



MODEL 41342 PLATINUM TEMPERATURE PROBE

INSTRUCTION SHEET 41342-90
REV 10-97

INTRODUCTION

The Model 41342 Platinum Temperature Probe is an accurate 1000 ohm Platinum RTD temperature sensor mounted in a weatherproof junction box. 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 due to solar heating. The probe installs easily in YOUNG naturally ventilated or aspirated shields. 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 additional cost.

NOTE: The terminal marked "EARTH GND" should be connected to properly grounded tower or grounding conductor as close to the sensor as possible. Failure to do so may result in damage due to static discharge.

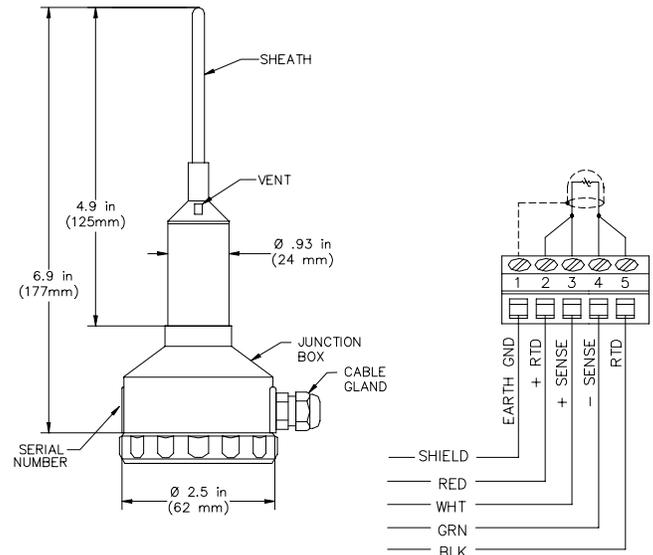
CE COMPLIANCE

This product has been tested and shown to comply with European CE requirements for the EMC Directive. Please note that shielded cable must be used.

Resistance vs. Temperature for 1000Ω nominal probe
Temperature Coefficient = 0.00375 Ω/Ω/°C

Resistance Ω	°F	°C	Resistance Ω
1226.445	140	60	1226.445
1205.659	130		1226.445
1184.837	120	50	1189.005
1163.978	110		1189.005
1143.081	100	40	1151.445
1122.148	90		1151.445
1101.177	80	30	1113.764
1080.169	70		1113.764
1059.124	60	20	1075.963
1038.042	50		1075.963
1016.922	40	10	1038.042
995.766	30		1038.042
974.572	20	0	1000.000
953.340	10		1000.000
932.069	0	-10	923.550
910.759	-10		923.550
889.407	-20	-30	885.132
868.013	-30		885.132
846.576	-40	-40	846.576
825.093	-50		846.576
		-50	807.873
			807.873

Transfer function calculated from manufacturer's data:
 $C^{\circ} = (1.1279 \times 10^{-5} * R^2) + (2.3985 \times 10^{-1} * R) - 251.1326$
 $F^{\circ} = (2.0302 \times 10^{-5} * R^2) + (4.3174 \times 10^{-1} * R) - 420.0387$



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.

SPECIFICATIONS

Measuring range: -50 to +50°C
-50 to +150°F
 Accuracy at 0°C: ±0.3°C
±0.1°C (optional)
 Time Constant: 42 seconds in 43408 shield.
 Sensor type: 1000Ω Platinum RTD
 Output signal: 4 wire RTD
 Recommended Cable: 2 pair shielded, 22 AWG (#18723)

Recommended Radiation Shields:
 Model 43408P Gill Aspirated Radiation Shield
 Model 41002P Gill Multi-Plate Radiation Shield

Declaration of Conformity

Application of Council Directives: 89/336/EEC
 Standards to which Conformity is Declared: EN 50082-1 (IEC 801-2, 3, 4)
 Manufacturer's Name and Address: R. M. Young Company
 Traverse City, MI, 49686, USA
 Importer's Name and Address: See Shipper or Invoice
 Type of Equipment: Meteorological Instruments
 Model Number / Year of Manufacture: 41342 (V, L)/1996

I, the undersigned, hereby declare that the equipment specified conforms to the above Directives and Standards.

