

## Heimdall installation 'Quick Reference' Guide for a SCOOT/MOVA detector

### Electrical Connections

#### Important Notes:

- a) When connecting this detector to a 24V AC source, please ensure that the 24V AC source is derived from an earthed secondary transformer (as used in standard traffic installations). Particular attention should be paid to the correct termination of the power supply wires. The RED wire should be used for the 24V AC/DC supply feed and the Black wire for the EARTHED supply return.
- b) When connecting to a Siemens ELV controller such as the ST900ELV the Red wire should be connected to detector supply common and the black to the detector supply as per section 3.5 of 667/HB/31900/000
- c) When using a 24V AC supply, only use battery powered interface equipment (e.g. laptop, PDA). Do not connect mains powered/connected equipment to the Heimdall series of detectors, as this will cause the detectors to fail.

All Heimdall detectors are equipped with a captive lead and a standard 9 pin 'Buccaneer' connector. The pin out for this connector is as specified in the Highways Agency Specifications: TR2505, TR2506 & TR2507. The Heimdall series of detectors provide additional facilities, to that specified in the HA documents, using the spare connections within the 9 way connector.

For the Helios Signal Head the Heimdall bulkhead connector cable is generally fitted to the topmost indent on the red Aspect (either side). The hole should be drilled using the rear drill start point. For other signal head suppliers, please refer to the relevant documentation supplied with their products.

The wires from this connector should be terminated in accordance with the details shown in the table below.

#### Output Cable (Standard)

Output Cable (Standard) configuration – for variants: 667/1/31900/xx0 & /xx2.

Connector Pin No.	Comment	Colour Code
1	Detector Supply (24V AC/DC)	Red
2	Detector Supply Common (0v)	Black
3	Screen	Green
4	Detector O/P #1&2 (Common)	White
5	Detector O/P #1 (Normally Open)*	Yellow
6	Detector O/P #1 (Normally Closed)*	Blue
7	Not Used	Violet
8	Not Used	Orange
9	Not Used	Brown

**Note:** \* This signal condition refers to the state when the detector is un-powered (detect state).

For pinout and wiring details of the output cable for either the SiTOS or 2<sup>nd</sup> output detector options, please refer to section 3.5 of 667/HB/31900/000

### DIP Switch Settings

All Heimdall detectors are equipped with switches that enable the unit to be installed, for the majority of applications, without the need for any special terminal (handset) equipment.

Access to these switches is gained by removal of the side cover. Before removal, note the cover's orientation and ensure it is replaced the same way round.

The switches on the first PCB (Digital Processor) control the basic functions of this detector and are as listed in the following table:

DIP Switch Number (PCB 1) – Digital Processor							
1	2	3	4	5	6	7	8
<b>SW 1, 2: Detector Height</b>		<b>SW 3, 4: Detector LED</b>		<b>SW 5: Maximum Presence Time.</b>	<b>SW 6: Detection Method</b>	<b>SW 7: DFM</b>	<b>SW 8: Remote Configuration</b>
0,0 = < 4.5 m 0,1 = 4.5m to 6.5m 1,0 = > 6.5m 1,1 = As per 0,0		0, 0 = Normal Detector O/P 0, 1 = Permanently Off 1, 0 = Detector O/P for 20 mins. after power applied 1, 1 = Normal Detector OP		0 = 4 minutes default. 1 = 30 minutes	0 = Perpendicular (static only) 1 = Angled (static + movement)	0 = Default monitor time (20 hours inactive) 1 = 'fault monitor time' is set by the Engineer's Terminal	0 = Disabled 1 = Enabled

#### Key:

0	OFF
1	ON

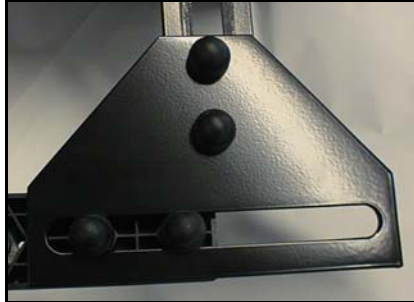
**Note:** The switches provided on PCB 2 (Special Serial Interface card) control the operation of the Siemens Serial Interface (SiTOS), details of the switch settings for this PCB are shown in Section 3.8 of 667/HB/31900/000

