
LEAFLET S/C 120.415.482

T210+ TEST SOURCE - OPERATING INSTRUCTIONS

1. INTRODUCTION

The T210+ Test Source is used to test Thorn Security S200 and S200+ Series of infra-red flame detectors in both safe and hazardous areas.

The T210+ is ATEX/IECEX 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 T210+ HOUSING IN A HAZARDOUS AREA. BATTERY CHANGES MUST BE MADE IN A SAFE AREA.

2. DESCRIPTION

The T210+ 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.

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 parabolic reflector through a sapphire window onto the detector.

The unit is powered by a Baseefa approved PP3 battery (see 5.4).

The T210+ is switched on with a rotary selector switch knob located on the rear of the unit.

The switch has four positions:

- | | | |
|----|-----|------------------------------------|
| 1) | OFF | Off |
| 2) | 50m | To test detectors set to 50m range |
| 3) | 25m | To test detectors set to 25m range |
| 4) | 12m | To test detectors set to 12m range |

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

3. PREPARING T210+ FOR USE

- 1) To assemble the T210+ to the S200 adaptor S/C No. 592.001.014, see Fig 1.
 - a) Assemble the S200 adaptor moulding/'U' bracket to the T210+ front plate using the three screws provided.
 - b) Attach the pole bracket to the 'U' bracket/pole stub assembly using the wing nut and nylon washers provided. Tighten securely.

Note: Hereafter, the term T210+, refers to the T210+ fitted with the S200 adaptor, brackets and pole stub.

- 2) To fit battery (in safe area) see below.
 - a) Ensure that the PP3 battery is fully charged.
 - b) Ensure that the T210+ rotary switch is in the 'OFF' position.
 - c) Remove the four back cover corner screws. Lift off the box front containing the PCB and battery holder. A lanyard is fitted to the T210+ to avoid straining the lead connecting the lamp assembly on the front box to the PCB on the back box.
 - d) 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 battery inserted the wrong way round.

- e) Turn the rotary switch to the 12m position and check that the lamp flashes. Turn the rotary switch to the 25m position and check that the lamp flashes more dimly. Turn the rotary switch to the 50m and check that the lamp is very dim.
- 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:

THIS IS A CALIBRATED UNIT. DO NOT DISMANTLE THE REFLECTOR CLAMP ARRANGEMENT.

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4. 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.

- If the detector for test cannot be reached by arm extension, connect up extension poles to the required length, (up to 3.9m: 13ft).
- The T210+ is calibrated with the T210+ aligned with the front face of the S200 (see Fig. 2). It is therefore recommended that the operator adjusts the swivels on the T210+ bracket to line up the T210+ with the S200 detector on the ground prior to fitting the extension poles. The T210+ unit should be approximately aligned with the cable entry holes on the S200.
- Turn the rotary switch to the detector range required.

- Offer up test unit to the front of the detector and engage top of the front surround on the top edge of the detector. Check that the T210+ is correctly aligned as per Fig. 2. If not, lower the T210+ and readjust swivels until the T210+ aligns correctly within the specified limits.
- Push forward on the handle or extension and the T210+ will self align to the face of the detector.
- Hold in position for 30 seconds, the detector alarm LED should illuminate, indicating that the detector has responded correctly.
- Lower test unit and turn rotary switch to the 'OFF' position

5. TECHNICAL SPECIFICATION

5.1 MECHANICAL

Materials

Housing:	Glass filled polyester two part case sealed to IP54.
S200 Series Adaptor:	Clear Polycarbonate.
Pole + Bracket:	Stainless steel.
Pole Stub:	Aluminium.
Wing Nuts:	Stainless steel.

