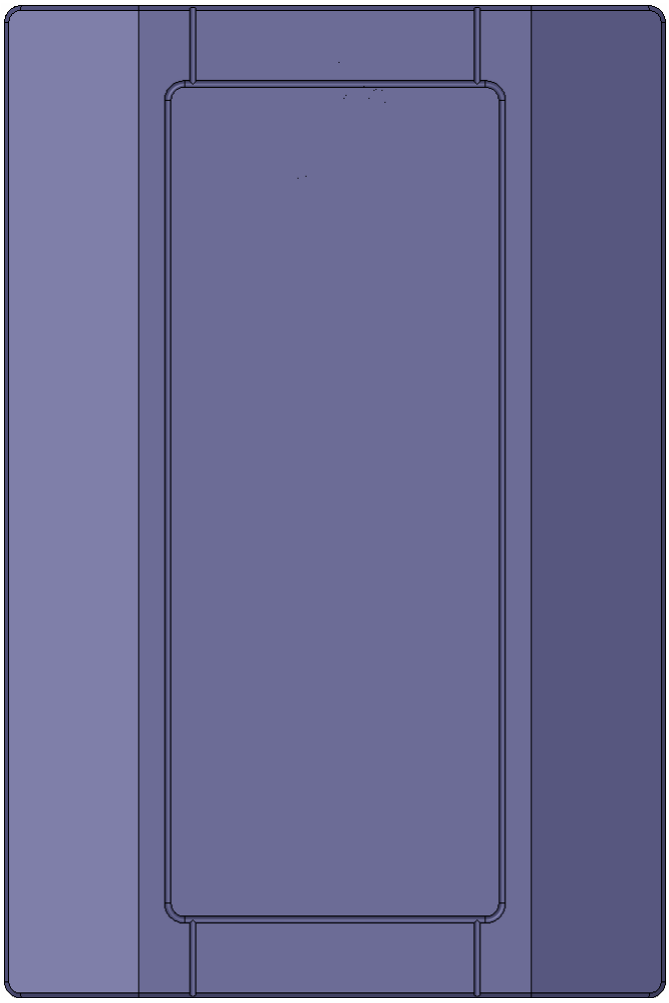
Service manual
For installation, operation and service

Panel Reader
VP1103



Manual article number 5277078

October 2010 / Manual version 1.1

Nedap LiveID - PO Box 104 - 7140 AC Groenlo - The Netherlands - T (+31) 544 471 100
F (+31) 544 466 839 - info@nedap-liveid.com - www.nedap-liveid.com

Manage your livestock

Preface

This manual describes the installation, operation, troubleshooting and maintenance of the Panel reader. Read this manual entirely and when installing, carefully follow the instructions step by step as described in the manual.

Pictograms

Please pay extra attention here. This pictogram indicates an important subject.

Version overview

Manual version 1.0 / May 2010	First release.
Manual version 1.1 / October 2010	Wiring adjustment.

Model: VP1103

IC: 1444A-VP1103 and FCC ID: CGDVP1103

Compliance statements

This device complies with part 15 of the FCC Rules and to RSS210 of Industry Canada.

Operation is subject to the following two conditions:

(1) this device may not cause harmful interference, and

(2) this device must accept any interference received, including interference that may cause undesired operation.

Cet appareil se conforme aux normes RSS210 exemptés de license du Industry Canada. L'opération est soumis aux deux conditions suivantes:

(1) cet appareil ne doit causer aucune interférence, et

(2) cet appareil doit accepter n'importe quelle interférence, y inclus interférence qui peut causer une opération non pas voulu de cet appareil.

Warning (part15.21)

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

This in particular is applicable for the antenna which can be delivered with the System.

