

AWL-V-3 VEHICLE TAG

User manual



**Important! Read carefully before use.
Keep for future need.**

Default user manual.

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This manual is to be considered a part of the device.





Carefully read manual before first use. Attend to all HSE requirements, all work safety related requirements and all HSE requirements related to the specific workplace. Caution is the best way to avoid any safety risk.



EU DECLARATION OF CONFORMITY

Manufacturer: ALIS Tech s.r.o., Tuřanka 1222/115, Slatina, 627 00 Brno, the Czech Republic
Company registration number: 06728103

Issues the following statement at its own risk:

Product name: **Vehicle tag**
Type label: **AWL-V-3**

Application: Vehicle tag is used to transmit signals, according to which the position and distance from reading devices, other tags and personal locators are determined. In the event of danger, it triggers an alert or other defined action.

We declare that the subject of the declaration described above is in accordance with harmonization regulations of European Union: Directive of the European Parliament and Council 2014/30/EU on the harmonization of legislation of the Member States regarding electromagnetic compatibility, as amended by European Parliament and Council (EU) 2018/1139; Directive of European Parliament and Council 2014/53/EU on harmonization of legislation regarding of Member States regarding supply of radio equipment on the market and repealing directive 1999/5/EC, as amended by Regulation of European parliament and Council (EU) 2018/1139; Directive of European Parliament and Council 2011/65/EU regarding restriction of the use of certain hazardous substances in electrical and electronic equipment, as amended; Regulation (EC) No 1272/2008 of the European Parliament and Council regarding classification, labeling and packaging of substances and mixtures, as amended; Regulation (EC) NO 1907/2006 of European Parliament and Council regarding registration, evaluation, authorization and restriction of chemicals, as amended.

We declare that the subject of the declaration described above is in accordance with the relevant provisions of legal and other regulations of the Czech Republic: Government decree No. 117/2016 Coll. regarding the assessment of conformity of products with regard to electromagnetic compatibility when placed on the market; Government decree No. 426/2016 Coll. regarding conformity assessment of radio equipment when placed on market; Government decree No. 481/2012 Coll. regarding restriction of use of certain hazardous substances in electrical and electronic equipment, as amended by Government Decree No. 391/2016 Coll., Government Decree No. 101/2018 Coll. and Government decree No. 146/2019 Coll., Government decree No. 121/2020 Coll. and Government decree No. 344/2020 Coll.; EN 62368-1 / AC: 2015 as stated in ČSN EN 62368-1: 2015 / All: 2017 / Opr. 2: 2018 / Zl: 2020; EN 62311: 2008 as stated in ČSN EN 62311: 2009 / Zl: 2020; EN 55032: 2015 as stated in ČSN EN 55032 ed. 2: 2017 / Opr. 1: 2018 / All: 2020; ETSI EN 301489-1 V1.2.1: 2000 as stated in ČSN ETSI EN 301489-1 V2.1.1: 2001; ETSI EN 301489-33 V1.1.1: 2009 as stated in ČSN ETSI EN 301489-33 V1.1.1: 2009; ETSI EN 301489-33 V2.1.1: 2017 as stated in ČSN ETSI EN 301489-33 V2.1.1: 2017; ETSI EN 302 065-1 V2.1.1: 2016 as stated in ČSN ETSI EN 302 065-1 V2.1.1: 2017; ETSI EN 302 065-2 V2.1.1: 2016 as stated in ČSN ETSI EN 302 065-2 V2.1.1: 2017; EN 60950-1: 2006 as stated in ČSN EN 60950-1 ed. 2: 2006 / All: 2009 / Al: 2010 / A12: 2011 / Opr. 1: 2012 / A2: 2014 / Z2: 2018.



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In Brno, 1.6.2021

Ing. Jakub Snížek
(Executive)

FOREWORD

Safe manipulation



Using systems connected to AWL-V-3 is advised to be done according to their respective user manuals. This user manual describes correct way to use AWL-V-3. Check the product condition before use.

To avoid any damage done and losing warranty rights due to unqualified assembly or use:

- use the product only based on this manual;
- comply with all the information regarding safety and maintenance;

You should only let qualified and experienced people use this product and its accessories.

- keep the manual at a place accessible for the user;
- comply with applicable standards;

Never install this product in places:

- with high oxygen concentration;
- with oxidizing agents (for instance nitrous oxide (N₂O));
- with flammable fluid;
- with excessive humidity;

User's Qualification

Person using this device should be able to use common electronic devices and should be trained to use AWL-V-3 in accordance with this user manual.

PLACEMENT OF PRODUCTION LABEL



Information contained in this document can be changed without prior notice. ALIS Tech s.r.o. (further mentioned only as “ALIS Tech”) does not take any responsibility for inaccuracies, missing information, loss, personal or other risk due to wrong use of the device not in accordance with content of this document.

