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# Visit Purpose

* To add signal isolators to output of flow transmitters to allow signal to be sent to PLC IO
* To diagnose issues with ISV1301 as it is not opening and closing like the other 3 isolator valves

# 2.0 Work Scope

To fit the signal isolators and test the input/ output signals from the isolator valves to diagnose the issue with it.

# 3.0 Report Details

Due to space restrictions in the panels, we could not fit all of the signal isolators into the panels as originally intended, we were however able to fit them into the junction boxes that all but one of the flow transmitters connect to the panels via. After this was done, we could see that all the currently working flow transmitters were able to read at 0 when no flow was present and when the speed of the blower was increased the flow level would increase.

We tested the voltage for the open and close signal for ISV1301 to see if it was receiving the correct signals from the PLC, we found that when sent an open signal, the open part of its circuit would activate and vice versa for its close signal, when sent these signals it does make a sound as if it is trying to move. The valve can be manually moved and will turn its open/ closed outputs will trigger on the PLC IO, from this we determined that the valve has a mechanical fault and likely needs to be replaced.

# 4.0 Summary & Recommendations

* There are 3 flow transmitters that are in ‘error’ mode and according to seikom the supplier, this means that the internal software of the unit is corrupted, and they will need to be replaced or sent back to them to have the software reinstalled.
* FIT1406 is the only sensor that doesn’t run through a junction box as it is positioned next to the panel and is wired directly to it, mechelec will be routing its cables to the junction box so that it can be connected to the signal isolator.
* When testing the flow transmitters, I noticed that when running the blower at 50% of its rated speed, FIT1101 is showing a 21ma signal which is out of range and should be between 4-20ma, FIT1201, FIT1301 and FIT1401 are showing 20ma + so are close to being out of range at this speed as well. This implies that the current range set in some of these flow transmitters is too low for the flow range they will experience when in operation and may need to be increased. If not, then this may cause alarms which would put the automatic sequence into shutdown.
* ISV1301 will need to be replaced as we cannot repair a mechanical fault with the unit.
* The screens for FCV1202 and FCV1406 seem to be blank, after checking we can see that power is going to these units, we will investigate further to assess any potential issues with them.