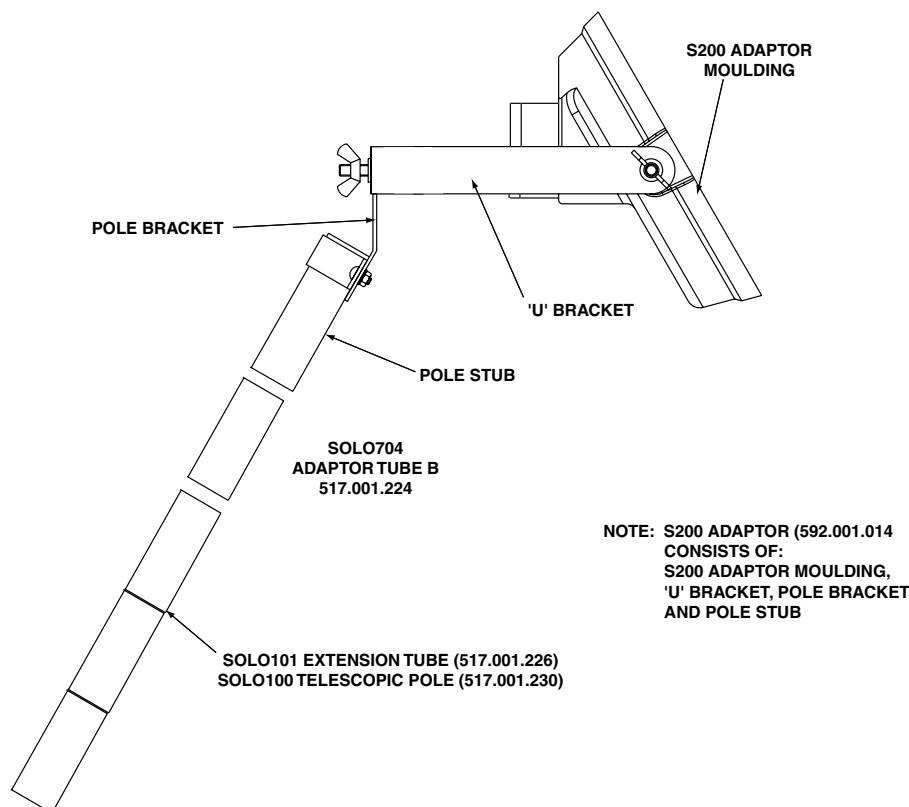


Fig. 1 T210+ Test Source and S200 Series Adaptor

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THE T210+ TEST SOURCE MUST BE POSITIONED AS SHOWN
± 20 DEGREES FOR CORRECT OPERATION.

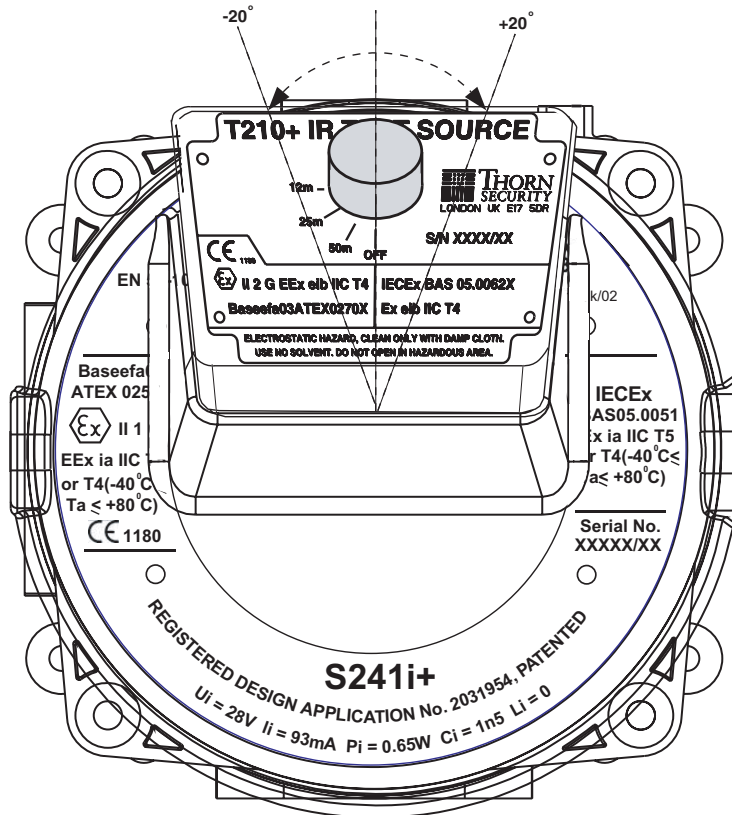


Fig. 2 T210+ Alignment

Weight

T210+ Test Unit with adaptor:	1.0kg.
Extension Pole:	3.0kg.

