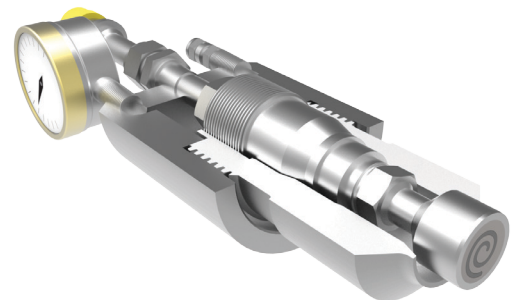
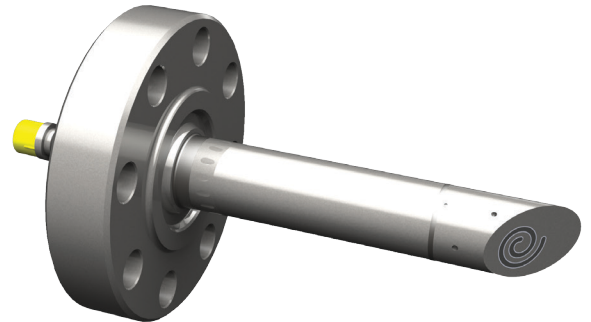
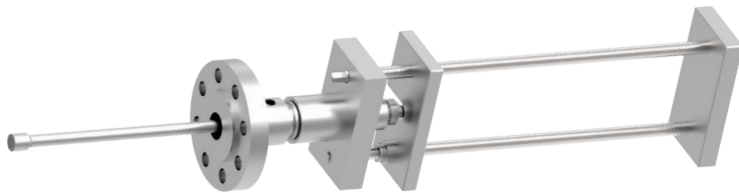


Teledyne Corman

Corman CEION[®] High Resolution Probes

Primary Features:

- High resolution, real-time metal loss measurement
- Combining resolution and lifespan within one probe eliminating the traditional trade off with ER technology
- Configurable technology allowing the measurement of both erosion and corrosion from one technology platform
- Built in calibration and temperature compensation provide a robust measuring system and increased ease of use in field
- Compatible with standard probe mounting configurations for ease of installation



CEION[®] is an evolution of the ER metal loss measurement technique, using advanced electronics to provide a signal-conditioned, calibrated output. For any given metal loss rate a considerably shorter time is needed for a CEION[®] sensor to detect a change than a standard ER measurement.

The faster detection rate allows users and operators to respond more quickly to increases in the metal loss rate which can reduce the total metal lost and therefore extend asset life. This speed of response is particularly useful in sand erosion monitoring and corrosion inhibition evaluation.

This patented technology is based on electrical resistance (ER) principles, yet the CEION[®] technology is typically 100 times more sensitive than standard ER. The CEION[®] technology can be used in for both corrosion and erosion, and in both probes and spools, topside and subsea.

APPLICATIONS

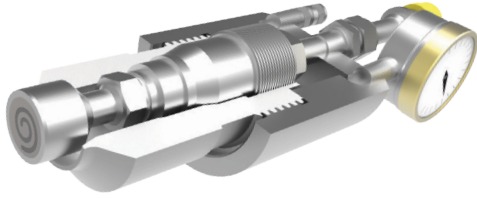
- Oil & Gas Production
- Refining & Processing
- Chemical Production
- Water Treatment & Distribution
- General Industrial Applications



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Cormon CEION[®] High Resolution Probes



CEION[®] HIGH RESOLUTION PROBES (RETRIEVABLE)

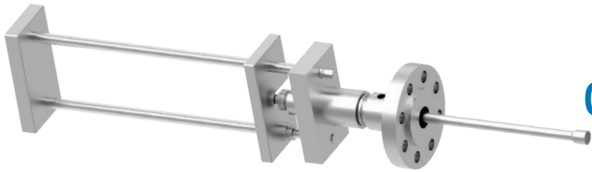
Available with or without velocity shield.

STANDARD CONFIGURATION

ELEMENT THICKNESS

LENGTH

Flush Epoxy Sealed (ø32mm)	0.5 mm	Specified at point of order
Adjustable Flush Epoxy Sealed (ø32mm)	1 mm	
Angle Head Epoxy Sealed (ø32mm)	2 mm	
Angle Ceramic High Temperature (ø32mm)	4 mm	
Tubular Long Epoxy Sealed (Element 4" Long)		
Tubular Short Epoxy Sealed (Element 2" Long)		



CEION[®] HIGH RESOLUTION PROBES (RETRACTABLE)

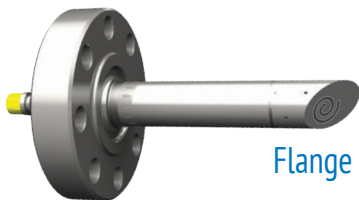
Available with or without velocity shield.

