
LEAFLET S/C 120.415.478

T110 TEST SOURCE - OPERATING INSTRUCTIONS

1. INTRODUCTION

The T110 Test Source is used to test Thorn Security infra-red flame detectors listed in Section 2, in both safe and hazardous areas.

The T110 is ATEX approved for use in zones 1 and 2 for group IIC gasses rated T1 - T4. Approval for zone 0 is not available for this type of equipment, although it is understood that dispensation may be obtainable on a site-by-site basis from the Factory Inspectorate.

WARNING:

UNDER NO CIRCUMSTANCES OPEN THE T110 HOUSING IN A HAZARDOUS AREA. BATTERY CHANGES MUST BE MADE IN A SAFE AREA.

2. DESCRIPTION

The T110 consists of a module mounted in a cradle which can be hand held or secured to an extendable pole. The module is self-aligning on the detector by means of an adaptor secured to the front of the cradle. The assembly is then held against the detector to check the response time and sensitivity of the detector.

There are four adapter plates available, each plate is specific to the following detector modules:

- 1) S111, S112, S121, S122
- 2) S131, S161
- 3) MS302, MS502
- 4) 601F, 601FEx, 801F, 801FEx

The required adapter plate is secured to the front of the T110 Test Source by three posidrive screws located on the front of the T110 mounting plate.

The Test Source is enclosed in a glass filled polyester housing which is approved as an increased safety or 'e' housing. It contains a bulb which is electrically pulsed by an intrinsically safe circuit to simulate typical flame flicker. Infra-red radiation from the lamp is focused by a Fresnel lens through a sapphire window onto the detector.

The unit is powered by a ATEX approved PP3 battery (see 4.3).

The T110 is switched on with a rotary selector switch knob located on the rear of the unit.

The switch has three positions:

- | | | |
|----|------|---|
| 1) | OFF | Centre position |
| 2) | Sxx1 | For testing Solar Blind detector models S111, S121, S131, S161, 601F, 601FEx, 801F and 801FEx |
| 3) | Sxx2 | For testing Non Solar Blind detector models S112, S122, MS302 and MS502 |

Care must be taken to switch off the unit when not in use to avoid battery drain.

When attaching an adapter to the T110, the following precautions must be observed:

The T110 mounting plate must be clean and flat. If the mounting plate is bent or distorted in any way the unit should be returned for repair, see Section 8.

The adapter plate must be clean and flat. If the adapter plate is bent or distorted in any way, it should be discarded and replaced.

No attempt should be made to insert packaging between the T110 mounting plate and the appropriate adaptor plate as this may seriously affect the response of the detector

3. METHOD OF TEST

WARNING:

TESTING A DETECTOR WILL PRODUCE AN ALARM SIGNAL FROM THE DETECTOR. TAKE THE NECESSARY STEPS TO INHIBIT A FULL ALARM CONDITION AT THE CONTROL PANEL BEFORE PROCEEDING.

- a) Fit the appropriate adapter to the front of the unit.
- b) If the detector for test cannot be reached by arm extension, connect up extension poles to the required length, (up to 3.9m: 13ft).
- c) Turn the rotary switch to the detector range required.
- d) Offer up test unit to the front of the detector and engage top of the front surround on the top edge of the detector.
- e) Push forward on the handle or extension and the T110 will self align to the face of the detector.

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- f) Hold in position for 6 to 20 seconds, the detector alarm LED should illuminate, indicating that the detector has responded correctly.
- g) Lower test unit and turn rotary switch to the 'OFF' position.

The signals from the T110 are approximately equivalent to the signals from the following petrol fires:

S111/S121/S131/S161/
601F/601FEx/801F/801FEx: 1²ft. of petrol at 12m
S112/S122/MS302/MS502: 1²ft. of petrol at 18m

4. TECHNICAL SPECIFICATION

4.1 MECHANICAL

Dimensions

The overall dimensions are shown in Fig. 2.

