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DP Prognosis™ FC for ROC800-Series Remote Operations Controllers

A New Solution for Differential Pressure (DP) Meter Diagnostics

DP Prognosis™ FC is a new solution that allows ROC800-Series Remote Operations Controllers to monitor orifice plates, Venturi tubes or cone meters in real time to detect conditions that lead to measurement errors. In partnership with DP Diagnostics LLC, Emerson is now able to deliver this industry-leading solution that provides Prognosis algorithms in the ROC800-Series Remote Operations Controller.

With fewer technicians to support hundreds or even thousands of DP meters, it is nearly impossible to ensure the integrity of every meter element and the secondary sensors. DP Prognosis FC is a new feature that provides operators with unprecedented insight into the meter's operability and functional state, providing 'smart' device diagnostics that indicate if the system is working correctly and if the foundation for accurate measurement is stable. Technicians can now be dispatched as needed to proactively address exceptions rather than risking discovery of costly issues during routine inspections and calibrations. In addition, the frequency of routine inspections can be extended, reducing site time as well as risks to personnel and the environment.

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How DP Prognosis FC Works

The behavior of differential pressure meters is well understood. When flow in the meter tube is restricted, there are three repeatable pressure changes: primary differential pressure, recovery differential pressure and permanent pressure loss. DP Prognosis FC exploits this phenomenon by considering the meter tube as three 'meters' in parallel. Both the flow rates calculated from each of the three 'meters' and the three differential pressure ratios are compared. When the comparison values remain within acceptable tolerances, the meter is deemed to be functioning properly. When the variables exceed preset tolerances, the pattern of the deviations can be matched, with known error signatures, to suggest which aspect of the meter is most likely causing the error.

Detect a Variety of Meter Anomalies in Real Time

- Worn or damaged orifice plate
- Partially blocked meter
- Plugged or leaking impulse lines
- Buildup of dirt in the meter
- Leaking / open manifold equalizing valve
- Improperly configured meter tube or meter restriction size
- Improperly installed orifice plate
- Transmitter calibration error
- Wet gas

ROC800 Compatibility

DP Prognosis FC can be added to any existing ROC800-Series Remote Operations Controller. The diagnostics can be configured for a specific meter run or for all meter runs (up to 12 total), depending on requirements. Orifice, Venturi and cone meters are supported.

Achieve Operational Excellence

- Significantly improve response time to fault conditions to minimize measurement uncertainty
- Mitigate unnecessary trips to the field by implementing predictive (condition based) maintenance practices
- Ensure optimal HSE practices by preventing injury due to improper DP plate installation, having the wrong plate ID entered or an open manifold
- Maximize uptime with a redundant transmitter arrangement

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