WARRANTY CONDITIONS

Warranty period for this device is 12 months from the date of purchase. Using this device in violation with contents of this makes any warranty rights void.

CUSTOMER SUPPORT

ALIS Tech reserves the right to perform any maintenance on this device.

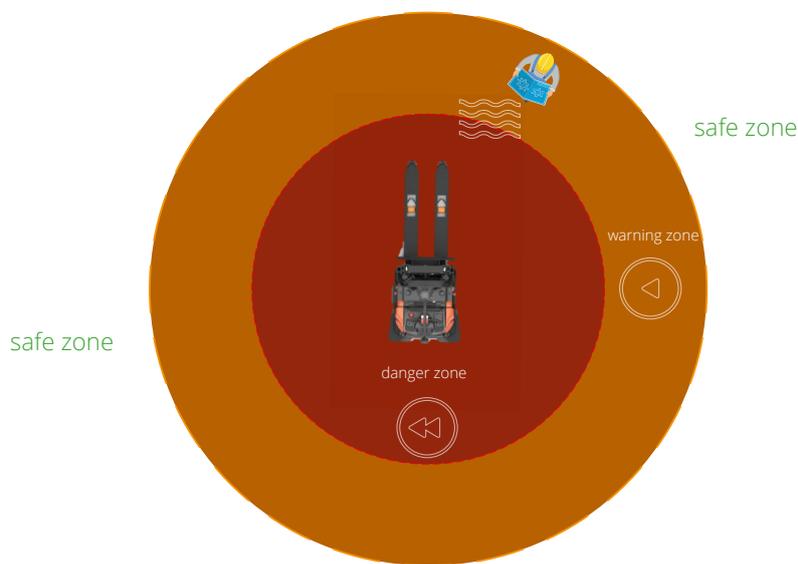
ASSUMED USE AND BRIEF DESCRIPTION

The device is used to transmit signals, based on which the position and distance from the reading devices is determined. In the event of a threat, it triggers an alert or other defined actions.

Functionality

The vehicle tag communicates wirelessly with reading devices and other tags in its surroundings. Based on information about the mutual distance it executes predefined actions. In the event of danger (crossing warning/danger zone), the AWL-V-3 sends a warning to the vehicle control unit to slow down the truck and a wireless signal to vibrate the personal tag. The AWL-V-3 can be connected to the danger light warning in the vehicle cabin (in 3 colors – RGB), and to the immune button, which signals the degree of danger and provides a function for deactivating the system. AWL-V-3 can respond to signal transmitted by zone readers. It can also autonomously slow down the vehicle to the maximum allowed set speed when approaching a definable distance.

In a situation where a pedestrian becomes a forklift driver, the driver's personal tag is deactivated against the forklift tag located on the forklift he is currently controlling. Activation distances for hazard signaling and other anti-collision system functionalities can be set in the parameter settings using a web browser without the need to install additional software.



PREPARATION AND INSTALLATION

If the following regulations are not observed, the manufacturer takes no responsibility for any damage. When assembling and using this product please comply with:

- National installation and operating regulations.
- National regulations on fire and explosion protection.



For user safety, it is necessary to make sure that the network cable is intact. In many cases, a faulty connection or an unconnected wire will not be recognized right away.

Installation

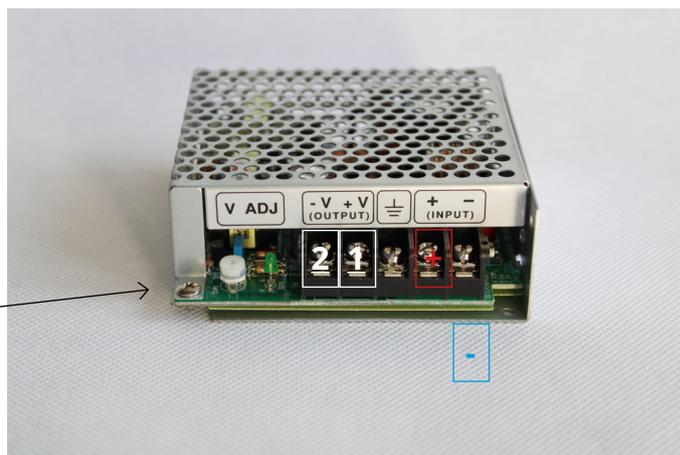
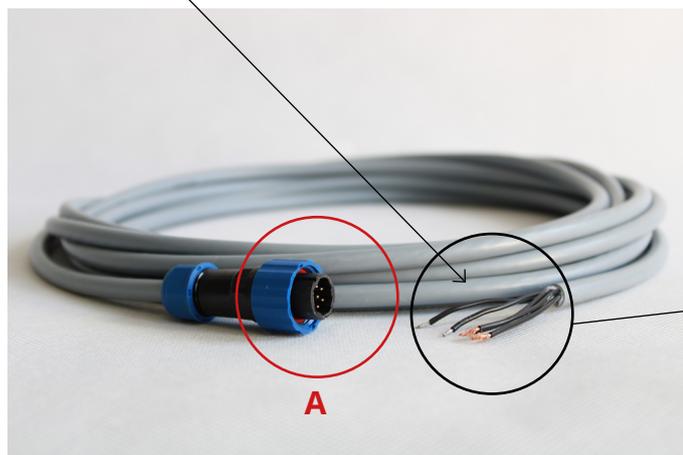
Installation of this device can only be done by manufacturer, technician trained by manufacturer or a technician under manufacturer's supervision.



