

Weight Sampler

User Manual

Article number ESF Weight Sampler
August 2017



 Vital
element
for
growth

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Version: 01.000
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Weight Sampler User Manual



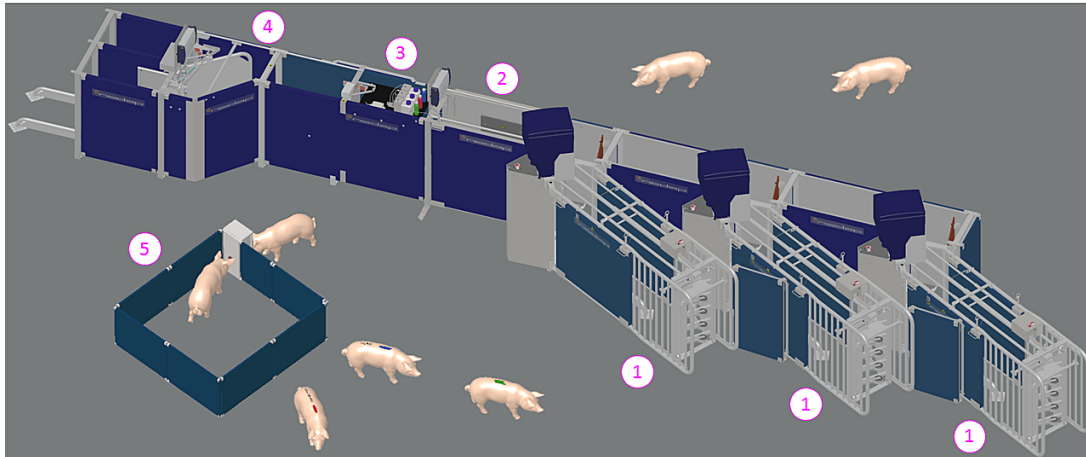
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1 Electronic Sow Feeding overview

Nedap Electronic Sow Feeding (ESF) is an advanced system for individual animal management and automation of routine processes. Depending on the configuration, the system consists of the following units and components.



Units

1. Feeding Stations

To individually provide sows with the correct amount of feed, depending on pre-set parameters such as parity and gestation.

2. Weight Sampler

To measure the weight of individual sows and keep track of their weight development.

3. Color Spray Marker

To mark sows with one or more colors (3 different colors are possible). The spray marker is normally mounted on the Sow Separation Unit (4), but it can be mounted on a Feeding Station (1) or a Heat Detection Unit (5) as well.

4. Sow Separation Unit

- To separate sows depending on their reproduction state.
- To separate sows without an ear tag (with option ID-check).
- To separate sows with an attention.

5. Heat Detection Unit

To detect whether sows are in heat.

Electrical components

The ESF is powered by a VP2001 power supply. A VP8001 processing unit (VPU) manages the VP1007 reader I/O controller, VP1001 reader motor controller and VP3001 motor controller in the various units.

The controllers are interconnected by a Velos cable. The VPU is connected to a network (LAN) and the Internet.



Control software

The system is controlled by Nedap Velos software, a system for livestock identification and management, based on the latest software technology. Nedap's unique software determines the behavior of standard hardware components and/or the total management system. The software can easily be configured for specific user requirements.

Access to the system is protected by user accounts. Different user accounts give access to different user levels, for example for farm personnel or a service engineer.

Management

A standard internet browser is used to access the system via its domain name (DNS) or its IP address. No additional PC software is required, the only condition is that all system units and components are linked via a LAN.

The system can also be managed remotely by a tablet computer or a smartphone.

When accessing the system on a PC, tablet or smartphone, a web page with clear and vital information is immediately displayed. Users can monitor the system wherever they are. They can check the status of individual animals or data for groups of animals.

1.1 Weight Monitoring introduction

Nedap Weight Monitoring provides automatic weighing and data collecting of individual sows in (gestation) group housing. The Nedap software algorithm accurately calculates the weight of each sow. The weight samples are stored and processed in the cloud. Week weights are displayed in the Velos interface.

Options & benefits

- Nedap Weight Monitoring saves time and effort in comparison to traditional manual weighing and data storage.
- Weight data help to keep the sows in prime body condition and to healthier and more uniform piglets.
- Weight data can also be used to administer the correct amount of treatment in relation to the sow's weight. This will result in healthier sows and it is also more cost-efficient.
- Producers can share their weight data with third parties, such as feed suppliers. Feed suppliers can use the data for example to develop tailor-made nutritional solutions.
- The weight data can also be shared with genetic companies to optimize their selective breeding strategies and processes.

