

ER Probes

[ER0250](#) - Atmospheric Probe

[ER0500](#) - Surface Strip Element and Cylindrical Element Types

[ER1000](#) - NPT Pipe Plug & Loop Element

[ER2000](#) - Fixed Length with 3/4" NPT Pipe Plug & Loop Element

[ER2100](#) - Fixed Length with 3/4" NPT Pipe Plug & Cylindrical Element

[ER3000](#) - Adjustable Length with 3/4" NPT Pipe Plug & Loop Element

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[ER3200](#) - Adjustable Length with 1 1/2" NPT Pipe Plug & Flush Element

[ER4000](#) - Retractable with Packing Gland & Loop Element

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[ER7000](#) - Retrievable w/ Loop Element for High Pressure Access Systems

[ER7100](#) - Retrievable w/ Cylindrical Element for High Pressure Access Systems

[ER7200](#) - Retrievable w/ Flush Element for High Pressure Access Systems

[ER7210](#) - Retrievable w/ Large Flush Element for High Pressure Access Systems

[ER7220](#) - Retrievable w/ Large Adjustable Flush Element for High Pressure Access Systems

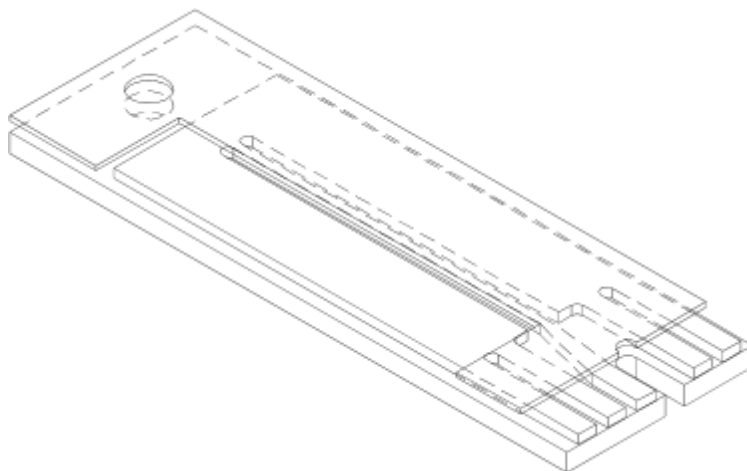
[ER7300](#) - Retrievable Spiral Loop for High Pressure Access Systems



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Model ER0250

Atmospheric Probe



Model ER0250 is a probe used to monitor corrosion in atmospheric environments. The probe consists of an element which is mounted onto an epoxy board. One side of the element is exposed to the corrosive environment while the other side is covered, acting as a reference element. The ER0250 connects to a special cable that allows it to be used with electrical resistance probe instrumentation. Replacement elements may be ordered without cable. The probe comes with a 3/16" hole for easy mounting.

Specifications:

Probe Body - Epoxy

Temperature Rating - 250°F / 121°C

Standard Element Sizes - 4 or 8 mils (useful range is half of thickness)

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ER0250 Ordering Information

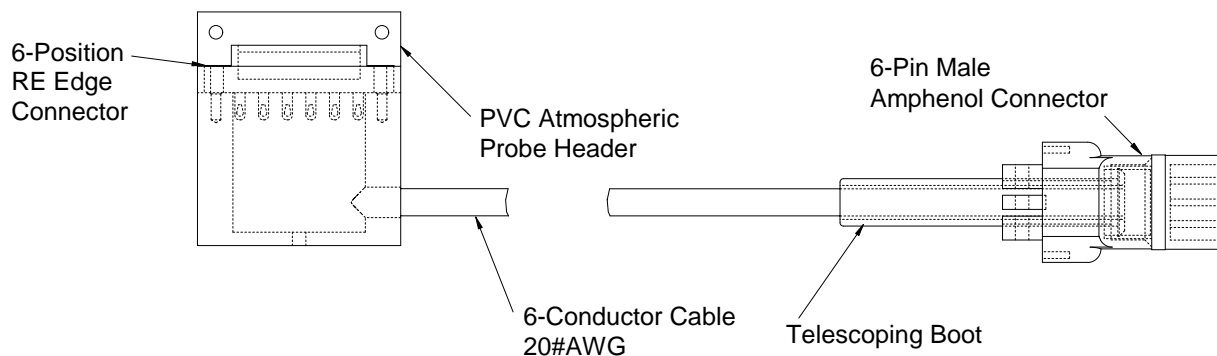
Model						
PAe	21	Atmospheric Prob				
Element Thickness						
40)		4 mil thickness (2 mil useful probe life)				
08		8 mil thickness (4 mil useful probe life)				
Element Alloy						
XXt		X Use Code in Alloy Char				
Cable Length						
00		No cable				
10		10 ft cable				
20		20 ft cable				
AP21	08	375	20	Example of Probe Ordering #		

For alloys, sizes, or other special requirements not listed, contact our sales department.

Alloy Chart					
Code	Description	UNS #	Code	Description	UNS #
730 5	100 01	109 010	51S	133 6L S	S3160
350 8	054 r 1/2M	442 254	146	206 7	N1027
450 1	091 r 1M	942 094	065	1A5 loy 62	N0662
81S 6	140 0 S	459 100	140	DC0 A11	C1100
41S 1	030 4 S	334 040	343	DC0 A44	C4430

Note: Not all alloys are available with all element types and seals.

Atmospheric Probe Extension Cable Assembly

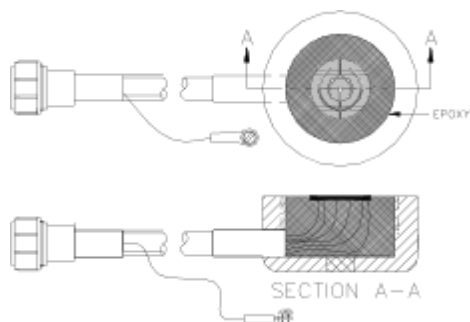


Part # : PS5602XXX

where XXX = length in feet (Ex: 020 = 20 feet)

Model ER0500

Electrical Resistance Probe Surface Strip Element and Cylindrical Element Types



Surface Strip Element



Cylindrical Element

Model ER0500 probes are designed for heavy duty service conditions such as underground and structural monitoring of pipelines, vessels, above and below ground storage tanks and structures - whether cathodically protected or not. The surface strip element assembly is suited to the “construction site” environment. The cylindrical element is economical and durable. Its slim profile is convenient for locations with restricted access such as concrete bridge structures and other infrastructure applications. Both probes provide good sealing of the reference element and the check element provides confidence in the continued performance of the corrosion sensor. Either probe may or may not be connected to a cathodically protected structure. Connection of a ground cable allows the probe to measure the effectiveness of the Cathodic Protection (C.P.) System under all the operating conditions. If unconnected to the structure, the probe monitors the direct corrosivity of the soil or environment. The probes may be ordered with or without a grounding lead for a C.P. System. The lead may be installed at the probe or connector end, whichever is most convenient. In most cases, a lead at the monitoring connector end is preferred, with a separate lead running to the vessel or C.P. System. This enables connection to the C.P. System to be made as required - even after probe installation.

Specifications:

	<u>Surface Strip</u>	<u>Cylindrical</u>
Probe Body	Epoxy Block	All Welded Element
Cable Connection	Heavy Duty Length	Heavy Duty Length with Bonded Heat Shrink Sleeving onto Element

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ER0500 Ordering Information

Model					
PAe	Electrical Resistance Prob				
	Type				
	31	Under ground surface strip without ground strap			
	40	Under ground cylindrical with ground strap			
	61	Under ground surface strip with ground strap			
	70	Under ground cylindrical without ground strap			
	Element Thickness				
	10	10 mil thickness (5 mil useful probe life) - cylindrical or surface strip			
	20	20 mil thickness (10 mil useful probe life) - cylindrical or surface strip			
	40	40 mil thickness (20 mil useful probe life) - surface strip only			
	50	50 mil thickness (25 mil useful probe life) - cylindrical only			
	Element Alloy				
	XXt	X	Use Code in Alloy Char		
	Cable Length				
	10	10 ft cable			
	20	20 ft cable			
AP	31	40	375	20	Example of Probe Ordering #

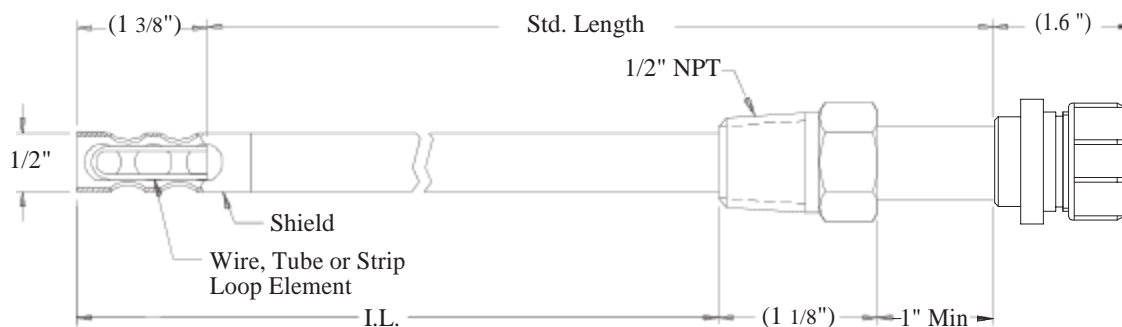
For alloys, sizes, or other special requirements not listed, contact our sales department.

Alloy Chart					
Code	Description	UNS #	Code	Description	UNS #
730 5	100 01	100 010	51S	133 6L S	S3160
350 8	054 r 1/2M	402 254	1A6	2C6 7	N1027
450 1	091 r 1M	002 094	065	1A5 loy 62	N0662
81S 6	140 0 S	450 100	140	DC0 A11	C1100
41S 1	030 4 S	334 040	343	DC0 A44	C4430

Note: Not all alloys are available with all element types and seals.

Model ER1000

Electrical Resistance Probe with 1/2" NPT Pipe Plug and Loop Element



Model ER1000 is a fixed-length, electrical resistance probe with a 1/2" NPT pipe plug. The probe requires process isolation or process shutdown to install and a threaded pipe fitting to mount. With a diameter of 1/2", the probe is ideal for applications where space is limited. The probe assembly consists of an insertion rod with an element, a hermetically sealed connector, a 1/2" NPT pipe plug, and a velocity shield, which are all welded in place. The insertion length (I.L.) is calculated to the end of the shield and can be specified by the customer. For standard probes, the maximum insertion length is given in the chart below. Several standard loop elements are available to meet your specific needs.

