

# Electrical Resistance (ER) Probes

MODEL 3500/3500HT



Model 3501/3501HT  
Replacement Insert

## Features

- **Cylindrical Element**
- **Mounting - 1" Full Port Valve Minimum**
- **Temp. Rating for Model 3500 - +425° F / + 218° C**
- **Temp. Rating for Model 3500HT - +1000° F / +520° C**
- **Pressure Rating for Model 3500 - 1500 PSI / 10.3 MPa**
- **Pressure Rating for Model 3500HT - 1000 PSI / 6.9 MPa**
- **Element Seal Material — All Welded**
- **Fill Material - Ceramic**
- **Probe Body Material - 316SS or Hastelloy C276\*\*\***

Model 3500 Retractable Process electrical resistance probes have a thin walled tubular sensing element made from the alloy of interest welded onto a body of the same material. Mild Steel bodies are Teflon coated. No other materials contact the corrosive process fluid. Materials of construction are carefully matched and welds are vacuum annealed during assembly to avoid preferential corrosion effects.

Model 3500 ER probes provide a large test surface, excellent dynamic temperature response and protection

of reference element. They are ideally suited to the more aggressive plant conditions and may be used in very aggressive organic or inorganic fluids over the entire pH range 0-14, subject to process containment requirements.

These probes are standard in mild steel, 304 S.S. and 316 S.S. Certain other alloys can be provided on special order; please contact the factory for information. The useful measuring lives of the T-10 and T-20 probe elements are 5 mils (0.13mm) and 10 mils (0.25mm) respectively.

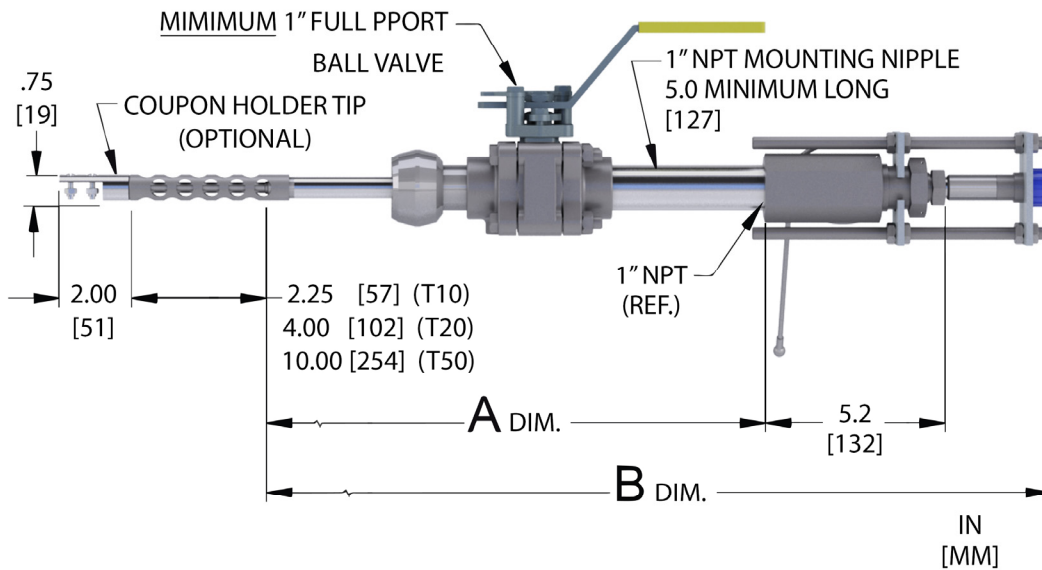
## Element Availability

UNS Number	Alloy	T10	T20	T50	UNS Number	Alloy	T10	T20	T50
K03005	Pipe Grade Carbon Steel	•	•	•	N08020	CARP 20-Cb3	•	•	
K03006	A106 Gr. B/A333 Gr. 6	•	•		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	Incoloy 825	•	•	
S31703	317 S.S.	•	•	•	N10276	Hastelloy C-276	•	•	
S31803	2205 Duplex S.S.	•	•						
S32100	321 S.S.	•	•						
S41000	410 Stainless Steel	•	•						
S50200	502 S.S. (5% Cr 1/2% Mo)	•	•						
N08904	904L S.S.	•							
	<b>Inches</b>	.005	.010	.025		<b>Inches</b>	.005	.010	.010
	<b>Useful Range (mm)</b>	.127	.254	.635		<b>Useful Range (mm)</b>	.127	.254	.635

