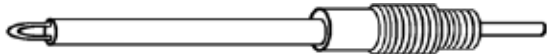


Temperature/ Thermocouple Probes

TA, TAS:

For Zone 2 use; low temperature, gives fast response; good in steep temperature gradients. Also used in Zones 4, 5, and 6 for inexpensive construction.

Standard diameters: 1/16", 1/8", 1/4"



TB, TBS:

For Zone 2 use; requires deeper immersion in gas to eliminate conduction. Good protection for thermocouples, basis of completely pressure tight assembly. Good in liquids. Also used in Zones 4, 5, and 6 for inexpensive construction and as elements in multiple shielded probes.

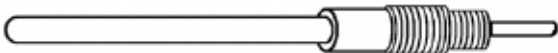
Standard diameters: 1/8", 1/4"



TU, TUS:

Same as TB, TBS, except junction is grounded to tip of stem for fast temperature response. TUS is made with Mineral insulated cable for bending installation.

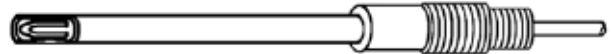
Standard diameters: 1/16", 1/8", 1/4"



TC, TCS:

For Zone 3 use; Common in all types of compressors for efficiency measurements.

Standard diameters: 1/8", 1/4"



TD:

For Zones 2 and 3 use. Most accurate probe suitable for reference readings. Bleed slot width made to suit velocity of application; thermocouple wire is coiled.

Standard diameters: 1/8", 1/4"

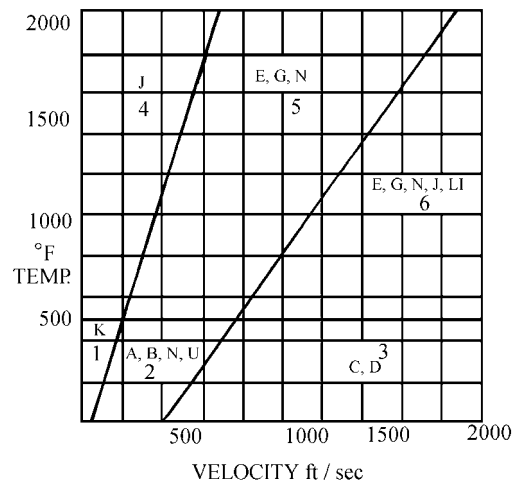
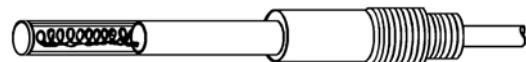


Fig. 1. Velocity temperature diagram.
Zones of use circled.

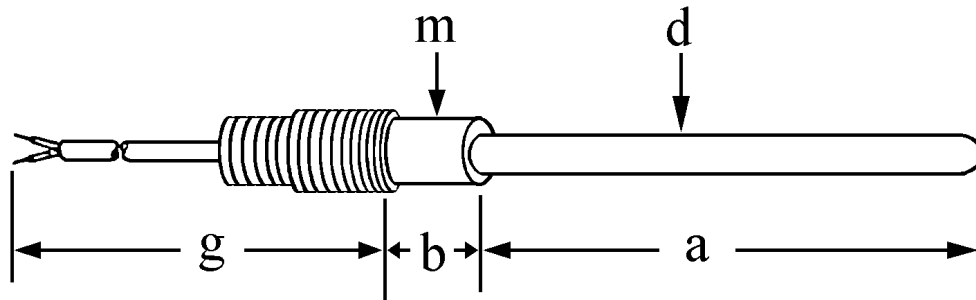


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Ordering Information



Typical Example: TBS-6-K-36-C-1-F

TBS: Type TBS
 6: a = 6" – Probe length
 K: Type of thermocouple wire:
 K: Chromel – Alumel
 J: Iron – Constantan
 T: Copper – Constantan
 E: Chromel – Constantan

36: g = 36" – Lead wire length. Plugs or Jack terminations are available.

C: d = 1/8" – Probe diameter

A	C	F
1/16"	1/8"	1/4"

1: b = 1" – Reinforcement tubing length

F: m = 5/16" – Reinforcement tubing diameter

F	J
5/16"	3/8"

* When ordering TA, TB, TU, and TC Types substitute TA, TB, TU, and TC for TAS, TBS, TUS, and TCS prefix in Part number (and omit –1-J suffix in 1/4" OD models).