Specifications:

Probe Body - 316 Stainless Steel

Element Seal - Glass or Teflon®

Fill Material - Ceramic

Temperature Rating - 500°F / 260°C

Pressure Rating - 3000 PSI / 204 Bar

Mounting - 1/2" NPT Pipe Plug

Std. Length	I.L. (Max.)
5"	3.08
8"	6.08
21" "	10.08
81" "	16.08

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ER1000 Ordering Information

Model								
PEe	21	Electrical Resistance 1/2" NPT Pipe Plug Prob						
Probe Body Material								
226		31						
44		C276						
E/R Element Options								
00		WR40 Wire Loop - 40 mil thickness (10 mil useful probe life)						
10		WR80 Wire Loop - 80 mil thickness (20 mil useful probe life)						
20		TU04 Tube Loop - 4 mil thickness (2 mil useful probe life)						
30		TU08 Tube Loop - 8 mil thickness (4 mil useful probe life)						
Seal Type								
1		Glass						
2		Teflon®						
3		Epoxy						
Length								
05		3.08 inches max. insertion length						
08		6.08 inches max. insertion						
12		length						
18		10.08 inches max. insertion length						
		16.08 inches max. insertion length						
Element Alloy								
Use Code in Alloy Char								
E/R Probe Options								
00								
03		No shield						
EP21	22	10	1	08	375	03	Example of Probe Ordering #	

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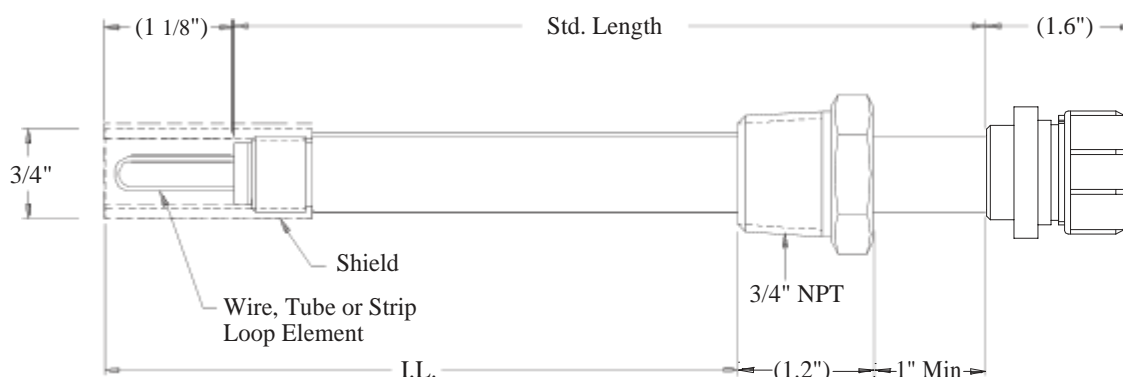
Alloy Chart					
Code	Description	UNS #	Code	Description	UNS #
730	01	109 010	51S	133 6L S	S3160
350 5	100 r 1/2M	402 254	1A6	2C6 7	N1027
450 8	054 r 1M	902 094	065	1A5 loy 62	N0662
81S 1	091 0 S	459 100	140	DC0 A11	C1100
41S 6	140 4 S	334 040	343	DC0 A44	C4430
1	030				

Note: Not all alloys are available with all element types and seals.

Model ER2000

Electrical Resistance Probe

Fixed Length with 3/4" NPT Pipe Plug and Loop Element



Model ER2000 is a fixed-length, electrical resistance probe with a 3/4" NPT pipe plug. The probe requires process isolation or process shutdown to install and a threaded pipe fitting to mount. The probe assembly consists of an insertion rod with an element, a hermetically sealed connector, and a 3/4" NPT pipe plug, which are all welded in place. A velocity shield can be provided if required. The insertion length (I.L.) is calculated to the end of the shield and can be specified by the customer. For standard probes, the maximum insertion length is given in the chart below. Several standard loop elements are available to meet your specific needs.

Specifications:

Probe Body - 316 Stainless Steel

Element Seal - Glass or Teflon®

Fill Material - Ceramic or Epoxy

Temperature Rating - 500°F / 260°C

Pressure Rating - 3000 PSI / 204 Bar

Mounting - 3/4" NPT Pipe Plug

Std. Length	IL (max)
6"	5.13
8"	7.13
21" "	11.13
81" "	17.13

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ER2000 Ordering Information

Model									
REe	2	Electrical Resistance Fixed Length Pipe Plug Prob							
Pipe Plug Size									
	2g	3/4" NPT Pipe Plu							
	3	1" NPT Pipe Plug							
Probe Body Material									
	22	316							
	44	C276							
E/R Element Options									
	00	WR40 Wire Loop - 40 mil thickness (10 mil useful probe life)							
	10	WR80 Wire Loop - 80 mil thickness (20 mil useful probe life)							
	20	TU04 Tube Loop - 4 mil thickness (2 mil useful probe life)							
	30	TU08 Tube Loop - 8 mil thickness (4 mil useful probe life)							
	80	SL05 Strip Loop - 5 mil thickness (1.25 mil useful probe life)							
	90	SL10 Strip Loop - 10 mil thickness (2.5 mil useful probe life)							
Seal Type									
	1	Glass							
	2	Teflon®							
	3	Epoxy							
Length									
	06	5.13 inches max. insertion length							
	08	7.13 inches max. insertion length							
	12	11.13 inches max. insertion length							
	18	17.13 inches max. insertion length							
Element Alloy									
	XXt	X	Use Code in Alloy Char						
E/R Probe Options									
	00	No Shield							
	03	Shield							
ER2	2	22	10	1	08	375	03	Example of Probe Ordering #	

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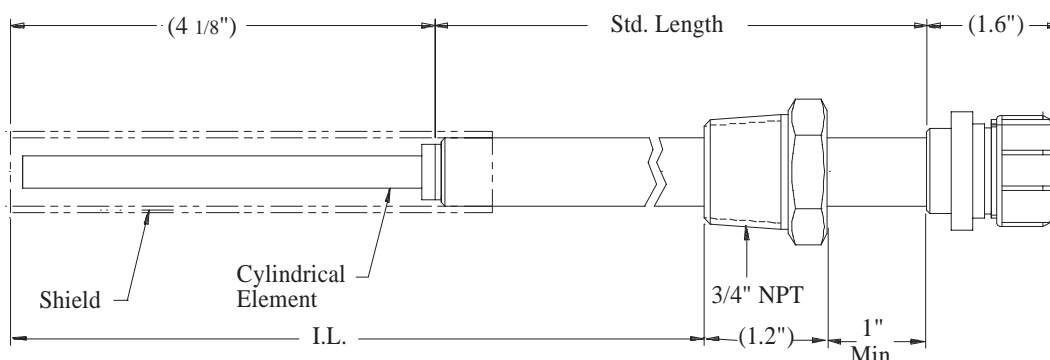
Alloy Chart					
Code	Description	UNS #	Code	Description	UNS #
730 5	100 01	100 010	51S	133 6L S	S3160
350 8	C54 r 1/2M	402 254	1A6	2C6 7	N1027
450 1	C91 r 1M	902 094	065	1A5 loy 62	N0662
81S 6	140 0 S	450 100	140	DC0 A11	C1100
41S 1	030 4 S	334 040	343	DC0 A44	C4430

Note: Not all alloys are available with all element types and seals.

Model ER2100

Electrical Resistance Probe

Fixed Length with 3/4" NPT Pipe Plug and Cylindrical Element



Model ER2100 is a fixed-length, electrical resistance probe with a 3/4" NPT pipe plug. The probe requires process isolation or process shutdown to install and a threaded pipe fitting to mount. The all-welded construction allows the probe to be used in harsh environments. The probe assembly consists of an insertion rod with an element, a hermetically sealed connector, and a 3/4" NPT pipe plug, which are all welded in place. A velocity shield can be provided if required. The insertion length (I.L.) is calculated to the end of the shield or to the end of the element if a shield is not present. Probe length can be specified by the customer. For standard probes, the maximum insertion length is given in the chart below. Several standard elements are available to meet your specific needs.

Specifications:

Probe Body - 316 Stainless Steel

Element Seal - Welded

Fill Material - Ceramic

Temperature Rating - 500°F / 260°C

Pressure Rating - 3000 PSI / 204 Bar

Mounting - 3/4" NPT Pipe Plug

Std. Length	IL (max)
"6"	8.38
"8"	10.38
21" "	14.38
81" "	20.38

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ER2100 Ordering Information

Model							
REe	2	Electrical Resistance Fixed Length Pipe Plug Prob					
Pipe Plug Size							
2g		3/4" NPT Pipe Plu					
3		1" NPT Pipe Plug					
Probe Body Material							
22		316					
44		C276					
E/R Element Options							
500		CT10 Cylindrical - 10 mil thickness (5 mil useful probe life)					
600		CT20 Cylindrical - 20 mil thickness (10 mil useful probe life)					
700		CT50 Cylindrical - 50 mil thickness (25 mil useful probe life)					
Length							
06		8.38 inches max. insertion length					
08		10.38 inches max. insertion length					
12		14.38 inches max. insertion length					
18		20.38 inches max. insertion length					
Element Alloy							
XXt		X		Use Code in Alloy Char			
E/R Probe Options							
00		No shield					
03		Shield					
ER2	2	22	500	08	375	03	Example of Probe Ordering #

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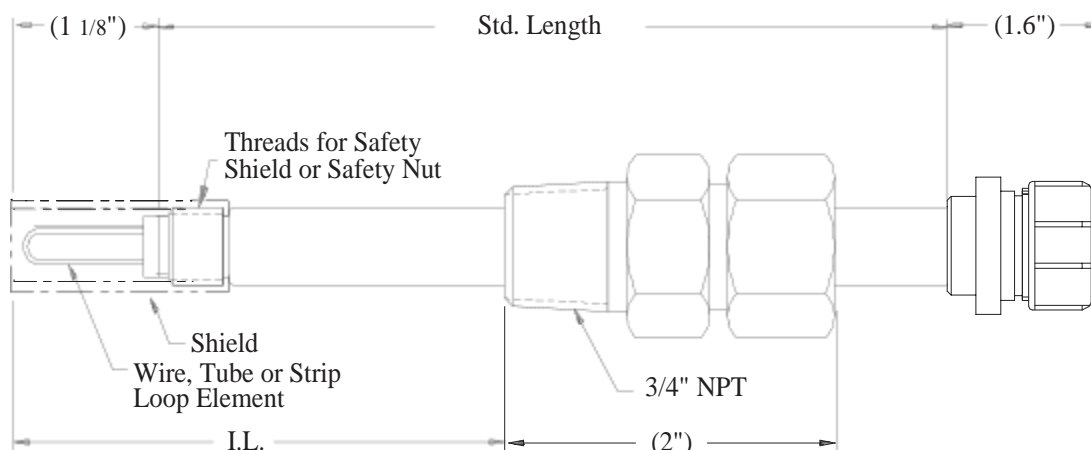
Alloy Chart						
Code	Description	UNS #	Code	Description	UNS #	
730 5	100 01	109 010	51S	133 6L S	S3160	
350 8	C54 r 1/2M	402 254	1A6	2C6 7	N1027	
450 1	C91 r 1M	902 094	065	1A5 loy 62	N0662	
81S 6	140 0 S	459 100	140	DC0 A11	C1100	
41S 1	030 4 S	334 040	343	DC0 A44	C4430	

Note: Not all alloys are available with all element types and seals.

Model ER3000

Electrical Resistance Probe

Adjustable Length with 3/4" NPT Pipe Plug and Loop Element



Model ER3000 is an adjustable-length, electrical resistance probe with a 3/4" NPT compression fitting. The compression fitting allows the probe to be inserted into the process to the required length. The probe requires process isolation or process shutdown to install and a threaded pipe fitting to mount. The probe consists of an insertion rod with an element, a hermetically sealed connector, a 3/4" compression fitting, and a safety nut to prevent blow out. A velocity shield can be added to the assembly if required. The insertion length (I.L.) is calculated to the end of the shield or to the end of the element if a shield is not present. Probe length can be specified by the customer. For standard probes, the maximum insertion length is given in the chart below. Several standard elements are available to meet your specific needs.