1. connect the AWL-V-3 with the connector **(A)**
2. connect with the cable from light beacon/imunne button **(B)**

Gray cable connection

1	V + (OUTPUT)
2	V - (OUTPUT)
3	Relay for speed control (COMMON)
4	Relay for speed control, warning zone (NORMAL OPEN)
5	Relay for speed control, warning zone (NORMAL CLOSE)
6	Relay for speed control, danger zone (NORMAL OPEN)
7	Relay for speed control, danger zone (NORMAL CLOSE)



see the numbers labelled on the wires

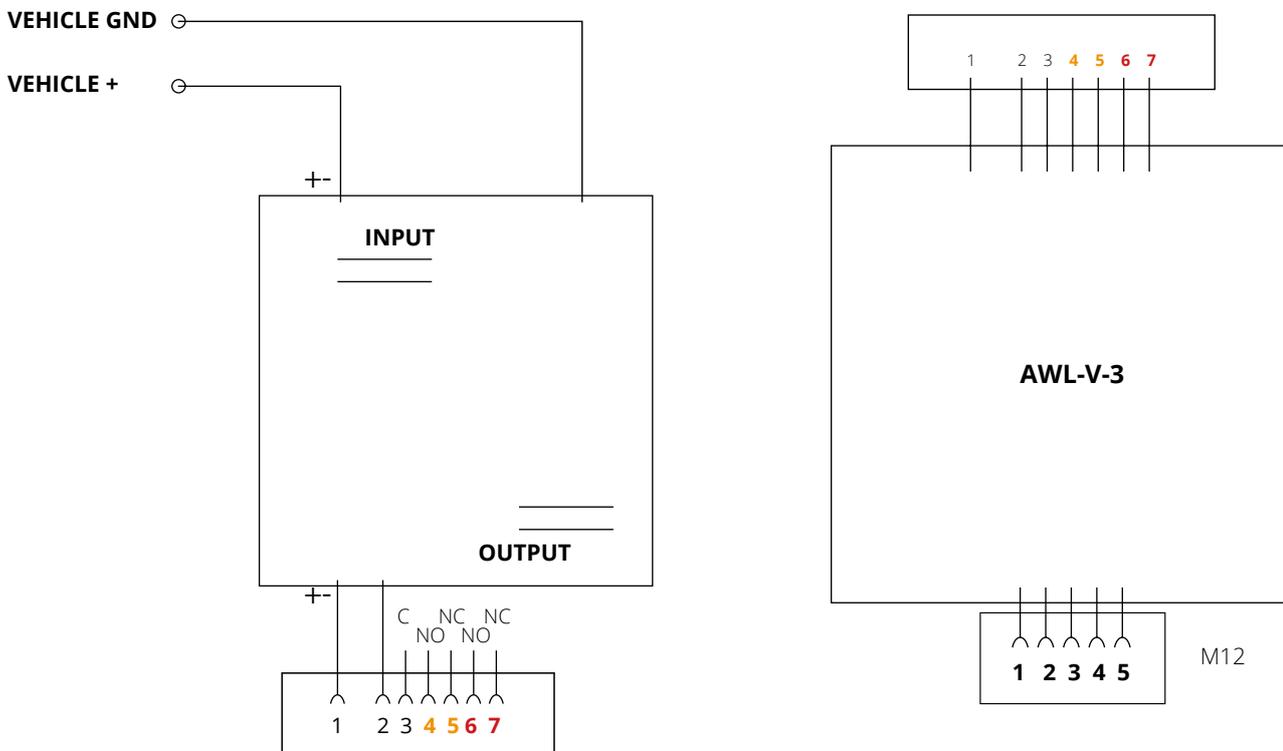
Forklift connection

INPUT (+)	1. forklift connection with relay contactor which is activated after starting up the forklift;
INPUT (-)	2. forklift connection to GND;

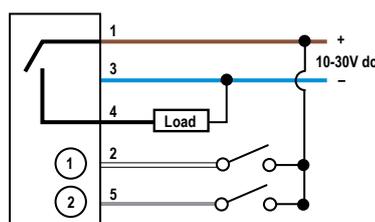
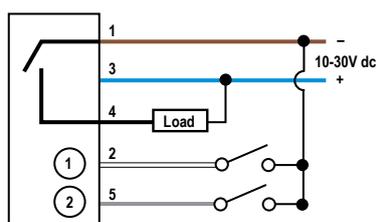
Schematic connection