Table of contents

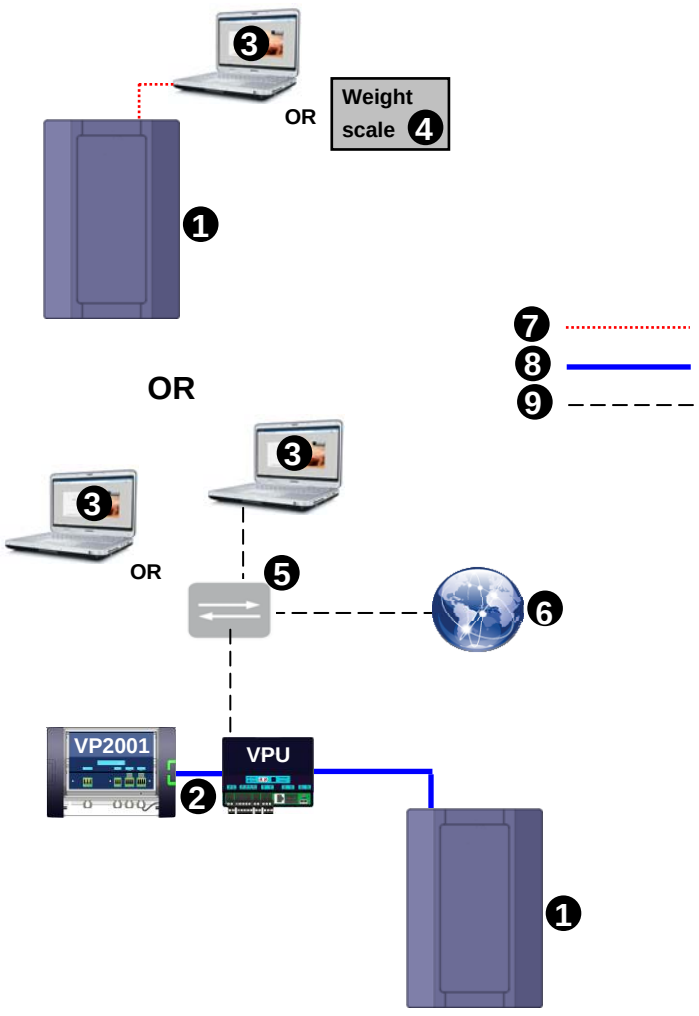
1. Introduction

The VP1103 Panel reader identifies RFID ear tags attached to individual animals. The identification can be used for registration of the animals that have passed the Panel reader unit (VP1103). A weight scale can optionally be connected to the Panel reader.

This device complies with Part 15 of the FCC Rules and to RSS-210 of Industry Canada. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

1.1. Description

The VP1103 Panel reader system consists of a Panel reader unit that is connected to a VPU using CAN communication or a connection to a PC or a weight scale through RS232.



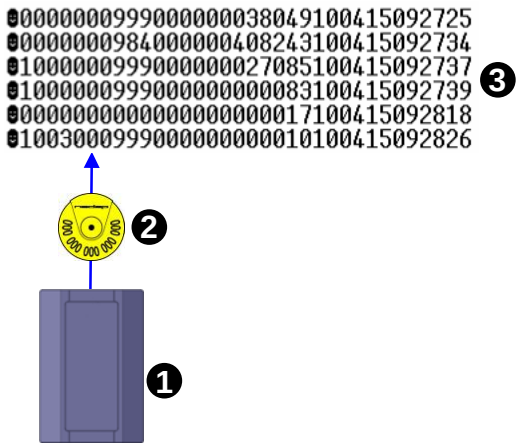
1. *Panel reader unit VP1103*
2. *Power supply VP2001 and VPU VP8001*
3. *Optional PC*
4. *Optional Weight scale*
5. *Optional Router and switch*
6. *Internet*
7. *RS232 connection*
8. *CAN communication*
9. *LAN connection via UTP cat5 cable*

Figure 1. Overview VP1103 Panel reader system

1.2. Functioning

The VP1103 Panel reader creates a magnetic field around the antenna that is used to identify the tags on ISO frequency 134.2 kHz. The Panel reader is connected to a VPU using CAN communication or to a PC or a weight scale through RS232.

The Panel reader identifies animals that pass the Panel reader unit. When an animal is identified by the Panel reader, the tag number will be dumped.



1. *VP1103 Panel reader unit*
2. *Responder number (animal identification)*
3. *Tag number dump*

Figure 2. Connection between the Panel reader and the dumped tag numbers

The tag numbers are stored via CAN communication in the VPU or dumped according to the ISO protocol 11784/11785 via an RS232 connection in e.g. the Windows Hyper Terminal communication program.

2. Installing the VP1103 Panel reader

2.1. Mounting the VP1103 Panel reader

Installation and service should be done only by trained personnel. Always turn off the main power when working on the de electrical installation. Keep animals away from the antenna during installation and service. Close all covers when ready with installation or service.

See Appendix A for technical specifications before mounting. See Appendix B for corridor requirements.

Mount the Panel reader unit firmly on a wall or at a (non metal) frame.

