

**Specification (Measurement)**

**Transport and Main Roads Specifications  
MRS204 Vehicle Detectors**

**May 2026**

## Copyright

© The State of Queensland (Department of Transport and Main Roads) 2026.

## Licence



This work is licensed by the State of Queensland (Department of Transport and Main Roads) under a Creative Commons Attribution (CC BY) 4.0 International licence.

## CC BY licence summary statement

In essence, you are free to copy, communicate and adapt this work, as long as you attribute the work to the State of Queensland (Department of Transport and Main Roads). To view a copy of this licence, visit: <https://creativecommons.org/licenses/by/4.0/>

## Translating and interpreting assistance



The Queensland Government is committed to providing accessible services to Queenslanders from all cultural and linguistic backgrounds. If you have difficulty understanding this publication and need a translator, please call the Translating and Interpreting Service (TIS National) on 13 14 50 and ask them to telephone the Queensland Department of Transport and Main Roads on 13 74 68.

## Disclaimer

While every care has been taken in preparing this publication, the State of Queensland accepts no responsibility for decisions or actions taken as a result of any data, information, statement or advice, expressed or implied, contained within. To the best of our knowledge, the content was correct at the time of publishing.

## Feedback

Please send your feedback regarding this document to: [tmr.techdocs@tmr.qld.gov.au](mailto:tmr.techdocs@tmr.qld.gov.au)

# Contents

<b>1</b>	<b>Introduction .....</b>	<b>1</b>
<b>2</b>	<b>Measurement of work .....</b>	<b>1</b>
2.1	Standard Work Items.....	1
2.2	Work Operations .....	2
2.3	Method of measurement of vehicle detection equipment .....	9
2.4	Supply of materials .....	9
2.5	Removal of existing equipment.....	9

## 1 Introduction

This Specification applies to the supply and installation of Vehicle Detectors.

This document applies to the following types of vehicle detectors:

- Inductive Loop Vehicle Detectors
- Radar Vehicle Detectors, and
- Infrared Vehicle Detectors.

This Specification shall be read in conjunction with MRS01 *Introduction to Specifications*, MRTS204 *Vehicle Detectors* and other Specifications as appropriate.

This Specification forms part of the Transport and Main Roads Specifications Manual.

## 2 Measurement of work

### 2.1 Standard Work Items

In accordance with the provisions of Clause 2.1.3 of MRS01 *Introduction to Specifications*, the Standard Work Items covered by this Specification are listed in Table 2.1.

**Table 2.1 – Standard Work Items**

Standard Item No.	Description	Unit of Measurement
<b>Inductive loop vehicle detectors</b>		
61504	Supply of inductive loop cable, [ <i>conductor size</i> ], [ <i>number of cores</i> ] cores, [ <i>core insulation</i> ], [ <i>sheath insulation</i> ], [ <i>conductor material</i> ]	m
61505	Supply of feeder cable, [ <i>conductor size</i> ], [ <i>number of cores</i> ] cores, [ <i>core insulation</i> ], [ <i>sheath insulation</i> ], [ <i>conductor material</i> ]	m
61506	Supply of cable joint, [ <i>fused</i>   <i>unfused</i> ]	each
61507	Installation, jointing and termination of inductive loop cable, [ <i>cores</i> ]	m
61508	Installation, jointing and termination of feeder cable, [ <i>cores</i> ]	m
61509	Supply of [ <i>rectangular</i>   <i>square</i> ] preformed loops [ <i>dimensions</i> ], [ <i>no. of turns</i>   <i>inductance range</i> ] in [ <i>concrete</i>   <i>asphalt</i> ] pavement	each
61510	Supply and installation of [ <i>rectangular</i>   <i>square</i> ] preformed loops [ <i>dimensions</i> ], [ <i>no. of turns</i>   <i>inductance range</i> ] in [ <i>concrete</i>   <i>asphalt</i> ] pavement	each

