



APPLICATION NOTE

FUEL LEVEL SENSOR (FLS) REED TYPE TEST BENCH PM-50

CUSTOMER

A leading automotive technology and precision-engineered solutions company based in India

CHALLENGES

- Meet higher data sampling rate requirements
- Simplify the panel meter solution with respect to communication, configuration, and cost

RESULT

- A higher data sampling rate with higher sampling accuracy (+/-0.05 to 0.2%)
- Ease of configuration
- Cost efficiency with on-board communication
- Built-in future potential with Wi-Fi connectivity and remote app control

THE PROBLEM

An automotive manufacturer produces driver information boards systems (integrated connectivity clusters) for vehicle dashboards for multiple major Original Equipment Manufacturers (OEMs). The manufacturer's final test bench includes an analog panel meter that automatically captures resistance parameter data in Ohms. It's part of a closed-loop architecture that ensures resistance data matches the dataset configuration as part of quality control.

The manufacturer, who has been a Red Lion customer for six years, has been using Red Lion's PAXD analog panel meters in this application in all nine of its indoor manufacturing facilities (eight in India and one in Indonesia). Where necessary, on-board communication for the PAXD has been supported by an optional communication card that sends the data to the Programmable Logic Controller (PLC).

Several of the manufacturers' end client Original Equipment Manufacturers (OEMs) wanted to gain better traceability over their clusters by upgrading their data-logging facility. With more data sampled and stored, if a vehicle cluster experienced any failure in future, the OEM would be able to use the model number, part number, and serial number to track the part back to the point of manufacture and analyze the quality control issue.

Specifically, the OEMs wanted the data sampling rate raised to 100 samples per second (to achieve 6000 samples per minute). The PAXD, however, supported a maximum of 600 samples per minute.

THE SOLUTION

For production lines where the new, higher sampling rate was required, Red Lion representatives recommended the PM500A0301600F00 Universal Analog Input Meter (PM-50). The PM-50's higher sampling rate not only met the new criteria, onboard Modbus communication was already installed. The unit also supported Wi-Fi communication, should the manufacturer decide to send data wirelessly in future.

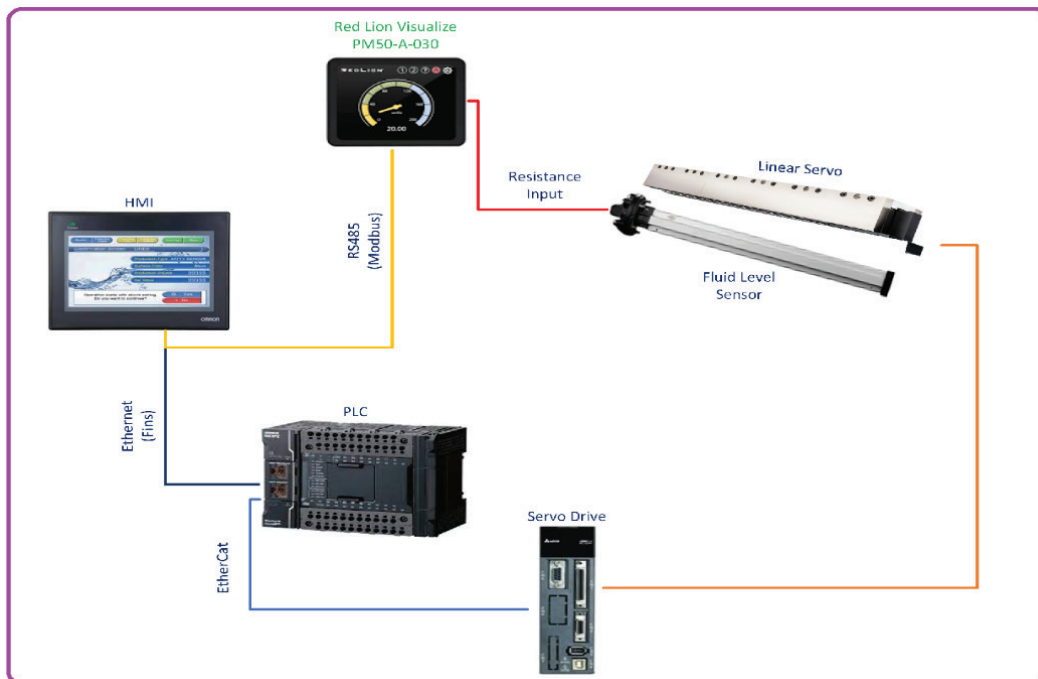
A proof of concept and a feasibility study were conducted to ensure the solution met the necessary technical standards. After one month of testing, the manufacturer approved the product, with an expected order of between 100 and 200 units annually.

THE RESULT

The manufacturer is now able to meet the higher sampling rate required by its OEM customers on those test benches that require it. Furthermore, the PM-50 is now delivering more accurate field data than the previous solution (+/- 0.05 to 0.2%). The PM-50 units enable Modbus communication to the Omron HMI and LabView SCADA system, and nonpurchase of any additional optional modules was necessary.

The ease of configuration made the PM-50 especially convenient for the manufacturer. The configuration values are easily copied to the other PM-50 devices through a web server or through an SD card. The manufacturer appreciated the extensive testing and technical support provided by Red Lion, alongside the convenience and reliability of the solution.

The PM-50 is also supported by a dedicated app, available on Android and iOS, called PM50 by Red Lion. The app allows end-users to monitor real-time data and configure the unit from a smartphone. While the manufacturer is not currently using this feature, they were impressed by the functionality, and the future potential built into Red Lion's PM-50 product line.



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