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Installation Commissioning and Maintenance Handbook for the

Tagmaster

Selective Vehicle Detection System

Document Authorisation			
Role	**Name**	**Function**	**Signed**
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Document Record		
Issue Number	**Date**	**Comments/Revision Details**
001	Aug 2013	First Issue
002	Mar 2015	Update part numbers

Contents

Related Documentation

Document Number	Title
667-DZ-46655-000.VSD	Tagmaster Family Tree
667-LP-46655-000-ETC	Tagmaster Illustrated Parts List
667-HE-20664-000	Installation and Commissioning Handbook - Installation Testing (General)
667-PA-46655-000	Tagmaster Global Support Plan
667-HQ-46655-000	Tagmaster Quick Start Guide
667-SD- 46655-000	Tagmaster Test Specification
Doc no. 06-118 06	Tagmaster Gen 4 User Manual

1 Introduction

1.1 Purpose and scope

This handbook gives details on the Installation, Commissioning and Maintenance for the Tagmaster Selective Vehicle Detector system. The handbook does not detail the interface or connection details to a supervising computer system.

The Tagmaster product in composed of two constituent elements;

- Reader
- Tags

The make up and configurations of these two constituent elements is dependent upon the system use. The configuration and make up is described in the appropriate section, according to their relevance to associated activity.

This handbooks detail the following:

- Basic overview of the Tagmaster hardware at module level, at a level necessary for installation, commissioning and maintenance
- Installation Procedure
- Commissioning Procedure
- Routine maintenance / inspection procedures
- Tagmaster faults
- Hardware configuration

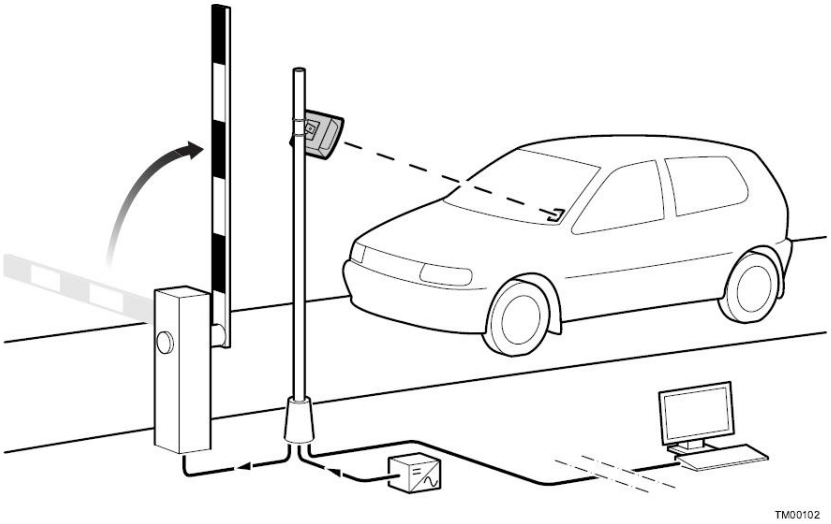
An illustration of the reader and a listed breakdown of the reader, in particular the component parts is provided in section 2.

Please note it is important to check the contents of the shipment for completeness and possible damage. If the contents are damaged, report the circumstances immediately with the carrier and the Tagmaster sales or service organization, contact details provide in section 6. Returns for repair should be carried via the standard Siemens Mobility Traffic Solutions Returns Process.

2 System Overview

The two main elements of a Tagmaster identification system are the Reader and the ID-tags. The system can be augmented by elements such as a host/controlling computer system. The system is designed to control external devices, such as traffic lights and barriers.

Figure 1



The figure above shows the overview of a Tagmaster identification system with a pole mounted Reader, an ID-tag mounted on the inside of a car windscreen, a host computer, a power supply and a barrier.

2.1 Reader Overview

The LR-series Tagmaster readers are devices for reading ID-tags, using 2.45 GHz frequencies. In addition to reading tags some readers also have the capability to write information to tags. The reader has built-in antennas for communication with ID-tags, as well as various serial interfaces for communication with a host computer.

The Tagmaster reader is the system's primary component. The system is produced in Sweden by Tagmaster. Tagmaster manufacture, configure and distribute a series of readers of varying complexity. The two variant of Tagmaster reader provided for installation and subsequent support by Siemens are:

Product Name	Detection Range	Siemens Part Number
LR-6	10m	667/9/99400/010
LR-6 XL	14m	667/9/99400/014

As indicated the primary difference between these two readers is the read range of the tags, with a nominal range of 10 metres and 14 meters respectively.

The Readers are designed for above ground installation. In most instances the Reader will be mounted to an existing, standard 4 metre traffic pole. However, a Universal Pole Mounting Kit will allow fitting on poles between 70mm and 140mm diameter.