Specifications:

Probe Body - 316 Stainless Steel

Element Seal - Glass or Teflon®

Fill Material - Ceramic

Temperature Rating - 500°F / 260°C

Pressure Rating - 1500 PSI / 102 Bar

Mounting - 3/4" NPT Fitting

Std. Length	IL (max)
6"	5.33
8"	7.33
21" "	11.33
81" "	17.33

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ER3000 Ordering Information

Model									
REe	3	Electrical Resistance Adjustable Pipe Plug Prob							
Pipe Plug Size									
2g		3/4" NPT Pipe Plu							
3		1" NPT Pipe Plug							
Probe Body Material									
22		316							
44		C276							
E/R Element Options									
00		WR40 Wire Loop - 40 mil thickness (10 mil useful probe life)							
10		WR80 Wire Loop - 80 mil thickness (20 mil useful probe life)							
20		TU04 Tube Loop - 4 mil thickness (2 mil useful probe life) TU08							
30		Tube Loop - 8 mil thickness (4 mil useful probe life)							
80		SL05 Strip Loop - 5 mil thickness (1.25 mil useful probe life) SL10							
90		Strip Loop - 10 mil thickness (2.5 mil useful probe life)							
A0		FS04 Flush Mount Small - 4 mil thickness (2 mil useful probe life)							
Seal Type									
1		Glass							
2		Teflon®							
3		Epoxy							
Length									
06		5.33 inches max. insertion length							
08		7.33 inches max. insertion length							
12		11.33 inches max. insertion length							
18		17.33 inches max. insertion length							
Element Alloy									
XXt		X		Use Code in Alloy Char					
E/R Probe Options									
00		No Shield							
03		Shield							
ER3	2	22	10	1	08	375	03	Example of Probe Ordering #	

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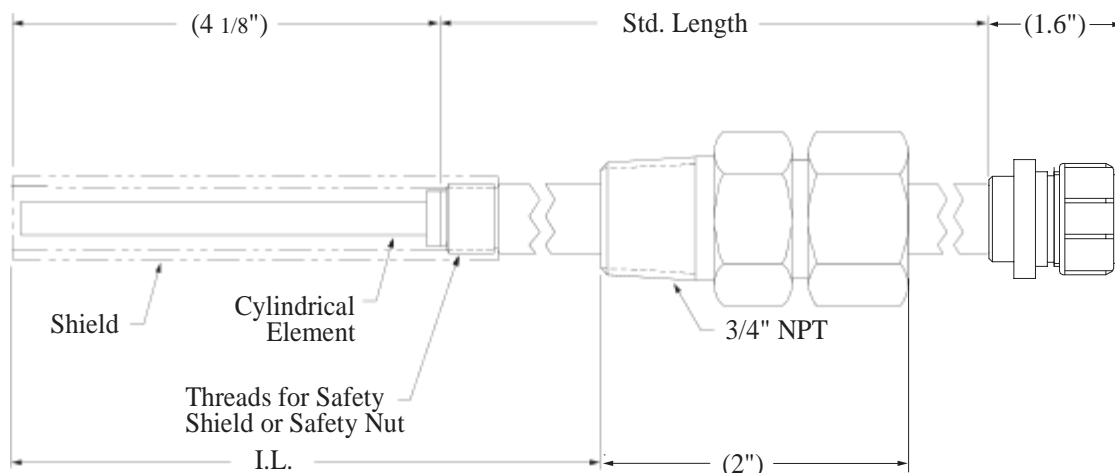
Alloy Chart					
Code	Description	UNS #	Code	Description	UNS #
730 5	100 01	109 010	51S	133 6L S	S3160
350 8	054 r 1/2M	402 254	116	206 7	N1027
450 1	091 r 1M	902 094	065	1A5 loy 62	N0662
81S 6	140 0 S	459 100	140	DC0 A11	C1100
41S 1	030 4 S	334 040	343	DC0 A44	C4430

Note: Not all alloys are available with all element types and seals.

Model ER3100

Electrical Resistance Probe

Adjustable Length with 3/4" NPT Pipe Plug and Cylindrical Element



Model ER3100 is an adjustable-length, electrical resistance probe with a 3/4" NPT compression fitting. The compression fitting allows the probe to be inserted into the process to the required length. The probe requires process isolation or process shutdown to install and a threaded pipe fitting to mount. The all-welded construction allows the probe to be used in harsh environments. The probe assembly consists of an insertion rod with an element, a hermetically sealed connector welded in place, a 3/4" compression fitting, and a safety nut to prevent blow out. A velocity shield can be added to the assembly if required. The insertion length (I.L.) is calculated to the end of the shield or to the end of the element if a shield is not present. Probe length can be specified by the customer. For standard probes, the maximum insertion length is given in the chart below. Several standard elements are available to meet your specific needs.

Specifications:

Probe Body - 316 Stainless Steel

Element Seal - Welded

Fill Material - Ceramic

Temperature Rating - 500°F / 260°C

Pressure Rating - 1500 PSI / 102 Bar

Mounting - 3/4" NPT Pipe Plug

Std. Length	I.L. (Max.)
6"	8.58
8"	10.58
21" "	14.58
81" "	20.58

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ER3100 Ordering Information

Model REe							
3	Electrical Resistance Adjustable Length Pipe Plug Prob						
	Pipe Plug Size 2g						
	3	3/4" NPT Pipe Plu 1" NPT Pipe Plug					
		Probe Body Material					
	22	316					
	44	C276					
		E/R Element Options					
	500	CT10 Cylindrical - 10 mil thickness (5 mil useful probe life)					
	600	CT20 Cylindrical - 20 mil thickness (10 mil useful probe life)					
	700	CT50 Cylindrical - 50 mil thickness (25 mil useful probe life)					
		Length					
	06	8.58 inches max. insertion length					
	08	10.58 inches max. insertion length					
	12	14.58 inches max. insertion length					
	18	20.58 inches max. insertion length					
		Element Alloy XXt					
	X	Use Code in Alloy Char					
		E/R Probe Options					
	00	No shield					
	03	Shield					
ER3	2	22	500	08	375	03	Example of Probe Ordering #

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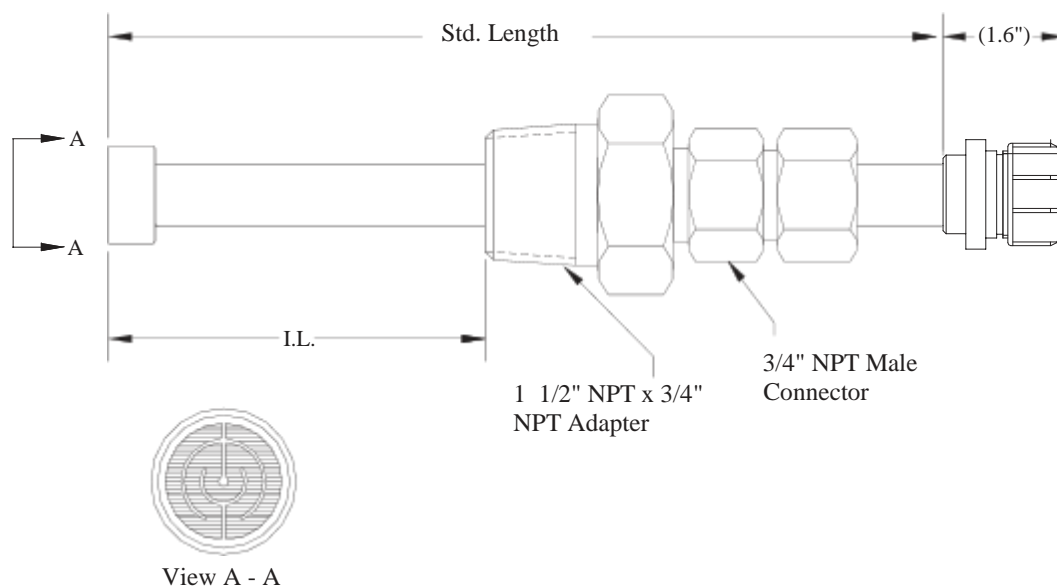
Alloy Chart					
Code	Description	UNS #	Code	Description	UNS #
730 5	100 01	109 010	51S	133 6L S	S3160
350 8	C54 r 1/2M	442 254	146	2C6 7	N1027
450 1	C91 r 1M	942 094	065	IA5 loy 62	N0662
81S 6	140 0 S	459 100	140	DC0 A11	C1100
41S 1	030 4 S	354 040	343	DC0 A44	C4430

Note: Not all alloys are available with all element types and seals.

Model ER3200

Electrical Resistance Probe

Adjustable Length with 1 1/2" NPT Pipe Plug and Flush Element



Model ER3200 is an adjustable-length, electrical resistance probe with a 3/4" NPT compression fitting combined with a 3/4" to 1 1/2" adapter. The compression fitting allows the probe to be inserted into the process to the required length. The probe requires process isolation or process shutdown to install and a threaded pipe fitting to mount. The probe assembly consists of an insertion rod with an element, a hermetically sealed connector welded in place, a 3/4" compression fitting, and a 3/4" to 1 1/2" adapter. The adapter can not be removed from the compression fitting. The insertion length (I.L.) is calculated to the end of the element. Probe length can be specified by the customer. For standard probes, the maximum insertion length is given in the chart below. Several standard elements are available to meet your specific needs.

Specifications:

Probe Body - 316 Stainless Steel

Element Seal - Epoxy

Fill Material - Ceramic

Temperature Rating - 500°F / 260°C

Pressure Rating - 1500 PSI / 102 Bar

Mounting - 1 1/2" NPT Pipe Plug

Std. Length	IL (max)
6"	3
8"	5
21" "	9
81" "	15

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ER3200 Ordering Information

Model							
ER3	Electrical Resistance Adjustable Length Pipe Plug Probe						
	Pipe Plug Size						
	7	1 1/2" NPT Pipe Plug					
		Probe Body Material					
	22	316					
	44	C276					
		E/R Element Options					
	C03	S05 Flush Mount - 5 mil thickness (2.5 mil useful probe life)					
	D03	S10 Flush Mount -1- 10 mil thickness (5 mil useful probe life)					
	E03	S20 Flush Mount - 20 mil thickness (10 (10 mil useful probe life)					
	F03	S40 Flush Mount - 40 mil thickness (20 mil useful probe life)					
		Length					
	06	3 inches max. insertion length					
	08	5 inches max. insertion length					
	12	9 inches max. insertion length					
	18	15 inches max. insertion length					
		Element Alloy					
	XXX	Use Code in Alloy Chart					
		E/R Probe Options					
	00	No shield					
ER3	7	22	C03	08	375	00	Example of Probe Ordering #

For alloys, sizes, or other special requirements not listed, contact our sales department.

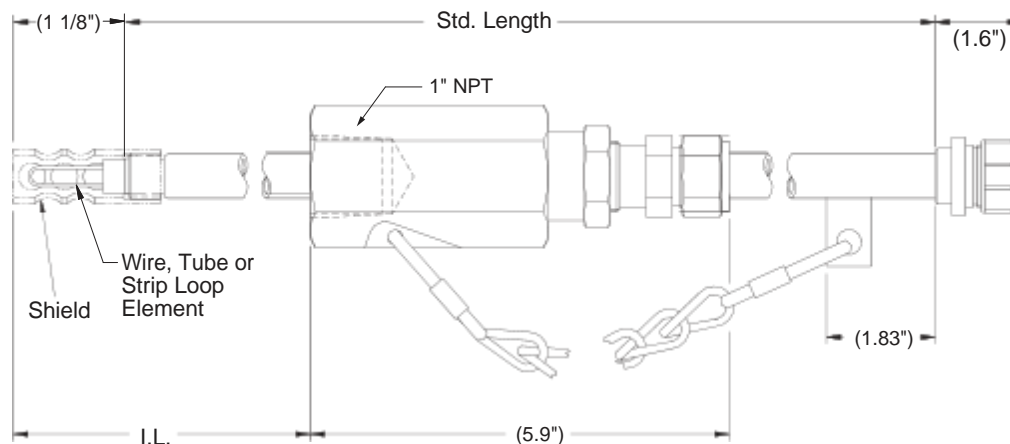
Alloy Chart					
Code	Description	UNS #	Code	Description	UNS #
730 5	100 01	109 010	51S	133 6L S	S3160
350 8	054 r 1/2M	442 254	146	206 7	N1027
450 1	091 r 1M	942 094	065	1A5 1oy 62	N0662
81S 6	140 0 S	459 100	140	DC0 A11	C1100
41S 1	030 4 S	364 040	343	DC0 A44	C4430

Note: Not all alloys are available with all element types and seals.