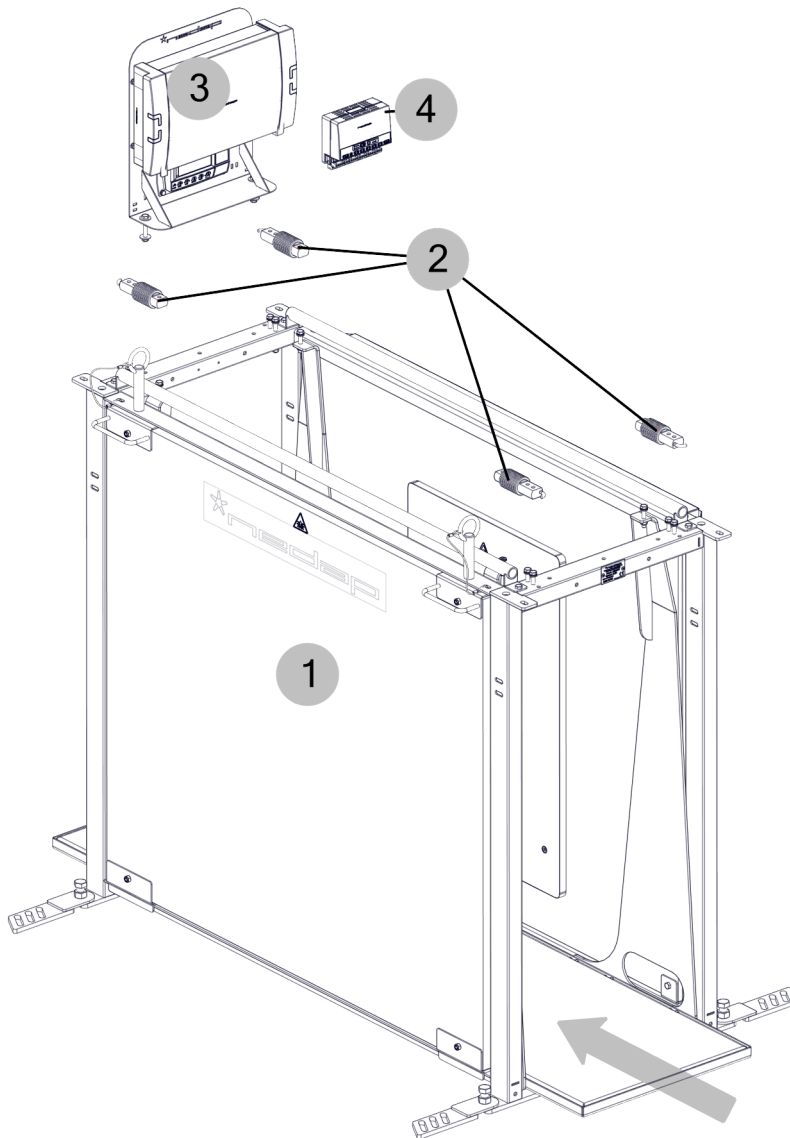


For commercial use, a cloud data connection is under development. Check the website <http://connect.nedap-livestockmanagement.com> for more information.



Components


The Nedap Weight Sampler consists of the following components.



1. Base unit
2. Load cells (200 kg)

3. Control unit
4. VP1007 reader I/O controller


1. The base unit is connected to the Nedap Corridor System and the Sow Separation Unit.
2. The weighing frame and weighing platform are suspended to the base unit frame with 4 load cells (200 kg).
3. The control unit consists of a weighing indicator and a V-box 2 with a junction print inside. The load cells are to be connected to this print.
4. The VP1007 reader IO controller is mounted in the V-box 2. The VP1007 controls the Weight Sampler.

 The arrow shows the walking direction of the sows.



2 Using the unit

2.1 Operating the Weight Sampler

 A reliable internet connection is an absolute requirement for Weight Monitoring and the Weight Sampler to operate.

The Weight Sampler functions automatically. There are no special actions required. Under normal circumstances, only regular checks, cleaning and some maintenance (see [Maintenance scheme \(page 12\)](#)) must be done.


The section "Functions and controls" explains the Velos menu options that are related to the Weight Sampler.

2.2 Week weights

Data processing

This section contains a brief explanation of how the system processes weighing data to generate week weights.

