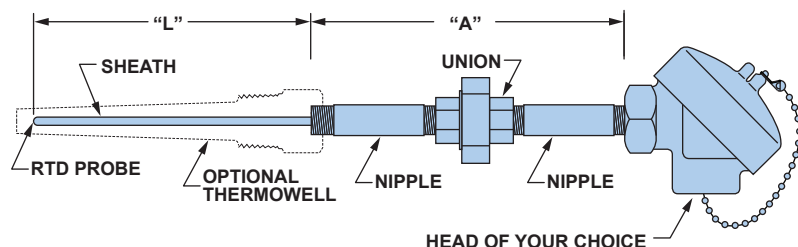


# SANDELIUS R.T.D. ASSEMBLIES

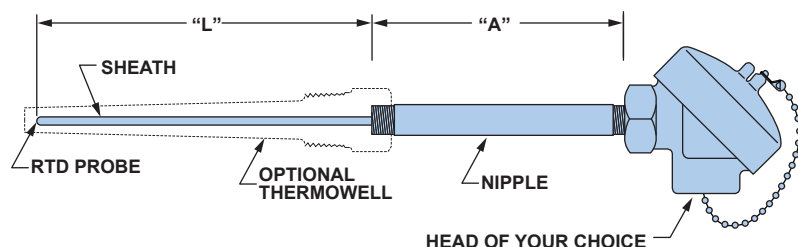
**Style R1H** – RTD with Nipple - Union - Nipple - Head

**Style SR1H** – Spring-Loaded RTD with Nipple - Union - Nipple - Head



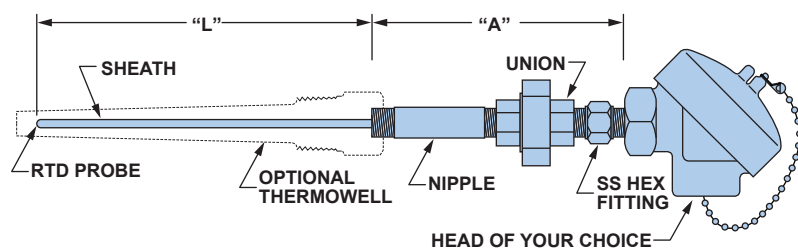
**Style R2H** – RTD with Nipple - Head

**Style SR2H** – Spring-Loaded RTD with Nipple - Head

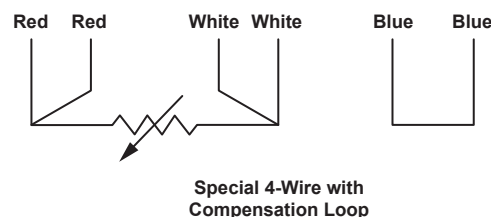
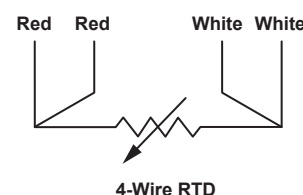
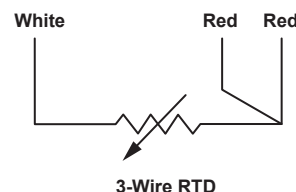
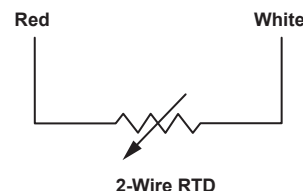


**Style R7H** – RTD with Nipple - Union - Brazed SS Fitting - Head

**Style SR7H** – RTD with Nipple - Union - Spring-loaded SS Fitting - Head



## RTD Leadwire Configurations



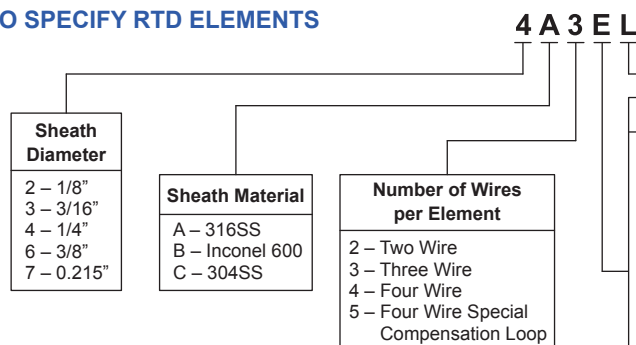
To Order specify:

**SR7H-4A3EL-L16-4G6-C46C-(Optional Thermowell\*)**

Assembly Style	Element See Below	L – Length in inches	Head See Pages A-18 & A-19	See Catalog Section B-2
		Thread Size 4 – 1/2" NPT 6 – 3/4" NPT 8 – 1" NPT	Nipple & Union Material C – Carbon Steel G – Galvanized Steel S – Stainless Steel	Nominal A Length in inches

\*To order an assembly complete with a thermowell simply insert the part number of the thermowell from Sandelius catalog Section B. When ordering an assembly complete with a thermowell, the "L" length may be shown as "00" as we will size the element to fit the thermowell.