Model ER4000

Electrical Resistance Probe

Retractable with Packing Gland and Loop Element



Model ER4000 is a retractable, electrical resistance probe commonly used in field and plant applications. A specially designed packing gland is used with the probe for insertion into or retraction from a pressurized system without a process shutdown. Standard packing material in the packing gland is Teflon®. Grafoil packing can be provided if requested. When the probe element requires replacement, the packing gland assembly may be reused. (Probe packing should also be replaced at this time.) The probe is designed to mount onto a 1" piping system, but can easily be adapted to fit your specific requirements. The probe assembly consists of a replaceable insertion rod with an element, a hermetically sealed connector welded in place, and a packing gland. A safety chain and safety nut are also provided to prevent blowout. A velocity shield can be added to the assembly if required. The insertion length (I.L.) is calculated to the end of the shield or to the end of the element if a shield is not present. Probe length can be specified by the customer. For standard probes, the maximum insertion lengths is given in the chart below. Several standard elements are available to meet your specific needs.

Specifications:

Probe Body - 316 Stainless Steel

Element Seal - Glass or Teflon®

Fill Material - Ceramic

Temperature Rating - 500° F / 260° C

Pressure Rating - 1500 PSI / 102 Bar

Mounting - 1" Full Port Valve (Min.)

Std. Length	IL (max)
42" "	17.60
03" "	23.60
63" "	29.60
24" "	35.60

The Easy Tool is required for probe insertion or retraction in systems with pressure over 150 pounds.

Metal Samples Corrosion Monitoring Systems

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ER4000 Ordering Information

Model								
ER45	Electrical Resistance 1" Female NPT Probe, Packing Gland with Teflon®							
ER75	Electrical Resistance 1" Female NPT Probe, Packing Gland with Grafoil							
ER00	Electrical Resistance Replacement Insertion Rod							
Probe Body Material								
26	31							
4	C276							
Packing Gland Material								
0	N/A (replacement insertion rod)							
2	316							
4	C276							
E/R Element Options								
00	WR40 Wire Loop - 40 mil thickness (10 mil useful probe life)							
10	WR80 Wire Loop - 80 mil thickness (20 mil useful probe life)							
20	TU04 Tube Loop - 4 mil thickness (2 mil useful probe life)							
30	TU08 Tube Loop - 8 mil thickness (4 mil useful probe life)							
80	SL05 Strip Loop - 5 mil thickness (1.25 mil useful probe life)							
90	SL10 Strip Loop - 10 mil thickness (2.5 mil useful probe life)							
Seal Type								
1	Glass							
2	Teflon®							
3	Epoxy							
Length								
24	17.60 inches max. insertion length							
30	23.60 inches max. insertion length							
36	29.60 inches max. insertion length							
42	35.60 inches max. insertion length							
Element Alloy								
XXt	X	Use Code in Alloy Char						
E/R Probe Options								
00	No Shield							
01	Shield, coupon adaptor (118), hardware							
02	Shield, coupon adaptor (220), hardware							
03	Shield							
ER45	2	2	10	1	36	375	02	Example of Probe Ordering #

For alloys, sizes, or other special requirements not listed, contact our sales department.

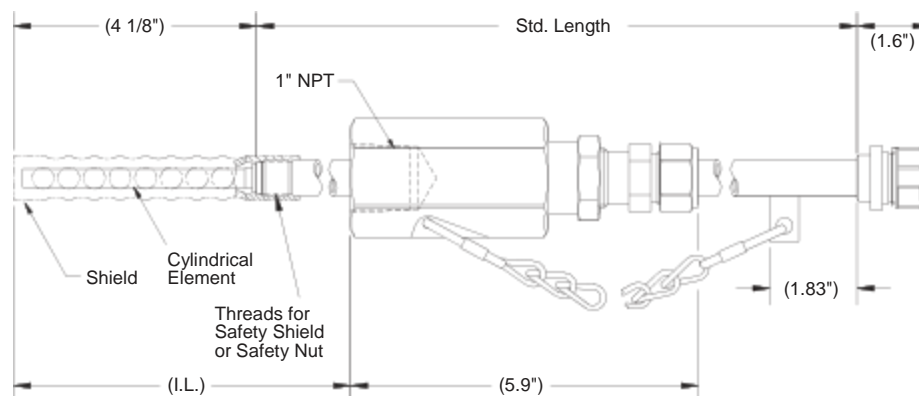
Alloy Chart					
Code	Description	UNS #	Code	Description	UNS #
730 5	100 01	100 010	51S	133 6L S	S3160
350 8	C54 r 1/2M	402 254	1A6	2C6 7	N1027
450 1	C91 r 1M	902 094	066	1A5 loy 62	N0662
81S 6	140 0 S	409 100	140	DC0 A11	C1100
41S 1	030 4 S	304 040	343	DC0 A44	C4430

Note: Not all alloys are available with all element types and seals.

Model ER4100

Electrical Resistance Probe

Retractable with Packing Gland and Cylindrical Element



Model ER4100 is a retractable, electrical resistance probe commonly used in field and plant applications. The all-welded design allows the probe to be used in harsh environments. A specially designed packing gland is used with the probe for insertion into or retraction from a pressurized system without a process shutdown. Standard packing material in the packing gland is Teflon[®], however, grafoil packing can be provided for high temperature applications*. When the probe element requires replacement, the packing gland assembly may be reused. (Probe packing should also be replaced at this time.) The probe is designed to mount onto a 1" piping system, but can easily be adapted to fit your specific requirements. The probe assembly consists of a replaceable insertion rod with an element, a hermetically sealed connector welded in place, and a packing gland. A safety chain and safety nut are also provided to prevent blowout. A velocity shield can be added to the assembly if required. The insertion length (I.L.) is calculated to the end of the shield or to the end of the element if a shield is not present. Probe length can be specified by the customer. For standard probes, the maximum insertion length is given in the chart below. Several standard elements are available to meet your specific needs.

Specifications:

Probe Body - 316 Stainless Steel

Element Seal - Welded

Fill Material - Ceramic

Temperature Rating - 500°F / 260°C - Teflon[®]
850°F / 454°C - Grafoil*

Pressure Rating - 1500 PSI / 102 Bar

Mounting - 1" Full Port Valve (Min.)

Std. Length	IL (max)
42" "	20.85
03" "	26.85
63" "	32.85
24" "	38.85

* Applications above 500°F / 260°C require the use of a high-temperature element. Contact our sales department for further details.

The Easy Tool is required for probe insertion or retraction in systems with pressure over 150 pounds.

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ER4100 Ordering Information

Model							
ER45	Electrical Resistance 1" Female NPT Probe, Packing Gland with Teflon®						
ER75	Electrical Resistance 1" Female NPT Probe, Packing Gland with Grafoil						
ER00	Electrical Resistance Replacement Insertion Rod						
Probe Body Material							
26	31						
4	C276						
Packing Gland Material							
0	N/A (replacement insertion rod)						
2	316						
4	C276						
E/R Element Options							
500	CT10 Cylindrical - 10 mil thickness (5mil useful probe life)						
600	CT20 Cylindrical - 20 mil thickness (10 mil useful probe life)						
700	CT50 Cylindrical - 50 mil thickness (25 mil useful probe life)						
Length							
24	20.85 inches max. insertion length						
30	26.85 inches max. insertion length						
36	32.85 inches max. insertion length						
42	38.85 inches max. insertion length						
Element Alloy							
XXt	X	Use Code in Alloy Char					
E/R Probe Options							
00	No shield						
01	Shield, coupon adaptor (118), hardware						
02	Shield, coupon adaptor (220), hardware						
03	Shield						
ER45	2	2	700	36	375	02	Example of Probe Ordering #

For alloys, sizes, or other special requirements not listed, contact our sales department.

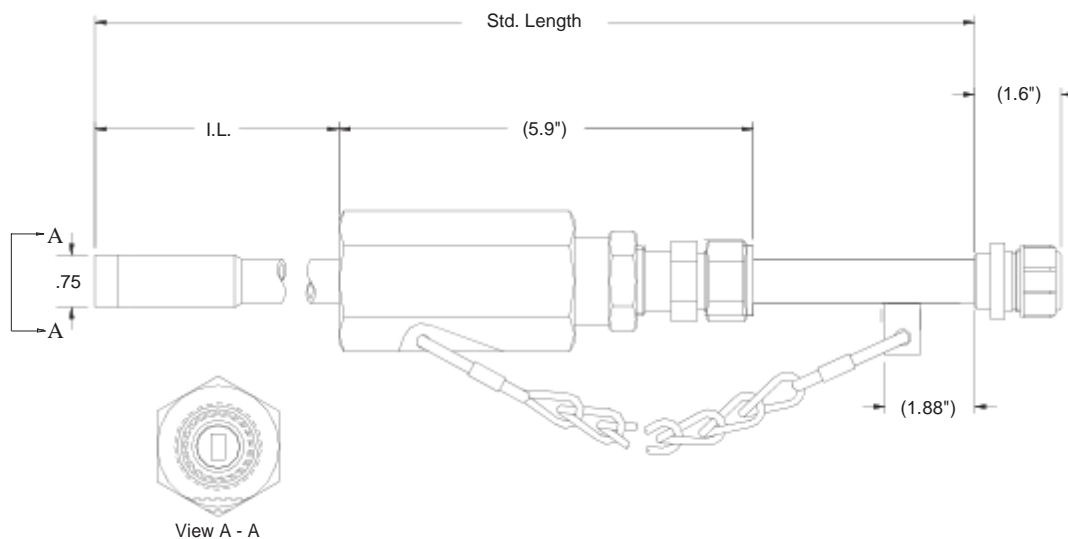
Alloy Chart					
Code	Description	UNS #	Code	Description	UNS #
730 5	100 01	100 010	51S	133 6L S	S3160
350 8	054 r 1/2M	402 254	1A6	206 7	N1027
450 1	081 r 1M	902 094	065	1A5 loy 62	N0662
81S 6	140 0 S	409 100	140	DC0 A11	C1100
41S 1	030 4 S	334 040	343	DC0 A44	C4430

Note: Not all alloys are available with all element types and seals.

Model ER4200

Electrical Resistance Probe

Retractable with Packing Gland and Small Flush Element



Model ER4200 is a retractable, flush-mount, electrical resistance probe ideally suited for applications where the probe element needs to be flush with the wall of the pipe. A specially designed packing gland is used with the probe for insertion to or retraction from a pressurized system without a process shutdown. Standard packing material in the packing gland is Teflon[®]. Grafoil packing can be provided if requested. The probe is designed to mount into a 1" piping system, but can easily be adapted to fit your specific requirements. The probe consists of an insertion rod with an element, a hermetically sealed connector welded in place, and a packing gland. The insertion length (I.L.) is calculated to the end of the element. Probe length can be specified by the customer. For standard probes, the maximum length is given in the chart below. Several standard elements are available to meet your specific needs.

Specifications:

Probe Body - 316 Stainless Steel

Element Seal - Glass or Epoxy

Fill Material - Epoxy

Temperature Rating - 500° F / 260° C

Pressure Rating - 1500 PSI / 102 Bar

Mounting - 1" Full Port Valve (Min.)

Std. Length	IL (max)
42" "	16.22
03" "	22.22
63" "	28.22
24" "	34.22

The [Easy Tool](#) is required for probe insertion or retraction in systems with pressure over 150 pounds.

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ER4200 Ordering Information

Model							
ER45	Electrical Resistance 1" Female NPT Probe, Packing Gland with Teflon®						
ER75	Electrical Resistance 1" Female NPT Probe, Packing Gland with Grafoil						
Probe Body Material							
226	31						
44	C276						
E/R Element Options							
A0	FS04 Flush Mount - 4 mil thickness (2 mil useful probe life)						
B0	FS08 Flush Mount - 8 mil thickness (4 mil useful probe life)						
H0	FS20 Flush Mount - 20 mil thickness (10 mil useful probe life)						
Seal Type							
1	Glass						
3	Epoxy						
Length							
24	16.22 inches max. insertion length						
30	22.22 inches max. insertion length						
36	28.22 inches max. insertion length						
42	34.22 inches max. insertion length						
Element Alloy							
XXt	X	Use Code in Alloy Char					
E/R Probe Options							
00A	N/						
ER45	22	A0	1	36	375	00	Example of Probe Ordering #

For alloys, sizes, or other special requirements not listed, contact our sales department.
Safety clamp must be ordered separately.

