Superseded by TS 03396.1, 21/09/2022

TRANSPORT for NEW SOUTH WALES (TfNSW)

QA SPECIFICATION TS200

REGISTER OF ITS FIELD EQUIPMENT

DISCLAIMER AND CONDITIONS FOR USE OF THIS SPECIFICATION

This Specification has been prepared by Transport for New South Wales (referred to herein as TfNSW) for use, insofar as it is applicable, in the State of New South Wales for equipment supplied under an TfNSW order or contract, or under an order or a contract from another party that is required in writing by Transport for New South Wales to use this Specification.

The use of this TfNSW Specification other than by those parties stated above and in the manner stated above is not recommended or authorised by Transport for New South Wales. Any such use is entirely the decision of the user alone. Transport for New South Wales disclaims all responsibilities and liabilities arising whether directly or indirectly from any such use. Transport for New South Wales does not warrant that this Specification is error free, nor does Transport for New South Wales warrant the suitability, fitness or otherwise of this Specification for any stated or implied purposes expressed or implied in this Specification or other documents. By using this Specification, the user agrees to indemnify Transport for New South Wales against the full amount of all expenses, losses, damages and costs (on a full indemnity basis and whether or not incurred by or awarded against Transport for New South Wales) which may be suffered by any person or Transport for New South Wales in connection with or arising out of the use of this Specification in any manner.

Transport for New South Wales is not under any duty to inform you of any errors in or changes to this Specification.

Superseded by TS 03396.1, 21/09/2022

REVISION REGISTER

Ed/Rev Number	Clause Number	Description of Revision	Authorised By	Date
Ed 1/Rev 1		First Issue.	Steven Shaw	26 Aug 14
Ed 1/Rev 2	Annex A	Corrected supplier for PAT DAW 100.	A Mehaffey	02 Oct 14
Ed 1/Rev 3	Annex A	Added approved AEI LED Lanterns. Removed prototype "FCG-VMS".	A Mehaffey	27 Nov 14
Ed 1/Rev 4	Annex A	Aligned with "TES-REG-001".	A Mehaffey	12 Mar 15
Ed 1/Rev 5	Various	Clarifications to "OEM" status. Updates to Annex A.	A Mehaffey	11 Aug 15
Ed 1/Rev 6	Various	Updates to Annex A.	A Mehaffey	02 Sep 16
Ed 2/Rev 1	Various	New approval classes replace "Compliant" and "OEM". Updates to Annex A.	A Mehaffey	29 Sep 16
Ed 2/Rev 2	Various	Approver becomes General Manager ITS.	S Shaw	21 Jun 17
Ed 2/Rev 3	Various	Removal of "provisional" classification. Updates to Annex A.	S Kindleysides	23 Mar 18
Ed 2/Rev 4	Various	Updates to Annex A.	S Kindleysides	04 Jul 18
Ed 2/Rev 5	Various	Editorial and formatting fixes.	S Kindleysides	23 Jul 18
Ed 2/Rev 6	Annex A	Updates to Annex A.	S Kindleysides	31 Aug 18
Ed 2/Rev 7	Annex A	Updates to Annex A.	J Gordon	13 Mar 19
Ed 3/Rev 0	Various	References to RMS changed to TfNSW. Updates to Annex A and B.	J Gordon	29 Sep 20
Ed 4/Rev 0	Various	Approver becomes Director ITS Engineering.	N Patras	9 Feb 21
Ed 5/Rev 0	Various	Updates to Annex A and B.	N Patras	9 Mar 21
Ed 6/Rev 0	Annex A	Add item to section A1.2	N Patras	12 Apr 21
Ed 7/Rev 0	Various	Updates to Annex A and B.	N Patras	17 Jun 21

Superseded by TS 03396.1, 21/09/2022

Transport for NSW

QA SPECIFICATION TS200

REGISTER OF ITS FIELD EQUIPMENT

Copyright – Transport for NSW
IC-QA-TS200

VERSION FOR:
All Supply of ITS Devices to TfNSW

Superseded by TS 03396.1, 21/09/2022

Superseded by TS 03396.1, 21/09/2022

CONTENTS

CLAUSE **PAGE**

FOREWORD II
TfNSW Copyright and Use of this Document ii
Revisions to Previous Version ii
Project Specific Changes ii

1 GENERAL 1
1.1 Scope 1
1.2 Structure of the Specification 1
1.3 Definitions and Abbreviations 2

2 REGISTER OF ITS FIELD EQUIPMENT 2
2.1 Overview 2

ANNEXURE TS200/A – ITS FIELD EQUIPMENT REGISTER 5
A1 Adaptive Traffic Control 5
A2 Tidal Lane Control 14
A3 Electronic Message Signs 14
A4 Traffic Detection and Monitoring 16
A5 Traffic Incident Verification 16
A6 Other Approved Devices 17

ANNEXURE TS200/B – ITS EQUIPMENT: SUPPLIER DETAILS 19

ANNEXURES TS200/C TO TS200/L – (NOT USED) 23

ANNEXURE TS200/M – REFERENCED DOCUMENTS 23
M1 TfNSW Specifications 23

LAST PAGE OF THIS DOCUMENT IS 23

Superseded by TS 03396.1, 21/09/2022

FOREWORD

TFNSW COPYRIGHT AND USE OF THIS DOCUMENT

Copyright in this document belongs to Transport for New South Wales.

When this document forms part of a contract

This document should be read with all the documents forming the Contract.

When this document does not form part of a contract

This copy is not a controlled document. Observe the Notice that appears on the first page of the copy controlled by TfNSW. A full copy of the latest version of the document is available on the TfNSW Internet website: http://www.rms.nsw.gov.au/business-industry/partners-suppliers/document-types/specifications/qa/traffic-systems.html

REVISIONS TO PREVIOUS VERSION

This document has been revised from Specification TS200 Edition 6 Revision 0.

PROJECT SPECIFIC CHANGES

Project specific changes are **not allowed** to this Register.

This Register of ITS Field Equipment should only be changed by TfNSW Director – Intelligent Transport Systems Engineering or delegate.

Projects that are nominally required to supply ITS Field Equipment that are currently not listed within this Register must obtain approval from TfNSW (Director ITS Engineering or delegate) before using such equipment, as outlined in TS202.