## HOW TO SPECIFY RTD ELEMENTS



Notes:

- Alpha = 0.00385 is the DIN 43760 standard and is the most commonly used.
- Not all items for which a part number can be made are available in actual fact.
- The temperature ranges shown are for platinum RTDs.
- Sandelius RTDs are normally manufactured for use at temperatures above -140° F. If an RTD is intended for use at temperatures below -140° F, this information must be specified on the order so the necessary modifications can be incorporated. (In very special cases, temperatures as low as -434° F are possible).

### RTD Type

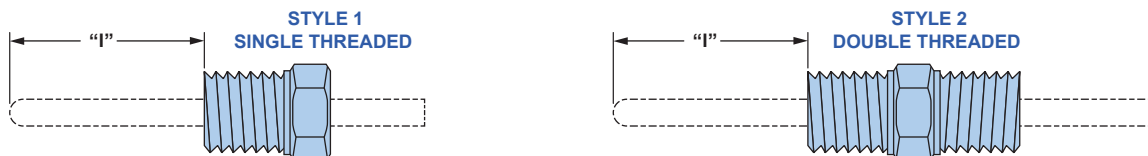
E	Platinum 100	@ 0° C.	α = 0.00385	– Single
EE	Platinum 100	@ 0° C.	α = 0.00385	– Dual
A	Platinum 100	@ 0° C.	α = 0.003916	– Single
AA	Platinum 100	@ 0° C.	α = 0.003916	– Dual
B	Platinum 100	@ 0° C.	α = 0.003902	– Single
P	Platinum 100	@ 0° C.	α = 0.003926	– Single
R	Platinum 100	@ 0° C.	α = 0.003911	– Single
W	Platinum 100	@	Sama Curve	– Single
N	Nickel 120	@ 0° C.		– Single
C	Copper 100	@ 25° C		– Single
Y	Other (Specify at end of part number)			

### Temperature Range<sup>2 3</sup> / Construction

L	– -328° F – 500° F with Teflon wire
K	– -328° F – 700° F with Kapton wire
M	– -328° F – 1000° F MgO with Teflon leads
C	– -20° F – 200° F with PVC wire (Recommended for cooling water)
F	– 50° F – 700° F with Fiberglass wire
H	– -328° F – 1200° F MgO with Teflon leads, H range comes standard with Inconel 600 sheath material

# ACCESSORIES

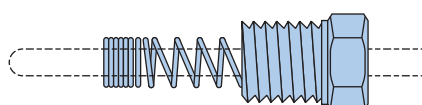
## FIXED FITTINGS – ARE BRAZED OR WELDED TO THE SHEATH



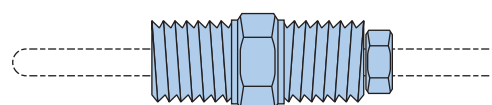
ORDER SYMBOL		THREAD SIZE	MATERIAL	AVAILABLE TO FIT THESE SHEATH O.D. SIZES
STYLE 1	STYLE 2			
F11	F21	1/8" NPT	304SS	0.063, 0.125, 0.188 & 0.250
F12	F22	1/4" NPT	304SS	0.063, 0.125, 0.188, 0.250, 0.313 & 0.375
F14	F24	1/2" NPT	304SS	0.063, 0.125, 0.188, 0.250, 0.313, 0.375 & 0.500
F16	F26	3/4" NPT	304SS	0.063, 0.125, 0.188, 0.250, 0.313, 0.375 & 0.500
F18	F28	1" NPT	304SS	0.063, 0.125, 0.188, 0.250, 0.313, 0.375 & 0.500

