FÖRSTER TECHNIK®

Automatisch besser.

Installation instructions

MultiReader identification unit

S22.1d

Version 5.35 and higher

1. Introduction

These installation instructions allow you to operate the MultiReader identification unit safely in the intended manner.

- Please read these installation instructions carefully before putting the MultiReader identification into service.
- Keep the installation instructions ready and available at all times and pass them on to the next user.
- Observe all of the warnings and safety instructions in this operating manual at all times.

1.1   Disposal

All components, liquids and solids must be disposed of in compliance with the applicable official regulations for proper waste recycling and disposal in your country. Also comply with the corresponding safety data sheets.

1.2   Manufacturer's contact details

Please get in touch with us if you have any questions on our products or require technical support!

Please note down the item number and the serial number stated on the device to have it ready and available whenever you make a call.

Item no.:

Serial no.:

Our contact details:

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78234 Engen, Germany

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2. Important safety instructions

2.1 Intended use

Only use the MultiReader as an electronic transmitter and receiver unit for RFID for Vario and Compact automatic calf feeders.

2.2 Necessary qualifications of the service technician

Only trained service technicians are authorized to install the MultiReader, put it into service and subject it to maintenance and repairs.

Service technicians are specialists with the appropriate qualifications. Service technicians are able to assess the work assigned to them and detect potential risks on the basis of their technical training as well as their knowledge of the relevant standards. They are familiar with the relevant accident prevention regulations, generally accepted safety regulations and country-specific standards and provisions.

2.3 How am I warned of hazards?

2.3.1 What are the components of a hazard description?

A hazard description always consists of the following elements:

- Hazard word (danger, warning, caution, attention)
- Type of hazard (what can happen?)
- Location of hazard (where can it happen?)
- Actions necessary for preventing the hazard (what should I do?).

2.3.2 Potentially fatal hazards or health hazards

A hazard symbol ⚠ (warning triangle with an exclamation mark) and the following hazard words indicate the risk of fatal injury or detrimental effects on health.

⚠ **DANGER!**

The word DANGER indicates an immediate danger that can cause loss of life or injury.

Marking in the installation instructions: **DANGER** (white font on red background).

⚠ **WARNING!**

The word WARNING indicates a potentially dangerous situation that can result in loss of life or severe injury.

Marking in the installation instructions: **WARNING** (black font on orange background).

> ⚠ **CAUTION!**

The word CAUTION indicates a potentially dangerous situation that can result in minor injuries.

Marking in the installation instructions: **CAUTION** (black font on yellow background).

2.3.3   Material damage

> *NOTICE!*

The word NOTICE warns you about the risk of material damage. The device or an object or animal in its vicinity, such as a calf, can be damaged.

Marking in the assembly instructions: white writing on a blue background

2.3.4   Safety signs

The safety signs on the product are an important part of the safety concept and help prevent accidents.

They indicate danger areas on the machine and warn against residual risks.

Keep all safety signs completely in legible condition and renew them if they become unreadable.

No spraying

Changes or modifications not expressly approved by the party responsible for compliance voids the user´s authority to operate this eqiupment.

Les changements ou modifications non expressément approuvés par la partie responsable de la conformité annulent l'autorité de l'utilisateur à faire fonctionner cet équipement.

2.4 Obligations of the owner

The owner is obliged to:

- Rule out misuse by children,
- Carefully read and understand these mounting instructions before putting the MultiReader into service,
- Only allow operating personnel to work with/on the MultiReader who:
  - Are familiar with the basic operational safety and accident prevention regulations,
  - Have been given instructions on work with/on the MultiReader,
  - Have read and understood these mounting instructions,
- Operate the MultiReader only as intended,
- Do not change the design or functions of the MultiReader,
- Operate the MultiReader only in perfect functional condition,
- Subject the MultiReader to regular visual inspection for possible damage and have it rectified by a service technician if necessary,
- Make sure the MultiReader's connection point is easy to access at all times,
- Make sure the MultiReader is mounted at the point intended,
- Protect the MultiReader and the corresponding cable from exposure to sunlight.
- Make sure all the electrical cables are installed outside the animal area.