1. The system operates with week weights (based on a calendar week) only. Each calendar week starts on Monday morning at 00:00 hour.
2. Raw weight samples are pushed directly to the cloud, without being processed locally.
3. Visiting weights are determined from the raw weight samples.
4. Day weights are determined from the visiting weights.
5. A minimum of 3 day weights are required to determine a correct week weight.
6. All calculating algorithms are executed in the cloud.

 Week weight data points are displayed in Velos (see [Weight check \(page 9\)](#)).
When there is insufficient usable data to determine a correct week weight, no data points are displayed in Velos.

2.3 Functions and controls


After logging in to Velos, the main menu appears on screen.

The menu options that are applicable to Weight Monitoring and the Weight Sampler are explained in the following sections.

2.3.1 Ideal weight curve

How to setup the ideal weight curve

The Weight Sampler comes with a pre-set ideal weight curve for sow weights at insemination and weights at farrowing for parities 0 – 10, and with a default tolerance of 20 kg (44 lb.). Change these settings for the specific breed of your sows.

 Always consult your genetic supplier to set up the ideal weight curve for your specific breed of sows before using the Weight Sampler.



1. Go to **Settings** ► **Weight monitoring** and click **Ideal weight curve**. The ideal weight curve graph is displayed.



Hover the mouse pointer over the graph to display weight values.

2. Enter the tolerance and the ideal weight for each parity at insemination and farrowing (see table with default values below).



Weights must be entered in kilograms. The pounds equivalent is shown between parentheses.

Tolerance	20 kg (44 lb.)	
Parity	Weight at insemination	Weight at farrowing
0	145 kg (320 lb.)	210 kg (463 lb.)
1	175 kg (386 lb.)	235 kg (518 lb.)
2	195 kg (430 lb.)	255 kg (562 lb.)
3	215 kg (474 lb.)	275 kg (606 lb.)
4	235 kg (518 lb.)	280 kg (617 lb.)
5	235 kg (518 lb.)	280 kg (617 lb.)
6	235 kg (518 lb.)	280 kg (617 lb.)
7	235 kg (518 lb.)	280 kg (617 lb.)
8	235 kg (518 lb.)	290 kg (639 lb.)
9	240 kg (529 lb.)	290 kg (639 lb.)
10	240 kg (529 lb.)	290 kg (639 lb.)

3. Click **Submit** to save the data.



2.3.2 Weight loss attentions


Weight loss


Sows that lose weight in two successive weeks get a "Weight loss attention". Weight loss may be an indication that there is something wrong with the animals, since sows normally show an increase in weight.

The software compares the present week weight with the previous week weight. If the weight loss is > 1%, a weight loss attention is issued.

Example

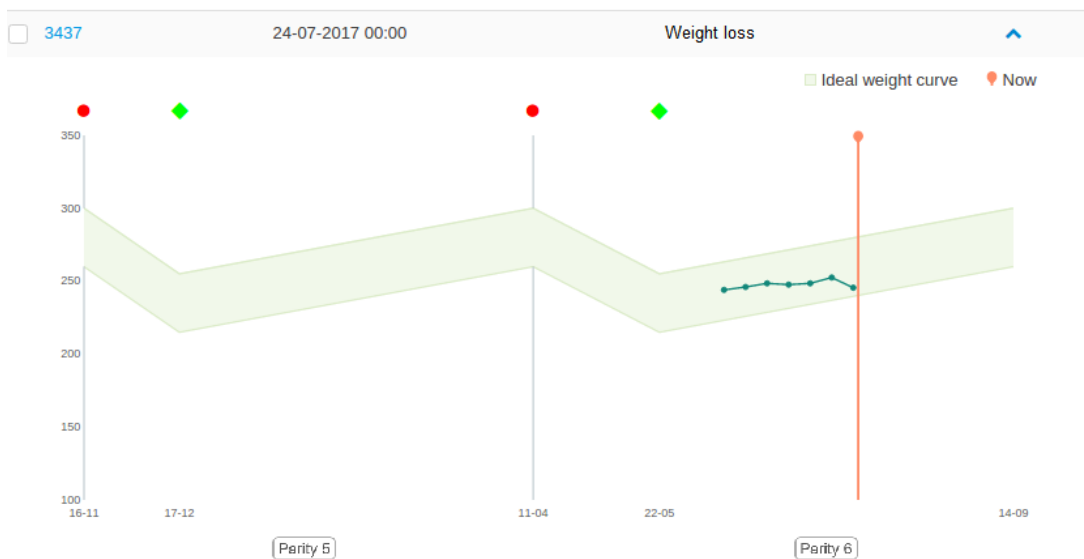
If a sow with a previous week weight of 250 kg (551 lb.) now has a week weight of less than 247.5 kg (545.6 lb.), it will get a weight loss attention.