DC/DC converter

unit



button



Pin 1 = Brown
Pin 2 = White
Pin 3 = Blue
Pin 4 = Black
Pin 5 = Gray



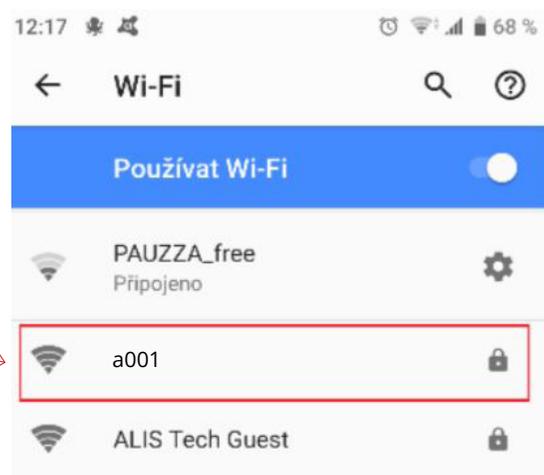
Important notice

When mechanically installing the DC/DC converter (inside a forklift), please ensure a suitable and firm fixation at a sufficient distance from the surrounding conductive contacts. If the converter is released, it may cause an unintentional short circuit when it touches the conductive contacts due to converter's electrically conductive body.

Settings and configuration

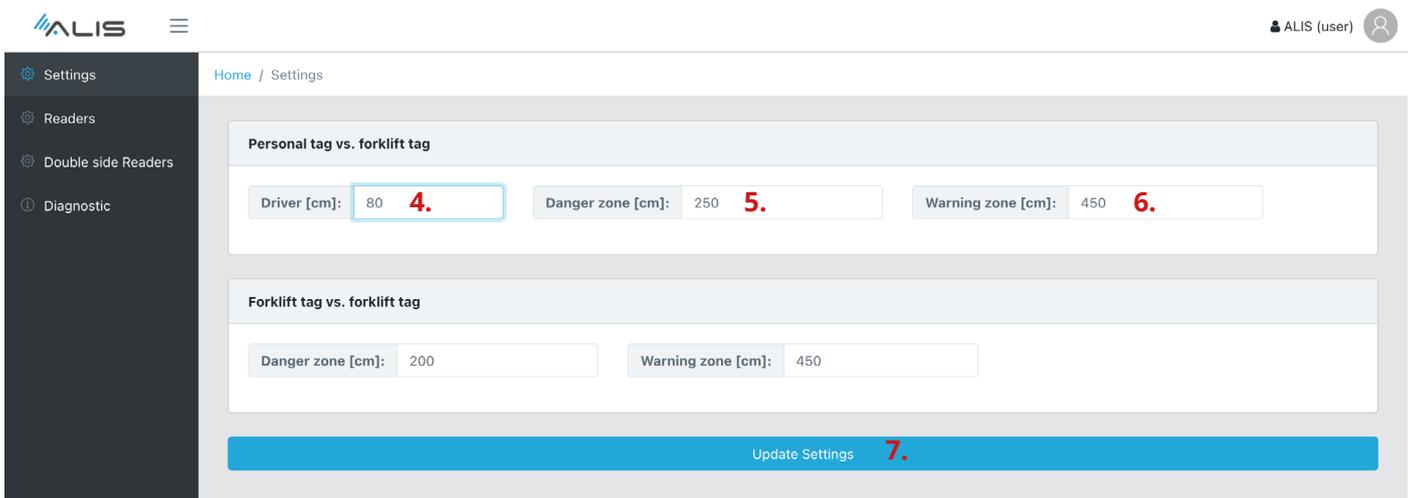
HOW TO GET INTO THE WEB APP

1. Switch the AWL-V-3 vehicle tag on and stay within its reach. Wait 1–3 minutes for the device to switch on.
2. Use any device for Wi-fi connection (mobile phone, personal computer etc.). Connect to Wi-fi using MAC address stated on the unique label of the vehicle tag - password is **11111111**.
3. When connected to Wi-fi, open the web browser. Enter **10.3.141.1:3700** into the search field. You will be forwarded to the log-in page. Enter **ALIS** into the EMAIL field and **1111** into the PASSWORD field.



