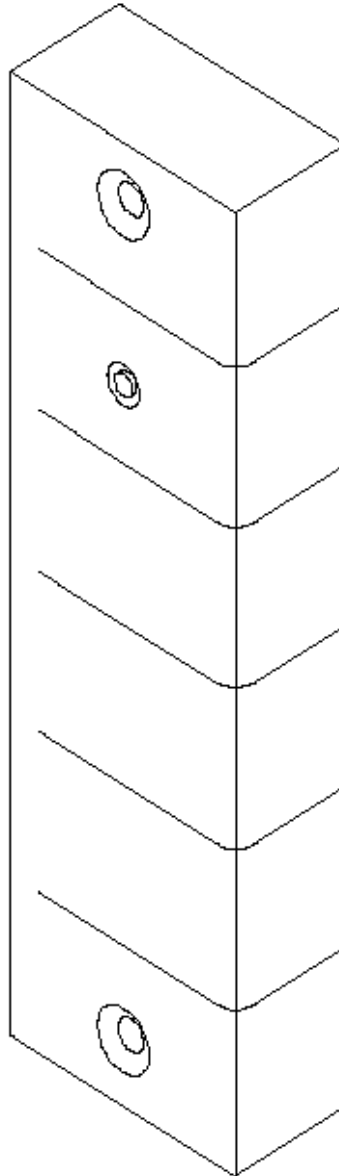


# Vandal Resistant Proximity Reader



## Installation Instructions

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**TDSi**  
[www.tdsi.co.uk](http://www.tdsi.co.uk)

# Specifications

Operating Temperature	-20°C to +55°C
Dimensions	38 x 120 x 17 mm
Power	10 - 14V DC 60mA Max
Read Range	Up to 5 cm
Operating Frequency	126 KHz (nominal)

# Part Numbers

TDSi Vandal Resistant Proximity Reader	5002-0352
Plain White Proximity Card	4262-0245
White Proximity Card + ISO Mag-Stripe	4262-0247
Proximity Key Tag	4260-0246