Mounting requirements:

1. *The Panel reader must **not** be mounted close to any iron. This will influence the performance of the antenna.*
2. *The Panel reader must **not** be mounted close to electrical equipment with background noise. This can disturb the antenna.*
3. *The Panel reader must be mounted on a wall close to a stable power supply.*
4. *The Panel reader must be mounted **> 1.5 m.** from electrical cables or power supply.*
5. *The Panel reader may **not** be exposed to direct sunlight.*

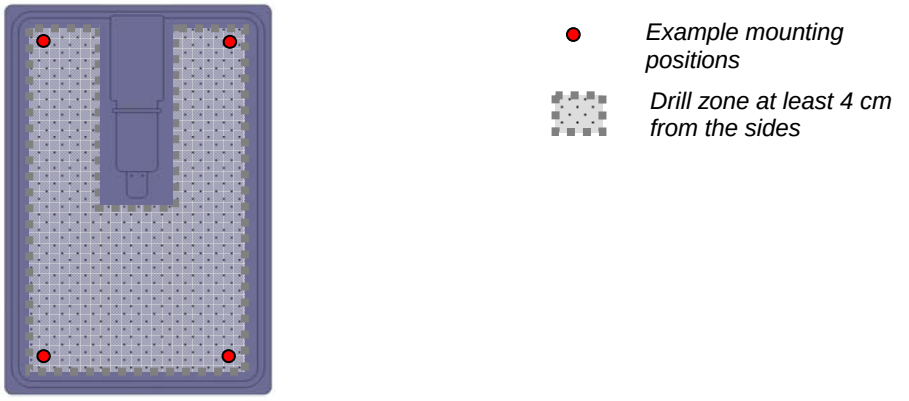


Figure 3. Mounting positions on rear view VP1103 Panel reader

Mount the Panel reader in 4 positions with screws, bolts, and plugs etc. suitable to support the Panel reader. Use a large washer behind the bolt/screw to give extra support. Use a screw or washer with a minimum head diameter of 18 mm. The size of the holes in the antenna must be corresponding with the size of the bolts or screws that are used.

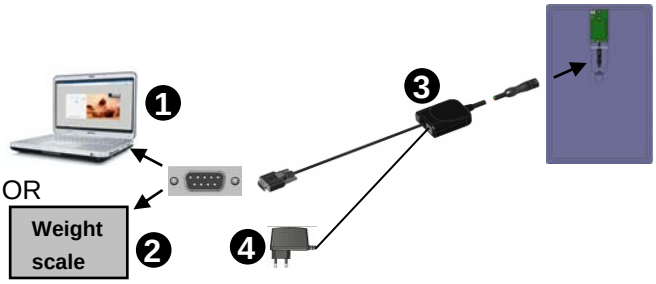
Don't damage the antenna when drilling holes for mounting the Panel reader. This could damage the electronics and affect the functioning of the Panel reader. Keep a minimum drill distance of 4 cm from the sides.

Install cables and power supplies / transformers > 1.5 m. from the Panel reader if possible.

2.2. Connecting to a PC or a weight scale via RS232

2.2.1. Connecting RS232 via a Sub-D connector

Connect a PC or a weight scale to the VP1103 Panel reader RS232 Sub-D connection from the connector. Use an extension cable (art. nr 7707037) of 4 meters to extend the cable if necessary.



1. *RS232 connection to PC*
2. *RS232 connection to weight scale or other device*
3. *Connector*
4. *Adaptor*

Figure 4. VP1103 Panel reader RS232 connection

2.2.2. Connecting RS232 via a Velos Panel reader cable

Connect a PC or a weight scale or other device to the Panel reader via a Velos Panel reader cable (art.nr.7707029). This cable can also be used for connection to a VPU. Shortening of the Velos Panel reader cable is allowed.

VP1103		PC or Weight scale
Shield	⏚	-
Black	-	-
Red	+	12-27 V DC
Green	(TxD)	RxD
Green / White	(RxD)	TxD