Materials

Housing: Glass filled polyester two part case sealed to IP54

Front Mounting Plate

S111, S112, S121,
S122, S131, S161: Stainless Steel to BS1449 Part 2
MS302, MS502
601F, 601FEx
801F, 801FEx: Clear polycarbonate

Weight

T110 Test Unit: 0.8kg
Extension Pole: 0.3kg

4.2 ENVIRONMENTAL

Temperature

Operating: -10°C to +50°C
Storage: -30°C to +70°C

Humidity

Up to 95%
(non-condensing)

EMC:

Equals or exceeds the requirements of BS EN 50082-1 and BS EN 50081-1

4.3 ELECTRICAL CHARACTERISTICS

Three rechargeable PP3 batteries are ATEX approved for use with the T110:

- VARTA V7/8H NiMH. This is available from Farnell - Part No. 521-516.
- GOLD SEAL GP15F8K NiCad. This is available from Farnell - Part No. 451-472.
- R.S. Components Part No. 591-089 PP3 NiCad battery (no longer available).

(These batteries have been tested for safe operation under short circuit conditions).

Standard Nickel Carbon and Zinc Chloride PP3 batteries are also ATEX approved. However, these are not recommended as they are required to be replaced more often (typically 2 hours continuous use as opposed to 4 hours for rechargeable PP3 batteries).

No alternative batteries may be used as this will invalidate the ATEX approval for use in Hazardous Areas.

The recommended charging time NiMH battery is:

Normal Charging: 14mA for 14h
Accelerated Charging for fully discharged cell: 70mA for 3h
Trickle Charge: 4.2mA

4.4 APPROVAL

The T110 is certified against EN50014, EN50019 (Increased Safety 'e') and EN50020 (Intrinsic Safety 'i').

The T110 is certified:

 II 2 G eib IIC T4

The certification covers the use of the T110 in Zone 1 and Zone 2 areas over the ambient temperature range -20°C to +40°C.

The label is shown in Fig. 1.

The ATEX Certification number is Baseefa03ATEX0270X.