2.5 Structural alterations

The MultiReader must not be subjected to any unauthorized alterations at any time.

Only original spare parts, wear parts and accessories may be used, since any warranty claims will otherwise expire.

3. Technical data

3.1 MultiReader

Height: 430 mm
Width: 300 mm
Depth: 100 mm

Training push-button with entitlement LED

The training push-button activates the training pump. The training pump is used to help the animals to get accustomed to the automatic feeder and to stimulate calves with a weak sucking behavior.
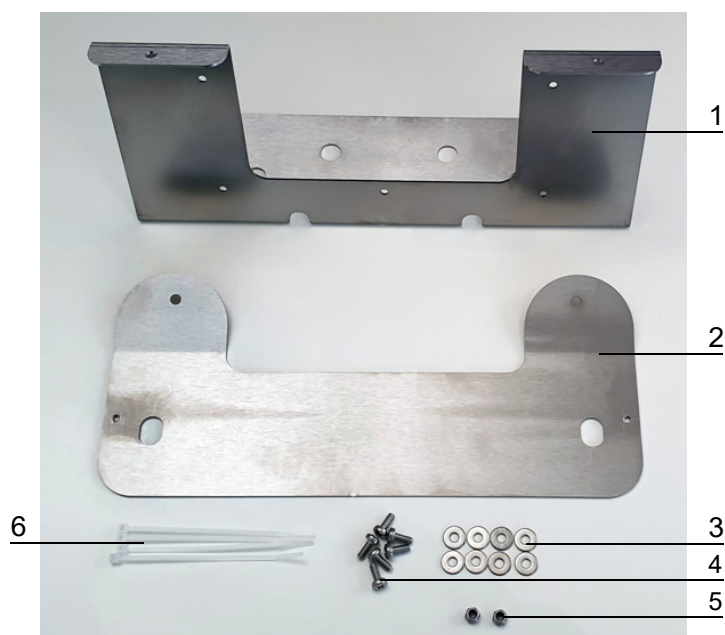
- The LED is illuminated: The calf has feed entitlement.
- The LED flashes slowly: The feed entitlement of the calf is below 0.5 L.
- The LED flashes rapidly: The calf has no feed entitlement.

3.2 Accessories

3.2.1 Mounting bracket (with front plate mounting)

3.2.1.1 Scope of delivery of the mounting bracket

1 Lower holder
2 Upper holder
3 Washers (6x)
4 Oval-head screws (6x)
5 Nuts (2x)
6 Cable ties (4x)

3.3   FCC

This equipment complies with Part 15 of the FCC rules. Any changes or modifications not expressly approved by the Manufacturer could void the user's authority to operate the equipment. This device complies with Part 15 of the FCC rules subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept all interference received, including interference that may cause undesired operation.

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

3.4   IC

This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

This device complies with Health Canada's Safety Code 6 / IC RSS-210. The installer of this device should ensure that RF radiation is not emitted in excess of the Health Canada's requirement.

Cet appareil est conforme avec Industrie Canada RSS standard exempts de licence (s). Son utilisation est soumise à Les deux conditions suivantes: (1) cet appareil ne peut pas provoquer d'interférences et (2) cet appareil doit accepter Toute interférence, y compris les interferences qui peuvent causer un mauvais fonctionnement du dispositif.

Cet appareil est conforme avec Santé Canada Code de sécurité 6 / IC RSS-210. Le programme d'installation de cet appareil doit s'assurer que les rayonnements RF n'est pas émis au-delà de l'exigence de Santé Canada.

4. Commissioning

4.1 Notes on installation

- Keep the distance between the antenna and the transmitter as small as possible.
- Only the animal to be identified in the box is permitted to be within the range of the antenna.
- Check the range of the antennas using the antenna test (see 5. "Diagnosis" - 15).
- If an animal entitled to feed is outside the feeding box, but within in the range of the antenna, a portion might be prepared that the animal will not receive. If necessary, block the area next to the feeding box.

  Note: If two animals are identified simultaneously by one antenna, animal identification is interrupted for both animals.

