose :** The instrument is used for measurement of moisture content in transformer insulating oil. The test kit makes use of automatic Karl Fischer Titrator method capable of measuring water in oil to 200ppm.

**Present Sources :**

- Megger Ltd. UK
- SI Analytics GmbH Germany

Requirement Per Annum	
Number	Rs Crores
5	0.255
Other data	
Whether required by other manufacturers	HSN Code
YES	90275090





# OIL BREAKDOWN VOLTAGE TEST KIT

**Purpose :** The instrument is used for automatic determination of electric strength (Breakdown voltage) of insulating oil up to 100kV.

**Present Sources :**

- Megger Ltd. UK
- Sivananda Electronics India

Requirement Per Annum	
Number	Rs Crores
8	0.28
Other data	
Whether required by other manufacturers	HSN Code
YES	90303390





# WINDING RESISTANCE MEASUREMENT TEST KIT

**Purpose :** The instrument is used for measuring DC winding resistance of Transformers/reactors, where large induction is present.

**Present Sources :**

- Elmon Systems Pvt. Ltd. India
- Megger Ltd. UK
- Scope T&M Pvt. Ltd. India
- Sivananda Electronics India

Requirement Per Annum	
Number	Rs Crores
4	0.20
Other data	
Whether required by other manufacturers	HSN Code
YES	9030





## Present Sources :

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- Figure 1 consists of three schematic diagrams labeled (a), (b), and (c). Diagram (a) is a cross-sectional view of a cylindrical specimen with a central hole. The outer diameter is 10 mm, the inner diameter is 6 mm, and the length of the central hole is 10 mm. The material is labeled 'ALUMINUM 6061-T6'. Diagram (b) is a side view of the specimen showing a central rod with a diameter of 6 mm and a length of 10 mm. The rod is labeled 'STAINLESS STEEL 304'. The specimen is labeled 'ALUMINUM 6061-T6'. Diagram (c) is a side view of the specimen showing a central rod with a diameter of 6 mm and a length of 10 mm. The rod is labeled 'STAINLESS STEEL 304'. The specimen is labeled 'ALUMINUM 6061-T6'. The diagrams illustrate the geometry and material composition of the experimental setup.

A network switch or patch panel with multiple ports and indicator lights. The device is grey and has a black front panel with several red LED indicators. Below the indicators are several ports with white cables plugged into them. The cables have green and white striped jackets.

# BHEL support for Development of Suppliers



24x7 Online portal for registration

- Simple registration form
- Timebound evaluation



Product development support

- Drawings, specifications
- Tooling



Hand holding with R&D and type testing



No LD/ penalty for developmental orders

# BHEL support for MSMEs

## MSMEs



### PURCHASE PREFERENCE

As per Public Procurement Policy and MSMED ACT

### ITEM PREFERENCE

358 items currently reserved for MSEs. When developed, items being imported can also be added to this list.

### BILL DISCOUNTING

Payments through **TReDS** platform extended to all MSMEs

- RXIL Limited
- Invoice Mart
- M1Xchange

### INTERACTIONS

Regular supplier meets.

### BENEFITS

- EMD waived
- No elimination in RA
- Relaxation in prior experience and prior turnover to MSEs
- Time bound payments

# BHEL support for Start-ups



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## **BENEFITS**

**Relaxation in prior  
experience and turnover**

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## **STARTUP RUNWAY**

**BHEL is tendering its  
requirements on GeM  
wherein Startups can  
supply goods as per the  
Startup Runway on GeM**

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# Calendar for BHEL SAMVAAD

[Detailed list](#)

SNO	Category of Material	Date	Day	TIME
1	Raw Materials-Special/ Alloy/ Electrical Steel	29.12.2020	Tuesday	10:00 AM - 12:00 PM
2	Consumables for Foundry Applications	01.01.2021	Friday	10:00 AM - 12:00 PM
3	Welding Consumables of Special Grade	05.01.2021	Tuesday	10:00 AM - 12:00 PM
4	Castings & Forgings	08.01.2021	Friday	10:00 AM - 12:00 PM
5	Components-Mechanical	12.01.2021	Tuesday	10:00 AM - 12:00 PM
6	Insulating Materials	15.01.2021	Friday	10:00 AM - 12:00 PM
7	Components - Electrical & Electronics	19.01.2021	Tuesday	10:00 AM - 12:00 PM
8	Components – Solar	22.01.2021	Friday	10:00 AM - 12:00 PM
9	Systems & Packages	27.01.2021	Wednesday	10:00 AM - 12:00 PM

[Click here for filling up your details regarding your participation](#)

For any queries, please contact us on [samvaad@bhel.in](mailto:samvaad@bhel.in)

# Enrollment for BHEL SAMVAAD – Online Form submission

## BHEL SAMVAAD

"An Interaction forum with local industry for strengthening the cause of Aatma Nirbhar Bharat"

**\*Required**

Supplier Name and address \*

Your answer

Contact person Name \*

Your answer

Contact person's email address \*

Your answer

Contact person's Mobile No. \*

Your answer

Category of Material (Kindly select your option, so that VC link is facilitated with you accordingly for the scheduled date and time) \*

- ☐ General development & Engineering materials - 01/01/2021 - 10:00 AM - 1:00 PM
- ☐ Components for Diesel Engines - 01/01/2021 - 10:00 AM - 1:00 PM
- ☐ Industrial Conversion of Special Grade - 05/01/2021 - 10:00 AM - 1:00 PM
- ☐ Castings & Forgings - 06/01/2021 - 10:00 AM - 1:00 PM
- ☐ Components for Turbine - 12/01/2021 - 10:00 AM - 1:00 PM
- ☐ Insulating Materials - 15/01/2021 - 1:00 PM - 2:00 PM
- ☐ Components for High speed Engines - 19/01/2021 - 10:00 AM - 12:00 PM
- ☐ Components for Air - 22/01/2021 - 10:00 AM - 1:00 PM
- ☐ Systems & Technologies - 22/01/2021 - 10:00 AM - 1:00 PM

List of items proposed to be developed for BHEL \*

Your answer

Submit



# Thank You

THANK YOU

Write to [samvaad@bhel.in](mailto:samvaad@bhel.in) to convey your interest