## SPRING-LOADED FITTINGS

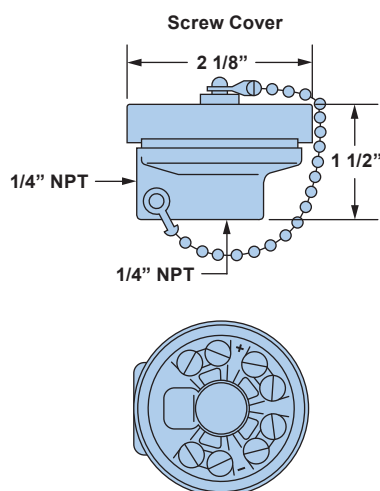
STYLE 1 – SINGLE THREADED



STYLE 2 – DOUBLE THREADED



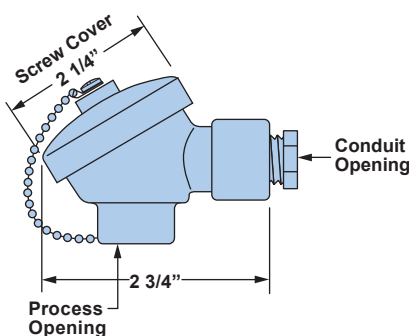
ORDER SYMBOL		THREAD NPT SIZE	MATERIAL	SPRING TYPE	AVAILABLE SHEATH SIZES
STYLE 1	STYLE 2				
SF14	SF24	1/2" NPT	304SS	Adjustable	0.125, 0.188, 0.250, 0.312 & 0.375
SB14	–	1/2" NPT	BRASS	Adjustable	0.125, 0.188, 0.250, 0.312 & 0.375
SPF14	SPF24	1/2" NPT	304SS	Adjustable with Liquid-tight O-Ring	0.125, 0.188 & 0.250



**Miniature Weatherproof Thermoset Plastic Head**

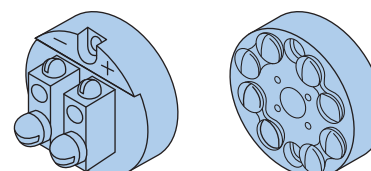
1/4" NPT x 1/4" NPT with 4 Integral Terminals

Part Number	Ambient Temperature Rating
N22	350° F
W22	800° F



**Miniature Aluminum Head (Type M)**

**Part Number: M44\*** (1/2" x 1/2" NPT)  
(Use "120" Series Terminal Blocks)  
Max No. of Terminals: 4 + Ground  
\*See note on page A-18

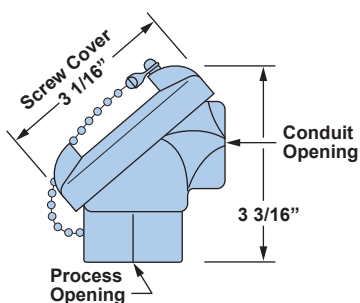


**Ceramic Terminal Blocks**

Fit Miniature Head Type: M

Part Number	Description
CP122	2 - Terminals
CP124	4 - Terminals

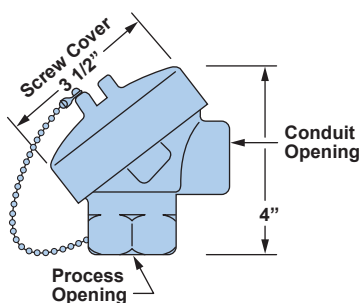
# TERMINAL HEADS & CONNECTOR BLOCKS



## Standard Weatherproof Heads

(Use "162 Series" Ceramic Terminal Blocks)  
Max. number of terminals: 6+Ground.

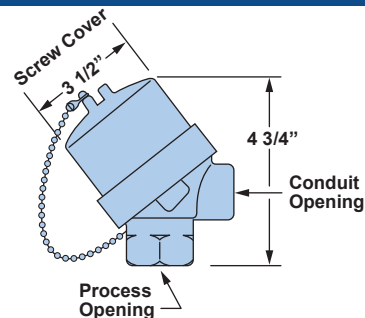
Part Number <sup>1</sup>	Type	Description
P46*	P	Polypropylene
PW46*	PW	White Polypropylene <sup>2</sup> (FDA Compliant)
Q46*	Q	Aluminum
R46*	R	Cast Iron



## Large Weatherproof Heads

(Use "162 Series" Ceramic Terminal Blocks)  
Max. number of terminals: 6+Ground.

