



## PRODUCT STANDARD

**SUDDEN SHORT CIRCUIT SWITCH****1.0 DESCRIPTION:-**

1.1 The intent of this specification is to define the function & design requirements of a Sudden short circuit Switch to perform 3-phase sudden short circuit test on Turbo-Generators.

1.2 All accessories necessary for completeness of composite system should also be considered by the bidder.

**2.0 TECHNICAL REQUIREMENTS:**

2.1 General technical specification of the switch shall be as follows :-

2.11 Rated Voltage	15/ 17.5 KV
2.12 Rated Frequency	10-60 Hz
2.13 Rated short time Withstand current	100 KA for 3sec
2.14 Rated short circuit making current	400 KA
2.15 Power frequency test voltage	45 kV
2.16 Rated lightning impulse withstand voltage to earth	95 KV
2.17 Closing time	14-16 m sec
2.18 Closing time accuracy	within $\pm 0.17$ m sec
2.15 Opening time (in no-load operation)	3-4 sec
2.16 Number of poles	3

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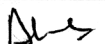

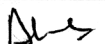

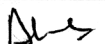
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स्वत्वाधिकार एवं गोपनीय

इस दस्तावेज में दी गई सूचना भारत भारती इलेक्ट्रिकल्स की संपत्ति है, इसका प्रयोग एवं प्रकाशन के बिना भारत भारती इलेक्ट्रिकल्स की लिमिटेड की लिखित अनुमति के बिना नहीं किया जाये।

हस्ताक्षर एवं दिनांक  
SIGN & DATEसामग्री सूची संख्या  
INVENTORY NO.

			नाम NAME	दिनांक एवं हस्ताक्षर SIGN. & DATE
			अनुवादक TRANSLATED BY	
			निर्माणकर्ता WORKED BY	N Verma
			जांचकर्ता CHECKED BY	AK Malhotra
सहमत विभाग AGREED DEPTT.	नाम NAME	दिनांक एवं हस्ताक्षर DATE & SIGNATURE	पर्यवेक्षणकर्ता SUPERVISED BY	AK Malhotra
			स्वीकृति : APPROVED :	KR GUPTA (AGM/EME)
REV. NO. 00			निर्माण PREPARED	जारी ISSUED
DATED			EME, HECP, HWR	EME, HECP, HWR
				दिनांक : DATE 27-02-2009

लिनांक एवं हस्ताक्षर SIGN & DATE			उत्पाद मानक PRODUCT STANDARD		TG 60678 पृष्ठ 3 का 2 Page 2 of 3						
सामग्री सूची संख्या INVENTORY NO.	SUPERSEDES INVENTORY NO.	2.17 Star point shall have provision for ground connection.  2.19 Non inductive shunt (accuracy 0.2 or better) to be connected in each pole for current measurement on star connection side. Normal rating of each shunt will be 15 kA / 60mV.  1.1 Control cabinet incorporating switch operation, indicator panel etc.  1.2 Environmental Conditions  <div style="display: flex; justify-content: space-between;"> <div>Ambient Temperature-</div> <div>5 to 45 Deg.C</div> </div> <div style="display: flex; justify-content: space-between;"> <div>Humidity-</div> <div>up to 95 % max</div> </div> <div style="display: flex; justify-content: space-between;"> <div>Mains power supply</div> <div>230 V, Single phase 415 V, Three phase</div> </div>									
COPYRIGHT AND CONFIDENTIAL  The information on this document is the property of Bharat Heavy Electricals Limited. It must not be used directly or indirectly in any way detrimental to the interest of the company.  स्वतंत्राधिकार एवं गोपनीय  इस दस्तावेज में दी गई सूचना भारत भारती इलेक्ट्रिकल्स की सम्पत्ति है इसका प्रयोग एवं आश्रय कानून से किसी भी तरह प्रयोग, जो कि कंपनी के हित में हानिकारक हो न किया जाए।		3. Inspection & Testing  <ul style="list-style-type: none"> <li>- Making current tests, short time current tests, dielectric tests, mechanical operating tests etc to be performed in accordance with relevant IEC/ VDE standards.</li> <li>- Inspection of all the equipment shall be done by BHEL before despatch/ shipment. One month notice shall be given by the vendor for the same.</li> <li>- Vendor shall conduct all the tests which will establish the operational correctness of the equipment.</li> <li>- The vendor shall provide all the test certificates of the equipment.</li> </ul> <p>The complete testing scheme will be submitted by the party for approval of BHEL.</p> 4.0 General Notes:-  4.1 The switch to be offered should be equipped with all the latest features.  4.2 Detailed Technical literature i.e. Catalogues, circuit diagrams etc should be enclosed along with the offer.  4.3 Type Test Records of the switch should also be furnished along with the offer.  4.4 Maintenance Spares for two years trouble free operation should also be quoted as <b>an option</b> . The party to ensure availability of requisite spares for 15 years.  4.5 Specially required tools and tackles, if any required for alignment of equipment at the site shall be supplied by the party.									
हस्ताक्षर एवं दिनांक SIGN & DATE											
सामग्री सूची संख्या INVENTORY NO.		<table border="1" style="width: 100%;"> <tr> <td data-bbox="160 1864 278 2009">REV. 00</td> <td data-bbox="278 1864 842 2009"></td> <td data-bbox="842 1864 1035 2009">           निर्माणकर्ता Worked by NV         </td> <td data-bbox="1035 1864 1161 2009">           जांचकर्ता Checked by AKM         </td> <td data-bbox="1161 1864 1288 2009">     </td> <td data-bbox="1288 1864 1420 2009"></td> </tr> </table>				REV. 00		निर्माणकर्ता Worked by NV	जांचकर्ता Checked by AKM	  	
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सामग्री सूची संख्या INVENTORY NO.				पृष्ठ 3 का 3 Page 3 of 3									
सामग्री सूची संख्या को अधिकतम करता है। INVENTORY NO.		4.6 Annual Maintenance Contract (AMC) for this switch to be quoted by the party as an Option.											
सामग्री सूची संख्या को अधिकतम करता है। INVENTORY NO.		5.0 <u>Installation and commissioning</u> :-  Installation and commissioning of the switch shall be in the scope of the supplier. All essential material necessary for installation of the equipment shall be arranged along with installation and operational/ maintenance manual and other required documents. <b>This includes drawings, circuit-diagrams and all other necessary details for above purpose.</b> All measuring instruments, special apparatus/ tools essential for installation, operation and maintenance, testing and checking the status of the equipment before and during operation shall be provided.											
सामग्री सूची संख्या को अधिकतम करता है। INVENTORY NO.		6.0 <u>Guarantee</u> :-  The equipment shall be guaranteed for trouble free operation for minimum 24 months from the date of commissioning. Items going defective during this period shall be repaired or replaced free of cost.											
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सामग्री सूची संख्या को अधिकतम करता है। INVENTORY NO.		7.2 <u>Documents along with supply</u> :-  a) Complete and final documents ----- 6 sets b) Test Certificates ----- 6 sets c) Guarantee Certificates ----- 6 sets d) O & M Manual ----- 6 sets											
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