Requests for clarifications, re-issue, or other questions regarding this Register should be directed to: ITShelpdesk@rms.nsw.gov.au

(TfNSW COPYRIGHT AND USE OF THIS DOCUMENT - Refer to the Foreword after the Table of Contents)

Superseded by TS 03396.1, 21/09/2022

TfNSW QA SPECIFICATION TS200

REGISTER OF ITS FIELD EQUIPMENT

1 GENERAL

1.1 SCOPE

Transport for NSW (TfNSW) has deployed a large variety of Intelligent Transport Systems (ITS) field equipment throughout the NSW road network to enable the operation of Intelligent Transport Systems.

This specification is intended to assist TfNSW staff and service providers in their selection of ITS field equipment for new installations, as well as for the maintenance or replacement of existing equipment, by identifying acceptable suppliers of equipment currently in operation.

There are two (2) categories of ITS field equipment suitable for supply by contractors:

- **"Type Approved"** ITS field equipment (Clause 2.1.1)
- **"Acceptable"** ITS field equipment (Clause 2.1.2)

These categories are defined in detail in Clause 2 below.

Items excluded from the scope of this register include:

- TfNSW approved hardware and mounting structures supporting ITS Equipment installation (other than for Traffic Control Sites).
- Supporting ITS power and communications equipment (where not otherwise specified).

The hardware elements are generally either identified in detailed TfNSW Technical Specifications, shown within standard TfNSW drawings, or are sourced from nominated suppliers of ITS field equipment.

In all cases, supplied ITS field equipment and all associated devices must be suitable for their required purpose and installation environment.

1.2 STRUCTURE OF THE SPECIFICATION

This Specification includes a series of annexures that detail additional requirements.

1.2.1 Project Specific Requirements

All projects must select ITS field equipment from the Register as shown in Annexure TS200/A, or seek approval from TfNSW (Director ITS Engineering or delegate) before using unlisted equipment, as outlined in TfNSW TS202. Project specific changes to this Register are **not allowed**.

1.2.2 Reference Documents

Standards, specifications and test methods are referred to in abbreviated form (e.g. TS202) For convenience, the full titles are given in Annexure TS200/M.

(TfNSW COPYRIGHT AND USE OF THIS DOCUMENT - Refer to the Foreword after the Table of Contents)

Superseded by TS 03396.1, 21/09/2022

1.3 DEFINITIONS AND ABBREVIATIONS

1.3.1 Definitions

The terms "you" and "your" mean "the Contractor" and "the Contractor's" respectively.

The following definitions are applicable to this Specification:

Intelligent Transport System (ITS)	An integrated technology solution using computer-based control systems which communicate with field devices (at one or more sites) to provide a functional outcome designed to improve journeys through the transport network.
ITS Field Equipment	ITS Equipment or Devices supporting the required functionality of an Intelligent Transport System, associated with a nominated ITS Field Site.
ITS Field Site	Nominated location of ITS Equipment, as shown on project plans and as required site for installation of devices.
Director ITS Engineering	TfNSW representative responsible for approvals over design documentations and additions to this Register.
ITS REGISTER	The listing of ITS Equipment suitable for supply to TfNSW via maintenance contractors and projects, located in Annexure TS200/A of this document.

1.3.2 Abbreviations

The following abbreviations apply to this Specification:

ITS	Intelligent Transport Systems
RMS	Roads and Maritime Services
TfNSW	Transport for New South Wales

2 REGISTER OF ITS FIELD EQUIPMENT

2.1 OVERVIEW

2.1.1 General

There are two (2) categories of ITS field equipment available suitable for supply by contractors:

- **"Type Approved"** ITS field equipment – evaluated as compliant to TfNSW specifications and supplied with an awarded TfNSW Type Approval Certification Number.
- **"Acceptable"** ITS field equipment – evaluated by TfNSW and considered acceptable for typical intended use.

Irrespective of any technical approval bestowed herein, as the ongoing maintenance is arranged by others, in all cases equipment that is used on the Road Network must also gain acceptance from Asset Manager, Network Sydney. This acceptance is twofold, firstly that financial resources have been allocated and secondly that requisite maintenance facilities have been identified.

(TfNSW COPYRIGHT AND USE OF THIS DOCUMENT - Refer to the Foreword after the Table of Contents)

Superseded by TS 03396.1, 21/09/2022

There is a further category of ITS field equipment, "Legacy", which is **not** suitable for general supply.

This register is not intended to replace the need for projects and ITS maintainers to ensure that their ITS equipment or systems operate in compliance with TfNSW specifications, nor does nomination in this register imply that all devices nominated are specifically compliant to current TfNSW specifications.

From a contractual supply perspective all ITS field equipment listed in TS200/Annexure A of this document may be considered as "TfNSW Approved", as long as the supply conditions applied to their listed approval classification can be proven to be met (and demonstrated). The purchaser must ensure that the installation follows manufacturer and/or TfNSW requirements. The ITS Branch should be used to provide technical advice and guidance on integration with TfNSW' monitoring systems.

The TfNSW process for general evaluation of ITS Devices (and associated equipment) is described in specification TfNSW TS201, which also establishes the applicant gateway via the ITS Helpdesk.

The process for evaluation of ITS solutions proposed for supply by projects (potentially incorporating supply of equipment neither approved nor acceptable) is described in specification TfNSW TS202. Where a project identifies, within an ITS solution, the use of equipment not listed herein, approval for the project should be obtained through the TS202 process.

2.1.2 "Type Approved" ITS Equipment

Type Approval is the highest level of TfNSW validation for supply of ITS Equipment, and is typically associated with safety-related systems and functions.

Type Approved ITS Equipment must be submitted by the manufacturer for detailed analysis and review by TfNSW ITS Engineers. The technical review shall incorporate review of independent test reports, break-down examinations of sample equipment, and extensive field trials.

This detailed review is to ensure that the ITS Equipment is not only compliant with the associated TfNSW specification(s), but also designed to be reliable and to operate correctly with the host ITS.

After detailed review, a "Type Approval Certification Number" is awarded to the manufacturer, and devices must only be supplied with documented proof of TfNSW "Type Approval Certification".

An example of Type Approved ITS Equipment within this document is:

(i) Traffic Signal Controller for traffic lights at intersections (e.g. Tyco Eclipse).

2.1.3 "Acceptable" ITS Equipment

The mid-level approval category is "Acceptable" that identifies ITS equipment that TfNSW deems acceptable for typical use.