 Make sure that you have entered the data for the ideal weight curve (tolerance, parity numbers and weight values at insemination and farrowing) of your sows correctly.


 See [Ideal weight curve \(page 6\)](#) for setting up an ideal weight curve.

Examine weight loss attentions

1. Go to **Dashboard ► Weight monitoring** and click **Weight loss** (the number of sows with an attention is shown between brackets). A list of all sows with a weight loss appears.
2. Click the animal number you want to examine. The ideal weight curve for the last two parities (unless the sow is in its first parity) and the week weights of the sow are displayed.



 Hover the mouse pointer over the graph and the data points to display the week weights and the animal number.

 Weight loss attentions remain active for a minimum of 1 week. They will remain active until a new week weight shows an increase in weight.



Possible actions

There are several actions possible to handle sows that show a weight loss.

1. Separate the sows to examine them and try to find the cause of the weight loss.
2. Mark sows with a weight loss with the Spray Marker to monitor them.
3. Change the condition settings of sows with a weight loss (see "Condition setting").



Also check if sows with a weight loss have a heat detection attention. This is an indication that the sow is no longer pregnant or that the sow has not become pregnant after the last insemination.

Condition setting

1. Go to **Dashboard** ► **Weight monitoring** and click **Weight loss** (the number of sows with an attention is shown between brackets). A list of all sows with a weight loss appears.
2. Mark the box in front of the animal number(s) you want to select or select all animals by marking the top box in front of **Animal**.
3. Click the blue arrow pointing down in the **Actions** box.
4. Click the pop-up **Quick entry** box to set up one or more actions (a list of 4 possible actions appears).
5. Mark **Action 1** and click on the arrow pointing down to activate a roll down menu *).
6. Click **Condition**, then choose the wanted condition score.
7. Click **Next** to continue.
8. Mark **Apply** to all animals, then click **Next** to confirm. After the settings have been stored, the message Done appears under the heading **Progress**.



*) If you want to set up more actions, mark **Action 2** (if necessary also **Action 3** and **Action 4**), click on the arrow pointing down to activate a roll down menu and fill out the required data as in step 5.

2.3.3 Weight check

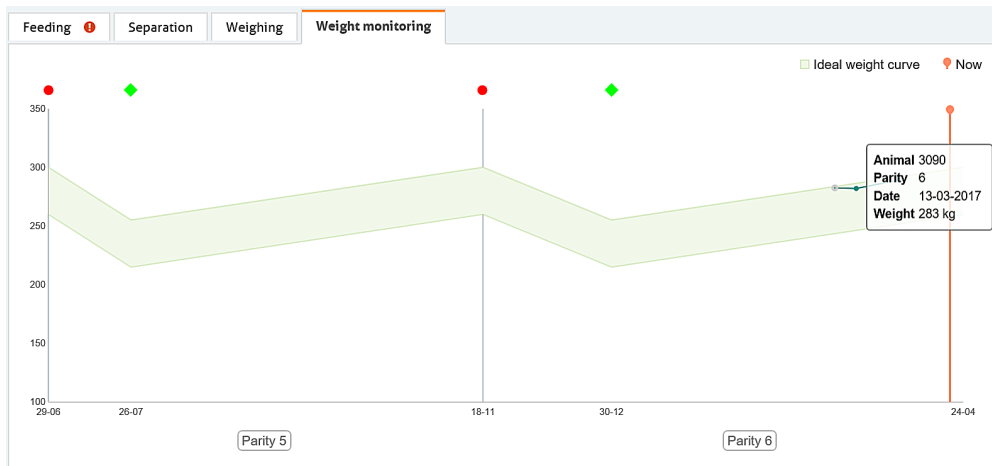
How to check weights

The weights of sows in gestation are displayed in a graph.

1. Go to **Farm** and click the blue arrow pointing down in the **Select location** box.
2. Click a gestation location with a Weight Sampler.
3. Click **View animals**. A list of all sows in that location appears.
4. Click on an animal number to see data for that animal.



The data contains "Basic data", "Calendar data" and a "Weight monitoring" tab. The ideal weight curve of the last two parities is displayed in the Weight monitoring tab (unless the sow is in its first parity). The actual week weights are plotted in the graph.



