



Choose
the future

Choose

BRAUMS

Smarter Safer Greener Living

PEDESTRIAN CALL AND AUDIO TACTILE SYSTEM

Robust Design

Vandal Resistant

Pedestrian Safety

Proven Reliability

Vision and Hearing Impaired

User Friendly

PEDESTRIAN CALL AND AUDIO TACTILE SYSTEM

The BRAUMS Audio Tactile Pedestrian Call System accommodates for both the general public and the hearing and vision impaired. The reliable input of the system allows for all pedestrians to register a safe walk request at signalised intersections. It is an essential component in any city's traffic and pedestrian management plan.



Configuration

The Pedestrian Call can be supplied in three main configurations:



1. Pedestrian Call S - Standard without Audio Tactile Transducer

Allows pedestrians to request a walk signal and allows the Traffic Signal Controller to detect the presence of the pedestrian.



2. Pedestrian Call AT with Audio Tactile

Provides assistance to vision impaired pedestrians via both the Audio and Tactile feedback to locate the Pedestrian Call, the crossing direction and the status of the phase of cycle (I.E. Walk or Don't Walk).



3. Pedestrian Call REC with an LED Call Record in either the Standard or Audio Tactile Pedestrian Call

When the Pedestrian Call button is pushed, an LED Indicator illuminates to provide feedback to the pedestrian showing that their call has been registered.

Technical Description

The Pedestrian Call assembly includes a manually operated, non-locking solid stainless steel push button which is located within the strong, aluminium diecast housing. An embossed arrow plate is positioned on the front of the housing to indicate the direction of the pedestrian crossing for the vision impaired. The arrow can be rotated by 22.5 increments to point in the appropriate direction of the crossing. An optional LED Call Record can also be installed, which illuminates once a call has been received and holds until walk cycle commences.

PEDESTRIAN CALL AND AUDIO TACTILE SYSTEM

General Assembly

A complete Pedestrian Call push button assembly comprises the following component parts:

- Base casting for mounting on the signal post, pole or mast arm
- Front cover casting incorporating the push button and switch mechanism
- Arrow Disc
- Audio tactile transducer (if required for vision impaired pedestrians)
- Two mounting Screws and associated spring washers.

The base casting incorporates terminal facilities for clamping flexible cables and a stainless steel wire for retaining the removable front cover casting and preventing stress on the electrical wiring connections.

The front cover casting is secured to the base by means of two recessed blackened stainless steel socket head screws designed for use with an Allen key measuring 5mm across the flats. The front cover incorporates the Stainless steel push button and switch assembly and provides facilities for fitting the arrow disc.

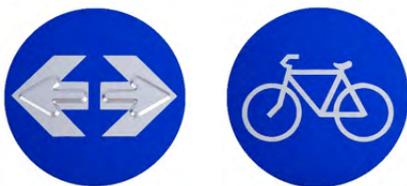
Arrow Disc

Each push-button assembly is fitted with either a single or dual arrow disc. The disc is held in a resilient mounting within the front cover casting, and is replaceable from the inside.

Facilities are provided to rotate the disc so as to provide the desired arrow orientation.

Facilities are provided for the disc to be rotated in angular increments of 22.5 degrees off the vertical, up to a maximum of 90 degrees either side of vertical. A locking device is provided to retain the disc in the desired orientation. When correctly fitted and secured, the joint between the disc and the aperture in the front cover casting are weatherproof.

When the audio-tactile facility is required, it is attached to the single arrow disc. The disc acts as the vibrating diaphragm when attached to the transducer.



Call Record

The call record lens is moulded from an opaque white (translucent) acrylic that is scratch resistant with similar properties to cast acrylic 445 sheet. The call record printed circuit board (PCB) is populated with surface mount components which include 10 SMT red LEDs. The PCB has been mounted at pre-determined distance from the back is the call record lens to ensure an even lamination of the call record when activated by the pedestrian. The call record circuit has been designed to ensure that the LED's do not emit light when a minimum voltage is present.

Push-button Mechanism

The push-button actuating mechanism (including the switch) incorporates inherent audible and tactile "feedback". The BRAUMS design minimizes the risk of the button being jammed by insertion of foreign objects or material.

The mechanism is designed for a service life of 10 years and a minimum of 10 million actuations.

PEDESTRIAN CALL AND AUDIO TACTILE SYSTEM

Transducer

The transducer assembly can be fitted to either an single arrow, double arrow or cycle escutcheon. These are supplied pre-assembled with the transducer casting and gasket. All transducer units are factory tuned for optimum performance. When coupled with a BRAUMS Audio Tactile Driver, the requirements of AS2535:2019 and TSI-SP-048:2018 are met.