Information submitted by the manufacturer/supplier shall be reviewed by TfNSW to determine if the functional objectives of the ITS device are demonstrated for typical use. Other information sources may also be used by TfNSW. Such information includes:

(a) Compliance with mandatory regulatory requirements (Safety, EMC), as applicable.

(b) Compliance with specifications or parts thereof, Australian or International, as relevant.

(c) Information on prior use/installations.

If deemed necessary TfNSW may require the manufacturer/supplier to install a trial site/s or system for evaluation by TfNSW prior to TfNSW awarding approval for the nominated equipment.

(TfNSW COPYRIGHT AND USE OF THIS DOCUMENT - Refer to the Foreword after the Table of Contents)

Superseded by TS 03396.1, 21/09/2022

A system integration test may also be required to validate correct operation with specific ITS host systems, if relevant to the equipment type.

This approval category should be used for ITS equipment for which TfNSW does not currently have an equipment specification, but where there is either an appropriate Australian or International Standard.

An example of "Acceptable" ITS Equipment within this document is:

(i) Video Surveillance Camera Site equipment "Accepted" as equivalent to TS106 default supply.

2.1.4 "Legacy" ITS Equipment

"Legacy" ITS field equipment is a level of TfNSW classification and is not considered suitable for supply.

A listing of "Legacy" equipment is only available through the ITS Help Desk and must **not** be provided to tenderers for TfNSW works.

"Legacy" equipment need not be removed from the field but should be replaced with "Approved" or "Acceptable" ITS equipment on site/system reconstruction, major upgrade or unrepairable failure.

A listing of field equipment as "Legacy" may indicate that the field equipment:

(a) Was compatible with a prior ITS Host System, but may not suit current systems, or has not been evaluated to confirm as compatible with the current systems.

(b) Was compliant with prior specifications, but may not be compliant with current specifications such that usage may be limited to maintenance of existing ITS field sites.

(c) Is compliant with current specifications, but has been replaced by the manufacturer/supplier with an updated model. The item listed may not be actively supported by the manufacturer/supplier.

(TfNSW COPYRIGHT AND USE OF THIS DOCUMENT - Refer to the Foreword after the Table of Contents)

Superseded by TS 03396.1, 21/09/2022

ANNEXURE TS200/A – ITS FIELD EQUIPMENT REGISTER

A1 ADAPTIVE TRAFFIC CONTROL

A1.1 Traffic Signal Controller

Supplier	Type	Model	Software	Category
ATC	**Housing – Ground**	ATSC4	n/a	Type Approved
	Logic Rack:		n/a	Type Approved
	Conflict Monitor	TC400-36-0GC	2013-07-V2.05	Type Approved
	Logic Processor Module	TC400-045-0HD	2014-06-V1.05	Type Approved
	Main Processing Daughter Board	TC400-53 Version 1.8 (VC6) Version 8.4 (VC5)	 2014-06-V1.05 2010-08-V1.02	Type Approved
	External Interface Module	TC400-065-0I	2016-05-V2.01	Type Approved
	Vehicle Detector Module	TC416-080-AB	2012-11-V1.06	Type Approved
	Output Module	TC400-040-0JD	2013-05-V1.09	Type Approved
	Output Module (NextGen)	TC400-240-0BB	2011-07-V1.08	Type Approved
	Power Supply Module	TC400-025-0JA	2013-07-V2.05	Type Approved
	Special Facility Module	TC400-055-0A	2014-08-V1.05	Type Approved
	Switch Board Module	TC400-067-0C	2016-05-V2.01	Type Approved
	Top Hat	TC400-175-RMS	n/a	Acceptable
	Line Transient Unit	TC430-11-LTU	n/a	Type Approved
QTC	**Housing – Ground**	Hadron	n/a	Type Approved
	Logic Rack:	LR16 orLR24	n/a	Type Approved
	Power Supply Module	PSM100	n/a	Type Approved
	Loop/Input Module	LIM1616DW	Ver 3.61	Type Approved
	Signal Group Module	SGM524	Ver 4.32	Type Approved
	Command Module	CM3264	Ver 1.088N (VC5)	Type Approved
	Conflict Monitor	n/a	QTC V3.0	Type Approved
	Top Hat	A470 Type-1 (RMS) A470 Type-2 (RMS)	n/a	Acceptable

(TfNSW COPYRIGHT AND USE OF THIS DOCUMENT - Refer to the Foreword after the Table of Contents)

Superseded by TS 03396.1, 21/09/2022

Supplier	Type	Model	Software	Category
Tyco	**Housing – Ground**	EC1 EC1-60 (Removable Roof)	n/a	Type Approved
	Housing – Post	EA1	n/a	Type Approved
	Logic Rack:	Eclipse	n/a	Type Approved
	Power Supply Module	PSM1 V8	Ver 2.09.0913	Type Approved
	Lamp Control Module	LCM8 V10	Ver 2.18.2564	Type Approved
	Loop Detector Module	LDM416 V9	Ver 1.10.0914	Type Approved
	Central Processor Module	CPM1a V18 Bootstrap Traffic Manager	 Ver 1.090762 Ver 2.51.0651	Type Approved
	Top Hat	Eclipse Housing Extension 7RU CX-60 RMS	n/a	Acceptable

A1.2 Traffic Signal Controller – Communications Modem

Supplier	Model / Type	Software	Category
Micro Connect	DIAL LCM *(PSTN)*	V1.04b	Type Approved
	RE LCM *(xDSL)*	V82 Build 7	Type Approved
Dataplex	DPX 213 iPS *(PSTN)*	V1.04	Type Approved
	DPX-3890-01 *(8-port Server – PSTN)*	VC.14e	Type Approved
	DPX-400-SxD *(xDSL)*	V57	Type Approved

A1.3 Traffic Signal Site – Portable Traffic Signals

Supplier	Model / Type	Software	Category
A1 Roadlines	CS-200 CS-400 PTC-1000	V1.05 V4.01.02 V2.03	Type Approved
Aldridge Electrical Industries	CS-200	V1.05	Type Approved
	PTC-1000	V2.01	Type Approved
Data Signs	PTL-300	02.02.1	Type Approved
Bartco	BTLC-100	TLC-1.0.1-030	Type Approved
	CS-200	V1.05	Type Approved

(TfNSW COPYRIGHT AND USE OF THIS DOCUMENT - Refer to the Foreword after the Table of Contents)

