Electrical Resistance (ER) Probes

4700/4700 ADJ

4700 FIXED

4700-ADJ

Features

- **High Pressure Fixed and Adjustable Flush**
- **Electrical Resistance (ER) 2" System**
- **Temperature Rating - 500°F / +260° C**
- **Pressure Rating - 3600 PSI / 24.8 MPa (Model 4700-ADJ)**
  -6000 PSI / 42.3 MPa (Model 4700)
- **Element Seal Material - Ryton**
- **Fill Material - Ceramic**
- **Probe Body Material – 316 L S.S.**

Model The Model 4700 electrical resistance probe is now available with an even more durable construction incorporating a connector with shrouded pins to prevent accidental damage.

This high pressure probe with element thicknesses up to 40 mils, can be read by any corrosion monitoring ER instrument. The rugged probe body is 316L Stainless Steel. It may be used at operating pressures to 6000 PSI/42.3 MPa (Model 4700) or 3600 PSI/24.8 MPa (Model 4700-ADJ) and temperatures to 500° F (260° C). These probes are for use in bottom of the line applications where corrosive fluids may accumulate or in lines which are subject to pigging.

The Model 4700-ADJ adds the flexibility to adjust the length of the probe, thus minimizing the inventory of replacement probes. The probe is readily available in two adjustment ranges 1.25" - 2.25" and 2.00" - 3.00". Larger sizes are available as a specialty item.

Probe adapters are required to make the cable connection to the probe. Use the following order numbers for adapters: 028068 for permanent instrumentation, 028043 for portable instruments.

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Element Availability

UNS Number	Alloy	S10	S20	S40	UNS Number	Alloy	S10	S20	S40
C70610	CuNi 90/10 CDA #706	•	•	•	N10276	Hastelloy C-276	•	•	•
K03005	Pipe Grade Carbon Steel	•	•	•	S31600	316 S.S.	•	•	•
K03006	A106 Gr. B/A33 Gr. 6	•	•	•	S31603	316L S.S.	•	•	•
N06625	Inconel 625	•	•	•	S31703	AISI 317L Stainless Steel	•	•	•
N08367	Incoloy 25-6HN	•	•	•	S31803	2205 Duplex S.S.	•	•	•
S30400	304 S.S.	•	•	•	S50200	502 S.S, (5% Cr ½% Mo) (UNS K41545)	•	•	•
S30403	304L S.S.	•	•	•					
	Inches **Useful Range (mm)**	.005 .175	.010 .250	.020 .510		**Inches** **Useful Range (mm)**	.005 .175	.010 .250	.020 .510

Based upon a standard access fitting height of 5.25" and a 1/16" weld gap per ANSI B31.1, the following equation may be used to determine the order length:

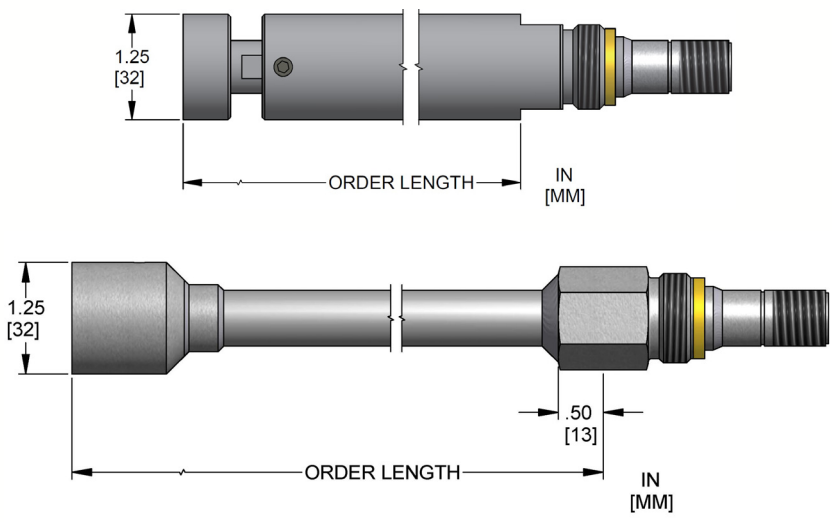
Fixed Flush Formula:
Order Length = T + 1.25"
Where: T = Wall Thickness of the pipe or vessel.
The order length should be rounded down to the nearest 1/8”.

ADJ Flush:
For 5.25" Access Fittings welded directly to the line with standard 1/16" weld gap, the following pipe size and schedules are covered with just the two sizes shown.

Notes:
1. Based on 5.25” access fitting height
2. Schedule pipe not listed above this size

Probe Size	1.25”	2.00”
Adjustment	1.25” – 2.25”	2.00” – 3.00”
Pipe Thickness Ranger[1]	0” – 1.00”	.75” – 1.75”
Sch. 40 Pipe[1]	Up to 24”[2]	--------
Sch. 80 Pipe[1]	Up to 18”	14” – 24”[2]
Sch. 160 Pipe[1]	Up to 8”	8” – 16”
Sch. XXS Pipe[1]	Up to 12”	5” – 12”[2]

Dimensions



Ordering Information

Note: For flush devices which are protruding into the line that may experience high velocity process conditions it is recommended that Wake Frequency Calculations be performed – please contact a Cosasco representative for further details.

Model	Retrievable ER Probes – Large Flush Element
4700	Complete Probe Assembly - Fixed
4700-ADJ	Complete Probe Assembly - Adjustable

Code	Element Form: See Table 1 for availability
S10	Flush Element, 10 mil thickness (5 mil span)
S20	Flush Element, 20 mil thickness (10 mil span)
S40	Flush Element, 40 mil thickness (20 mil span)

Code	Element Alloy: See Table 1 for availability
XXXXXX	Enter UNS number

Code	Order Length
XX.XX	Inch order length in 1/8" "increments from 1.25" to 36.00" (fixed only)
YY.YY	Inch order length 1.25" or 2.00" (adjustable only)

Code	Connector
0	"S" type with shrouded pins (new type)[1]

4700	S20	K03005	5.00	0	Example
4700-ADJ	S10	K03005	1.25	0	Example

Note: The probe with shrouded pins has probe connection adapters as follows: for portable instrument 028043, for permanent connection 028068.

Weight:

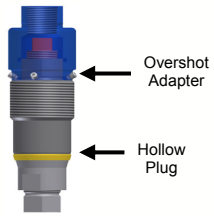
Fixed Unit		Adjustable Unit	
Probe Length	Weight	Probe Length	Weight
3.25" – 12"	3 lbs/1.36 kg	1.25"	0.8 lbs/0.36 kg
12.25" – 24"	4.5 lbs/2.04 kg	2.00"	1.0 lbs/0.45 kg
24.25" – 36"	6 lbs/2.72 kg		

Probe Adapters:

028043 – For use with portable instruments.
028068 – For permanent connection at 2500 psi max.
745113 – For permanent connection at 10, 000 psi max., when used with Pressure retaining cover P/N 740095

RECOMMENDED:

Overshot Adapter: P/N 126292
An overshot adapter is not required, but is recommended for use with the 4700 probe. It permits removal and installation of hollow plug with probe and a steel pipe plug in place (keeps probe pins clean and dry for immediate connection to instruments).



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