

The Use of Automation in Control Panel Manufacturing

The production of control panels has over the years been a labor intensive process. Most of the operations in the production of the control panels are carried out manually. The common functions that are done manually include:

- Laying out
- Punching
- Drilling the Panels
- Engineering
- Crimping
- Stripping
- Wiring of the panels
- Drilling of enclosures

Control panels are produced manually, which means that the production cycles are longer with a greater need for documentation and quoting in the modification of new projects. Increasingly though, a large number of [control panel manufacturers](#) have turned to the use of software to aid in the production of control panels. Despite that, there has been little work done by these manufacturers to achieve proper integration.

Typically for example, while the use of CAD systems is made for the production of schematics, the list of materials needed, finances, and other such monetary values are drawn up in excel or csv styled spreadsheets. While these may help ease the production task to some extent, they are unable to create a synergy in production to produce better, more effective control panels.

Production of control panels can be meticulous. To highlight this, here is an overview of the preparation of back panels and enclosure of the control panels.

- All components on the back panel will be laid out by hand
- Manual marking of locations for fittings and center punching
- Manual drilling of locations. This will include slow tapping, manual oiling and tool cutting, and straight thread tapping.
- The metal needs to be measured, taped and marked. Followed by sawing, punching and cutting out processes.

All of these steps that have been mentioned are labor intensive and can be expensive especially in circumstances where there are mistakes made in the production process which would need to be reworked.

The Changing Market Dynamics

The use of control panels in major industries has meant that their production and quality needs to be properly managed and controlled. With the production of control panels manually, this can be hard to ensure since the factoring of human errors can significantly alter one control panel from the other even though they have gone through the same assembly line.

This has resulted in the introduction of all encompassing software designs such as ECAD P8 and Pro Panel 3D. The use of these software has meant that a large number of mundane tasks in the design and production of control panels can be automated ensuring that their quality is maintained as well as ensuring that any changes made by engineers can be quickly adapted, and reflected upon in the final product.

With the introduction of newer NCE provisions, it is important that the changes and design styling of the control panels is changed to suit the harsher criterions set. The use of these machinery and the automation of the production of the control panel has resulted in the control panels enjoying a variety of benefits, such as:

- Time saving in production
- Cheaper control panels
- Enhanced quality
- Standardized process of production