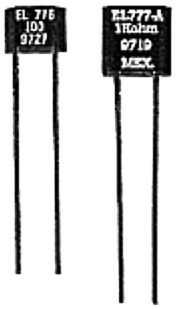
Honeywell

Interactive Catalog Replaces Catalog Pages

Honeywell Sensing and Control has replaced the PDF product catalog with the new Interactive Catalog. The Interactive Catalog is a power search tool that makes it easier to find product information. It includes more installation, application, and technical information than ever before.

Click this icon to try the new Interactive Catalog.

Sensing and Control
Honeywell Inc.
11 West Spring Street
Freeport, Illinois 61032



FEATURES
- Linear resistance vs temperature
- Accurate and Interchangeable
- Excellent stability
- Small size
- Printed circuit mountable
- Ceramic SIP package

TYPICAL APPLICATIONS
- HVAC – room, duct and refrigerant equipment
- Instrument and probe assemblies
- Electronic assemblies – temperature compensation
- Process control – temperature regulation

HEL-776 and HEL-777 platinum RTDs are designed to measure temperatures from −55° to +150°C (−67° to 302°F) in printed circuit boards, temperature probes, or other lower temperature applications. Solderable leads in 0.050″ or 0.100″ spacing provide strong connections for wires or printed circuits.

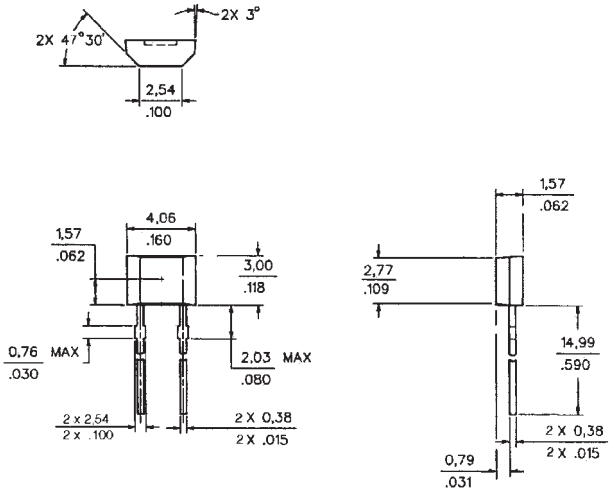
The 1000Ω, 375 alpha version, provides 10x greater sensitivity and signal-to-noise. Both are ideal for air temperature sensing.

ORDER GUIDE

HEL-776-A	Molded SIP pkg. 0.100″ lead spacing		
HEL-777-A	Molded SIP pkg. 0.100″ lead spacing		
	-U	1000Ω, 0.00375 Ω/Ω/°C	
	-T	100Ω, 0.00385 Ω/Ω/°C	
		-0	±0.2% Resistance Trim (Standard)
		-1	±0.1% Resistance Trim (Optional)

MOUNTING DIMENSIONS (for reference only) mm/in.

HEL-776-A



HEL-777-A

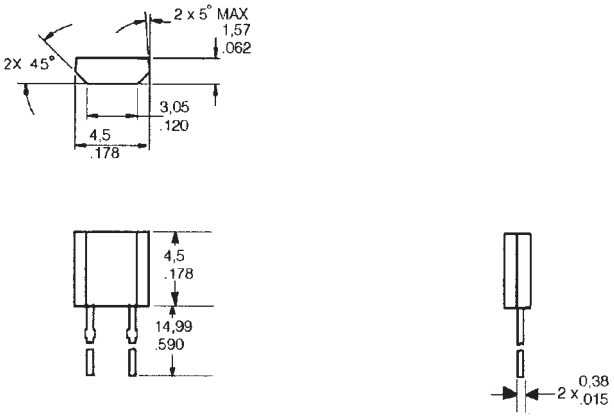


Fig. 1: Wheatstone Bridge 2-Wire Interface

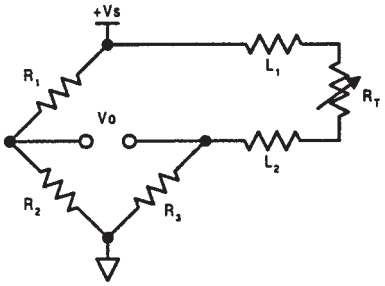


Fig. 2: Linear Output Voltage

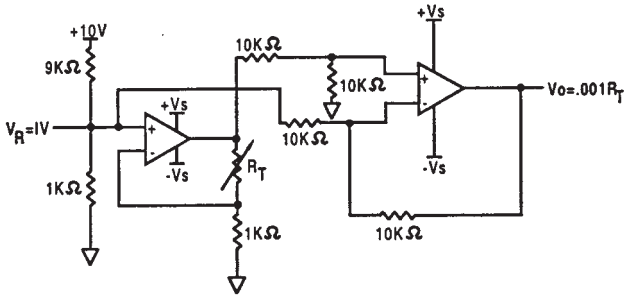
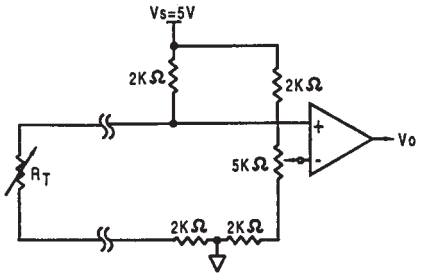


Fig. 3: Adjustable Point (Comparator) Interface



CAUTION
PRODUCT DAMAGE
The inherent design of this component causes it to be sensitive to electrostatic discharge (ESD). To prevent ESD-induced damage and/or degradation, take normal ESD precautions when handling this product.

