

ELIT-8701 : Temperature Sensor

Datasheet Version: 1 June 2012
Working with Meters and Analyser to measure Temperature



Cost effective, robust Temperature sensor for Lab, Field and light Industrial use, where the sensor head is not submerged

| Temperature °C | Resistance Ohm |
|-------------------|-------------------|
| -20.0 | 1,103,000 |
| -10.0 | 611,900 |
| 0.0 | 351,000 |
| 10.0 | 207,800 |
| 20.0 | 126,700 |
| 25.0 | 100,000 |
| 30.0 | 79,420 |
| 40.0 | 51,050 |
| 50.0 | 33,590 |
| 60.0 | 22,590 |
| 70.0 | 15,500 |
| 80.0 | 10,840 |
| 90.0 | 7,708 |
| 100.0 | 5,569 |

R-T Curve for NTC

Specifications:

- Shaft diameter 3 mm for stainless steel and 3.7mm for ETFE-coated
Shaft length 150 mm, Sensor head diameter 16 mm, length 40 mm
- Sensor element Siemens / Matsushita R-T curve-matched Thermistor B57863-S104-F9 (100 kOhm, NTC)
- Accuracy $\pm 0.2^{\circ}\text{C}$ between 0.0°C and 70.0°C
- Measuring Range 0.0°C to 100.0°C
- Standard cable length 1 m. Cable lengths of 3 m and 5 m optional.
- Connector: 3.5 mm mono-audio plug.

Options:

When ordering select:

- Stainless steel (instrument grade) or ETFE (Non-stick Teflon-type).
- Cable length: 1 m, 3 m, 5 m.

Measurements:

- Immerse the sensor at minimum 50 mm into the sample.
- If no stirrer is used, then make stirring movements with the sensor (1 turn per second).
- Be aware that there are always temperature layers formed: coolest at the bottom (above 4°C)
- There is always a delay between the actual temperature of the medium and the sensor signal measured.
- The delay follows the exponential curve. The time constant depends on the stirring speed.
- Stainless steel sensors have a time constant of approximately 5 seconds.
- ETFE-coated sensors have a time constant of approximately 15 seconds.

NTC temperature sensors can only be used with instruments which compensate the non-linearity of the Siemens / Matsushita R-T curve-matched Thermistor B57863-S104-F9.