

## DELMHORST INSTRUMENT COMPANY

### MODEL TM-100 ELECTRONIC THERMOMETER OWNER'S MANUAL FOR STORED CROPS

The TM-100 is a solid-state, portable, battery operated instrument for measuring temperature over the range of -40° to 300° F and -40° to 150° C. Readings below or above the temperature levels mentioned are to be taken as "no readings."

A typical Grain Temperature Probe System includes:

- One (1) TM-100 Electronic Thermometer
- One (1) TS-107 Grain Probe (Sensor)
- One (1) SH-44 Sensor Handle
- Three (3) PE-22 Probe Extensions (3 ft. long each). Three is the suggested number but additional extensions may be used.

**IMPORTANT:**      Keep threads on the extensions clean and lubricated to avoid binding.

#### INSTRUCTIONS FOR USE:

1. Attach the TS-107 Sensor to one of the PE-22 extensions, and connect additional extensions as necessary. Connect the SH-44 Handle to the last PE-22 extension and to the meter. In some cases, depending on the type and size of the bin, it may be advisable to connect no more than two extensions (with the sensor attached to the first one) and drive them into the grain. One or more extensions are then connected to the last one as the probe is progressively pushed into the grain.

This procedure is necessary when more than three PE-22 extensions are used, since it would be awkward to handle a probe made of 4 to 5 extensions (12 ft., 15 ft., or even more feet long).

2. The system is now ready for use. Once the probe is in the grain, the meter is read by pressing the on/off keypad once to turn the instrument on. The correct reading is the one obtained once the meter has stabilized. Several factors affect the time for stabilization: the amount of air movement, the grain being tested, the moisture content of the grain. In no instance, should stabilization time be longer than four to five minutes.

Moisture migration (and therefore spoilage) in stored crops result from temperature changes. This can occur even though the grain is at a moisture level generally considered safe when stored. The TM-100 with the sensor can be used to determine these temperature differences. In most stored products, insects and fungi become inactive at temperatures below 50° F and moisture contents less than 12%. The size of hot spots can be determined, as well as temperature patterns, by additional probings.

Always quote the Model Number and Serial Number of your instrument if you order additional accessories, such as handles, extensions or sensors, or if you return the instrument or accessories for servicing.