Hover the mouse pointer over the graph and the data points to display the weights and the animal number.

- Click on the blue arrow pointing down after the animal number to display a list of all animals or click on the blue << or >> to display data for the previous or next animal number.

How to use sow weights for injecting pharmaceuticals

Since the weight of the sows is known, these data can be used to determine the correct amount of pharmaceuticals for sows that are ill and need to be inoculated.

- Go to **Farm** and select the location where you have a Weight Sampler installed.
- Click **View animals** and click the animal number you want to inoculate.
- Check the animal's weight to determine the correct amount of pharmaceuticals.

2.3.4 Monitor Weight Sampler

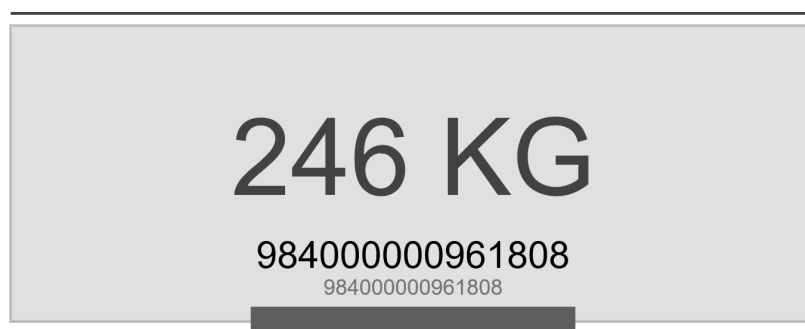
How to monitor the Weight Sampler

The functioning of the Weight Sampler can be monitored in real time.


- Go to **Maintenance** ► **Monitor** and click **Behavior components**.

When more than one VPU is installed, click the VPU to which a Weight Sampler is connected.

- Go to **Monitor** and click **View**. A simplified image of the Weight Sampler and weighing data appear on screen.





-  The tag number of the last sow that passed the Weight Sampler is shown at the bottom of the image. When the next sow walks over the weighing platform, its tag number and weight are displayed. Since sows move over the weighing platform, the weight shown is not the real weight of the sows. The real weights are displayed as week weights (see [Weight check \(page 9\)](#)).



If there is no sow on the weighing platform, "0 KG" is shown.


Due to environmental factors the screen may occasionally show a different value, for example "1 KG". This is no cause for alarm, no further action is required.




3 Maintenance

3.1 Maintenance scheme


Maintain the Weight Sampler according to the scheme below. Regular maintenance is necessary to keep the unit in optimum condition and to retain the weighing accuracy.

 It is easier to perform maintenance if you isolate the sows first.
For cleaning, remove the blue side panel and the weighing platform.

When	Check	Action	Who
Daily	Check for obstructions under or against the weighing platform.	Remove obstructions if necessary.	User
Weekly	Check if the weighing indicator shows "0 kg" when there are no sows, dung or dirt on the weighing platform ¹⁾ .	Briefly push the ">T< TARE" key to set the display to "0 kg" if necessary ²⁾ .	User
Monthly	Check for dung or dirt under the weighing platform.	Pressure wash if necessary.	User
	Check if the floor anchors are properly tightened.	First check if the Weight Sampler is level front to back and left to right. Adjust if necessary, then re-tighten the floor anchors.	User
Quarterly	Check the load cells for defects and malfunctioning.	Check the load cells according to Calibrate the unit (page 12) , section "Load cell check".	User Service Partner
	Check if the load cell bolts are properly tightened ³⁾ .	Tighten if necessary.	User Service Partner
If necessary	Calibrate the unit.	See Calibrate the unit (page 12)	User Service Partner




-  ¹⁾ Due to environmental factors, the display may from time to time show weight values that are slightly above or below zero. This does NOT require to push the ">T< TARE" key.
- ²⁾ Do NOT push the "ZERO" button to set the weighing indicator to 0 kg. If you do this, the unit must be re-calibrated.
- ³⁾ The correct tightening moment for the load cell bolts is 30 Nm (22 lbf-ft.). Do NOT over-tighten the bolts to prevent damaging the load cells.


3.2 Calibrate the unit


 The unit must be calibrated with a minimum metric weight of 180 kg ± 0.2 kg or a minimum USC weight of 400 lb. ± 7 oz. (= 181.5 kg ± 0.2 kg) before it can be used.
It must also be checked regularly to retain the weighing accuracy (see [Maintenance scheme \(page 12\)](#)).