Velos Panel reader cable

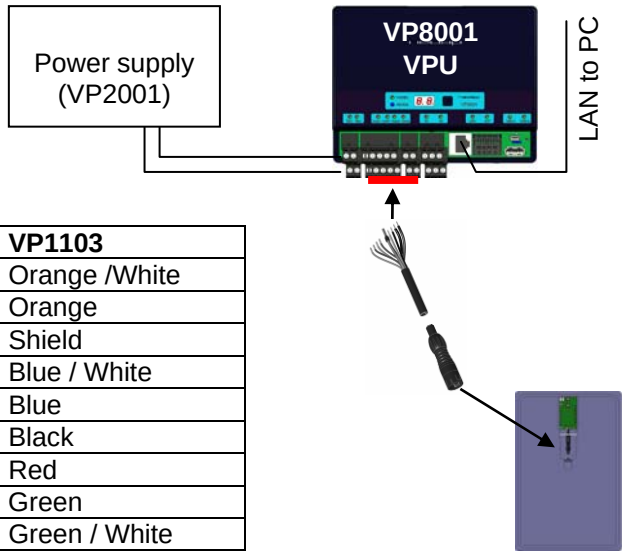
Red	+	Input voltage 12-27 V DC
Black	-	Minus
Blue	C_H	Not connected
Blue / White	C_L	Not connected
Shield	⏚	Shielding connected to minus
Orange	~	Synchronization (antenna) HDX
Orange / White	~	Synchronization (antenna) HDX
Green	TxD	TxD RS232 Communication, normally connected to RxD from PC
Green / White	RxD	RxD RS232 Communication, normally connected to TxD from PC Also connect the minus to PC when using RS232 communication

Use an extension cable (art. nr 7707037) of 4 meters to extend the Velos Panel reader cable if necessary.

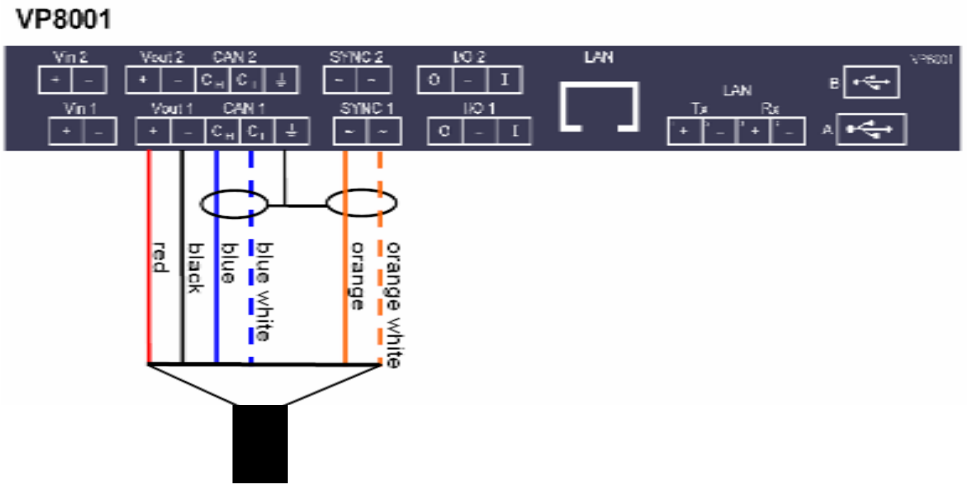
2.3. Connecting to a Velos VPU via CAN communication

2.3.1. Connecting one VP1103 Panel reader

Connect the Panel reader cable (art.nr.7707029) to the VPU connectors.



