

Installation and User Guide

ILC-1117 Titan Illuminated Crossing Telephone

GAI-TRONICS

CONTENTS

1.	Safety and Care Information.....	3
2.	Product Description	3
2.1.	Changes from previous versions.....	3
2.2.	At a Glance	4
3.	Operation / Testing.....	5
3.1.	Call timer.....	5
3.2.	Handset integrity alert	5
4.	Installation	6
4.1.	General	6
4.2.	If glands are required	6
4.3.	Wall mounting	7
4.4.	Pole mounting	8
5.	Connections and option settings.....	9
6.	Legend Panel.	12
6.1.	Legend panel dimensions	12
6.2.	Fitting the legend panel.	13
7.	Cleaning	13
7.1.	Normal Cleaning	13
7.2.	Stainless Steel Push-buttons	13
7.3.	Graffiti.....	13
8.	Aftercare.....	14
9.	Technical Specifications	15
10.	CE Declaration	17

1. Safety and Care Information

- ▲ **The safety of the user/installer relies on the isolation of the telephone network and not on the earthing of the case**
- ▲ **Please read these instructions thoroughly before starting installation. These products must be installed by competent personnel familiar with telephone installation.**
- ▲ **Telephone network voltages can be hazardous. Take adequate precautions when opening the case or installing. If in doubt, disconnect the telephone line elsewhere before accessing the line connections.**
- ▲ **For increased protection against lightning transients, attach a local earth to the main terminal block (see section 5)**
- ▲ **Do not fit a terminating resistor across the telephone terminals. The system does not require a terminating resistor, fitting a resistor may prevent the telephone from initiating a call.**

2. Product Description

This manual describes the ILC-1117 model Titan telephone, designed for use on PETS (Public Emergency Telephone System) at automatic half barrier (AHB) level crossings in the UK. The product was introduced with the design of PETS3, but is backward compatible with PETS2 and PETS1.

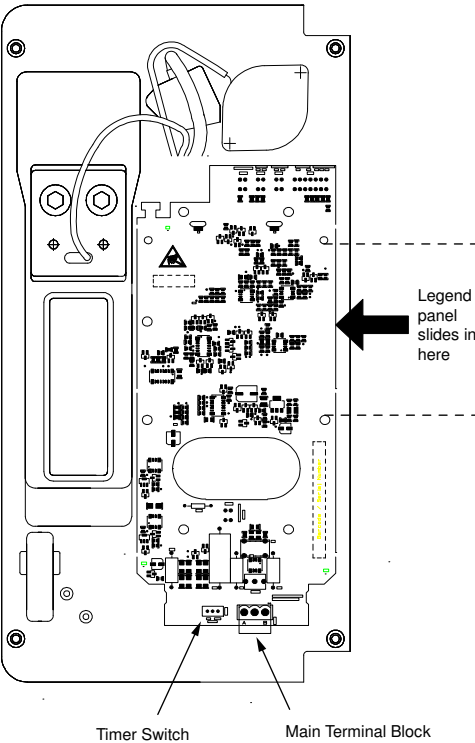
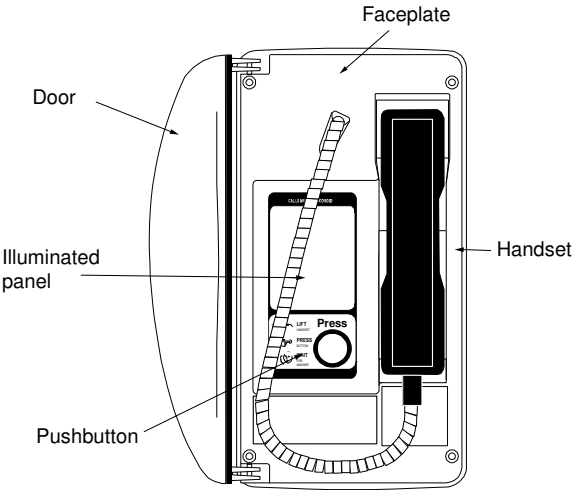
2.1. Changes from previous versions

This manual describes an updated range of products introduced in June 2009. For those familiar with GAI-Tronics' products, the list of new or changed features is as follows:

- Larger illuminated area, with instructions
- Clearer, more even illumination. Backlight colour is now white as opposed to red. Illumination level does not vary when on or off hook.
- Prominent, vandal resistant pushbutton
- New, simpler terminal layout (section 5). No separate Cap-Shunt link (ringing is permanently enabled). The pushbutton is permanently in circuit.
- There is no longer an option to select an illumination current. Illumination current is fixed at 6mA.
- Increased lightning protection (section 9).
- Compliance with railway EMC standards (section 9)

For the full list of product features, please see the specifications in section 9.

