Rev	Date	Approved	DCN									
A	7SEP00	DW	11214									

1. There are 3 different versions of the model 11 series in use.

2. Use the diagrams below to determine which version you have before calibrating.

   a. Remove the circuit board from the case and examine the lead connections.

3. For version 1 use procedure A, for version 2 use procedure B, and for version 3 use procedure C.
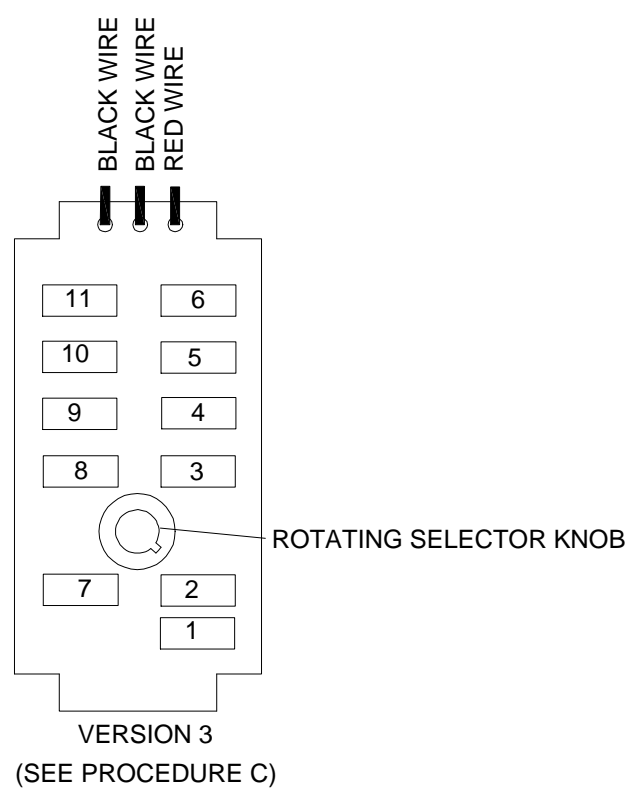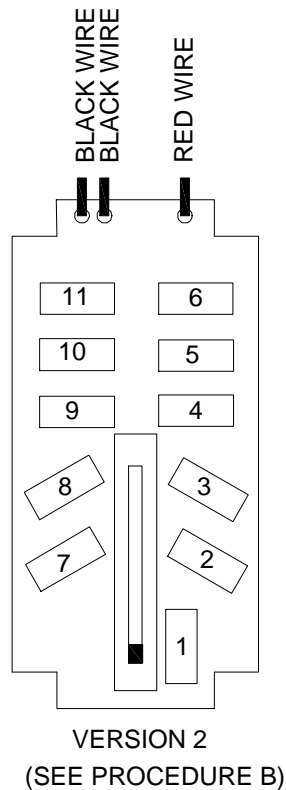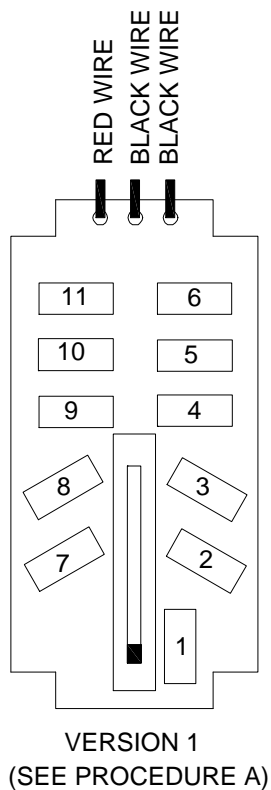
VERSION 1
(SEE PROCEDURE A)

VERSION 2
(SEE PROCEDURE B)

VERSION 3
(SEE PROCEDURE C)

PROCEDURE A (FOR VERSION 1)

Equipment needed:

1. Digital Ohmmeter ± 0.025% accuracy with 4 wire Ohm connections (Keithly 191 5 ½ digit or equivalent).

2. Table of temperature vs. resistance for RTD type, range, and curve (α) as indicated on faceplate of model 11 being calibrated.

Procedure:

1. Connect unit to an Ohmmeter set for 3 wire hook-up.

Caution: Using a 2 wire hook-up will cause a 0.017 Ohm error.

2. Move the switch to its lowest temperature position (Position 1) and adjust R1 (as shown in figure 1) to the resistance value obtained from Table 1.

Note: If model 11 does not match any of the tables in table 1 you need an RTD table.