Superseded by TS 03396.1, 21/09/2022

A1.4 Traffic Signal Site – Type 1 Portable Traffic Signal

Supplier	Model / Type	Software	Category
Arrow Emergency Systems	e-STOP	PTU: ATCD_Slave-7.1 HRC: ATCD_Master-6.1	Type Approved

A1.5 Traffic Signal Site – Type 1 Portable Traffic Signal with Boom Barrier

Supplier	Model / Type	Software	Category
No listing			

(TfNSW COPYRIGHT AND USE OF THIS DOCUMENT - Refer to the Foreword after the Table of Contents)

Superseded by TS 03396.1, 21/09/2022

A1.6 Traffic Signal Lantern

Supplier	Type	Model	Category
Aldridge Traffic Systems	LED 200mm: Roundel (RYG) Arrow (RYG) Pedestrian (W, DW) Bicycle (RG) Bus (RY, White)	 RA453 RA453A RL552 RA452C RA453B	Type Approved
	LED 300mm: Roundel (RYG) Arrow (RYG)	 RA983 RA983A	Type Approved
	Housing 200mm: 1 Aspect 2 Aspect 3 Aspect 4 Aspect	 RA301 RA302 RA303 RA304	Type Approved
	Housing 300mm: 3 Aspect	 RA903-5	Type Approved
Aldridge Electrical Industries	LED 200mm: Roundel (RYG) Arrow (RYG) Pedestrian (W, DW) Bicycle (RG) 3 Aspect Bus R /Y/ White 3 Aspect 'T' R /Y /White	 RA453L RA453AL RA548L RL282C RA453BL RA453TL	Type Approved
	HPSM 200mm: Roundel (RYG) Arrow (RYG) Pedestrian (W, DW) Bicycle (RG) 3 Aspect Bus R /Y/ White 2 Aspect Bike/Ped combined	 RA443 RA433A RL442 RL444 RA433B RL446	Type Approved
	HPSM 300mm: Roundel (RYG) Arrow (RYG) Single aspect cross 3 Aspect T 3 Aspect Bus	 RA843 RA843A RA841X RA843T RA843B	Type Approved
	Housing 200mm: 1 Aspect 2 Aspect 3 Aspect 4 Aspect	 RA451 RA452 RA453 RA454	Type Approved
	Housing 300mm: 3 Aspect	 TB0233	Type Approved

Superseded by TS 03396.1, 21/09/2022

Supplier	Type	Model	Category
Braums	HPSM 200mm: 2 Aspect YA/ GA 2 Aspect RA/ YA 2 Aspect RA/ YA/ GA 3 Aspect R/ Y/ GA 3 Aspect R/ Y/ G 4 Aspect R/ Y/ G/ GA 4 Aspect R/ Y/ G/ RA 1 Aspect Bus White 3 Aspect Bus R /Y/ White 1 Aspect 'T' White 3 Aspect 'T' R /Y /White 1 Aspect 'E' White 2 Aspect Pedestrian W/ DW 2 Aspect Cycle RC/ GC 3 Aspect Cycle R/ Y/ G 2 Aspect Bike/Ped combined	 BTLAA22YGN BTLAA22RYN BTLAA23N BTLAA23GAN BTLAV23N BTLAA24GAN BTLAA24RAN BTLAB21N BTLAB23N BTLAT21N BTLAT23N BTLAE21N BTLAP22N BTLAC22N BTLAC23N BTLAPC22N	Type Approved
	HPSM 300mm: 2 Aspect YA/ GA 2 Aspect RA/ YA 3 Aspect RA/ YA/ GA 3 Aspect R/ Y/ GA 3 Aspect R/ Y/ G 4 Aspect R/ Y/ G/ GA 4 Aspect R/ Y/ G/ RA 1 Aspect Bus White 3 Aspect Bus R/ Y/ White 1 Aspect Cross R 2 Aspect Cross R/ White A	 BTLAA32YGN BTLAA32RYN BTLAA33N BTLAA33GAN BTLAV33N BTLAA34GAN BTLAA34RAN BTLAB31N BTLAB33N BTLAX1N BTLAX32N	Type Approved
	Housing 200mm: 1 Aspect 2 Aspect 3 Aspect 4 Aspect	 BLT201-5 BLT202-5 BLT203-5 BLT204-5	Type Approved
	Housing 300mm: 3 Aspect	 BLT-403-5	Type Approved
Tyco	LED 200mm: Roundel (RYG) Arrow (RYG) Pedestrian (W, DW) Bicycle (RYG) Bicycle (RG) Bus (RY, White)	 8959 105 00120 8959 105 00130 8959 105 00100 8959 105 00115 8959 105 00110 8959 105 00121	Type Approved
	LED 300mm: Roundel (RYG) Arrow (RYG)	 8959 105 00140 8959 105 00150	Type Approved

(TfNSW COPYRIGHT AND USE OF THIS DOCUMENT - Refer to the Foreword after the Table of Contents)

Superseded by TS 03396.1, 21/09/2022

Supplier	Type	Model	Category
Tyco	HPSM 200mm: Roundel (RYG) Arrow (RYG) Pedestrian (W,DW) Bicycle (RYG) Bicycle (RG) Bus (RY, White)	 8959 105 00120 8959 105 00130 8959 105 00100 8959 105 00115 8959 105 00110 8959 105 00121	Type Approved
	HPSM 300mm: Roundel (RYG) Arrow (RYG)	 8959 105 00140 8959 105 00150	Type Approved
	Housing 200mm: 1 aspect 2 aspect 3 aspect 4 aspect	 4002 150 00932 4002 150 00890 4002 150 00900 4002 150 00910	Type Approved
	Housing 300mm: 3 aspect	4002 150 00920	Type Approved

Legend:
RYG: Red, Yellow, Green
xA: arrow aspect of colour x
W, DW: Walk, Don't Walk

A1.7 Traffic Signal Lantern – Target Boards

Supplier	Model / Type	Category
Aldridge Traffic Systems	Target Boards, Single / Dual 3 aspects 200mm/300mm	Acceptable
Aldridge Electrical Industries	Target Board, Single / Dual 3 aspects (200mm)	Acceptable
Braums	Target Board, Single / Dual 3 aspects 200mm/300mm	Acceptable
Tyco	Target Boards, Single / Dual 3 aspects 200mm/300mm	Acceptable

