

<b>Page 1 of 4</b>	<b>Effective from 13.12.2010</b>	<b>STR For Earth Leak Detector SIQ 0367</b>	<b>Version 0</b>
--------------------	--------------------------------------	-------------------------------------------------	------------------

**Government of India  
Ministry of Railways**

**Signal Directorate**

**Schedule of Technical Requirement (STR)**

**For**

**Earth Leak Detector  
SIQ 0367 ( Ver. 0 )**

**Research Designs and standards Organisation  
Manak Nagar, Lucknow – 226011**

**13<sup>th</sup> Dec 2010**

Page 2 of 4	Effective from 13.12.2010	STR For Earth Leak Detector SIQ 0367	Version 0
-------------	------------------------------	-----------------------------------------	-----------

## STR FOR EARTH LEAK DETECTOR

### (b) ESSENTIAL MACHINERY AND PLANTS REQUIRED FOR PRODUCTION:

1. Hot & cold climate chambers for temperature cycling
2. Burn-in chamber
3. Temperature controlled manual soldering machine / Station
4. Flow solder line consisting of (To be indicated in QAP, if outsourced)
  - Automatic Integrated soldering machine
  - Aqueous cleaner for automatic cleaning and degreasing
- OR**
- Dip soldering Machine with Pre-heating
5. Video microscopic inspection equipment with minimum magnification of 32X
6. Component forming machine (To be indicated in QAP, if outsourced).
7. PCB populating machine (To be indicated in QAP, if outsourced).
8. Transformer Winding Machine
9. Temperature controlled oven
10. Card Holding Racks
11. Compressor with pressure controllers
12. Vernier Caliper
13. Drill Machine
14. Bench wise
15. Grinder
16. Component Cutter and Bender
17. Piller Punch
18. Milling M/C
19. Sheet Cutter
20. Threading Machine
21. Welding machine
22. Genset

### (b) ESSENTIAL TESTING EQUIPMENTS REQUIRED FOR QUALITY ASSURANCE:

1. Storage dual beam oscilloscope of 20 MHz or above bandwidth.
2. True R.M.S digital multimeter – 4½ digits display with facility of diode & transistor testing., high accuracy, suitable up to 50 KHz with micro amp range of AC/DC
3. Function generator.
4. Computer aided design system with workstations, printer and eprom /µcontroller Programmer

<b>Page 3 of 4</b>	<b>Effective from 13.12.2010</b>	<b>STR For Earth Leak Detector SIQ 0367</b>	<b>Version 0</b>
--------------------	--------------------------------------	-------------------------------------------------	------------------

5. Variable DC power supply (+5V, +12V, 24V, 0-48V) (of 2 Amps minimum capacity).
6. Million Mega ohm meter (500V).
7. D.C. high voltage tester (0-5KV).
8. Variac ( 0 to 260v, of adequate power handling capacity).
9. Test jigs and fixtures.
10. Decade resistance box (100  $\Omega$  to 100 M  $\Omega$ )
11. Bus Bar Source 24/60/110 V AC/DC
12. High voltage transformer for AC immunity (750 V)
13. H.V. tester (2000V)
14. I.R. tester (500V)
15. IC tester (Analog/Digital)
16. Capacitance meter
17. Auto transformer with digital volt / current meters.
18. Magnifying glass.

Note : Every proposal for outsourcing of any activity/process shall be with following conditions :

- (a) Outsourcing can be done only from ISO 9001 certified firm.
- (b) Every such proposal shall be got approved by RDSO.

**Quality Assurance flow chart for Earth Lead Detector**

