MODEL 41342LC/LF
PLATINUM TEMPERATURE PROBE 4-20mA OUTPUT

INSTRUCTION SHEET 41342L-90
REV: C111215

INTRODUCTION

The Model 41342LC/LF Platinum Temperature Probe is an accurate 1000 ohm Platinum RTD temperature sensor and 4-20 mA line driver interface mounted in a weatherproof junction box. The probe is available in Celsius or Fahrenheit calibration. The probe is designed for easy installation in YOUNG Multi-plate and Aspirated Radiation Shields.

INSTALLATION

For accurate measurements, the temperature probe should be installed in a protective radiation shield. Use of the probe without a radiation shield may result in large errors. YOUNG naturally ventilated or motor aspirated shields are recommended. For best performance, the probe and shield should be placed in a location with good air circulation clear of large masses (buildings, pavement, solar panels...), Exhaust vents, electrical machinery, motors, water fountains and sprinklers.

MAINTENANCE

The temperature probe is designed to offer years of service with minimal maintenance. If necessary, the probe may be periodically checked or recalibrated using normal bath calibration methods. NIST traceable calibration is available from YOUNG at nominal cost.

WARRANTY

This product is warranted to be free of defects in materials and construction for a period of 12 months from date of initial purchase. Liability is limited to repair or replacement of defective item. A copy of the warranty policy may be obtained from R. M. Young Company.

CE COMPLIANCE

This product has been tested and complies with European CE Requirements for the EMC Directive. Please note that shielded cable must be used.

EMC COMPLIANCE

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

This ISM device complies with Canadian ICES-001.
Cet appareil ISM est conforme à la norme NMB-001 du Canada.

EN55011/CISPR 11, Group 1, Class B device.
Class B equipment is suitable for use in domestic establishments and in establishments directly connected to a low voltage power supply network which supplies buildings used for domestic purposes.

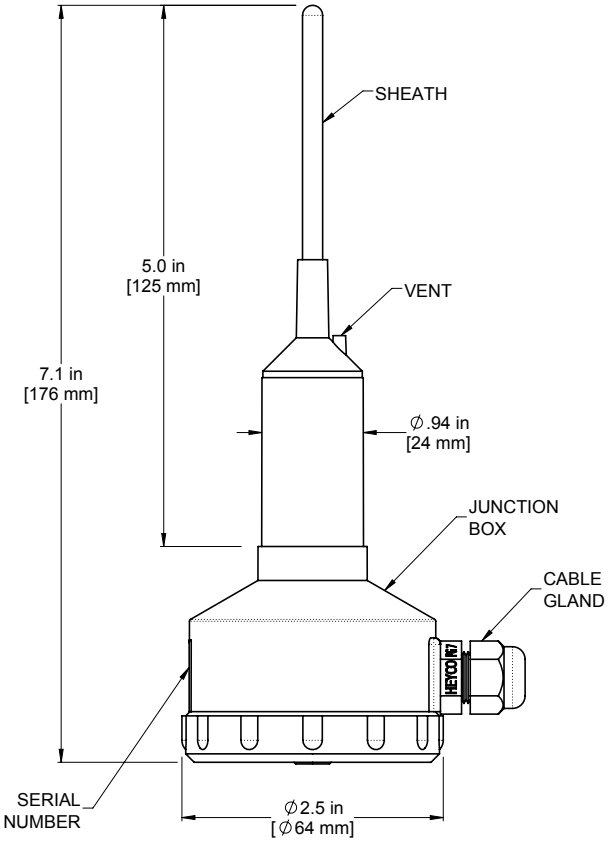
Note:
41342L may be disrupted by conducted RF interference at 9.6-10 and 13.8-22 MHz. To meet EMC Compliance, (2) YOUNG 18500 ferrite chokes must be installed on the cable, one near the sensor, and one near the recording instrument. (Each choke must have the cable pass through the center hole at least 2 times, creating 1 loop around the outside as shown in the diagram on the back page.)

SPECIFICATIONS

Power Requirement:	12 - 30 VDC, 20mA
Calibrated measuring range:	-50 to +50°C (suffix C)
	-50 to +150°F (suffix F)
Accuracy at 0°C:	±0.3°C
Time Constant:	42 seconds in 43408 shield.
Sensor type:	1000Ω Platinum RTD
Output signal:	4-20 mA
Recommended Cable:	2 conductor shielded, 22 AWG (#18641)

Recommended Radiation Shields:

Model 43502	Compact Aspirated Radiation Shield
Model 41003P	Multi-Plate Radiation Shield



