Cellocator Proximity Reader (AR0211)

Product Overview

Cellocator Division
Pointer Telocation Ltd.

Proprietary and Confidential

Version 1.3

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POINTER

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Legal Notices

IMPORTANT

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2. This document should be retained for future reference.

3. Attachments, accessories or peripheral devices not supplied or recommended in writing by Pointer Telocation Ltd. May be hazardous and/or may cause damage to the product and should not, in any circumstances, be used or combined with the product.

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1 Introduction

1.1 Overview

The AR0211 Cellocator Proximity Reader provides a wireless driver ID solution with support for proximity cards or tags.

The Proximity Reader completes the suite of driver identification solutions now available. Starting with the low-end solution of legacy Dallas key and followed by the more mid-range Cellocator Keypad, the Cellocator Proximity Reader offers a high-end solution with a range of features (see the *Highlights* section below). All solutions are integrated seamlessly with Cellocator devices, providing the ability to upgrade even existing installations.

The AR0211 Cellocator Proximity Reader supports contactless cards or tags based on EM 4102 technology. The Reader identifies the card or tag information and sends it to the Cellocator unit via the Dallas interfaces. The Reader indicates its power-up process and received card/tag information via a built-in buzzer.

The unit handles the card information the same way as it handles the Dallas key or the Cellocator Keypad information and thus all the driver ID functionality is also available for the Proximity Reader.

The device can replace the Dallas key or the Cellocator Keypad, allowing for modern and more convenient wireless technology. Use of popular EMarine 4102 wireless technology allows for a variety of off-the-shelf contactless cards and tags which can be used for multiple purposes such as office or vehicle access control.

Cellocator also provides AR0222 proximity cards and AR0223 proximity tags. The cards can be provided with a customized logo or image.

1.2 Highlights

- Supports Cellocator Driver ID functionality
- Supports contactless cards or tags based on Emarine 4102 technology
- Integrates with the Cellocator unit via Dallas interface
- Provides audio indication on power-up and on card identification
- Designed to be installed behind the dashboard – minimal foot print with no screws needed
- Package includes indication label for easy operation
- Supports vehicle electrical environment
- Supports 12V and 24V

1.3 Abbreviations

Abbreviation	Description
ID	Identification
Dallas	Dallas 1-Wire interface (slave) utilizing the DS1990A standard

1.4 References

All the reference documents listed in the following table can be downloaded from the support section of the Pointer website (www.pointer.com).

#	Reference	Description
1.	Cellocator Keypad Overview	
2.	Dallas Reader with LED and Push Button Overview	
3.	Trailer ID Overview	

1.5 Revision History

Version	Date	Description
1.0	03/05/2011	Initial version
1.1	17/07/2011	Change indication label
1.2	15/03/2015	Add connector

2 General Description

2.1 Product Content

The Cellocator Proximity Reader includes the items listed in **Error! Reference source not found.**.

Name/Part Number	Description	Picture
Cellocator Proximity Reader PN: AR0211	Proximity Reader which supports EM4102 standard, integrated with the Cellocator unit via Dallas interface and designed for vehicle environment.	
Indication Label	A sticker to be attached to the dashboard to indicate the location of the Proximity Reader. It is included in the Proximity Reader package.	
Double Coated Adhesive Tape	Double coated adhesive tape is included in the Proximity Reader package and used for mounting the Proximity Reader to the back of the dashboard.	
Proximity Card EM4100 PN: AR0222	The proximity card is used for identifying the driver.	
Proximity Tag EM4100 PN: AR0223	The proximity tag is used for identifying the driver.	

Table 1: Cellocator Proximity Reader Content

2.2 Proximity Reader Description

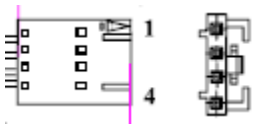
The AR0211 Cellocator Proximity Reader supports contactless cards or tags based on EMarine 4102 technology. The Reader identifies the card or tag information and sends it to the Cellocator unit via the Dallas interface. The Reader indicates its power-up process and received card/tag information via a built-in buzzer.

The Reader supports 12V and 24V vehicle batteries. It is designed for vehicle electrical environments with the capability to support electrical spikes generated by the vehicle and by consuming an average current of only 8 mA. The device also supports reverse current.

The Reader detects cards within a distance of 5 cm. The detection distance is reduced as the temperature drops. The Reader detects tags within a distance of 2.5 cm. The Reader does not detect tags at temperatures lower than 0°C.

The reader utilizes a built-in buzzer for audio indication. The Reader signals card/tag detection by generating a tone approximately 200 milliseconds long via the built-in buzzer. The Reader generates 2 beeps on power on. The built in buzzer can be used also to signal the authorization (feedback) tone generated by the Cellocator unit and thus save the external buzzer generally used for that feature.