Power input and relay activation output signal can be made using a single 4 core cable, this allows the use of a single cable entry to provide these functions. To allow updates and reader diagnostics to be carried efficiently, following installation, it is advisable to provide a remote connection to the Reader's Ethernet port. An Ethernet cable can be run to a suitable enclosure, where the associated Tagmaster power supply may also be housed. The reader is powered with a voltage ranging from +10 to +30 V DC.
The LR-series reader is designed for configuration with a wide range of input and output devices, including relays, isolated I/O, indicators, and a buzzer. The Reader has several communication alternatives and is easily integrated using the following communication interfaces:

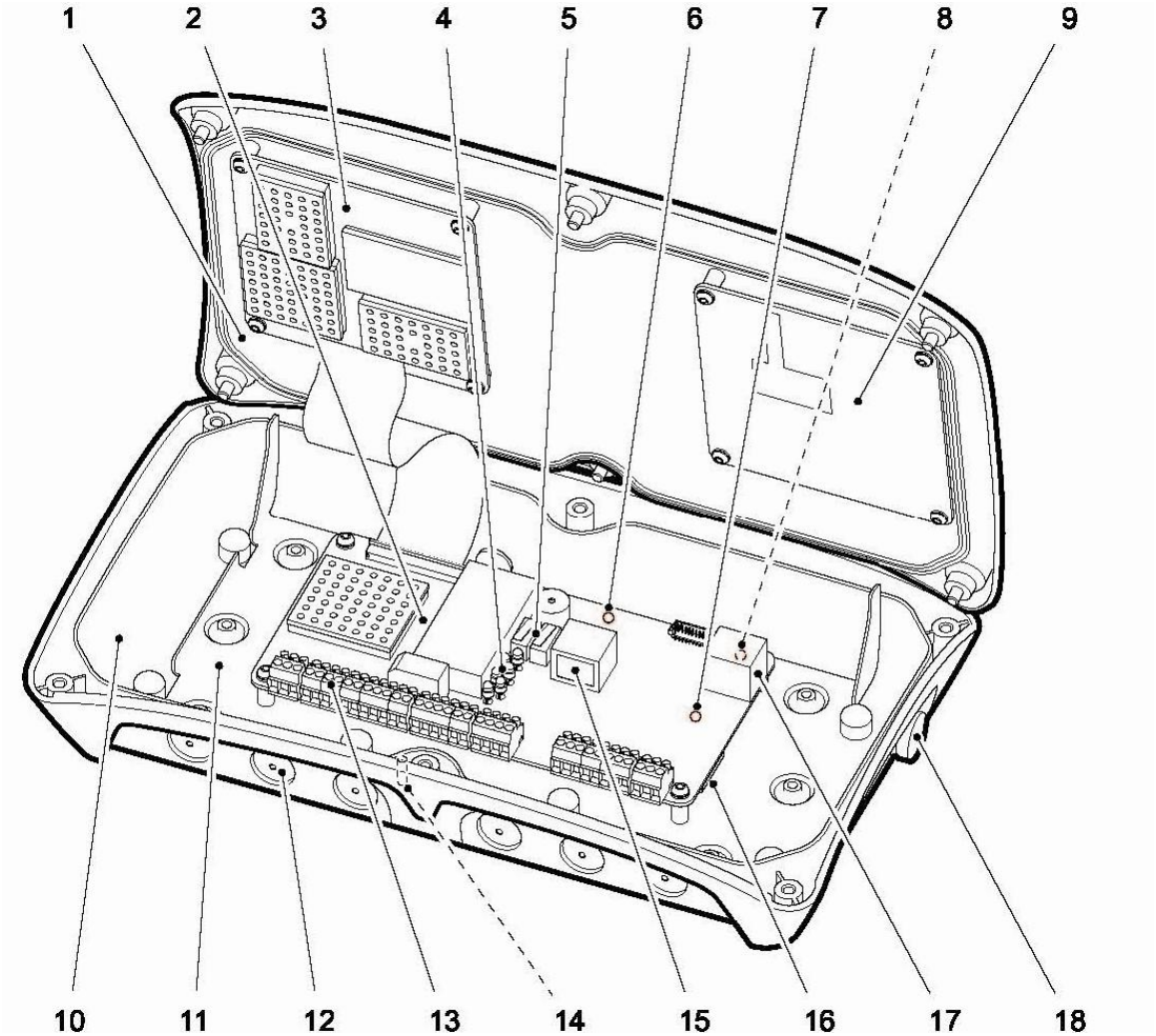
Ethernet
RS232
RS485
USB Host
Wiegand/Mag-stripe
Micro SD memory card

Note: the Readers can be configured with varying levels of application software. The application software loaded may not be designed to support the use of these interfaces, consult corresponding software manual for further information.

Reader Components (please refer to figure 2)

1 Lid
2 Controller board
3 RF-unit
4 Externally-visible indicators
5 Tamper switches
6 Red system status indicator
7 Green system status indicator
8 Yellow system status indicator
9 TX-unit
10 Enclosure base
11 Chassis
12 Knock-out for cable entry
13 Terminal blocks
14 Ground screw
15 Ethernet connector with link state and activity indicators
16 Micro SD slot
17 USB host connector (intended for internal expansion)
18 Pressure balance membrane