Standard Item No.	Description	Unit of Measurement
61511	Installation of [ <i>rectangular   square</i> ] preformed loops [ <i>dimensions</i> ], [ <i>no. of turns   inductance range</i> ] in [ <i>concrete   asphalt</i> ] pavement	each
61512	Supply of inductive loop vehicle detector incorporating [1   2   3   4   5   6   7   8] channel cards	each
61513	Supply and installation of inductive loop vehicle detector incorporating [1   2   3   4   5   6   7   8] channel cards	each
61514	Installation of inductive loop vehicle detector incorporating [1   2   3   4   5   6   7   8] channel cards	each
61515	Supply and installation of inductive loops [ <i>description</i> ]	lump sum
<b>Radar vehicle detectors</b>		
61531	Supply and installation of radar vehicle detector, as per manufacturer's requirements	each
<b>Infrared vehicle detectors</b>		
61551	Supply and installation of infrared vehicle detector as per manufacturer's requirements	each
<b>Ancillary items</b>		
61571	Provision of [ <i>type</i> ] vehicle detector spares [ <i>as listed in the contract documents or on drawing reference</i> ]	item
<b>Removal of existing vehicle detectors</b>		
61591	Removal of [ <i>type</i> ] vehicle detection equipment for re-use	each
61592	Removal of [ <i>type</i> ] vehicle detection equipment for disposal	each
61593	Removal of inductive loop	each
61594	Removal of feeder cable	m

## 2.2 Work Operations

### Item 61504 Supply of inductive loop cable, [*conductor size*], [*number of cores*] cores, [*core insulation*], [*sheath insulation*], [*conductor material*]

Work Operations incorporated in the above item include:

- a) Work Operations listed in Clause 2.1.5 of MRS01 *Introduction to Specifications*, and
- b) general equipment requirements stated in MRTS257 *Feeder Cable and Loop Cable for Vehicle Detector*.

**Item 61505 Supply of feeder cable, [conductor size], [number of cores] cores, [core insulation], [sheath insulation], [conductor material]**

Work Operations incorporated in the above item include:

- a) Work Operations listed in Clause 2.1.5 of MRS01 *Introduction to Specifications*, and
- b) general equipment requirements stated in MRTS257 *Feeder Cable and Loop Cable for Vehicle Detector*.

**Item 61506 Supply of cable joint, [fused | unfused]**

Work Operations incorporated in the above item include:

- a) Work Operations listed in Clause 2.1.5 of MRS01 *Introduction to Specifications*, and
- b) general equipment requirements stated in MRTS257 *Feeder Cable and Loop Cable for Vehicle Detector*.

**Item 61507 Installation, jointing and termination of inductive loop cable, [cores]**

Work Operations incorporated in the above item include:

- a) Work Operations listed in Clause 2.1.5 of MRS01 *Introduction to Specifications*
- b) Installation, labelling, connection and termination of inductive loop cables per MRTS204 *Vehicle Detectors*, SD1424 *Traffic signals – Detector loops installation details*, SD1425 *Traffic signals – Detector loops placement details*, SD1701 *Traffic signals – Detector loops counting / right turn loops and diode connection details* and SD1702 *ITS – Detector loops motorway management placement details*, and
- c) testing of installation.

**Item 61508 Installation, jointing and termination of feeder cable, [cores]**

Work Operations incorporated in the above item include:

- a) Work Operations listed in Clause 2.1.5 of MRS01 *Introduction to Specifications*
- b) Installation, labelling, connection and termination of feeder cables per MRTS204 *Vehicle Detectors*, SD1424 *Traffic signals – Detector loops installation details*, SD1425 *Traffic signals – Detector loops placement details*, SD1701 *Traffic signals – Detector loops counting / right turn loops and diode connection details* and SD1702 *ITS – Detector loops motorway management placement details*, and
- c) testing of installation.

**Item 61509 Supply of [rectangular | square] preformed loops [dimensions], [no. of turns | inductance range] in [concrete | asphalt] pavement**

Work Operations incorporated in the above item include:

- a) Work Operations listed in Clause 2.1.5 of MRS01 *Introduction to Specifications*, and
- b) general equipment requirements stated in MRTS257 *Feeder Cable and Loop Cable for Vehicle Detector*.

**Item 61510 Supply and installation of [rectangular | square] preformed loops [dimensions], [no. of turns | inductance range] in [concrete | asphalt] pavement**

Work Operations incorporated in the above item include:

- a) Work Operations listed in Clause 2.1.5 of MRS01 *Introduction to Specifications*
- b) general equipment requirements stated in MRTS257 *Feeder Cable and Loop Cable for Vehicle Detector*
- c) installation, labelling, connection and termination of preformed loop cables per MRTS204 *Vehicle Detectors*, SD1424 *Traffic signals - Detector loops installation details*, SD1425 *Traffic signals - Detector loops placement details*, SD1701 *Traffic signals - Detector loops counting / right turn loops and diode connection details* and SD1702 *ITS - Detector loops motorway management placement details*, and
- d) testing of installation per MRTS204 *Vehicle Detectors*.

