

MICRO SWITCH
a Honeywell Division

FED. MFG. CODE 91929

**TEMPERATURE
SENSOR**

CATALOG LISTING

TD4A

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NIFE TEMPERATURE SENSOR CHIP SPECIFICATIONS
GENERAL DESCRIPTION: AN INTEGRATED CIRCUIT CONSISTING OF A NIFE THIN FILM RESISTANCE ELEMENT WITH A LASER TRIMMED SERIES LADDER

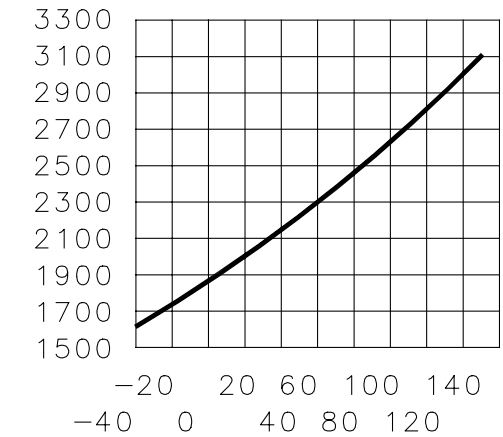
ABSOLUTE MAXIMUM RATINGS

OPERATING RANGE	-40°C (-40°F) TO 150°C (302°F)
STORAGE TEMPERATURE	-55°C (-67°F) TO 170°C (338°F)
VOLTAGE	10 VDC CONTINUOUS (24 HOURS)

INTERCHANGEABILITY
(PACKAGED CHIP & mA MAX CURRENT) ¹

TEMPERATURE	RESISTANCE (OHMS) ²
-40°C (-40°F)	1584 ± 12 (1.9°C)
-30°C (-22°F)	1649 ± 11 (1.7°C)
-20°C (-4°F)	1715 ± 10 (1.5°C)
-10°C (14°F)	1784 ± 9 (1.3°C)
0°C (32°F)	1854 ± 8 (1.1°C)
+10°C (50°F)	1926 ± 6 (0.8°C)
+20°C (68°F)	2000 ± 5 (0.7°C)
+30°C (86°F)	2076 ± 5 (0.7°C)
+40°C (104°F)	2153 ± 6 (0.8°C)
+50°C (122°F)	2233 ± 7 (0.9°C)
+60°C (140°F)	2314 ± 9 (1.1°C)
+70°C (158°F)	2397 ± 10 (1.2°C)
+80°C (176°F)	2482 ± 12 (1.4°C)
+90°C (194°F)	2569 ± 14 (1.6°C)
+100°C (212°F)	2658 ± 16 (1.8°C)
+110°C (230°F)	2748 ± 18 (2.0°C)
+120°C (248°F)	2840 ± 19 (2.0°C)
+130°C (266°F)	2934 ± 21 (2.2°C)
+140°C (284°F)	3030 ± 23 (2.4°C)
+150°C (302°F)	3128 ± 25 (2.5°C)

RESISTANCE vs TEMPERATURE



TEMPERATURE °C

TYPICAL TIME CONSTANT ²	15 SEC. STILL WATER 4 MIN. STILL AIR
TEMPERATURE RISE ²	L .23°C PER MILLIWATT IN STILL AIR

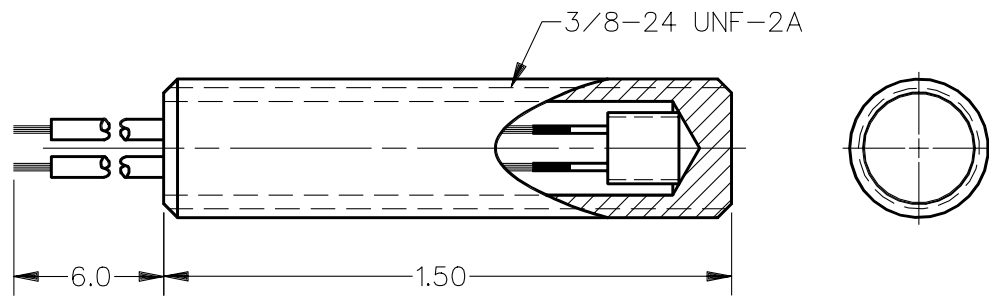
EQUATION FOR COMPUTING RESISTANCE:

$$R_T = R_0 + (3.84 \times 10^{-3} \times R_0 \times T) + (4.94 \times 10^{-6} \times R_0 \times T^2)$$

R_T = RESISTANCE AT TEMPERATURE T

R_0 = RESISTANCE AT 0°C

T = TEMPERATURE IN °C



NOTES

- ¹ CHARACTERISTICS TAKEN WITH 1 mA MAX CURRENT AND DEVICE SUSPENDED IN AIR
- ² TEMPERATURE ERROR EQUIVALENT TO RESISTANCE ERROR

REVISIONS
A PR-16644
KAG
3 AUG 89

DDM/CAD
DRAWN
T M M 13 OCT 88

CHECK K A G 13 OCT 88
CHECK K A G 13 OCT 88

ISSUE 2

M

TD4A

DRAWING NUMBER
RELEASE NO. DR-3967

REPLACES X77665-TD

THIRD ANGLE PROJECTION

SCALE 2 : 1

DO NOT SCALE PRINT

UNLESS OTHERWISE SPECIFIED TOLERANCES ARE

ONE PLACE	(.0)	±.030
TWO PLACE	(.00)	±.015
THREE PLACE	(.000)	±.005
ANGLES		±

WEIGHT