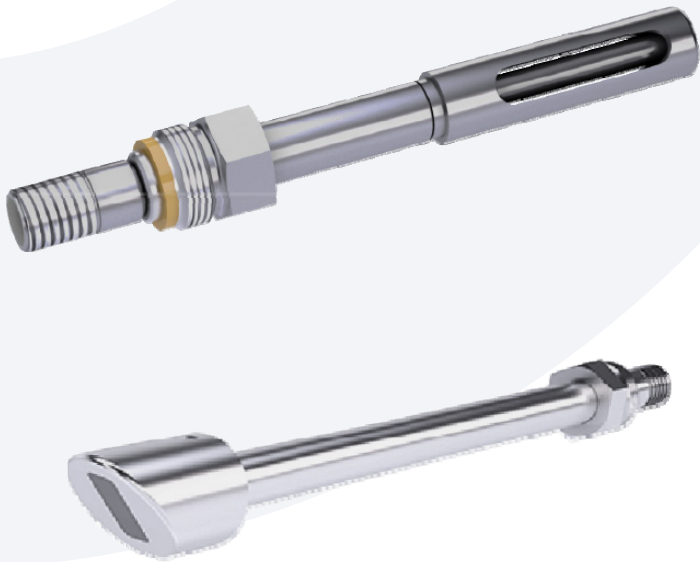


Microcor[®] Erosion Probes

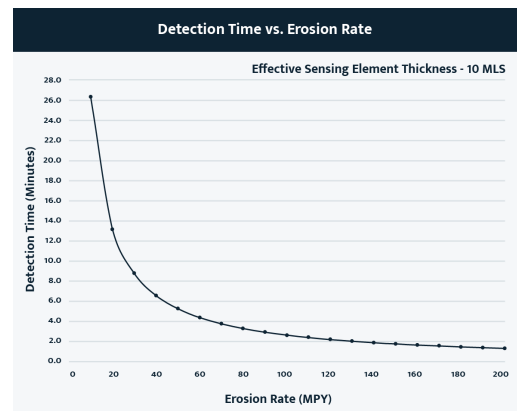
- High Resolution Erosion Measurement
- Available in Offline & Online Configurations



S4500 and zs4700 Probe

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

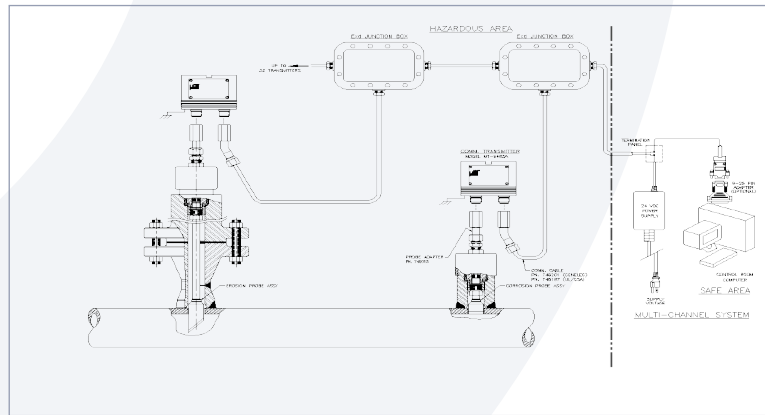
Cosasco offers a range of metal loss sensors and instrumentation, designed specifically to detect sand erosion at speeds approaching real time.



Microcor[®] Erosion Probes 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.

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



Typical Online Monitoring System

A Typical Erosion Measurement 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 a Cosasco representative for more information.

Transmitter

The erosion monitoring system is available in offline or online configuration. The MT-9485A wired 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. Alternatively, each transmitter may be attached to a Microcor® data logger.

Order 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
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Probes

Model	Retrieval Erosion Probe			
S4500	Complete Probe Assembly, Cylindrical Element			
↓	Code	Elemental 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		
	XXXXX	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	Retrieval Erosion Probe			
S4700	Complete Probe Assembly, Angled Element			
↓	Code	Elemental 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		
	XXXXX	Enter UNS Number		
	↓	Code	Order Length	
LL.LL		Order Length in Inches		
	2.50" min, 36.00" max			
S4700	F20	S31603	6.00	← Example