Date / Place: Traverse City, Michigan, USA February 19, 1996

David Poinsitt
 David Poinsitt
 R & D Manager, R. M. Young Company



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

INSTRUCTION SHEET 41342L-90
REV 9-97

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.

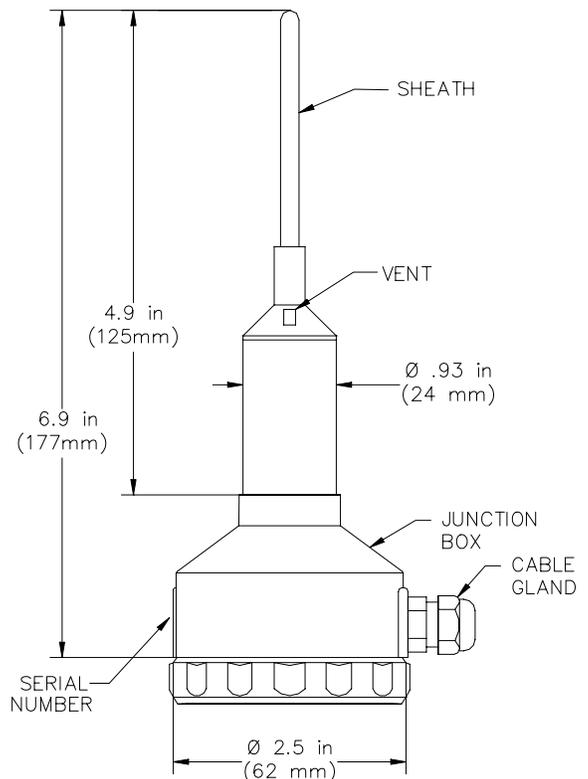
CE COMPLIANCE

This product has been tested and shown to comply with European CE requirements for the EMC Directive. Please note that shielded cable must be used.

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: 1000 Ω Platinum RTD
 Output signal: 4-20 mA
 Recommended Cable: 2 conductor shielded,
 22 AWG (#18641)

Recommended Radiation Shields:
 Model 43408P Gill Aspirated Radiation Shield
 Model 41002P Gill Multi-Plate Radiation Shield



Declaration of Conformity

Application of Council Directives: 89/336/EEC
Standards to which Conformity is Declared: EN 50082-1 (IEC 801-2, 3, 4)

Manufacturer's Name and Address: R. M. Young Company
 Traverse City, MI, 49686, USA

Importer's Name and Address: See Shipper or Invoice
Type of Equipment: Meteorological Instruments
Model Number / Year of Manufacture: 41342 (V, L)/1996

I, the undersigned, hereby declare that the equipment specified conforms to the above Directives and Standards.

Date / Place: Traverse City, Michigan, USA February 19, 1996

David Poinsett

David Poinsett
 R & D Manager, R. M. Young Company



MODEL 41342VC/VF
PLATINUM TEMPERATURE PROBE 0-1V Output

INSTRUCTION SHEET 41342V-90
REV 09-97

INTRODUCTION

The Model 41342VC/VF Platinum Temperature Probe is an accurate 1000 ohm Platinum RTD temperature sensor and low power voltage interface circuit mounted in a weatherproof junction box. The probe is available in Celsius or Fahrenheit calibration. Output signal is 0-1 VDC full scale. 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 due to solar heating. 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. Temperature calibration should be accurate for the life of the probe. 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.