5.2 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
EN 50130-4 (immunity)
EN 61000-6-3 (emissions)

5.3 BATTERY LOW INDICATOR

There is a battery low indicator behind the small window on the front of the T210+. This will flash periodically to indicate the battery charge is low. When this indicator lights permanently, this indicates that the battery charge is too low to continue testing detectors. The T210+ must then be taken to a Safe Area and the battery changed.

5.4 BATTERIES

Two rechargeable PP3 batteries are approved for use with the T210+:

- VARTA V7/8H NiMH. This is available from Farnell - Part No. 521-516.
- GOLD SEAL GP15F8K NiCad.

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

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Standard Nickel Carbon and Zinc Chloride PP3 6F 22-IEC batteries are also Baseefa 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 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

5.5 ATEX CERTIFICATION

The T210+ is certified against EN50014, EN50019 (Increased Safety 'e') and EN50020 (Intrinsic Safety 'i').

The T210+ is certified:

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The certification covers the use of the T210+ in Zone 1 and Zone 2 areas over the ambient temperature range -20°C to +40°C.

The label is shown in Fig. 3.

The ATEX Certification number is Baseefa03ATEX0270X.

5.6 IECEX CERTIFICATION

The T210+ is certified against BS EN 60079-0 and EN 50020. It is classified T4 for use in ambient temperatures between -20°C and +40°C.

The IECEX classification is shown on the label in Fig. 3 as

Ex eib IIC T4

and the IECEX certification number is IECEXBAS 05.0062X.

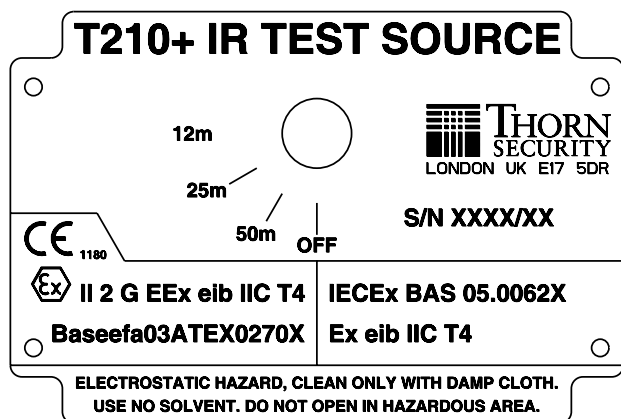


Fig. 3

6. PERFORMANCE

The T210+ produces a modulated test stimulus for 14 to 16 seconds to allow all S200/S200+ detectors to be tested (S200/S200+ time to alarm settings are 3, 6 and 12 seconds).

The T210+ set to 12m range. On this setting the T210+ is set up to simulate a 0.1 sq m n-heptane fire at a range of 8.5 to 10.5m.

The T210+ set to 25m range. On this setting the T210+ is set up to simulate a 0.1 sq m n-heptane fire at a range of 14 to 18m.

The T210+ set to 50m range. On this setting the T210+ is set up to simulate a 0.1 sq m n-heptane fire at a range of 28 to 36m.

7. REPLACEMENT OF THE BATTERY

WARNING:

UNDER NO CIRCUMSTANCES MAY THE T210+ BE OPENED (OR THE BATTERY REPLACED) WHILE IN A HAZARDOUS AREA. ONLY FIT APPROVED BATTERIES, SEE 5.4.

Follow the procedure detailed in Section 3. step 2). It is recommended that a fully charged battery is fitted prior to using the T210+ and that spare fully charged batteries are also made available if a large number of detectors are to be tested.

8. CLEANING

Do not rub or clean the T210+ 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.

9. REPAIR OF DAMAGED UNITS

The T210+ is a calibrated unit. On no account may the front and rear box assemblies be interchanged between units.

If a T210+ 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

10. ORDERING INFORMATION

T210+ infra-red test source:	592.001.016
Adaptor S200 series:	592.001.014
Nicad battery and charger:	592.001.010
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

JM/tg

1st February 2006