

TS90 TelScout® Time-Domain Reflectometer User Manual

Description

The TS90 TelScout Time-Domain Reflectometer is specifically designed for technicians and troubleshooting experts in the outside-plant, telephone cable fault location environment. The TS90 is easy to use, very accurate, and has dual ports for crosstalk testing or on-line comparison of cables.

Safety

Safety is essential in the use and maintenance of Greenlee tools and equipment. This manual and any markings on the tool provide information for avoiding hazards and unsafe practices related to the use of this tool. Observe all of the safety information provided.

Purpose of This Manual

This manual is intended to familiarize all personnel with the safe operation and maintenance procedures for the TS90 TelScout Time-Domain Reflectometer.

Keep this manual available to all personnel. Replacement manuals are available upon request at www.greenlee.com.

All specifications are nominal and may change as design improvements occur. Greenlee Textron Inc. shall not be liable for damages resulting from misapplication or misuse of its products.

TelScout is a registered trademark of Textron Innovations Inc.

Important Safety Information

⚠ WARNING

Read and understand this material before operating or servicing this equipment. Failure to understand how to safely operate this tool could result in an accident causing serious injury or death.

⚠ WARNING

Electric shock hazard:

Measuring terminals: This tool is not intended to be connected to voltages above 30 VAC or 60 VDC (referenced to earth).

Failure to observe this warning could result in severe injury or death.

Batteries: The instrument is powered by six AA alkaline batteries (9 V). Dispose of depleted batteries in accordance with Local, State, and Federal Laws.

Fuse: The instrument contains a 1.5 A fast-acting fuse, which is **not** user replaceable.

Controls and Inputs

-  Turns instrument on and off.
-  Displays on-line help.*
-  Switches the display backlight on and off.
-  Raise or lower gain and scroll through menu selections.
-  Move cursor across the displayed waveform or change values.

 Softkeys have different functions depending on the current operational state of the instrument. A label on the screen above each key describes its purpose.

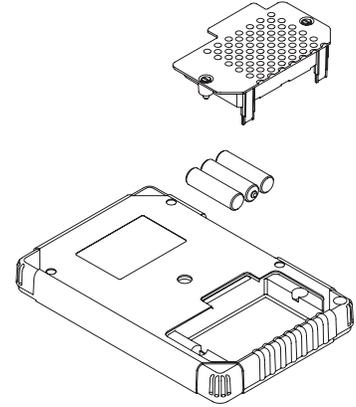
Press **Language** to display a list of the available menu languages. Press **▲▼** to highlight the language to be used. Press **Use Language** to activate the chosen language.

 The test connectors consist of two standard-size banana jacks for connecting to the Test Pair.

 The reference connectors consist of two standard-size banana jacks for connecting to the Reference Pair.

* Each screen and operation is explained fully on-screen within the unit itself in each language so you do not have to carry a large manual.

Maintenance



Replacing the Batteries

Replace the batteries when the low-battery icon  appears on the display or if the unit refuses to turn on.

Always replace all six cells at the same time.

Never mix new and old cells. Never mix cell types (alkaline and non-alkaline).

Insert cells as shown in battery holder (reversed cells may leak and damage the instrument).

Inspection

Inspect the exterior of the TS90 for wear, missing parts, or cracks in the enclosure. Replace any defective parts.

Cleaning

Remove dust from the outside of the instrument by wiping with a lint-free cloth or small brush. Use the brush to remove dust from the connectors.

Clean the remaining dirt with a lint-free cloth, dampened in a mild detergent and water solution. Dry before use. Do not use abrasive cleaners or harsh chemicals (e.g., alcohol or acetone) as damage to the enclosure might result.



 Do not discard this product or throw away! For recycling information, go to www.greenlee.com.

KEEP THIS MANUAL

WARRANTY SERVICE CONTRACT INFORMATION

GENERAL WARRANTY PROVISIONS

Seller warrants to Buyer that products furnished hereunder will be merchantable, free from defects in design, material and workmanship, fit and sufficient for the purposes intended by Buyer, free from all liens and encumbrances and will conform to and perform in accordance with the specifications set forth in this Agreement for a period of One Year, commencing with the date of acceptance thereof by Buyer.