Mounting Hardware

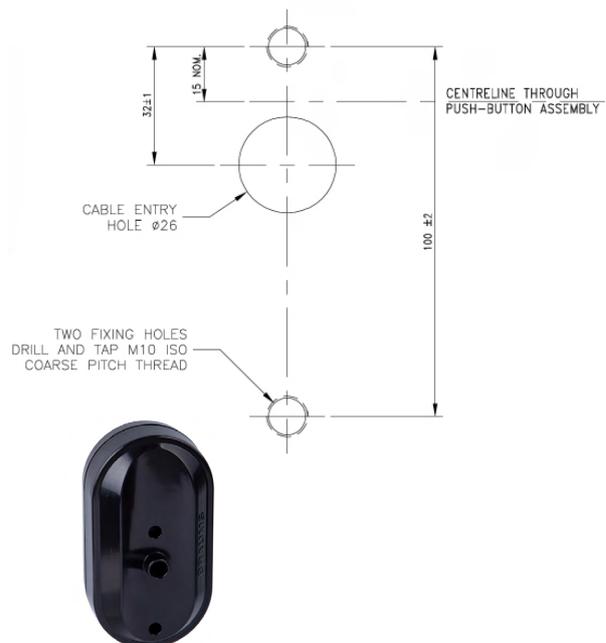
Each Pedestrian Call assembly is supplied with two stainless steel screws, internal start washers and flat washers. These six components are packed in a plastic bag, secured within the Pedestrian Call assembly.

Electrical Requirements

Standard Supply Voltage 32Vac: 50Hz.

Wiring

The switch housing is wired in 24/0.2 gauge 250V grade PVC insulated copper cable, complying with the requirements of AS 3191. All wiring is supported with ties so that no stress is transmitted to any connection.



Technical Description

The Audio Tactile Driver unit is designed to be installed with or can be added to an existing compliant Pedestrian Call at signalised intersections.

The Audio Tactile Driver unit provides input for the Pedestrian Call to generate a homing signal that assists vision impaired pedestrians locate the Pedestrian Call at the intersection. The audio output is via a transducer mounted behind the arrow plate. The transducer not only outputs the audio signal but it also vibrates the arrow plate at different frequencies. Each frequency corresponds to the walk and don't walk signal to assist the hearing impaired. Vibration can be felt by the pedestrian's hand on the arrow plate and when pressing the button.

PEDESTRIAN CALL AND AUDIO TACTILE SYSTEM

Below are the waveforms that show the typical response and these are in accordance with the standard AS2353:1999.

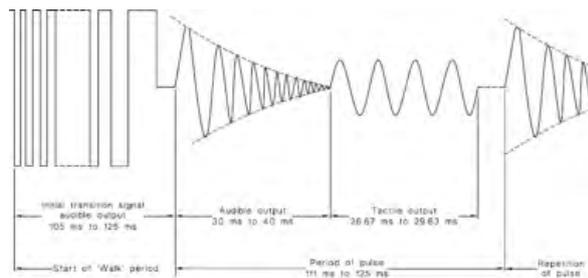


Figure 1: Walk and Don't Walk Frequency Tones

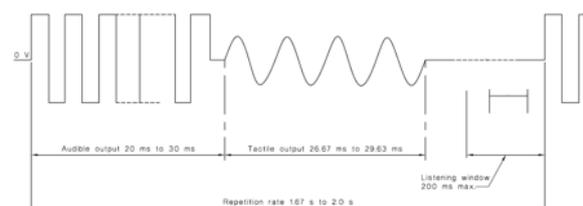


Figure 2: Homing or Locating Signal Frequency Output

The audio level output by the transducer is controlled continuously and is automatically adjusted by the Audio Tactile unit via an Automatic Gain Control (AGC) circuit to take into account varying background noise.

The AGC has time delay filters that can exclude large short term transient noise from affecting the AGC circuit and as a consequence the audio levels output by the transducer.

The Audio Tactile generates two types of audio signals that indicate "Walk" and "Don't Walk" aurally and in synchronization with the display pedestrian lanterns for green Walk and red Don't Walk phase.

The circuits operate on 240vac and is a proven and reliable design that can withstand the harsh roadside environment.

The Audio Tactile Unit is programmed to generate the correct timings and frequency, however, it has the option of generating the Walk tone for the whole of the Walk phase or only for the first 8 seconds of the Walk phase.