3. Move switch to position 2 and adjust R2 to its value obtained from Table 1.

4. Repeat this procedure for the remaining temperature positions in sequential order until all temperature ranges have been adjusted.
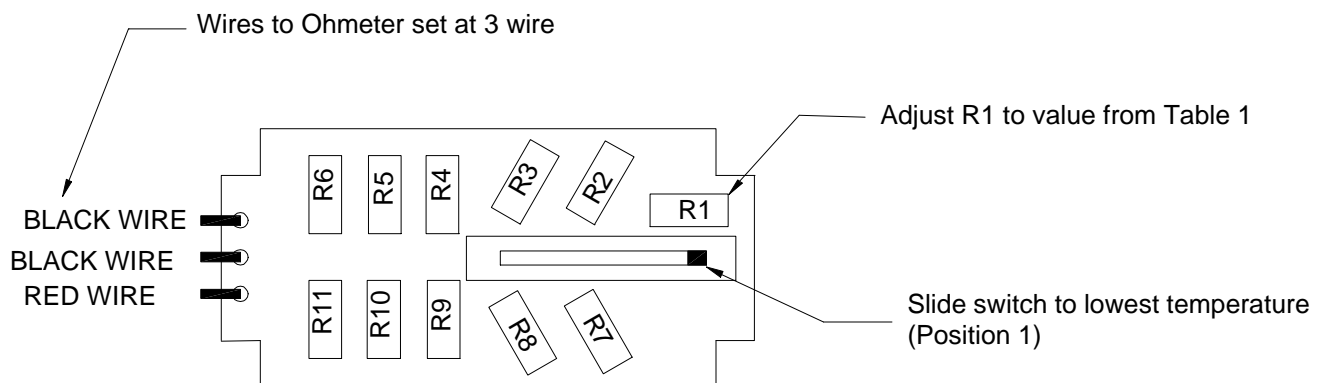

Figure 1

5. Move switch to position 1 and verify all temperature ranges are within 0.05% accuracy.

   a. Adjust pots as necessary to obtain correct values.

Caution: **Any time a low temperature is adjusted the higher temperatures must be rechecked to verify their values are still within specifications.**

6. Any model 11 that fails to meet its specifications after recalibration should be returned to the factory for repairs.

End of Procedure

PROCEDURE B (FOR VERSION 2)

Equipment needed:

1. Digital Ohmmeter ± 0.025% accuracy with 4 wire Ohm connections (Keithly 191 5 ½ digit or equivalent).

2. Table of temperature vs. resistance for RTD type, range, and curve (α) as indicated on faceplate of model 11 being calibrated.

Procedure:

1. Connect unit to an Ohmmeter set for 3 wire hook-up.

Caution: Using a 2 wire hook-up will cause a 0.017 Ohm error.

2. Move the switch to its lowest temperature position (Position 1) and adjust R1 (as shown in figure 1) to the resistance value obtained from Table 1.

Note: If model 11 does not match any of the tables in table 1 you need an RTD table.

3. Move switch to position 2 and adjust R2 to its value obtained from Table 1.

4. Repeat this procedure for the remaining temperature positions in sequential order until all temperature ranges have been adjusted.
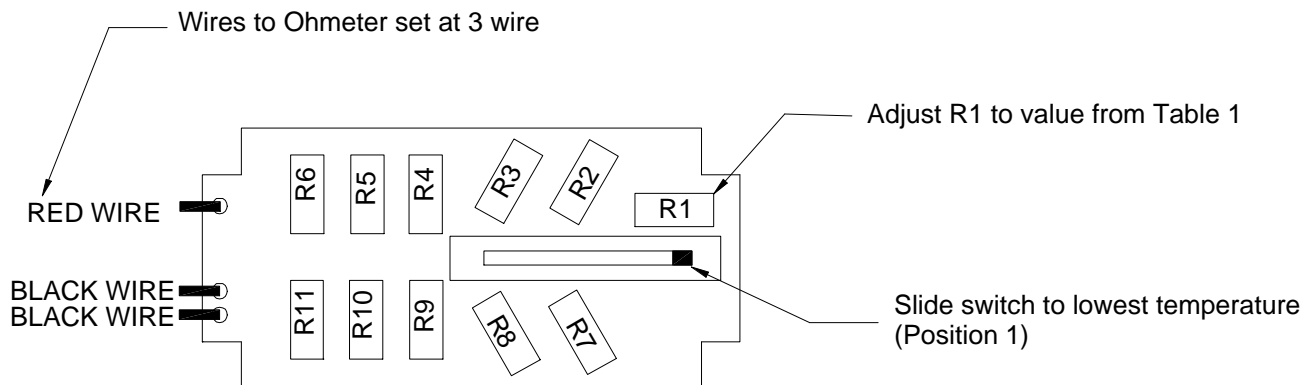

Figure 1

5. Move switch to position 1 and verify all temperature ranges are within 0.05% accuracy.

   a. Adjust pots as necessary to obtain correct values.

Caution: Any time a low temperature is adjusted the higher temperatures must be rechecked to verify their values are still within specifications.

6. Any model 11 that fails to meet its specifications after recalibration should be returned to the factory for repairs.

End of Procedure

PROCEDURE C (FOR VERSION 3)

Equipment needed:

1. Digital Ohmmeter ± 0.025% accuracy with 4 wire Ohm connections (Keithly 191 5 ½ digit or equivalent).

2. Table of temperature vs. resistance for RTD type, range, and curve (α) as indicated on faceplate of model 11 being calibrated.