Figure 2

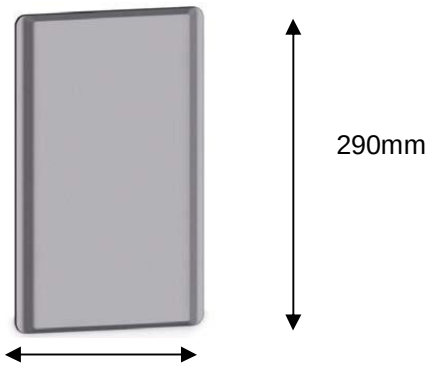


2.2 Tag Overview

An ID-tag is a device configured with ID information that can be read at a distance by the reader. The reading range depends on; the type of the reader, the ID-tag, the settings of the reader, and environmental conditions. ID-tags vary slightly in size and shape but all are of a compact designed, suitable for mounting discretely within a vehicle. Each ID-tag has its own unique number and it is possible to read many ID-tags concurrently. A lithium battery is used in the ID-tag to achieve a high communication speed and a long reading range.
Siemens advocate the use of three types of tags; MarkTag MaxType Tamper Evident Tag, MarkTag Classic Credit Card Tag and the MarkTag Memory Tag. Please refer to the illustrated Parts Catalogue detailed in the document reference section. Reader set-up is detailed in the commissioning section but fundamentally maximum communication range is achieved when the front surface of the ID-tag is parallel with the front side of the reader. If the ID-tag is misaligned, relative to the front side of the reader, the communication range will be reduced.

Figure 3

Example Tag – The Tagmaster Classic



Product Name	Siemens Part Number
MarkTag Classic Credit Card Tag	667/9/99401/000

2.3 Environmental Considerations

The LR-series reader is a device for reading ID-tags using 2.45 GHz frequencies. In addition to reading, some readers also have the capability to write information to ScriptTags (see separate data sheet for specific capabilities of the reader). The reader has built-in antennas for communication with ID-tags as well as various serial Interfaces for communication with a host computer.

2.3.1 Electromagnetic Interference

Industrial noise is typically present in the kHz and low MHz frequency band. The LR series is using 2.45 GHz frequencies, so typical industrial noise will not affect the communication.

2.3.2 Electromagnetic Interference in cables

By using specified cables, proper shielding, and grounding as well as selecting a suitable communication interface, optimum communication reliability is ensured.

2.3.3 Lightning

In order to protect the reader from possible effects of lightning, additional surge protection on the inputs and outputs may be required.

2.3.4 Temperature

For most applications, normal atmospheric cooling is sufficient for the reader. However, if heat is generated close to the reader, the use of forced cooling or heat shields should be considered.

3 Technical Data

The table immediately below details the technical specification, LR 3 series details provided for reference.

Description	Specification
Reading Range (LR-6)	0 – 6 m
Reading Range (LR-3)	0 – 5 m
Power Supply	+10 to + 30 VDC
Power Consumption	4.5 W
Current Consumption	175/350 mA @ 24/12 VDC
Radio Frequency Range	CW: 2436. 1-2464.1 MHZ, Channel 5 – 97 FHSS*:2400 – 2483.5 Mhz
Tag Data Speed	Low 4 kbps and high 16 kbps
Ethernet	10/100 Mbps
Serial Output	RS232, 2 wire or 4 wire RS485. Up to 115.2 kbps

Description	Specification
Operating Temperature Range	-30^{o} C to + 60^{o}C
Sealing	IP 65

Description	Specification
Size (LR-6)	290 x 165 x 56 mm
Power Cable Entry Fitting (LR-6)	8 cable entry fitting holes diameter 16mm
Weight (LR-6)	0.95kg

Material	plastic

4 Installation

This section describes the procedure of installing the reader and tags, including; mounting the reader, installing the necessary cables, installing the power supply and performing a commissioning. Installation engineers are advised to read through this entire section before performing installations.

4.1 General Requirement

To provide an example of a typical Siemens Tamaster installation, the following requirements and installation sequence has been compiled to provide Installation Engineers with a basic reference for site surveys and installations. Please note, this sequence is provided as a guide, modification and enhancement of this process will be carried out based on the actual installation requirements and the site survey.

4.1.1 Site Survey

During the Presale/Tender phase of a prospective installation a site survey, to ascertain the optimum locations for; readers, cable runs and power supply, will be carried. The type of ID-tags to be used will be specified during a project planning phase, based on considerations of communication distances and movement speeds.

4.1.2 Typical Installation Equipment Inventory

Please consult the illustrated part catalogue detailed in the document reference section for details of individual parts as indicated below. Those parts not detailed in the illustrated parts catalogue are detailed here. Please note reference to the site survey and project plan should be made before a full parts inventory associated with site installations is compiled.

- Tagmaster readers (illustrated parts catalogue)
- Universal Brackets (illustrated parts catalogue)
- Reader to Pole Top Cap assembly connection cable (Cat 5e cable RS Components part number 103 499 or similar and possibly from alternative supplier)
- 4 core (2 pair) screened cable (Siemens Part Number 998/4/85263/001)
- Power supply (illustrated parts catalogue)
- Cabinet Terminal Strip (Siemens Part Number 667/1/04099/000)
- Tagmaster Test Tag (illustrated parts catalogue)
- 22mm pole gland (RS Components part number 669-4689 or from alternative supplier**)**

4.1.3 Tools

The following tools are necessary for installation:

- Screwdriver, Torx T20
- Screwdriver, 2.5 mm flat-bladed
- Tamtorque Tool TTBP50BG RS 365-2395
- Short metal tube, diameter 16 mm (knocking out reader cable blanks)
- Hammer
- Side cutter
- Wire stripper/RG45 stripping tool
- RG45 Crimping tool
- Standard Engineer's tool kit

- Drill and drill bit (installation of 22mm pole gland)

4.2 Mounting the Reader

The reader will typically be installed on a traffic signal pole. With reference to figures 3 and 4, mount the reader to the pole using a universal mounting bracket. A slotted plate secures to the rear of the reader. A trapezium shaped plate on the universal bracket slides into the slotted plate and is secured by two grub screw. The universal bracket is secured to the pole by either utilizing the existing holes in the bracket and securing directly to the pole or modifying the bracket so that a pole mounting kit can be used.