Input Feature

The BRAUMS Audio Tactile Unit has additional circuitry allowing for up to 4 Input Control signals. These inputs are interfaced by additional wiring coming from the traffic signal controller.

These inputs allow the user to provide functionality such as Tactile Only Output, Reduced Output Level by 3dB, Shutdown until Push Button pressed. The above are some of the software options that can be made available.

Implementation

The inputs of the Audio Tactile Unit can be wired to the controller using spare cores of the existing field wiring. This wiring can be terminated to the output of a relay fitted in the controller. By using the same ELV supply as used by the push buttons the return can be the same ELV return thus saving on wiring.

This relay can be controlled from the controller personality either on a Time of Day basis or directly from a command message sent from a SCATS® Regional Computer. A Special Purpose Output controlled by the controller personality program can control the relay so that a 32Vac ELV supply is feed to the Input Circuit of the Audio Tactile Unit. When this control signal is applied to the desired input then the required functionality can be implemented. This functionality can be as defined above or another user defined feature that is programmed into the Audio Tactile Unit before delivery from the BRAUMS factory.

PEDESTRIAN CALL AND AUDIO TACTILE SYSTEM

Driver Housing General Assembly

The Audio Tactile unit is mounted to a standard traffic signal pole and connected to the Pedestrian Call to drive the transducer that generates the required audio tones for Walk and Don't Walk portions of a pedestrian walk phase to assist vision impaired pedestrians. The Audio Tactile unit also has a low frequency and amplitude homing signal.

The BRAUMS Audio Tactile Driver unit is designed in accordance with the Australian Standard for Pedestrian Calls, AS2353 and TfNSW's TSI-SP-048 specification.

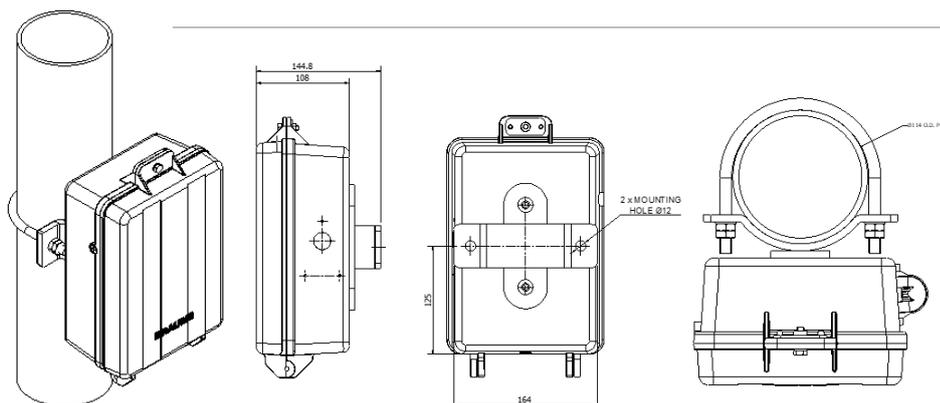
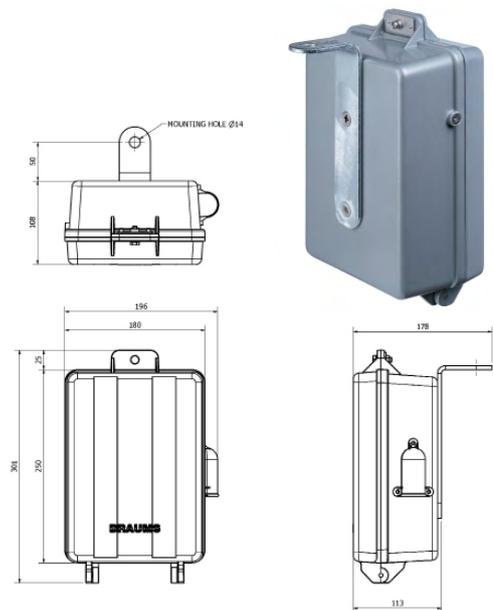
The BRAUMS Audio Tactile enclosure and lid are polyester powder coated satin silver. All external fasteners are stainless steel. The enclosure has been designed for and meets the requirements of the Ingress Protection standard of IP45 (as specified in TfNSW's specification TSI-SP-048).

Cable entry into the enclosure is on the side and it uses the standard cable entry cover, gasket and cable clamp (internally) as used on the BRAUMS traffic signal lanterns.

