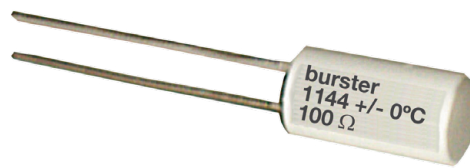


# Platinum Resistance Thermometer Simulation

**Model 1146-Pt100**  
**Model 1144-Pt100**  
**Model 1144-Pt500**  
**Model 1144-Pt1000**

Code:	1144-Pt EN
Delivery:	6-8 Wochen
Warranty:	24 months



1144-Pt EN

- $TK \leq 10 \text{ ppm/K}$
- More than 60 fixed temperature values from  $-200 \text{ °C} \dots +800 \text{ °C}$
- Calibration in acc. with DIN EN 60751
- $\pm 0.02 \%$  tolerance for the models 1144-Pt 100, 1144-Pt 500 and 1144-Pt 1000
- $\pm 0.05 \%$  tolerance for model 1146-Pt100
- Resistance material MANGANIN®

## Application

Today resistance thermometers are one of the important precision and operating measurement instruments of technical temperature measurement. Fast and easy testing of display, control and recording devices in measurement and process engineering is essential. Fixed temperature values can easily be simulated according to the characteristic curves of Pt100, Pt500 and Pt1000 using the precision resistors calibrated in °C (the inscription also includes the resistance value in  $\Omega$ ).

The small dimensions of the resistors allow the installation in measuring instruments or measuring circuits for comparison or control measurements.

Consideration of the ambient temperature is not necessary and the temperature coefficient of  $< 10 \text{ ppm}$  of the used material MANGANIN® is negligible.

## Description

The precision resistors of the models 1144 and 1146 consist of low-capacity and low-inductance wire coils made of MANGANIN®, which are cast in small plastic cylinder housings.

Prior to comparison, the resistance bodies are exposed to a meticulous artificial aging procedure. This special process and the adjustment to only half the nominal tolerance guarantee high long-term stability over many years.

