

VALVE TECHNOLOGY

REFITTING VALVES WITH DIGITAL LONWORKS MODULES

PointL Bulgaria Ltd developed a special technology for the refitting of existing valves. The system, based on LonWorks bus technology from Echelon, establishes digital communication with any supervisory or process control system, without the need for complex and costly overhaul. An instance of 'outside-the-box thinking'!

Rehabilitation and upgrades of working power plants, oil refineries, chemical plants or water supply systems require modern process control systems and face the problem of having to replace many actuators and valves with new ones that are compatible with the new control systems. The process is very difficult and costly, especially when the old piping and construction are preserved. In addition, the task requires training the operators to work in the new environment.

How does it work?

Everything begins with the intelligence we give to the actuated valves. With a very simple operation only the mechanical, electrical, pneumatic and other feedback assembly of the actuator is replaced with an intelligent digital module (Mouvon), based on LonWorks technology. After this, a patented non-contact digital readout assembly is attached directly to the shaft of the valve.

The pictures show a typical example of an electrically actuated valve with replacement of the existing feedback assembly and brakes. The valve itself is not dismantled and in certain

cases, it is possible to refit it, without disrupting the industrial process, if it allows for manual valve operation for a period of time.

Any type of actuated valve, including sliding shutters, can be and have been refitted. Pneumatic valves need only low-pressure compressed air for air supply, while the digital module controls the pressure on the membrane and valve positions.

Accuracy better than 0.5%

Valve positioning accuracy after refitting is better than 0.5%. There are no parts to wear out, and no parts for maintenance or replacement in the readout and positioning assembly. Now, valve-individual characteristics and behavior are recorded and constantly monitored by the digital module and each valve is controlled individually, achieving unmatched accuracy. Deterioration of the valve's mechanical gearbox or twisted axes for example are registered and calibrated remotely, and the valve is operated at the required precise position.

The valve now recognizes and immediately signals the system about gasket corro-



Valve, refitted with the digital module. Valve positioning accuracy is better than 0.5%, states its Bulgarian developer.



Digital (Mouvon) module with the digital positioner in the housing of the actuator.

sion, mechanical obstruction in the valve itself, overload of the motor and wear and tear of the mechanical parts. The valve also brings many other cost, time and operations advantages.

The digital modules can be connected to any industrial control system or can operate under our LonWorks 4G distributed logic industrial system. Only 4 wires are needed – one pair for the power supply and one pair for the signal. Some of the modules are certified to the EEx m II T6 Norm for explosion proof applications. <<

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