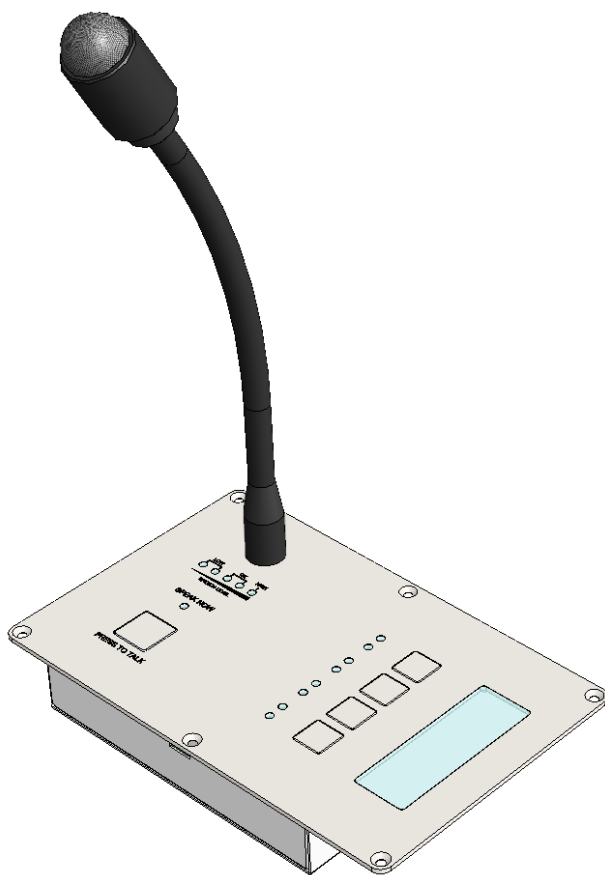


VRMS4-C1

4-Button Vandal Resistant Serial Microphone Station



Installation Guide

ASL Document Ref.: U-0664-0630.docx
Issue: 03 complete, approved - Date: 03/02/20
Part Number: M0664_126



This product is designed and manufactured to comply with the following EC Directives for electrical and electronic equipment:

- 1) Restriction of Hazardous Substances (RoHS) Directive: 2011/65/EU
- 2) Electromagnetic Compatibility (EMC) Directive: 2014/30/EU
- 3) Low Voltage (LVD) Directive: 2014/35/EU

A “Declaration of Conformity” statement to the above Directives, listing the applicable harmonised standards to which the equipment conforms, is available on request.

The VRMS4-C1 is assessed for safety as suitable for pollution degree 2 environments.

Failure to use the equipment in the manner described in the product literature will invalidate the warranty.



This product must be disposed of in accordance with the WEEE directive.

Contents

1	Safety and Precautions.....	3
2	Preparation.....	4
3	Unpacking and Handling.....	4
4	Installation.....	5
5	Connections.....	8
6	Controls and Indicators.....	10
7	Technical Specification.....	12
8	Mechanical Dimensions.....	13
9	Storage and Preservation.....	15
10	Packing for Return.....	15

Additional User Documentation:

Additional reference information is available from ASL's website (www.asl-control.co.uk).

Copyright © 2020 Application Solutions (Safety and Security) Limited

Application Solutions (Safety and Security) Limited
 Unit 17 Cliffe Industrial Estate
 Lewes - East Sussex
 BN8 6JL - UK
 Tel: +44(0)1273 405411 Fax: +44(0)1273 405415

www.asl-control.co.uk

All rights reserved.

Information contained in this document is believed to be accurate, however no representation or warranty is given and Application Solutions (Safety and Security) Limited assumes no liability with respect to the accuracy of such information.

1 Safety and Precautions

Observe all safety information both on the equipment and in this section.

Environmental



The temperature and humidity ranges shown in the specifications for this equipment must not be exceeded.



This equipment must not be installed in an area that is subject to a corrosive atmosphere, excessive moisture or may allow water or other liquids to come into contact with the unit or its external connections.



Objects containing liquids should not be placed upon the equipment.

Electrical Safety



Make sure that cabling is adequately rated.



Always replace blown fuses in the supply to this product with the correct type and rating.

Installation



To prevent injury, this product must be securely attached to the desk in accordance with the installation instructions.

EMC

The signal to noise ratio of this product may be reduced:

- in the vicinity of strong magnetic fields, e.g. transformers or induction loops
- in the close proximity of some radio frequency transmitters

If this occurs, re-location of the equipment or the signal cables is recommended.

ESD Precautions



This product contains static-sensitive devices. Observe ESD precautions when working on the equipment with the cover removed.

