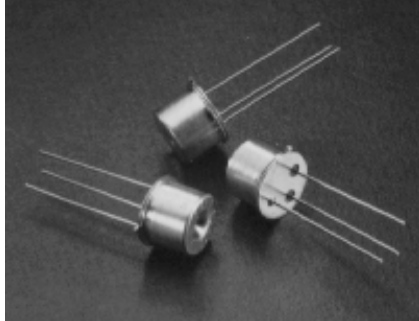


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## Redi-Temps

### Redi-Temp Subminiature 3600 Thermostats in a TO-5 Package



#### Applications:

- Power Supplies
- Logic Boards
- Telecommunications
- Medical Electronics
- Robotics

#### Benefits:

- PC Board Mountable TO-5 Package
- Logic Level Switching-Gold Contacts
- Wave Solderable-Hermetic Seal
- No Power Budget
- Electrically Isolated Case Ground Lead
- SPST (Single Pole Single Throw)
- Mounting Bracket Available
- Available from Stock

#### Operating Parameters:

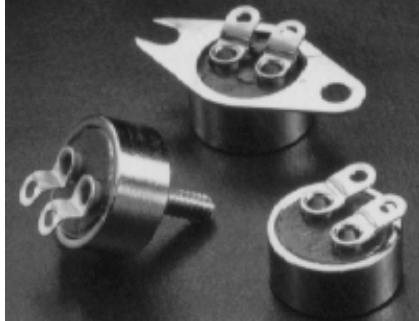
- Operating Temperature Range: 40° to 100°
- Dielectric Strength: 500 VAC, 60 Hz-for one second. Term to case
- Insulation Resistance: 20 milliohms min./Contact Resistance: 95 Milliohms max.
- Environmental Exposure: -50° to 177°



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## Redi-Temps

### Redi-Temp Thermostats 3100 SPST Hermetic Series



#### Applications:

- Computers
- Medical Electronics
- Power Supplies
- Industrial Controls
- Test Equipment

#### Benefits: Environmental Exposure - 80° to 550° F (-62° to 288° C)

- UL Listings
- Single Contact (SPST)
- Pre-set and Tamperproof
- 100% Thermally and Mechanically Inspected
- Laser Welded Hermetic Seal

#### Open On Rise Temp °F

Open	Tol +/-	Close	Tol +/-	Part Number
40	5	20	5	3100U-3-1431
50	5	30	5	3100U-3-1432
60	5	40	5	3100U-3-1433
70	5	50	5	3100U-3-1434
80	5	60	5	3100U-3-1435
90	5	70	5	3100U-3-1436
100	5	80	5	3100U-3-1437
110	5	90	5	3100U-3-1438
120	5	100	5	3100U-3-1439
130	5	110	5	3100U-3-1440
140	5	120	5	3100U-3-1441
150	5	130	5	3100U-3-1442
160	5	140	5	3100U-3-1443
170	5	150	5	3100U-3-1444

#### Open On Rise Temp °C

Open	Tol +/-	Close	Tol +/-	Part Number
4	3	-7	3	3100U-3-1431
10	3	-1	3	3100U-3-1432
16	3	4	3	3100U-3-1433
21	3	10	3	3100U-3-1434
27	3	16	3	3100U-3-1435
32	3	21	3	3100U-3-1436
38	3	27	3	3100U-3-1437
43	3	32	3	3100U-3-1438
49	3	38	3	3100U-3-1439
54	3	43	3	3100U-3-1440
60	3	49	3	3100U-3-1441
66	3	54	3	3100U-3-1442
71	3	60	3	3100U-3-1443
77	3	66	3	3100U-3-1444