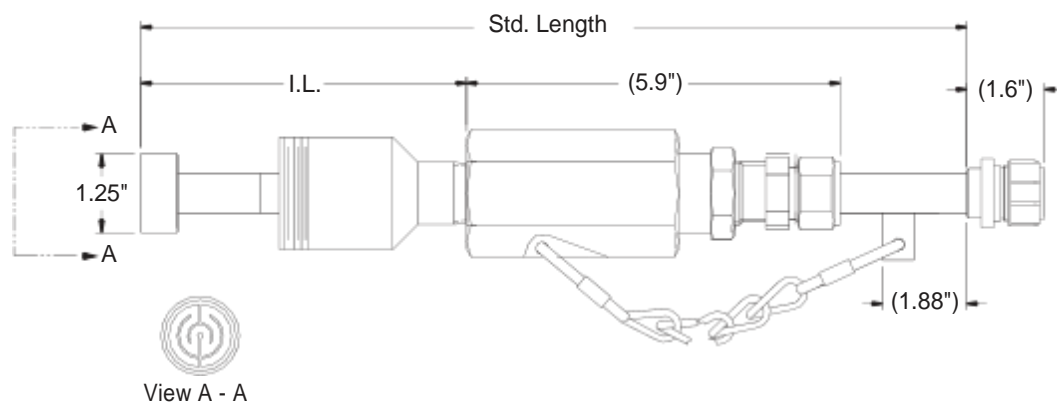
Alloy Chart						
Code	Description	UNS #	Code	Description	UNS #	UNS #
730 5	100 01	109 010	51S	133 6L S		S3160
350 8	C54 r 1/2M	402 254	1A6	2C6 7		N1027
450 1	C91 r 1M	902 094	065	1A5 loy 62		N0662
81S 6	140 0 S	459 100	140	DC0 A11		C1100
41S 1	030 4 S	324 040	343	DC0 A44		C4430

Note: Not all alloys are available with all element types and seals.

Model ER4210

Electrical Resistance Probe

Retractable with Packing Gland and Large Flush Element



Model ER4210 is a retractable, flush-mount, electrical resistance probe ideally suited for applications where the probe element needs to be flush with the wall of the pipe. A specially designed packing gland is used with the probe for insertion to or retraction from a pressurized system without a process shutdown. Standard packing material in the packing gland is Teflon[®]. The probe is designed to mount into a 1½" piping system, but can easily be adapted to fit larger requirements. The probe consists of an insertion rod with an element, a hermetically sealed connector welded in place, and a packing gland with a 1" to 1½" swage nipple. The insertion length (I.L.) is calculated to the end of the element. Probe length can be specified by the customer. For standard probes, the maximum length is given in the chart below. Several standard elements are available to meet your specific needs.

Specifications:

Probe Body - 316 Stainless Steel

Element Seal - Epoxy

Fill Material - Epoxy

Temperature Rating - 500°F / 260°C

Pressure Rating - 1500 PSI / 102 bar

Mounting - 1½" Full Port Valve (Min.)

Std. Length	IL (max)
42" "	11.22
03" "	17.22
63" "	23.22
24" "	29.22

The [Easy Tool](#) is required for probe insertion or retraction in systems with pressure over 150 pounds.

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ER4210 Ordering Information

Model							
REe	B	Electrical Resistance Pipe Plug Probe with Packing Gland & Swage Nippl					
Pipe Plug Size							
6g		2" NPT Pipe Plu					
7		1 1/2" NPT Pipe Plug					
Probe Body Material							
22		316					
44		C276					
E/R Element Options							
C03		S5 Flush Mount - 5 mil thickness (2.5 mil useful probe life)					
D03		S10 Flush Mount - 10 mil thickness (5 mil useful probe life)					
E03		S20 Flush Mount - 20 mil thickness (10 mil useful probe life)					
F03		S40 Flush Mount - 40 mil thickness (20 mil useful probe life)					
Length							
24		11.22 inches max. insertion length					
30		17.22 inches max. insertion length					
36		23.22 inches max. insertion length					
42		29.22 inches max. insertion length					
Element Alloy							
XXt		X		Use Code in Alloy Char			
E/R Probe Options							
00A		N/					
ERB	6	22	C03	24	375	00	Example of Probe Ordering #

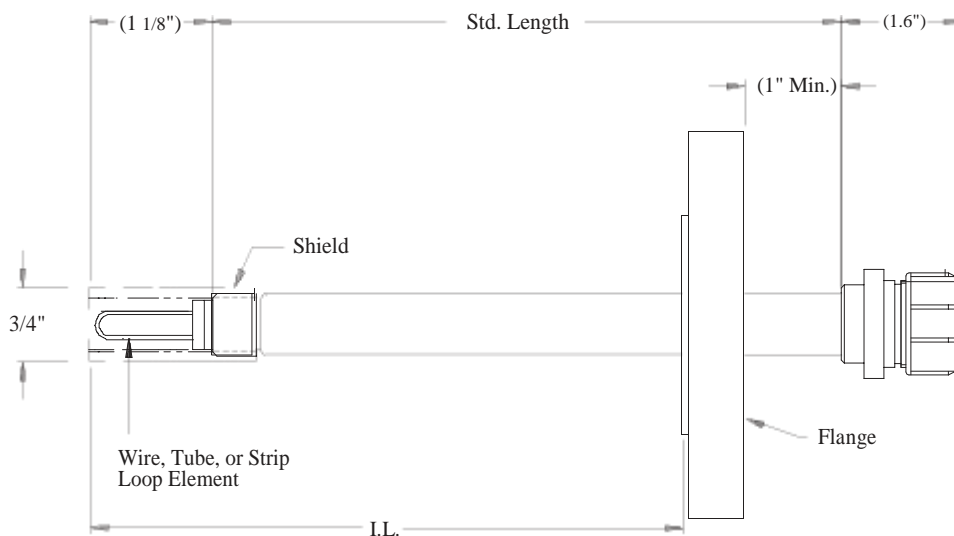
For alloys, sizes, or other special requirements not listed, contact our sales department.
Safety clamp must be ordered separately.

Alloy Chart						
Code	Description	UNS #	Code	Description	UNS #	
730 5	100 01	100 010	51S	133 6L S	S3160	
35o 8	C54 r 1/2M	402 254	1A6	2C6 7	N1027	
45o 1	C91 r 1M	902 094	065	1A5 loy 62	N0662	
81S 6	140 0 S	459 100	140	DC0 A11	C1100	
41S 1	030 4 S	334 040	343	DC0 A44	C4430	

Note: Not all alloys are available with all element types and seals.

Model ER6000

Electrical Resistance Probe Fixed Length with Flange and Loop Element



Model ER6000 is a fixed-length, flange-mounted, electrical resistance probe. The probe is ideally suited for use in high pressure and/or hazardous applications where threaded fittings are not available or not recommended. Process shutdown or process isolation is required for installation and inspection. The probe assembly consists of an insertion rod with an element, a hermetically sealed connector, and a flange (as specified by customer), which are all welded in place. A velocity shield can be added to the assembly if required. A mechanical seal can also be added for additional safety. Insertion length (I.L.) is calculated to the end of the shield and, in this case, is based on a 1" total flange thickness. Customers can specify any length required. For standard probes, the maximum insertion length is given in the chart below. Several standard elements and flange sizes are available to meet your specific needs.

Specifications:

Probe Body - 316 Stainless Steel

Element Seal - Glass or Teflon®

Fill Material - Ceramic

Temperature Rating - 500°F / 260°C

Pressure Rating - According to Flange Rating

Mounting - Mating Flange

Std. Length	IL (max)
8"	7.125
21" "	11.125
81" "	17.125
42" "	23.125

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ER6000 Ordering Information

Model									
REe 6	Electrical Resistance Fixed Length Probe with Flang								
Flange Size									
1	1" Flange								
2	1 1/2" Flange								
3	2" Flange								
4	3" Flange								
5	4" Flange								
6	1/2" Flange								
7	6" Flange								
Probe Body Material									
22	316								
44	C276								
E/R Element Options									
0	WR40 Wire Loop - 40 mil thickness (10 mil useful probe life)								
1	WR80 Wire Loop - 80 mil thickness (20 mil useful probe life)								
2	TU04 Tube Loop - 4 mil thickness (2 mil useful probe life)								
3	TU08 Tube Loop - 8 mil thickness (4 mil useful probe life)								
8	SL05 Strip Loop - 5 mil thickness (1.25 mil useful probe life)								
9	SL10 Strip Loop - 10 mil thickness (2.5 mil useful probe life)								
Flange Pressure Rating									
1	150 lb.								
2	300 lb.								
3	600 lb.								
4	1200 lb.								
5	1500 lb.								
6	900 lb.								
Seal Type									
1	Glass								
2	Teflon®								
3	Epoxy								
Length									
08	7.125 inches max. insertion length								
12	11.125 inches max. insertion length								
18	17.125 inches max. insertion length								
24	23.125 inches max. insertion length								
Element Alloy									
XXt	X	Use Code in Alloy Char							
E/R Probe Options									
00	No shield								
01	Shield, coupon adapter (118), hardware								
02	Shield, coupon adapter (220), hardware								
03	Shield								
ER6	2	22	3	1	2	08	375	03	Example of Probe Ordering #

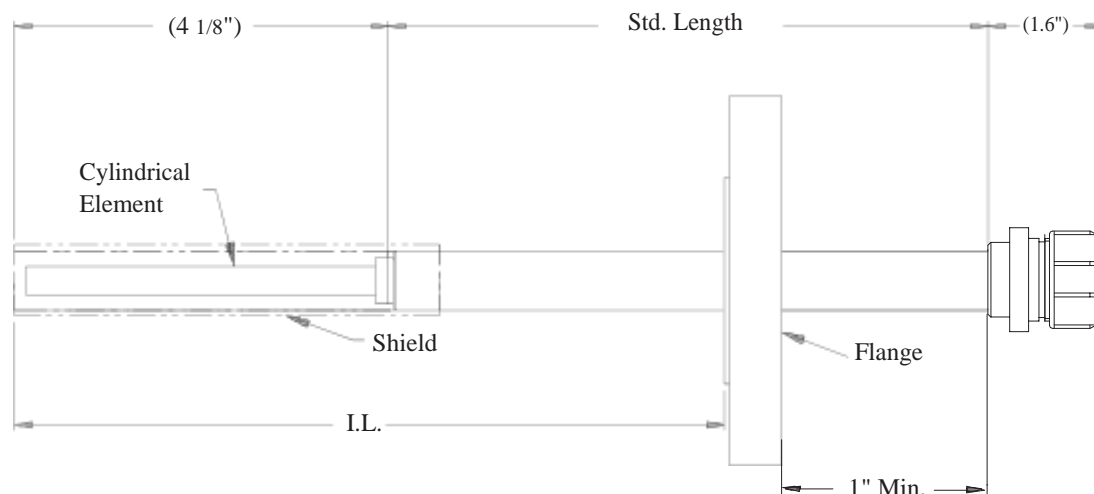
For alloys, sizes, or other special requirements not listed, contact our sales department.

Alloy Chart					
Code	Description	UNS #	Code	Description	UNS #
730 5	100 01	100 010	51S	133 6L S	S3160
350 8	054 r 1/2M	402 254	146	206 7	N1027
450 1	031 r 1M	902 094	085	1A5 loy 62	N0662
81S 6	140 0 S	459 100	140	DC0 A11	C1100
41S 1	000 4 S	334 040	343	DC0 A44	C4430

Note: Not all alloys are available with all element types and seals.