Figure 3

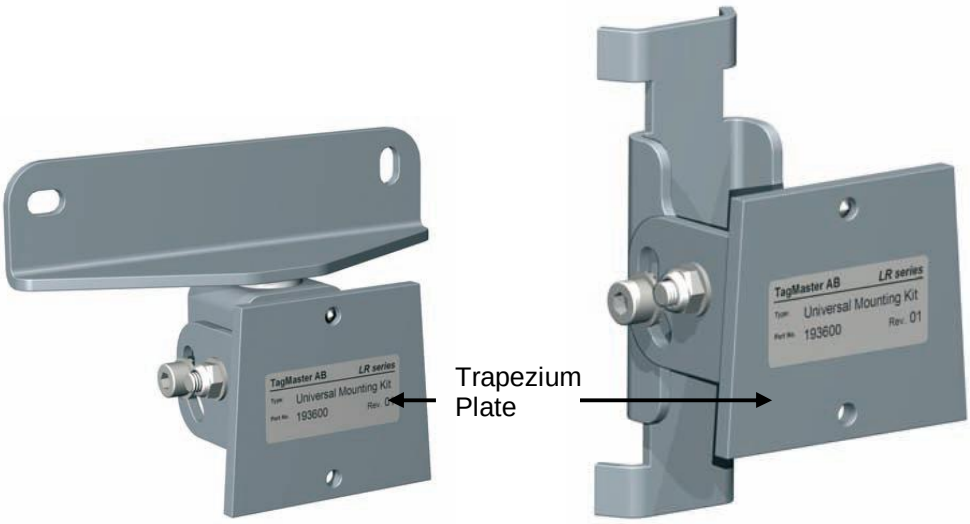
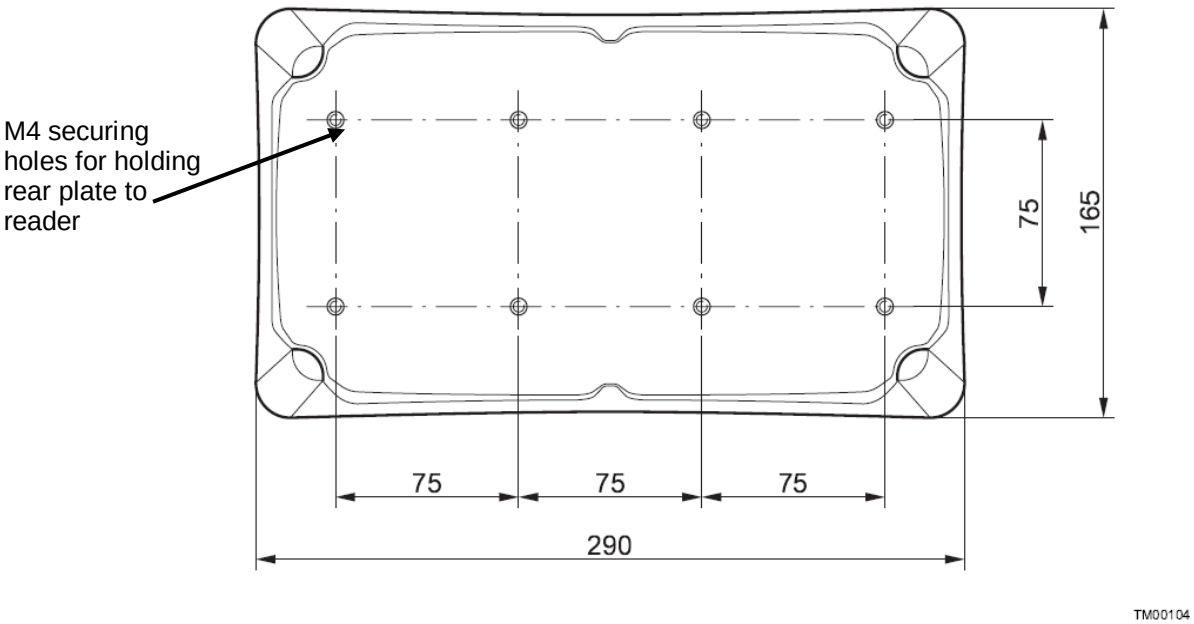