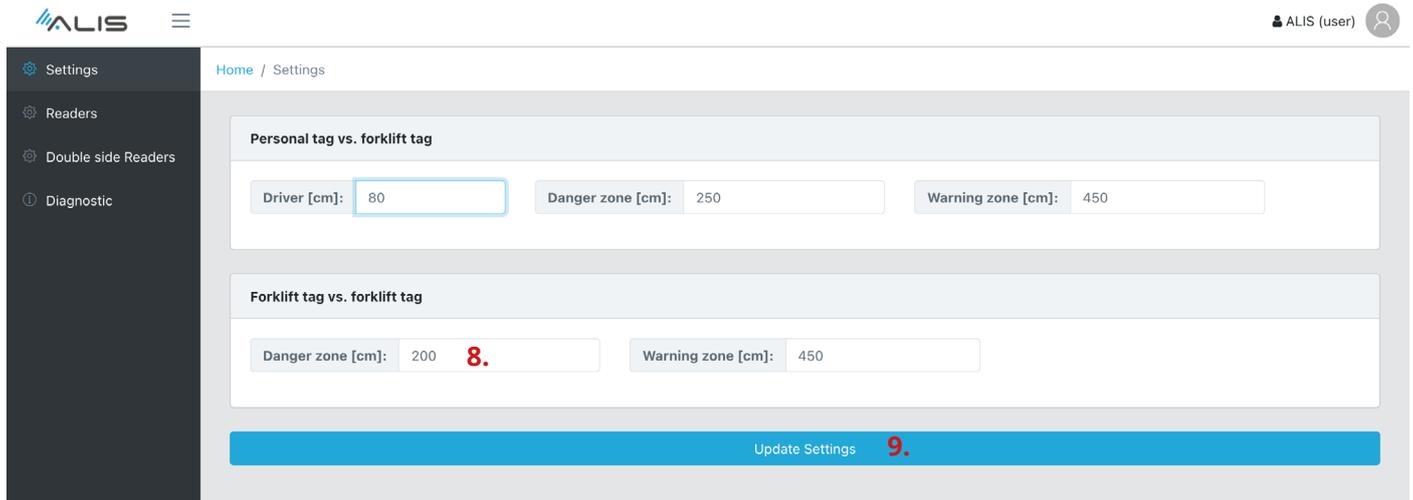
SETTINGS OF VEHICLE TAG AGAINST PERSONAL TAG

4. At the SETTINGS tab, perform settings of the personal tag against the vehicle tag. At SETTINGS --> DRIVER, set the distance for the forklift's driver, i.e. that the driver is present at the vehicle's cab.
5. At SETTINGS --> DANGER ZONE, set the distance for a pedestrian.
6. SETTINGS --> WARNING ZONE, set the distance for a pedestrian
7. When completed, click on the UPDATE SETTINGS button.



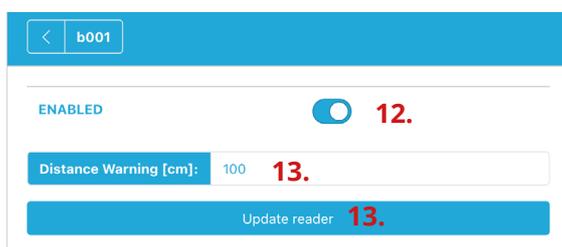
SETTINGS OF VEHICLE TAG AGAINST VEHICLE TAG

- At the SETTINGS tab, you can perform settings of the vehicle tag against another vehicle tag. Procedure is the same as stated above.
- When completed, click on the UPDATE SETTINGS button.