2 Preparation


1. Read and observe the safety instructions and guidelines in Section “2 Safety and Precautions” (page 3).



Failure to follow these instructions and guidelines may cause personal injury and/or damage to the equipment.

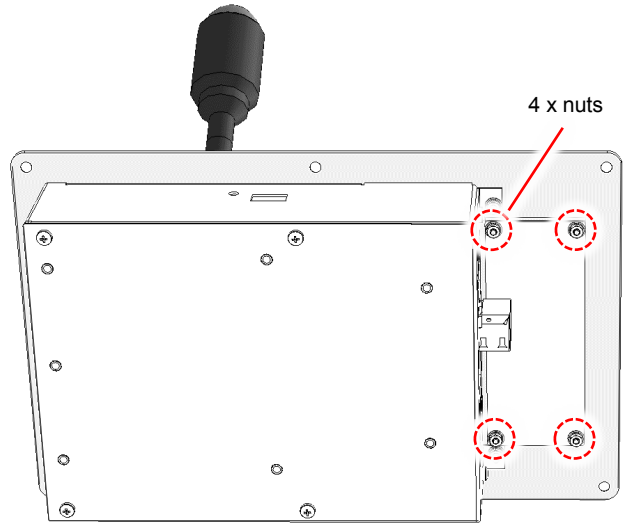
2. Gather the following documentation and tools:
 - The system design documentation of the specific location
 - Snake-Eye 08 driver bit to suit M4 tool for the supplied fixing screws (see below)
 - 5 mm AF torque wrench for the fixing nuts of the identification label clamping plate
 - Appropriate tools for preparing the desk cut-out
 - Completed zone annotation label
3. Gather the equipment (in its original packing).

3 Unpacking and Handling

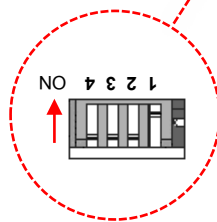
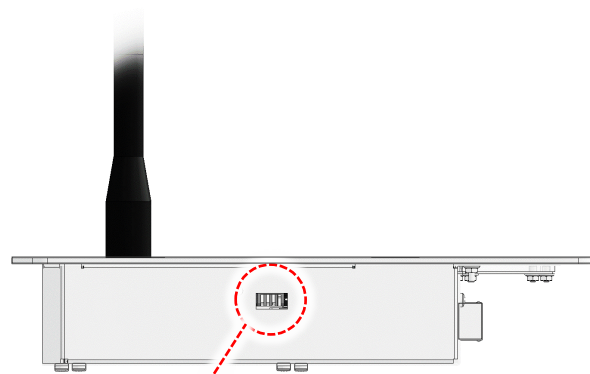
1. Observe any markings or warnings on the package prior to handling and opening.
2. Check the equipment package for signs of damage during transport. Report problems to the carrier or supplier.
3. Unpack the equipment in a dry area handling the equipment with care.
4. Check the equipment package contents for completeness. Report any missing items immediately.
VRMS4-C1 package contents:
 - 1 x VRMS4-C1
 - 1 x gasket
 - 6 x M4 Snake Eye screws 
 - 1 x Installation Guide
5. It is advisable to retain the original equipment packing (containers and materials) in the event that the equipment ever needs returning for service.
6. If the packing is not to be retained, the packing materials should be either recycled or disposed of according to local regulations.
7. Make sure that the name and address of the Authorised Distributor from whom you purchased the product is recorded on the “Service and Warranty” page of this document for future reference.
8. Repacking instructions are provided in Section “10 Packing for Return” (page 15).

4 Installation

1. Insert the completed zone identification label into the label slot as required.
 - a. Loosen the 4 x nuts that secure the label clamping plate using a torque wrench set at 20cN.m.
 - b. Slide the label in between the plate and the underside window.
 - c. Adjust the label position and retighten the fixing nuts.



