

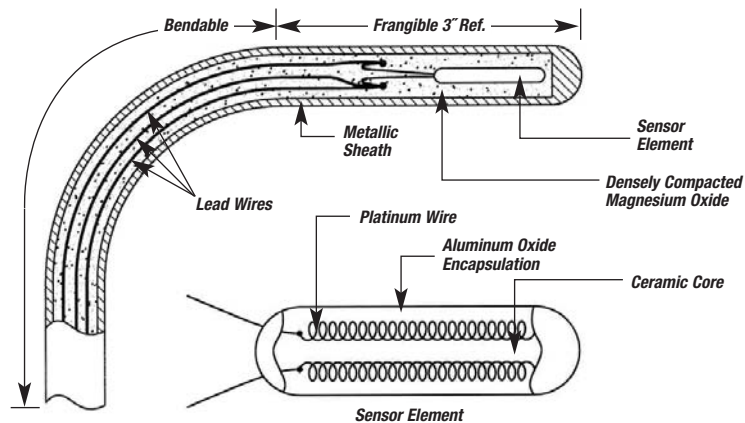
Conax Buffalo's **wirewound platinum RTD assemblies** feature a wirewound element encased in either a stainless steel or Inconel 600 sheath. The RTD's nickel leadwires are supported and insulated throughout the sheath with densely compacted high-purity magnesium oxide. This allows the sensor to be bent like a thermocouple except in the tip portion that contains the element.

- sensor element to meet your operating conditions and specifications
- sensor tolerance
- lead configuration corresponding to the number of leads your application requires
- sheath material and size
- termination style
- optional mounting configuration
- sheath length

Thin film platinum element assemblies (M-style) use a powder-filled tubewell construction with bare leadwire strung through pre-formed MgO insulators and attached directly to the element. This assembly is inserted into a closed-end tubewell, which is then filled with Al₂O₃ powder and capped with potting compound. **Copper and nickel element assemblies (E-style)** feature a similar tubewell construction, with Teflon®-insulated leadwires brazed to the element. The tubewell is then filled with Al₂O₃ powder and capped with potting compound. In both cases, the minimum active length is 3" and the assemblies should not be bent.

If at any time you require assistance, call 1-800-223-2389 or your local Conax sales representative.

Wirewound Platinum Element Assembly



RTD assemblies can be provided with a wide variety of termination styles and mounting fittings to meet the needs of your application. Conax Buffalo also offers numerous sensor tolerances, sheath diameters and sheath materials. This section outlines the key choices needed to specify the correct Conax Buffalo part description for your needs. In each case, you will be asked to select the:

Sensor Element Descriptions

Catalog Code	Description	Operating Range	
ERTD41	Wirewound Copper, 10Ω (9.05Ω actual) @ 0° C, 0.00426 Ω/Ω/°C	-70° C to +150° C	-94° F to +300° F
ERTD42	Wirewound Nickel, 120Ω @ 0° C, 0.00672 Ω/Ω/°C	-40° C to +180° C	-40° F to +350° F
RTD43	Wirewound Platinum, 100Ω @ 0° C, 0.00385 Ω/Ω/°C	-250° C to +600° C	-418° F to +1112° F
MRTDF43	Thin Film Platinum, 100Ω @ 0° C, 0.00385 Ω/Ω/°C	-50° C to +550° C	-58° F to +1022° F
RTD44	Wirewound Platinum, 100Ω @ 0° C, 0.00385 Ω/Ω/°C	-250° C to +800° C	-418° F to +1472° F
ARTD44	Wirewound Platinum, 100Ω @ 0° C, 0.00385 Ω/Ω/°C	-196° C to +600° C	-321° F to +1112° F
RTD45	Wirewound Platinum, 100Ω @ 0° C, 0.003916 Ω/Ω/°C	-250° C to +600° C	-418° F to +1112° F
RTD86	Wirewound Platinum, 200Ω @ 0° C, 0.00385 Ω/Ω/°C	-250° C to +600° C	-418° F to +1112° F
MRTDF430	Thin Film Platinum, 1000Ω @ 0° C, 0.00385 Ω/Ω/°C	-50° C to +550° C	-58° F to +1022° F

Note: Operating temperatures apply to element only. Assembly operating temperature depends on materials and construction. When the RTD must fit into an existing network, the ice point resistance and temperature coefficient should match that of the readout equipment – usually found on the equipment nameplate. Wirewound platinum elements consist of a filament encapsulated within longitudinal holes in a ceramic body. Thin-film elements (designated by "F") consist of a platinum film deposited onto a ceramic substrate and are available only in powder-filled construction. ASTM E1137 specifications are met by ARTD44. These sensor types are also available: RTD48, Wirewound Platinum, 10 Ω @ 0° C, 0.00385 Ω/Ω/°C; MRTDF215, Thin Film Platinum, 500 Ω @ 0° C, 0.00385 Ω/Ω/°C. Consult factory. Wirewound platinum element assemblies are also available in E-style and M-style construction, W tolerance, for certain applications. Consult factory.