Figure 4

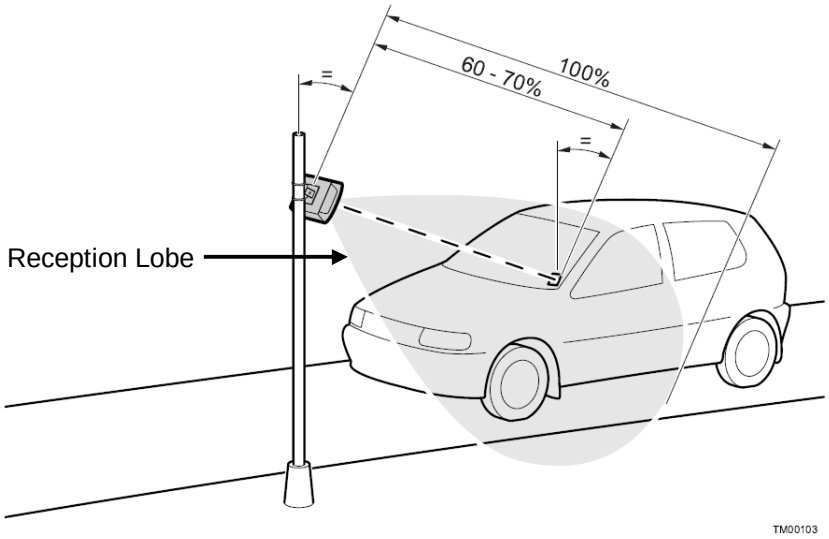


Where possible mount the reader in a horizontal position. In exceptional cases, the reader can be mounted in a vertical position.

4.2.1 Orientating the Reader

Successful reception of a tag signal, as a vehicle approaches a barrier or traffic junction, relies on the tag entering the reception lobe of the reader. With reference to figure 5, the reception lobe protrudes forward from the reader in a tear drop shape, 14metres for LR6-XL reader and 10metres for the LR6 reader. At initial installation the reader should be orientated so that the centre of the lobe points in the general direction of the required reception direction.
Mounting holes are sealed at the base, so the fixing screw must not extend more than 8 mm into the reader.
Note: Do not drill any additional holes in the enclosure, as that would affect the sealing Specifications

Figure 5



4.3 Cable Installation

4.3.1 Cable Installation General

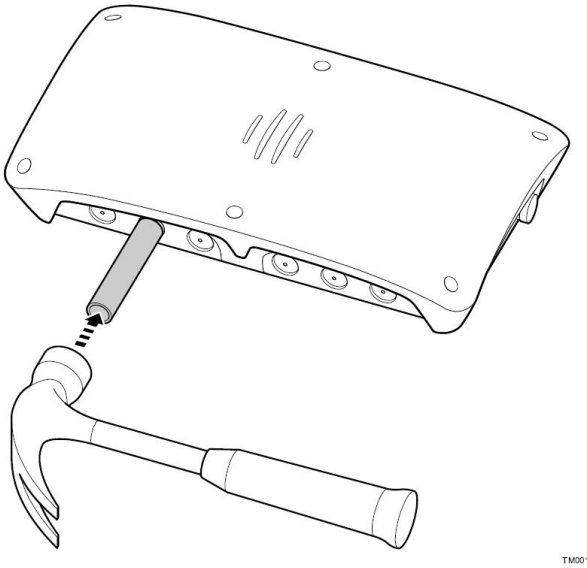
In a standard Tagmaster installation two connections will be established, one between Barrier/Traffic I/O output signal to the controller circuit, and one to between power supply and reader. In addition it is strongly advised that a LAN connection to a ground level enclosure is also established between reader and a remote position. This will allow remote configurations and updates to be carried out following installation; removing the requirement to work at height and the necessity for access arrangements. Cables are not supplied with the LR-series. All cables must be shielded and suitable for the installation environment, for instance at outdoor environment. Use flexible cables with stranded wire. The terminal blocks used are Phoenix, type PT 1.5, which allow for a 6 core cable cross sectional area 1.5 mm². Stranded wires must be fitted with a ferrule before being inserted in the termination blocks.
The cable for the RS485 interface must be a twisted pair cable and conform to the EIA RS485 standard.
A category 5 (CAT5e) cable is required for the Ethernet connection.

4.3.2 Reader Cable Connections

The reader is provided with knock-outs for incoming cables on both the horizontal and vertical edges. First and foremost use the cable entries on the horizontal edge of the reader, even if the reader is mounted in a vertical position.
Note: The reader is certified for an installation of maximum four separate incoming cables. Do not exceed this maximum number.

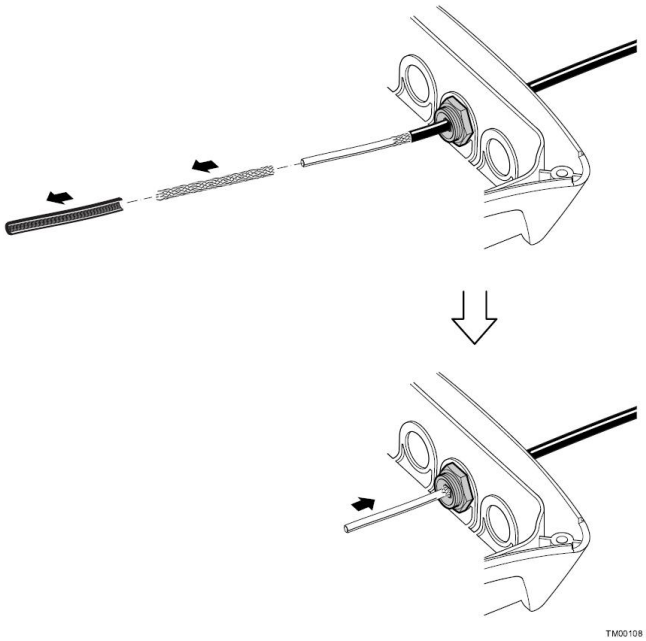
1. Use a short 16 mm-diameter tube to remove the desired knock-outs. Using a hammer as illustrated in Figure 6, tap the tube sharply.