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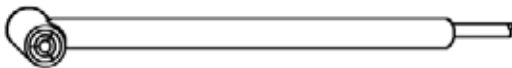
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Temperature/ Thermocouple Probes

TE:

For high temperature medium velocity, Zone 5. Wide shield spacing minimizes blocking due to carbon deposits. Radiation Multi-Shielded sensing head, stainless steel stem for use in gases.

Standard diameter: 3/8"



TN:

Can be used in Zones 2, 3, 4, 5 and 6 because of silver coated element. Only useful if gas does not tarnish silver. Element removable for calibration and polishing. Stagnation slotted external shield with removable silver coated thermocouple element for use in clean gases.

Standard diameter: 1/4"



TG:

High temperature, high velocity, Zone 6; also Zone 5 where space limitations are important. Less likely to damage by liquid fuel burning on surface of probe when used near burner because of separating action of flow reversals through probe. Pressure tight to 1000 psi. Stagnation and Radiation slotted external shield, thermocouple insert made of mineral insulated cable.

Standard diameter: 3/8"

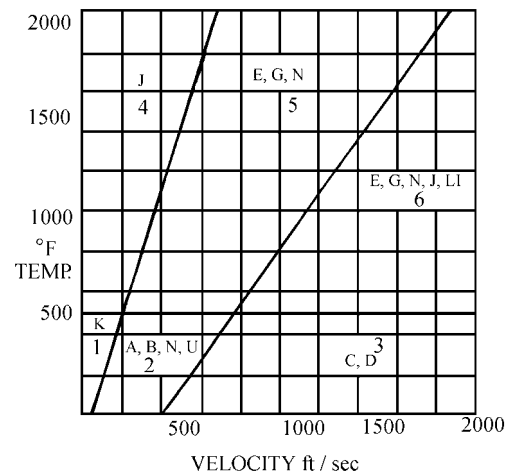


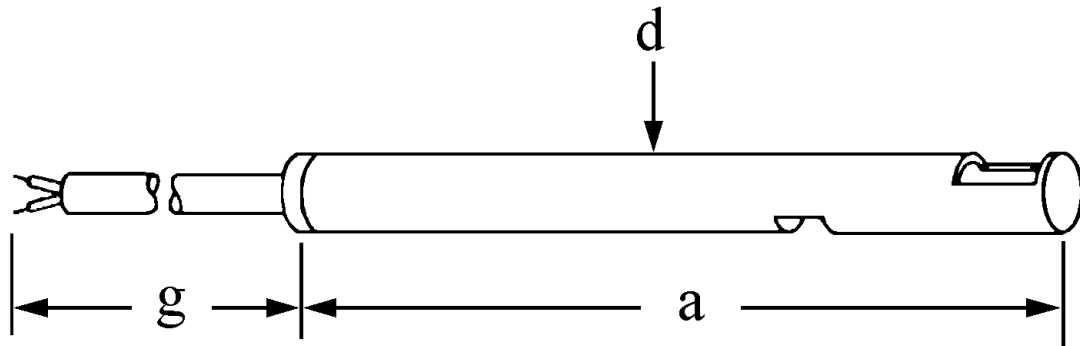
Fig. 1. Velocity temperature diagram. Zones of use circled.



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Ordering Information



Typical Example: TG-8-K-36-W-J

- TG: Type TG
- 8: a = 8" – Probe length
- K: Type of thermocouple wire
 - K: Chromel – Alumel
 - J: Iron – Constantan
 - T: Copper – Constantan
 - E: Chromel – Constantan
- 36: g = 36" – Lead wire length. Plugs or Jack terminations are available.
- W: Welded – T/C tip joining compound
- J: d = 3/8" – Probe diameter

F	J
1/4"	3/8"

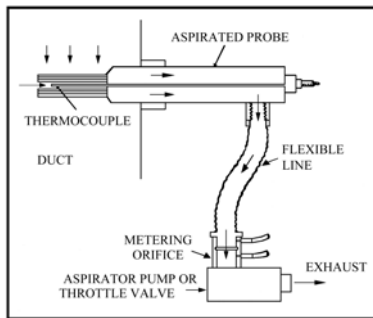


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Temperature / Thermocouple Probes Aspirated Probes

United Sensor features a unique line of Aspirated Temperature Probes for high velocity and / or high temperature use. The probes are designed for use with an aspirating pump and metering orifice to draw measured fluid past the hot junction at a desired velocity (see figure below).

