



# UNIVERSAL TACTILE EQUIPMENT CU100

# INSTRUCTION MANUAL

## Incorporating Type Approval Maintenance Provisions

### APPLICATION

Universal type for use at installations which include a flashing green man period (eg Pelicans), as well as normal junction controllers.

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## DESCRIPTION

The CU100 Universal Tactile Crossing Indicator for the visually impaired is particularly useful where the standard audible indicator is not suitable, at sites such as junctions with pedestrian light signals or at staggered Pelican Crossings.

It is easy and quick to fit, either on site, or prior to installation. The Tactile Cone with its drive mechanism fits into any approved pedestrian push button box on a universal bracket. The Control Unit, normally housed in the red man signal head, draws its low power requirement from the switched green man power supply without affecting the lamp monitoring circuits. Where the "Flashing Green" period is not provided, an external link is fitted to enable operation.

The patented electronic control circuit\* requires very low power, operating over dimmed or undimmed voltage, with full safety interlocks against accidental operation, precisely controlling the speed and torque of the Tactile Cone.

\* Patent Nos: GB 2222011.B.B



**Figure 1**  
**PSU - SIGNAL HEAD INSTALLATION**

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## SPECIFICATIONS & EU DIRECTIVES

This Equipment has been designed to conform to:

Low Voltage Directive	73/23/EEC
Electromagnetic Compatibility Directive	89/336/EEC
BS 7671 : 2001 AMD 9781	
BS EN 60204-1 : 1998	
BS EN 50293 : 2001	
TR 0157B	
TRG 0500C	

### 3 MODIFICATIONS

There are no approved modifications.

### 4 GREEN MAN LAMP MONITORING

Each Tactile Control Unit is connected in parallel with a green man lamp drive and will consume a nominal 7VA. If a Green Man Monitoring Facility is fitted, please contact Radix Traffic Limited should further information be required.

### 5 CONTROLLER LOADING

The various Pelican controllers on the market each have different drive capabilities for the existing audible indicators, and we have naturally taken this into account when designing the Tactile Equipment. If, however, you intend connecting more than four Tactile Control Units to one Pelican, please contact us with all relevant details so that we can ensure that the controller output will not be overloaded.

### 6 REPAIRS

The equipment comprises a CU100 Control Unit mounted in the red/green man signal head and a TU100 Tactile Unit mounted in the pedestrian push button box. Should either of these modules prove faulty, no repair shall be attempted but the faulty module shall be replaced by another **of the same type**. All suspect or faulty modules shall be returned to the supplier for repair.

### 7 WARNING

**Use of components other than those permitted herein, or modifications or enhancements that have not been authorised by Radix Traffic Limited, may invalidate the Type Approval and Warranty of this product.**

**This equipment may only be used in conjunction with controllers which include an approved road red lamp failure monitoring facility.**

**The CU100 Control Unit is designed for use in conjunction with one TU100 Tactile Unit and must not be connected to any other type.**

**NB Tactile Units (motors) must not be connected in parallel under any circumstances.**

**CAUTION** Ensure that all proper safety precautions are taken. The controller must be switched off whilst working on any street furniture, and provisions should be made to ensure safe operation of the crossing/junction at all times.

Make certain that the controller includes an approved road red lamp failure monitoring facility which will extinguish the "Green Man" Signal for the duration of the red lamp failure.

### 8.1 TU100 TACTILE UNIT

The latest designs of push button box already allow for direct fitting of the Tactile Unit. Where necessary follow the typical instructions below.

**NB** We recommend that the tactile unit be installed on the right (as normal) even when an audible device is also fitted.

#### A Preparation of Siemens Push Button Box

- (a) Remove existing audible device and temporarily insulate the incoming wire ends.
- (b) Drill out the two existing audible device mounting holes to 4.8mm and tap them to M6. (Later Boxes are already tapped M6.)

#### B Preparation of GEC Push Button Box

- (a) Remove existing audible device and temporarily insulate the incoming wire ends.
- (b) Using a Radix push button box drilling jig, drill two new holes of 4.8mm diameter from the outside of the box and tap them to M6. The jig should first be located by means of the 15mm plastic grommet **head**, the long edge being aligned with the push button box hinge casting.
- (c) Blank the two old audible device mounting holes from the inside using a suitable sealant, eg silicone rubber.

#### C Preparation of TfL/Equip Push Button Box

- (a) Remove existing audible device and temporarily insulate the incoming wire ends.
- (b) When appropriate, install audible device on left of box and re-connect its wires.

#### D Installation of TU100 Tactile Unit

- (a) Mount the Tactile Unit in place of the audible device with the terminal block towards the installer and the Tactile Cone projecting through and rotating freely in the existing 15mm hole, using the two M6 x 10 socket head screws, two plain washers and two shakeproof washers provided. Fit the earth lead eyelet under one of the shakeproof washers. The sealing tube must be positioned around the cone so as to form a seal between the mounting plate and the inner face of the box.

### 8.1 D **Installation of TU100 Tactile Unit** continued

- (b) Connect the green/yellow wire to the push button earth bond point and check for earth continuity between there and the Tactile Unit mounting bracket.
- (c) Do not make any other connections at this stage.