Figure 6



2. Open the Reader using a Torx screwdriver.
3. Insert metal cable glands into the holes (gland provided with the reader).
4. Cut the power cable to a suitable length and pull it through the cable gland.
5. Connect the shield of the power cable to earth at the power supply end. The shield functions as earth connection for the Reader.
6. Measure enough length of the cable to reach to the pole termination block, predetermined termination block or remote power supply.
7. Strip the outer insulation and pull back the cable until the cable shield makes contact with the earthing fingers inside the gland.
8. Tighten the cable gland around the cable.

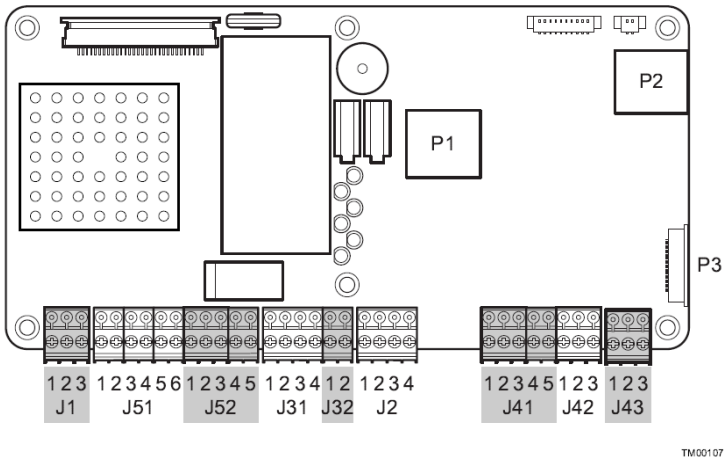
Figure 7



9. Cut away excessive length of the cable shield, strip the ends of the conductors, and crimp a ferrule onto the stripped end of each conductor.
10. Connect the power cable to group J31 according to connection scheme detailed below.
11. Make sure that the power source is turned off and connect the other end of the power cable to the power source.

12. Connect the relay activation cables in the same manner. The Ethernet cable will be plugged into Ethernet, Connector P1.

Figure 8



Note: It is possible to attach or remove the terminal block connectors inside the reader for more convenient connection of the cables.

The terminals are grouped as specified as below.

4.3.2.1 Relay Output Group J1

The controller board has one relay output for heavy duty loads.

Pin	Signal	Description
1	RCOM	Common Terminal or Relay
2	ROPEN	Connected to RCOM when relay is open
3	RCLOSE	Connected to RCOM when relay is closed

4.3.2.2 Wiegand/Mag-Stripe, J2

The controller board has an access control interface that supports both Wiegand and Mag-stripe protocols.

Pin	Signal	Description
1	D0	Wiegand 1 Signal
2	D1	Wiegand Signal
3	CL	Card Load Signal
4	GND	Ground

Pin	Signal	Description
1	CLK	Mag-Strip Clock Signal
2	DATA	Mag-Strip Data Signal
3	LOAD	Card Load Signal
4	GND	Ground

4.3.2.3 Power Supply Group J31

Pin 1 is internally connected to pin 3 and pin 2 is internally connected to pin 4. The purpose is to make it possible to feed power to any peripheral equipment. Use pins 1 and 2 for power supply connection.

Pin	Signal	Description
1	SPL	Positive DC Supply Input
2	RTN SPL	Negative DC Supply Input
3	SPL	Positive DC Supply Input Internally Connected to Pin 1
4	RTN SPL	Positive DC Supply Input Internally Connected to Pin 2

4.3.2.4 External Tamper Switch Group J32

To protect the Reader from tampering, there are two mechanical tampering switches which break if the cover is opened. One tamper switch is connected internally to the controller board and will generate a software alarm when broken, and the other is an external tamper switch interface which can be connected to an external alarm loop.

Pin	Signal	Description
1	TAMP A	When the tamper switch is open, TAMP A and TAMP B are connected
2	TAMP B	

4.3.2.5 RS485 Serial Communications Interface Group J41

The controller board has one RS485 serial interface for both 2-wire and 4-wire communication. RS485 supports multi-drop serial networks. The communication can be in both full duplex (4-wire) and half duplex (2-wire).
Note: If the installation requires long cables or high data speeds it may be necessary to use termination.

Pin	Signal	Description
1	TX+	Transmitted and received data, to and from HOST
2	Tx-	
3	GND	Ground
4	RX+	Received Data to Reader from HOST

5	Rx-	

Pin	Signal	Description
1	TX+	Transmitted and received data, to and from HOST
2	Tx-	
3	GND	Ground
4	NC	Not Used
5	NC	

4.3.2.6 RS232 Serial Communications Interface Group J42

The controller board has one RS232 serial interface.

Pin	Signal	Description
1	TX	Transmitted Data from Reader to HOST
2	RX	Received Data to Reader from HOST
3	GND	Ground

4.3.2.7 Service Interface Group J43

The service interface is used for maintenance and configuration of the Reader. Do not use the service interface as a regular system interface.

Pin	Signal	Description
1	TX	Transmitted Data from Reader to HOST
2	RX	Received Data to Reader from HOST
3	GND	Ground

4.3.2.8 Isolated Input Group J51

The Reader has three isolated optocoupler inputs which are protected from noisy environments.