## Detector Mounting Methods

1. This detector can be mounted on poles with heights ranging from between 3.3 to 8.0 metres, however the best mounting height for optimum performance would be 4 metres
2. When mounting to a Siemens Helios Signal Head, the Heimdall Above Ground Detector can be mounted in the slot on the top bracket, as shown in **Figure 1**, below.
3. Alternatively, a side mounting bracket can be fitted on top of the head fixing bracket, thus providing a slot and two holes for attaching the detector to, as shown in **Figure 2**, below.
4. Existing signal heads from a range of manufacturers may employ a mounting position which causes the detector to be 'masked' by the head's 'backing board'. In this situation a Heimdall Spacer Bracket Kit (667/1/31942/000) must be used. A typical installation of this kind is shown in **Figure 3**, below.



**Figure 1**



**Figure 2**



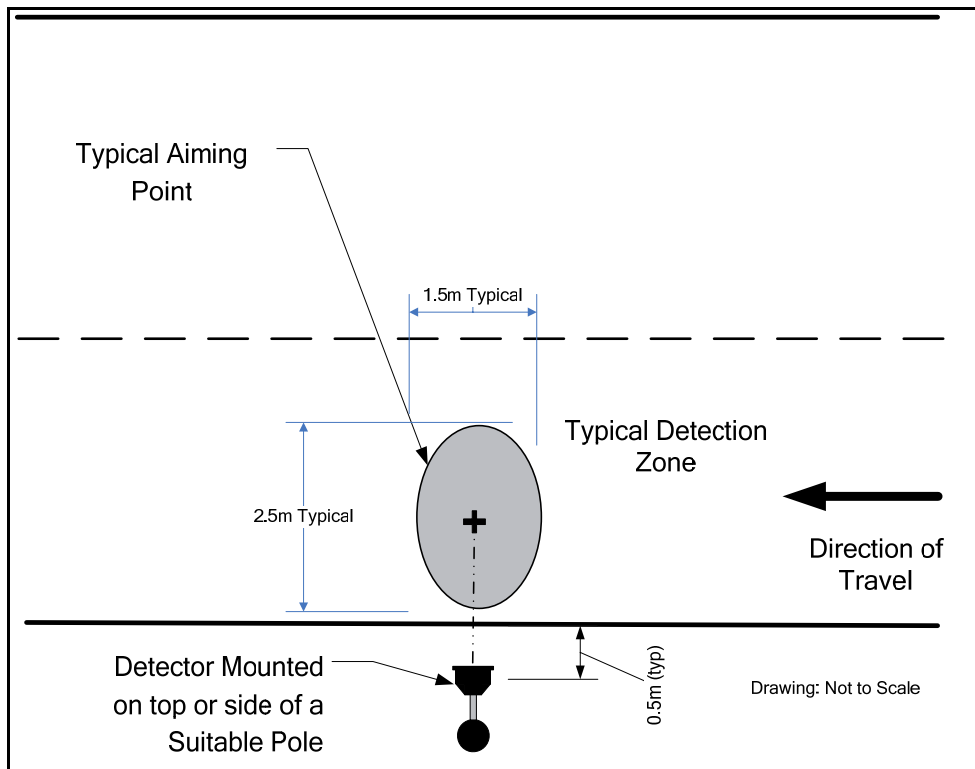
**Figure 3**

## Detector Alignment

When aligning the detector always ensure the following:

1. The pole that the detector is to be mounted on is located directly adjacent to the detection zone.  
**Note:** If there is an existing signal pole directly adjacent to the detection zone then the detector may be mounted to this. If there is not, then the detector will need mounting to a standalone pole.
2. There is sufficient strain relief and no risk of entrapment or pinching of the detector cables when installing or aligning the detector on a pole.
3. The detector should be aligned with the 'aiming point' shown in the diagram below.

**Note:** The detector has an in-built fixed processing delay of 1 second. This should be taken into account when defining site installation.



**Figure 1 – SCOOT and MOVA Detector Installation – Plan View (4m installation – Static Algorithm)**