The Reader is equipped with a 40 cm, 4 wires cable terminated with 4 pins connector. The connector is Cvilux CI3304S0010 utilizing crimp terminals CI33T021PE0 and its drawing is shown below:



The reader interface is detailed in the following table:

Wire colour	Pin #	Wire description	Functionality and connection
Red	2	Power input	Connected to the vehicle power supply
Black	1	Ground	Connected to the vehicle ground
Green	4	Dallas interface	Used for communication with the Cellocator unit
White	3	Buzzer input	Can be connected to one of the Cellocator unit outputs for Driver ID authorization indication

Table 2: Wireless reader interface

NOTES:

1. The tag does not function below 0 °C.
2. For proper operation the Cellocator unit should not be programmed to operate in hibernation mode

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2.3 Operating Instructions

To identify himself, the driver should hold the card / tag next to the indication label, keeping it within the required distance range and wait till the indication beep is heard.

If the Cellocator unit is programmed with the driver ID functionality and the buzzer input is connected to the appropriate output of the Cellocator unit, when the received Driver ID code is authorized a one second authorization tone will follow the indication beep.

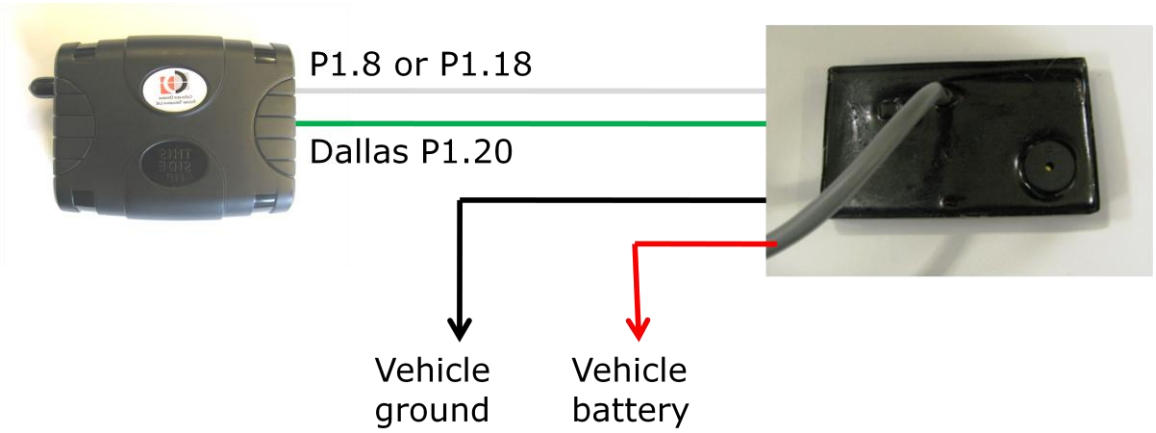
3 Technical Specifications

Parameter	Value
Dimensions	78x 45 x10 mm
Weight	45 g
Wireless standard	EM4102
Wireless frequency	125±5 KHz, ASK
Average current	8 mA
Maximum current	60 mA
Operating voltage range	9V – 32V
Support reverse polarity protection	Yes
Support spikes of ±200V as defined in Vehicle Electrical Transients – ISO16750-2	yes
Audible indication period	0.2 second
Max detection distance for tag	2.5 cm
Max detection distance for card	5 cm
Max detection period	1 second
Temperature range	-30 - 70 °C
Tag temperature range	0-60 °C
RoHS	supported

Table 3: Technical Specifications

4 Installation Instructions

4.1 Installation diagram



4.2 Pre-installation Information

Prior to commencing any installation procedures, technicians should study and be aware of the following:

CAUTION:

- To avoid possible bodily injury, or damage to the vehicle, the installer must be a certified technician who has been qualified to install the system.
- Installation in vehicles having computerized systems may have unexpected results. Please consult with your local car dealer before performing any vehicle OEM invasive installation.

Note that specifications are subject to change without notice.

For extensive installation instructions of Cellocator products, including complete descriptions of prerequisites, preparations, recommended installation practices, recommended installation locations, forbidden installation schemes etc, please refer to the relevant product installation manual on the Cellocator support site.

4.3 Proximity Reader Installation

1. Allocate an area in the dashboard where the Reader can be installed behind the panel and its front side can be reached easily by the driver when seated.
2. You may provide an adapter with appropriate connector or cut the reader connector
3. Connect the Proximity Reader wires as follows:
   i. Connect the red wire to the vehicle battery.
   ii. Connect the black wire to the vehicle ground.

iii. Connect the green wire to the Dallas wire of the Cellocator harness.

iv. Connect the white wire to the appropriate (siren [p1.8] or global output / blinker [p1.18]) output of the Cellocator unit if authorization indication is required.

4. Mount the unit behind the dashboard using the double coated adhesive tape.
5. Stick the indication label on the front side of the dashboard next to the Proximity Reader.