180	5	160	5	3100U-3-1445	82	3	71	3	3100U-3-1445
190	5	170	5	3100U-3-1446	88	3	77	3	3100U-3-1446
200	5	180	5	3100U-3-1447	93	3	82	3	3100U-3-1447
210	8	185	6	3100U-3-1448	99	5	85	4	3100U-3-1448
220	8	195	6	3100U-3-1449	104	5	91	4	3100U-3-1449
230	8	205	6	3100U-3-1450	110	5	96	4	3100U-3-1450
240	8	215	6	3100U-3-1451	116	5	102	4	3100U-3-1451
250	8	225	6	3100U-3-1452	121	5	107	4	3100U-3-1452

**Close On Rise  
Temp °F**

Open	Tol +/-	Close	Tol +/-	Part Number
40	5	20	5	3100U-3-1453
50	5	30	5	3100U-3-1454
60	5	40	5	3100U-3-1455
80	5	60	5	3100U-3-1456
100	5	80	5	3100U-3-1457
120	5	100	5	3100U-3-1458
140	5	120	5	3100U-3-1459
160	5	140	5	3100U-3-1460
180	5	160	5	3100U-3-1461
200	5	180	5	3100U-3-1462
220	6	195	8	3100U-3-1463

**Close On Rise  
Temp °C**

Close	Tol +/-	Open	Tol +/-	Part Number
4	3	-7	3	3100U-3-1453
10	3	-1	3	3100U-3-1454
16	3	4	3	3100U-3-1455
27	3	16	3	3100U-3-1456
38	3	27	3	3100U-3-1457
49	3	38	3	3100U-3-1458
60	3	49	3	3100U-3-1459
71	3	60	3	3100U-3-1460
82	3	71	3	3100U-3-1461
93	3	82	3	3100U-3-1462
104	4	91	5	3100U-3-1463

**Ratings-Resistive**

Life Cycles	30 VAC/DC	120 VAC	240 VAC
5,000	7.0 Amps	6.0 Amps	3.0 Amps
10,000	6.5 Amps	5.0 Amps	2.5 Amps
25,000	6.0 Amps	4.0 Amps	2.0 Amps
50,000	5.5 Amps	3.0 Amps	1.5 Amps
100,000	5.0 Amps	2.0 Amps	1.0 Amps

**U.L. Ratings**

Life Cycles	120 VAC	240 VAC
<b>6,000</b>	<b>6.0 Amps</b>	<b>1.5 Amps</b>
<b>6,000</b>	<b>1/10 H.P.</b>	
<b>100,000</b>	<b>3.0 Amps</b>	<b>0.025 Amps</b>

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## Redi-Temps

### Redi-Temp Thermostats 3455RC 15 AMP High Temperature Series



#### Applications:

- Copy Machines
- Power Supplies
- Telecommunications
- Ovens

#### Benefits:

- Electrical Rating to 15 Amp 120 VAC Resistive
- Environmental Exposure 0° to 550° F (-18° to 288°C)
- U.L., C.S.A, and European Approval Agency Listings
- Single Contact (SPST)
- Pre-set and Tamperproof
- High Density Ceramic Base

#### Open On Rise Temp °F

Open	TOL +/-	Close	TOL +/-	Part Number
65	5	30	8	3455RC-100-220
75	5	40	8	3455RC-100-221
85	5	55	8	3455RC-100-222
95	5	75	8	3455RC-100-223
105	5	65	8	3455RC-100-224
115	5	85	8	3455RC-100-225
125	5	95	8	3455RC-100-226
135	5	105	8	3455RC-100-227

#### Open On Rise Temp °C

Open	TOL +/-	Close	TOL +/-	Part Number
18	3	-1	5	3455RC-100-220
24	3	4	5	3455RC-100-221
29	3	13	5	3455RC-100-222
35	3	18	5	3455RC-100-223
41	3	24	5	3455RC-100-224
46	3	29	5	3455RC-100-225
52	3	35	5	3455RC-100-226
57	3	41	5	3455RC-100-227