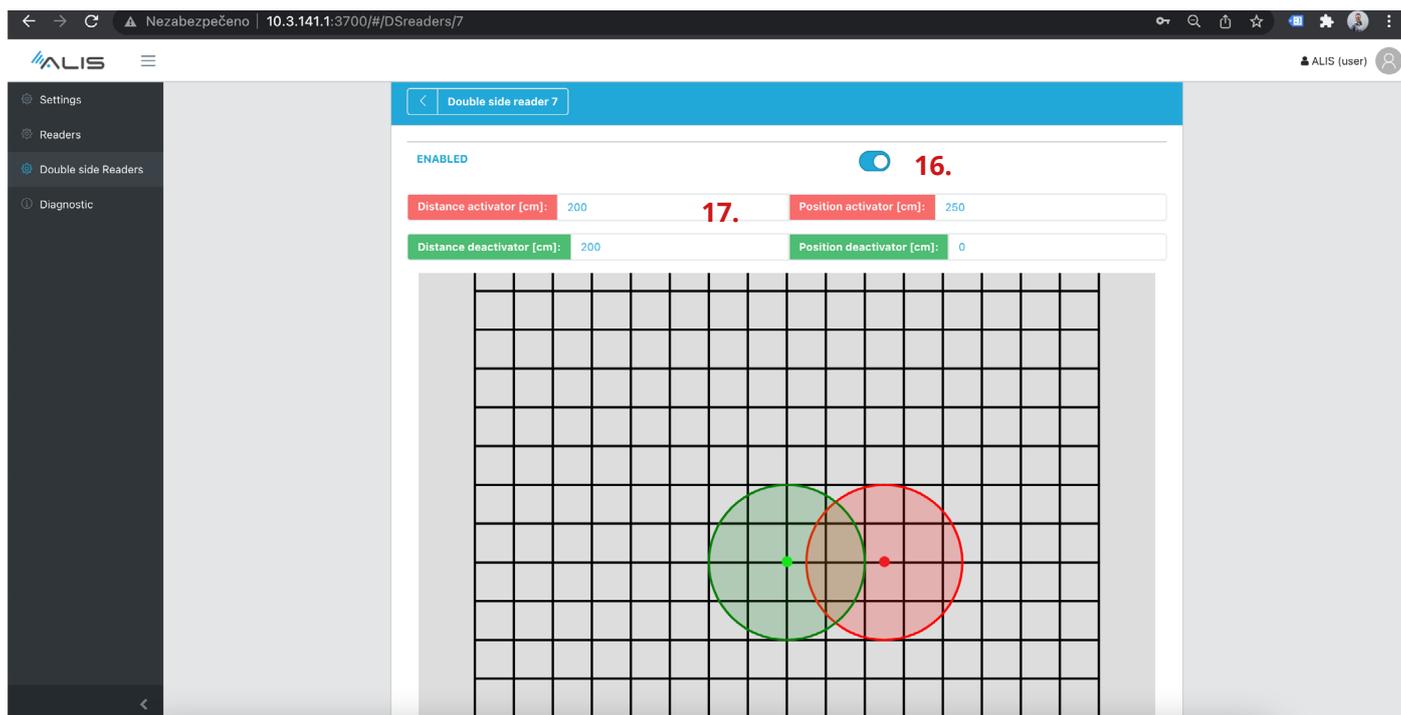
SETTINGS OF READERS

- At the READERS tab, you will execute settings of the reader against vehicle tags.
- Search for reader ID in the search field according to marking on the label of the reader.
- Go to READERS --> click on ENABLED.
- At the DISTANCE WARNING tab, change the required distance. When completed, update it with clicking on the UPDATE READER button.

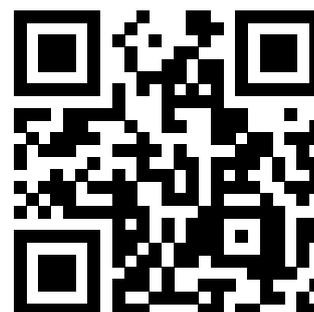


DOUBLE ANTENNA

14. Perform settings of double antenna at the DOUBLE SIDE READERS tab.
15. Select an antenna type according to marking on the label of the reader.
16. Check that ENABLED is displayed.
17. You can set size of activation and deactivation zones at the DISTANCE ACTIVATION and DISTANCE DEACTIVATION field.
18. Update with clicking on the UPDATE READERS button.



Scan the QR code or [click](#) to play the video about the settings and configuration.



Checking and validation of settings

SETTINGS DIAGNOSTICS

You can use the DIAGNOSTICS section for checking and verification of the system setting with the real status of functions.

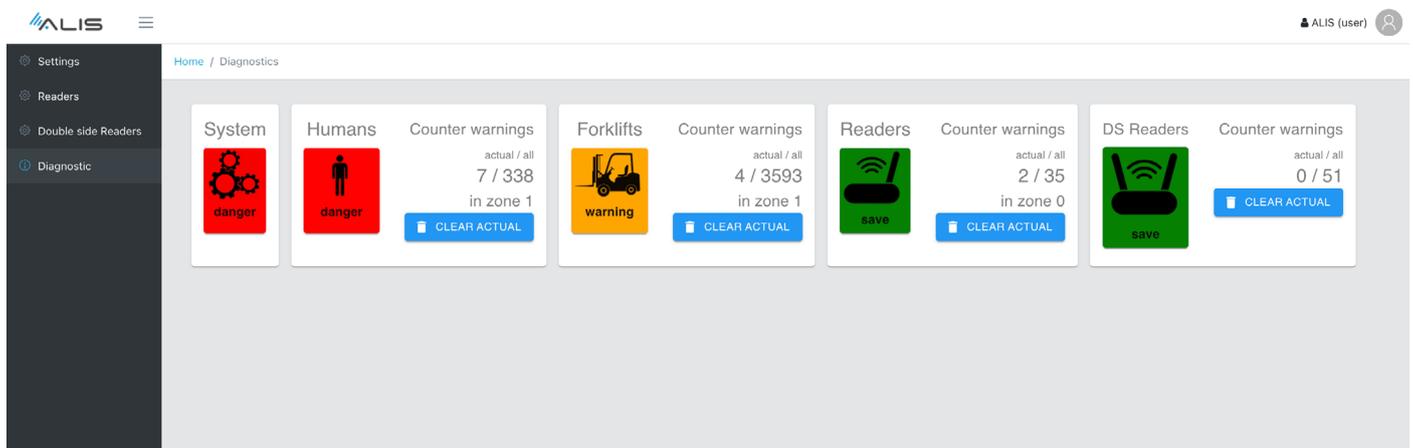
1. System = it represents settings for the given vehicle tag in relation to other vehicle tags, personal tags and readers.

green = safe (safe zone) – the personal tag does not vibrate, vehicle tag is moving with no speed limitation.

orange = warning (warning zone) – the personal tag vibrates, the vehicle tag decelerates for the first phase.