2.2. At a Glance



3. Operation / Testing

When connected to a telephone line, the telephone will draw a constant current of 6mA on-hook and the illuminated panel will be lit.

Pressing the button with the handset on hook will cause the display to flicker briefly. This will have no other effect and neither a call nor a fault will be initiated

Lifting the handset will cause the phone to loop the line – dial tone should be heard but a call will not be initiated.

Pressing the button will cause a timed loop break (approx 100ms) which should initiate a call. Refer to the relevant PETS instructions for call connection timings.

The loop break duration is independent of how long the button is held pressed. Keeping the button pressed will still only result in a 100ms break.

3.1. Call timer

The phone has a selectable call timer that can limit the maximum call duration to approximately 7 minutes.

When on, the timer forces the phone back off line after the preset time. This prevents the line remaining tied if the handset is left off-hook. The timer is factory-set to OFF by default.

3.2. Handset integrity alert

If the handset integrity loop is broken (most commonly because the handset has been damaged or torn off), the illumination will not be lit and the on hook current will be almost zero. This should cause PETS to signal an alarm.

Note that a terminating resistor should not be fitted across the telephone terminals.

4. Installation

4.1. General

IMPORTANT

All possible measures must be taken to ensure water, fluid or dust does not contaminate the internal components of the telephone whilst unpacking, preparing and installing the telephone in inclement weather conditions or by negligence.

Failure to do so may invalidate your warranty.

These telephones are supplied without connection leads – cabling to the telephone network must be supplied and installed by the installer. Because of this, extra precautions must be observed: installation must be carried out by trained personnel. Contact GAI-Tronics if installation service is required.

1. To prepare for installation, open the door, then undo the four retaining screws to remove the faceplate from the rear enclosure. A 3mm Allen key is required. Take care not to damage the exposed circuit board when setting the faceplate aside during installation.

Caution – take care to support the spring-loaded door whilst open to prevent it slamming shut and trapping fingers.

2. All connections and option settings are on the rear of the faceplate towards the lower edge.
3. The Titan telephone is intended for vertical installation to a wall or pole. Select the required mounting method (section 4) and mount the rear enclosure first where applicable.
4. Route the required cables through glands as appropriate, and make connections and option settings following section 5. Ensure that both cable entries are sealed with either a gland or a black blanking plug as described.
5. Re-fit the faceplate ensuring a weatherproof seal is maintained.
6. Test the operation of the telephone (section 3). Installation is now complete.

4.2. If glands are required

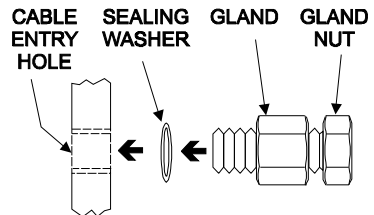
Before mounting the telephone, check the cable routing and requirements. If glands are required, fit them to the case as follows:

1. Remove the RED blanking plug leaving the other (usually BLACK) in place.

2. Select the appropriate sized gland:
Use the smaller gland for cables diameters 4 - 7mm.
Use the larger gland for cable diameters 8 - 13mm.

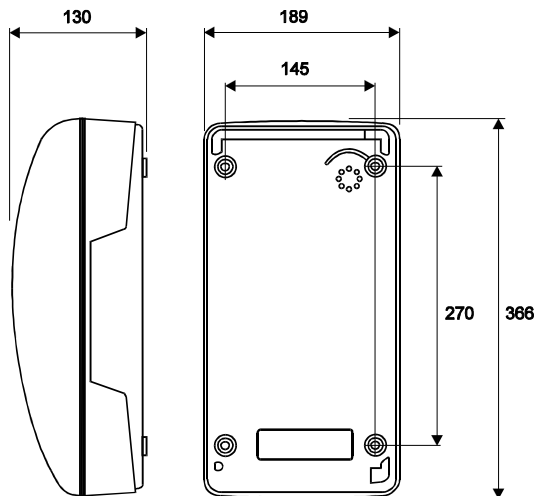
3. From the outside of the case, insert the selected gland into the threaded cable entry hole and tighten, so that its sealing washer is compressed against the enclosure surface.