Mounting Hardware

There are two types of mounting brackets for the Braums Audio Tactile Enclosure, an L-bolt bracket designed in accordance with the RMS drawing VM626-9 issue B; and the other to suit a U-bolt which clamps around a 114mm traffic signal post.

The L-bolt mounting bracket has been manufactured by 40 x 5 mild steel flat bar and has been hot dipped galvanized. This mounting approach allows the Audio Tactile Enclosure to be mounted directly from an upper or lower mounting bracket M12 bolt without falling.



The U-bolt approach provides two 12mm mounting holes to suit the provided U-bolt, and is secured using associated nuts and washers. All fittings are hot dipped galvanized.

PEDESTRIAN CALL AND AUDIO TACTILE SYSTEM

Gear Tray

The gear tray on the Audio Tactile Enclosure has been designed so as it can be removed from the enclosure intact with all parts once the Driver Card has been removed and the incoming cables disconnected from the terminal block. This design allows for easy replacement of components should they ever need replacing.

The gear tray electrical terminations are fully covered with a clear moulded polycarbonate cover. The side label is the BRAUMS identification label that contains the date of manufacture, IP rating, model type and serial number.

Electrical Requirements

Standard Supply Voltage of 240Vac, 50Hz/60Hz. An Extra Low Voltage (ELV) option is also available (42Vac, 50Hz/60Hz).

Audio Tactile Frequencies

Don't Walk Signal:

Pulse rate of 0.5Hz—Tone Frequency of 2kHz with a decayed response to 500Hz

Walk Signal:

Pulse rate of 8.3Hz—Tone Frequency of 50 Hz

Technical Installation

Audio Tactile Wiring

Harness Connections:

1. Connect Green/Yellow to Earth terminal in upper mounting assembly.
2. Connect Blue to Neutral terminal in upper mounting assembly.
3. Connect Brown to undimmed lamp active (constant 240Vac) terminal in upper mounting assembly)
4. Connect Orange to "WALK" active terminal in upper mounting assembly.
5. Connect White Figure 8 to terminals on transducer inside Pedestrian Call assembly.

Dip-Switches in Audio

Tactile Housing:

- SW1 - 1 → 8 second walk tone timeout, OFF—Untimed, ON—Timed.
- SW1 - 2 → Not used, set to OFF.
- SW1 - 3 → Tactile circuit, ON—Tactile Only, OFF—Normal Tones.
- SW1 - 4 → Serial Enable for Test and Calibration, set to OFF.

Note: These settings correspond mostly to current Australian jurisdiction's configurations.

Settings can be included for SCATS® (Sydney Coordinated Adaptive Traffic System) controllability such as muting the Audio Tactile System in pedestrian off-peak hours, different WALK tones for adjacent crossings, etc.



PEDESTRIAN CALL AND AUDIO TACTILE SYSTEM

External Inputs into Audio Tactile Housing:

- Ext I/P_1 → Selects Tactile ONLY feature.
- Ext I/P_2 → Selects Reduced Audio Output by 3dB feature.
- Ext I/P_3 → Spare.
- Ext I/P_4 → Spare.

SW2 Gain Settings:

- H = Higher Volume Output
- N = Normal Volume Output
- L = Lower Volume Output

PART NO.	PRODUCT NAME	DESCRIPTION
BPB1000	PEDESTRIAN CALL	Pedestrian Call without Audio Tactile Transducer
BPB1001	PEDESTRIAN CALL AUDIO TACTILE	Pedestrian Call with Audio Tactile Transducer
BPB1002	PEDESTRIAN CALL WITH CALL RECORD	Pedestrian Call without Audio Tactile Transducer and with LED Call Record
BPB1003	PEDESTRIAN CALL AUDIO TACTILE CALL RECORD	Pedestrian Call with Audio Tactile Transducer and LED Call Record
BAT1001	AUDIO TACTILE DRIVER HOUSING W/ BOARD	Audio Tactile Driver Housing complete with driver board. Mounted using L-Bracket
BAT1002	AUDIO TACTILE DRIVER HOUSING U BOLT W/ BOARD	Audio Tactile Driver Housing complete with driver board. Mounted using U-Bolt.
BATB0001	AUDIO TACTILE DRIVER BOARD	Audio Tactile Driver board ONLY



BRAUMS Pty Ltd

Telephone: +61 2 9684 3300
 Facsimile: +61 2 9684 3390
 E-mail: info@braums.com.au

Unit M, 10 - 16 South St,
 Rydalmere NSW 2116 Australia
 PO Box 122 Ermington NSW 1700

ABN 31 150 551 732

www.braums.com.au