

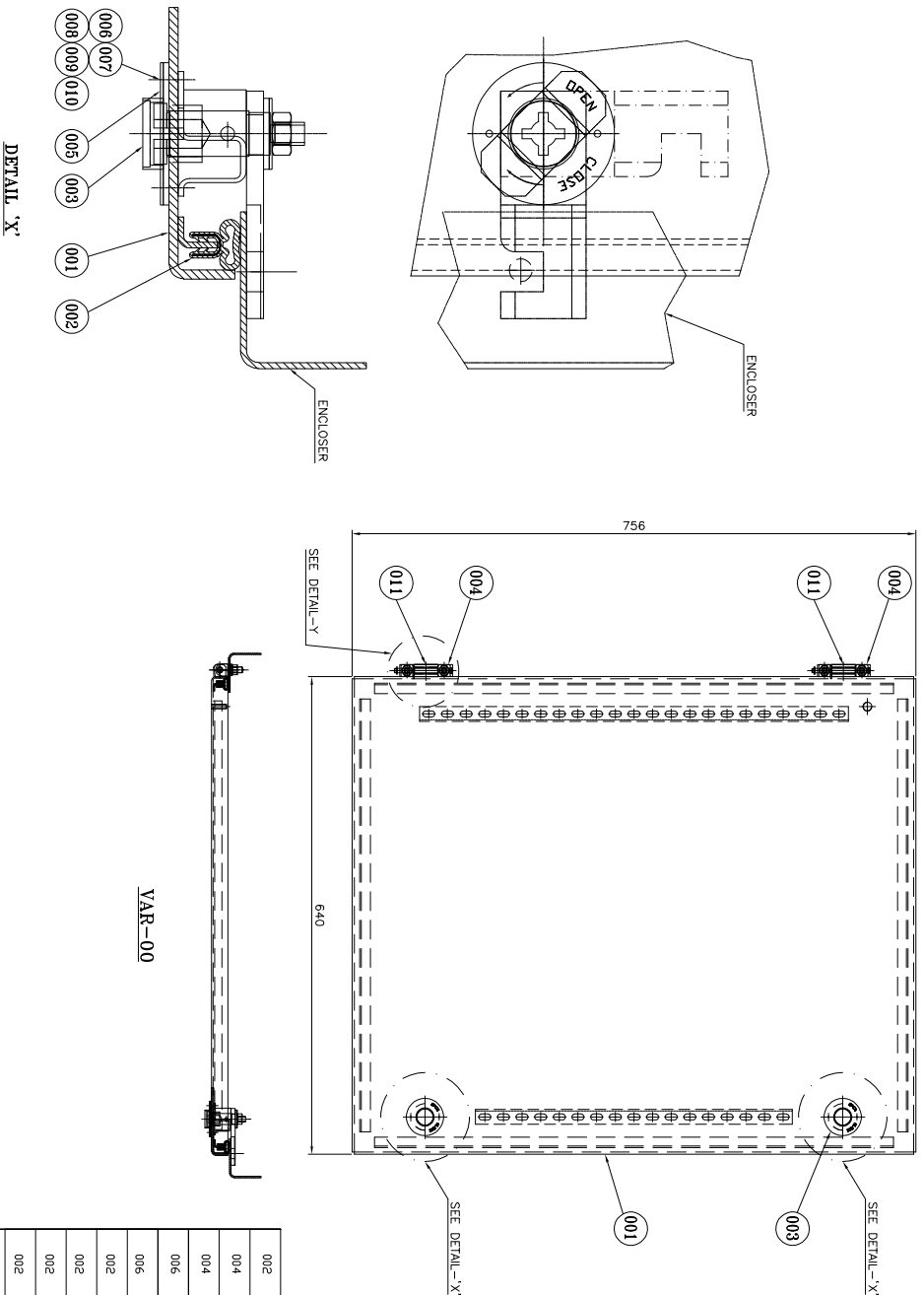
## Corrigendum-II to BHEL Enquiry E4523038

This corrigendum is being issued to publish some additional drawings/ specification required for quotation against the tender.

Vendors are requested to submit their offers accordingly.

All other terms and conditions remain same.

50020061251 - ON - 98K  
FIRST ANGLE PROJECTION  
2 3 4 5 6 7 8 9 10 11 12  
(ALL DIMENSIONS ARE IN mm)



VAR. NO	REMARKS	VAR. ITEM	DESCRIPTION	DRAWING NO.	VAR.	IT. NO.	MATL. CODE	UNIT	WT.
002		011	BRASS BUSH	35219001823	003			0.330	
004		010	RYLET RIVEL BIF 3X10 ST				BP7174038015	0.01	
004		009	SELF TAPPING SCRU. M4x8-S1				BP900754460	0.025	
006		008	HEX. NUT M4-4.8				AA715115975	0.01	
006		007	SCRU SLIT CSK PM4x20-4.8				AA712210061	0.002	
002		006	SCRU SET SRECAP 6x6.5				AA712510000	0.003	
002		005	LABEL FOR DOOR LOCK	45095001636	001			0.003	
002		004	HINGE ASSEMBLY	35219001821	00			0.287	
002		003	DOOR LOCK ASSY. (KEY FREE)	25219001567	00			0.670	
001		002	DOOR GASKET 3440 LG	45219001674	001			0.735	
001		001	W.A. OF DOOR	25219001011	00			13.687	

ADDITIONAL INFORMATION  
STATUS OF DRAWING: B  
DISTRIBUTION OF PRINTS: SWM-3  
O/C - 1  
TCY - 1

35219001823  
NAME OF CUSTOMER/PRODUCER  
BHARAT HEAVY ELECTRICALS LTD.  
1:1  
15219002005  
FOR INSTRUMENT PANEL

REV.	DATE	ALTERED	BY	CHKD.	DATE	ALTERED	BY	CHKD.
01								

1 2 3 4 5 6 7 8 9 10 11 12





# PRODUCT STANDARD

## SWITCHGEAR ENGINEERING DIVISION

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### “TERMINAL BLOCKS & ITS ACCESSORIES”

#### 1.0 SCOPE

This standard covers specification and acceptance norms for the terminal blocks for use in indoor, outdoor switchgears and control & relay panels.