Procedure:

1. Connect unit to an Ohmmeter set for 3 wire hook-up.

Caution: Using a 2 wire hook-up will cause a 0.017 Ohm error.

2. Move the switch to its lowest temperature position (Position 1) and adjust R1 (as shown in figure 1) to the resistance value obtained from Table 1.

Note: If model 11 does not match any of the tables in table 1 you need an RTD table.

3. Move switch to position 2 and adjust R2 to its value obtained from Table 1.

4. Repeat this procedure for the remaining temperature positions in sequential order until all temperature ranges have been adjusted.
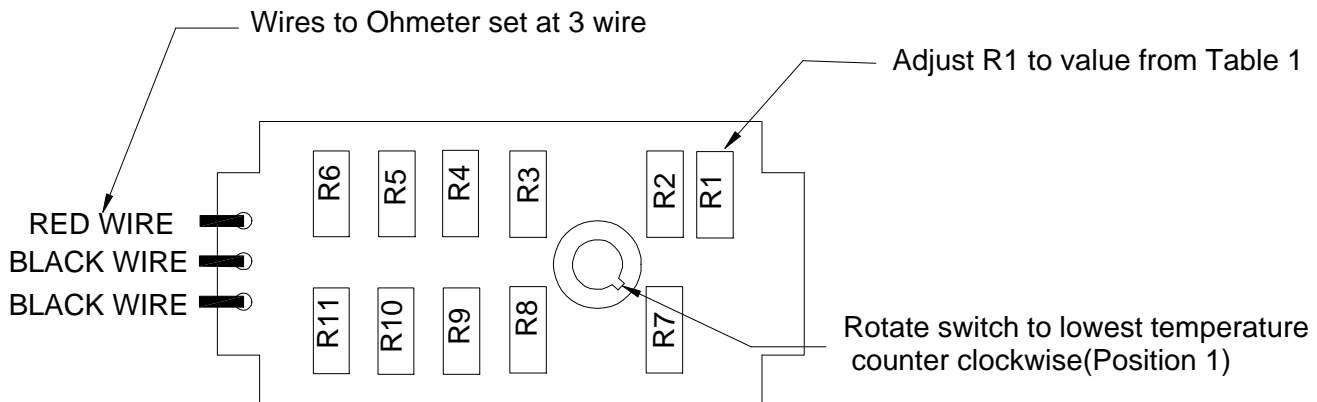

Figure 1

5. Move switch to position 1 and verify all temperature ranges are within 0.05% accuracy.

   a. Adjust pots as necessary to obtain correct values.

Caution: Any time a low temperature is adjusted the higher temperatures must be rechecked to verify their values are still within specifications.

6. Any model 11 that fails to meet its specifications after recalibration should be returned to the factory for repairs.

End of Procedure

Table 1

Platinum RTD Curves in °F

Temp. (°F)	100 Ohm 1.3850 DIN (Ohms)	100 Ohm 1.3902 (Ohms)	100 Ohm 1.3916 JIS (Ohms)	1000 Ohm 1.3750 HVAC (Ohms)
0	93.028	92.94	92.900	932.069
25	98.479	98.46	98.450	985.173
50	103.902	103.96	103.970	1038.042
75	109.302	109.43	109.470	1090.678
100	114.680	114.88	114.942	1143.081
125	120.036	120.31	120.393	1195.253
150	125.369	125.72	125.824	1247.192
175	130.681	131.10	131.192	1298.900
200	135.969	136.46	136.574	1350.374
225	141.236	141.79	141.936	1401.617
250	146.480	147.11	147.268	1452.628
300	156.901	157.66	157.872	1553.952
350	167.233	168.13	168.386	1654.348
400	177.476	178.51	178.772	1753.815
450	187.630	188.80	189.104	1852.353
500	197.694	198.99	199.350	1949.962
600	217.555	219.12	219.566	2142.394
700	237.058	238.89	239.385	2331.111
800	256.205	258.30	258.875	2516.112
900	274.995	277.34	277.968	2697.398
1000	293.427	296.02	296.732	2874.969

Table 1 (cont.)

Platinum RTD Curves in °C

Temp. (°C)	100 Ohm 1.3850 DIN (Ohms)	100 Ohm 1.3902 (Ohms)	100 Ohm 1.3916 JIS (Ohms)	1000 Ohm 1.3750 HVAC (Ohms)
0	100.00	100.000	100.00	1000.000
25	109.73	109.868	109.90	1094.879
50	119.40	119.660	119.73	1189.005
75	128.98	129.378	129.48	1282.379
100	138.50	139.020	139.16	1375.000
125	147.94	148.588	148.76	1466.869
150	157.31	158.083	158.29	1557.986
175	166.61	167.505	167.75	1648.350
200	175.84	176.853	177.13	1737.963
225	184.99	186.129	186.44	1826.822
250	194.07	195.332	195.67	1914.930
300	212.02	213.520	213.93	2088.888
350	229.67	231.419	231.89	2259.836
400	247.04	249.027	249.56	2427.775
450	264.11	266.342	266.94	2592.705
500	280.90	283.383	284.02	2754.625