

Design Manual for Roads and Bridges



Control & Communications Technology
Maintenance & Operation

TM 101

Traffic signalling systems (maintenance and operation)

(formerly TA 12/07, TA 16/07, TA 56/87, TA 82/99, TA 84/06, TD 07/07, TD 24/97, TD 35/06)

Version 0.1.0

Summary

This document contains maintenance and operation requirements for traffic signalling systems.

Feedback and Enquiries

Users of this document are encouraged to raise any enquiries and/or provide feedback on the content and usage of this document to the dedicated National Highways team. The email address for all enquiries and feedback is: Standards_Enquiries@highwaysengland.co.uk

This is a controlled document.

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Latest release notes

| Document code | Version number | Date of publication of relevant change | Changes made to | Type of change |
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| TM 101 | 0.1.0 | August 2022 | Core document | Incremental change to requirements |

This update of TM 101 constitutes the following: updated references; updated definitions; basic grammar corrections.

Previous versions

| Document code | Version number | Date of publication of relevant change | Changes made to | Type of change |
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| TM 101 | 0 | June 2019 | | |

Foreword

Publishing information

This document is published by National Highways.

This document supersedes TA 12/07, TA 16/07, TA 56/87, TA 82/99, TA 84/06, TD 07/07, TD 24/97, TD 35/06, which are withdrawn.

Contractual and legal considerations

This document forms part of the works specification. It does not purport to include all the necessary provisions of a contract. Users are responsible for applying all appropriate documents applicable to their contract.

Introduction

Background

This document contains maintenance and operation requirements for traffic signalling systems.

Assumptions made in the preparation of the document

The assumptions made in GG 101 [Ref 3.N] apply to this document.

It is assumed that the parties reading TM 101 are aware of additional documents to those within the DMRB. The Department for Transport (DfT) prepares general advice, some of which is applicable to motorway and all purpose trunk roads. Of these documents, the most relevant are Local Transport Notes (LTN), and Traffic Advisory Leaflets (TAL), which mostly cover topics which apply to local rather than strategic roads, but some are of general relevance.

It is assumed that inspection activities are conducted which may identify the need for maintenance works.

Abbreviations

Abbreviations

| Abbreviation | Definition |
|--------------|-------------------------------------------|
| BS EN | British Standard European Norm |
| CDM | Construction, design and management |
| IET | Institution of Engineering and Technology |

Terms and definitions

Terms

| Term | Definition |
|----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Traffic control equipment | equipment used in connection with the signals (including the content of all instructions stored in, or executable by, that equipment). NOTE: Examples of associated equipment can include communication devices. |
| Traffic signalling equipment | all items of hardware installations which operate together and indicate to users to proceed with safety at road traffic junctions against relevant diagrams of the Traffic Signs Regulations and General Directions SI 2016/362 (TSRGD) [Ref 6.N] and associated amendments, for England, Wales and Scotland, and the Traffic Signs Regulations (Northern Ireland) 1997 - SRNI 1997/386 [Ref 7.N]for Northern Ireland. |
| Traffic signalling installations | permanent traffic signalling equipment at prescribed locations as defined in the Traffic Signs Regulations and General Directions SI 2016/362 (TSRGD) [Ref 6.N] and associated amendments for England, Wales and Scotland on all purpose trunk roads, and the Traffic Signs Regulations (Northern Ireland) - SRNI 1997/386 [Ref 7.N] for Northern Ireland. NOTE: Examples of locations include junctions, emergency vehicle stations, level crossings, airports, tunnels, swing/movable bridges and signalised crossings. |
| Traffic signalling systems | the combination of traffic signalling equipment and/or traffic control equipment, associated software, hardware and data. |

1. Scope

Aspects covered

- 1.1 This document outlines the procedures and requirements that shall be followed for the maintenance of traffic signalling installations.

Implementation

- 1.2 This document shall be implemented forthwith on all schemes involving traffic signalling installations on the Overseeing Organisations' motorway and all-purpose trunk roads according to the implementation requirements of GG 101 [Ref 3.N].

Use of GG 101

- 1.3 The requirements contained in GG 101 [Ref 3.N] shall be followed in respect of activities covered by this document.

2. General requirements

Maintenance

- 2.1 All traffic signalling installations maintenance shall comply with 'Road traffic signal systems' BS EN 50556 [Ref 5.N].
- 2.2 Traffic signalling installations maintenance shall be undertaken as required by the Overseeing Organisation.

Electrical works

- 2.3 All electrical work must comply with The Electricity at Work Regulations SI 1989/635 [Ref 2.N].
- 2.4 All electrical work shall comply with Requirements for Electrical Installations. IET Wiring Regulations BS 7671 [Ref 4.N].
- 2.5 Security threats to traffic signalling systems must be mitigated in accordance with the requirements of The Network and Information Systems Regulations SI 2018/506 [Ref 1.N].
- 2.6 Where evident, security threats to traffic signalling systems shall be assessed, documented, mitigated and managed.

NOTE *Examples of security threats to traffic signalling systems can include compromised roadside equipment, in-station equipment, system software, and metal theft.*

- 2.7 Risk to the existing communications infrastructure by the introduction of new traffic signalling equipment shall be avoided.

3. Normative references

The following documents, in whole or in part, are normative references for this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

| Ref. | Document |
|---------|--------------------------------------------------------------------------------------------------------------------------------------------|
| Ref 1.N | The National Archives. legislation.gov.uk. SI 2018/506, 'ELECTRONIC COMMUNICATIONS - The Network and Information Systems Regulations 2018' |
| Ref 2.N | The National Archives. legislation.gov.uk. SI 1989/635, 'HEALTH AND SAFETY - The Electricity at Work Regulations 1989 (as amended)' |
| Ref 3.N | National Highways. GG 101, 'Introduction to the Design Manual for Roads and Bridges' |
| Ref 4.N | BSI. BS 7671, 'Requirements for Electrical Installations. IET Regulations' |
| Ref 5.N | BSI. BS EN 50556, 'Road traffic signal systems (Designated Standard - LVD)' |
| Ref 6.N | The National Archives. legislation.gov.uk. SI 2016/362 (TSRGD), 'The Traffic Signs Regulations and General Directions 2016' |
| Ref 7.N | The National Archives. legislation.gov.uk. SRNI 1997/386, 'Traffic Signs Regulations (Northern Ireland) 1997' |

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