2.0 Applicable Standard: IEC-60947-7-1 part-7

#### 3.0 SPECIFICATION :

##### 3.1 INSULATION MATERIAL

SL NO	INSULATION MATERIAL	PROPERTIES	COMPLIANCE (TO BE FILLED BY SUPPLIERS)
1	Polyamide 6.6	• Non corrosive	Complied/ Not Complied
		• abrasion resistant	Complied/ Not Complied
		• impact resistant	Complied/ Not Complied
		• Self extinguishing (FV2 OR VO according to UL94)	Complied/ Not Complied
		• Continuous temperature operating range of -35 to +105 deg. C	Complied/ Not Complied
		• Dielectric strength - 400 KV / cm	Complied/ Not Complied
		• Resistant to fuels, oils, detergents and adverse climatic condition.	Complied/ Not Complied
		• Insulation Resistance >>10M ohms.	Complied/ Not Complied
		• Resistant to surface discharge with CTI>600 (IEC-60112)	Complied/ Not Complied
• Excellent resistance to micro organisms, bacteria, enzymes and termites.	Complied/ Not Complied		

##### 3.2 CONTACT MATERIAL & SURFACE

1.	Contact material shall be of extra hard electrolytic copper or copper alloy having excellent conductivity & good chemical resistance against corrosion.	Complied / Not Complied
2.	<b>All Current carrying parts of the TB shall be of Non-ferrous material.</b>	Complied / Not Complied
3.	Contact Surface shall be tin/lead or nickel plated surface for excellent long term protection against corrosion and gas tight connection for consistency of the contact resistance.	Complied / Not Complied
4.	Screw clamp shall be zinc plated and passivated to provide resistance to corrosion.	Complied / Not Complied
5.	Flatness of base of channel to be done after punching/ bending.	Complied / Not Complied

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<b>REV.</b>	09	<b>Revision:</b>  Document revised to modify Clause No 3.2.2	<b>APPROVED :-</b>		
<b>ALTD.</b>	PP/DP		NNS		
<b>APPD.</b>	MAK		<b>PREPARED</b>	<b>ISSUED</b>	<b>DATE</b>
<b>DATE</b>	11.11.19		<b>SKS</b>	<b>BPN</b>	<b>19-05-95</b>



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### 3.3 TYPE OF TERMINAL BLOCKS & TB ASSEMBLY

ITEM NO	TYPE OF TERMINAL BLOCK	TECHNICAL REQUIREMENT	COMPLIANCE (TO BE FILLED BY SUPPLIERS)	BP CODE (POLYAMIDE) (Ref Note 7)
001	Feed through terminal screw clamp <i>Application: For AC/DC control wiring. (used in Indoor swgr and SAS.)</i>	• TYPE CODE:- (As per Table-1)	Complied/ Not Complied	BP9049120075
		• Rated Voltage:660 Volts	Complied/ Not Complied	
		• Rated Current:32Amps Continuous	Complied/ Not Complied	
		• Max. pitch/thickness of TB : 8mm	Complied/ Not Complied	
		• Suitable for connecting two wires of upto 2.5 sqmm lugged stranded copper conductors at each end with ease.	Complied/ Not Complied	
		• Screws shall be captive.	Complied/ Not Complied	
• Suitable for both flat and pin/ tubular type lugs	Complied/ Not Complied			
001A	End plate for Item-001		Complied/ Not Complied	BP9049120130
001B	Horizontal Marker for Item-001 and packet/box quantity 1 to 10 ( _ nos) 11 to 20 ( _ nos) 21 to 30 ( _ nos) 31 to 40 ( _ nos) 41 to 50 ( _ nos) 51 to 60 ( _ nos) 61 to 70 ( _ nos) 71 to 80 ( _ nos) 81 to 90 ( _ nos) 91 to 100 ( _ nos)	• PVC marker shall have white background • Each Box/Package of PVC markers shall contain 10 Strips of one type. Strip type shall be 1-10, 11-20, 21-30...etc, as mentioned at LHS. Each strip of PVC marker shall contain total 10 markers. Total one box shall contain 100 markers. (Strip wise box/package quantity to be mentioned at LHS)	Complied/ Not Complied	BP9049120164
001C	Top connected Insulated Two way shorting Link for Item-001	-Tin or nickel plated copper -Suitable for shorting two adjacent terminal blocks covered in item-001 above.	Complied/ Not Complied	BP9049120113
001D	Top connected Insulated Three way Shorting Link for Item-001	-Tin or nickel plated copper -Suitable for shorting three adjacent terminal blocks covered in item-001 above.	Complied/ Not Complied	BP9049122922
001E	Side connected Insulated Two way shorting Link for Item-001	-Tin or nickel plated copper -Suitable for shorting two adjacent terminal blocks covered in item-001 above.	Complied/ Not Complied	BP9909128640