4. Proceed with chosen mounting method below



As standard, The telephone is supplied with a pole mounting kit 100-02-0208-001, but no glands.

4.3. Wall mounting



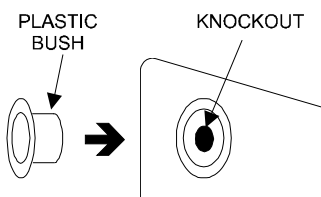
1. Using a suitable tool, punch out 4 holes in the rear enclosure, taking care not to damage or dislodge the plastic bushes. Only four of the eight holes are required - the outer ones are recommended. The inner holes are provided to be compatible with older-style mounting posts, and should be left intact if not used. If the inner holes are used they must be fitted with the supplied plastic bushes.

WARNING: *Your warranty will be invalidated if :-*

- 1. Any fixing hole made in the rear enclosure is left unused.*
 - 2. Any additional holes are drilled into the telephone enclosure.*
 - 3. Plastic bushes are not used on all fixing holes.*
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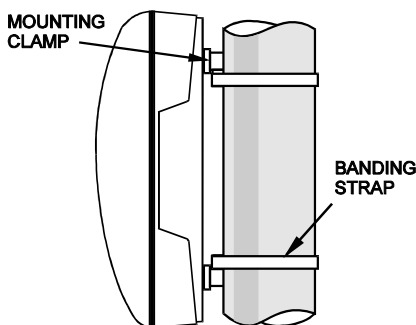
2. Mark the wall with hole centres based on the dimensions shown (145 x 270mm). If necessary offer the rear enclosure up to the wall to check alignment. Do not use the enclosure as a template for drilling.
 3. Drill holes in the wall on the marked positions. Select appropriate screws, wall plugs etc., for the type of wall, bearing in mind that the weight of the complete phone is around 5kg.
-

IMPORTANT: *Check that screws seat properly in the plastic bushes to ensure a watertight seal. Do not use excessive tightening force, as this may crack the case.*



4. Ensure that all four plastic flanged bushes are in place and the rear enclosure is screwed tightly to the surface to prevent any water ingress through the punched holes.
5. Complete the installation by making the appropriate connections (section 5) and re-fitting the face plate.

4.4. Pole mounting



This accessory is for mounting GAI-Tronics telephones on to the side of round poles of 100mm to 200mm diameter, or on to square or rectangular section uprights of 100mm to 150mm across the mounting surface.

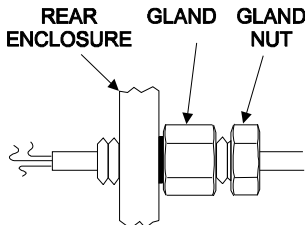
NOTE:

Banding straps (large scale worm-drive clamps) are not included in this kit and must be obtained separately. For details of where banding can be obtained, refer to GAI-Tronics.

1. Using a suitable tool, punch out the 4 **outer** holes in the rear enclosure, taking care not to damage or dislodge the plastic bushes.
2. Attach the pole mounting clamp assemblies to the rear enclosure using the M6 x 25 screws provided, pushing the screws through from inside the phone.
3. Tighten nuts to a torque of 4.5Nm max.
IMPORTANT: avoid the use of power tools. Spinning the nuts too quickly can cause a rapid increase in heat which can cause the nuts to seize as a result of galling or cold-welding.
Note: only use the outer four holes, and ensure that the screws seat properly in the plastic bushes to avoid water ingress.
4. Ensuring that the glands are at the bottom, pass a proprietary banding strap round each of the pole mounting clamps and the support pole. Tighten securely.
5. Continue the installation by making the appropriate connections (section 5) and re-fitting the face plate.
6. Re-tighten the straps firmly and trim off any excess band material. For security the driving head of the band may also be sawn off.

5. Connections and option settings

If glands are used, insert the cable through the gland body and tighten the gland nut sufficiently to clamp the cable, making a seal. Ensure sufficient cable is left to allow removal of the faceplate without straining the cable.



IMPORTANT: If only one cable entry is used, the black blanking plug fitted to the second position must be left in place.

Connect the telephone line A and B to the main terminal block TB2 as shown.



