AUTOMATIC LINE BREAK CONTROL

The Automatic Line Break Control module senses a pipeline break or major leak through a unique Rate-of-Drop circuit. This circuit consists of a differential pilot valve which senses pipeline pressure and compares it with the gas in a reference tank at the normal pipeline pressure. When the pressure in the pipeline decreases, the pressure in the reference tank also decreases, but at a rate dictated by a calibrated orifice. This establishes a different pressure between the reference tank and the pilot connected directly to the pipeline. The rate of pressure differential drop is indicative of the severity of pipeline gas loss and the differential pilot valve, at the calibrated setpoint, senses this Rate-of-Drop. When the pilot valve trips, the actuator is activated to close the main pipeline valve.

The Rate-of-Drop circuit eliminates inadvertent shutdowns on short duration pressure bumps. Utilizing the pipeline gas for both the pilot gas and power media makes the Automatic Line Break Control system independent of regulator or other power media failure.

The control module is calibrated with a Rate-of-Drop Test Kit, which monitors the pressure levels in the pipeline, the reference tank, and the differential pressure across the orifice. The kit includes the valves required to simulate a line break for the purpose of testing and calibration.
Advantages

- High-pressure construction – no regulator, relief valve or mechanical switching valve
- Differential pilot valve utilizes stainless steel diaphragm for accuracy and repeatability
- Marine-grade, hard anodized aluminum body for both poppet and differential pilot valve
- Easily adjusted Rate-of-Drop trip set point (10 psi/min – 150 psi/min)
- No mechanical linkages, which are subject to environmental failure
- Limit valve ensures complete closing of valve
- Single unit design – Diaphragm unit and directional control valve are a single unit, resulting in a shorter diaphragm stroke and lower hysteresis