SCREW-LESS PUSH IN TYPE TERMINAL BLOCKS & ITS ACCESSORIES

1.0 SCOPE

This standard covers specification and acceptance norms for the screw-less push in fit type terminal blocks for use in Indoor switchgears & relay panels.

2.0 APPLICABLE STANDARD: IEC-60947-7-1 & UL certified

3.0 SPECIFICATION :

3.1 INSULATION MATERIAL

SL NO	INSULATION MATERIAL	PROPERTIES	COMPLIANCE (YES/ NO)
1	Polyamide 6.6	• Non corrosive	
		• Abrasion resistant	
		• Impact resistant	
		• Self extinguishing (FV2 OR VO according to UL94)	
		• Continuous temperature operating range of –35 to +105 deg. C	
		• Dielectric strength - 400 KV / cm	
		• Resistant to fuels, oils, detergents and adverse climatic condition.	
		• Insulation Resistance >>10M ohms.	
		• Resistant to surface discharge with CTI>600 (IEC-60112)	
		• Excellent resistance to micro-organisms, bacteria, enzymes and termites.	

3.2 CONTACT MATERIAL & SURFACE

SL NO	SPECIFICATION REQUIREMENT	COMPLIANCE (YES/ NO)
1.	Contact material shall be of extra hard electrolytic copper or copper alloy having excellent conductivity & good chemical resistance against corrosion.	
2.	All Current carrying parts of the TB shall be of Non-ferrous material.	
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.	

TYPE OF TERMINAL BLOCKS & TB ASSEMBLY

ITEM NO	ENQ IT NO.	TYPE OF TERMINAL BLOCK	TECHNICAL REQUIREMENT	COMPLIANCE (YES / NO)
001	**001**	**Feed through terminal screw-less push in fit type**	• **TYPE CODE:-**	
		Application: For AC/DC control wiring.	• Rated Voltage:660 Volts	
			• Rated Current:20Amps Continuous	
			• Max. pitch/thickness of TB : 8mm	
			• Suitable for connecting **one wire** of upto 2.5 sqmm lugged stranded copper conductors at each end with ease.	
			• Push in contact shall be high quality spring steel.	
			• Push in contact shall open automatically when the conductor is pushed in and ensure the required pressure force against the current bar.	
			• The spring shall open by a push button to release wire easily and without direct contact with live parts.	
			• Suitable for flat / pin / tubular type lugs	
001A	002	End plate for Item-001	• Material and color shall be same as that of above terminal blocks. • In case end plate is inbuilt in TB then partition plate is to be provided	
001B	003	Horizontal Marker for Item-001	• PVC marker shall have white background • Each Box/Packet of PVC markers shall contain 100 markers. • Vendor to provide price of 100 markers • Marker numbering shall be provided after PO placement, during manufacturing clearance	
001C	004	Two way shorting Link for Item-001	-Tin or nickel plated copper -Suitable for shorting two adjacent terminal blocks covered in item-001 above.	
001D	005	Three way Shorting Link for Item-001	-Tin or nickel plated copper -Suitable for shorting three adjacent terminal blocks covered in item-001 above.	
001E	006	Test Plug	Test Plug for 2kV test on above TBs	

ITEM NO	ENQ IT NO.	TYPE OF TERMINAL BLOCK	TECHNICAL REQUIREMENT	COMPLIANCE (YES / NO)
002	**007**	**Disconnecting type terminal block with barrel nut to provide test sockets as monitoring points for test plugs** with **screw-less push in fit type**	• **TYPE CODE:-**	
		Application : For PT/CT circuit.	• Rated Voltage:660 Volts	
			• Rated Current:20Amps Continuous	
			• Max. pitch/thickness of TB : 13mm	
			• Suitable for connecting one wires of upto 4 sqmm lugged stranded copper conductors at each end with ease.	
			• Push in contact shall be high quality spring steel.	
			• Push in contact shall open automatically when the conductor is pushed in and ensure the required pressure force against the current bar.	
			• The spring shall open by a push button to release wire easily and without direct contact with live parts.	
			• Suitable for flat / pin / tubular type lugs	
002A	008	End plate for Item-002	• Material and color shall be same as that of above terminal blocks. • In case end plate is inbuilt in TB then partition plate is to be provided	
002B	009	Horizontal Marker for Item-002 and packet/box quantity	• PVC marker shall have white background • Each Box/Packet of PVC markers shall contain 100 markers0 • Vendor to provide price of 100 markers. • Marker numbering shall be provided after PO placement, during manufacturing clearance.	
002C	010	Two way shorting Link for Item-002	-Tin or nickel plated copper -Suitable for shorting two adjacent terminal blocks covered in item-002 above.	
002D	011	Three way Shorting Link for Item-002	-Tin or nickel plated copper -Suitable for shorting three adjacent terminal blocks covered in item-002 above.	
002E	012	Test Plug	Test Plug for 2kV test on above TBs	