A1.8 Traffic Signal Lantern – Special Body

No longer used

A1.9 Traffic Signal Site – Posts & Mast Arms

Supplier	Model / Type	Category
GM Poles	Posts & Mast Arms Types 2, 3, 4, 5, 6, 7, 8, 9, 10, 11 and 13	Acceptable
Hayman Industries	Post Type 2-7, and 9-13, Offset and Shallow Type 2 base plate	Acceptable

(TfNSW COPYRIGHT AND USE OF THIS DOCUMENT - Refer to the Foreword after the Table of Contents)

Superseded by TS 03396.1, 21/09/2022

A1.10 Traffic Signal Site – Lantern Mounting and Accessories

Supplier	Model / Type	Category
Aldridge Electrical Industries	Top assembly, Low mounting bracket, and associated hardware	Acceptable
Aldridge Traffic Systems	Top assembly, Low mounting bracket, and associated hardware	Acceptable
Braums	Top assembly, Low mounting bracket, and associated hardware	Acceptable
Tyco	Top assembly, Low mounting bracket, and associated hardware	Acceptable

A1.11 Traffic Signal Site – Audio Tactile Units

Supplier	Model / Type	Software	Category
Aldridge Electrical Industries	Driver Card & Housing – AT45-5R	n/a	Type Approved
	Driver Card – AT0080	V1.1AS	Type Approved
Aldridge Traffic Systems	Driver Card & Housing – CW45-6	AT15-S15	Type Approved
	Housing – CW45-5	n/a	Type Approved
	Driver Card – ATV 2V2	AT15-S15	Type Approved
Braums	Driver Card – BATB1001	015-TS-100	Type Approved
	Housing – BAT1000	n/a	Type Approved

A1.12 Traffic Signal Site – Push Button Assembly

Supplier	Product	Model	Category
Aldridge Electrical Industries	Push-Button with Transducer	PB0257	Type Approved
Aldridge Traffic Systems	Push-Button with Transducer	CW-255	Type Approved
Braums	Push-Button with Transducer:	BPB1001	Type Approved

A1.13 Traffic Signal Site – Pit Covers and Frames

Supplier	Model / Type	Category
ACO	Pit Covers/frames	Acceptable
Durham	Pit Covers/frames	Acceptable
Mascot Engineering	Pit Covers/frames	Acceptable
Natz Packaging	Pit Covers/frames	Acceptable
Tri Underground Australia	Circular Pit Cover & frame	Acceptable

(TfNSW COPYRIGHT AND USE OF THIS DOCUMENT - Refer to the Foreword after the Table of Contents)

Superseded by TS 03396.1, 21/09/2022

A1.14 Traffic Signal Site – Pre-formed and Pre-fabricated Loops

Supplier	Type	Model	Category
Central Infrastructure Sydney	CI Sydney stick-down pre-fabricated loops	CIS Loop	Acceptable
Juvana	Patriot (pre-fabricated, enclosed tube)	CG16MM Series	Acceptable
		CG9.5MM Series	Acceptable
PJ's Loop Service Pty Ltd	Thermapp (pre- formed stick down)	STTS-S	Acceptable
		STTS-D	Acceptable
Traffic Tech	Ezy Loops (pre- formed, stick down)	SS-EL	Acceptable

A1.15 Traffic Signal Site – Inductive Loop, Other Cables, Cable Accessories and Loop Sealant

Supplier	Model / Type	Category
Bambach	Multi-core – 29 Core PN17810 Loop Detector Cable – PN46005 Loop Feeder – 1 Pair PN46000 Loop Feeder – 3 Pair PN46015 Loop Feeder – 4 Pair PN46016 Loop Feeder – 5 Pair PN46017 Loop Feeder – 6 Pair PN46021	Acceptable
Cable Accessories	Jointing Kits	Acceptable
Gripset Industries	Gripset B26 (Loop Sealant) PPSCT010	Acceptable
Madison Technology	Traffic Cable – 29 Core MCC294MMTRAFFICUV Loop Detector Cable – MC7051XLPE1000 Loop Feeder – 1 Pair MC7052J FSTD500 Loop Feeder – 3 Pair MC7056JFSTD500 Loop Feeder – 4 Pair MC7058JFSTD500 Loop Feeder – 5 Pair MC70510JFSTD500 Loop Feeder – 6 Pair MC70512JFSTD500	Acceptable
Scott Technology	Loop Sealant LSS/F6 Formulation- GS12692	Acceptable
	Piezo sealant Formulation- GS050815T	Acceptable
	Adhesive Formulation- G517987A	Acceptable

(TfNSW COPYRIGHT AND USE OF THIS DOCUMENT - Refer to the Foreword after the Table of Contents)

Superseded by TS 03396.1, 21/09/2022

A1.16 Traffic Signal Site – Terminal Boxes (Mast Arm / Wooden Pole)

Supplier	Model / Type	Category
Aldridge Traffic Systems	Mast Arm Mounting T5/6 VL510	Acceptable
	ELP terminal box	Acceptable
Aldridge Electrical Industries	Mast Arm Terminal VL429	Acceptable
	ELP Terminal Box VL329	Acceptable
Braums	Mast Arm MATB200	Acceptable
	Mast Arm Terminal Box for Type 8 Post MATB208	Acceptable
	Pole Mounted ELPB200	Acceptable
Tyco	Mast Arms & Type 6 Post 4002 110 12240	Acceptable

A1.17 Traffic Signal Site – PJ Box

Supplier	Model / Type	Category
Powercast	PJ Box – Small; RTA001	Acceptable
	PJ Box – Large; RTA002	Acceptable
	PJ Box – Extra Large; RTA003	Acceptable
Channell	PJ Box – Bulk0	Acceptable
	PJ Box – Bulk1	Acceptable
	PJ Box – Bulk2	Acceptable
	PJ Box – Bulk4	Acceptable
	Optional pre-fab pit	Acceptable
EJ Australia	PJ Box – Small; RTA-S	Acceptable
	PJ Box – Large; RTA- M	Acceptable
	PJ Box – Extra Large; RTA- L	Acceptable
Illuminating Technologies	PJ lid & frame – small; JPEG.016-IPT	Acceptable
	PJ lid & frame – large; JPEG.014-IPT	Acceptable
	PJ lid & frame – extra-large; JPEG.012-IPT	Acceptable