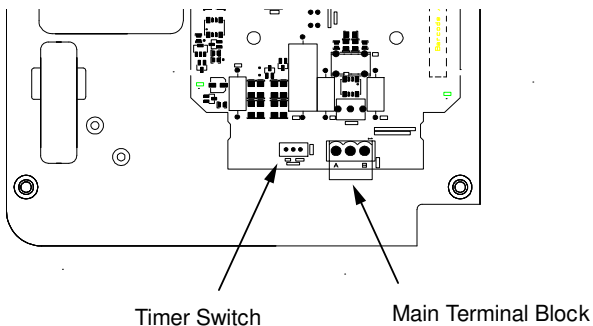
The centre earth terminal is intended for connection to a local earth to provide common mode protection from lightning transients. **If this terminal is not earthed there is an increased risk that the telephone could be damaged by line-born transients.**

Note that user safety from the telephone network is provided by isolation and does not rely on this earth connection.

Do not fit a terminating resistor across the telephone terminals. The system does not require a terminating resistor, fitting a resistor may prevent the telephone from initiating a call.

Note: Conductor sizes to be 0.5mm-2.5mm² (flexible cable); 0.5-4.0mm² (solid cable) The terminal block can be disconnected from the circuit board for easier installation

Cabling must not infringe European Low Voltage Directive (LVD) 2006/95/EC.

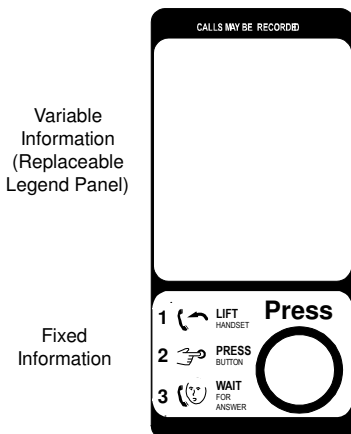


The timer is set by the position of switch SW2. Position the switch to the left to set the timer **ON**, and to the right to set it **OFF**.

This unit is supplied with the switch set to the **OFF** position.

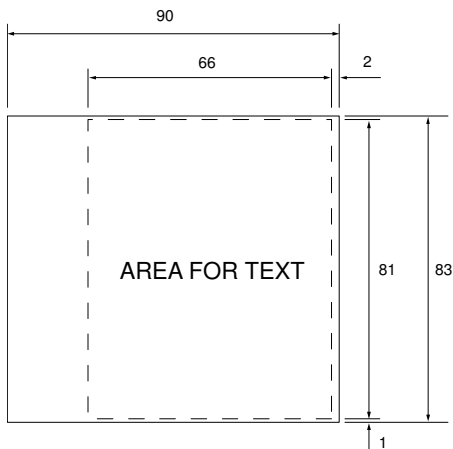
6. Legend Panel.

The telephone is designed to accept a legend panel, giving details of the level crossing. The legend panel slides into a thin slot behind the faceplate and is held in place when the faceplate is secured in the rear enclosure. The legend panel is then backlit by the illuminated panel.



6.1. Legend panel dimensions

The legend panel should be made from clear material (for example laser printer OHP film), preferably 0.5mm thick (max 1mm), and cut to the template below.



Note that the area for printing is 81mm x 66mm and allows a border and a tab for ease of fitting.

6.2. Fitting the legend panel.

To fit the legend panel, first ensure that a panel has been correctly printed and cut to size according to the template above.

Remove the faceplate from the telephone by removing the 4 retaining screws.

Locate the slot behind the window, at the left hand edge when viewing from the front. The slot is only approximately 1mm thick, and there is a retaining guide to keep the legend panel aligned correctly.

Gently slide the legend panel into place. Undue force should not be necessary. Note that the slot is fairly tight to the dimensions above to ensure correct alignment.

When fully inserted, the edge of the legend panel will protrude beyond the circuit board to the edge of the gasket, allowing a tab for ease of removal. **It must not overlap the strip of gasket, otherwise the water seal will be compromised.**

7. Cleaning

Recommended cleaning methods are outlined below:

7.1. Normal Cleaning

For normal cleaning we recommend "Virosol", manufactured by Clover products.

Carefully follow manufacturer's instructions for storage, handling and use.

7.2. Stainless Steel Push-button

The stainless steel push-button should be cleaned regularly especially if the telephone is in a marine environment. The stainless steel may show signs of discolouration or rust – this will not damage the button or impair its performance but may look unsightly and can be cleaned off using normal cleaning agents as above. In extreme cases a mild abrasive may be necessary.

7.3. Graffiti

For graffiti, paint and ink we recommend the use of 3M GR1 graffiti stain remover.