145	5	115	8	3455RC-100-228	63	3	46	5	3455RC-100-228
155	5	125	8	3455RC-100-229	68	3	52	5	3455RC-100-229
165	5	135	8	3455RC-100-230	73	3	57	5	3455RC-100-230
175	5	145	8	3455RC-100-231	79	3	63	5	3455RC-100-231
185	5	155	8	3455RC-100-232	58	3	68	5	3455RC-100-232
195	5	165	8	3455RC-100-233	91	3	73	5	3455RC-100-233
205	6	175	8	3455RC-100-234	96	4	79	5	3455RC-100-234
215	6	185	8	3455RC-100-235	102	4	85	5	3455RC-100-235
225	6	195	8	3455RC-100-236	107	4	91	5	3455RC-100-236
235	6	205	8	3455RC-100-237	113	4	96	5	3455RC-100-237
245	6	215	8	3455RC-100-238	118	4	102	5	3455RC-100-238
255	7	225	8	3455RC-100-239	124	4	107	5	3455RC-100-239
275	7	245	8	3455RC-100-240	135	4	118	5	3455RC-100-240
295	7	265	8	3455RC-100-241	146	4	129	5	3455RC-100-241
315	10	275	15	3455RC-100-242	157	6	135	8	3455RC-100-242

**Close On Rise  
Temp °F**

Close	TOL +/-	Open	TOL +/-	Part Number
70	8	35	5	3455RC-100-243
90	8	60	5	3455RC-100-244
110	8	80	5	3455RC-100-245
130	8	100	5	3455RC-100-246
150	8	120	5	3455RC-100-247
170	8	140	5	3455RC-100-248
190	8	160	5	3455RC-100-249
210	8	180	6	3455RC-100-250
230	8	200	6	3455RC-100-251

**Close On Rise  
Temp °F**

Close	TOL +/-	Open	TOL +/-	Part Number
21	5	2	3	3455RC-100-243
32	5	16	3	3455RC-100-244
43	5	27	3	3455RC-100-245
54	5	38	3	3455RC-100-246
66	5	49	3	3455RC-100-247
77	5	60	3	3455RC-100-248
88	5	71	3	3455RC-100-249
99	5	82	4	3455RC-100-250
110	5	93	4	3455RC-100-251

Rating-Resistive

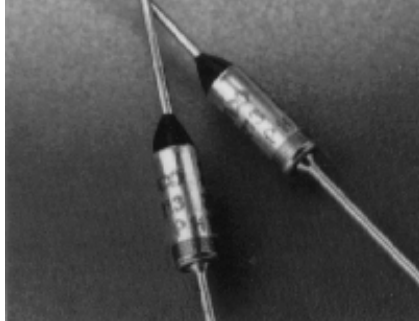
Catalog Type	Electrical Cycles	120VAC	240VAC	277VAC
3455RC	100,000	15 AMP	10 AMP	10 AMP
	100,000	4.4 FLA 26.4 LRA	2.2 FLA 13.2 LRA	-
	6,000	5.8 FLA 34.8 LRA	2.9 FLA 17.4 LRA	-
	6,000	125 VA	125 VA	-

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## Redi-Temps

### Thermal Cut-Offs (Thermal Links) Overtemperature Protection Devices



#### Applications:

- Table Top Appliances
- Personal Care
- Major Appliances
- Electronic Equipment
- Heating and Cooling Systems

#### Benefits:

- Responsive, Reliable, Inexpensive, "One-Shot"
- UL, CSA, and European Agency Approvals
- Nineteen Temperature Offerings
- Small Size, Two Lead Lengths
- Available TCO Developers Kit

The electrical resistance of a D-Series thermal cut-off is comparable to that of an equal length of 18 guage solid copper wire. With proper air flow, heat generation below 15 Amperes is minimal. Above 25 Amperes, the upper limit on current capacity will depend on the environment for each specific application.

Controlled series resistance measurements are made across a total lead span of 1.0 inch on all production units. Using this procedure, typical resistance value is 0.8 Milliohms.