A1.18 Traffic Signal Site – Fuse Box

Supplier	Model / Type	Category
Aldridge Traffic Systems	Post-Mounted Fuse Box VL530	Acceptable
Braums	Post-Mounted Fuse Box PMB0200	Acceptable
Reagle	Underground Fuse Box RMS70020480	Acceptable

(TfNSW COPYRIGHT AND USE OF THIS DOCUMENT - Refer to the Foreword after the Table of Contents)

Superseded by TS 03396.1, 21/09/2022

A1.19 Traffic Signal Site – Facility Key

Supplier	Model / Type	Category
Fountain Line	Facility Key	Acceptable

A2 TIDAL LANE CONTROL

A2.1 Lane Control Equipment

Supplier	Type	Model	Category
ESDR Electronics	SERNIS Unidirectional In-Pavement Light (white)	SR-45-WW-1G (1 gland)	Acceptable
		SR-45-WW-2G (2 gland)	Acceptable

A3 ELECTRONIC MESSAGE SIGNS

A3.1 VMS (Variable Message Signs)

Supplier	Model / Type	Category
Aldridge Electrical Industries	Type C	Acceptable
Braums	Types A, B & C.	Acceptable
Brightway Electronics	Types B & C	Acceptable

A3.2 VSLS

Supplier	Model / Type	Category
No listing		

A3.3 VAS (Vehicle Activated Signs)

Supplier	Model / Type	Category
Hi-Vis	LEDWARNINGSIGN2018	Acceptable
J1-LED	Refer to certificate for types.	Acceptable
Pioneerz Safety	SASEvo2	Acceptable

A3.4 CMS (Changeable Message Signs)

Supplier	Model / Type	Category
No listing		

Superseded by TS 03396.1, 21/09/2022

A3.5 FAS (Flashing Arrow Signs)

Supplier	Model / Type	Controller Model Number	Software	Category
A1 Roadlines	Type A – Single sided	QS-AB04	Controller – 0721 / Light Sensor – 8169	Type Approved
	Type A – Double sided	QS-AB04D	Controller – 5753 / Light Sensor – 8169	Type Approved
	Type B – Single sided	QS-AB03	Controller – 0721 / Light Sensor - 8169	Type Approved
	Type B – Double sided	QS-AB03D	Controller – 5753 / Light Sensor - 8169	Type Approved
	Type C - Trailer	QS-AB03	Controller – 0721 / Light Sensor - 8169	Type Approved
	Type C – Vehicle mounted	QS-AB03	Controller – 0721	Type Approved
Arrow Emergency Systems	Type A	TYPE A/B	V2.5	Type Approved
	Type B	TYPE A/B	V2.5	Type Approved
Aldridge Traffic Systems	Type B	RA7001AC Type 1 Rotary Switch	V3.05	Type Approved
	Type B	RA7001AC Type 2 Keypad	V3.05	Type Approved
Data Signs	Type C	43020	01.00.04	Type Approved
Global Traffic Equipment	Type B – Single sided LDC ABS	AC4S (GT7027)	V1.2	Type Approved
	Type B – Double sided LDC-ABD	AC4S (GT7028)	V1.2	Type Approved
J1-LED Intelligent Transport Systems	Type B– Single sided JL-D-0128	JL-D-0128	JLD0128124	Type Approved
Magnum MFG	Type B – Single sided VMAB-BS	VMAB-BSC	FO_M8_DIRV1.0.4	Type Approved
Outsource1	Type B – Single sided ARRB-LED-G3/B	MC30	App_8933_Ver 3028	Type Approved
	Type B – Double sided ARRB-LED-G3/B	MC30	App_8933_Ver 3022_Test_4	Type Approved
	Type C –Vehicle mounted ARRB-LED-G3/C	MC30	App_8933_Ver 3028	Type Approved
Road Runner Parts	Type A– Single sided AAB-AB	AAB-L0007	V109bCP	Type Approved
	Type B– Single sided AAB-BB	AAB-L0007	V109bCP	Type Approved

(TfNSW COPYRIGHT AND USE OF THIS DOCUMENT - Refer to the Foreword after the Table of Contents)

Superseded by TS 03396.1, 21/09/2022

A3.6 ISLUS (Integrated Speed and Lane Usage Signs)

Supplier	Model / Type	Category
HMI Technologies	ISLUS Type C: AUS-LUS-950	Acceptable

A4 TRAFFIC DETECTION AND MONITORING

A4.1 Vehicle Classifiers and Counters

Supplier	Model / Type	Category
CEOS	TIRTL (IR Smart Classifier)	Acceptable
Excel Technology Group	XL 500 / 1000 LL / LPL / PLP (Inductive Loop Classifier)	Acceptable
Nortech	IR100 (Inductive Loop Classifier)	Acceptable
	IR200 (Inductive Loop Classifier)	Acceptable
TCS Products	Trafficorder Tube Counter	Acceptable

A4.2 Over-speed Detection

Supplier	Model / Type	Category
No listing		

A4.3 Traffic Detector/Traffic Flow Monitor

Supplier	Model / Type	Category
Nortech	IR100 (Inductive Loop)	Acceptable
	IR200 (Inductive Loop)	Acceptable

A4.4 Weigh in Motion Site

Supplier	Model / Type	Category
No listing		

A5 TRAFFIC INCIDENT VERIFICATION

A5.1 TS106 – Video Surveillance Cameras – IP Digitised Analogue Video – Type A

Manufacturer	Model / Type	Category
No listing		

(TfNSW COPYRIGHT AND USE OF THIS DOCUMENT - Refer to the Foreword after the Table of Contents)

Superseded by TS 03396.1, 21/09/2022

A5.2 TS106 – Video Surveillance Cameras – IP Digitised Analogue Video – Type B

Manufacturer	Model / Type	Category
No listing		

A5.3 TS106 – Video Surveillance Cameras – Native IP Digital Video – Type A

Manufacturer	Model / Type	Category
Bosch	IP Camera PoE (Sand Finish) MIC-7502-Z30W	Acceptable
	MIC-7522-Z30x	Acceptable

A5.4 TS106 – Video Surveillance Cameras – Native IP Digital Video – Type B

Manufacturer	Model / Type	Category
Axis	Q1615 MkII	Acceptable
	Q1615 Mk III	Acceptable
Vivotek	SD9366-EH (Speed dome camera)	Acceptable
	SD9366-EH-v2	Acceptable