Defective products will, at Buyer's option, be either returned to Seller, or Seller's Authorized Repair Agency, for repair or replacement, with risk of in-transit loss and damage borne and transportation charged paid by Seller, or repaired or replaced by Seller, or Seller's Authorized Repair Agency, on site at Seller's expense. Unless otherwise agreed upon by the parties, Seller, or Seller's Authorized Repair Agency, will complete repairs and ship the repaired product within five (5) days of receipt of the defective product or, at Buyer's option, ship replacement product within five (5) days after receipt of oral notification from Buyer. Seller, or Seller's Authorized Repair Agency, will bear the risk of in-transit loss and damage and will prepay and bear the cost of transportation charges for shipments to Buyer of repaired or replaced products. If requested by Buyer, Seller, or Seller's Authorized Repair Agency, at Seller's expense, will begin onsite repairs within three (3) days after receiving verbal notification from Buyer.

If product returned to Seller, or Seller's Authorized Repair Agency, or made available to Seller, or Seller's Authorized Repair Agency, on site for repair, as provided for in this clause is determined to be beyond repair, Seller, or Seller's Authorized Repair Agency, will promptly so notify Buyer and, unless otherwise agreed to by the parties, ship replacement product without charge within five (5) days of such notification.

Any replacement, repair, modification, installation or other service performed by Seller, or Seller's Authorized Repair Agency, pursuant hereto will be warranted as herein provided based upon the date performance of the service is completed and accepted by Buyer for the remainder of the unexpired period of the original warranty or for a new period of one (1) year, whichever is longer.

All services, if any, provided under this Agreement will be provided in a fully professional manner.

WORK HEREUNDER

It is understood that visits by representatives of Seller or its suppliers for inspection, adjustment or other similar purposes in connection with products purchased hereunder will for all purposes be deemed "work hereunder" and will be at no charge to Buyer unless otherwise agreed in writing with Buyer.

SPECIFIC WARRANTY PROVISIONS

FACTORY WARRANTY:

Greenlee warrants all products against defects in material or workmanship for a period of one year from date of shipment to the original purchaser. All units returned to a Greenlee authorized repair center, delivery charges prepaid, that are deemed defective under this warranty will be replaced or repaired at Greenlee's option. This warranty shall not apply to any defect, failure or damage caused by improper use or inadequate maintenance. This warranty does not apply to worn or damaged accessories such as test leads, batteries and soft cases. Calibration is not covered under factory warranty.

Product sold through distribution carries a 15-month warranty due to turn around time.

CONTRACTED SERVICE:

Greenlee offers contracted warranty for specific products. The Sales Department negotiates these contracts at the time of purchase. Such contracts are customer and/or marketing driven. Contracts are product/customer specific.

EXTENDED WARRANTY:

Extended warranty is available at the Buyer's option.

WARRANTY ON REPAIRED PRODUCTS:

Greenlee offers a 90-day warranty against defects in material or workmanship for repaired products. Extended repair warranty may be available for select customers and is negotiated by sales department.

FLAT RATE REPAIR CONTRACTS:

Flat rate repair contracts for pricing and product coverage are available for non-warranty repairs. The sales department negotiates these contracts.

PCB (MODULE) EXCHANGE:

It is the discretion of Greenlee to exchange defective or damaged PCB modules with refurbished PCB modules.

NON-WARRANTY REPAIRS:

Greenlee will charge time and material for all product repairs that are non-warranty. Any Greenlee manufactured unit that is received with a broken seal (opened by someone other than Greenlee authorized personnel) will be considered non-warranty and repaired as such.

SPARE PARTS:

Spare parts are sold to Greenlee authorized repair centers only.

Greenlee considers spare parts to be any internal part that the unit must be opened to have replaced.

ACCESSORIES:

Accessories can be ordered through Greenlee's sales department or distribution centers. Contact our sales department for a list of accessories per product.

Greenlee considers accessories to be any item that is not required for unit operation, with the exception being test leads and cables; i.e., straps, cases, software.

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