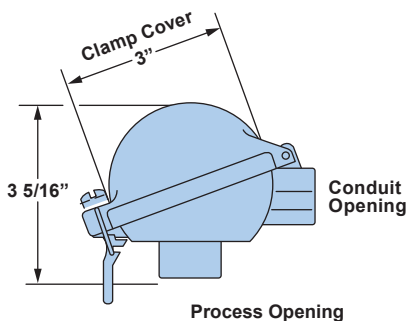
Part Number <sup>1</sup>	Type	Description
A46*	A	Aluminum
C46*	C	Cast Iron



## Large Dome Cover Weatherproof Heads

(Use "162 Series" Ceramic Terminal Blocks)  
Max. number of terminals: 6+Ground.

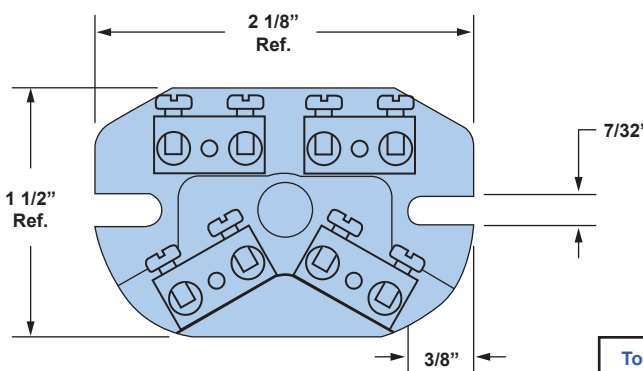
Part Number <sup>1</sup>	Type	Description
D46*	D	Cast Iron



## Weatherproof Aluminum Head

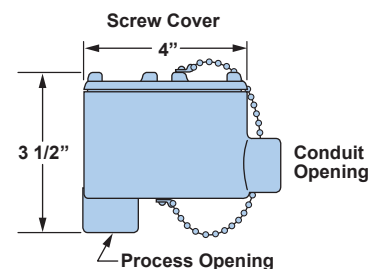
(Use "162 Series" Terminal Blocks)  
Max No. of Terminals: 6 + Ground

Part Number <sup>1</sup>	Type	Description
H44*	H	1/2" x 1/2" NPT
H46*	H	1/2" x 3/4" NPT



163 Series Ceramic terminal blocks  
Fits All Heads, must be used for 8g- wire

Part Number	Number of Terminals
CP163B	2
CP163D	4



## Large Explosion Proof Heads

(Standard Terminal Block is CP129)  
Max No. of Terminals: 6 + Ground

Part Number <sup>1</sup>	Type	Description
E46*	E	Aluminum
F46*	F	Cast Iron/Aluminum

## To Order Any Head On This Page

**C 4 6 B**

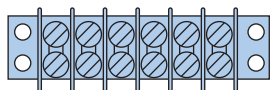
- Connector block if required.
- B – 2 Terminals    C – 3 Terminals
- D – 4 Terminals    F – 6 Terminals
- Conduit Opening (See table A below)
- Process Opening (See table A below)
- Head Type
- If a tapped internal ground screw is required insert a "G" in front of the part number.

## Table A - Connection Sizes (All heads on this page)

NPT SIZE	ORDER CODES	Available on Head Types	
		PROCESS	CONDUIT
1/2	4	All	All
3/4	6	All except H+P	All
1	8	A B C D E F & R	E & F

## Notes:

- \* To order heads complete with terminal block add suffix to specify the number of terminals required B=2 terminals, C=3 terminals, etc.
- 1. Unless otherwise noted, all head part numbers shown are for heads with 0.5" NPT process openings and 0.75" NPT conduit openings. See Table A for other available sizes.
- 2. PW series heads may be specially ordered with molded-in terminals. To order insert an "M" before the number of terminals required. Example: PW46MF would have 6 molded-in terminals.
- 3. Type E & F explosion proof heads are approved for Class 1, Groups B, C, & D; Class 2, Groups E, F & G; Class 3, All Groups.
- 4. Type F explosion proof heads have cast iron bodies with aluminum covers.
- 5. Aluminum & Cast Iron heads are available with epoxy coating add an "X" after the type designation. Example: QX46D.
- 6. Some NPT sizes are achieved through the use of reducing bushings.

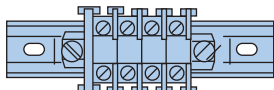


## CP129 & CP130 Terminal Strips

CP129 (3/8" spacing) is standard in E & F type heads.  
CP130 (7/16" spacing) available with compensated terminals is commonly used in junction boxes.

