



# 1278 VPAC Subsystem: Intrinsically Safe On-line Valve Leak Monitoring Subsystem for Oil and Gas

## 2-Wire Intrinsically Safe VPAC Subsystem Provides On-Line Leak Monitoring with 4-20ma output for Plant DCS

- ♦ On-line real time valve leak detection and quantification
- ♦ Essential for verifying correct valve operation in critical safety systems
- ♦ Can save millions of \$'s by identifying losses to flare
- ♦ Intrinsically safe
- ♦ Direct connection to plant DCS via loop powered 4-20ma (i.e. no separate power)
- ♦ Works with galvanic or zener barriers

The 1278 Subsystem, configured for valve leak detection, provides an on-line alternative to the portable 5131-VPAC, which is used worldwide for loss control in refineries, gas plants and offshore platforms. The 5131-VPAC saves >\$1m per annum per unit in losses.\*

### Advantages of the 1278 On-line system:

- ♦ Instant response when a valve sticks or leaks, saving the losses that occur between manual surveys. Often a repeat valve operation or adjustment of the limits is all that is needed to re-seat a valve properly. This provides an essential safety function.
- ♦ Reduced need for personnel to conduct manual surveys on critical valves.
- ♦ Critical information on isolation & bypass system effectiveness

Based on >15 years experience with VPAC technology, the most cost-effective strategy for installing VPAC On-line is to target the Emergency Blow-Down Valves (EBDV), hydrogen valves, and C2/C3

control valves leading to flare that are responsible for the majority of losses. ESDV's may be monitored automatically when closed. Difficult to reach valves, for example those on top of towers that may never be surveyed, are another ideal use.



The system works with any loop-powered 24 volt 4-20 ma system, (power is derived from the current loop), and is supplied with an intrinsically safe VPAC sensor, ready for direct connection to the plant DCS via any galvanic or zener barrier. When valves do not close properly, or leak for other reasons, the operator knows immediately!!

\*Ask for references.

### Hardware Specifications

- **Size (L x W x H):** 150 mm x 65 mm x 35 mm
- **Weight:** 0.35 kg
- **Power Consumption:** <20 ma from loop power
- **Noise:** <1.8  $\mu$ V rms RTI with sensor
- **Operating Temperature:** -40° to 70°C
- **Storage Temperature:** -40° to 85°C
- **Power Requirements:** Loop powered, 4-20ma, 11.5-30 volt
- **4-20ma Output Drive:** Corresponds to 0 - 100 dB AE  
1-5 volts with 250 ohm termination
- **Dynamic Range:** >87 dB AE (-0.4 - 3240 litres/min gas for 3" (76.2mm) ball valve at 10 bar D.P.)
- **Sensor:** 23 mm diameter x 20.5 mm high, sealed, integral 2m cable, temp. -40° to 125°C
- **Extreme Temperatures:** Waveguide (WG-SCR or WG-WLD) allows operation from cryogenic up to 650°C

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