

# Electrical Resistance (ER) Probes

Request A Quote

MODEL 4500



## Features

- **High Pressure Cylindrical Element**
- **Mounting – Electrical Resistance (ER) 2" System**
- **Temperature Rating - +500° F / +260° C**
- **Pressure Rating - 6000 PSI / 41.3 MPa ("S" Type Connector)  
- 3600 PSI / 24.8 MPa ("C" Type Connector)**
- **Element Seal Material - All Welded**
- **Fill Material - Ceramic**
- **Probe Body Material - Same as Element**

A new style of the Model 4500 electrical resistance probe is now available with an even more durable construction and incorporating a connector with shrouded pins to prevent accidental damage. It is recommended for all new installations. This new style incorporates welded shields where required and requires a different probe connecting adaptor (see order details). The Model 4500 ER probe is the most rugged mechanically and the least affected by temperature fluctuations. Shields are recommended for high velocity situations. Welds are vacuum annealed during assembly to avoid preferential corrosion. Probe adapters are required to make the cable connection to the probe.

**Ordering Length** = P + T + 1.25"

Where: P = Penetration required into pipe or vessel.

T = Wall Thickness of pipe or vessel.

**NOTE:** Formula is based upon standard access fitting height of 5.25 inches and 1/16" weld gap per ANSI B31.1.

**Example:** 6" Sch. 80 pipe\* with 3" penetration required; 3" + .432"\* + 1.25 = 4.682". Round 4.682" down to next 1/4" for an ordering length of 4.5".

**COSASCO**<sup>®</sup>

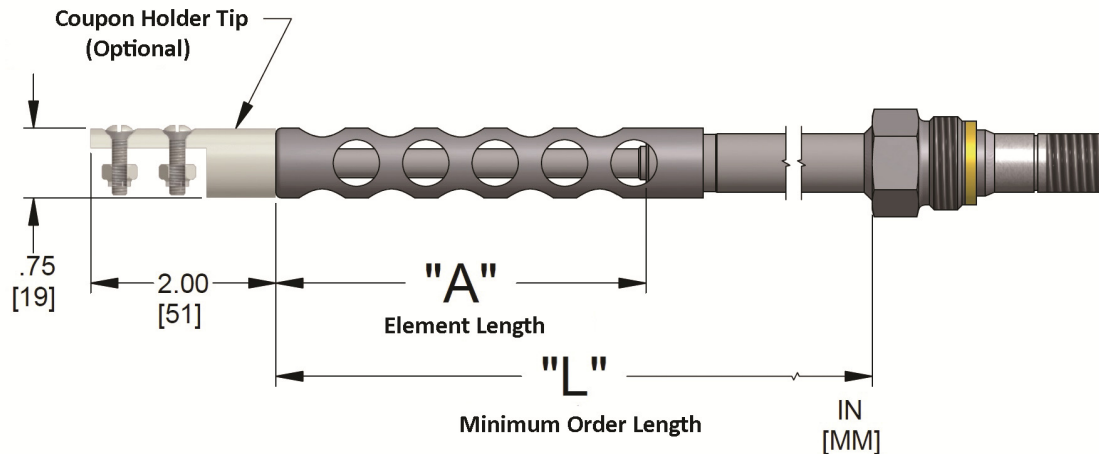
## Element Availability

UNS NUMBER	ALLOY	T10	T20	T50	UNS NUMBER	ALLOY	T10	T20	T50		
K03005	Pipe Grade Carbon Steel	■	■	■	N08020	CARP 20-Cb3	■	■			
A106GRB	A106 Gr. B	■	■		S50400	9% Cr 1% Mo	■	■			
S30400	304 S.S.	■	■	■	N04400	Monel 400	■	■			
S30403	304L S.S.	■	■		N06600	Inconel 600	■	■			
S31600	316 S.S.	■	■		N06625	Inconel 625	■	■			
S31603	316L S.S.	■	■		N08825	Inconel 825	■	■			
S31703	317 S.S.	■	■	■	N10276	Hastelloy C-276	■	■			
S31803	2205 Duplex S.S.	■	■		A333GR6	A333 Gr.6		■			
S32100	321 S.S.	■	■								
S41000	410 Stainless Steel	■	■								
S50200	502 S.S.(5% Cr ½% Mo)	■	■								
N08904	904L S.S.	■	■								
		Inches	.005	.010	.025			Inches	.005	.010	.025
		Useful Range (mm)	.127	.254	.635			Useful Range (mm)	.127	.254	.635

**Table 1**

Other element alloys or styles may be supplied subject to material availability.

## Dimensions



Element Type	"A" Dimension		"L" Dimension	
	Inches	mm	Inches	mm
T10	2.25	57	3.25	83
T20	4.00	102	5.00	127
T50	10.00	254	11.00	279

# MODEL 4500

## Ordering Information

**Note:** For high velocity process conditions it is recommended that Wake Frequency Calculations be performed – please contact a Cosasco representative for further details.

Model	Retrievable ER Probe-Cylindrical Element					
4500	Complete Probe Assembly					
	<b>Code</b>	<b>Element Form: See Table 1 for Availability</b>				
	T10	Cylindrical, 10 mil thickness (5 mil useful probe life)				
	T20	Cylindrical, 20 mil thickness (10 mil useful probe life)				
	T50	Cylindrical, 50 mil thickness (25 mil useful probe life)				
	<b>Code</b>	<b>Element Alloy: See Table 1 for Availability</b>				
	XXXXXX	Enter UNS Number				
	<b>Code</b>	<b>Order Length</b>				
	XX.XXX	Inch Order Length in 1/4" Increments From 2.75" (3.25" w/shield) TO 36.00" for T10 Elements From 4.50" (5.00" w/shield) TO 36.00" for T20 Elements From 10.50" (11.00" w/shield) TO 36.00" for T50 Elements				
	<b>Code</b>	<b>Shield</b>				
	0	Not Included (Liquids to 8 ft/sec, gases to 25 ft/sec)				
	1	Standard (Liquids to 25 ft/sec, gases to 75 ft/sec)				
	2	High Velocity/Erosion (Liquids to 50 ft/sec, gases to 150 ft/sec)				
	3*	Coupon Holding (Liquids to 25 ft/sec, gases to 75 ft/sec)				
	<b>Code</b>	<b>Connector</b>				
	0	"S" Type With Shrouded Pins (New Type) <sup>(1)</sup>				
<b>4500</b>	<b>T20</b>	<b>K03005</b>	<b>5.25</b>	<b>0</b>	<b>0</b>	<b>EXAMPLE</b>

**Note:** <sup>(1)</sup> Probe connection adapters as follows:  
for portable instrument 028043, for  
permanent connection 028068

\*Coupon holding tip will extend 2"  
beyond order length coupon holding  
shields use CI-RS strip coupons.

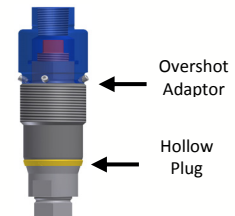
**Unit Weight:** Probe length 3.25" - 12", 3 lbs. / 1.36 kg.  
Probe length 12.25" - 24", 4.5 lbs. / 2.04 kg.  
Probe length 24.25" - 36", 6 lbs. / 2.72 kg.

**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 4500 probe. It permits removal and installation of hollow plug with probe and a steel pipe plug in place (keeps inside of probe area clean and dry).



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