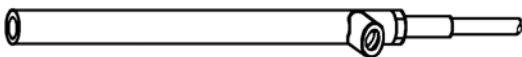


Aspirated Probe Operation

TLI:

For Zones 1, 2, and 3; can also be used in Zones 4, 5, and 6; maximum 2000°F. Requires aspiration. Inconel covered thermocouple is removable. External shield has an open tip.

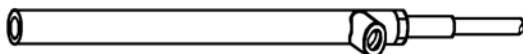
Standard diameter: 1/4"



TK:

For Zones 1, 2, and 3 primarily; can also be used in 4, 5, and 6 where space is limited. Requires aspiration. Also useful for measuring fuel-vapor mixture temperature. By pointing entrance downstream and upward, the flow reversal and aspirator drain off liquid fuel thrown onto shields and thermocouple reads true gas temperature. Nichrome shielded thermocouple element for use in all velocities and temperatures below 500°F. External shield has an open tip.

Standard diameter: 1/4"



TJ:

Most versatile and accurate probes for all velocities and temperatures up to 2000°F. Requires bleed line for aspirating gas and source of suction if rig pressure is less than 2" Hg. above atmospheric. Thermocouple element removable for calibration. Completely pressure tight assembly. Suitable for measuring reference temperatures. Radiation multi-shielded sensing head, aspirated, with removable thermocouple element for use in all velocities.

Standard diameter: 1"

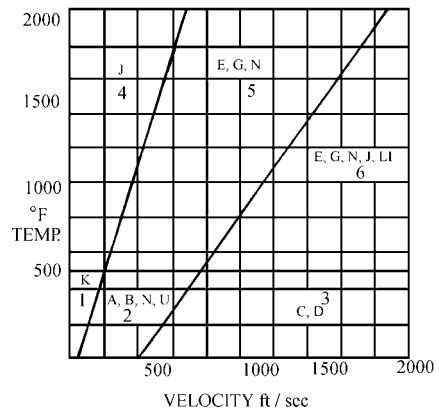


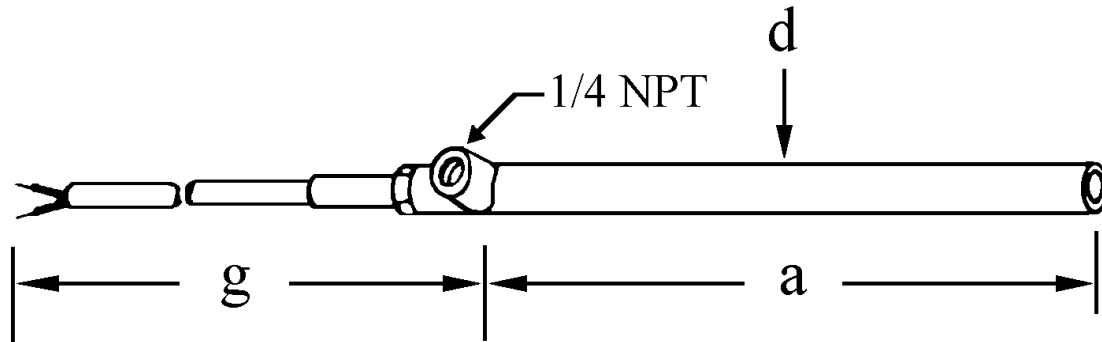
Fig. 1. Velocity temperature diagram. Zones of use circled.



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Ordering Information



Typical Example: TLI-8-K-36-F

- TLI: Type TLI
 8: a = 8" – Probe length
 K: Type of thermocouple wire:
 K: Chromel – Alumel
 J: Iron – Constantan
 T: Copper – Constantan
 E: Chromel – Constantan
- 36: g = 36" – Lead wire length. Plugs or Jack terminations are available.
- F: d = 1/4" – Probe diameter

F	
1/4"	1"



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