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<b>002</b>	<b>Screw Driver Operated Stud type, non-disconnecting type terminal block with barrel nut to provide test sockets as monitoring points for test plugs.</b>	<ul style="list-style-type: none"> <li><b>TYPE CODE:- (As per Table-1)</b></li> </ul>	Complied/ Not Complied	BP9049120091
	<i>Application : For AC/DC control supply and relay twisted pair cable termination. (used in Indoor swgr, CRP and SAS. )</i>	<ul style="list-style-type: none"> <li>Rated Voltage:660 Volts</li> </ul>	Complied/ Not Complied	
		<ul style="list-style-type: none"> <li>Rated Current:32Amps Continuous</li> </ul>	Complied/ Not Complied	
		<ul style="list-style-type: none"> <li>Max. pitch/thickness of TB : 10mm</li> </ul>	Complied/ Not Complied	
		<ul style="list-style-type: none"> <li>Suitable for connecting two wires of upto 2.5 sqmm lugged stranded copper conductors at each end with ease.</li> </ul>	Complied/ Not Complied	
		<ul style="list-style-type: none"> <li>Suitable for both Ring &amp; Fork type <b>M3 size</b> lugs</li> </ul>	Complied/ Not Complied	
<b>002A</b>	End plate for Item-002			BP9049120148
<b>002B</b>	Horizontal Marker for Item-002 and packet/box quantity 1 to 10 ( _ nos) 11 to 20 ( _ nos) 21 to 30 ( _ nos) 31 to 40 ( _ nos) 41 to 50 ( _ nos) 51 to 60 ( _ nos) 61 to 70 ( _ nos) 71 to 80 ( _ nos) 81 to 90 ( _ nos)	<ul style="list-style-type: none"> <li>PVC marker shall have white background</li> <li>Each Box/Packet of PVC markers shall contain 10 Strips of one type. Strip type shall be 1-10, 11-20, 21-30...etc, as mentioned at LHS. Each strip of PVC marker shall contain total 10 markers. Total one box shall contain 100 markers. (Strip wise box/packet quantity to be mentioned at LHS)</li> </ul>	Complied/ Not Complied	BP9049120172
<b>002C</b>	Insulated Two way open (fork) type Shorting Link for Item-002	Suitable for shorting two adjacent terminal blocks covered in item-002 above.	Complied/ Not Complied	BP9049120199
<b>002D</b>	Insulated Three way open (Fork) type shorting Link for Item-002	Suitable for shorting three adjacent terminal blocks covered in item-002 above.	Complied/ Not Complied	BP9049122825
<b>002E</b>	Protective Transparent shroud to cover 4 nos terminal blocks covered at item-002	Quantity shall be doubled incase shroud suitable for 2 terminal blocks is offered.	Complied/ Not Complied	BP9049123965



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<b>003</b>	Screw Driver Operated Stud type, <u>disconnecting type terminal block</u> with barrel nut to provide test sockets as monitoring points for test plugs.	<ul style="list-style-type: none"> <li><b>TYPE CODE:-</b> (As per Table-1)</li> </ul>	Complied/ Not Complied	BP9049120105
	<i>Application : For PT/CT circuit. (used in Indoor swgr, CRP and SAS. )</i>	<ul style="list-style-type: none"> <li>Rated Voltage:660 Volts</li> </ul>	Complied/ Not Complied	
		<ul style="list-style-type: none"> <li>Rated Current:32Amps Continuous</li> </ul>	Complied/ Not Complied	
		<ul style="list-style-type: none"> <li>Max. pitch/thickness of TB : 13mm</li> </ul>	Complied/ Not Complied	
		<ul style="list-style-type: none"> <li>Shall have sliding link type facility for disconnection without actually removing the wires.</li> </ul>	Complied/ Not Complied	
		<ul style="list-style-type: none"> <li>Suitable for connecting two wires of upto 4 sqmm lugged stranded copper conductors at each end with ease.</li> </ul>	Complied/ Not Complied	
	<ul style="list-style-type: none"> <li>Suitable for Ring type or Fork type <b>M4 size</b> lugs</li> </ul>	Complied/ Not Complied		
<b>003A</b>	End plate for Item-003		Complied/ Not Complied	BP9049120156
<b>003B</b>	Horizontal Marker for Item-003 and packet/box quantity 1 to 10 ( _ nos) 11 to 20 ( _ nos) 21 to 30 ( _ nos) 31 to 40 ( _ nos) 41 to 50 ( _ nos) 51 to 60 ( _ nos) 61 to 70 ( _ nos) 71 to 80 ( _ nos) 81 to 90 ( _ nos)	<ul style="list-style-type: none"> <li>PVC marker shall have white background</li> <li>Each Box/Packet of PVC markers shall contain 10 Strips of one type. Strip type shall be 1-10, 11-20, 21-30...etc, as mentioned at LHS. Each strip of PVC marker shall contain total 10 markers. Total one box shall contain 100 markers. (Strip wise box/packet quantity to me mentioned at LHS)</li> </ul>	Complied/ Not Complied	BP9049120180
<b>003C</b>	Insulated Two way open (fork) type Shorting Link for Item-003	-Suitable for shorting two adjacent terminal blocks covered in item-003 above.	Complied/ Not Complied	BP9049122841
<b>003D</b>	Insulated Three way open (fork) type shorting Link for Item-003	-Suitable for shorting three adjacent terminal blocks covered in item-003 above.	Complied/ Not Complied	BP9049122850
<b>003E</b>	Protective Transparent shroud to cover 4 nos terminal blocks covered at item-003	Quantity shall be doubled incase shroud suitable for 2 terminal blocks is offered	Complied/ Not Complied	BP9049123981