**Item 61511 Installation of [rectangular | square] preformed loops [dimensions], [no. of turns | inductance range] in [concrete | asphalt] pavement**

Work Operations incorporated in the above item include:

- a) Work Operations listed in Clause 2.1.5 of MRS01 *Introduction to Specifications*
- b) general equipment requirements stated in MRTS257 *Feeder Cable and Loop Cable for Vehicle Detector*.
- c) installation, labelling, connection and termination of preformed loop cables per MRTS204 *Vehicle Detectors*, SD1424 *Traffic signals - Detector loops installation details*, SD1425 *Traffic signals - Detector loops placement details*, SD1701 *Traffic signals - Detector loops counting / right turn loops and diode connection details* and SD1702 *ITS - Detector loops motorway management placement details*, and
- d) testing of installation per MRTS204 *Vehicle Detectors*.

**Item 61512 Supply of inductive loop vehicle detector incorporating  
[1 | 2 | 3 | 4 | 5 | 6 | 7 | 8] channel cards**

Work Operations incorporated in the above item include:

- a) Work Operations listed in Clause 2.1.5 of MRS01 *Introduction to Specifications*, and
- b) general equipment requirements stated in MRTS201 *General Equipment Requirements*, MRTS204 *Vehicle Detectors* and MRTS257 *Feeder Cable and Loop Cable for Vehicle Detector*.

**Item 61513 Supply and installation of inductive loop vehicle detector incorporating  
[1 | 2 | 3 | 4 | 5 | 6 | 7 | 8] channel cards**

Work Operations incorporated in the above item include:

- a) Work Operations listed in Clause 2.1.5 of MRS01 *Introduction to Specifications*, and
- b) general equipment requirements stated in MRTS201 *General Equipment Requirements*, MRTS204 *Vehicle Detectors* and MRTS257 *Feeder Cable and Loop Cable for Vehicle Detector*.
- c) any applicable requirements of MRTS93 *Traffic Signals*, MRTS204 *Vehicle Detectors* and MRTS257 *Feeder Cable and Loop Cable for Vehicle Detector*, and
- d) testing of installation per MRTS204 *Vehicle Detectors*.

**Item 61514 Installation of inductive loop vehicle detector incorporating  
[1 | 2 | 3 | 4 | 5 | 6 | 7 | 8] channel cards**

Work Operations incorporated in the above item include:

- a) Work Operations listed in Clause 2.1.5 of MRS01 *Introduction to Specifications*, and
- b) any applicable requirements of MRTS93 *Traffic Signals*, MRTS204 *Vehicle Detectors* and MRTS257 *Feeder Cable and Loop Cable for Vehicle Detector*
- c) installation of loop detector equipment per MRTS201 *General Equipment Requirements* and MRTS204 *Vehicle Detectors*
- d) labelling of equipment and cables per MRTS201 *General Equipment Requirements* and MRTS204 *Vehicle Detectors*
- e) connection and termination of cables per MRTS204 *Vehicle Detectors*, and
- f) testing of installation per MRTS204 *Vehicle Detectors*.

**Item 61515 Supply and installation of inductive loops, [description]**

Work Operations incorporated in the above item include:

- a) Work Operations listed in Clause 2.1.5 of MRS01 *Introduction to Specifications*
- b) supply of inductive loop cable per Item 61504 and feeder cable per Item 61505
- c) supply of conduit, jointing kit and slot sealant per Item 61506
- d) cutting of slots per Item 61507
- e) installation of conduit per Item 61507
- f) installation of loop per Item 61507
- g) installation of detector feeder cable through conduit, jointing of loop lead-in with detector feeder cable in pit, and termination of feeder cable in field enclosure per Item 61508, and
- h) testing of installation.

**Item 61531 Supply and installation of radar vehicle detector as per manufacturer's requirements**

Work Operations incorporated in the above item include:

- a) Work Operations listed in Clause 2.1.5 of MRS01 *Introduction to Specifications*
- b) general equipment requirements stated in MRTS201 *General Equipment Requirements*
- c) any applicable requirement of MRTS93 *Traffic Signals*, MRTS204 *Vehicle Detectors* and MRTS257 *Feeder Cable and Loop Cable for Vehicle Detector*
- d) installation of radar vehicle detector per MRTS201 *General Equipment Requirements* and MRTS204 *Vehicle Detectors*
- e) labelling of equipment and cables per MRTS201 *General Equipment Requirements*
- f) connection and termination of cables per MRTS201 *General Equipment Requirements* and MRTS204 *Vehicle Detectors*, and
- g) testing of installation per MRTS204 *Vehicle Detectors*.