**Note:** Consult the manufacturer when encapsulation or use of cleaning solvents is being considered. These operations may damage the TCO (Thermal Link).

#### Resistive Ratings

	120VAC	240VAC	277VAC
<b>UL*</b>	16.7/25 Amps	16.7/25 Amps	15/20 Amps
<b>CSA</b>	16.7 Amps	16.7 Amps	15 Amps

IEC Ratings available upon request  
 \*Max normal current carrying capabilities/overload value

Internationally Approved:  
Type DXXX  
Approval Agency Certificate Numbers

Approval Agency	Certificate Number	Standard
UL	E49429	UL 1020
CSA	LR 43279	C22.2 NO. 209
BEAB	CAL0051	IEC691/EN60691
VDE	DE1-4434 thru 4437 & DE1 4736	IEC691/EN60691
MITI	H Series 33-735 thru 33-741	
FEMKO	095875-01-03	PUBL.E128(CEE 28)
SEMKO	7979904-01	SEMKO 111/CEE 11
SEV	737 003	SEV 1020.1965
UTE	19 479a 19481	NF C 73-600
KEMA	86.7665	K29A.07

Note: Types DXXX & DXXC are UL & CSA Recognized

Maximum Opening Temperature

TCO Part Number	Temp. °C TF	Temp. °F TF
D070	72	162
D076	77	171
D081	84	183
D085	87	189
D090*	93	199
D096	98	208
D098	100	212
D103	104	219
D108	109	228
D115	117	243
D118*	121	250
D125	128	262
D139*	141	286
D149	152	306
D165*	169	336
D181	184	363
D213	216	421
D226*	228	442
D242*	240	464

Temp. Tolerance +0° to -4°C  
(+0° to -7.2°F)

\*Temp. Tolerance +0° to -6°C  
(+0° to -10.8°F)



Invensys Sensor Systems is now a part of **Honeywell Sensing and Control** - the world's largest single-source supplier of sensors and switches.

**Our expanded product offering includes:**

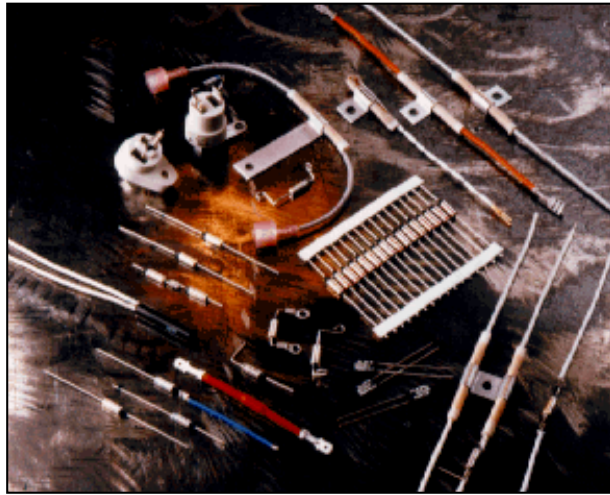
- Sensors**
  - Automotive On-Board Current Sensors
  - Fiber Optic Sensors
  - Force Sensors
  - Humidity Sensors
  - Infrared Products
  - Liquid Level Sensors
  - Mass Airflow Sensors
  - Moisture Sensors
  - Position Sensors
  - Pressure Sensors
  - Proximity Sensors- Aerospace/Military/ Transportation
  - Rail Products
  - Temperature Sensors
  - Thermocouples, Non-contact Probes and RTDs
  - Turbidity Sensors
  - Ultrasonic Sensors

- Switches**
  - Basic Switches
  - Environment Sealed Switches
  - Indicators
  - Keypswitches
  - Limit and Enclosed Switches
  - Pushbuttons
  - Relays
  - Rocker Switches
  - Thermal Switches
  - Toggle Switches

- Safety Products for Machine Safeguarding**
  - Safety Modules
  - Safety Sensors
  - Safety Switches

- Wintriss Safety Products**

## Thermal Fuses



**Responsive, Reliable, Inexpensive, "One Shot"**

Thermal fuses (Thermal Links) provide the most cost-effective "one-shot" or single operation over-temperature protection for small appliances, resistive heating elements, business machines and FHP motors. The "spring & pellet" design responds to temperature by interrupting an electrical circuit when the operating temperature exceeds the thermal rating of the fuse.