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<b>004</b>	<b>Screw Driver Operated Stud type, non-disconnecting type terminal block with barrel nut to provide test sockets as monitoring points for test plugs.</b>	<ul style="list-style-type: none"> <li><b>TYPE CODE:- (As per Table-1)</b></li> </ul>	Complied/ Not Complied	BP9909128659
	<i>Application : For AC/DC control supply and relay twisted pair cable termination. (used in outdoor swgr, and OLTC )</i>	<ul style="list-style-type: none"> <li>Rated Voltage:660 Volts</li> </ul>	Complied/ Not Complied	
		<ul style="list-style-type: none"> <li>Rated Current:32Amps Continuous</li> </ul>	Complied/ Not Complied	
		<ul style="list-style-type: none"> <li>Max. pitch/thickness of TB : 13mm</li> </ul>	Complied/ Not Complied	
		<ul style="list-style-type: none"> <li>Suitable for connecting two wires of upto 2.5 sqmm lugged stranded copper conductors at each end with ease.</li> </ul>	Complied/ Not Complied	
		<ul style="list-style-type: none"> <li>Suitable for both Ring &amp; Fork type <b>M4 size</b> lugs.</li> </ul>	Complied/ Not Complied	
<b>004A</b>	End plate for Item-004		Complied/ Not Complied	BP9909128667
<b>004B</b>	Horizontal Marker for Item-004 and packet/box quantity 1 to 10 ( _ nos) 11 to 20 ( _ nos) 21 to 30 ( _ nos) 31 to 40 ( _ nos) 41 to 50 ( _ nos)	<ul style="list-style-type: none"> <li>PVC marker shall have white background</li> <li>Each Box/Packet of PVC markers shall contain 10 Strips of one type. Strip type shall be 1-10, 11-20, 21-30...etc, as mentioned at LHS. Each strip of PVC marker shall contain total 10 markers. Total one box shall contain 100 markers. (Strip wise box/packet quantity to me mentioned at LHS)</li> </ul>	Complied/ Not Complied	BP9909128675
<b>004C</b>	Insulated Two way open (fork) type Shorting Link for Item-004	-Suitable for shorting two adjacent terminal blocks covered in item-008 above.	Complied/ Not Complied	BP9909128683
<b>004D</b>	Protective Transparent shroud to cover 4 nos terminal blocks covered at item-004	Quantity shall be doubled incase shroud suitable for 2 terminal blocks is offered.	Complied/ Not Complied	BP9909128691



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<b>005</b>	<b>Feed through terminal spring loaded screw clamp</b>	<ul style="list-style-type: none"> <li><b>TYPE CODE:- (As per Table-1)</b></li> </ul>	Complied/ Not Complied	BP9049120083
	<i>Application: For AC/DC control wiring. (Non preferred)</i>	<ul style="list-style-type: none"> <li>Rated Voltage:660 Volts</li> </ul>	Complied/ Not Complied	
		<ul style="list-style-type: none"> <li>Rated Current: 32 Amps Continuous</li> </ul>	Complied/ Not Complied	
		<ul style="list-style-type: none"> <li>Max. pitch/ thickness of TB : <b>8mm</b></li> </ul>	Complied/ Not Complied	
		<ul style="list-style-type: none"> <li>Suitable for connecting two wires of upto 2.5 sqmm lugged stranded copper conductors at each end with ease.</li> </ul>	Complied/ Not Complied	
		<ul style="list-style-type: none"> <li>Contact Material shall be of electrolytic copper or copper alloy with tin/nickel plated surface.</li> </ul>	Complied/ Not Complied	
		<ul style="list-style-type: none"> <li>Screw clamp shall be zinc plated and passivated to provide resistance to corrosion.</li> </ul>	Complied/ Not Complied	
		<ul style="list-style-type: none"> <li>Spring shall be of high quality austenitic chrome nickle spring steel (CrNi) or equivalent</li> </ul>	Complied/ Not Complied	
	<ul style="list-style-type: none"> <li>Suitable for hook type lugs</li> </ul>	Complied/ Not Complied		
<b>005A</b>	End plate for Item-005			BP9049122779
<b>005B</b>	Horizontal Marker for Item-005 and packet/box quantity 1 to 10 ( _ nos) 11 to 20 ( _ nos) 21 to 30 ( _ nos) 31 to 40 ( _ nos) 41 to 50 ( _ nos) 51 to 60 ( _ nos) 61 to 70 ( _ nos) 71 to 80 ( _ nos) 81 to 90 ( _ nos) 91 to 100 ( _ nos)	<ul style="list-style-type: none"> <li>PVC marker shall have white background.</li> <li>Each Box/Packet of PVC markers shall contain 10 Strips of one type. Strip type shall be 1-10, 11-20, 21-30...etc, as mentioned at LHS. Each strip of PVC marker shall contain total 10 markers. Total one box shall contain 100 markers. (Strip wise box/packet quantity to me mentioned at LHS)</li> </ul>	Complied/ Not Complied	BP9049122795
<b>005C</b>	Front connected Insulated Two way Shorting Link for Item-005	-Tin or nickel plated copper -Suitable for shorting two adjacent terminal blocks covered in item-005 above.	Complied/ Not Complied	BP9049122817
<b>005D</b>	Front connected Insulated Three way Shorting Link for Item-005	-Tin or nickel plated copper -Suitable for shorting two adjacent terminal blocks covered in item-005 above.	Complied/ Not Complied	BP9049123949
<b>005E</b>	Side connected Insulated Two way shorting Link for Item-001	-Tin or nickel plated copper -Suitable for shorting two adjacent terminal blocks covered in item-005 above.	Complied/ Not Complied	BP9909128705