Calibration procedure

Action	Display
1. Push and hold the "I" and the "f" keys of the weighing indicator at the same time until "Full SEtuP" appears in the display, followed by "bUiLd".	"Full SEtuP". "bUiLd".
2. Push the ">0< ZERO" key twice.	"CAL".
3. Push the ">T< TARE" key once.  Check if the weighing platform is empty, clean and free from obstacles on, under or against it.	"ZEro".
4. Push the "f" key twice.	"Z in P", followed by "0 kg".  This is the 0 kg calibration level of the weighing platform.
5. Push the ">0< ZERO" key once	"CAL"
6. Push the ">T< TARE" key twice.	"SPAN".
7. Push the "SELECT" key once.	"00300.0 kg" (or another number) blinks in the display.
8. Push the "f" key once.	The first digit blinks.
9. Enter the calibration weight that is going to be used. a. Push the "PRINT" key to edit the first digit. b. Push the "SELECT" key to go to the next digit. c. Repeat steps a and b until "00180.0 kg" or "00181.5 kg" is shown in the display.	"00180.0" or "00181.5 kg" must become visible in the display.
10. Put a total metric weight of 180 kg ± 0.2 kg or a USC weight of 400 lb. ± 7 oz. (= 181.5 kg ± 0.5 kg) evenly distributed on the weighing platform.  A known metric weight of 180 kg ± 0.2 kg or a known USC weight of 400 lb. ± 7 oz. (= 181.5 kg ± 0.2 kg) MUST be used for calibration, otherwise the weighing accuracy is too small to obtain dependable results.	"00180.0 kg" or "00181.5 kg"
11. Push the "f" key once to set this calibration level for the Weight Sampler.	"S in P".
12. Push and hold the "I" and the "f" keys at the same time until "SAvinG" appears in the display and a beep sounds. The calibration settings are now stored.	"SAvinG".
13. Remove the calibration weight. The display should now show "0.0 kg".	"0.0 kg".

 The weighing indicator displays only kilograms.


 Push the ">T< TARE" key to set the weighing indicator to zero (0 kg) if any number shows in the display when the weighing platform is clean and empty.

 If you push the ">0< ZERO" key by accident, the unit must be re-calibrated as described in the procedure above.



Load cell check

1. Put a weight (for example a bucket of sand or water) on one of the corners of the weighing platform and check the weight in the display.
2. Remove the weight and check if the display returns to 0 kg.
3. Move the weight to the next corner and check if the weight in the display is equal to the weight of step 1.
4. Repeat step 1 – 3 until all 4 corners are checked.
5. The corner that shows a deviation in weight is the corner with a malfunctioning load cell.
6. Check the wiring of the suspected load cell and fix if possible.
7. Re-calibrate and check again.
8. If the deviation stays, replace the load cell and re-calibrate.

 The Weight Sampler is now ready for use.



4 Trouble shooting

If the unit does not function correctly or if an error message is displayed, use the following sections to try to solve the issue.


4.1 General errors

Error	Cause	Solution	Who
The unit does not function	No electrical power	Check power main. Reset circuit breaker or replace fuse.	User
		Check VP2001 power supply. If defective, replace VP2001 power supply.	Service Partner
	Weighing platform blocked	Lift weighing platform, remove dirt and debris. Clean with pressure hose if necessary.	User
	Weighing platform or weighing frame damaged	Check weighing platform and weighing frame for damage. Replace defective component(s).	Service Partner
	One or more load cells defective	Check load cells. Replace defective load cell(s).	Service Partner
The unit does not function properly	Software failure	Switch off power and switch on power again to restart the unit. Call Service Partner if error remains.	User
	Internet connection does not function	Check the internet connection. Call Service Partner if problem cannot be solved.	User
	Defective or faltering electronics	Check VP8001 and/or VP1007. Replace defective component(s).	Service Partner
	One or more load cells malfunctioning	Check load cells. Replace malfunctioning load cell(s).	Service Partner

4.2 LED indications V-box 2

State	Cause	Solution	Who
Blue led on the V-box 2 flashes	Communication error or Antenna error	Check "System Attentions" in Velos.	User
Blue led on the V-box 2 is off	Power is off	Check power supply VP2001. Check circuit breaker/fuse and cabling. If this does not solve the problem, call Service Partner.	User




 When the system is functioning properly, the blue LED on the V-box 2 is "breathing".