**Table 1**

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

## Dimensions



"A" Dimension is with probe fully inserted into packing gland

Order Length	"A" Dimension		"B" Dimension	
	Inches	mm	Inches	mm
18	14.4	366	22.25	565
24	20.4	518	28.25	718
30	26.4	670	34.25	870
36	32.4	823	40.25	1022

# MODEL 3500/3500HT

## Ordering Information

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

Model	Retractable ER Probes – Cylindrical Element Assembly						
3500	Complete Probe Assembly With Stuffing Box						
3500HT	Complete High Temperature Assembly ***						
3501	Model 3500 Replacement Insert						
3501HT	High Temperature Replacement Insert ***						
	<b>Code</b>	<b>Element Form: See Table 1 for availability</b>					
	T10	10 mil thickness (5 mil useful probe life)					
	T20	20 mil thickness (10 mil useful probe life)					
	T50	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>					
	18	18 Inches					
	24	24 Inches					
	30	30 Inches					
	36	36 Inches					
	<b>Code</b>	<b>Safety Clamp (Not an option for 3501 and 3501HT)</b>					
	0	Not Included					
	1	Safety Clamp Installed					
	<b>Code</b>	<b>Shield</b>					
	0	Not included (liquids 8 ft./sec, gases 25 ft./sec)					
	1	Standard (liquids 25 ft./sec, gases 75 ft./sec)					
	2	High Velocity/Erosion (liquids 50 ft./sec, gases 150 ft./sec)					
	3**	Coupon Holding (liquids 25 ft./sec, gases 75 ft./sec)					
	<b>Code</b>	<b>Stuffing Box Material (Not an option for 3501 or 3501HT)</b>					
	0	Stainless Steel/Carbon Steel*					
	1	Hastelloy C-276					
	2	Same as element material					
<b>3500</b>	<b>T10</b>	<b>K03005</b>	<b>18</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>Example</b>
<b>3501</b>	<b>T10</b>	<b>K03005</b>	<b>18</b>		<b>1</b>		<b>Example</b>
<b>3500HT</b>	<b>T20</b>	<b>K03005</b>	<b>18</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>Example</b>
<b>3501HT</b>	<b>T20</b>	<b>K03005</b>	<b>18</b>		<b>1</b>		<b>Example</b>

\*Carbon Steel for Carbon Steel Elements, Stainless Steel for all others.

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

\*\*\*For High-Temp Carbon Steel Element Probes, the Probe Body will be 316L S.S. For other alloys the body will be Hastelloy C276. The Stuffing Box and shields will be 316 S. S.

## Accessories:

Part Numbers if Ordering Shield Separately:	
Model 3500 & 3501	Model 3500HT & 3501HT
Standard Shield #745006-TXX-XXXXXX	Standard Shield #745054-XXXXXX
High Velocity/Erosion Shield #745017-TXX-XXXXXX	High Velocity Shield #745017-XXXXXX
Coupon Holding Shield #745060-XXXXXX	Coupon Holding Shield #745058-XXXXXX
"XXXXXX" is the UNS alloy number	"XXXXXX" is the UNS alloy number

**Unit Weight:** Probe Assembly with Safety Clamp – 7 lbs. /3.18 kg  
Insert Only – 2.5 lbs./1.13 kg

**Cosasco**  
11841 Smith Avenue  
Santa Fe Springs, CA 90670, USA  
Tel: 1-562-949-0123  
Email: [sales@cosasco.com](mailto:sales@cosasco.com)  
Web Site: [www.cosasco.com](http://www.cosasco.com)

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