A5.5 TS106 – Video Surveillance Cameras – Accessories

Supplier	Model / Type	Category
Bosch	DCA Camera Mount- MIC-DCA-HW	Acceptable
Advantech	PoE Injector EKI-2711hpi-AE	Acceptable
Microsemi	PoE Injector PD-9501GI	Acceptable
Delta	120W 48VDC DIN Power Supply	Acceptable
Novaris	Surge Suppressor (Sacrificial) RJ45 Cat6	Acceptable
Ingal EPS	CCTV Pole / Mast	Acceptable
Camera and Lighting Lowering Systems	CCTV Pole / Mast Lowering Device	Acceptable

A6 OTHER APPROVED DEVICES

A6.1 Outdoor Equipment Cabinets

Manufacturer	Model / Type	Category
Logix Engineering	ITS Roadside Cabinets	Acceptable
Aldridge Electrical Industries	VM0466, VM0466 double skin	Acceptable

(TfNSW COPYRIGHT AND USE OF THIS DOCUMENT - Refer to the Foreword after the Table of Contents)

Superseded by TS 03396.1, 21/09/2022

A6.2 Street Lighting – LED Luminaires

Utilisation of any luminaire requires approval of the overarching Street Lighting Design Isolux plan.

Supplier	Name	Optics/Visor	Wattage	Category
Aldridge Traffic Systems	V-Led V216	T5N7PBP	85,175, 265	Acceptable
Sylvania-Schreder	RoadLED Generation 2	SCO	80,175	Acceptable
		AERO	80,175	Acceptable
	RoadLED Generation 3	SCO	250	Acceptable
		AERO	250	Acceptable
	RoadLED Midi	SCO	75, 150	Acceptable
		AERO	75, 150	Acceptable
OrangeTek	IGNIS 1	RMS5	76	Acceptable

Note: A like for like replacement guide of **TfNSW** acceptable LED luminaires is available on request from the ITS Helpdesk.

A6.3 Road Weather Information

Supplier	Model / Type	Category
Manly Hydraulic	Flood Warning Sensor	Acceptable

A6.4 Emergency Telephones

Supplier	Model / Type	Category
Austec Communications Solutions	Teltek TT-275SQ-2100 with TT 308-103 (handset type)	Acceptable
	Teltek TT-275SQ-2100 with TT 308-013 (non-handset type)	Acceptable
KJ Precision	Dritel Series 7 3G Loudspeaking Telephone S73GLSFSSP10	Acceptable
	Dri-Tel Series 7.1 3G Handset Telephone S7.13GHSFSSP10WRMS	Acceptable
Dallas Delta	3G / 4G, PSTN – Solar/Mains power	Acceptable

(TfNSW COPYRIGHT AND USE OF THIS DOCUMENT - Refer to the Foreword after the Table of Contents)

Superseded by TS 03396.1, 21/09/2022

ANNEXURE TS200/B – ITS EQUIPMENT: SUPPLIER DETAILS

Supplier	Address	Phone
A1 Roadlines Pty Ltd	89 Rushdale Street, Knoxfield VIC 3180	03 9765 9400
ACO	134-140 Old Bathurst Road, Emu Plains NSW 2750	1300 765 226
Aldridge Electrical Industries Pty Ltd	U10/16 Sir Joseph Banks Drive, Kurnell NSW 2231	02 9540 9966
Aldridge Traffic Controllers	Unit N, 10-16 South St, Rydalmere NSW 2116	02 8846 5599
Aldridge Traffic Systems	12 – 14 Leeds Street, Rhodes NSW 2138	02 9736 3677
Applied Traffic Pty Ltd	6/42 Smith Street, Capalaba QLD 4157	07 3245 5505
Armitage Group Pty Ltd	31/65 Marigold Street, Revesby NSW 2212	02 9771 2364
ARRB	500 Burwood Hwy, Vermont South VIC 3133	03 9881 1555
Arrow Emergency Systems	17 Bailey Ct, Brendale QLD 4500	07 3881 3302
Austec Communications Solutions	21 Kelly Road, Spring Creek QLD 4343	07 5539 3346
Bambach Wires & Cables	102 Old Pittwater Road, Brookvale NSW 2100	02 9938 5622
Bartco Visual Information Systems	7 Westside Avenue, Port Melbourne VIC 3207	1300 306 106
BOSCH		02 9842-4759
Boval Engineering	13 Coombes Dr, Penrith NSW 2750	02 4728 4909
BRAUMS	Unit N, 10-16 South St, Rydalmere NSW 2116	02 8846 5599
Brightway Electronics	7 Clapham Rd, Regents Park, NSW 2143	02 8102 9466
Cables Accessories (Australia) Pty Ltd	8 Distribution Place, Seven Hills NSW 2147	13 31 22
Camera and Lighting Lowering Systems	835 Industrial Drive, Elmhurst, IL 60126, USA	+1 708 681 4330
Central Infrastructure Sydney	98 Stahls Rd, Oakville, NSW 2765	0415 346 190
Central Weighing Australasia Pty Ltd	PO Box 682, Mooloolaba, QLD 4557	07 5444 2910
CEOS Pty Ltd	3/17 Burgundy St, Heidelberg, VIC 3084	03 9458 4955
Channell	Unit B3-B4, 26 Powers Rd Seven Hills	02 8884 4111
Clearview Traffic / Astucia Australia	28 Freeman Street, Campbellfield VIC 3061	0404 004 162
CNJ Electrical Services	8 Enterprise Drive, Glendenning NSW 2761	02 9625 6822

(TfNSW COPYRIGHT AND USE OF THIS DOCUMENT - Refer to the Foreword after the Table of Contents)

