HOW FMS OPC UA SERVER FACILITATES LOCAL ROOM DISPLAYS

APPLICATION NOTE CC-125 (A4)

Contents

Introduction

With FMS 5.4 OPC UA Server, TSI provides for a very simple way of exchanging FMS data and information between software platforms and devices across an entire process network.

One example is sending data to a human machine interface (HMI). This is a multifunction screen that can be installed in controlled areas such as a Grade C or D grey access corridors or in Grade A manufacturing processes. The HMI locally displays FMS real-time data from sensors installed throughout the building.

An HMI can be fully customized with a look and feel to display information of interest based on specific users' requirements.

Description

It is common for the pharmaceutical industry to use display panels. These are typically installed in grey corridors to show critical environmental parameters such as differential pressure, temperature and humidity.

Multifunction analog displays connected to 4-20 mA analog sensors, clearly presenting real-time data to all operators within the cleanroom. For example, end users can quickly see that the facility is in control prior to entering.

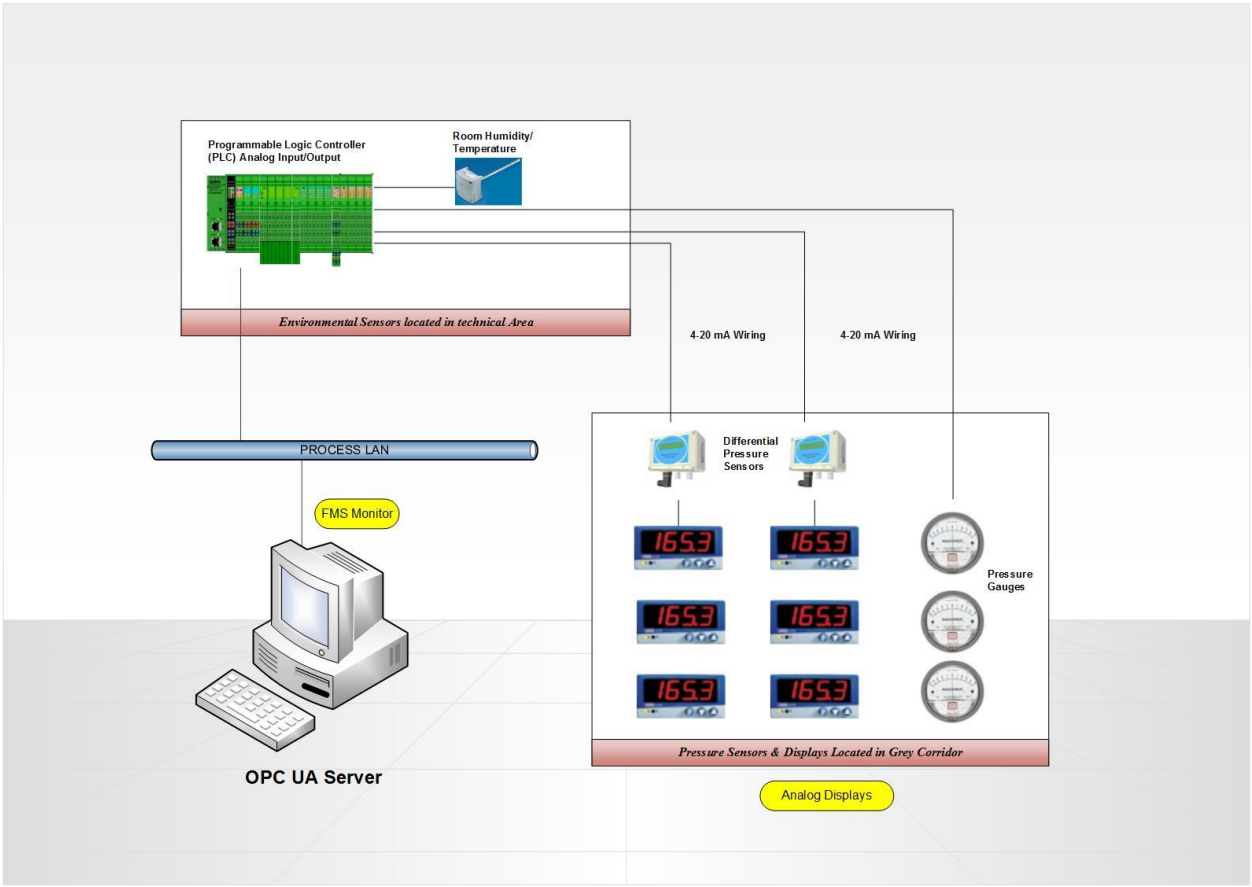

Figure 1: Grey Corridor Display Panel

Analog panel displays have disadvantages in that they are expensive to install and calibrate due to the following factors.

- A high number of wired connections results in costly installation and validation testing.
- Sensors installed in the technical area and the display panel in a controlled access corridor requires at least two people to calibrate the whole loop (sensor and display).
- Display panels installed in the grey corridor (controlled zone) poses as a contamination risk during calibration, resulting in the zone needing to be reclassified.