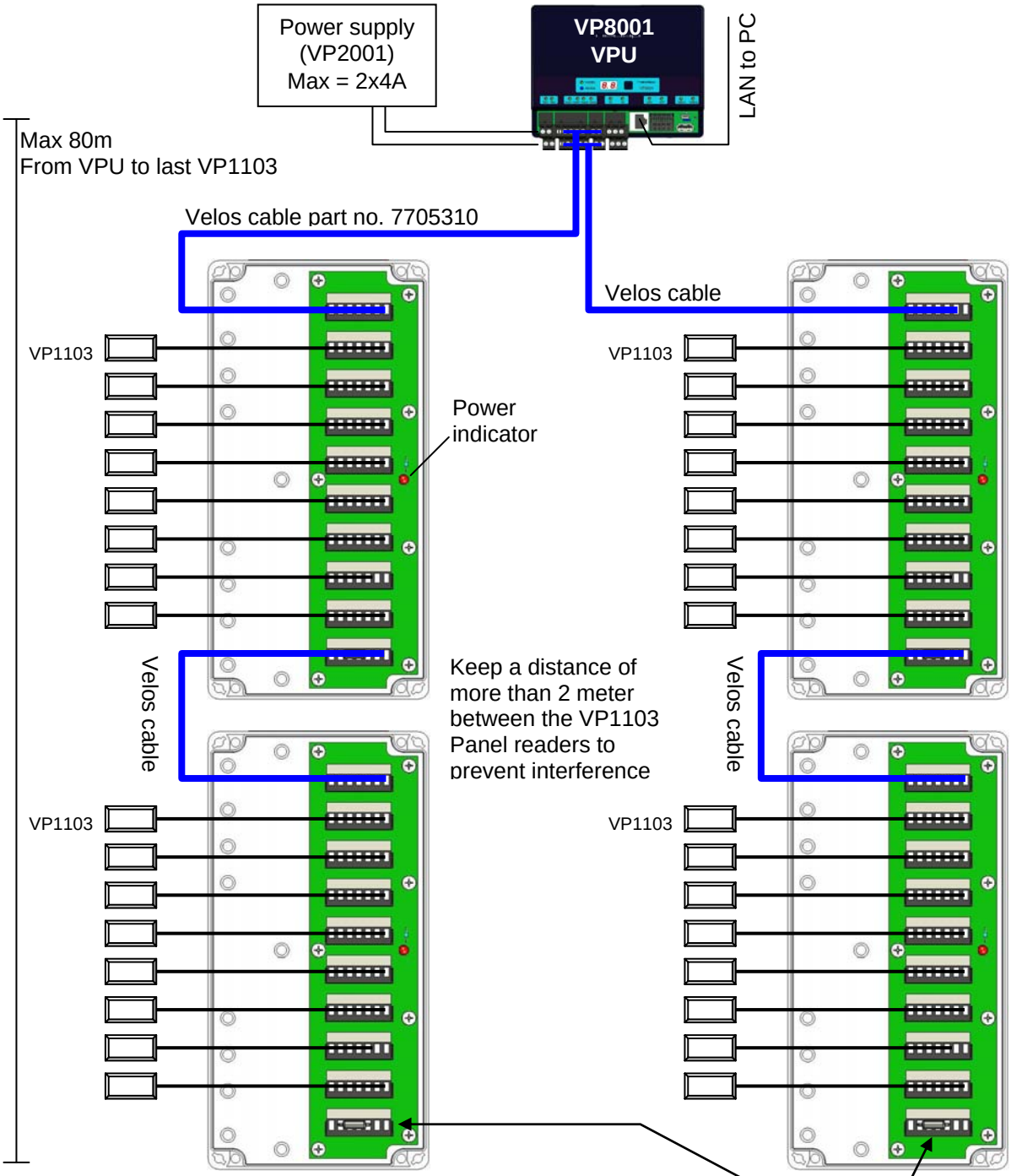
VPU		VP1103
Orange / White	~	Orange /White
Orange	~	Orange
Shield	⏚	Shield
Blue / White	C_L	Blue / White
Blue	C_H	Blue
Black	-	Black
Red	+	Red
	Not connected	Green
	Not connected	Green / White



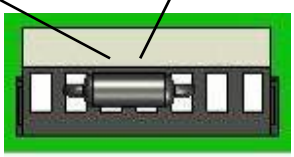
Shortening of the Velos Panel reader cable (art.nr.7707029) is allowed. Use an extension cable (art. nr 7707037) of 4 meters to extend the cable if necessary.

2.3.2. Connecting several VP1103 Panel readers to a Velos VPU

Connect the Panel readers VP1103 to the Velos connection boxes.



Velos cable		VP1103
Orange/white	~	Orange/white
Orange	~	Orange
Shield	⏚	Shield
Blue/white	C_L	Blue/white
Blue	C_H	Blue
Black	-	Black
Red	+	Red



End resistor
Only used at last box

3. Starting up operation

The Panel reader is pre-tuned and ready for use.

3.1. Turn on the power

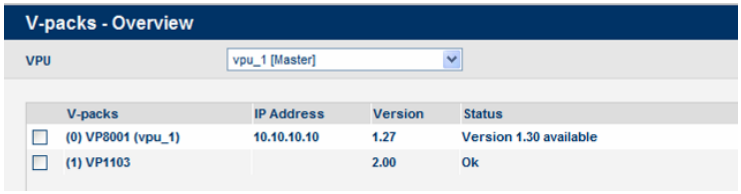
For an RS232 connection: Put the adaptor into an electric socket.

For CAN communication to a VPU: Turn on the Power supply VP2001.

3.2. Checking the VP1103 Panel reader

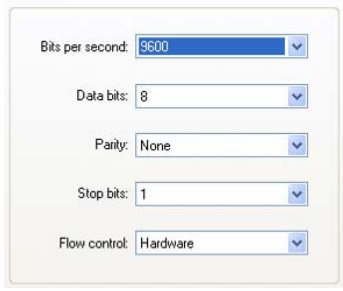
3.2.1. Checking the CAN connection to the VPU

Check the status of the Panel reader that is connected to a VPU in the Velos VPU program web page *Maintenance* > *V-packs – Overview*.



