COLLECTING PRODUCTION DATA USING OPC-SERVERS (KEPWARE)

This document gives an overview of how OPC-Servers, such as Kepware can assist with the data collection in your factories. The general set-up when using an OPC-Server is shown in the diagram below and will be further explained in the following sections.

PLC tags

Factories may have many production lines that each consists of several machines. The automation is in most cases controlled by PLCs (Programmable Logic Controllers). The PLCs contain all kinds of data e.g., production data, configurations etc. stored in internal variables known as “tags”. A tag could contain a counter with “pieces produced” or the current temperature. The PLC tags are essential for the function of the machine and are also essential when communicating with other systems.

If we want to be able to look at this data in detail, analysing historic values to better understand our production pipeline, we need a system that can receive the data stored in these PLC tags as input and provide analysed data as output. Factbird® is such a system.

Sending PLC tags to Factbird®

We want to send these PLC tags to Factbird to analyse the data, but most PLCs can however not directly connect to Factbird’s Cloud. Therefore, we need an intermediary between the PLC and Factbird. The intermediary needs to be able to read data from PLCs that may come from different vendors and be able to send data to Blackbird. An OPCserver can be used as such an intermediary.

There are multiple OPC-server software programs available, one of which is Kepware. The advantage of Kepware excels is that it has vast amounts of drivers that enable it to read data from almost any PLC. Kepware is a software suite that is installed on a computer that has network connectivity (e.g., Wi-Fi or Ethernet) to the PLCs at the factory. It should be installed on a computer that is able to run 24/7, so that it can always receive data from PLCs.

Kepware can be bought from your local Kepware distributor. With a Kepware setup, it is possible to read PLC tags, and forward the tags of interest to Factbird’s cloud for storage and analysis. Both Kepware and Factbird can handle many PLC tags, coming from many different PLCs at the same time.

Why Kepware?

When considering the different connection options for Factbird®, the first question you should ask yourself is whether you would like to use the existing data from the machines' PLCs or install extra sensors. This of course also depends on whether the PLC tags include the data you are looking for.

If you do decide to connect the PLCs to Factbird®, the next consideration is what PLCs you have in your factory and how many tags you would like to connect to the cloud. Bear in mind that if you have Omron PLC, the Factbird Omron NX1 can also you the trouble of installing a server in the first place. Otherwise, a general rule of thumb is that the more tags you want to have connected, the more feasible it is to install and connect a Kepware server.