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<b>006</b>	<b>Shrouded Screw Driver Operated Stud type, Non-Disconnecting type terminal block.</b> <i>Application : For AC/DC control supply and relay twisted pair cable termination. (used in Indoor swgr NTPC jobs)</i>	<b>TYPE:</b> <b>(Refer Table-1)</b>	Complied / Not Complied	<b>BP9049127185</b>
		<ul style="list-style-type: none"> <li>Rated Voltage:660 Volts</li> <li>Rated Current:32 Amps Continuous</li> </ul>		
		<ul style="list-style-type: none"> <li>Max. pitch/ thickness of TB : 11mm</li> </ul>		
		<ul style="list-style-type: none"> <li>Suitable for connecting two wires of upto 2.5 sq.mm. lugged stranded copper conductors at each end with ease.</li> </ul>		
		<ul style="list-style-type: none"> <li>Screws/Studs shall be captive.</li> </ul>		
		<ul style="list-style-type: none"> <li>Shall be suitable for ring /fork type lug.</li> </ul>		
<b>006A</b>	End plate for Item-006A		Complied / Not Complied	<b>BP9049127193</b>
<b>006B</b>	Horizontal Marker for Item-006 and packet/box quantity 1 to 10 ( _ nos) 11 to 20 ( _ nos) 21 to 30 ( _ nos) 31 to 40 ( _ nos) 41 to 50 ( _ nos) 51 to 60 ( _ nos) 61 to 70 ( _ nos) 71 to 80 ( _ nos) 81 to 90 ( _ nos) 91 to 100 ( _ nos)	<ul style="list-style-type: none"> <li>PVC marker shall have white background</li> <li>Each Box/Packet of PVC markers shall contain 10 Strips of one type. Strip type shall be 1-10, 11-20, 21-30...etc, as mentioned at LHS. Each strip of PVC marker shall contain total 10 markers. Total one box shall contain 100 markers. (Strip wise box/packet quantity to be mentioned at LHS)</li> </ul>	Complied/ Not Complied	<b>BP9049127207</b>
<b>006C</b>	Insulated Two way open (fork) type Shorting Link for Item-006	-Tin or nickel plated copper -Suitable for shorting two adjacent terminal blocks covered in item-006 above.	Complied/ Not Complied	<b>BP9049127215</b>
<b>006D</b>	Insulated Three way open (Fork) type shorting Link for Item-006	-Tin or nickel plated copper -Suitable for shorting three adjacent terminal blocks covered in item-006 above.	Complied/ Not Complied	<b>BP9049127223</b>



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<b>007</b>	<b>Shrouded Screw Driver Operated Stud type, disconnecting type terminal block with barrel nut to provide test sockets as monitoring points for test plugs.</b> <i>Application : For PT/CT circuit. (used in Indoor swgr NTPC jobs)</i>	<b>TYPE</b> <b>(Refer Table-1)</b>	Complied / Not Complied	<b>BP9049127231</b>
		<ul style="list-style-type: none"> <li>Rated Voltage:660 Volts</li> </ul>		
		<ul style="list-style-type: none"> <li>Rated Current: 32 Amps Continuous</li> </ul>		
		<ul style="list-style-type: none"> <li>Max. pitch/thickness of TB : 13mm</li> </ul>		
		<ul style="list-style-type: none"> <li>Suitable for connecting two wires of up to 4 sqmm lugged stranded copper conductors at each end with ease.</li> </ul>		
		<ul style="list-style-type: none"> <li>Shall have sliding link type facility for disconnection without actually removing the wires.</li> </ul>		
		<ul style="list-style-type: none"> <li>Screws/Studs shall be captive type.</li> </ul>		
	<ul style="list-style-type: none"> <li>Shall be suitable for ring type lugs</li> </ul>			
<b>007A</b>	End plate for Item-007			<b>BP9049127240</b>
<b>007B</b>	Horizontal Marker for Item-007 and packet/box quantity 1 to 10 (___ nos) 11 to 20 (___ nos) 21 to 30 (___ nos) 31 to 40 (___ nos) 41 to 50 (___ nos) 51 to 60 (___ nos) 61 to 70 (___ nos) 71 to 80 (___ nos) 81 to 90 (___ nos) 91 to 100 (___ nos)	<ul style="list-style-type: none"> <li>PVC marker shall have white background</li> <li>Each Box/Packet of PVC markers shall contain 10 Strips of one type. Strip type shall be 1-10, 11-20, 21-30...etc, as mentioned at LHS. Each strip of PVC marker shall contain total 10 markers. Total one box shall contain 100 markers. (Strip wise box/packet quantity to be mentioned at LHS)</li> </ul>	Complied / Not Complied	<b>BP9049127258</b>
<b>007C</b>	Insulated Two way open (fork) type Shorting Link for Item-007	-Tin or nickel plated copper -Suitable for shorting two adjacent terminal blocks covered in item-007 above.		<b>BP9049127266</b>
<b>007D</b>	Insulated Three way open (fork) type Shorting Link for Item-007	-Tin or nickel plated copper -Suitable for shorting three adjacent terminal blocks covered in item-007 above.		<b>BP9049127274</b>
<b>008</b>	BLANK			