3.2.2. Checking the RS232 connection to a PC

Check the operation of the VP1103 Panel reader that is connected to a PC with the Hyper Terminal program. Set the baud rate of the Hyper Terminal communication program to 9600. The other settings are default.



The tags numbers that are identified by the Panel reader will be displayed in the screen according to the ISO protocol 11784/11785.

4. Maintenance, malfunction and disposal

4.1. Maintenance

Check the operation of the Panel reader regularly.

No regular maintenance is required.

The Panel reader can be cleaned with water and sponge. Avoid (aggressive) cleaning liquids.

4.2. Malfunction

If the Panel reader VP1103 is connected to a VPU, view the actual state of the Panel reader in the webpage *Maintenance* > *V-packs – Overview*.

A reduced antenna performance may be caused by a strong electrical background noise. Install cables and power supply / transformers > 1.5 m. from the Panel reader.

4.3. Disposal

At discard dispose of materials from the Panel reader in accordance with the current environmental rules of the state or local governing authorities.

Appendix A Technical specifications

Measurements VP1103 Panel reader

Total height	595 mm
Total width	495 mm
Depth	30 mm

Specifications for transport / installation

Weight VP1103 Panel reader	6.2 kg
Electrical supply	
Main supply	100V - 240V
Frequency	50 – 60 Hz
Input voltage (always use Nedap power supply)	12 - 27 V DC
Input current (mA) depends on input voltage	0.75 – 0.5 A
Environmental	
Operating temperatures	- 10°C / + 50°C
Transport / storage temperatures	- 25°C / + 70°C
Relative humidity (non condensing)	10°C / 90%
Enclosure protection class (when cover and cables installed correctly)	IP67
The Panel reader may not be exposed to direct sunlight. The Panel reader must always be transported and stored dry and frost-free.	

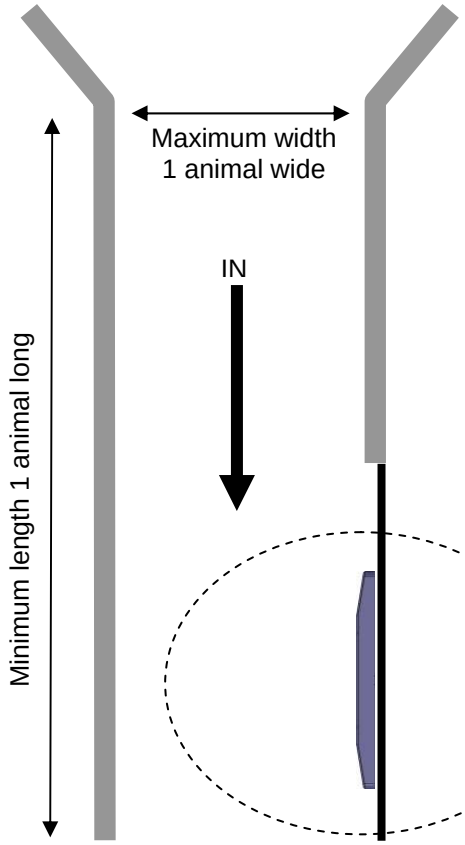
Other specifications

CAN	CAN-bus communication 125 kBit
Power	Power consumption 225 mA with antenna switched on (i.c.o. 500 V)
	Protected against reverse connection power supply
Software	Downloadable by the CAN network
Antennas	Internal fixed antenna
Detection distance	Depending on used tags
Synchronization	Synchronization according to ISO 11785, ISO 24631-7

Appendix B Corridor requirements

The maximum corridor width at the Panel reader location will be different for each animal sort and breed. Make sure the corridor is not too wide at the Panel reader location.

The maximum width of the corridor is essential to achieve a proper working system. Animals should never be able to pass each other, turn around or walk in the wrong direction.



Maximum corridor entrance width: Allow passage of 1 animal at the time. Keep the corridor as narrow as possible.

RFID Eartags : Attach all ear tags on same side of animals (left in this example).

The antenna must be mounted at the side where the tag is attached.

The identification distance of the antenna field

The identification distance of the antenna varies per installation. It depends on the iron and the background noise in the ISO-reader area.

Nedap LiveID - PO Box 104 - 7140 AC Groenlo - The Netherlands - T (+31) 544 471 100
F (+31) 544 466 839 - info@nedap-liveid.com - www.nedap-liveid.com

Manage your livestock