2. Make sure that the DIP switches are set as required.



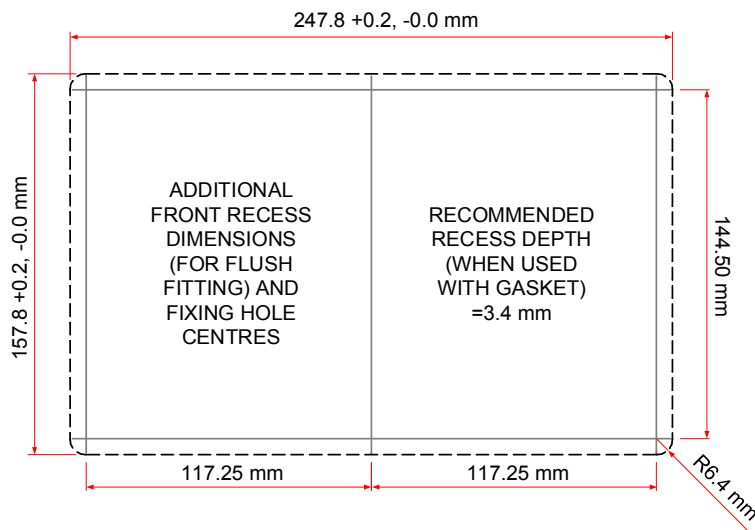
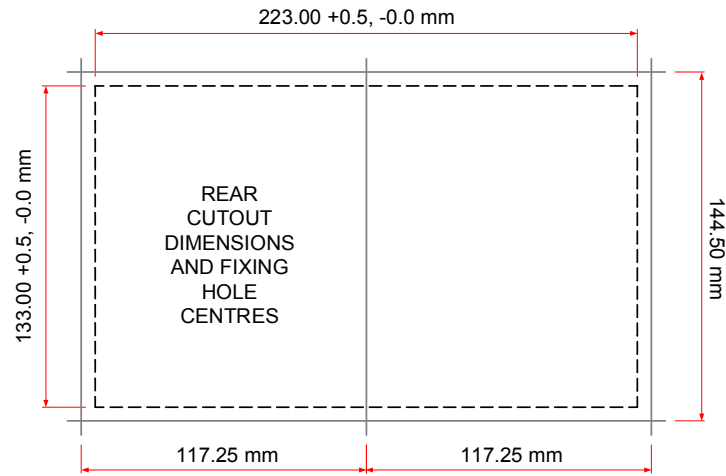
DIP SWITCH Settings for VRMS4-C1 in ASL PAVA systems			
4	3	2	1
OFF	OFF	OFF	ON
↓	↓	↓	↑

DIP SWITCH Settings for VRMS4-C1 in third-party applications			
4	3	2	1
Set the required address as described in Table 1 (page 11).			OFF
			↓

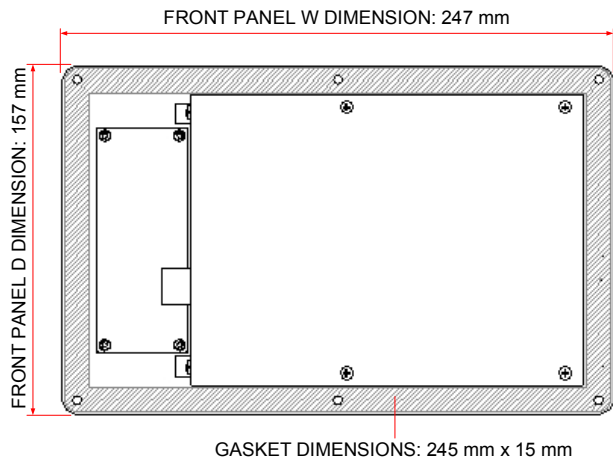
3. Prepare the recess by cutting the desk according to the dimensions detailed below.