STANDARD CONFIGURATION

ELEMENT THICKNESS

LENGTH

Flush Epoxy Sealed (ø32mm)	0.5 mm	12" Nominal Length
Flush Glass Sealed Ceramic (ø32mm)	1 mm	18" Nominal Length
Flush Glass Sealed Ceramic (ø23mm)	2 mm	24" Nominal Length
Angle Head Epoxy Sealed (ø23mm)	4 mm	30" Nominal Length
Angle Ceramic High Temperature (ø23mm)		36" Nominal Length
Tubular Long Epoxy Sealed (Element 4" Long)		
Tubular Short Epoxy Sealed (Element 2" Long)		



FIXED FLANGE CEION[®] HIGH RESOLUTION PROBES

Flange insertion length specified at point of order. Available with or without velocity shield.

STANDARD CONFIGURATION

ELEMENT THICKNESS

SIZE (NB)

FLANGE RATING

TYPE

Adjustable Flush Epoxy Sealed	0.5 mm	1/2"	150#	Raised Face
Flush Ceramic	1 mm	3/4"	300#	Flat Face
Flush High Temperature Ceramic	2 mm	1"	600#	Ring Joint
Angle Head Ceramic	4 mm	1-1/2"	900#	
Angle Head High Temperature Ceramic		2"	1500#	
		2-1/2"	2500#	
		3"		



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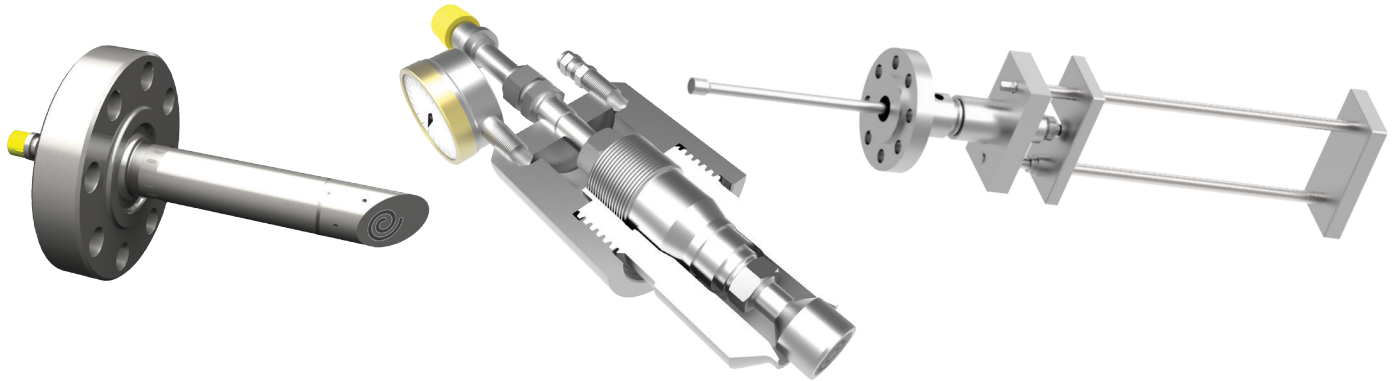
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Cormon CEION[®] High Resolution Probes



PROBE BODY MATERIALS

316/316L St.Steel Dual Certified
Inconel 825
Inconel 625
Hastelloy C276
Inconel 625
Duplex A182 Gr.F51
Super Duplex A182 Gr.F53
Super Duplex A182 Grade F55

FLANGE MATERIALS

ASTM A105N/A350 LF2 Dual Certified
ASTM A694 F65
ASTM A694 F60
ASTM A694 F70
ASTM A694 F52
316/316L St.Steel Dual Certified
Inconel 825
Inconel 625
Hastelloy C276
Inconel 625
Duplex A182 Gr.F51
Super Duplex A182 Gr.F53
Super Duplex A182 Grade F55

ELEMENT THICKNESS

BS 970 070M20
BS1449 CS2
ASTM A105N/A350 LF2 Dual Certified
API 5L Gr.X52
ASTM A106 Gr.B
ASTM A333 Gr.6
API 5L Gr.B
API 5L Gr.X60
API 5L Gr.X65
9Cr 1Mo
API 5L Gr.X70
5Cr 1/2 Mo
316/316L St.Steel Dual Certified
Inconel 825
Inconel 625
Hastelloy C276
Inconel 625
Duplex A182 Gr.F51
Super Duplex A182 Gr.F53
Super Duplex A182 Grade F55

ELEMENT THICKNESS

CEION[®]

ER

Raw resolution as %
of element thickness

Time to detect change at
4 mls per year* (0.1 mmpy)

Raw resolution as %
of element thickness

Time to detect change at
4 mls per year* (0.1 mmpy)

0.5 mm
1 mm
2 mm
4 mm

.0006%
.0004%
.00025%
.00045%

.26 hours
.35 hours
.44 hours
1.58 hours

.1 %
.1 %
.1 %
n/a

43.8 hours
87.6 hours
175 hours
Not in range



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