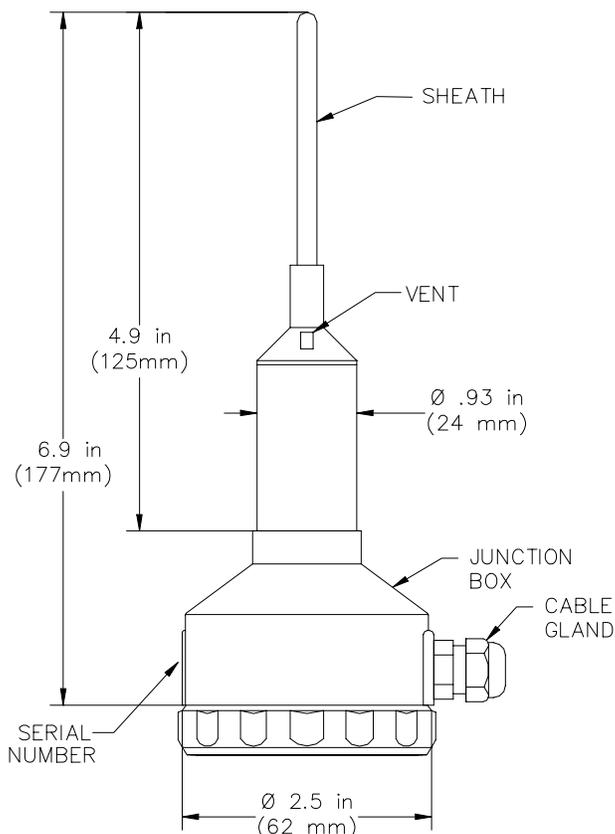
CE COMPLIANCE

This product has been tested and shown to comply with European CE requirements for the EMC Directive. Please note that shielded cable must be used.

SPECIFICATIONS

Power Required:	8 - 24 VDC, 5 mA
Calibrated measuring range:	-50 to +50°C -50 to +150°F
Accuracy at 0°C:	±0.3°C (differential measurement)
Time Constant:	42 seconds in 43408 shield.
Sensor type:	1000 Ω Platinum RTD
Output signal:	0-1 VDC
Recommended Cable:	2 pair shielded, 22 AWG (#18723)

Recommended Radiation Shields:	
Model 43408P	Gill Aspirated Radiation Shield
Model 41002P	Gill Multi-Plate Radiation Shield



Declaration of Conformity

Application of Council Directives:
 89/336/EEC
Standards to which Conformity is Declared:
 EN 50082-1 (IEC 801-2, 3, 4)
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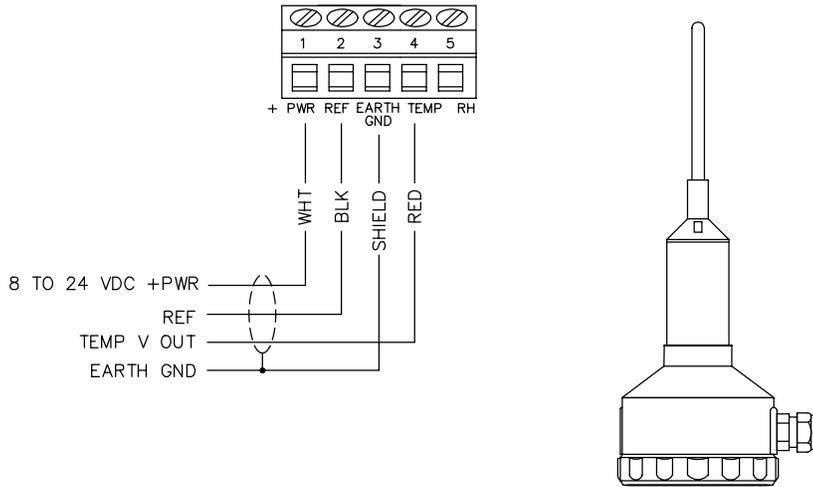
Date / Place: Traverse City, Michigan, USA February 19, 1996