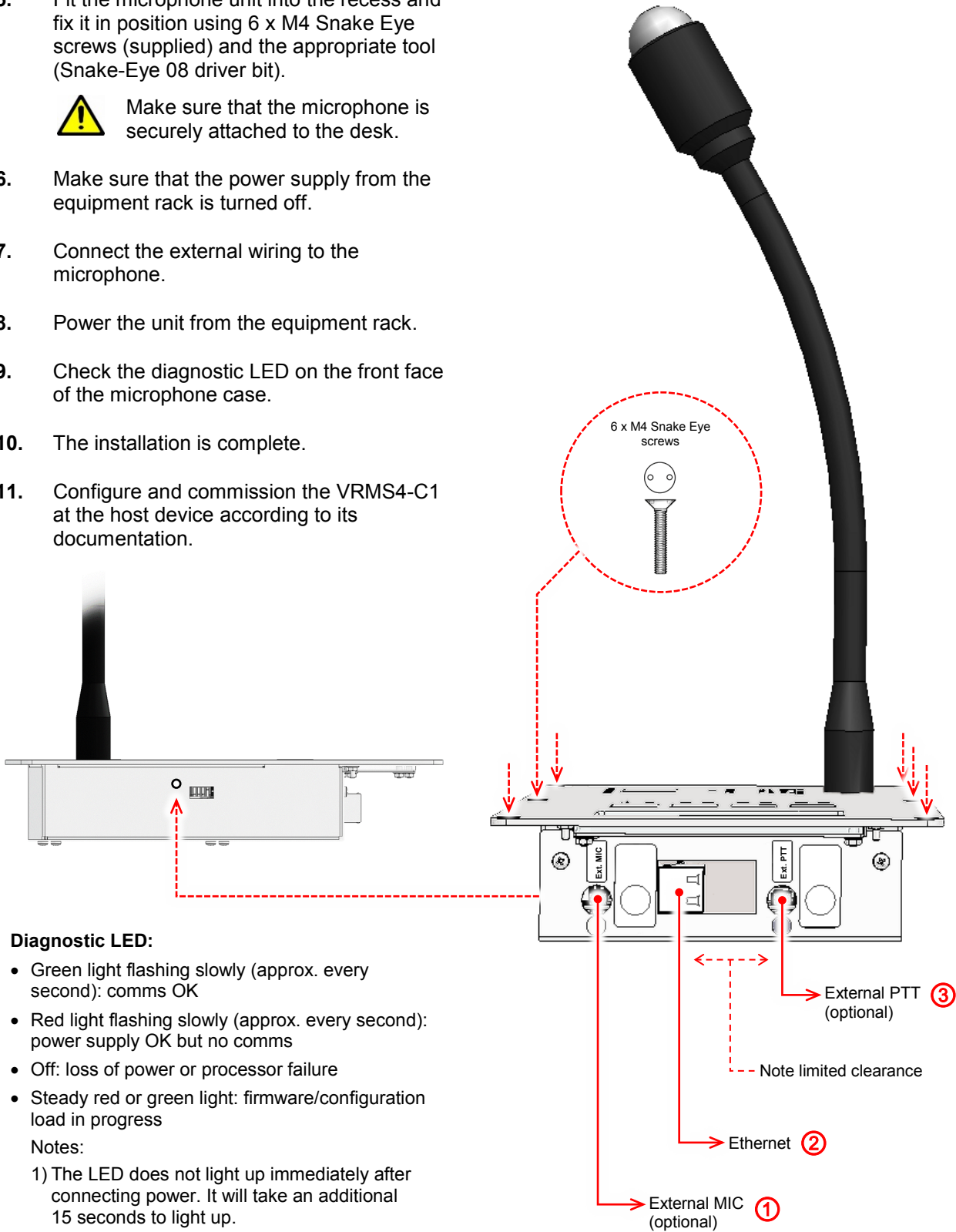
Make sure that there is enough clearance for cabling underneath the front panel.



4. Peel the self-adhesive backing off the gasket and stick the gasket to the recess or to the front panel as shown on the diagram on the right.



5. Fit the microphone unit into the recess and fix it in position using 6 x M4 Snake Eye screws (supplied) and the appropriate tool (Snake-Eye 08 driver bit).
 -  Make sure that the microphone is securely attached to the desk.
6. Make sure that the power supply from the equipment rack is turned off.
7. Connect the external wiring to the microphone.
8. Power the unit from the equipment rack.
9. Check the diagnostic LED on the front face of the microphone case.
10. The installation is complete.
11. Configure and commission the VRMS4-C1 at the host device according to its documentation.



Diagnostic LED:

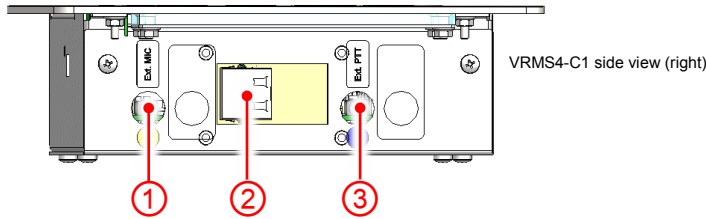
- Green light flashing slowly (approx. every second): comms OK
- Red light flashing slowly (approx. every second): power supply OK but no comms
- Off: loss of power or processor failure
- Steady red or green light: firmware/configuration load in progress


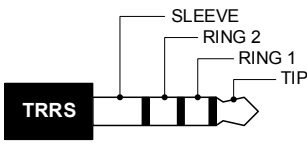
Notes:

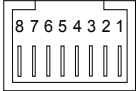
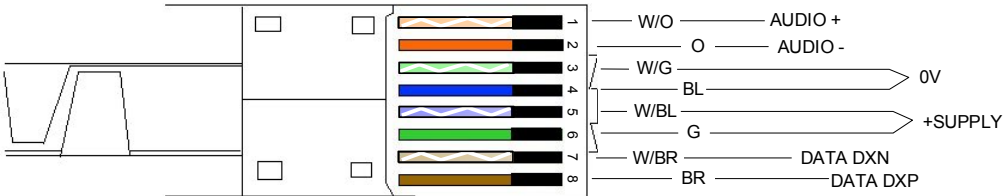
- 1) The LED does not light up immediately after connecting power. It will take an additional 15 seconds to light up.
- 2) The LED may be off for a few seconds during firmware/configuration load.