### 8.2 **CONTROL UNIT** (See Figure 1)

The Siemens Helios type signal head has internal mounting bosses. Use the 2 Plas-tech 4mm screws and 4mm washers supplied to mount the Control Unit in a convenient location inside the head avoiding the cable access conduit.

- A It is suggested that the Control Unit be mounted within the Red Man signal head, positioned above and to the right of the aspect itself. First check that the aspect/lens assembly can be closed without fouling the Control Unit, and that the connection terminal block on the Control Unit is to the right and accessible. Note the position with respect to the outside of the signal head.
- B Using a suitable template, drill four 3mm pilot holes (for Control Unit mounting) from the outside of the signal head in the appropriate position, being especially careful not to damage any of the equipment in or on the head or pole. These holes should then be opened up to 6.5mm.
- C The Control Unit may now be mounted using the four M6 x 10 screws and four fibre washers supplied.

### 8.3 **WIRING**

**REMINDER:** Make absolutely certain that the power is off before commencing any wiring. See the CAUTION section at the beginning of the installation instructions.

**It is essential for the safety integrity of the crossing that the installer must ensure both the neutral and live connections of the Tactile Equipment are connected directly to the neutral and live connections of the Green Man! Under no circumstances may other connections be made!**

#### A **Control Unit**

- (a) Connect the green/yellow earth wire to a suitable earth bonding point.
- (b) Where possible, connect the blue and brown cores of the input lead in parallel with the Green Man drive at the pole cap terminal block by feeding this lead through the flexible conduit. The blue lead should be connected to the lamp common and the brown to the switched live which feeds the Green Man. (continued)

### 8.3 A **Control Unit** (b) continued

Where this is not possible proceed as in (i) and (ii) below:

- (i) Cut the lamp common wire joined to the Green Man drive, strip both ends and insert them into one of the butt crimp connectors together with the blue wire in the input lead to the Control Unit. Carefully crimp the three wires together.
- (ii) Cut the switched live wire joined to the Green Man drive, strip both ends and insert them into one of the butt crimp connectors together with the brown wire in the input lead to the Control Unit. Carefully crimp the three wires together.
- (c) **For controllers with a flashing green man period (eg Pelicans)**, add two new wires in parallel with the two audible device supply wires, feed them from the pole cap into the signal head and connect them to the "Audible" and "Common" terminals on the Control Unit, negative to "Common" and positive to "Audible". **NB: Ensure that there is no connection to the "Junction" terminal.**
- (d) **For controllers with no flashing green man period (eg normal junction controllers)**, add a short wire on the Tactile Control Unit terminal block between "Audible" and "Junction".
- (e) Connect two unused cores leading from the signal head to the push button box to the "Motor" terminals on the Control Unit, noting which is "Motor+" and which is "Motor-".

### B **TU100 Tactile Unit**

- (a) Connect the two cores of 8.3 A (e) above to the Tactile Unit terminal block, "M+" to the terminal with the red wire and "M-" to the black.
- (b) **NB** Tactile Units (motors) must not be connected in parallel under any circumstances.

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## **TESTING**

**9.1 Check that the Tactile Cone is free to be rotated manually at all times except during the steady green man period. The Tactile Cone must not rotate by itself at any time other than during the steady green man period.**

**9.2 Check that during the steady green man period:**

- the Tactile Cone rotates at approximately 60 rpm;
- the Tactile Cone continues to rotate at approximately 60 rpm when lightly gripped between finger and thumb;
- the Tactile Cone stops when firmly gripped but still tries to turn in the same direction. It should be very difficult to rotate in the opposite direction.



## DECLARATION OF INCORPORATION

**Manufacturer (Responsible Person):**

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Product: TACTILE EQUIPMENT  
Model: CU100 plus TU100  
Serial Number: 100-ddd-nnnn  
T.F. Reference: See CU100 Tactile Equipment Technical File

**THIS PRODUCT CONFORMS TO THE ESSENTIAL REQUIREMENTS OF:-**

Electromagnetic Compatibility Directive	89/336/EEC
Low Voltage Directive	73/23/EEC

Signed:  Date: 1/7/02

Position: Director

Authorised signatory on behalf of the Manufacturer (Responsible Person).

<b><i>ELECTRICAL</i></b>	
Nominal Supply	<b>230V 50Hz</b>
Operating range:	104.4V to 253V
Power Consumption:	Nominal 7VA
"Steady Green Man" Input:	9 to 30V dc Nominal load 2.5 Kohms
<b><i>MECHANICAL</i></b>	
Rotation Speed:	60 rpm $\pm$ 20%
Stopping Torque:	Less than 0.08 Nm
Unpowered Spin Torque:	Less than 0.02 Nm
<b><i>ENVIRONMENTAL</i></b>	
Operating Temperature Range:	-15°C to +70°C
Storage Temperature Range:	-20°C to +80°C
<b><i>SIZES</i></b>	
TU100 Tactile Unit:	40mm dia x 110 mm incl cone
CU100 Control Unit:	L = 140mm, W = 65mm, H = 55mm
Kit Shipping Size:	215mm x 165mm x 90mm
Shipping Weight:	1.1 kg



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