Model ER6100

Electrical Resistance Probe Fixed Length with Flange and Cylindrical Element



Model ER6100 is a fixed-length, flange-mounted, electrical resistance probe. The probe is ideally suited for use in high pressure and/or hazardous applications where threaded fittings are not available or not recommended. Process shutdown or process isolation is required to install and inspect. The all-welded construction allows the probe to be used in harsh environments. The probe assembly consists of an insertion rod with an element, a hermetically sealed connector, and a flange (as specified by customer), which are all welded in place. A mechanical seal and a velocity shield can be added if required. The insertion length (I.L.) is calculated to the end of the shield or to the end of the element if a shield is not present. Probe length can be specified by the customer. For standard probes, the maximum insertion length is given in the chart below and, in this case, is based on a 1" total flange thickness. Several standard elements are available to meet your specific needs.

Specifications:

Probe Body - 316 Stainless Steel

Element Seal - Welded

Fill Material - Ceramic

Temperature Rating - 500°F / 260°C

Pressure Rating - According to Flange Rating

Mounting - Mating Flange

Std. Length	IL (max)
8"	10
21" "	14
81" "	20
42" "	26

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ER6100 Ordering Information

Model								
REe 6	Electrical Resistance Fixed Length Probe with Flang							
Flange Size								
1	1" Flange							
2	1 1/2" Flange							
3	2" Flange							
4	3" Flange							
5	4" Flange							
6	1/2" Flange							
7	6" Flange							
Probe Body Material								
22	316							
44	C276							
E/R Element Options								
5	CT10 Cylindrical - 10 mil thickness (5 mil useful probe life)							
6	CT20 Cylindrical - 20 mil thickness (10 mil useful probe life)							
7	CT50 Cylindrical - 50 mil thickness (25 mil useful probe life)							
Flange Pressure Rating								
10	150 lb.							
20	300 lb.							
30	600 lb.							
40	1200 lb.							
50	1500 lb.							
60	900 lb.							
Length								
08	10 inches max. insertion length							
12	14 inches max. insertion length							
18	20 inches max. insertion length							
24	26 inches max. insertion length							
Element Alloy								
XXt	X	Use Code in Alloy Char						
E/R Probe Options								
00	No shield							
01	Shield, coupon adapter (118), hardware							
02	Shield, coupon adapter (220), hardware							
03	Shield							
ER6	2	22	7	20	08	375	03	Example of Probe Ordering #

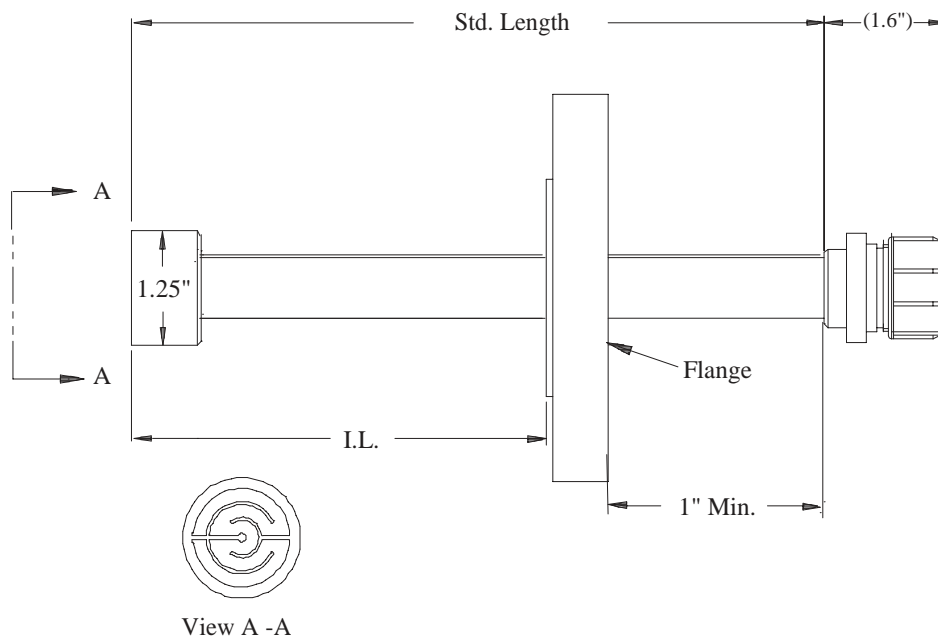
For alloys, sizes, or other special requirements not listed, contact our sales department.

Alloy Chart					
Code	Description	UNS #	Code	Description	UNS #
730 5	100 01	100 010	51S	133 6L S	S3160
350 8	C24 r 1/2M	402 254	1A6	2C6 7	N1027
450 1	C01 r 1M	902 094	065	1A5 loy 62	N0662
81S 6	140 0 S	409 100	140	DC0 A11	C1100
41S 1	000 4 S	354 040	343	DC0 A44	C4430

Note: Not all alloys are available with all element types and seals.

Model ER6200

Electrical Resistance Probe Fixed Length with Flange and Flush Element



Model ER6200 is a fixed-length, flange-mounted, electrical resistance probe. The probe is ideally suited for use in high pressure and/or hazardous applications where threaded fittings are not available or not recommended. Process shutdown or process isolation is required to install and inspect. The all-welded construction allows the probe to be used in harsh environments. The probe assembly consists of an insertion rod with an element, a hermetically sealed connector, and a flange (as specified by customer), which are all welded in place. A mechanical seal can be added if required. The insertion length (I.L.) is calculated to the end of the element. Probe length can be specified by the customer. For standard probes, the maximum insertion length is given in the chart below and, in this case, is based on a 1" total flange thickness. Several standard elements are available to meet your specific needs.

Specifications:

Probe Body - 316 Stainless Steel

Element Seal - Epoxy

Fill Material - Ceramic

Temperature Rating - 500°F / 260°C

Pressure Rating - According to Flange Rating

Mounting - Mating Flange

Std. Length	IL (max)
	6
21" "	10
81" "	16
42" "	22

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ER6200 Ordering Information

Model									
REe 6	Electrical Resistance Fixed Length Probe with Flang								
Flange Size									
1	1" Flange								
2	1 1/2" Flange								
3	2" Flange								
4	3" Flange								
5	4" Flange								
6	1/2" Flange								
7	6" Flange								
Probe Body Material									
22	316								
44	C276								
E/R Element Options									
C	S05 Flush Mount - 5 mil thickness (2.5 mil useful probe life)								
D	S10 Flush Mount - 10 mil thickness (5 mil useful probe life)								
E	S Flush Mount - 20 mil thickness (10 mil useful probe life)								
F	S40 Flush Mount - 40 mil thickness (20 mil useful probe life)								
Flange Pressure Rating									
13	150 lb.								
23	300 lb.								
33	600 lb.								
43	1200 lb.								
53	1500 lb.								
63	900 lb.								
Length									
08	6 inches max. insertion length								
12	10 inches max. insertion length								
18	16 inches max. insertion length								
24	22 inches max. insertion length								
Element Alloy									
XXt X	Use Code in Alloy Char								
E/R Probe Options									
00A	N/								
ER6	2	22	C	13	08	375	00	Example of Probe Ordering #	

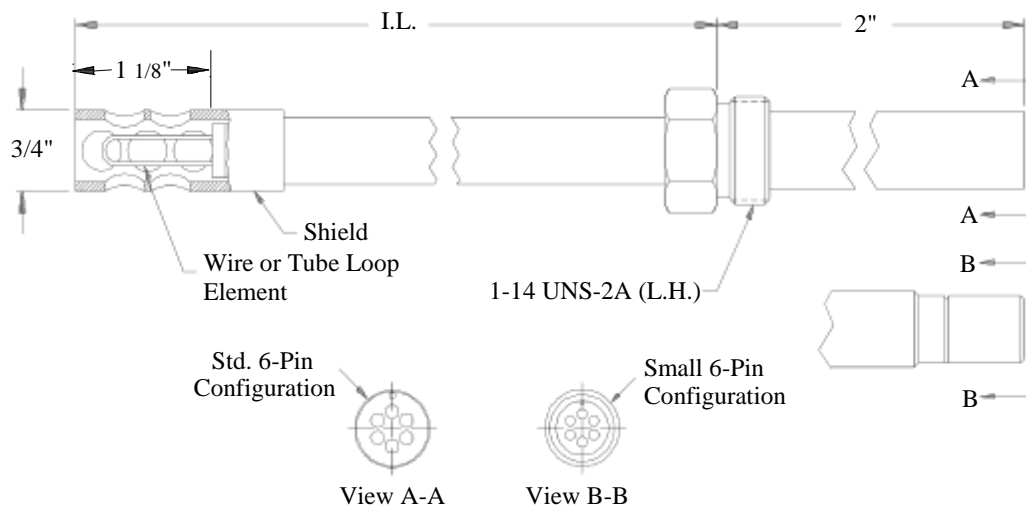
For alloys, sizes, or other special requirements not listed, contact our sales department.

Alloy Chart					
Code	Description	UNS #	Code	Description	UNS #
730 5	100 01	100 010	51S	133 6L S	S3160
350 8	034 r 1/2M	402 254	1A6	2C6 7	N1027
450 1	031 r 1M	902 094	065	1A5 loy 62	N0662
81S 6	140 0 S	459 100	140	DC0 A11	C1100
41S 1	000 4 S	354 040	343	DC0 A44	C4430

Note: Not all alloys are available with all element types and seals.

Model ER7000

Electrical Resistance Probe, Retrievable with Loop Element for High Pressure (HP™ and MH™) Access Systems



Model ER7000 is a fixed-length, retrievable, electrical resistance probe for use with HP™ and MH™ high pressure access systems. The probe assembly consists of an insertion rod with an element, a hermetically sealed connector, and a hollow plug nut, which are all welded in place. A velocity shield can be added to the assembly if required. The hollow plug nut on the probe screws into the hollow plug of the access system. This allows the probe to be installed in the process, using a retrieval tool and service valve, without process shutdown. The insertion length (I.L.) can range from 2.875" up to any length specified by the customer. Insertion length is calculated by the formula:

$$I.L. = PD + WT + 1.75''$$

(where PD = penetration depth, WT = wall thickness)

Note: Formula valid for access fitting heights of 5.25" (HP) and 5.5" (MH).

Several standard elements are available to meet your specific needs. Probe adaptors are available and must be ordered separately.