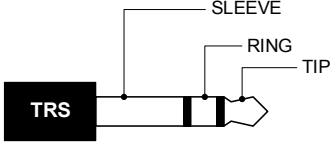
① ② ③: see Section “5 Connections” (page 8) for pinout details

5 Connections



External MIC (external microphone)					
Plug	Contact	Signal		Description	
①  3.5 mm jack	TRRS	Tip	LEFT CHANNEL	O/P	Unbalanced stereo left channel output
		Ring 1	RIGHT CHANNEL	O/P	Unbalanced stereo right channel output
		Ring 2	GROUND	-	Ground
		Sleeve	MIC IN	I/P	Headset boom microphone input
					
Cabling					
Type	1 x 3-core, screened				
Termination	TRRS plug				
Suggested Type	Suitably rated 3-core screened cable				

Microphone port (for connection to a host device)				
Pin	Signal		CAT5 Cable (T568B)	Description
1	AUDIO+	O/P	White/Orange	Balanced audio output (+ve / 0 dBu nominal / 220 Ω)
2	AUDIO-	O/P	Orange	Same as above, but -ve
3	0V SUPPLY	I/P	White/Green	0 V supply
4	0V SUPPLY	I/P	Blue	0 V supply
5	+SUPPLY	I/P	White /Blue	+V supply input (15 to 40 V DC)
6	+SUPPLY	I/P	Green	+V supply input (15 to 40 V DC)
7	DATA DXP	-	White/Brown	EIA RS485 Data+ (19200 baud)
8	DATA DXN	-	Brown	EIA RS485 Data- (19200 baud)
②  RJ45				
IMPORTANT: The RJ45 connector pinout does not match the RJ45 connector of VIPEDIA-12 microphone inputs. Incorrect connections may damage the serial interface. Contact ASL for further details.				
Cabling				
Type	Twisted pairs, overall screened			
Termination	RJ45 (note limited clearance if the External PTT is to be used)			
Suggested Type	Standard overall screened CAT5 STP The recommended maximum cable-run using CAT5 STP is 250 m. For cable-run limitations using alternative cable types please refer to Application Solutions (Safety and Security) Limited for advice.			

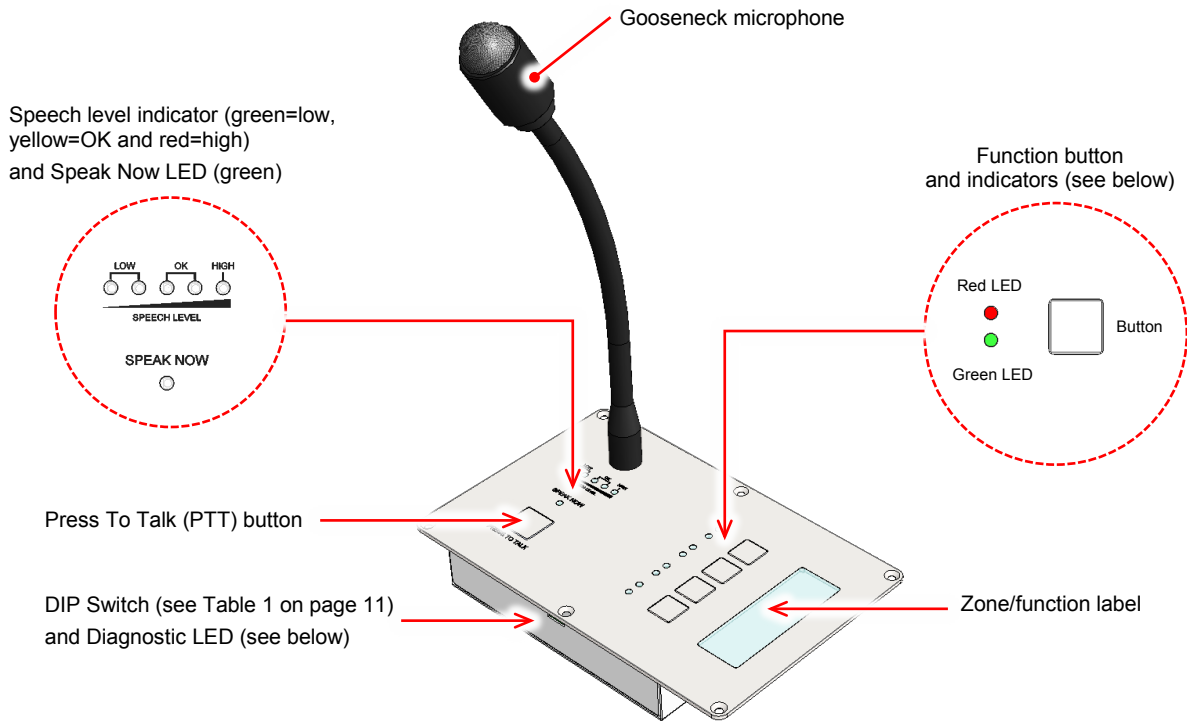
<p style="text-align: center;">③</p>  <p style="text-align: center;">3.5 mm jack</p>	External PTT (external Press To Talk)				
	Plug	Contact	Signal		Description
	TRS	Tip	CONTACT INPUT	I/P	Contact input (contact closure to ground, internal 10 kΩ pull-up to +3.3 V)
		Ring	CONTACT OUTPUT	O/P	Contact output (open-collector)
		Sleeve	GROUND	–	Ground
					