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009	Shrouded Stud type Terminal Block (25 sq.mm)	TYPE (Refer Table-1)	Complied / Not Complied	BP9049127330
	<i>Application: For termination of incoming AC/DC power supply cable of swbd. (used in Indoor swgr &amp; CRP)</i>	<ul style="list-style-type: none"><li>Rated Voltage: 660 Volts</li></ul>		
		<ul style="list-style-type: none"><li>Rated Current: 65Amps Continuous</li></ul>		
		<ul style="list-style-type: none"><li>Max. pitch/thickness of TB : 20mm</li></ul>		
		<ul style="list-style-type: none"><li>Suitable for 25sqmm Conductor</li></ul>		
		<ul style="list-style-type: none"><li>Screws/Studs shall be captive type.</li></ul>		
		<ul style="list-style-type: none"><li>Shall be suitable for ring type lugs</li></ul>		
009A	End plate for Item-009A		Complied / Not Complied	BP9049127347
009B	Horizontal Marker for Item-009 and packet/box quantity 1 to 10 ( _ nos) 11 to 20 ( _ nos) 21 to 30 ( _ nos)	<ul style="list-style-type: none"><li>PVC marker shall have white background</li><li>Each Box/Packet of PVC markers shall contain 10 Strips of one type. Strip type shall be 1-10, 11-20, 21-30...etc, as mentioned at LHS. Each strip of PVC marker shall contain total 10 markers. Total one box shall contain 100 markers. (Strip wise box/packet quantity to be mentioned at LHS)</li></ul>		BP9049127355
010	End stop/clamp with screw	-Suitable for channel type mentioned at it-011 & 012	Complied/ Not Complied	BP9049116531
011	TB mounting slotted DIN Channel (700mm length) as per drg no.45611150134, It-02 (For VM12-820 swgr & Outdoor swgr)	<ul style="list-style-type: none"><li>Alkaline Zinc plated channel shall be suitable for offered TB's &amp; accessories.</li><li>Channel shall be Yellow passivated to increase resistance to corrosion.</li></ul>	Complied/ Not Complied	BP9049127371
012	TB mounting slotted DIN Channel (1000mm length) as per drg no.45611150134, it-03 (For VM36 swgr +CRP)	<ul style="list-style-type: none"><li>Alkaline Zinc plated channel shall be suitable for offered TB's &amp; accessories.</li><li>Channel shall be Yellow passivated to increase resistance to corrosion.</li></ul>	Complied/ Not Complied	BP90499114250
013	TB mounting slotted DIN Channel (450 mm length) as per drg no.45611150134, It-04. (For OLTC)	<ul style="list-style-type: none"><li>Alkaline Zinc plated channel shall be suitable for offered TB's &amp; accessories.</li><li>Channel shall be Yellow passivated to increase resistance to corrosion.</li></ul>	Complied/ Not Complied	BP9909131323



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014	<b>Terminal blocks Assembly Type-1</b> (For VM12 swgr)	Each Type-1 TB assembly shall be supplied with 80 nos TBs as per Item-001 (TB type shall be as per Table:1) mounted left to right on 1 no. suitable Slotted DIN TYPE TB mounting channel (Item-011), along with the 1 no end plate (item-001A) and 2 nos end stop/clamp (item-010), one on each side. All TBs shall be numbered both sides of TBs from left to right by Horizontal marker (Item-001B).	Complied/ Not Complied	BP9049124046
015	<b>Terminal blocks Assembly Type-2</b> (For VM12 swgr)	Each Type-2 TB assembly shall be supplied with 20 nos TBs as per item-003 & 30 nos TBs as per item-001 mounted left to right on 1 no. suitable Slotted DIN TYPE TB mounting channel (Item-011), along with the 2 no end plate item-003A and 001A and 2 nos end stop/clamp (item-010) one on each side. All TBs shall be numbered both sides of TBs from left to right by Horizontal marker Item-003B for TBs item-003 & Item-001B for TB item-001. (Item-003 shall be placed first and item-001 thereafter).	Complied/ Not Complied	BP9049124054
016	<b>Terminal blocks Assembly Type-3</b> (For VM12 swgr)	Each Type-3 TB assembly shall be supplied with 50 nos TBs as per item-001 & 10 nos TBs as per item-002 mounted left to right on 1 no. suitable Slotted DIN TYPE TB mounting channel (Item-011), along with the 2 no end plate item-002A and 003A and and 2 nos end stop/clamp (item-010)i.e one on each side. All TBs shall be numbered both sides of TBs from left to right by Horizontal marker Item-001B for TBs item-001 & Item-002B for TB item-002. (Item-001 shall be placed first and item-002 thereafter).	Complied/ Not Complied	BP9909128730
017	<b>Terminal blocks Assembly Type-4</b> (For VM36 swgr)	Each Type-4 TB assembly shall be supplied with 100 nos TBs as per Item-001 mounted left to right on 1 no. suitable Slotted DIN TYPE TB mounting channel (item-012), along with the 1 no end plate item-006A and 2 nos end stop/clamp (item-010)i.e one on each side. All TBs shall be numbered both sides of TBs from left to right by Horizontal marker Item-006B.	Complied/ Not Complied	BP9909128748
018	<b>Terminal blocks Assembly Type-5</b> (For VM36 swgr)	Each Type-5 TB assembly shall be supplied with 30 nos TBs as per item-003 & 40 nos TBs as per item-001 mounted left to right on 1 no. Slotted DIN TYPE TB mounting	Complied/ Not Complied	BP9909128756