Specifications:

Probe Body - 316 Stainless Steel

Element Seal - Glass

Fill Material - Ceramic

Temperature Rating - 500°F / 260°C

Pressure Rating - 3600 PSI / 245 Bar

Mounting - High Pressure (HP™ or MH™) Access System with Hollow Plug

Metal Samples Corrosion Monitoring Systems

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ER7000 Ordering Information

Model								
RHP	Electrical Resistance Probe for High Pressure (H TM and MH TM) Access Systems							
Mounting Material								
2	316							
3	C276							
Connector Type								
1	Small connector							
2	Standard connector							
E/R Element Options								
0	WR40 Wire Loop - 40 mil thickness (10 mil useful probe life)							
1	WR80 Wire Loop - 80 mil thickness (20 mil useful probe life)							
2	TU04 Tube Loop - 4 mil thickness (2 mil useful probe life)							
3	TU08 Tube Loop - 8 mil thickness (4 mil useful probe life)							
Seal Type								
1	Glass							
2	Teflon®							
3	Epoxy							
Length								
XXt	XX	Length in inches, stated in 2 decimal place form (Ex: 7¼" = 0725)						
Element Alloy								
XXt	X	Use Code in Alloy Char						
E/R Probe Options								
00	No shield Standard							
01	shield							
02	Hi-velocity shield							
03	Coupon holding shield							
HR	2	2	3	1	0725	375	03	Example of Probe Ordering #

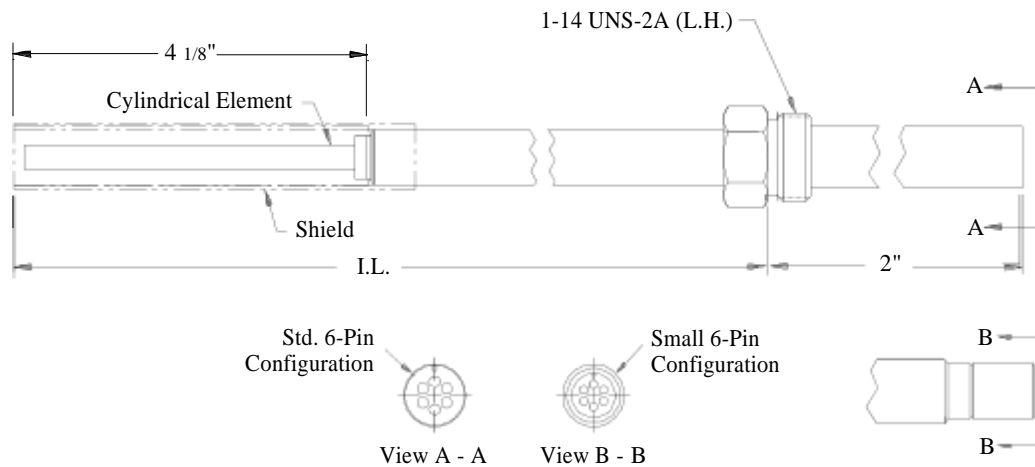
For alloys, sizes, or other special requirements not listed, contact our sales department.

Alloy Chart					
Code	Description	UNS #	Code	Description	UNS #
730 5	100 01	100 010	51S	133 6L S	S3160
350 8	CS4 r 1/2M	402 254	1A6	2C6 7	N1027
450 1	CS1 r 1M	902 094	065	1A5 loy 62	N0662
81S 6	140 0 S	459 100	140	DC0 A11	C1100
41S 1	000 4 S	354 040	340	DC0 A44	C4430

Note: Not all alloys are available with all element types and seals.

Model ER7100

Electrical Resistance Probe, Retrievable with Cylindrical Element for High Pressure (HP™ and MH™) Access Systems



Model ER7100 is a fixed-length, retrievable, electrical resistance probe for use with HP™ and MH™ high pressure access systems. The all-welded construction of the element makes it ideal for harsh environments. The probe assembly consists of an insertion rod with an element, a hermetically sealed connector, and a hollow plug nut, which are all welded in place. A velocity shield can be added to the assembly if required. The hollow plug nut on the probe screws into the hollow plug of the access system. This allows the probe to be installed in the process, using a retrieval tool and service valve, without process shutdown. The insertion length (I.L.) can range from 5" up to any length specified by the customer. Insertion length is calculated by the formula:

$$\text{I.L.} = \text{PD} + \text{WT} + 1.75''$$

(where PD = penetration depth, WT = wall thickness)

Note: Formula valid for access fitting heights of 5.25" (HP) and 5.5" (MH).

Several standard elements are available to meet your specific needs. Probe adaptors are available and must be ordered separately.

Specifications:

Probe Body - 316 Stainless Steel

Element Seal - Welded

Fill Material - Ceramic

Temperature Rating - 500°F / 260°C

Pressure Rating - 3600 PSI / 245 Bar

Mounting - High Pressure (HP™ or MH™) Access System with Hollow Plug

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ER7100 Ordering Information

Model							
RHP	Electrical Resistance Probe for High Pressure (H TM and MH TM) Access Systems						
Mounting Material							
2	316						
3	C276						
Connector Type							
1	Small connector						
2	Standard connector						
E/R Element Options							
50	CT10 Cylindrical - 10 mil thickness (5 mil useful probe life)						
J0	CT10 Cylindrical (2") - 10 mil thickness (5 mil useful probe life)						
60	CT20 Cylindrical - 20 mil thickness (10 mil useful probe life)						
70	CT50 Cylindrical - 50 mil thickness (25 mil useful probe life)						
Length							
XXt	XX	Length in inches, stated in 2 decimal place forma (Ex: 6¼" = 0625)					
Element Alloy							
XXt	X	Use Code in Alloy Char					
E/R Probe Options							
00	No shield						
01	Standard shield						
02	Hi-velocity shield						
03	Coupon holding shield						
HR	2	2	60	0725	375	03	Example of Probe Ordering #

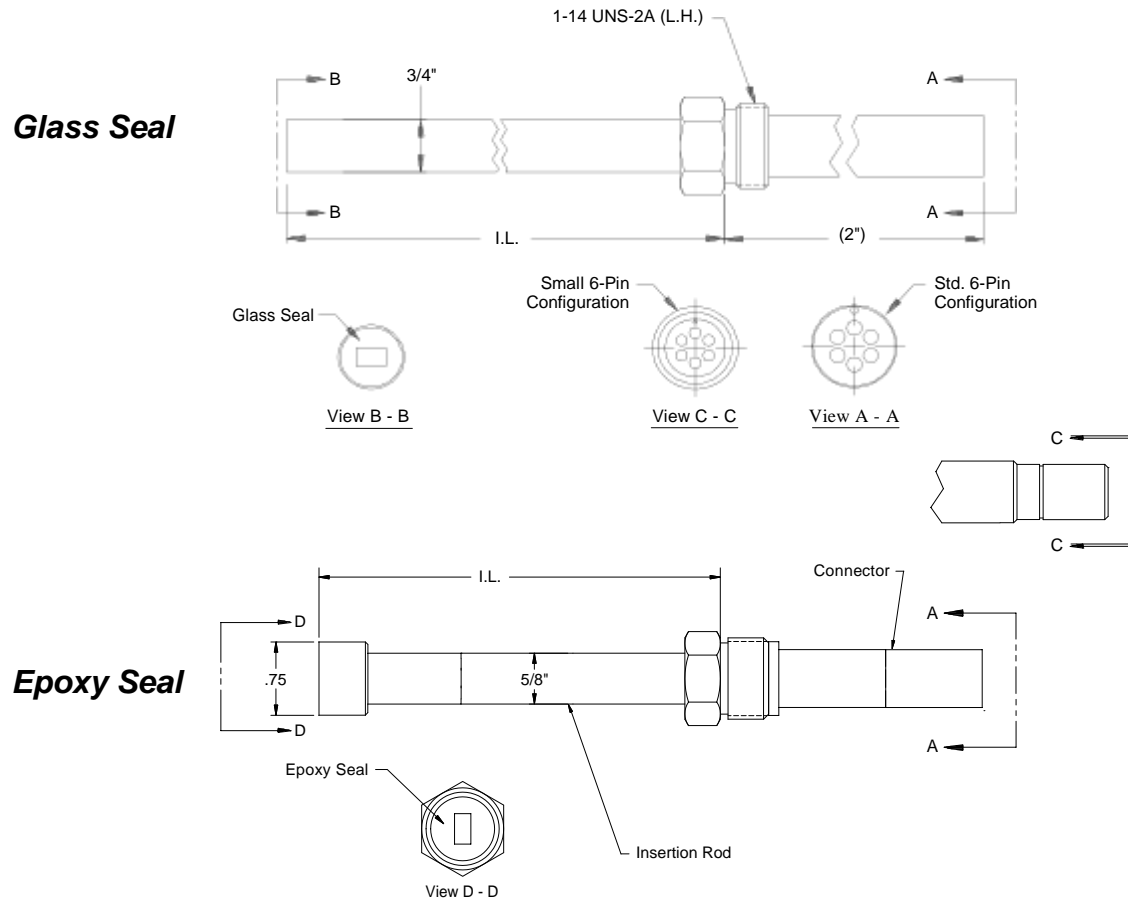
For alloys, sizes, or other special requirements not listed, contact our sales department.

Alloy Chart					
Code	Description	UNS #	Code	Description	UNS #
730 5	100 01	100 010	51S	133 6L S	S3160
350 8	C34 r 1/2M	402 254	1A6	2C6 7	N1027
450 1	C01 r 1M	902 094	065	1A5 loy 62	N0662
81S 6	140 0 S	450 100	140	DC0 A11	C1100
41S 1	000 4 S	354 040	343	DC0 A44	C4430

Note: Not all alloys are available with all element types and seals.

Model ER7200

Electrical Resistance Probe, Retrievable with Small Flush Element for High Pressure (HP™ and MH™) Access Systems



Model ER7200 is a fixed-length, flush-mount, retrievable, electrical resistance probe for use with HP™ and MH™ high pressure access systems. These probes are ideally suited for applications where the probe element needs to be flush with the wall of the pipe. The probe assembly consists of an insertion rod with an element, a hermetically sealed connector, and a hollow plug nut, which are all welded in place. The hollow plug nut on the probe screws into the hollow plug of the access system. This allows the probe to be installed in the process, using a retrieval tool and service valve, without process shutdown. The insertion length (I.L.) can range from a minimum of 1.75" up to any length specified by the customer, using the formula:

$$I.L. = PD + WT + 1.75''$$

(where PD = penetration depth, WT = wall thickness)

For top-of-the-line, flush-mount monitoring, PD = 0.

Note: Formula valid for access fitting heights of 5.25" (HP) and 5.5" (MH).

Several standard elements are available to meet your specific needs. Probe adaptors are available and must be ordered separately.

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Specifications:

Probe Body - 316 Stainless Steel

Element Seal - Glass or Epoxy **Fill**

Material - Epoxy

Temperature Rating - 500°F / 260°C

Pressure Rating - 3600 PSI / 245 Bar

Mounting - High Pressure (HP™ or MH™) Access System with Hollow Plug

ER7200 Ordering Information

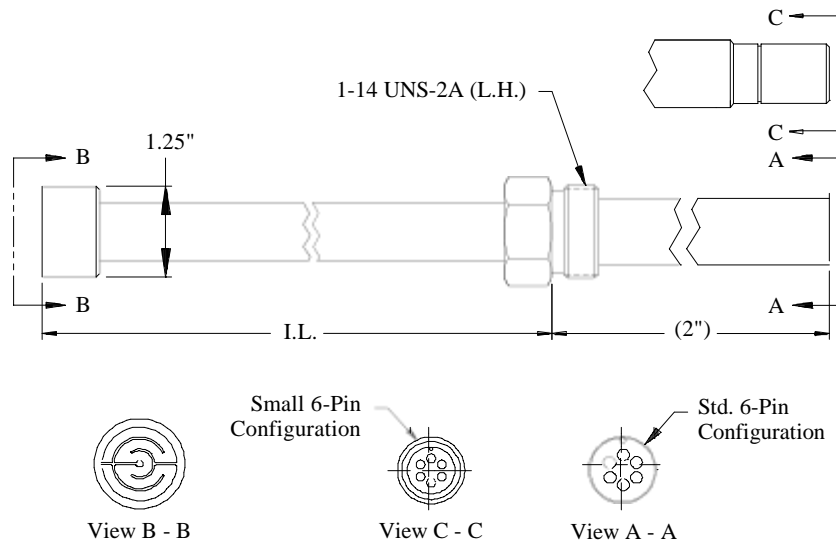
Model								
RHP	Electrical Resistance Probe for High Pressure (H™ and MH™) Access Systems							
Mounting Material								
	2	316						
	3	C276						
Connector Type								
	1	Small connector						
	2	Standard connector						
E/R Element Options								
	A	S4 Flush Mount - 4 mil thickness (2 mil useful probe life) S8						
	B	Flush Mount - 8 mil thickness (4 mil useful probe life)						
	H	S20 Flush Mount - 20 mil thickness (10 mil useful probe life)						
Seal Type								
	1	Glass						
	3	Epoxy						
Length								
	XXt	XX	Length in inches, stated in 2 decimal place forma (Ex: 7¼" = 0725)					
Element Alloy								
	XXt	X	Use Code in Alloy Char					
E/R Probe Options								
	00d	No shield						
HR	2	2	B	3	0725	375	00	Example of Probe Ordering #

For alloys, sizes, or other special requirements not listed, contact our sales department.