	Cabling				
Type	1 x 2-core				
Termination	TRS plug				
Suggested Type	Suitably rated 2-core cable				

Notes:

- 1) Refer to BS 7671 (Requirements for Electrical Installations) or other appropriate local standards for guidelines on maximum potential cable lengths given the actual installation parameters.
- 2) NA

6 Controls and Indicators

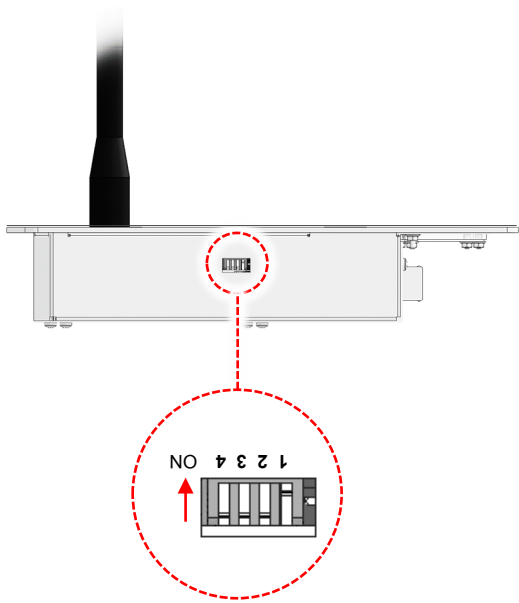
Figure 1 VRMS4-C1 controls and indicators



Function Button LEDs		Indication (overview)
Green	Off	Not selected.
	Flashing	Zone selected prior to announcement.
	On	Selected or busy.
Red	Off	Not busy or non-emergency route may be active.
	Flashing	Zone in error.
	On	Busy or emergency route is active.
Note: The LED indication depends on the host device, communication protocol and the associated function. Refer to the host device documentation for details.		

Diagnostic LED	Indication
Green light flashing slowly (approx. every second)	Comms OK
Red light flashing slowly (approx. every second)	Power supply OK but no comms
Off	Loss of power or processor failure
Notes: 1) The LED does not light up immediately after connecting power. It will take an additional 15 seconds to light up. 2) The LED may be off for a few seconds during firmware/configuration load.	

Table 1 VRMS4-C1 - DIP switch settings



Application	Switch Position	Address
ASL PAVA Systems (SW 1 is in the ON position when the VRMS4-C1 is used in ASL PAVA systems.)		Not applicable
Third-party Systems (SW 1 is in the OFF position when the VRMS4-C1 is used in third-party applications.)		0
		1
		2
		3
		4
		5
		6
		7

7 Technical Specification

Supply voltage range	15 - 40 V DC
Current consumption operating (maximum at 24 V DC supply – all LEDs on)	200 mA
Current consumption quiescent (at 24 V)	100 mA
Audio	0 dBu nominal / 220 Ω output impedance
Control data	EIA RS485 / 19200 baud
Surveillance tone	23 Hz (-10 dBu nominal)
Microphone	heavy duty gooseneck
Buttons	4 x function buttons and 1 x Press To Talk (PTT) button
LEDs	2 x LEDs per zone select button (red and green) and 1 x Speak Now LED (green)
Speech Level Meter	five-LED bargraph (green=low, yellow=OK and red=high)
External Microphone	1 x 3.5 mm TRRS jack (headset boom type microphone)
External Press to Talk (PTT) switch	1 x 3.5 mm TRS jack (contact closure to ground, internal 10 k Ω pull-up to + 3.3 V)
Format / Colour	metal box (stainless steel front panel) / silver with black annotation
Dimensions (H x W x D)	50 mm x 247 mm x 157 mm (excluding gooseneck)
Weight	1.8 kg
Temperature	-5°C to +40°C (operation) / -5°C to +50°C (storage)
Humidity range	0% to 93% non-condensing
Ingress Protection (console except for the gooseneck)	spilled drinks on front surface

