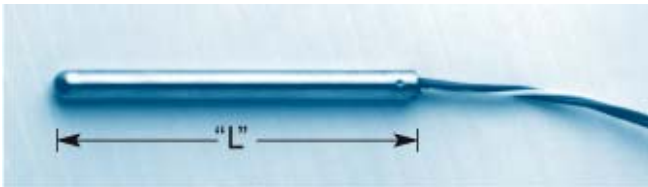




INDUSTRIAL PLATINUM RTD SERIES 21 Models 21A, B, C, D & H

STRAIGHT PROBE ASSEMBLIES

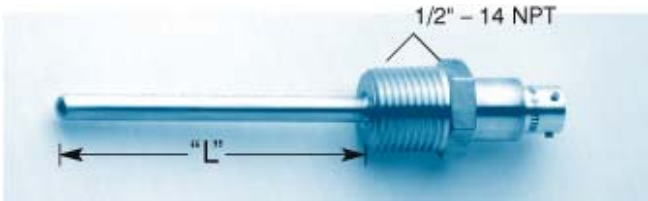
TYPE 21A



Features: 1/4" dia. 316 SS sheath; operating range -320°F to 900°F, Teflon® insulated lead wires; single or dual elements, RdF Reference or IEC/DIN R vs. T characteristics, and 2, 3 or 4 wire element configurations.

RIGID PROBE ASSEMBLIES WITH HERMETICALLY SEALED CONNECTOR

TYPE 21C

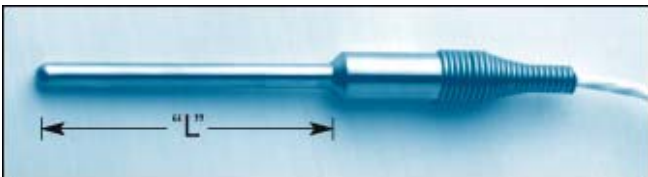


Features: 1/4" dia. 316 SS sheath with hermetically sealed 4-pin connector; operating range -320°F to 900°F single or dual elements; RdF Reference or IEC/DIN R vs. T characteristics, and 2, 3 or 4 wire configurations.

*P/N 53105 (Mating Connector) must be ordered separately.

HERMETICALLY SEALED PROBE ASSEMBLIES

TYPE 21H



Features: 1/4" dia. SS sheath; operating range -320°F to 900°F; Teflon® insulated 3-conductor cable; RdF Reference or IEC/DIN R vs. T characteristics. Integral hermetic seal. Single element only.

21A/C/H

RTD RESISTANCE SPECIFICATIONS (Ohms @ 0°C)

- 10 100 ± 0.1 ($\alpha = 0.003924 \Omega/\Omega/^\circ\text{C}$) RdF Ref. Std.
 - 11 100 ± 0.1 ($\alpha = 0.00385 \Omega/\Omega/^\circ\text{C}$) IEC/DIN Std.
 - T01 100 + 0.12 ($\alpha = 0.00385 \Omega/\Omega/^\circ\text{C}$) thin film
 - 20 200 ± 0.2 ($\alpha = 0.003924 \Omega/\Omega/^\circ\text{C}$)
 - 21 200 ± 0.2 ($\alpha = 0.00385 \Omega/\Omega/^\circ\text{C}$)
 - T05 500 ± 0.6 ($\alpha = 0.00385 \Omega/\Omega/^\circ\text{C}$) thin film
 - T10 1000 ± 1.2 ($\alpha = 0.00385 \Omega/\Omega/^\circ\text{C}$) thin film
 - 102* 100 ± 0.1 Dual Element ($\alpha = 0.003924 \Omega/\Omega/^\circ\text{C}$)
 - 112* 100 ± 0.1 Dual Element ($\alpha = 0.00385 \Omega/\Omega/^\circ\text{C}$)
 - T012* 100 ± 0.12 Dual Element ($\alpha = 0.00385 \Omega/\Omega/^\circ\text{C}$) thin film
- *Not Available on 21H

- SERVICE PARAMETER – Sinusoidal Vibration 20Hz to 2kHz
 - S Standard construction (25 g wire-wound, 80 g thin film)
 - H Heavy-duty construction (up to 50 g)
 (1 wire element only)

- PROBE LENGTH (Specify "L" in inches)
 - Std. Const: 3" minimum,
 - Heavy Duty: 3" minimum for 21H,
 - 4" minimum for 21A & 21C (see photos)

LEAD WIRE CONFIGURATION

- A Single element, 2 wires, any length
- B* Single element, 3 wires, (36" or under on 21A), *21H requires B cable, any length, standard.
- C Single element, 4 wires, (36" or under on 21A)
- D Dual element, 2 wires per element
- E Dual element, 3 wires per element, 21A only