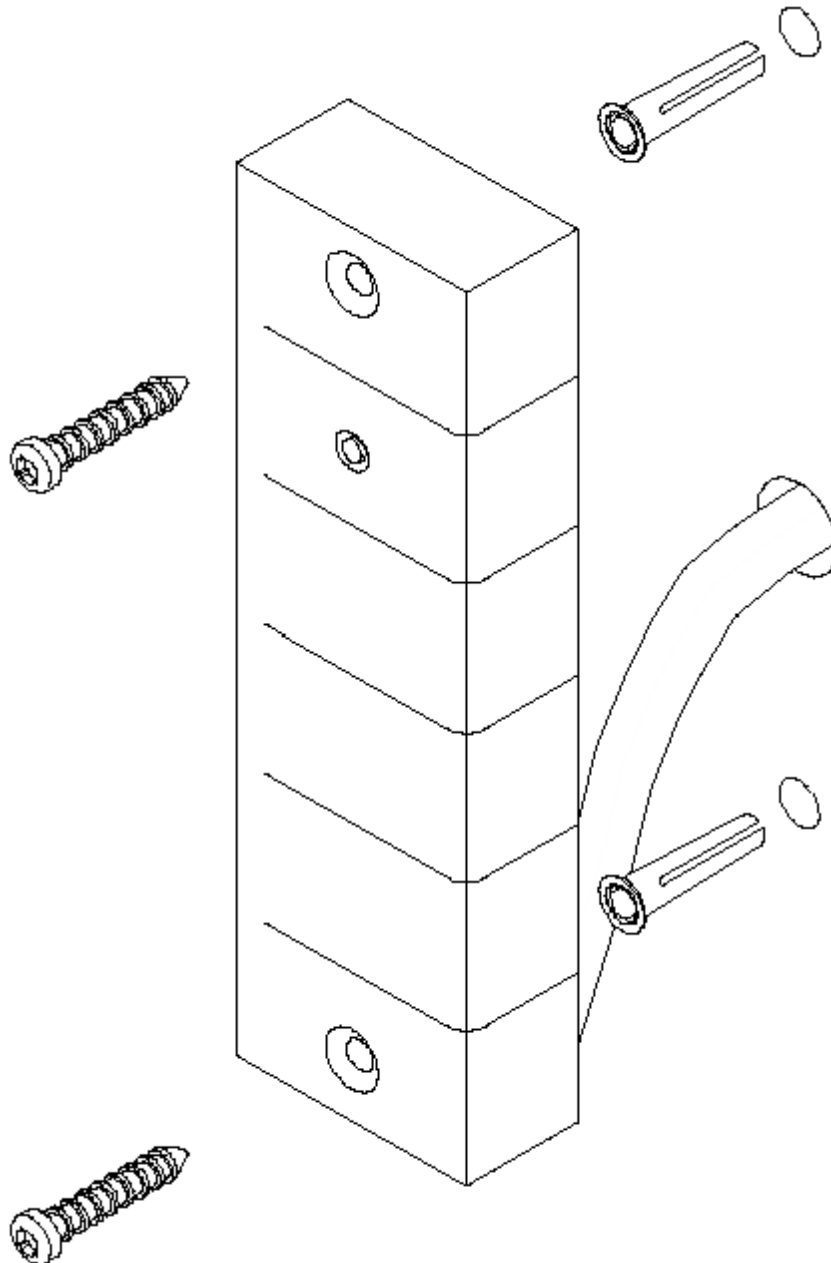
# Installation

## Mounting & Assembly

Proximity readers should be mounted in a location away from noise sources such as computer monitors, TV sets, mains wires and other proximity readers. Note also that any nearby metal will result in a reduction in card read range. It is good practice, before choosing a final location, to connect the reader and test for acceptable read range.

### Important:

In order to comply with CE EMC regulations, TDSi Proximity readers must be mounted at least 1m apart.



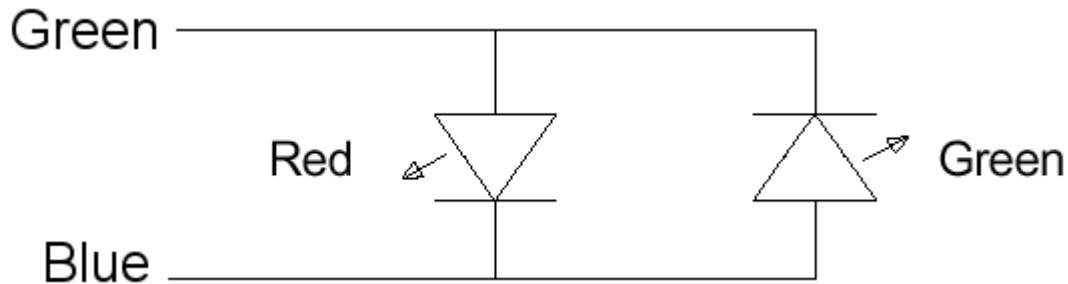
Mark and drill holes in the mounting surface for the screws and cable.

Feed cable through hole in wall and secure reader to wall as shown with security screws provided. A security screwdriver is included in the fixing kit for fastening security screws.

# Wiring and Connections

Colour	Function	Notes
Red	Power	Connect to 12V DC regulated
Black	0V	Connect to 0V
Green	LED -ve	Forward voltage: Red light
Blue	LED +ve	Reverse voltage: Green light (see diagram)
Yellow	Mag data	
White	Mag clock	
Brown	Do not connect	Tie back and isolate, do not cut off
Violet	Do not connect	Tie back and isolate, do not cut off
Orange	Do not connect	Cut off if exposed
Screen	Ground	Clamp to PSU Earth Chassis plate

## LED Indicator



## Cable length

Cable length can be extended by using shielded 6-core cable. The maximum cable length is dependant on a number of factors. Guidance is given overleaf for various installation configurations in normal office environments. The distances cannot be guaranteed as performance depends on the amount of radiated electrical "noise" in the vicinity of the cable.

# Connection to System 1

ACU Connection	Wire Colour	Designation
7	Red	+12V
8	Black	0V
13	White	Clock
15	Yellow	Data
12	Green	LED +5V
14	Blue	Indicator LED

NOTE: Enable Mag-Stripe Swipe reader (NOT Proximity) option using MB614.

## Maximum Proximity Reader cable lengths into System 1

Cable distance can be extended using shielded multicore cable up to a maximum of 150m.

Conductor resistance in the 0V wire must be less than 4 ohms.

Using **7/0.2mm<sup>2</sup>** cable, this implies a maximum cable length of **40m**.

Using **16/0.2mm<sup>2</sup>** cable, this implies a maximum cable length of **100m**.

The distance can be increased to 150m maximum using 16/0.2mm<sup>2</sup> cable with 2 cores carrying the 0V connection.

# Connection to System 2

Reader1	Reader 2	Wire Colour	Designation
48	21	Red	+12V
47	20	Black	0V
46	19	White	Clock
45	18	Yellow	Data
44	17	Green	LED +5V
43	16	Blue	Indicator LED

**NOTE 1:** Enable Mag-Stripe Swipe reader (NOT Proximity) option in READER TYPE sub-menu in ACU FUNCTIONS menu.

**NOTE 2:** Ensure correct positioning of Reader Technology jumpers on top circuit board of System 2: positions 7 and 9; i.e. Mag-stripe position NOT Proximity.