8 Mechanical Dimensions

Figure 2 Microphone dimensions

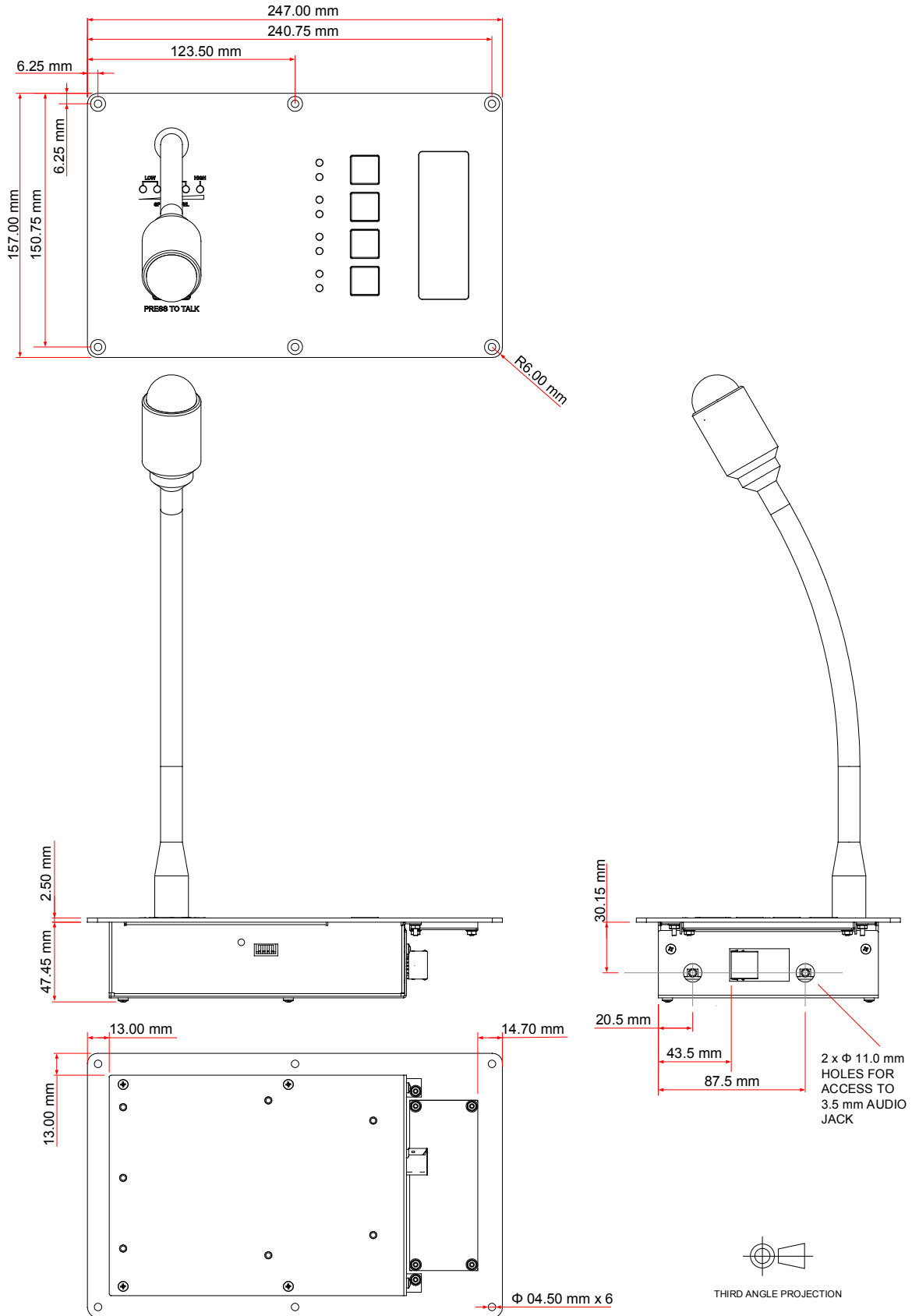
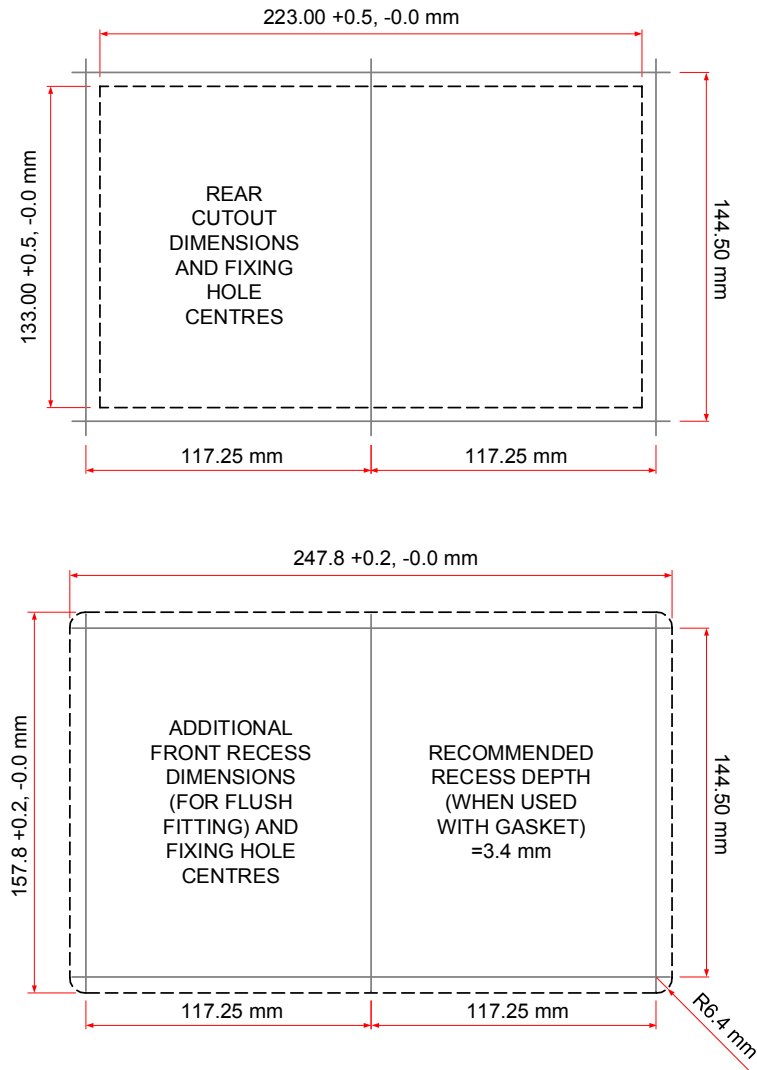