ARMOR LENGTH (21A only)

Specify "X" in inches (ie. A0= no armor, A60 = 60 inches) (Single element only)

- LEAD LENGTH - Specify in inches (Not applicable to 21C)



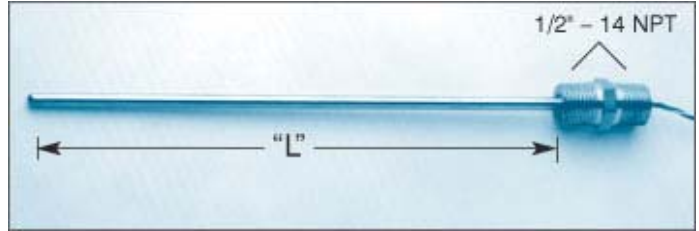
- *21A ** 10 ** S ** 4 ** B ** A60 ** 60 * Typical write-up for 21A
- *21B ** T10 ** A ** 8 ** A ** - ** 60 * Typical write-up for 21C

Specialists in Temperature Measurement



**RIGID PROBE ASSEMBLIES
WITH HEX FITTING
TYPE 21B**

Features: 1/4" dia. 316 SS sheath and threaded fitting for connection head assembly; operating range -320°F to 900°F; Teflon® insulated lead wires; single or dual elements; Rdf Reference or IEC/DIN R vs. T characteristics, and 2, 3 or 4 wire element configurations.



21B 14" Diameter Sheathed Platinum Probe, Rigid Mount to Fitting

RTD RESISTANCE SPECIFICATIONS (Ohms @ 0°C)

10	100 ± 0.1	($\alpha = 0.003924 \Omega/\Omega/^\circ\text{C}$) Rdf Ref. Std.
11	100 ± 0.1	($\alpha = 0.00385 \Omega/\Omega/^\circ\text{C}$) IEC/DIN Std.
T01	100 ± 0.12	($\alpha = 0.00385 \Omega/\Omega/^\circ\text{C}$) thin film
20	200 ± 0.2	($\alpha = 0.003924 \Omega/\Omega/^\circ\text{C}$)
21	200 ± 0.2	($\alpha = 0.00385 \Omega/\Omega/^\circ\text{C}$)
T05	500 ± 0.6	($\alpha = 0.00385 \Omega/\Omega/^\circ\text{C}$) thin film
T10	1000 ± 1.2	($\alpha = 0.00385 \Omega/\Omega/^\circ\text{C}$) thin film
102	100 ± 0.1	Dual element ($\alpha = 0.003924 \Omega/\Omega/^\circ\text{C}$)
112	100 ± 0.1	Dual element ($\alpha = 0.00385 \Omega/\Omega/^\circ\text{C}$)
T012	100 ± 0.12	Dual element ($\alpha = 0.00385 \Omega/\Omega/^\circ\text{C}$) thin film

CONNECTION HEAD (see connection head table below)

SERVICE PARAMETER - Sinusoidal Vibration 20Hz to 2kHz

- S Standard construction (25 g wire-wound, 80 g thin film)
- H Heavy duty construction (up to 50 g) (single wire element only)

PROBE LENGTH

(Specify "L" in inches, >60" requires support) (see photo)
Std. Const: 3" min, Heavy Duty: 4" min.

NUMBER OF LEADS

- A Single element, 2 wires any length
- B Single element, 3 wires 36" or under in length
- C Single element, 4 wires 36" or under in length
- D Dual element, 2 wires per element
- E Dual element, 3 wires per element
- X3 Single element, 3 wire cable over 36"
- AX3 Adds stainless steel armor excluding last 5"
- X4 Single element, 4 wire cable over 36"
- AX4 Adds stainless steel armor excluding last 5"

ARMOR LENGTH

Specify "X" in inches (ie. A0= no armor,
A60 = 60 inches) (Single element only)

LEAD LENGTH - Specify in inches (4" Standard)



Connection Heads with Terminals

Nema 4 w/Gasket Illustrations on Data Sheet T-WELLS/ACCESSORIES

CODE	to order with sensor:	to order alone:	Conduit	Max. Temp
A	Small cast aluminum head	P/N 51590-1	1/2 NPT	125°C
B	High temp. small cast aluminum head	P/N 51590-2	1/2 NPT	260°C
C	Cast Iron head	P/N 51840-1	3/4 NPT	260°C
D	For no connection head specify "D"			
E	Large cast aluminum head	P/N 52298-1	3/4 NPT	260°C
F	Economy conduit body	P/N 41438	1/2 NPT	125°C
G	Explosion proof small cast aluminum head	P/N 41333-1	1/2 NPT	125°C
H	High temp. expl. proof small cast aluminum head	P/N 41333-2	1/2 NPT	260°C
I	Hinged plastic	P/N 54684	3/4 NPT	125°C
J	Hinged cast aluminum	P/N 54681	3/4 NPT	125°C
K	Din B cast aluminum	P/N 55261	1/2 NPT	100°C
S	Other (please specify when ordering)			
T	Transmitter, specify or supply w/head			