Alloy Chart					
Code	Description	UNS #	Code	Description	UNS #
730 5	100 01	100 010	51S	133 6L S	S3160
350 8	034 r 1/2M	402 254	146	206 7	N1027
450 1	031 r 1M	902 094	085	1A5 loy 62	N0662
81S 6	140 0 S	459 100	140	DC0 A11	C1100
41S 1	000 4 S	354 040	343	DC0 A44	C4430

Model ER7210

Electrical Resistance Probe, Retrievable with Large Flush Element for High Pressure (HP™ and MH™) Access Systems



Model ER7210 is a fixed-length, flush-mount, retrievable, electrical resistance probe for use with HP™ and MH™ high pressure access systems. These probes are ideally suited for applications where the probe element needs to be flush with the wall of the pipe. The probe assembly consists of an insertion rod with an element, a hermetically sealed connector, and a hollow plug nut, which are all welded in place. The hollow plug nut on the probe screws into the hollow plug of the access system. This allows the probe to be installed in the process, using a retrieval tool and service valve, without process shutdown. The insertion length (I.L.) can range from a minimum of 1.75" up to any length specified by the customer, using the formula:

$$\text{I.L.} = \text{PD} + \text{WT} + 1.75''$$

(where PD = penetration depth, WT = wall thickness)

For top-of-the-line, flush-mount monitoring, PD = 0.

Note: Formula valid for access fitting heights of 5.25" (HP) and 5.5" (MH).

Several standard elements are available to meet your specific needs. Probe adaptors are available and must be ordered separately.

Specifications:

Probe Body - 316 Stainless Steel

Element Seal - Epoxy

Fill Material - Epoxy

Temperature Rating - 500°F / 260°C

Pressure Rating - 3600 PSI / 245 Bar

Mounting - High Pressure (HP™ or MH™) Access System with Hollow Plug

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ER7210 Ordering Information

Model							
RHP	Electrical Resistance Probe for High Pressure (H TM and MH TM) Access Systems						
Mounting Material							
2	316						
3	C276						
Connector Type							
1	Small connector						
2	Standard connector						
E/R Element Options							
C3	S05 Flush Mount - 5 mil thickness (2.5 mil useful probe life)						
D3	S10 Flush Mount - 10 mil thickness (5 mil useful probe life)						
E3	S20 Flush Mount - 20 mil thickness (10 mil useful probe life)						
F3	S40 Flush Mount - 40 mil thickness (20 mil useful probe life)						
Length							
XXt	XX	Length in inches, stated in 2 decimal place forma (Ex: 7¼" = 0725)					
Element Alloy							
XXt	X	Use Code in Alloy Char					
E/R Probe Options							
00d	No shiel						
HR	2	2	C3	0725	375	00	Example of Probe Ordering #

For alloys, sizes, or other special requirements not listed, contact our sales department.

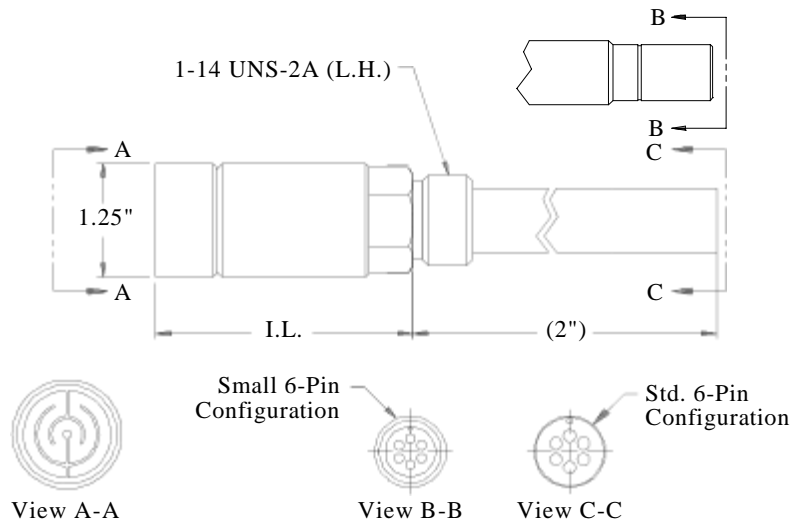
Alloy Chart					
Code	Description	UNS #	Code	Description	UNS #
730 5	100 01	109 010	51S	133 6L S	S3160
350 8	C34 r 1/2M	402 254	1A6	2C6 7	N1027
450 1	C01 r 1M	902 094	065	IA5 loy 62	N0662
81S 6	140 0 S	459 100	140	DC0 A11	C1100
41S 1	000 4 S	354 040	343	DC0 A44	C4430

Note: Not all alloys are available with all element types and seals.

Model ER7220

Electrical Resistance Probe

Retrievable with Large Adjustable Flush Element for High Pressure (HP™ and MH™) Access Systems



Model ER7220 is an adjustable-length, flush-mount, retrievable, electrical resistance probe for use with HP™ and MH™ high pressure access systems. These probes are ideally suited for applications where the probe element needs to be flush with the wall of the pipe to prevent any obstructions. The probe assembly consists of an insertion rod with an element, a hermetically sealed connector, and a hollow plug nut, which are all welded in place. The hollow plug nut on the probe screws into the hollow plug of the access system. This allows the probe to be installed in the process, using a retrieval tool and service valve, without process shutdown. The insertion length (I.L.) can range from a minimum of 1.75" up to any length (in 1/8" increments) specified by the customer, using the formula below. The adjustable flush element allows for a total adjustment of 1".

$$I.L. = PD + WT + 1.75''$$

(where PD = penetration depth, WT = wall thickness)

For top-of-the-line, flush-mount monitoring, PD = 0.

Note: Formula valid for access fitting heights of 5.25" (HP) and 5.5" (MH).

Several standard elements are available to meet your specific needs. Probe adaptors are available and must be ordered separately.

Specifications:

Probe Body - 316 Stainless Steel

Element Seal - Epoxy

Fill Material - Epoxy

Temperature Rating - 500°F / 260°C

Pressure Rating - 3600 PSI / 245 Bar

Mounting - High Pressure (HP™ or MH™) Access System with Hollow Plug

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ER7220 Ordering Information

Model							
RHP	Electrical Resistance Probe for High Pressure (H TM and MH TM) Access Systems						
Mounting Material							
2	316						
3	C276						
Connector Type							
1	Small connector						
2	Standard connector						
E/R Element Options							
C3	S05 Flush Mount - 5 mil thickness (2.5 mil useful probe life)						
D3	S10 Flush Mount - 10 mil thickness (5 mil useful probe life)						
E3	S20 Flush Mount - 20 mil thickness (10 mil useful probe life)						
F3	S40 Flush Mount - 40 mil thickness (20 mil useful probe life)						
Length							
XXt	XX	Length in inches, stated in 2 decimal place forma (Ex: 7¼" = 0725)					
Element Alloy							
XXt	X	Use Code in Alloy Char					
E/R Probe Options							
DAe	No shield, adjustabl						
HR	2	2	C3	0725	375	AD	Example of Probe Ordering #

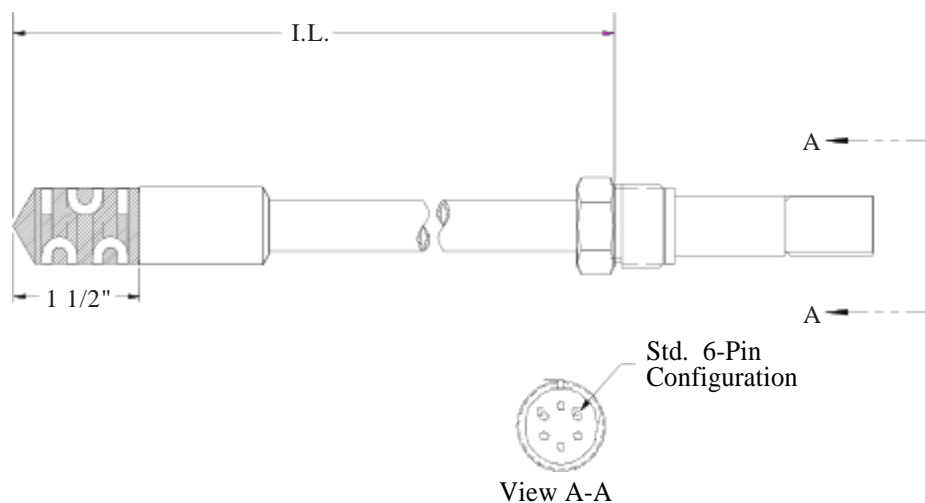
For alloys, sizes, or other special requirements not listed, contact our sales department.

Alloy Chart					
Code	Description	UNS #	Code	Description	UNS #
730 5	100 01	100 010	51S	133 6L S	S3160
350 8	C34 r 1/2M	402 254	1A6	2C6 7	N1027
450 1	C01 r 1M	902 094	065	1A5 loy 62	N0662
81S 6	140 0 S	459 100	140	DC0 A11	C1100
41S 1	000 4 S	354 040	343	DC0 A44	C4430

Note: Not all alloys are available with all element types and seals.

Model ER7300

Electrical Resistance Probe, Retrievable Spiral Loop for High Pressure (HP™ and MH™) Access Systems



Model ER7300 spiral loop probe is a retrievable, electrical resistance probe designed for use with both the HP™ and MH™ high pressure access systems. The element is a spiral wound strip encased in epoxy. This approach to element construction offers several advantages over other element geometries:

- High intrinsic resistance - provides highly stable readings with low susceptibility to noise.
- High element strength - allows use in very high flow rate regimes such as a gas transmission.
- Wide spacing of element loops - minimizes the risk of iron sulphide scaling and bridging.

While the spiral loop probe is ideally suited to fast flowing, sour systems, its high stability makes it a suitable choice for all oil and gas systems.

Insertion length (I.L.) can range from a minimum of 3.75" up to any length (in 1/16" increments) specified by the customer, using the formula:

$$\text{I.L.} = \text{PD} + \text{WT} + 1.75''$$

(where PD = penetration depth, WT = wall thickness)

Note: Formula valid for access fitting heights of 5.25" (HP) and 5.5" (MH).

Specifications:

Probe Body - 316 Stainless Steel

Element Seal - Epoxy

Element Material - AISI 1018

Temperature Rating - 250°F / 121°C

Pressure Rating - 3600 PSI / 245 Bar

Mounting - High Pressure (HP™ or MH™) Access System with Hollow Plug

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ER7300 Ordering Information

Model							
RHP	Electrical Resistance Probe for High Pressure (H TM and MH TM) Access Systems						
Mounting Material & Connector Type							
22r	316 stainless steel with standard connecto						
E/R Element Options							
K	SP10 Spiral Loop - 10 mil thickness (5 mil useful probe life)						
L	SP20 Spiral Loop - 20 mil thickness (10 mil useful probe life)						
Seal Type							
3y	Epoxy						
Length							
XXt	XX	Length in inches, stated in 2 decimal place forma (Ex: 7¼" = 0725)					
Element Alloy							
XXt	X	Use Code in Alloy Char					
E/R Probe Options							
00d	No shiel						
HR	22	K	3	0725	375	00	Example of Probe Ordering #

For alloys, sizes, or other special requirements not listed, contact our sales department.

Alloy Chart					
Code	Description	UNS #	Code	Description	UNS #
730 5	100 01	109 010	51S	133 6L S	S3160
350 8	CS4 r 1/2M	402 254	1A6	2C6 7	N1027
450 1	CS1 r 1M	902 094	065	1A5 loy 62	N0662
81S 6	140 0 S	459 100	140	DC0 A11	C1100
41S 1	000 4 S	354 040	343	DC0 A44	C4430

Note: Not all alloys are available with all element types and seals.