## Maximum Proximity Reader cable lengths into System 2:

Cable distance can be extended using shielded multicore cable up to a maximum of 150m.

Conductor resistance in the 0V wire must be less than 15 ohms.

Using **7/0.2mm<sup>2</sup>** (or thicker) cable, this implies a maximum cable length of **150m**.

# Connection to System 4 Digital

Reader 1	Reader 2	Reader 3	Reader 4	Wire Colour	Designation
48	21	21	21	Red	+12V
47	20	109	120	Black	0V
46	19	107	118	White	Clock
45	18	102	113	Yellow	Data
44	17	108	119	Green	LED +5V
43	16	105	116	Blue	Indicator LED

**NOTE 1:** Enable Mag-Stripe Swipe reader (NOT Proximity) option in READER TYPE sub-menu in ACU FUNCTIONS menu.

**NOTE 2:** Ensure correct positioning of Reader Technology jumpers on top circuit board of System 2: positions 7 and 9; i.e. Mag-stripe position NOT Proximity.

**NOTE 3:** Link pin 104 to 108 (Reader 3) and pin 115 to 119 (Reader 4) to enable Mag-stripe format (NOT Proximity).

## Maximum Proximity Reader cable lengths into System 4:

Cable distance can be extended using shielded multicore cable up to a maximum of 150m:

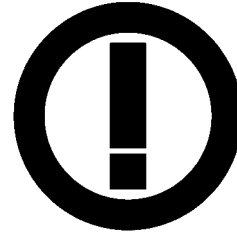
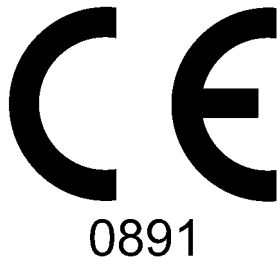
**Reader inputs 1 & 2:** Follow recommendations for System 2.

**Reader inputs 3 & 4:** Follow recommendations for System 1

## Caution – Stand-alone System4 installation

In a System4 installation that is stand-alone (i.e. not connected to computer or printer), electrical noise on the RS232 input (Pin 57) may interfere with any proximity reader(s) connected as Reader 3 or Reader 4. To avoid this, set the internal communications jumper links for RS232 communications (positions LK2 and LK5) and also link Pin 57 (RS232 RX) to Pin 58 (Signal Ground).

# Compliance Notices - 1



## Compliance with CE regulations

The equipment is designed, tested and declared to conform to the following CE directives:

- 89/336/EEC - EMC Directive
- 93/68/EC - Low Voltage Directive
- 1999/5/EC - R&TTE Directive

## Limitations on intended operating environment

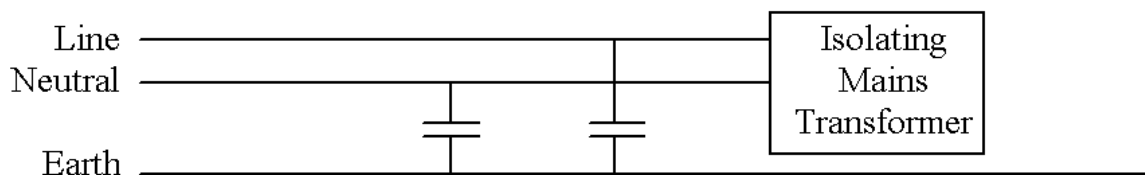
The equipment is intended for use in access control applications in a wide range of configurations. It is intended to control the use of third party equipment attached at the control interface. Such third party equipment and all cabling must be of suitable design and installation to ensure that the overall system complies with the requirements of the CE directives.

Guidance notes for the installation and use of TDSi equipment must be strictly followed. Due to the wide range of access control products TDSi cannot cover all possible type and combinations of equipment that may be assembled to form a total system. TDSi exercise due diligence to ensure that the equipment is suitable for use in the stated applications, but ultimate responsibility for the compliance of a complete system must rest with the prime contractor at a site where local conditions may require additional EMC precautions be taken.

## Power supply requirements.

Note that any power supply used to drive this equipment must provide a smoothed DC voltage using a linear regulator. The power supply must NOT be of switched mode design. When used in security applications a battery backed-up power supply must be used to maintain operation during short power interruptions. Connections between the power supply and the equipment must be made using braided screen cable, of suitable power rating, with the braid screen connected to earth at the power supply.

To reduce interference TDSi recommend that the mains input to the power supply isolating transformer is fitted with 470pF, Class Y mains suppression capacitors. These should be connected from mains line to earth, and from mains neutral to earth.



## Special note on multiple proximity reader installations.

To ensure compliance with CE EMC regulations, TDSi Proximity readers must be mounted at least 1m apart.

