Technical note: 013
Dated: 2nd Sept 15

Subject: How to Ensure Right Connection?

Technical note 012, was about loose contact and its ill effect in electric circuits. Here we note down few important areas which will guide us to ensure a right contact.

- Avoid using single strand wire both in domestic, and industrial circuits. Use only multi strand wires.
- Domestic wiring, see that the screw is tight after insertion of wire pull the wire to check its proper contact.
- Never use Aluminum wires and cables for power circuit, in Domestic area.
- In Industrial wiring use proper lugs to ensure right connection. Different types of lugs are available and select the right one.
- Always use solder less crimping type lugs.
- Power cable from Utility, used in LV circuits are of Aluminum. Avoid using Aluminum lugs. Use tinned copper lugs with long barrel. Apply antioxidant paste on the Aluminum wire and then double crimp the copper lug.

- While ordering cable termination kits in LV, MV, HV. If the conductor is mentioned as Aluminum, invariably the kit comes with Aluminum lugs. Insist on Copper lugs. This is also true with straight jointing kits. The cable jointer should be told to apply anti oxidant paste over the aluminum conductor and then crimp the copper lugs.
- Cable jointing and termination is a specialized activity. Utilize the services of a qualified experienced cable joiners.
- Most of the equipment comes with copper terminals. These terminals have two holes for terminating the cable. Invariably as the cable lug has only one hole due to wrong ordering. The cable is terminated using a single bolt. This is a wrong practice. Check the equipment termination provided
- If the equipment is provided with Aluminum terminals due to cost considerations, and a copper cable is to be terminated, A bi metallic strip of Aluminum and Copper is to be introduced. It is also ensured that Aluminum of the strip makes contact with the Aluminum of the terminal, and copper of the strip with copper of lug.
- Spring washers if provided should be positioned between plain washers and then the bolt tightened. Never place a washer on the mating surface of lug and terminal.
- Periodically check the contact resistance of all the termination, bus bar joints.
- Visually inspect the terminations for any discoloration due to localized heating. Rectify the connections.
- Prevention is better than Cure.

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