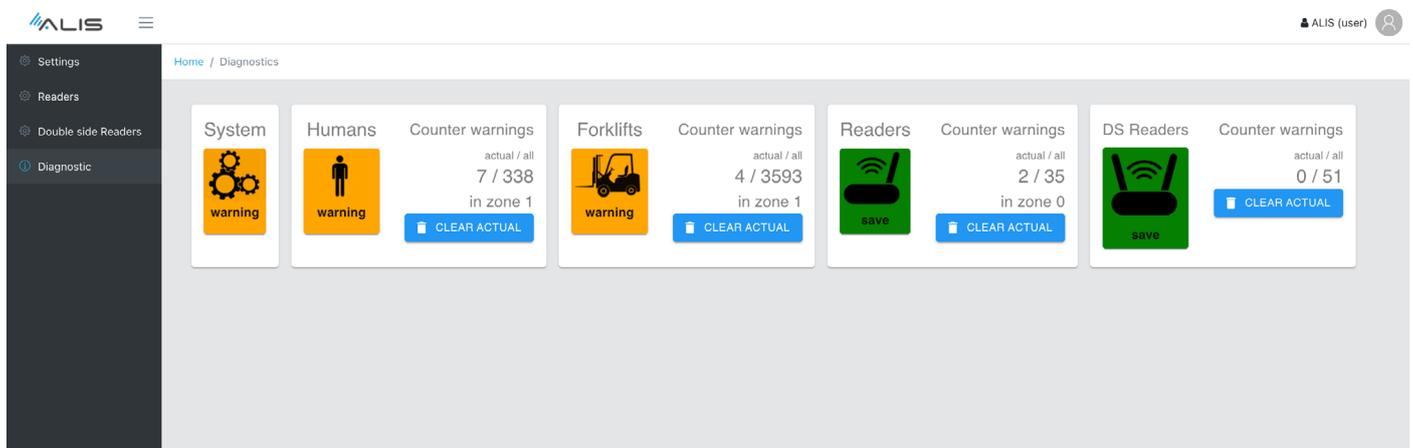
red = danger (danger zone) – the personal tag vibrates, the vehicle tag decelerates for the second phase.

2. * Red – danger zone always takes priority over other colours. Orange – warning zone takes priority over green colour – safe zone.



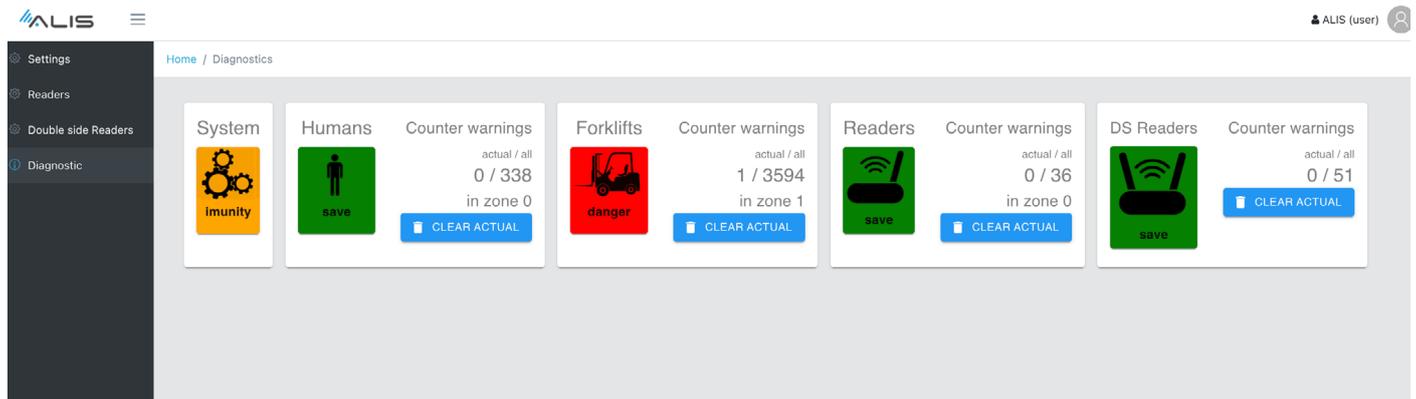
red = danger (danger zone) – the personal tag vibrates, the vehicle tag decelerates for the second phase.

The vehicle fitted with the vehicle tag is decelerated for the second phase due to dangerous close proximity of the personal tag.



SETTINGS DIAGNOSTICS

In case of implementation of the immune button you can check its functionality at the DIAGNOSTICS tab (see the picture below). Detected vehicle in the surroundings shines red (located in the danger zone). When you press the immune button the vehicle switches into the immunity mode for 10 seconds and reaches speed of relevant warning zone.