# Compliance Notices - 2

## FCC Regulations Notice .

This device complies with Part 15, Class B, of the FCC Rules. Operation is subject to the following two conditions:-

- a) This device may not cause harmful interference.
- b) This device must accept any interference received, including interference that may cause undesired operation.

**WARNING:** Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the manufacturer's instructions, may cause interference harmful to radio communications.

There is no guarantee, however, that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

## CSA EMC Notice

This digital apparatus does not exceed the Class B Limits for radio frequency emissions from digital apparatus set out in the radio interference regulations of the Canadian Department of Communications.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la Class B prescrites dans les règlements sur le brouillage radioélectrique édictés par le Ministère des Communications du Canada.

## Radio Frequency Allocation Notice

Individual countries may have specific regulations on radio frequencies used by electronic equipment and purchasers are advised that it is their responsibility to ensure that equipment meets their local regulations. TDSi cannot be held responsible for consequences of any such breach and purchasers are therefore advised to check local regulations before installation.

# Safety Notices

## Low Voltage 10 - 14v DC operation

### Product description

The equipment should be powered from a fully approved, external, isolated, mains powered, fused, overload protected, 10 - 14v DC supply, with battery support.

### Rating

The equipment is designed to operate from a 10 - 14v DC power supply and draw a maximum current of 100mA, excluding additional lock strike and sensor loads.

### Safety

The equipment is designed to comply with the provisions of the international standard EN 60950 which covers safety of IT equipment.

**WARNING:** Disconnect the mains supply from any associated equipment before removing the covers or making connections to the equipment.

All regulations and requirements **MUST** be strictly followed to prevent hazards to life and property both during and after installation, and during any subsequent servicing and maintenance. It is essential to comply with the local wiring regulations and to use mains cable appropriate for use in that installation. The electrical installation of the equipment must include convenient means to isolate the equipment from mains supply.

### Siting and fixing of equipment.

The equipment may be installed indoors, out of doors, or in damp or exposed conditions provided it is carefully installed and sealed to the manufacturer's instructions. To ensure mechanical stability the equipment must be secured using appropriate fasteners or brackets to a wall, pillar or other part of the building structure, or to associated stable equipment. The equipment must not be sited near to sources of excessive heat. It is designed for use in ambient temperatures ranging from -20°C to +55°C (degrees Centigrade).

### Connecting a low voltage DC supply to the equipment.

Always use a fully approved mains power supply to provide the 10 - 14V DC supply to the equipment. Install the power supply in accordance to the manufacturer's instructions. The 10 - 14V DC supply must be connected to the equipment using screened cable with the braid earthed correctly at both ends. Fit TDSi recommended suppression capacitors to the mains supply input of the PSU.

### Connecting signal wiring to associated equipment.

When the equipment is powered from an external low voltage 10 - 14V DC power supply it must be connected to other equipment forming part of an overall control system using supply and signal wiring connections made with screened cable with the screen securely connected to an earth point at the system power supply and at appropriate earth points within the system. Where individual remote equipment is locally earthed it is permissible to disconnect the cable screen earth connection at one end of the cable.

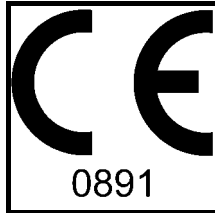
### Internal fuse rating.

There are no replaceable fuses fitted with the equipment. Any mains driven power supply to which the unit is connected should be suitably fused for the application according to the supplier's instructions.



## EC DECLARATION OF CONFORMITY

### Compliance with Radio & Telecommunications Terminal Equipment Regulations



Date of issue: 22/08/2001  
Equipment Model Type: TDSI 350 SERIES VR PROXIMITY READERS  
Model variant part numbers 5002-0352/3  
Address: TDSi GROUP  
SENTINEL HOUSE, NUFFIELD RD POOLE, DORSET,  
BH17 ORE, UNITED KINGDOM

This is to certify that the aforementioned equipment fully conforms to the protection requirements of the following EC Council Directives on the approximation of the laws of the member states relating to:

<u>Applicable directives</u>	<u>Title</u>
1999/5/EC	Radio & Telecommunications Terminal Equipment Directive

#### Technical standards

EMC	EN-55022: 1994	Electromagnetic immunity
EMC	EN-50082-2:95 & EN-50130-4:1995	Electromagnetic immunity
LVD	EN60950	Safety of Information Technology Equipment
RTTE	ETSI EN 300 330-1:2001 (Equipment Class 3)	ERM; SRD; Radio equipment in the frequency range 9kHz to 25MHz and inductive loop systems in the frequency range 9kHz to 30MHz; Part 1: Technical characteristics & tests methods.

Signed on behalf of TDSi by:

Title: **P M Gater, Joint Managing Director.**