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		channel (item-012) along with the 1 no end plate item-001A and 2 nos end stop/clamp (item-010), one on each side. All TBs shall be numbered both sides of TBs from left to right by Horizontal marker Item-003B for TBs item-003 & Item-001B for TB item-001. (Item-003 shall be placed first and item-001 thereafter).		
019	<b>Terminal blocks Assembly Type-6</b> (For O/D PVN swgr)	Each Type-6 TB assembly shall be supplied with 40 nos TBs as per Item-004 mounted left to right on 1 no. Slotted DIN TYPE TB mounting channel (item-011) along with the 1 no end plate item-004A and 2 nos end stop/clamp (item-010), one on each side. All TBs shall be numbered center of TBs from left to right by Horizontal marker Item-004B. As per drg. 45611150141, IT-02, Rev-01	Complied/ Not Complied	BP9909128764
020	<b>Terminal blocks Assembly Type-7</b> (For O/D PVN swgr)	Each Type-7 TB assembly shall be supplied with 25 nos TBs as per Item-004 mounted left to right on 1 no. Slotted DIN TYPE TB mounting channel (item-011) along with the 1 no end plate item-004A and 2 nos end stop/clamp (item-010), one on each side. All TBs shall be numbered center of TBs from left to right by Horizontal marker Item-004B. As per drg. 45611150141, IT-02, Rev-01.	Complied/ Not Complied	BP9909128772
021	<b>Terminal blocks Assembly Type-8</b> (For OLTC)	Each Type-8 TB assembly shall be supplied with 32 nos TBs as per Item-004 mounted left to right on 1 no. Slotted DIN TYPE TB mounting channel (item-013) along with the 1 no end plate item-004A and 2 nos end stop/clamp (item-010), one on each side. All TBs shall be numbered both sides or center of TBs from left to right by Horizontal marker Item-004B from 01 to 32. As per drg. 5670805, Rev-0.	Complied/ Not Complied	BP9905160264
022	<b>Terminal blocks Assembly Type-9</b> (For OLTC)	Each Type-7 TB assembly shall be supplied with 32 nos TBs as per Item-004 mounted left to right on 1 no. Slotted DIN TYPE TB mounting channel (item-013) along with the 1 no end plate item-004A and 2 nos end stop/clamp (item-010), one on each side. All TBs shall be numbered both sides or center of TBs from left to right by Horizontal marker Item-004B from 33 to 64. As per drg. 5670805, Rev-0.	Complied/ Not Complied	BP9905160272



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<b>023</b>	TB mounting slotted DIN Channel (625mm length) as per drg no.45611150134, IT-01 (For VM700 & GIS)	<ul style="list-style-type: none"><li>Alkaline Zinc plated channel shall be suitable for offered TB's &amp; accessories.</li><li>Channel shall be Yellow passivated to increase resistance to corrosion.</li></ul>	Complied/ Not Complied	BP9905160280
<b>024</b>	TB mounting DIN Channel (470 mm length) as per drg no.45611150134, IT-05 (For GIS swgr)	<ul style="list-style-type: none"><li>Alkaline Zinc plated channel shall be suitable for offered TB's &amp; accessories.</li><li>Channel shall be Yellow passivated to increase resistance to corrosion.</li></ul>	Complied/ Not Complied	BP9909133636



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**TABLE:1**

IT. No	TYPE OF TERMINAL BLOCK	TYPE CODES		
		ELMEX	CONNECTWELL	I/C
<b>1</b>	<b>FEED THROUGH TERMINAL BLOCK</b>	<b>KUT4BS</b>	<b>CTS4UNCR</b>	<b>TB4US</b>
1a	End Plate for It-01	KPX	EP2.5/4UN	EP4US
1b	Horizontal Marker for It-01	KN6.5	CA509/K6	TM2.5N
1c	Two way shorting link (Top connected) for It-01	CCLA2.5-2W	CA742/2	IPSL2
1d	Three way shorting link (Top connected) for It-01	CCLA2.5-3W	CA742/3	IPSL3
1e	Two way shorting link (side connected) for It-01	SLC2.5-2W	CA713/2	IPSL2S
<b>2</b>	<b>STUD TYPE, NON DISCONNECTING TERMINAL BLOCK</b>	<b>KAT-M3-10</b>	<b>CSB3/N3UL</b>	<b>TBSS M3UN</b>
2a	End Plate for It-02	KPS4	EPCBS3U	EPMU
2b	Horizontal Marker for It-02	KN6.5	CA509/K9	TM2.5N
2c	Two way shorting link (Side) for It-02	ASL1-2W	CA514/15-2	M3ISFL2
2d	Three way shorting link (Side) for It-02	ASL1-3W	CA514/15-3	M3ISFL3
2e	Transparent Shroud for It-02	PCCM39	CSTSPC2-1	PCM3
<b>3</b>	<b>SCREW DRIVER OPERATED STUD TYPE, DISCONNECTING TERMINAL BLOCK</b>	<b>KLTD M4</b>	<b>CBDT4U</b>	<b>TBTD6U</b>
3a	End Plate for It-03	KPLD4	EPCBDT4U	EPDT6U
3b	Horizontal Marker for It-03	KN5.5	CA509/K2B4	TM2.5N
3c	Two way shorting link (Side) for It-03	KDSL4-2W	CA514/15-2	M4IFSL2
3d	Three way shorting link (Side) for It-03	KDSL4-3W	CA514/15-3	M4IFSL3
3e	Transparent Shroud for It-03	PCD48	CDTPC1X	PC50