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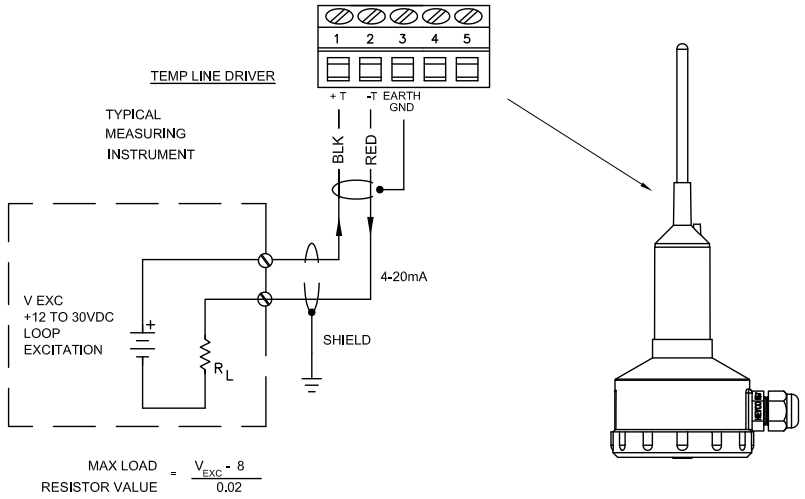
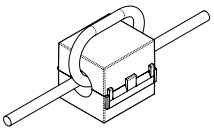
WIRING INFORMATION

MODEL 41342L TEMPERATURE SENSOR

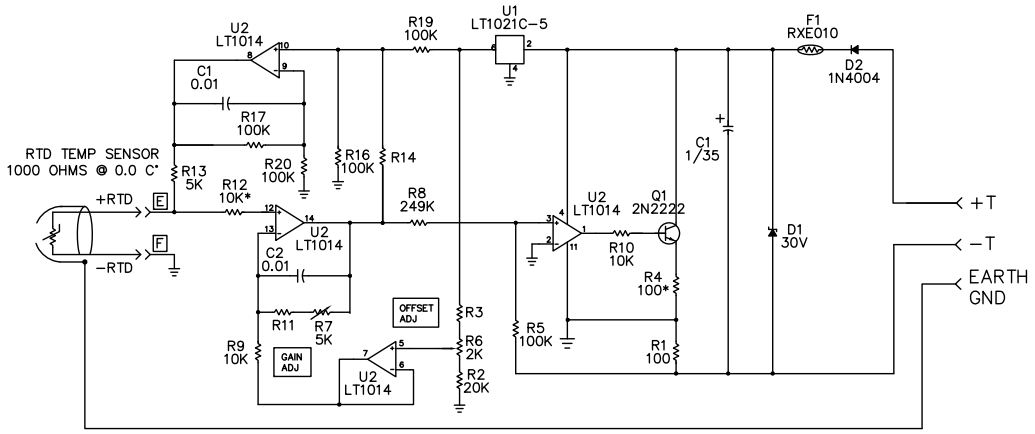
WIRING DIAGRAM





18500 FERRITE CHOKE (2)
(SEE EMC SECTION FOR USAGE)

CIRCUIT SCHEMATICS

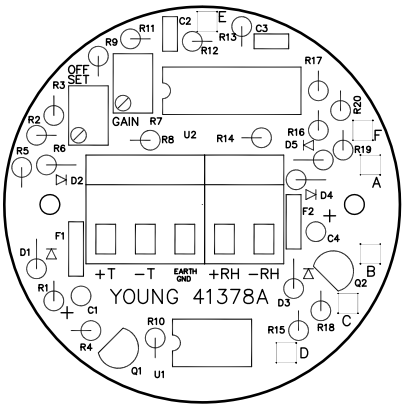


	RESISTOR VALUES	
MODEL	41342LC	41342LF
RANGE	CELSIUS (-50° TO +50°)	FAHRENHEIT (-50° TO +150°)
OUTPUT	4 TO 20 mA	4 TO 20 mA
R14	931K	845K
R11	107K	95.3K
R3	140K	137K

NOTES: 1. ALL RESISTORS ARE 5ppm, 0.1% UNLESS NOTED.
RESISTORS MARKED WITH "★" ARE 100PPM METAL FILM.

2. ALL CAPACITORS ARE IN uF, UNLESS OTHERWISE NOTED.

3. ⏚ SYMBOL DESIGNATES REFERENCE FOR THIS CIRCUIT ONLY.
IT DOES NOT REPRESENT EARTH GROUND.



RTD TEMP SENSOR CALIBRATION POINTS:	
CELSIUS	FAHRENHEIT
-50 C° 807.87 OHMS	-50 F° 825.093 OHMS
0 C° 1000.00 OHMS	0 F° 932.069 OHMS
+50 C° 1189.01 OHMS	+150 F° 1247.192 OHMS
CALIBRATE BY ADJUSTING GAIN AND ZERO TRIMPOTS FOR:	CALIBRATE BY ADJUSTING GAIN AND ZERO TRIMPOTS FOR:
12.00 ± 0.01 mA AT 0.0 C°	8.00 ± 0.01 mA AT 0.0 F°
20.00 ± 0.01 mA AT +50.0 C°	20.00 ± 0.01 mA AT +150.0 F°