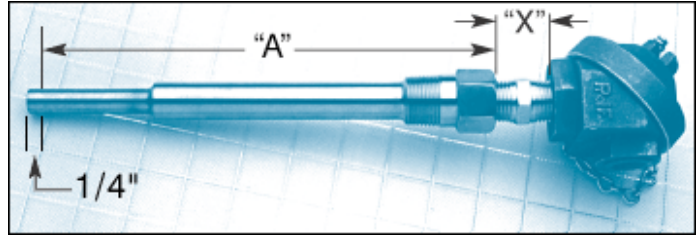
Terminals: All heads include at least 4 two-screw strap terminations. 6 can be requested in styles "C" and "E". Style "K" includes 6 two-screw post straps. Styles "A", "B", "G" & "H" can have up to 8 screw-in post straps.

Specialists in Temperature Measurement



SPRING LOADED PROBE ASSEMBLIES WITH HEX FITTING
TYPE 21D

Features: 1/4" diameter 316 SS sheath; operating range -320°F to 900°F with universal hardware for spring-loading; single or dual elements; RdF Reference or IEC/DIN R vs T characteristics, and 2, 3 or 4 wire element configurations. Styles A & B Head Shown.



Thermowell not included—order separately; see data sheet T-WELLS

21D 1/4" Diameter Sheathed Platinum Probe, Spring-Loaded

RTD RESISTANCE SPECIFICATIONS (Ohms @ 0°C)

10	100 ± 0.1 ($\alpha = 0.003924 \Omega/\Omega/^\circ\text{C}$) RdF Ref. Std.
11	100 ± 0.1 ($\alpha = 0.00385 \Omega/\Omega/^\circ\text{C}$) IEC/DIN Std.
T01	100 ± 0.12 ($\alpha = 0.00385 \Omega/\Omega/^\circ\text{C}$) thin film
20	200 ± 0.2 ($\alpha = 0.003924 \Omega/\Omega/^\circ\text{C}$)
21	200 ± 0.2 ($\alpha = 0.00385 \Omega/\Omega/^\circ\text{C}$)
T05	500 ± 0.6 ($\alpha = 0.00385 \Omega/\Omega/^\circ\text{C}$) thin film
T10	1000 ± 1.2 ($\alpha = 0.00385 \Omega/\Omega/^\circ\text{C}$) thin film
102	100 ± 0.1 Dual Element ($\alpha = 0.003924 \Omega/\Omega/^\circ\text{C}$)
112	100 ± 0.1 Dual Element ($\alpha = 0.00385 \Omega/\Omega/^\circ\text{C}$)
T012	100 ± 0.12 Dual Element ($\alpha = 0.00385 \Omega/\Omega/^\circ\text{C}$) thin film

SERVICE PARAMETER - Sinusoidal Vibration 20Hz to 2kHz
 S Standard construction (25 g wire-wound, 80 g thin film)
 H Heavy duty construction (up to 50 g) (single wire element only)

PROBE LENGTH IN THERMOWELL
 Std. Const: 2" min, Heavy Duty: 3" min (see photo)
 Specify length "A" (bore depth) in inches

PROBE LAG HARDWARE - 1/2 NPT Fittings, stainless steel unless noted.
 A Hex Nipple is 3/4" long standard. Specify as "A", (standard)
 BX (Straight Nipple), specify X=1/8", 1/2", 1" + 1" increments
 EX (Aluminum Union/Nipple Extension), specify X=min. 3" plus 1" increments
 FX Same as EX (stainless union)
 GX (Coupling/nipple extension), black iron, specify X=min. 3" + 1" increments
 HX (Union/nipple extension), black iron, specify X=min. 3" + 1" increments
 JX (Close nipple, galvanized unsealed parting coupling, nipple extension) black iron, specify x=min. 1 1/2" + 1" increments (shortest "union")
 KX (Straight nipple) black iron, specify x=1/8", 1/2", 1", + 1" incr. (CREDIT)

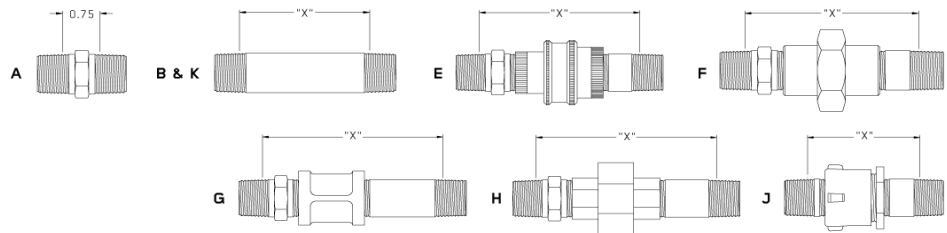
CONNECTION HEAD (see connection head table)