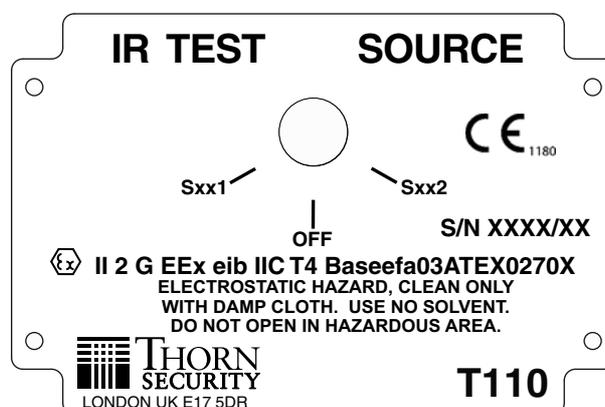


Fig. 1

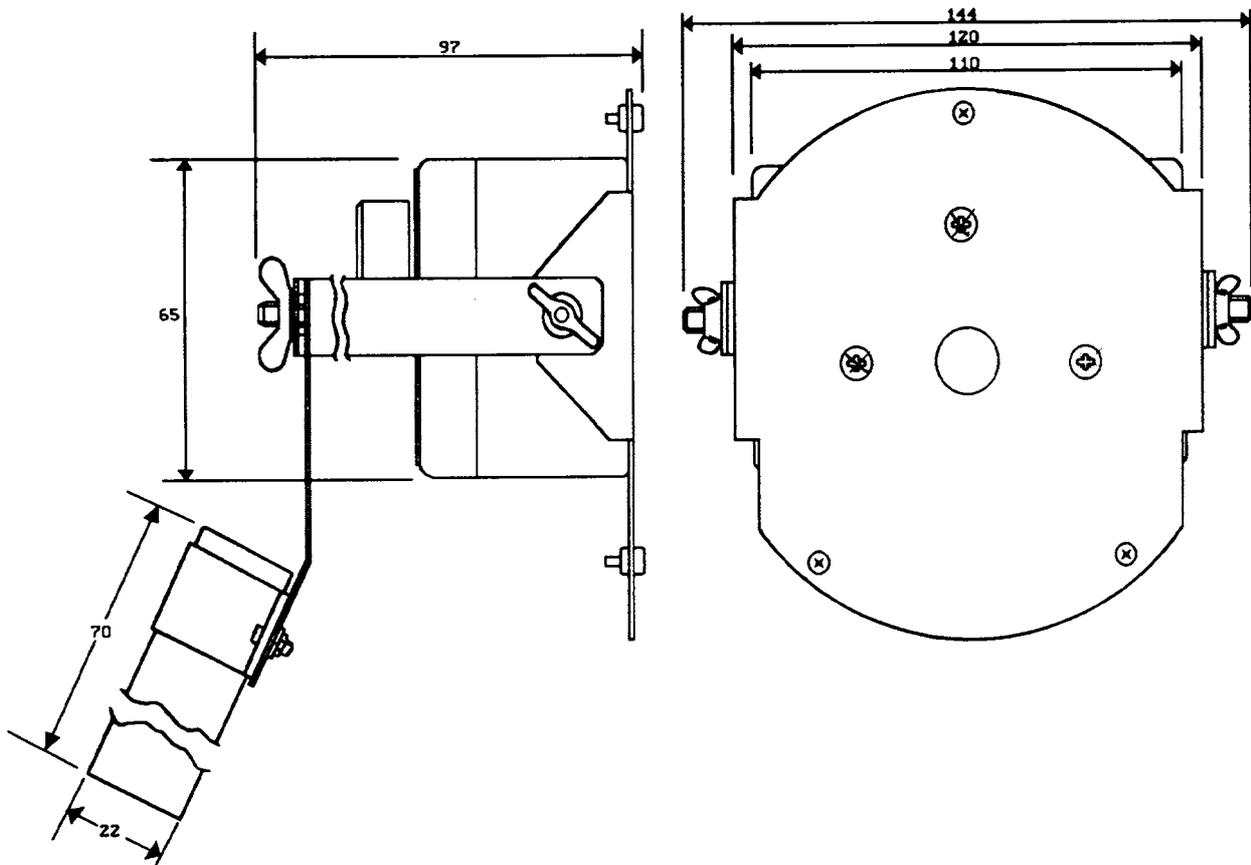


Fig. 2 T110 Test Source - Overall Dimensions

5. BATTERY LOW INDICATOR

The T110 gives the following operational indications when switched 'ON':

- | | |
|-----------------------------|--|
| Battery charged: | A white pulsing light is visible through the window, indicating the unit is working correctly. |
| Battery low: | A red light is visible pulsing with the white light. |
| Battery very low: | Red light permanently ON, battery must be changed. |
| Battery dead/
bulb fail: | No lights visible, battery must be changed. |

Note: If no white light is visible after the battery change, check connection to the bulb.

6. REPLACEMENT OF THE BATTERY

To fit battery, proceed as follows:

- Ensure that the PP3 battery is fully charged.
- Ensure that the T110 rotary switch is in the 'OFF' position.
- Remove the four back cover corner screws. Remove the back plate containing the circuit PCB and battery holder. Take care not to move the lamp reflector assembly.
- Align the PP3 battery with the battery holder, ensuring correct polarity alignment and push the battery into the holder.

Note: The circuit is polarity protected but the unit will not work with incorrect polarity.

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- e) Turn the rotary switch to the Sxx1 position and check that the lamp flashes. Turn the rotary switch to the Sxx2 position and check that the lamp flashes more dimly.
- f) Turn the rotary switch to the OFF position. Reassemble the back case to the front cover with the four screws. Do not over tighten.

WARNING:

UNDER NO CIRCUMSTANCES MAY THE T110 BE OPENED (OR THE BATTERY REPLACED) WHILE IN A HAZARDOUS AREA. ONLY FIT ATEX APPROVED BATTERIES, SEE 4.3.

7. CLEANING

Do not rub or clean the T110 with solvent as this could cause an electrostatic charge and a risk of explosion in the presence of an explosive gas. Clean only with a damp cloth.

8. REPAIR OF DAMAGED UNITS

The T110 is a calibrated unit. On no account may the front and rear box assemblies be interchanged between units.

If a T110 becomes non-functional or damaged, it should be returned for repair and recalibration to:

Service Department
Tyco Safety Products
Dunhams Lane
Letchworth
Herts
SG6 1BE

9. ORDERING INFORMATION

T110 infra.red test source:	592.001.012
Adapter plate for S111/S112/S121/S122:	592.001.004
Adapter plate for S131/S161:	592.001.005
Adapter plate for 601F/601FEx/ 801F/801FEx:	592.001.018
Nicad battery and charger:	592.001.010
T110 carrying case:	592.001.011
Solo 100 telescopic extension pole set:	517.001.230
Solo 101 extension pole:	517.001.226
Solo 704 adaptor tube B:	517.001.224
Solo 610 Carryall bag:	517.001.264

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1st February 2006