MICROCOR®
EROSION PROBES

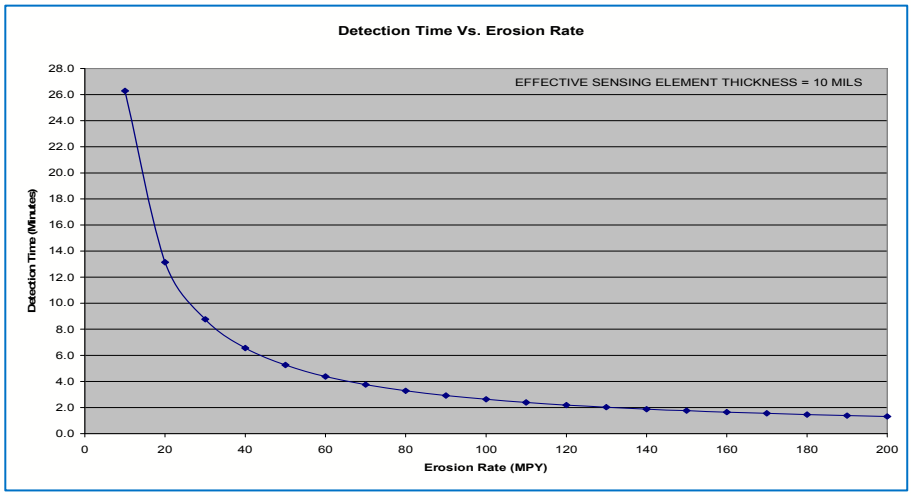
Request A Quote

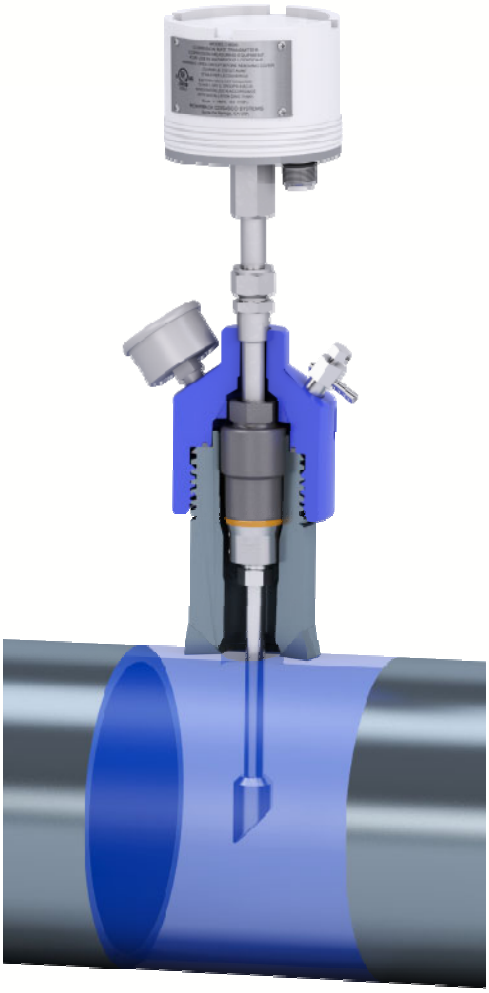
The Problem

Sand production in oil and gas producing wells can cause rapid erosion and wear of top side equipment such as chokes, valves, and flow-lines. In addition, it may cause serious formation damage. Rapid detection and remediation of sand producing/erosion episodes is necessary to prevent short-term failure of topside equipment, and cumulative formation damage.

The Solution

Cosasco offers a range of metal loss sensors and instrumentation, designed specifically to detect sand erosion at speeds approaching real time. Typical detection times for various sand erosion rates are shown below:



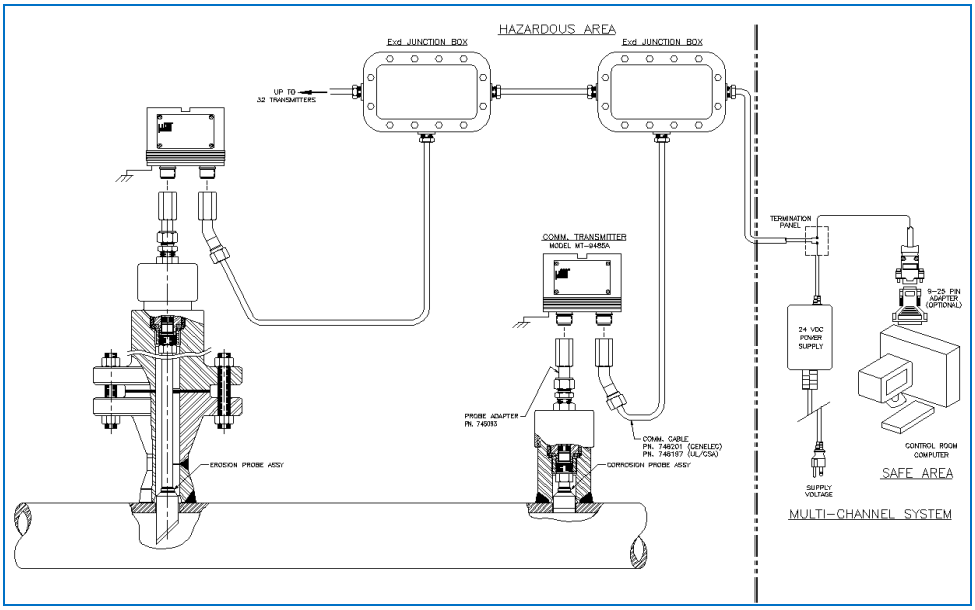


MT-9485A shown with a M4700 probe

Sensing elements for the erosion/corrosion measurement system can be made from almost any commercially available, alloy. Less corrosion resistant materials, such as carbon steel, will show the combined effects of corrosion, and erosion, whereas more resistant alloys, such as 316 or duplex stainless steel or Hastelloy, will show erosion effects exclusively. Erosion probes and instrumentation can be fully integrated with other digital loop transmitters manufactured by Cosasco, such as Linear Polarization (LPR), or high resolution electrical resistance (Microcor), to provide a comprehensive corrosion/erosion monitoring solution within a single digital communication and data handling system.

COSASCO®

The areas experiencing the most severe effects of erosion are the outer diameters of bends and areas downstream of changes in pipeline diameter. However, the corrosion/erosion probe is best placed with its sensing element at the center of the line in a straight run pipe section where the greatest flow rates are experienced, since this is the place where the highest concentrations of sand are typically found.

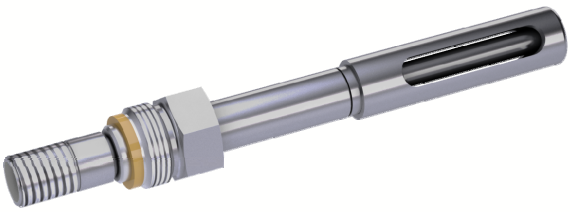


Typical On-Line Monitoring System

A Typical Erosion System Consists of the Following

Probe

Two versions are available. The rugged, all welded cylindrical element model S4500 with a specially designed element support shield is suitable for severe flow or high temperature applications. The angled element S4700 probe is exposed to the flow at a 45° angle, simulating a change in direction in the pipe. The maximum temperature of this probe is 400°F, and is recommended for less severe flow rates of less than 25 ft/sec. Both these probes are mounted in the Cosasco line of high pressure access fittings; however, alternative mounting methods are available. Please contact the factory for more information.



S4500 Probe

Transmitter

The MT-9485A corrosion/erosion transmitter is mounted directly on the probe, using the appropriate probe adapter. Connection to the monitoring system is made using an industry standard RS-485 multi-drop connection. This line may be attached to a number of MT-9485A erosion transmitters, MT-9485A Microcor corrosion transmitters, and E9020 LPR transmitters. Alternatively, each transmitter may be attached to a ML-9500B data logger.

S4700 Probe

Ordering Information

- **MT-9485A Erosion Transmitter**
  - **Probe adapter:** P/N 745093 Probe adapter for retrievable probes (For permanent connection at 2500 PSI max)
    P/N 745114 Probe adapter for retrievable probes (For permanent connection out 10,000 PSI max, when used with pressure retaining cover P/N 740095)
  - **Transmitter to Junction Box Cable:** P/N 748197-L Flexible Ex-proof connection (UL/CSA)
    P/N 748201-L Flexible connection (CENELEC)
  - **Local Junction Box:** P/N 702181-1 Hazardous area junction box
- **ML-9500B Data Logger**
  - **Transmitter to Data Logger Cable:** P/N 748203-L (UL/CSA)
    P/N 748202-L (CENELEC)
- **Checkmate DL Data Transfer Unit**
  - **PC Power & Interface Module:** P/N 748237 RS232/485 converter & 24VDC power supply

Probes

Model	Retrievable Erosion Probe
S4500	Complete Probe Assembly, Cylindrical Element

Code	Element Form and Thickness
T10	Cylindrical, 10 mil thickness (5 mil life)
T20	Cylindrical, 20 mil thickness (10 mil life)
T50	Cylindrical, 50 mil thickness (25 mil life)

Code	Element Alloy
XXXXXX	Enter UNS Number

Code	Order Length
LL.LL	Order Length in Inches
	3.25” min, 36.00” max for T10
	5.00” min, 36.00” max for T20
	11.00” min, 36.00” max for T50

S4500 — T20 — S31603 — 6.00 ← Example

Model	Retrievable Erosion Probe
S4700	Complete Probe Assembly, Angled Element

Code	Element Form and Thickness
F10	Angled, 10 mil thickness (5 mil life)
F20	Angled, 20 mil thickness (10 mil life)
F40	Angled, 40 mil thickness (20 mil life)

Code	Element Alloy
XXXXXX	Enter UNS Number

Code	Order Length
LL.LL	Order Length in Inches
	2.50” min, 36.00” max

S4700 — F20 — S31603 — 6.00 ← Example

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Microcor-Erosion-Probes-DS rev-B
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