David Poinsett

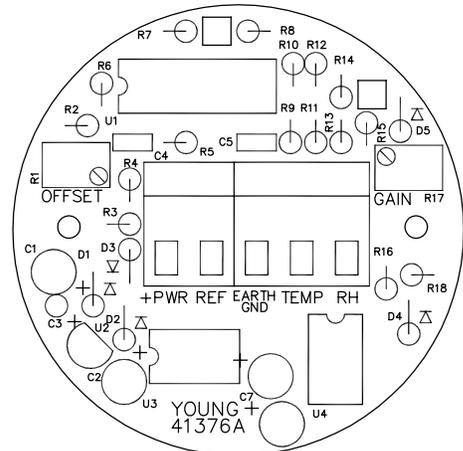
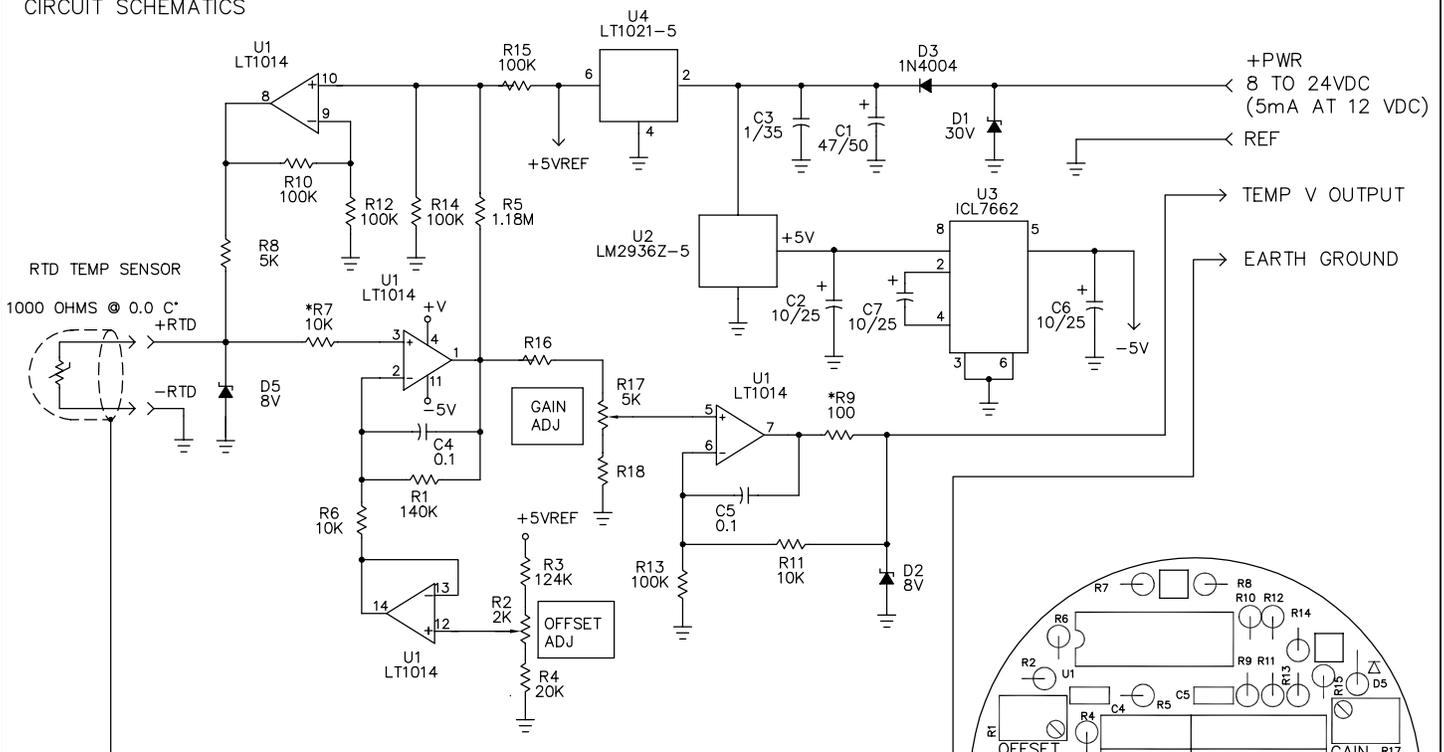
David Poinsett
 R & D Manager, R. M. Young Company



WIRING DIAGRAM



CIRCUIT SCHEMATICS



RESISTOR VALUES

MODEL	41342VC	41342VF
RANGE	CELSIUS (-50° TO +50°)	FAHRENHEIT (-50° TO +150°)
OUTPUT	0 TO 1.000V	0 TO 1.000V
R16	95.3K	100K
R18	20K	17.7K

- NOTES:
- ALL RESISTORS ARE 5ppm, 0.1% UNLESS OTHERWISE NOTED.
 - RESISTORS MARKED WITH "*" ARE 100ppm
 - ALL CAPACITORS ARE IN uF OR uF/WV, UNLESS OTHERWISE NOTED.

RTD TEMP SENSOR CALIBRATION POINTS:

-50° C	807.873 OHMS
0° C	1000.000 OHMS
+50° C	1189.005 OHMS
-50° F	825.093 OHMS
0° F	932.069 OHMS
+150° F	1247.192 OHMS

MODEL 41342V TEMP SENSOR INTERFACE	DWG A	PRD 12-96
WITH VOLTAGE OUTPUTS	DWN KL	DWG 09-97
COMPONENT LAYOUT & CIRCUIT SCHEMATIC	CHK	C41342V
R.M. YOUNG CO. TRAVERSE CITY, MI 49686 U.S.A. 231-946-3980		