**Temperature Ratings**  
Maximum Opening Temperatures

TCO Part Number	Temp °C TF	Temp °F TF	TCO Part Number	Temp °C TF	Temp °F TF
D070	72	162	D115	117	243
D076	77	171	D118*	121	250
D081	84	183	D125	128	262
D085	87	189	D139*	141	286
D088	90	194	D149	152	306
D090*	93	199	D165	169	336
D096	98	208	D181	184	363
D098	100	212	D213	216	421
D103	104	219	D226*	228	442
D108	109	228	D242*	240	464

Temp Tolerance: 0 to -4°C (0° to -7.2°F)  
\*Temp. Tolerance: +0° to -6°C (+0° to -10.8°F)

**DXXX Series:**  
Thermal cut-off with an 18 awg tin plated copper case end lead.

**DXXXXA Series:**  
Thermal cut-off with a 23 awg case end lead. Developed for ease of placement in windings.

**DXXXC Series:**  
Thermal cut-off with an 18 awg steel case end lead is available, when required.

**Resistive Ratings**

120VAC	120VAC	277VAC
--------	--------	--------

UL\* 16.7/25 Amps 16.7/25 Amps 15/20 Amps

CSA 16.7 Amps 16.7 Amps 15 Amps

IEC Ratings available upon request

\*Max normal current carrying capabilities/overload value

**Internationally Approved:**

Type DXXX

**Approval Agency Certificate Numbers**

Approval Agency	Certificate Number	Standard
UL	E49429	UL 1020
CSA	LR 43279	C22.2 NO. 209
BEAB	CAL0051	IEC691/EN60691
VDE	DE1-4434 thru 4437 & DE1-4736	IEC691/EN60691
MITI	H Series 33-735 thru 33-741	IEC691/EN60691
FEMKO	095875-01-03	PUBL.E128(CEE 28)
SEMKO	7979904-01	SEMKO 111/CEE 11
SEV	737 003	SEV 1020.1965
UTE	19 479a 19 481	NF C 73-600
KEMA	86.7665	K29A.07

Note: Types DXXXA & DXXXC are UL & CSA Recognized

These Thermal Links are intended for use in: tropical climates Resistive & Inductive circuits, have a comparative tracking index exceeding 250, and are suitable for sealing in or use with impregnating fluids or cleaning solvents.

Note: Consult the manufacturer when encapsulation or use of cleaning solvents is being considered. These operations may damage the TCO (Thermal Link).

**If you are interested in our standard Redi-Temp products, [click here.](#)**

## Elmwood Thermal Sensors

### Transparent Heaters

### 78000 Series

#### FEATURES

- Electrically conductive transparent film eliminates need for resistance wires or traces
- Accommodates EMI/RFI shielding applications
- Optical grade polyester ensures clarity and provides optimum readability
- Permits light transmission up to 93% and eliminates shadow effect from wire-wound versions
- Pressure-sensitive adhesive enables easy press-in-place installation
- Resilient vinyl cover sheet protects heater surface from fingerprints and scratches

#### TYPICAL APPLICATIONS

- LCD displays on gas pumps
- LCD panels on forklift trucks
- LCD displays on hand-held terminals and meters
- Vehicle head-up displays



Elmwood Sensors manufactures a full line of flexible transparent heaters designed to warm liquid crystal display (LCD) panels in cold, moist environments.

