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".
Element Availability

<table>
<thead>
<tr>
<th>UNS NUMBER</th>
<th>ALLOY</th>
<th>T10</th>
<th>T20</th>
<th>T50</th>
<th>UNS NUMBER</th>
<th>ALLOY</th>
<th>T10</th>
<th>T20</th>
<th>T50</th>
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</thead>
<tbody>
<tr>
<td>K03005</td>
<td>Pipe Grade Carbon Steel</td>
<td>■</td>
<td>■</td>
<td>■</td>
<td>N08020</td>
<td>CARP 20-Cb3</td>
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<td>A106GRB</td>
<td>A106 Gr. B</td>
<td>■</td>
<td>■</td>
<td>■</td>
<td>SS0400</td>
<td>9% Cr 1% Mo</td>
<td>■</td>
<td>■</td>
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<tr>
<td>S30400</td>
<td>304 S.S.</td>
<td>■</td>
<td>■</td>
<td>■</td>
<td>N04400</td>
<td>Monel 400</td>
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<tr>
<td>S30403</td>
<td>304L S.S.</td>
<td>■</td>
<td>■</td>
<td>■</td>
<td>N06600</td>
<td>Inconel 600</td>
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<td>S31600</td>
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<td>■</td>
<td>N06625</td>
<td>Inconel 625</td>
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<td>S31603</td>
<td>316L S.S.</td>
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<td>■</td>
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<td>N08825</td>
<td>Inconel 825</td>
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<td>317 S.S.</td>
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<td>■</td>
<td>■</td>
<td>N10276</td>
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<td>S31803</td>
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<td>■</td>
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<td>A333GR6</td>
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<tr>
<td>S32100</td>
<td>321 S.S.</td>
<td>■</td>
<td>■</td>
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<tr>
<td>S41000</td>
<td>410 Stainless Steel</td>
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<tr>
<td>S50200</td>
<td>502 S.S.(5% Cr 3% Mo)</td>
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<tr>
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<table>
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<tr>
<th>Inches</th>
<th>.005</th>
<th>.010</th>
<th>.025</th>
<th>Useful Range (mm)</th>
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<th>.254</th>
<th>.635</th>
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<tr>
<td>T10</td>
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<td>3.25</td>
<td>&quot;A&quot; Dimension</td>
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<td>T20</td>
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<td>102</td>
<td>5.00</td>
<td>&quot;L&quot; Dimension</td>
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<td>127</td>
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<td>T50</td>
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<td>254</td>
<td>11.00</td>
<td>Minimum Order Length</td>
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<td>279</td>
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</table>

Table 1
Other element alloys or styles may be supplied subject to material availability.

Dimensions

[Diagram of coupon holder tip and element length with dimensions labeled "A" and "L".]
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.

<table>
<thead>
<tr>
<th>Model</th>
<th>Retrievable ER Probe-Cylindrical Element</th>
</tr>
</thead>
<tbody>
<tr>
<td>4500</td>
<td>Complete Probe Assembly</td>
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</tbody>
</table>

**Code** | **Element Form: See Table 1 for Availability**
---|---
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)

**Code** | **Element Alloy: See Table 1 for Availability**
---|---
XXXXX | Enter UNS Number

**Order Length**
- 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

**Shield**
- 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)

**Code** | **Connector**
---|---
0 | “S” Type With Shrouded Pins (New Type) 3

**EXAMPLE**

4500 – T20 – K03005 – 5.25 – 0 – 0

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**Note:**
- [2] 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).