Now with FMS OPC UA Server, TSI offers a better solution that greatly decreases cost of ownership by way of:

- Easy installation
- Extended system life
- Lower maintenance
- Reduced testing and validation overheads
- Minimized annual recalibration costs

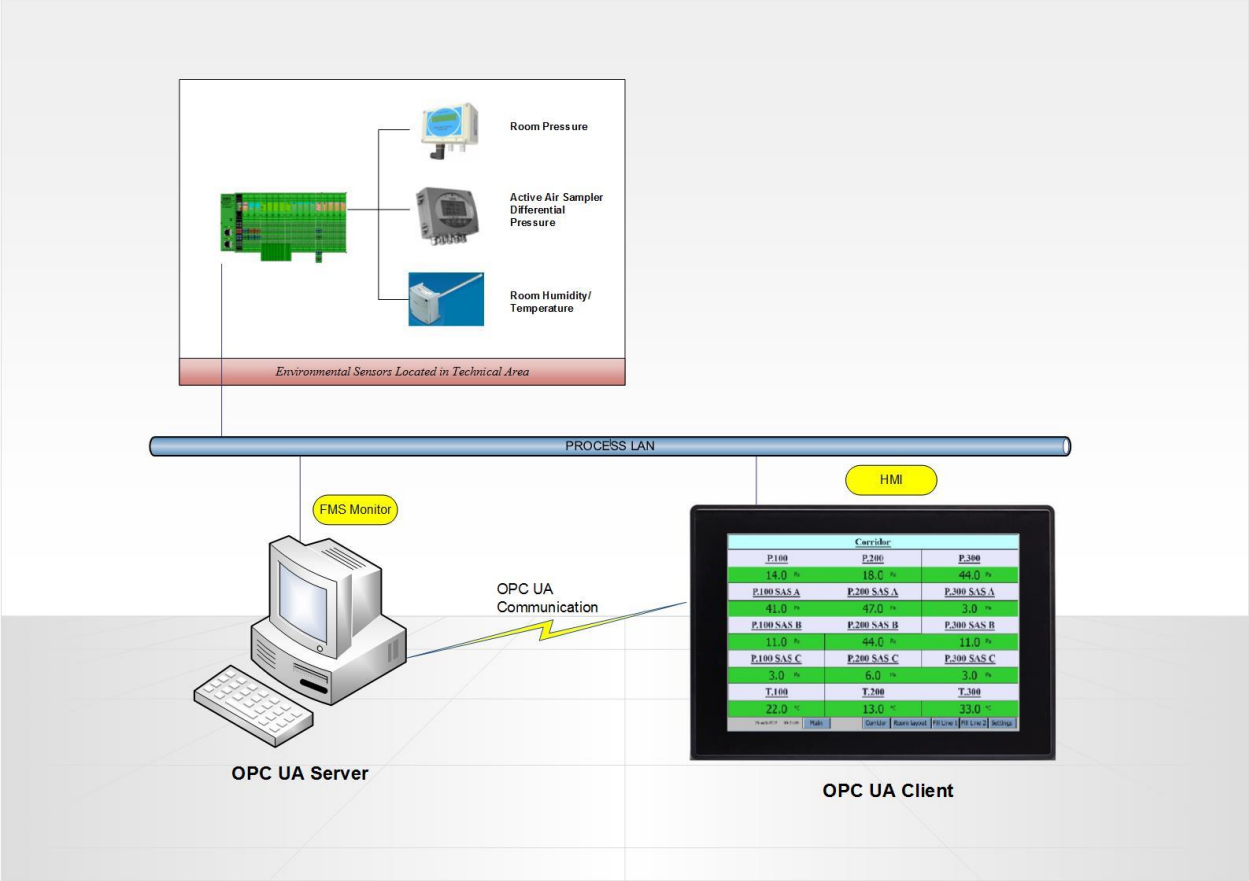

Figure 2: Corridor HMI Display Configured to Show Data of Interest to the Operator

Figure 2 shows how easy it is to replace the grey corridor display panel shown in Figure 1 with an HMI solution. It requires less wiring, hardware and maintenance—easing the future path to upgrade and the desire to add more displays.

Conclusion

FMS OPC UA Server with HMIs acting as an OPC UA Client is a cost-effective solution when there are lots of sensors installed in a building whose data needs to be displayed inside corridors or cleanrooms.

HMI Implementation Requirements

- FMS with OPC UA Server option installed.
- HMI that is compatible with OPC UA Client/Server (does not require an embedded PLC as physical connection to the sensors is unnecessary).
- HMI programmable software (usually included to support design of the interface).
- HMI connected to the cleanroom process network.

Acronyms

Acronym	Description
AMS	Alarm Monitoring System.
BMS	Building Management System.
COM	Component Object Model—method for organizing software, specifying how to build components that can be dynamically interchanged.
DA	OPC Data Access—provides access to real-time process data.
DCOM	Distributed Component Object Model—proprietary Microsoft® technology for communication between software components on networked computers. Originally was called "Network OLE," extends Microsoft® Corporation's COM, and provides the communication substrate under Microsoft® Corporation's COM+ application server infrastructure.
HDA	Historical Data Access.
HMI	Human Machine Interface.
HMI/PLC	Human Machine Interface with a PLC Integrated.
OPC	OLE for Process Control—communication standard. Refer to www.opcfoundation.org for more information.
PLC	Programmable Logic Controller.
UA	Unified Architecture.

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CC-125-Rev A (A4) Printed in U.S.A.