**Item 61551 Supply and installation of infrared vehicle detectors as per manufacturer's requirements**

Work Operations incorporated in the above item include:

- a) Work Operations listed in Clause 2.1.5 of MRS01 *Introduction to Specifications*
- b) general equipment requirements stated in MRTS201 *General Equipment Requirements*, MRTS204 *Vehicle Detectors* and MRTS257 *Feeder Cable and Loop Cable for Vehicle Detector*
- c) any applicable requirements of MRTS93 *Traffic Signals*, MRTS204 *Vehicle Detectors* and MRTS257 *Feeder Cable and Loop Cable for Vehicle Detector*
- d) installation of infrared vehicle detector per MRTS201 *General Equipment Requirements* and MRTS204 *Vehicle Detectors*
- e) labelling of equipment and cables per MRTS201 *General Equipment Requirements*
- f) connection and termination of cables per MRTS201 *General Equipment Requirements* and MRTS204 *Vehicle Detectors*, and
- g) testing of installation per MRTS204 *Vehicle Detectors*.

**Item 61571 Provision of [type] vehicle detection spares [as listed in the contract documents or on drawing reference]**

Work Operations incorporated in the above item include:

- a) Work Operations listed in Clause 2.1.5 of MRS01 *Introduction to Specifications*
- b) provision of spares in accordance with the requirements of MRTS201 *General Equipment Requirements* and as listed in the Scheme Documentation, and
- c) transport of all components to the Principal's storage facility.

**Item 61591 Removal of [type] vehicle detection equipment for re-use**

Work Operations incorporated in the above item include:

- a) Work Operations listed in Clause 2.1.5 of MRS01 *Introduction to Specifications*
- b) disconnection of electrical supply including termination and 'making safe' of supply cable
- c) disconnection of telecommunications connection
- d) removal of internal enclosure equipment, supporting pole and associated modules, and
- e) transport of all components to the Principal's storage facility or designated site storage area for re-use.

### **Item 61592 Removal of [type] vehicle detection equipment for disposal**

Work Operations incorporated in the above item include:

- a) Work Operations listed in Clause 2.1.5 of MRS01 *Introduction to Specifications*
- b) disconnection of electrical supply including termination and 'making safe' of supply cable
- c) disconnection of telecommunications connection
- d) removal of internal enclosure equipment, enclosure, supporting pole and associated modules, and
- e) transport of all removed components for disposal.

### **Item 61593 Removal of inductive loop**

Work Operations incorporated in the above item include:

- a) Work Operations listed in Clause 2.1.5 of MRS01 *Introduction to Specifications*
- b) disconnection of electrical supply, including termination and 'making safe' of supply cable
- c) disconnection of inductive loop lead-in from feeder cable
- d) removal of loop lead-in from pit
- e) remove loop wires inside slots (by profiler), and
- f) transport of all removed materials for disposal.

### **Item 61594 Removal of feeder cable**

Work Operations incorporated in the above item include:

- a) Work Operations listed in Clause 2.1.5 of MRS01 *Introduction to Specifications*
- b) disconnection of electrical supply including termination and 'making safe' of supply cable
- c) disconnection of inductive loop lead-in from feeder cable
- d) removal of feeder cable from pit, conduit and field enclosure, and
- e) transport of all removed materials for disposal.

### **2.3 Method of measurement of vehicle detection equipment**

This Specification provides Standard Work Items for:

- a) supply only of individual components
- b) installation only of individual components
- c) supply and installation of individual components, and
- d) supply and installation of complete vehicle detection site on a lump sum basis.

Any combination of Standard Work Items relating to these methods of measurement may be used in the Schedule of Rates. However:

- a) where a Standard Work Item for supply and installation of a particular component or group of components is included in the Schedule of Rates, no supply only nor installation only Standard Work Item shall also apply to that component or group of components, as applicable, and
- b) where a Standard Work Item for supply and installation of a complete vehicle detection site on a lump sum basis is included in the Schedule of Rates, no supply only, installation only nor supply and installation Standard Work Item shall also apply to that work.

### **2.4 Supply of materials**

Any materials to be supplied by the Principal will be as stated in the Form C7827.IC *Principal Supplied Material List*. All other material shall be supplied by the Contractor.

The responsibility for Transport to the Site of materials, supplied by the Principal, shall be as stated in the Form C7827.IC *Principal Supplied Material List*. Transport to the Site of all other materials shall be the responsibility of the Contractor.

### **2.5 Removal of existing equipment**

The Administrator will inspect the salvaged materials at the storage site and will reject any materials which, in the opinion of the Administrator, have been damaged during the salvage operation. The Contractor shall be required to reimburse the Principal for materials damaged during salvage.