For more information call: 1-800-223-2389 • e-mail: conaxbuf@conaxbuffalo.com • visit our website: www.conaxbuffalo.com

Sensor Tolerances

Class (Catalog Code)	Tolerance at 0°C (°C)										
	ERTD41		ERTD42		MRTDF43	RTD43 & RTD44		RTD45		RTD86	MRTDF430
	Single	Single	Dual	Single	Single	Dual	Single	Dual	Single	Single	
Class B (W)*	-	-	-	±0.3	±0.3	±0.3	±0.3	±0.3	±0.3	±0.3	±0.3
1/3 Class B (V)	-	-	-	-	±0.1	-	±0.1	-	-	-	-
X	±0.4	±0.8	±1.4	-	-	-	-	-	-	-	-
Class A (S)**	-	-	-	-	±0.15	-	±0.15	-	-	-	-

Notes: - This table represents tolerance values for 3-wire and 4-wire RTDs. Caution must be exercised with 2-wire RTDs and 3-wire RTDs with longer than standard termination leads because possible error can be introduced by leadwire resistance. - Class A and Class B tolerances are based on EN 60751:1996 for platinum elements. - For ASTM E1137 assemblies, ARTD44, W tolerance applies, 4-wire lead configuration. * Type W tolerance sensors are the most widely used in the industry. ** Type S is only available with Type 4 four-wire lead configuration.

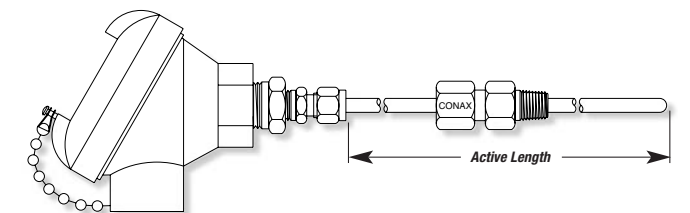
Sheath Diameter and Material Availabilities

Catalog Code			Sheath OD (inches)	Wall Thickness (nominal)	Sensor Element	Single				Dual	
304 Stainless Steel	316 Stainless Steel	INCONEL 600				W	V	X	S	W	X
SS12	316SS12	INC12	0.125	0.020	RTD43	•	•		•	•	
					MRTDF43	•					
					RTD44	•	•		•		
					RTD45	•	•		•		
SS18	316SS18	INC18	0.187	0.028	RTD43	•	•		•	•	
					MRTDF43	•					
					RTD44	•	•		•	•	
					RTD45	•	•		•	•	
SS25	316SS25	INC25	0.250	0.033	ERTD41				•		
					ERTD42				•		•
					RTD43	•	•		•	•	
					MRTDF43	•					
					RTD44	•	•		•	•	
					ARTD44	•					
					RTD45	•	•		•	•	
					RTD86	•					
					MRTDF430	•					

Notes: - Per ASTM E1137, stainless steel is recommended for service temperatures not exceeding 900° F (480° C). Inconel 600 is recommended for service temperatures not exceeding 1202° F (650° C). Conax endorses these recommendations. Above 1202° F (650° C), high purity alumina sheathing is suggested. - All 0.125" and 0.187" sheath diameters can be supplied containing up to four wires. All 0.250" sheath diameters can be supplied containing up to eight wires. - ASTM E1137 assemblies, ARTD44W, available in 0.250" sheath diameter only. - Maximum continuous standard probe length is 20 feet. For longer lengths, please consult the factory. - Information on optional sheath materials can be found on pages 23-24 or consult the factory.

Active Length

The active length must be specified as the last portion of the catalog description. The active length is the distance in inches from the termination to the sensor tip, as shown in the drawing. Note that you must order the active length, not the immersion. The active length is available in 1/16" increments. For information on immersion length, see pages 25 and 44.



For more information call: 1-800-223-2389 • e-mail: conaxbuf@conaxbuffalo.com • visit our website: www.conaxbuffalo.com