CAUTION: This is a very aggressive chemical. Pay close attention to the manufacturer's recommendations for storage, handling and use.

8. Aftercare

The purchase of your GAI-Tronics product does not end our commitment to you.

In addition to our warranty obligations, GAI-Tronics are able to offer various levels of maintenance packages, installation and commissioning packages and technical support, from ad-hoc repairs to full maintenance contracts.

By choosing GAI-Tronics as your aftercare provider you are ensured of manufacturer expertise and ISO 9000-certified quality control standards throughout the life of the product.



We can also supply a full range of accessories including mounting posts, beacons and high-volume sounders.

Contact GAI-Tronics for details. www.gai-tronics.co.uk

9. Technical Specifications

Operational Requirements	
Systems.	<ul style="list-style-type: none"> Public Emergency Telephone System (PETS) only.
Not suitable for connection to:	<ul style="list-style-type: none"> Public networks (PSTN) Standard PABXs
Telephone line parameters	<ul style="list-style-type: none"> On-hook current: 6mA \pm 10% Ring Voltage: 30V to 100V rms, 20Hz to 50Hz Line voltage 20 to 70 Vdc Loop current \geq 15mA
Product features	
Power supply	100% line power.
Hookswitch	Electronic with no external moving parts
Time Out	7 minutes (\pm 1). Selectable
Ringer loudness	80dBA @ 1m
Handset	Suitable for inductive coupling to Hearing Aids having a 'T' switch position. Tested to ETS 300-381
Environmental limits	
Temperature:	Operating: -20°C to +60°C Storing: -40°C to +70°C
Relative Humidity	Up to 95% (non-condensing)
Ingress Protection	IP65 to EN60529:1992 – Degrees of protection provided by enclosures.
Physical characteristics	
Casing material	Die-cast Aluminium
Handset Material	Cycoloy (2800) with stainless steel cord.
Weight	5kg approx.
Dimensions	189W x 366H x 130D (mm)



Compliance to standards	
European Directive	<p>2004/108/EC – EMC Directive</p> <p>2006/95/EC – Low Voltage Directive (LVD)</p> <p>2011/65/EC - Restriction of the use of certain hazardous substances in electrical and electronic equipment (recast) (RoHS 2) Directive</p> 
EMC	<p>EN55022 – Information technology equipment. Radio disturbance characteristics.</p> <p>EN55024 – Information technology equipment. Immunity characteristics.</p> <p>EN 50121-4 - Railway applications, emission and immunity</p> <p>RT/E/S/30003 iss1 1999 – The performance of Telecommunications Equipment under Conditions of Electrical Interference</p>
Safety	EN60950-1 – Specification for information technology equipment, including electrical business equipment.
Telephony	<p>BS6305:1992 (with the exception that on-hook leakage current is 6mA).</p> <p>BS6317:1992</p>
Lightning and transients	ITU-T recommendation K.21 - Enhanced surge protection.
Recycling Information	<p>The symbol shown here and on the product means that the product is classed as Electrical or Electronic Equipment and should not be disposed with other household or commercial waste at the end of its working life.</p>  <p>The Waste of Electrical and Electronic Equipment (WEEE) Directive has been put in place to recycle products using best available recovery and recycling techniques to minimise the impact on the environment, treat any hazardous substances and avoid the increasing landfill.</p> <p>Business users should contact their suppliers and check the terms and conditions of the purchase contract and ensure that this product is not mixed with other commercial waste for disposal.</p>

10. CE Declaration


GAI-TRONICS
A Division of Hubbell Ltd

EC Declaration of Conformity CE

We, GAI-Tronics (a division of Hubbell Ltd.), of Brunel Drive, Stretton Business Park, Burton upon Trent, Staffordshire, England, DE13 0BZ, declare under our sole responsibility, that the following product is in conformity with the directives listed below and hold the relevant technical documentation at the above address.

Product description	Titan Illuminated PETS Telephones Model ILC-1117 incorporating 999-02-1117-xxx PCB (all variants)
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EC Directives
2004/108/EC – EMC Directive
2006/95/EC – Low Voltage Directive (LVD)
2011/65/EC - Restriction of the use of certain hazardous substances in electrical and electronic equipment (recast) (RoHS 2) Directive

Date of issue	Name/Job Function of authorised signatory	Signature of signatory
30 November 2012	R Rumsby Engineering Manager	

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The policy of GAI-Tronics is one of continuous improvement, therefore the Company reserves the right to change specifications without notice