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ITEM NO	ENQ IT NO.	TYPE OF TERMINAL BLOCK	TECHNICAL REQUIREMENT	COMPLIANCE (YES / NO)
003	**013**	**Feed through terminal screw-less push in fit type (one in two out)**	• **TYPE CODE:-**	
		Application: For AC/DC control wiring.	• Rated Voltage:660 Volts	
			• Rated Current:20Amps Continuous	
			• Max. pitch/thickness of TB : 8mm	
			• Suitable for connecting total **three wires** of upto 2.5 sqmm lugged stranded copper conductors with ease. (One in Two out)	
			• Push in contact shall be high quality spring steel.	
			• Push in contact shall open automatically when the conductor is pushed in and ensure the required pressure force against the current bar.	
			• The spring shall open by a push button to release wire easily and without direct contact with live parts.	
			• Suitable for flat / pin/ tubular type lugs	
003A	014	End plate for Item-001	• Material and color shall be same as that of above terminal blocks. • In case end plate is inbuilt in TB then partition plate is to be provided	
003B	015	Horizontal Marker for Item-001	• PVC marker shall have white background • Each Box/Packet of PVC markers shall contain 100 markers. • Vendor to provide price of 100 markers • Marker numbering shall be provided after PO placement, during manufacturing clearance.	
003C	016	Two way shorting Link for Item-003	-Tin or nickel plated copper -Suitable for shorting two adjacent terminal blocks covered in item-003 above.	
003D	017	Three way Shorting Link for Item-003	-Tin or nickel plated copper -Suitable for shorting three adjacent terminal blocks covered in item-003 above.	
003E	018	Test Plug	Test Plug for 2kV test on above TBs	

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4.0 ACCEPTANCE NORMS

SL. NO.	DESCRIPTION	BIDDERS COMPLIANCE (Yes / No)
1.	Color : GREY for Polyamide	
2.	Type Code: As per P.O / Approved during offer evaluation.	
3.	Uniformity in mounting of TBs in terminal blocks assemblies	
4.	TBs shall be UL certified	

5.0 TESTING

SL. NO.	**Verification of the following properties based on test certificates from supplier-:**	BIDDERS COMPLIANCE (Yes / No)
1.	Insulation Resistance ≥ 10 M ohms.	
2.	Pull out force as per IEC.	
3.	Resistance to vibration: The TBs shall withstand pull tests under vibration with 12 Hz & 50 Hz frequency and amplitude of 1 mm.	
4.	Rated voltage withstand capability : 660V AC.	
5.	Surge Voltage (1.2 / 50 micro sec) withstand capability: 8 kV.	
6.	Voltage drop at rated current < 5 milli Volt.	
7.	Temperature rise at rated current < 45 deg. C.	
8.	Insulation inflammability test	

6.0 GENERAL NOTES:

SL. NO.	DESCRIPTION	BIDDERS COMPLIANCE (Yes / No)
1.	Specific confirmation against each item technical requirement is to be given, in the absence of which the offer may be rejected.	
2.	Consignment shall be inspected and tested (if required) in BHEL as per testing clauses in point 5.0 above.	
3.	The terminal block shall be suitable for clip-on to channel type (Din Type) and it shall be possible to remove/change any terminal with ease from the stack without affecting the other terminals.	
4.	Insulating Material of all type of terminal blocks offered along with end plates shall be of Polyamide. Material type mixing is not acceptable.	
5.	Particular type of Terminal blocks and associated accessory under procurement shall be of same make and shall be procured from the same source in view of compatibility.	
6.	All items of TB's shall be UL certified, certificate in support of same shall be submitted with offer.	

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