## To Order Specify

**CP130-12-K**  
 | Type of Optional  
 | Compensated Terminals  
 | (Available on CP130 only)  
 | Number of Terminals (20 max.)  
 | Part Number



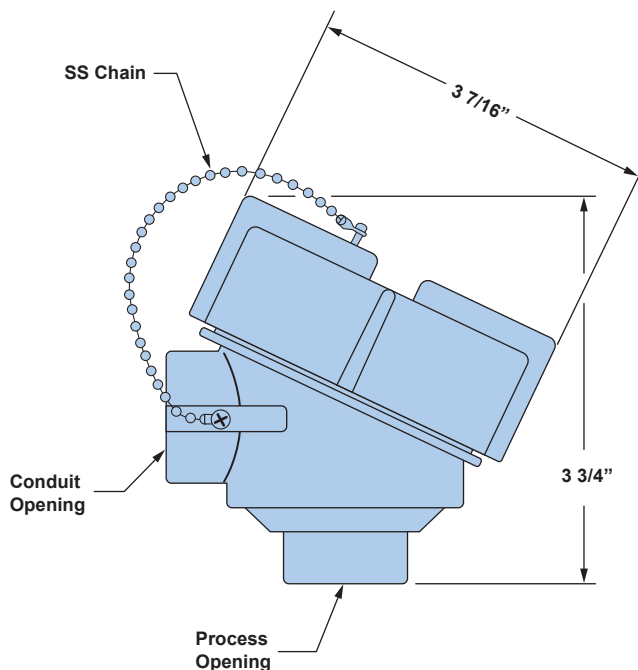
## CP140 Tubular Clamp Type Terminal Strip

Commonly used in junction boxes. May be specified as an option for E & F type heads.

## To Order Specify

**CP140-10**  
 | Number of Terminals  
 | Part Number

# TERMINAL HEADS & CONNECTOR BLOCKS



## To Order Specify

**AE-46-D**

Standard Terminal Block  
 B – 2 Terminal Block (CP162B)  
 C – 3 Terminal Block (CP162C)  
 D – 4 Terminal Block (CP162D)  
 F – 6 Terminal Block (CP162F)  
 Leave blank if no Terminal Block

Connection Code  
 (See Table B)

Basic Part Number  
 (See Table A)

**TABLE A - Basic Part Numbers**

Part Number	Material
AE	Aluminum, Explosion Proof
AEX	Epoxy Coated Aluminum, Explosion Proof
SE	316SS, Explosion Proof

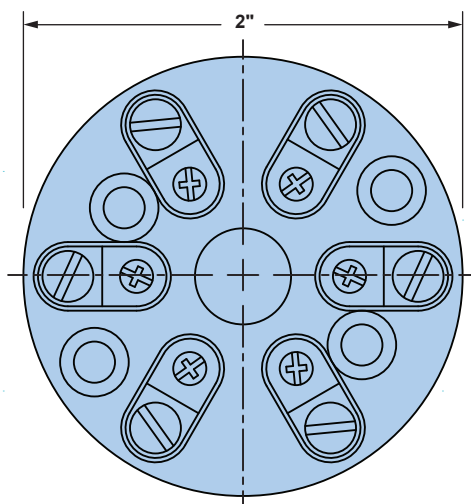
**Table B – Connection Code**

Code	Process Opening	Conduit Opening
44	1/2" NPT	1/2" NPT
45	1/2" NPT	M20 x 1.5
46	1/2" NPT	3/4" NPT
66	3/4" NPT	3/4" NPT

FM/CSA APPROVALS:  
 CLASS 1, DIV. 1, GROUPS B, C & D and  
 Dust Ignitionproof for Class II, Div. 1,  
 Group E, F and G, Class III  
 Type 4X and IP68

**Ex** II 2 G Ex d IIC Gb Ta, IP68  
 II 2 D Ex tb IIIC Db Ta, IP68

IECEx Approvals:  
 Ex d IIC Gb  
 Ex tb IIIC Db



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Part Number	Number of Terminals
CP162B	2
CP162C	3
CP162D	4
CP162E	5
CP162F	6

REVISIONS			Sandelius Instruments, Inc. 713.861.1100      www.sandelius.com					
NO.	DATE	BY						
1.			TERMINAL BLOCK					
2.								
3.			DRAWN BY	TJM	SCALE	NTS	MATERIAL	Noted
4.			CHK'D		DATE	2/17/16	DRAWING NUMBER	CP163
5.			TRACED		APP'D			