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4	<b>STUD TYPE (NON DISCONNECTING M4) TERMINAL BLOCK</b>	<b>KAT M4</b>	<b>CSB4/M4U</b>	-
4a	End Plate for It-04	-	-	-
4b	Horizontal Marker for It-04	-	-	-
4c	Two way shorting link (Side) for It-04	-	-	-
4d	Transparent Shroud for It-04	-	-	-
5	<b>FEED THROUGH TERMINAL BLOCK (Spring loaded) (Non preferred)</b>	<b>KST 4U WS</b>	<b>CTS6USC</b>	<b>TB4US</b>
5a	End Plate for It-05	KPX	EPUSC	EP4US
5b	Horizontal Marker for It-05	KN6.5	CA509/K8	TM2.5
5c	Two way shorting link (Top connected) for It-05	CCLA2.5-2W	CA624/2	2.5IPSL2
5d	Three way shorting link (Top connected) for It-05	CCLA2.5-3W	CA624/3	2.5IPSL3
5e	Two way shorting link (side) for It-05	-	-	-
6	<b>SHROUDED (NTPC) STUD TYPE NON DISCONNECTING TERMINAL BLOCK</b>	<b>OAT6</b>	<b>STH3</b>	<b>CTBSSM4U</b>
6a	End Plate for It-06	OEP6	EPSTH3	ET-CMU
6b	Horizontal Marker for It-06	KN9	CA509/K8	TM2.5
6c	Two way shorting link (Side) for It-06	OSL6-2W	CA733/2	CMIPSL-2
6d	Three way shorting link (Side) for It-06	OSL6-3W	CA733/3	CMIPSL-3



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	7	SHROUDED (NTPC) STUD TYPE DISCONNECTING TERMINAL BLOCK	OAT6T	STH4DT	CTBTD6U
	7a	End Plate for It-07	OEP6T	EPSTH4DT	EP-C6U
	7b	Horizontal Marker for It-07	KN9	CA509K10	TM2.5
	7c	Two way shorting link (Side) for It-07	OSL6-2W	CA512/14-2	CM4IFSL-2
	7d	Three way shorting link (Side) for It-07	OSL6-3W	CA512/14-3	CM4IFSL-3
	9	SCREW DRIVER OPERATED STUD TYPE, (25SQ.MM ) TERMINAL BLOCK	OAT25	STH6	CTBSSM6U
	9a	End Plate for It-09	OEP25	EPSTH6	EPCMU
	9b	Horizontal Marker for It-09	KN17	CA509/K16	TM2.5

#### 4.0 ACCEPTANCE NORMS

SL. NO.	DESCRIPTION	COMPLIANCE	BIDDERS COMMENTS
1.	Colour : GREY for Polyamide	Complied/ Not Complied	
2.	Type Code: As per P.O	Complied/ Not Complied	
3.	Sequential Marking of TBs in terminal blocks assemblies	Complied/ Not Complied	
4.	Uniformity in mounting of TBs in terminal blocks assemblies	Complied/ Not Complied	
5.	All Make Model of TB's shall have mark of <b>CE/VDE/UL/CSA</b>	Complied/ Not Complied	
6	Base of channels (It no 11 to 13 & 21) shall be checked for flatness and dimensions as per specification.	Complied/ Not Complied	

#### 5.0 TESTING

SL. NO.	Verification of the following properties based on test certificates from supplier:-	COMPLIANCE	BIDDERS COMMENTS
1.	Insulation Resistance $\geq 10$ M ohms.	Complied/ Not Complied	
2.	Pull out force as per IEC.	Complied/ Not Complied	
3.	Resistance to vibration: The TBs shall withstand pull tests under vibration with 12 Hz & 50 Hz frequency and amplitude of 1 mm.	Complied/ Not Complied	
4.	Rated voltage withstand capability : 660V AC.	Complied/ Not Complied	
5.	Surge Voltage (1.2 / 50 micro sec) withstand capability: 8 kV.	Complied/ Not Complied	
6.	Voltage drop at rated current < 5 milli Volt.	Complied/ Not Complied	
7.	Temperature rise at rated current < 45 deg. C.	Complied/ Not Complied	
8.	Insulation inflammability test	Complied/ Not Complied	

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### 6.0 NOTES:

SL. NO.	DESCRIPTION	COMPLIANCE	REMARK
1.	Specific confirmation against each item technical requirement is to be given, in the absence of which the offer may be rejected.	Complied/ Not Complied	
2.	Offer to be submitted in two bid-: Technical and Price bid.	Complied/ Not Complied	
3.	Two copies of descriptive leaflets and type test certificates of terminal blocks shall be furnished with the offer.	Complied/ Not Complied	
4.	Consignment shall be inspected and tested (if required) in BHEL as per testing clauses in point 5.0 above.	Complied/ Not Complied	
5.	The terminal block shall be suitable for clip-on to channel type (Din Type item-011/012/013) and it shall be possible to remove/change any terminal with ease from the stack without affecting the other terminals.	Complied/ Not Complied	
6.	Five (5) Samples of terminal blocks along with accessories suitably connected with two lugged wires on each end and one (1) sample of terminal block assembly as per the specification shall be furnished with the offer for evaluation.	Complied/ Not Complied	
7.	Insulating Material of all type of terminal blocks offered along with end plates shall be of Polyamide. Material type mixing is not acceptable.	Complied/ Not Complied	
8.	Terminal blocks in terminal assembly shall be uniformly placed.	Complied/ Not Complied	
9.	20 nos Terminal assemblies shall be packed in one box. TB assemblies shall be Properly packed to avoid any transit damage. Box shall have provision for easy handling. Proper marking shall be done indicating the Assembly Type, Type code for TB's, Material code, etc. clearly on each box.	Complied/ Not Complied	
10.	All the items under procurement shall be of same make and shall be procured from the same source for the purpose of uniformity and compatibility. Color of all the items shall be same.	Complied/ Not Complied	
11.	All items of TB's shall have mark of <b>CE//UL/CSA/BIS</b> , certificate in support of same shall be submitted with offer.	Complied/ Not Complied	

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