Pin	Signal	Description
1	IN 1A	Input Signal 1
2	IN 1C	Input Reference 1
3	IN 2A	Input Signal 2
4	IN 2C	Input Reference 2
5	IN 3A	Input Signal 3
6	IN 3C	Input Reference 3

4.3.2.9 Isolated Output Group J52

The reader has two collector outputs

Pin	Signal	Description
1	IN 1A	Input Signal 1
2	IN 1C	Input Reference 1
3	IN 2A	Input Signal 2
4	IN 2C	Input Reference 2
5	IN 3A	Input Signal 3
6	IN 3C	Input Reference 3

4.3.2.10 Ethernet Connection P1

An RJ45 connector labeled P1, with two internal indicators, is provided for Ethernet connection. The clip for detaching the cable faces upwards from the controller board surface to allow mid-board mounts.
The Ethernet connector has eight pins and the wire scheme is based on the T568A standard. The pins are wired straight through the cable, that is, pins 1 through 8 on one end are connected to pins 1 through 8 on the other end.
Note: The RJ45 connector will not pass through the cable gland. Pass the Ethernet cable through the cable gland, before crimping the connector on the cable.

4.3.2.11 USB HOST Connector P2

USB devices are connected using a standard USB type A connector.

4.3.2.12 Micro SD Memory Card Interface Socket P3

A standard micro SD memory card socket is used. The card socket is placed on the underside of the controller board.

4.3.3 Cable from Pole Top Termination to Remote Enclosure

Prior to installation a site survey will be carried out. This site survey will reveal; cable runs, termination strategy and power supply enclosure locations. The following information assumes that the reader is to be installed on a standard traffic signal pole. A standard Tagmaster installation requires two core to provide power from a remote enclosure to the pole Top Cap assembly terminations. A core pair is also required to return the barrier/traffic signal activation signal from the reader to the barrier/traffic controller. Screened four core detector cable can be used to carry out this function. If four spare cores are available these can be utilized for this function, however, they should be labeled as designated for Tagmaster use. The relay output from the Tagmaster reader and the power supply to the reader should be made available on a Standard termination terminal strip, at the remote enclosure. Note, an addition terminal strip may be required for to carry out this termination.

A 22mm gland will be installed on the pole to allow the cable from the Tagmaster reader to pass through the pole and be terminated at the Top Cap assembly terminals.

There is often a requirement to update tags that are authorised to activate the Tagmaster reader. In order to make this process as efficient as possible it is strongly advised that a LAN cable, from the reader's LAN port, is routed back to the remote enclosure, housing the power supply or other remote position.

The LAN cable will be CAT 5e cable, terminated with RG45 connectors. This cable will be routed directly from the reader to the remote enclosure, via the pole gland but without passing through pole Top Cap assembly terminals.

4.4 Power Supply Installation

The tagmaster reader's power supply will be housed in a remote enclosure. The part number for the appropriate power supply should be sought from the illustrated parts catalogue, detailed in the document reference section. Mains power for the power supply will be taken from the enclosure auxiliary fuse and output power DC supply made available at a terminal strip adjacent to the reader's supply cable.

Figure 9
Tagmaster reader power supply

5 Commissioning and System Verification

5.1 General requirements

After completing the installation, as described in previous sections, carry out the Commissioning and System Verification Procedure.

To carry out the commissioning the In Commissioning Engineer should be equipment with the following items;

- Two reference tags, used on the commissioned system.
- Voltmeter
- Laptop Computer
- Tagmaster LR Series User Manual
- Tools set as detailed for installation

Ensure:-

- there are no metal objects between or close to the reader.
- the cables, reader and termination have not been disturbed, since the installation procedure was carried out.

5.2 Power Up and Voltage Check

Note, the following procedure should only be carried out by trained and qualified personnel.

Gain access to the remote enclosure, housing the reader's power supply. Ensure mains power is to the power supply is isolated and disconnect the output terminals.. Switch on the auxiliary main power. Measure the output voltage from the reader's power supply. Ensure that the output voltage is within the required ranges as stated in the Technical Specification section. Switch off the mains power to the reader's power supply and reconnect the output cores to the reader. Switch on the power supply and measure the output power supply to the reader. Ensure that the output voltage remains within the required tolerances.

Gain access to the reader and open the tagmaster reader's lid. Measure the power supply voltage at the input terminals of the reader. Ensure that the voltage level is within the required tolerances.

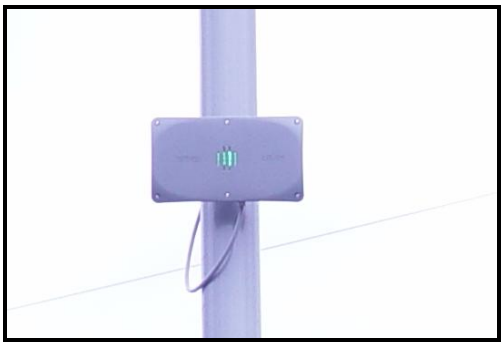
5.3 Programming reference tags

With reference to the Tagmaster Gen 4 User Manual (see document reference section) connect a laptop computer to the Tagmaster reader and with the 'read tag' radio button checked, present the two reference tags to the Tagmaster reader. Transfer the two tag ID's to the authorised ID list and save the reader's settings. With further reference to the GEN 4 Tagmaster user manual and using the appropriate menu, configure the reader to provide a visual indication when a tag is presented to the reader.

