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ELAU PacDrive M MAx-4 Controller Upgrade to C600

Background:

- Our customer was using an ELAU PacDrive M MAx-4 Controller on their blister packaging line. These controllers were withdrawn from sale in 2010 and have been completely obsolete since 2018. Sourcing replacement units and even spare parts is becoming extremely difficult if not largely impossible.
- A proposal was made to upgrade to a C600 controller. Although still PacDrive M equipment, these controllers remain readily available. This means a partial upgrade is possible significantly reducing our customer's exposure should their MAx-4 fail in production and either not be able to be repaired or replaced.
- A Capex proposal was submitted which was approved and the processs for the upgrade was able to begin.

Process and considerations:

- There are a number of steps involved in upgrading a MAx-4 controller to a C600 controller and it is not guaranteed such an upgrade will prove successful. At each step of the process we provide an assessment of the likelihood of success and any issues which need addressing which could affect this.
- However, the risk of failure, the issues in sourcing a replacement and the consequences of prolonged downtime, make upgrading a MAx-4 controller a viable option to protect sites from obsolescence in the short to medium term.

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Feasibility testing:



- This requires the Project and Source Code from the MAx-4 controller, any libraries and passwords plus the electrical schematics. A check is also made to ensure the controller hardware is compatible with, for example, Profibus modules.
- Feasibility testing was carried out at DMC offices. This included uploading the project to a test C600 to ensure the code from the MAx-4 is still functional on this type of controller.
- No issues were identified and arrangements were made to come to site for the next step. At this stage we anticipated an 80%+ chance of success.

Site Visit:

We asked for 2 days to be set aside initially and our customer's production ensured enough additional stock had been made to allow for this downtime.

Day 1: we took our test C600 loaded with the loaded project to site. This was installed on the line and initial tests conducted.



- Firstly, some rewiring was required with the inputs and outputs needing to be adapted for the C600. This is because these controllers use different terminal blocks to MAx-4s.
- The HMI was checked for any errors. None were found so the machine was homed before jogging.
- A short production run followed to test the set-up before a longer run took place in the afternoon. Once it was clear there were no issues we left site, available for remote support if required (3rd party equipment can sometimes fail to recognise the new controller necessitating adjustments in their configuration software).

Day 2: we returned in the morning and installed the new C600 controller.

- A full production run took place with no issues.
- Our Machine Analyser® was installed as part of the upgrade. This collects data from the PLC in a read-only format allowing us to monitor the PacDrive equipment - especially important following the installation of a new controller.

Conclusion and final handover:

- All documents related to the upgrade were collated and forwarded to ous customer, including:
- latest source code of the machine and backup, modified electrical schematics showing C600 in place of MAx-4, installation pictures, C600 manual and details of Machine Analyser®.
- Receipt confirmed by our customer and project closed internally at DMC.