4.3 System attentions


System attentions can be displayed from the Velos "Dashboard" or "Maintenance" menu.

- When using the Dashboard menu, go to **System attentions** and click on a `system attention` to display any issue.
- When using the Maintenance menu, go to **System** and click on `System attentions` to display any issue.

Error	Cause	Solution	Who
Communication timeout	The communication between the VP1007 and the weighing indicator does not work.	Call Service Partner to solve the problem.	User Service Partner
Antenna attention	Antenna is disconnected.	Check antenna cable for defects. Fix if possible. Call Service Partner to replace antenna cable if fixing is impossible.	User Service Partner
	Antenna tuning not correct.	Call Service Partner to tune the antenna.  The Service Partner can tune the antenna remotely.	User Service Partner

4.4 Weighing indicator trouble shooting

General errors

Error	Cause	Solution	Who
(U - - - -)	The weight is below the minimum allowable weight reading.	Increase the weight or decrease the minimum allowable weight reading.	Service Partner
(O - - - -)	The weight is above the maximum allowable weight reading.  Warning Overloading may damage mechanical scale elements.	<ul style="list-style-type: none"> • Check the condition of load cell connections. • Check for damaged load cell. 	Service Partner
(ZERO) (ERROR)	The weight reading is beyond the limit set for Zero operation. The operation of the <ZERO> key is limited in the setup during installation. The indicator cannot be Zeroed at this weight.	Increase the Zero Range (OPTION: Z.RANGE) or use the <TARE> key instead.	Service Partner
(STABLE) (ERROR)	Scale motion has prevented a <ZERO>, <TARE> or <PRINT> operation from occurring on command.	Try the operation again once the scale is stable.	User Service Partner



Setup and calibration errors


Error	Cause	Solution	Who
(ENTRY) (DENIED)	<ul style="list-style-type: none"> The instrument may be in Safe Setup and an item that needs Full Setup has been selected for editing. When accessing setup, more than three attempts have been made with the incorrect pass code. 	<ul style="list-style-type: none"> Access Full Setup to edit the item. Turn the instrument off. When the instrument is turned back on, enter the correct pass code to access setup. 	Service Partner
(LIN.PT) (LO)	An attempt has been made to place a linearization point below zero.	Incorrect linearization point entered (must be between zero and full scale).	Service Partner
(PT.TOO) (CLOSE)	An attempt has been made to place a calibration point too close to an existing calibration point.	Re-enter the calibration point. Points must be spaced by at least 2% of full scale from each other.	Service Partner
(RES) (LO)	The scale build is configured for less than 100 graduations.	Check the resolution (count-by) and capacity settings.	Service Partner
(RES) (HIGH)	The scale build is configured for more than 30,000 graduations (K303: 60,000 graduations).	Check the resolution (count-by) and capacity settings.	Service Partner
(SPAN) (LO)	The load cell signal range (span) is too small for these settings.	<ul style="list-style-type: none"> Incorrect span weight entered (must be between zero and full scale). Scale wiring incorrect. Wrong load cell capacity (too large). Wrong or no calibration weight added to scale. 	Service Partner
(SPAN) (HI)	The load cell signal range (span) is too large for these settings.	<ul style="list-style-type: none"> Incorrect span weight entered (must be between zero and full scale). Scale wiring incorrect. Load cell capacity too small for application. 	Service Partner
(ZERO) (LO)	An attempt has been made to calibrate zero below -2 mV/V.	Scale wiring incorrect.	Service Partner
(ZERO) (HI)	An attempt has been made to calibrate zero above +2 mV/V.	<ul style="list-style-type: none"> Remove all weight from scale. Scale wiring incorrect. 	Service Partner


Diagnostic errors


Error	Cause	Solution	Who
(E0001)	The power supply voltage is too low.	Check supply	Service Partner
(E0002)	The power supply voltage is too high.	Check scale / cables	Service Partner
(E0010)	The temperature is outside of allowable limits.	Check location	Service Partner



Error	Cause	Solution	Who
(E0020)	Scale build is incorrect. The number of graduations has been set too low or too high.	Fix up scale build	Service Partner
(E0100)	The digital setup information has been lost.	Re-enter setup	Service Partner
(E0200)	The calibration information has been lost.	Re-calibrate	Service Partner
(E0300)	All setup information has been lost.	Enter setup and calibrate	Service Partner
(E0400)	The factory information has been lost.	Return for Service	Service Partner
(E0800)	The EEPROM memory storage chip has failed.	Return for Service	Service Partner
(E2000)*	ADC Out of Range Error. This may be caused from a broken load cell cable.	<ul style="list-style-type: none"> • Check BUILD: CABLE setting. • Check load cell cable, wiring, connector. 	Service Partner
(E4000)	The battery backed RAM data has lost data.	Re-enter setup	Service Partner
(E8000)	The FLASH program memory is incorrect.	Return for Service	Service Partner

 Check: Service personnel can check the item on site.
 Return for Service: The instrument must be returned to the manufacturer for factory service.