Whether you're pumping gasoline outdoors or transporting materials in a warehouse freezer, a drop in temperature can quickly freeze an LCD and render it unreadable. But, Elmwood's transparent heaters protect LCDs in temperatures as low as -40 °C!

Our transparent heaters feature a thin-film polyester that provides maximum readability in extreme environments. The heating element can be mounted either in front of or behind the LCD readout using transparent, pressure-sensitive adhesive.

This low energy-consuming device can be operated either by battery or with line power, and operates at one watt or less per square inch (0.155 w/cm<sup>2</sup>).

Elmwood transparent heaters can be combined with thermostats, thermistors, thermocouples and thermal fuses to form custom-engineered heating assemblies. They are custom designed and factory tested to meet Elmwood's stringent quality control criteria.

#### **⚠ WARNING**

##### **PERSONAL INJURY**

DO NOT USE these products as safety or emergency stop devices or in any other application where failure of the product could result in personal injury.

**Failure to comply with these instructions could result in death or serious injury.**

#### **⚠ WARNING**

##### **MISUSE OF DOCUMENTATION**

- The information presented in this product sheet is for reference only. Do not use this document as a product installation guide.
- Complete installation, operation, and maintenance information is provided in the instructions supplied with each product.

**Failure to comply with these instructions could result in death or serious injury.**

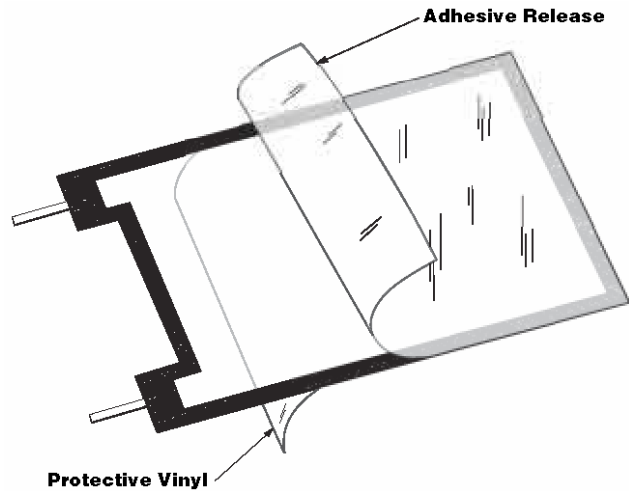
# Elmwood Thermal Sensors

## Transparent Heaters

## 78000 Series

### TECHNICAL SPECIFICATIONS

Maximum Watt Density	5 W/sq.in.
Environmental	Withstands temperatures ranging from - 40°C to 107°C
Typical Termination	Eyeleted ring terminal wires or flexible tail with connector
Temperature Control	Can be designed with optional onboard NTC thermistor
Typical Light Transmission	75% minimum
Typical Thickness	0.007" (add 0.002" for PSA)
Construction	Indium tin oxide (ITO) sputtered on polyester film



### WARRANTY/REMEDY

Honeywell warrants goods of its manufacture as being free of defective materials and faulty workmanship. Contact your local sales office for warranty information. If warranted goods are returned to Honeywell during the period of coverage, Honeywell will repair or replace without charge those items it finds defective. **The foregoing is Buyer's sole remedy and is in lieu of all other warranties, expressed or implied, including those of merchantability and fitness for a particular purpose.**

Specifications may change without notice. The information we supply is believed to be accurate and reliable as of this printing. However, we assume no responsibility for its use.

While we provide application assistance personally, through our literature and the Honeywell web site, it is up to the customer to determine the suitability of the product in the application.

For application assistance, current specifications, or name of the nearest Authorized Distributor, contact a nearby sales office. Or call:

1-800-537-6945 USA

1-800-737-3360 Canada

1-815-235-6847 International

#### FAX

1-815-235-6545 USA

#### INTERNET

[www.honeywell.com/sensing](http://www.honeywell.com/sensing)

[info.sc@honeywell.com](mailto:info.sc@honeywell.com)

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