NUMBER OF LEADS
 A Single element, 2 wires any length
 B Single element, 3 wires 36" or under in length
 C Single element, 4 wires 36" or under in length
 D Dual element, 2 wires per element
 E Dual element, 3 wires per element

LEAD LENGTH (Specify in inches)
 (4" Standard)



LAG HARDWARE REFERENCE



Specialists in Temperature Measurement



Performance Specifications

Features

Premium RTD Probe Assemblies with strain free

Time Constant without Thermowell

Less than 6 sec. in water flowing at 3 ft. per sec.

wire-wound sensing elements or economical thin film sensing elements.

Operating Temperature Range

-196°C to 480°C (-320°F to 900°F) (SS Sheath)
Maximum Leadwire exit temperature: 260°C (500°F);
For higher temps, consult factory.

Resistance (Ohms @ 0°C)

100.0 ± 0.1Ω (± 0.12Ω thin film)
200.0 ± 0.2Ω
500.0 ± 0.6Ω thin film
1000.0 ± 1.2Ω thin film

Temperature Coefficients

0.003924 Ω/Ω/°C (RdF Reference)
0.003850 Ω/Ω/°C (IEC/DIN grade)

Accuracy

0.25°C @ 0°C (32°F)
0.3°C @ 0°C (32°F) on IEC/DIN thin film

Stability

Less than 0.05°C shift per year
full span on wire elements,
-50°C to 300°C (-60°F to 575°F) span on thin films

Vibration

Sinusoidal 20Hz to 2kHz
Wire Element: 25g Standard Construction
50g Heavy Duty Construction
Thin Film: 80g Standard Construction

Self-Heating

35 mW/°F in water @ 3 ft/sec.

Insulation Resistance

500 Megohms minimum @ 100VDC @ 25°C (77°F)

Recommended Current

1mA maximum

Pressure Rating

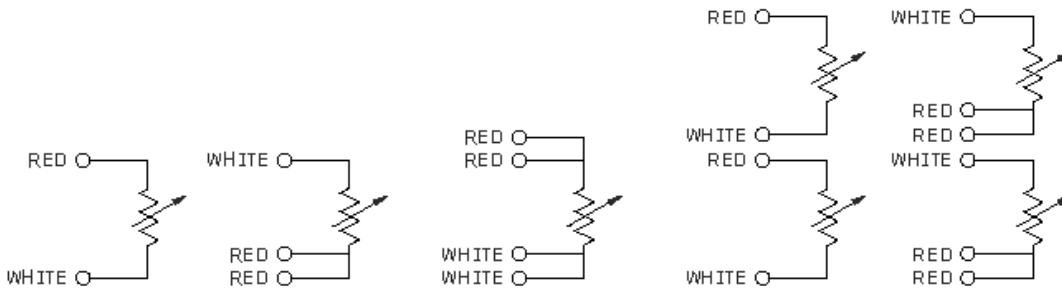
3000 PSI

Lead Materials

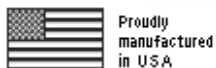
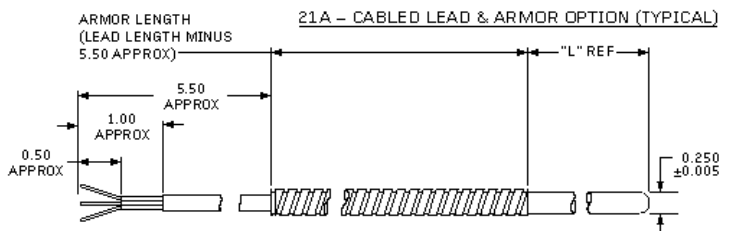
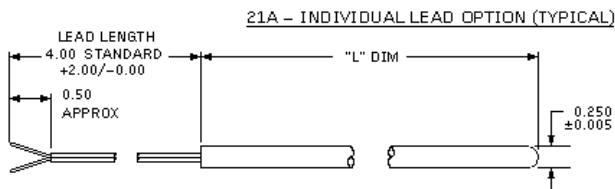
22 AWG nickel-plated stranded copper,
TFE Teflon® insulated

Teflon® is a registered trademark of the DuPont Corporation.

SCHEMATIC DIAGRAM



LEAD REFERENCE



RdF Corporation • 23 Elm Ave., Hudson, NH 03051
800.445.8367 • 603.882.5195 • fax 603.882.6925 • sensor@rdcorp.com • www.rdcorp.com

