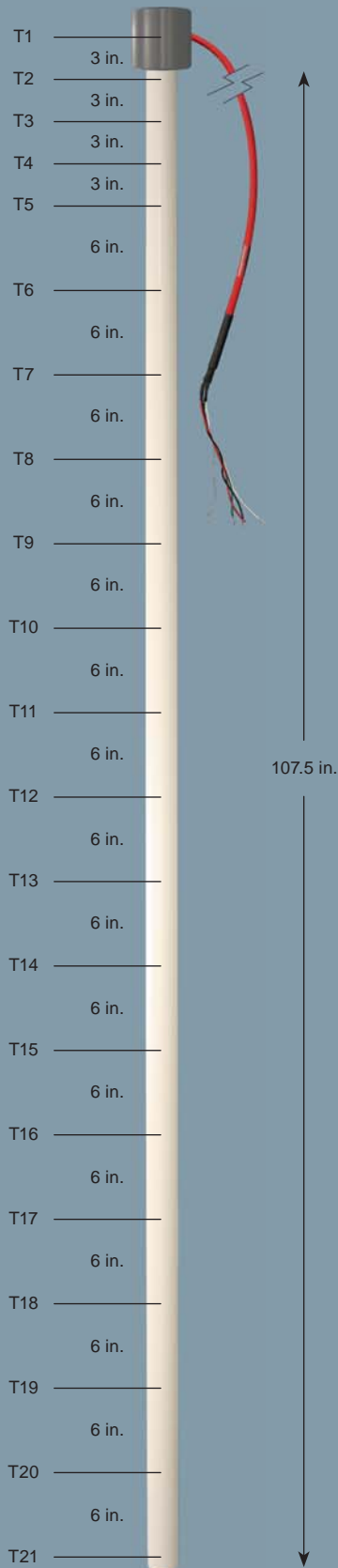




# Subgrade Temperature Probe



The RST Instruments Subgrade Temperature Probe is a 9' array of thermistors which is designed to be installed in pavement subgrade to measure thermal profile over the long-term. Two types are available: analog and digital.

The analog design is compatible with traditional CRREL (Cold Regions Research and Engineering Laboratory) types, in which the individual thermistors are connected sequentially to an external data logger which sends clocking pulses to advance to the next channel. The thermistors are more closely spaced (3") near the top to respond to the steep gradient to the pavement surface temperature, while at depth the thermistors are spaced 6" apart.

The digital design is externally identical, with thermistors in identical locations. The design differs in that each thermistor is individually connected to a precision power supply, analog/digital converter, and calibration microcontroller, with data returned on a RS485 digital bus. Data is collected via a serial port on the logger (e.g. ports C7/C8 on a Campbell CR1000), with a low-power RS485 adapter connecting to the temperature probe. Because of the tiny analog circuit and individual digital calibration, the achieved resolution and accuracy are superb. The probe can be run on switched 12V to minimize idle current.



### RST Instruments Ltd.

11545 Kingston St.,  
Maple Ridge, BC  
Canada V2X 0Z5

Telephone: 604 540 1100  
Facsimile: 604 540 1005  
Toll Free: 1 800 665 5599

[info@rstinstruments.com](mailto:info@rstinstruments.com)

[www.rstinstruments.com](http://www.rstinstruments.com)

### applications

For installation in pavement subgrade to measure thermal profile over the long-term.

### features

Analog or digital versions.

Dedicated connection for each thermistor to power, analog/digital converter and calibration microcontroller.

Superb resolution and accuracy.

### analog - specifications

PARAMETER	VALUE	UNITS
Sensors	21	
Length	109.5	Inches
Diameter	1.05	Inches
Material	PVC	
Cable	4 x 22	AWG
Accuracy	0.1	C
Calibrated Range	0-70	C
Resistance @ 25 C	30,000	Ohms
Beta (25/85)	3942	K
Thermistor Type	NTC	Interchangeable
Power Supply	5.00	DCV switched
Reference Resistor (channel 22)	87.15	Kohm

### digital - specifications

PARAMETER	VALUE	UNITS
Sensors	21	
Length	109.5	Inches
Diameter	1.05	Inches
Material	PVC	
Cable	4 x 22	AWG
Accuracy	0.1	C
Calibrated Range	0-70	C
Resolution	0.01	C
Communications	RS485	
Power supply	6-20	VDC

### ordering info

ITEM	PART #
Analog - Subgrade Temperature Probe	TH201
Digital - Subgrade Temperature Probe	TH301

\* Please specify cable length at time of ordering.