5.4 Reader Orientation and alignment

With reference to figure 5, in order that the reader can detect the presence of an authorised tag at the appropriate range and in the correct area, the reception lobe direction should be optimized. Using the adjustment screws on the universal mounting bracket adjust the reader to point in the direction required for optimum reception of the reception lobe. The reader's lid, which houses the reader's antenna, should be close while this activity is carried out. This activity most efficiently carried out by two engineers. One engineer will make the physical adjustment to the reader while the second presents the reference tag to the reader. An indication that a tag has been read will be a red or green LED, illuminated on the front of the reader; red for unauthorised and green for authorized activation.

Figure 10



Monitor the relay output connection and ensure that the output signal is activated when an authorised tag is presented.
Program the appropriate number of tags for the end users needs.
Secure the front of the reader and all enclosures.
Connect the relay activation connections at the remote enclosure to the output circuit and ensure that the barrier/traffic signal is activated.

5.5 Tag Installation

As detailed in the general introduction, Siemens advocate the use of three type of Tagmaster reader activation Tag. Each of the three types of Tag can be supplier with Tag holders. Please refer the Tagmaster Illustrated Parts Catalogue, detailed in the document reference section. The make, model and configuration of vehicle into which Tags will be installed will vary. The general requirement, when positioning a tag within a vehicle, is to ensure that the tag is presented to the reader 'line of sight' to the reader. Please refer to figure 11 for tag example location.

Figure 11

6 Maintenance

6.1 General maintenance philosophy and introduction

For full information on the maintenance periodicity, tools and other support requirement, such as spare support, please refer to the Tagmaster Global Support Plan, detailed in the document reference section.

This maintenance section describes the maintenance procedures for the reader and how to solve the most common problems encountered during installation or in service.

Repair support is subject to individual support contracts, however in general, first line repair support for customers is achieved by phone support, via the Siemens Contact Centre. Second line support to customers will be provided by Field Service attending site. For third line support Field Service will be supported from Siemens Mobility Traffic Solutions Head Quarters, please refer to section 7 for contact details.
Reader repair will be achieved by full reader swop out. With reference to the Tagmaster Gen 4 User Manual, authorized Tag lists should be maintained independent of the reader to ensure that this activity can be carried out without loss of data.

Please note, Individual components with the reader are not designed to be replaced at the installation site. Please note, any such unauthorized alterations to the reader will invalidate the warranty.

6.2 Annual Periodic Inspection

The following activities will be carried out at the annual period inspection Please refer to Appendix 1 for check list;

- Main Supply Voltage check
- Tagmaster VDC Power supply Voltage check at Power Supply Output
- Tagmaster VDC Power Supply Voltage Check at Reader
- Read activation and Reception Lobe area check
- Relay activation check
- Down load of Authorised Tag list to memory stick
- Reader and remote enclosure termination check
- General installation deterioration check
- Review of tag requirements

6.3 Trouble Shooting

The following table describes the most common problems encountered during installation as well as adequate solutions.
Three system status indicators on the controller board inside the Reader show the status of the unit as illustrated in Figure 2. The table below explains the different indicator meanings

Colour	Mode	Indications
Yellow	On	Power On
	Off	Power Off
Green	Flashing	System SW running
	Initially On	System SW loading
	Persistently On	System SW running
	Off	System SW fault
Red	Flashing Quickly	HW initiated and running
	On	Initiation process
	Off	HW not initiated

The link state indicator and the activity indicator on the Ethernet connector inside the Reader show the status of the network communication as explained in the table below.

Colour	Mode	Indications
Green	On	100 Mbps Connection
	Off	10 Mbps Connection
Yellow	Flashing	Present Communications
	On	Link Exists
	Off	No Communications

The following table describes the most common problems encountered during installation and proposed solutions.

Problem	Solution
Yellow system status indicators is off	Check the power supply
Green system status indicators is on or off	Switch off the power supply, switch it on again, and wait 30 seconds. This can be done by pulling the J31 terminal block off the board and putting it back again. If the Reader fails to start again, contact TagMaster support.
Red system status indicator is off	Switch off the power supply and switch it on again. This can be done by pulling the J31 terminal block off the board and putting it back again. If the Reader fails to start again, contact TagMaster support.

Yellow Ethernet indicator is off	Check the network connection

7 Contacts within Technical Support and Tagmaster

For any support related questions, queries or problems please contact the Technical Support Department, Siemens Mobility, Traffic Solutions, Sopers Lane, Poole, BH17 1ER.

Departmental contacts are as follow:

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8 Appendix 1 Periodic Inspection Check Sheet

Check Number	Activity	Completion Status and Date
1	Main Supply Voltage check	
2	Tagmaster VDC Power supply Voltage check at Power Supply Output	
3	Tagmaster VDC Power Supply Voltage Check at Reader	
4	Read activation and Reception Lobe area check	
5	Relay activation check	
6	Down load of Authorised Tag list to memory stick	
7	Reader and remote enclosure termination check	
8	General installation deterioration check	
9	Review of tag requirements	
10	Tagmaster VDC Power supply Voltage check at Power Supply Output	