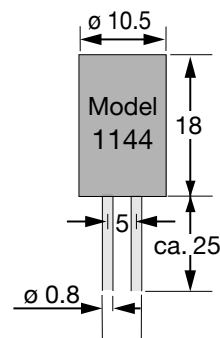
**Resistance Values**

Temperature Value in °C t <sub>90</sub>	Order Code	Resistance Value in Ω	Temperature Value in °C t <sub>90</sub>	Order Code	Resistance Value in Ω	Temperature Value in °C t <sub>90</sub>	Order Code	Resistance Value in Ω
<b>Model 1146-Pt100</b>			<b>Model 1144-Pt100</b>			<b>Model 1144-Pt500</b>		
- 200	1146 - 200-	18.520	+ 40	1144 - 40+	115.541	- 10	1144-Pt500 - 10-	480.430
- 150	1146 - 150-	39.723	+ 45	1144 - 45+	117.470	0	1144-Pt500 - 0	500.000
- 100	1146 - 100-	60.256	+ 50	1144 - 50+	119.397	+ 20	1144-Pt500 - 20+	538.970
- 50	1146 - 50-	80.306	+ 55	1144 - 55+	121.321	+ 50	1144-Pt500 - 50+	596.985
- 30	1146 - 30-	88.222	+ 60	1144 - 60+	123.242	+ 100	1144-Pt500 - 100+	692.530
- 25	1146 - 25-	90.192	+ 65	1144 - 65+	125.160	+ 150	1144-Pt500 - 150+	786.625
- 20	1146 - 20-	92.160	+ 70	1144 - 70+	127.075	+ 200	1144-Pt500 - 200+	879.490
- 15	1146 - 15-	94.124	+ 80	1144 - 80+	130.897	+ 250	1144-Pt500 - 250+	970.490
- 10	1146 - 10-	96.086	+ 90	1144 - 90+	134.707	+ 300	1144-Pt500 - 300+	1060.26
- 8	1146 - 8-	96.870	+ 100	1144 - 100+	138.506	+ 400	1144-Pt500 - 400+	1235.46
- 6	1146 - 6-	97.653	+ 120	1144 - 120+	146.068	+ 500	1144-Pt500 - 500+	1404.89
- 4	1146 - 4-	98.436	+ 150	1144 - 150+	157.325	<b>Model 1144-Pt1000</b>		
- 2	1146 - 2-	99.218	+ 200	1144 - 200+	175.856	- 50	1144-Pt1000 - 50-	803.06
<b>Model 1144-Pt100</b>			+ 250	1144 - 250+	194.098	- 10	1144-Pt1000 - 10-	960.86
0	1144 - 0	100.000	+ 300	1144 - 300+	212.052	0	1144-Pt1000 - 0	1000.00
+ 2	1144 - 2+	100.781	+ 350	1144 - 350+	229.716	+ 10	1144-Pt1000 - 10+	1039.03
+ 4	1144 - 4+	101.562	+ 400	1144 - 400+	247.092	+ 20	1144-Pt1000 - 20+	1077.94
+ 6	1144 - 6+	102.343	+ 450	1144 - 450+	264.179	+ 30	1144-Pt1000 - 30+	1116.73
+ 8	1144 - 8+	103.123	+ 500	1144 - 500+	280.978	+ 50	1144-Pt1000 - 50+	1193.97
+ 10	1144 - 10+	103.903	+ 550	1144 - 550+	297.487	+ 100	1144-Pt1000 - 100+	1385.06
+ 15	1144 - 15+	105.849	+ 600	1144 - 600+	313.708	+ 150	1144-Pt1000 - 150+	1573.25
+ 20	1144 - 20+	107.794	+ 650	1144 - 650+	329.640	+ 200	1144-Pt1000 - 200+	1758.56
+ 25	1144 - 25+	109.735	+ 700	1144 - 700+	345.284	+ 250	1144-Pt1000 - 250+	1940.98
+ 30	1144 - 30+	111.673	+ 750	1144 - 750+	360.638	+ 300	1144-Pt1000 - 300+	2120.52
+ 35	1144 - 35+	113.608	+ 800	1144 - 800+	375.704	+ 400	1144-Pt1000 - 400+	2470.92
						+ 500	1144-Pt1000 - 500+	2809.78
Intermediate values on request.								

**Technical Data**

Resistance material: MANGANIN®  
 Temperature coefficient: ≤ ±10 ppm/K  
 Error tolerance: model 1144 ± 0.02 %  
 model 1146 ± 0.05 %  
 Balance temperature: 23 °C  
 Balance point: for connecting wire of 5 mm length  
 Temperature range: - 200 ... + 800 °C  
 Basic values: calibrated acc. to DIN EN 60751  
 Coil design: graduated coil according to Chaperon  
 Long-term stability: < 0.02 % over years  
 Operating voltage: max. 500 V  
 Temperature range: 0 °C ... 85 °C  
 Temperature dependence:  $R_t = R_{20} [1 + \alpha_{20} (t-20) + \beta (t-20)^2]$   
 $\alpha_{20} = 0 \dots 20 \cdot 10^6$   
 $\beta = - 0.59 \cdot 10^6$   
 Short-time load: approx. 10 % < 1 min  
 Ultimate load: 0.7 W up to 25 °C environmental temperature  
 Surface temperature: max. 85 °C  
 results from heat dissipation and environmental temperature  
 Thermal resistance: 90 K/W  
 Specifications: according DIN 43783, part 1 (former VDE 410)  
 Weight: ca. 3 g

**Dimensions [mm]**



**Minimum order quantity:**

Standard values: 10 pcs (can be mixed)  
 Special values: 10 pcs (of identical version)  
 Delivery: approx. 4 - 6 weeks

**Order Code**

7 pcs **Model 1146-Pt100** - 100 °C  
 10 pcs **Model 1144-Pt100** + 100 °C  
 12 pcs **Model 1144-Pt500** + 50 °C  
 17 pcs **Model 1144-Pt1000** + 150 °C