The screenshot displays the ALIS Diagnostics interface. At the top left is the ALIS logo and a menu icon. At the top right, it shows 'ALIS (user)' with a user profile icon. A dark sidebar on the left contains navigation options: Settings, Readers, Double side Readers, and Diagnostic (highlighted). The main content area is titled 'Home / Diagnostics' and features five diagnostic cards:

- System:** Icon of gears, 'immunity' label. Counter warnings: 0 / 338 in zone 0. Button: CLEAR ACTUAL.
- Humans:** Icon of a person, 'save' label. Counter warnings: 0 / 338 in zone 0. Button: CLEAR ACTUAL.
- Forklifts:** Icon of a forklift, 'danger' label. Counter warnings: 1 / 3594 in zone 1. Button: CLEAR ACTUAL.
- Readers:** Icon of a wireless antenna, 'save' label. Counter warnings: 0 / 36 in zone 0. Button: CLEAR ACTUAL.
- DS Readers:** Icon of a wireless antenna, 'save' label. Counter warnings: 0 / 51. Button: CLEAR ACTUAL.

SAFETY

General safety requirements

- The degree of protection of electrical equipment provided by the cover preventing foreign objects and water from entering the device given by IP code (ČSN EN 60529:1993) must correspond to the specific installation of the electrical device, must be stated in the user manual and on the nameplate of electrical device. The IP code of the device (IP 67) can be found in the operating instructions in the technical data and on the production label.
- Conditions for operation of devices relating to the use of radio frequencies and operation of short-range radio transmitting devices by natural or legal persons are laid down in Act. No. 127/2005 Coll., as amended, and General Authorization No. VO-R / 10 / 05.2014-3 for the use of radio frequencies and for the operation of short-range devices pursuant to section 10, paragraph 1 of Act No. 127/2005 Coll.
- Technical requirements for radio equipment are set by NV No. 426/2016 Coll.
- Technical requirements for protection in terms of electromagnetic compatibility are set by the Government Decree No. 117/2016 Coll.

Safety instructions

- Keep the device dry and clean.
- Do not place the device on excessively hot or cold surface.
- Clean the device with damp and clean cloth.
- Do not paint the device.
- Do not disassemble or repair the device.
- Do not use the device in places where it could interfere with the operation of other devices, such as air traffic, integrated rescue system, etc.
- Only use accessories supplied by the manufacturer.

REPAIR AND MODIFICATION

The device and its accessories do not contain any parts repairable by the user.



Do not disassemble, modify or repair the device as this can result in harming user, damaging device and its functionality and compromising warranty rights.

This device can only be repaired by manufacturer's or supplier's technician. Manufacturer is not responsible for any injury or damage caused by repair done by anybody else than mentioned above.

MAINTENANCE

Cleaning

Clean the product only by manual rubbing of its surface.

Never submerge the product in liquid. Do not rinse with pressurized water.



Risk of electric shock and fire!
Risk of damage or destruction of the product during machine cleaning.
Do not use any flammable or explosive cleaning or disinfecting agents.

Control

Each control unit is tested by the manufacturer for its functionality. After installation of the device, the manufacturer's technician, supplier's technician or technician under the supervision of the manufacturer tests it. The customer confirms the correct functionality by signing the handover protocol.

The manufacturer reserves the right to change the inspection method.

TECHNICAL SERVICE

For service and repair inquiries, contact your supplier or the manufacturer directly.

SPECIFICATIONS

Product specifications

Product name	Vehicle tag
Light warning	optional

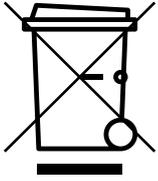
Technical specifications

Dimensions (mm)	210 × 150 × 55
Weight (g)	730
Standard	802.15.4a, 802.1.4a
Power voltage	DC 24 V
Power rating	26.4 W
Frequency range	3.25 GHz – 6.75 GHz
Output power	-21 dBm/MHz
Effective range	150 m
Accuracy	10 cm
Operating mode	TDoA, TWR
Antenna gain	1.5 dBi

External conditions

Operating temperature (°C)	-10 – +50
Humidity (RH %)	0 – 90 (without condensation)
Degree of protection	IP 67
RoHS	yes

PROPER DISPOSAL OF THE PRODUCT



Disposal of electrical and electronic equipment. This symbol on the product or in its documentation indicates that this product shall not be treated as household waste at the end of its working life. To avoid possible harm to the environment or human health from uncontrolled waste disposal, please separate this from other types of wastes and recycle them with respect to the sustainable reuse of material resources. Non-commercial users should contact either the retailer where they purchased this product, or their local government office, for details of where and how they can safely recycle this item. This product must not be mixed with other industrial products.

SAFETY MARKING



Meaning:	CAUTION! Clean the transmitter elements before use.
Type:	Marking with safety instruction.
Regulations / standards:	Government Decree No. 176/2008 Coll. and Government Decree No. 378/2001 Coll.
Dimensions [mm]:	60 × 20 mm
Location:	On device.
Amount:	1

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