Figure 3 Recess dimensions



9 Storage and Preservation

This product should be packed for storage in the original packing as described in the Section “10 Packing for Return” (page 15) and stored in the following environmental conditions:

- Away from harsh environmental conditions, such as areas that are subject to corrosive atmosphere, excessive moisture or may allow water or other liquids to come into contact with the unit or its external connections.
- In a heated and humidity controlled storage areas where the temperature and humidity are within the equipment specification.

10 Packing for Return



This product contains static-sensitive devices. Observe ESD precautions when working on the equipment with the cover removed.

If a product is being returned for servicing, try to use the containers and materials of the original packaging. Attach a tag indicating the type of service required, return address, equipment type and full serial number.

If the original packing can no longer be used, the following general instructions should be used for repacking with commercially available materials:

- All electronics assemblies must be properly packed in ESD protective packing for transport, to prevent physical and ESD damage.
- The filler material used for packing must be antistatic or static dissipative, as this may come into contact with exposed connectors, wiring, or PCB assemblies. The use of non-conductive filler material may cause damage to the electronic assemblies reducing their operational life, or even destroying them.
- Use a sturdy cardboard box that will support the weight and size of the equipment.
- Attach a tag indicating the type of service required, return address, equipment type and full serial number.
- Completely wrap the equipment in bubble wrap (all sides must be protected) and secure the wrap in place with tape.
- Place the wrapped equipment inside the box surrounded by filler material, making sure that there is no room for movement.
- Seal the box securely with packing tape.

Service and Warranty

Name and Address of Authorised Distributor:

This product carries a full warranty. For full details of warranty and service agreements, please contact the Authorised Distributor who supplied the product to you.

Exclusions

The warranty does NOT cover:

1. Customer misuse, including incorrect installation.
2. Damage other than manufacturing defects.
3. Transit / Courier damage.
4. Incorrect voltage or power supply used.
5. Incorrect input signal.
6. Abnormal environmental operating conditions.
7. Damage incurred by accident, fire, lightning or other hazard.
8. Modification to the unit or inexpert / attempted repair.
9. No fault found – where no fault can be found after extensive testing, indicating user error or failure in ancillary equipment.
10. Electronic assemblies which are improperly packed when returned for repair or service. All electronics assemblies must be properly packed in ESD protective packing for transport to prevent physical and ESD damage.

Should any of the above apply, Application Solutions (Safety and Security) Limited reserves the right to raise any relevant charges to the customer.

Application Solutions (Safety and Security) Limited shall not be liable for any indirect, special or consequential loss or damage (including without limitation any loss of profits) arising from the use of this product or for any breach of this warranty.

In the interest of continual product development, Application Solutions (Safety and Security) Limited reserves the right to make changes to product specification without notice or liability.