 * (E2000) is the most common error message.

 The "E" type error messages are additive. For example if the weighing indicator is running off batteries and the temperature drops, the battery voltage may be too low. The resulting error messages will be E0011 (0001 + 0010).
 The numbers add in hexadecimal as follows: 1 - 2 - 3 - 4 - 5 - 6 - 7 - 8 - 9 - A - B - C - D - E - F (For example 2 + 4 = 6 or 4 + 8 = C).



5 Symbols used



Caution: The product or the environment is at risk if the user does not follow procedures carefully.



Danger due to electromagnetic fields.

- People with pacemakers, metallic implants or hearing aids may experience discomfort or complications.
- Consult your doctor before entering a site with equipment that generates electromagnetic fields, such as inverters.



Danger of getting jammed, shut off before entering or servicing!



Danger: Life threatening condition or situation.



Note: Additional information to point out possible problems.



Remove before use.



Secure before opening.



Starts automatically, shut off before entering or servicing!



Tip: Suggestions and advice to perform certain tasks more easily.



Warning: top heavy!



Warning: Users can (seriously) hurt themselves or damage the product if instructions are not followed carefully.



6 Glossary

Term	Description
Behavior component	The behavior of a standard hardware component and / or the total management system, set by Velos software.
CAN (bus)	Controller Area Network. A standard serial bus to connect electronic controllers.
DHCP	Dynamic Host Configuration Protocol.
ESF	Electronic Sow Feeding.
Ethernet	Network communication standard for PCs in a LAN.
LAN	Local Area Network.
RFID	Radio Frequency IDentification.
Router	Networking device that forwards data packets between computer networks.
Switch (connection box)	Connects VPU's to a PC (network).
V-box	Housing for V-packs.
V-pack	VPU or VP.
VP1007	Reader Input/Output controller.
VP2001	Power supply (25 Vdc, 2x 4 A).
VP2002	Power supply (25 Vdc, 1x 2 A).
VP3001	Reader Input/Output controller.
VP8001	Velos Processing Unit (VPU).
VPU	Velos Processing Unit.
Velos cable	Shielded 6-pole communication / power cable to connect VPU's and V-packs.
Velos software	Nedap software to control the system.



7 Declaration of Conformity



Declaration of Conformity

We, the undersigned,

Company	N.V. Nederlandsche Apparatenfabriek "Nedap"
Address, City, country	Parallelweg 2, 7141 DC Groenlo, The Netherlands

certify and declare under our sole responsibility that the following equipment:

Product description / Intended use	Weight sampler system
Manufacturer	N.V. Nederlandsche Apparatenfabriek "Nedap"
Brand	Nedap
Model: SOW WEIGHT SAMPLER	

is evaluated and complies with **Directive 2011/65/EU** of the European Parliament and of the council of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment and with **Directive 2006/42/EC** of the European Parliament and of the council of 17 May 2006 on machinery.

The following laboratories and institutions performed the tests and issued the relevant reports:

Report numbers	Issued by
210717 SCAN2049_000.pdf 270717 TCF_Checklist machinerichtlijn Sow weighing	DSM Metaalbewerking BV, Wethouder Buitenhuisstraat 8 7951 SM Staphorst Nedap, Parallelweg 2, 7141 DC Groenlo, Netherlands

The technical documentation as required by the Conformity Assessment procedure is kept at the following address:

Company	N.V. Nederlandsche Apparatenfabriek Nedap	
Address, City + Country	Parallelweg 2, 7141 DC Groenlo, The Netherlands	
Phone - and fax number	+31 544 471 111 and +31 544 463 475	
E-mail	reinold.hubers@nedap.com	
	TF reference nr.	270717.01
	Drawn up in	Groenlo, The Netherlands
	Date	27 July 2017
	Name and position	Reinold J.W. Hubers, Compliance Engineer



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