Temperature

Platinum RTDs

FUNCTIONAL BEHAVIOR

$R_T = R_0(1+AT+BT^2-100CT^3+CT^4)$
RT = Resistance (Ω) at temperature T (°C)
R_0 = Resistance (Ω) at 0°C
T = Temperature in °C

$A = \alpha + \frac{\alpha\,\delta}{100}$ $B = \frac{-\alpha\,\delta}{100^2}$ $C_{T<0} = \frac{-\alpha\,\beta}{100^4}$

CONSTANTS

Alpha, α (°C^{-1})	0.00375 ±0.000029	0.003850 ±0.000010
Delta, δ (°C)	1.605 ± 0.009	1.4999 ± 0.007
Beta, β (°C)	0.16	0.10863
A (°C^{-1})	3.81×10^{-3}	3.908×10^{-3}
B (°C^{-2})	-6.02×10^{-7}	-5.775×10^{-7}
C (°C^{-4})	-6.0×10^{-12}	-4.183×10^{-12}

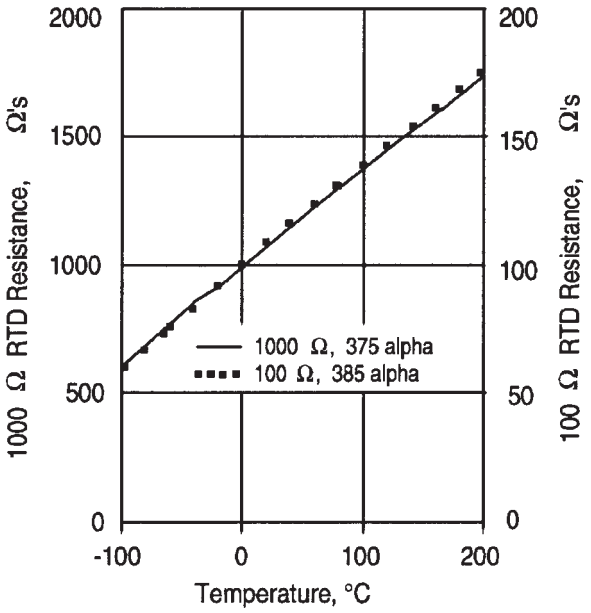
Both β = 0 and C = 0 for T>0°C

ACCURACY VS TEMPERATURE

Tolerance	Standard ±0.2%		Optional ±0.1%	
Temperature (°C)	±ΔR* (Ω)	±ΔT (°C)	±ΔR* (Ω)	±ΔT (°C)
−200	6.8	1.6	5.1	1.2
−100	2.9	0.8	2.4	0.6
0	2.0	0.5	1.0	0.3
100	2.9	0.8	2.2	0.6
200	5.6	1.6	4.3	1.2
300	8.2	2.4	6.2	1.8
400	11.0	3.2	8.3	2.5
500	12.5	4.0	9.6	3.0
600	15.1	4.8	10.4	3.3

* 1000Ω RTD. Divide ΔR by 10 for 100Ω RTD.

RESISTANCE VS TEMPERATURE CURVE



SPECIFICATIONS

Sensor Type	Thin film platinum RTD: R_0 = 1000 Ω @ 0°C; alpha = 0.00375 Ω/Ω/°C R_0 = 100 Ω @ 0°C; alpha = 0.00385 Ω/Ω/°C
Temperature Range	−55° to +150°C (−76° to +302°F)
Temperature Accuracy	±0.5°C or 0.8% of temperature °C (R_0 ±0.2% trim), whichever is greater ±0.3°C or 0.6% of temperature °C (R_0 ±0.1% trim), whichever is greater (optional)
Base Resistance and Interchangeability, $R_0 \pm \Delta R_0$	1000 ± 2 Ω (±0.2%) @ 0°C or 100 ± 0.2 Ω (±0.2%) @ 0°C 1000 ± 1 Ω (±0.1%) @ 0°C or 100 ± 0.1 Ω (±0.1%) @ 0°C (optional)
Linearity	±0.1% of full scale for temperatures spanning −40° to 125°C
Time Constant	<10 seconds in air at 10 ft/sec
Operating Current	2 mA maximum for self heating errors of <1°C; 1 mA recommended
Stability	<0.25°C/year; 0.05°C per 5 years in occupied environments
Self Heating	<15mW/°C typical
Insulation Resistance	>50 MΩ @ 50 VDC @ 25°C
Construction	Plastic case, PLASKON 3300SH
Lead Material	Copper alloy 194 solder dipped tin silver

单击下面可查看定价，库存，交付和生命周期等信息

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