Superseded by TS 03396.1, 21/09/2022

Supplier	Address	Phone
Compusign Pty Ltd	8/10 Clarice Road, Box Hill VIC 3128	03 9890 3400
Controlware		02 9765 8222
Dallas Delta Corporation Pty Ltd	102 Albert Street, East Brunswick VIC 3057	03 9387 7388
Data Signs Pty Ltd	5 Grace Court, Sunshine West VIC 3020	03 9312 2177
Dataplex Pty Ltd	1 Rivett Rd, North Ryde NSW 2113	02 9869 2500
Durham	27 Curtis Road, Mulgrave NSW 2756	02 4587 7011
EJ Australia	32 Enterprise Circuit, Prestons NSW 2170	02 9757 3862
ESDR Electronics	Unit 7/30 Perry St, Matraville	02 9700 1050
Excel Technology Group	18 Staple Street, Seventeen Mile Rocks, QLD 4073	07 3279 4322
Fountain Line	3 Production Ave, Kogarah NSW 2217	02 9587 0232
Global Traffic Equipment Pty Ltd (Giga Signs)	27 Harrington Street, Arundel QLD 4214	07 5631 4444
GM Poles	Unit 10 / 7 Gundah Road, Mount Kuring-Gai NSW 2080	02 9056 5700
Gripset Industries Pty Ltd	30 Park Ave, Woodville North SA 5012	1800 650 435
Hayman Industries	119 Airds Road, Minto NSW 2566	02 8796 2600
Hi-Vis Signs & Safety	40-42 Fitzroy Street, Carrington NSW 2294	1300 857 500
Ingal EPS	2 Caruso Court, Maddington WA 6109	08 9493 9234
J1-LED Intelligent Transport Systems Pty Ltd	10 Production Street, Beenleigh Qld 4207	07 3807 6272
Juvana Pty Ltd	PO Box 5522, Brendale QLD 4500	07 3203 6556
Kenshaw Electrical Pty Ltd	9 Belford Place, Cardiff NSW 2285	02 4903 1500
Kistler Instruments Australia Pty Ltd	U1.23 L1, 202 Jells Rd, Wheelers Hill VIC 3150	03 9560 5055
KJ Precision Engineering	16/388 Newman Rd, Geebung QLD 4034	07 3265 3240
Logix Engineering	28 Boron St, Sumner Park, Brisbane QLD 4074	07 3376 9436
Madison Technology Cables	149 Beaconsfield Street, Silverwater NSW 2128	02 8756 4214 1800 788889
Magnetic Automation Pty Ltd	U1, 24 Prince William Drv, Seven Hills NSW 2147	02 9421 8800
Magnum MFG Pty Ltd	45 Holland St, Northgate QLD 4013	07 3266 1000
Manly Hydraulics Laboratory	110b King Street, Manly Vale NSW 2093	02 9949 0200

Superseded by TS 03396.1, 21/09/2022

Supplier	Address	Phone
Mascot Engineering	37 Tarlington Place, Smithfield NSW 2164	1300 885 295
Mercury Innovation	Unit 1 179/183 Woodpark Rd, Smithfield NSW 2164	0403 997 878
Micro Connect Pty Ltd	2 Tectonic Cr, Kunda Park, QLD 4556	02 8002 1987
Microcom Pty Ltd (MetroCount)	15 O'Connor Close, North Coogee WA 6163	08 9430 6164
Natz Packaging	18/589 Withers Rd, Rouse Hill NSW 2155	02 8824 6995
Navtech Radar Ltd	Home Farm, Ardington, Wantage, Oxfordshire, OX12 8PD, UK	+44 (0)1235 832 419
Nortech Detection Pty Ltd	5/49 Frenchs Forest Rd, Frenchs Forest NSW 2086	02 8977 4047
Novaris	www.control-logic.com.au info@lfsp.com.au	1800 557 705 0427 60 44 44
Outsource1	Unit 2/12-14 Bailey Court, Brendale QLD 4500	1300 852 065
Pioneerz Safety	www.pioneerzsafety.com	07 3488 2159
PJ's Loop Services Pty Ltd	30 Medway Road, Bringelly NSW 2556	02 4774 9747
Powercast Pty Ltd	27/13 Swaffham Road, Minto NSW 2566	02 8731 3301
Quick Turn Circuits Pty Ltd	14 Leeds Street, Rhodes NSW 2138	02 9701 9900
Regal Switchboards	9/28 Vore Street, Silverwater NSW 2128	02 9748 7888
TfNSW Intelligent Transport Systems	219-241 Cleveland Street, Redfern, NSW, 2016	ITS Helpdesk
TfNSW ITS Manufacturing	129A Orchardleigh Street, Yennora NSW 2150	02 9794 4754
Road Runner Parts	42-44 Whyalla Place, Prestons NSW 2170	02 9607 5774
RTS Constructions Aust Pty Ltd	Unit 1, 2 Stoddart Road, Prospect NSW 2148	02 9636 1233
SAGE Automation	Ll 1, 3 Richardson Place, North Ryde NSW 2113	02 9878 9600
Scott Technology Pty Ltd	Unit 1, 28 Lee Holm Road, St. Marys NSW 2760	02 9623 6444
SICK Pty Ltd	Unit 1, 17 Stanton Rd, Seven Hills NSW 2147	03 9457 0600
Sylvania-Schreder (previously Gerard Lighting Pty Ltd)	96-112 Gow Street, Padstow NSW 2211	1300 799 300
TCS Products Pty Ltd	5/24 Vore Street, Silverwater NSW 2128	1 800 506 706
Traffic Control Supplies	59 Moreton Street, Heathwood QLD 4110	07 3278 8022
Traffic Signals Sales & Service Pty Ltd	133 Arcadia Road, Arcadia NSW 2159	02 9655 1307

(TfNSW COPYRIGHT AND USE OF THIS DOCUMENT - Refer to the Foreword after the Table of Contents)

Superseded by TS 03396.1, 21/09/2022

Supplier	Address	Phone
Traffic Tech	2/26 Leighton Place, Hornsby NSW 2077	02 9477 7262
Trantek	West Ryde NSW 2114	02 9808 6166
Tyco Traffic & Transportation	38 South Street, Rydalmere NSW 2116	02 9805 8300
Wieland Engineering	19 Wellington Street, Riverstone NSW 2765	02 9627 4400

(TfNSW COPYRIGHT AND USE OF THIS DOCUMENT - Refer to the Foreword after the Table of Contents)

Superseded by TS 03396.1, 21/09/2022

ANNEXURES TS200/C TO TS200/L – (NOT USED)

ANNEXURE TS200/M – REFERENCED DOCUMENTS

M1 TFNSW SPECIFICATIONS

TfNSW Q	Quality Management System (formerly RMS Q)
IC-QA-TS201	Approval of ITS Field Equipment
IC-QA-TS202	Project Approval of ITS Solutions for Projects
IC-QA-TSxxx	TfNSW “Traffic Systems” (ITS) Specifications 001 to 299