- The distance between two antennas should be approx. 100 cm to avoid any range overlapping. In the event of double or external identification, the antennas will need to be shielded using earthed metal plates.
- Install the antenna cable outside the animal area to prevent it from being damaged.

4.2 Squelch values and identification ranges

The approx. range of the antennas is 15 - 25 cm.

The antenna version is decisive for the identification range. With Nedap micro-identification, you can set the range via the squelch value.

The squelch values and the identification ranges for the various identification systems are listed in the following table. These squelch values are based on experience and are set at the factory.

System	HDX (ISO 11784/11785)	FDX-A yellow	FDX-B white (ISO 11784/ 11785)	Squelch (default values)	Identification range
Collar (X-responder)	no	yes	no	0	15 - 20 cm
Collar (PM responder)	no	yes	yes	180	15 - 20 cm
Earmark (also in the collar) (Nedap system)	no	yes	yes	0	15 - 20 cm
Earmark (also in the collar) (Tiris system)	yes	no	no	inactive	15 - 20 cm

4.3   Installing the MultiReader

The MultiReader identification unit can be fastened at three different positions in the MaxiFlex 100 or Flex100 stall partition:

• Front plate
• Left side
• Right side

Note: If mounted at the side, the height of the identification unit can be adapted to the position of the transponder.

Note: When using X-responders, we recommend mounting the MultiReader identification unit on the front plate using the holder (accessory).

4.3.1   On front plate

4.3.1.1   Without bracket

Proceed as follows for the installation:

1. Place the aerial box on the center of the front plate. Please make sure that:
    • The flat side faces upwards,
    • The upper edge of the aerial box is flush with the lower edge of the recess on the front plate.
2. Fasten the aerial box to the front plate using the screws enclosed (see figure).

3. Drill a hole into the front plate directly beneath the aerial box and feed the aerial cable through it.

NOTICE!

To prevent it being damaged, make sure the antenna cable is installed outside the area occupied by the animal.

4.3.1.2   With bracket (optional)

1. Fasten the holder to the antenna box from the rear using the screws and washers supplied with the holder.

2. Fasten the remaining screws and washers to the antenna box.

3. Place the antenna box with holder on the center of the front plate. Please make sure that:
   - The flat side faces upwards.
   - The upper edge of the aerial box is flush with the lower edge of the recess on the front plate.

   - If a swing frame is present at the stall partition, install the identification unit approx. 2-3 cm lower if necessary, so that the locking pin of the swing frame does not touch the antenna box.

4. Fasten the antenna box to the front plate (the holes are already pre-drilled in the holder).

5. Drill a hole into the front plate directly beneath the aerial box and feed the aerial cable through it.

> **NOTICE!**
>
> **To prevent it being damaged, make sure the antenna cable is installed outside the area occupied by the animal.**

4.3.2   On the left or right in the partition

Proceed as follows for the installation:

1. Drill the antenna box holes in the feeding box.

2. Fasten the aerial box to the side part of the feeding box using the screws enclosed so that the flat side faces away from the front plate (see figure).

3. Feed the antenna cable through the cable feed-through in the front plate.

   Drill a hole in the front plate if a hole is not already present.

NOTICE!

To prevent it being damaged, make sure the antenna cable is installed outside the area occupied by the animal.

4.4   Connecting antenna cables

Connect the antenna cable to the automatic feeder antenna connection. The connection is labeled with a sticker.
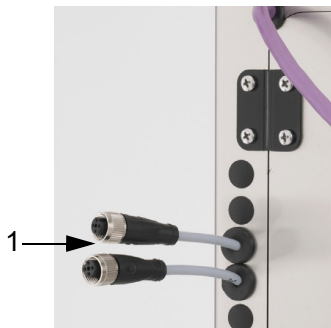
1 Antenna connections

Note: If an IFS feeding box or HygieneBox is present, connect the antenna cable to the connection on the IFS feeding station or HygieneBox.

4.4.1   Connecting the MultiReader to the main board

⚠ **DANGER!**

Danger of death by electric shock!

The electrical components of the automatic feeder are live.

► Always disconnect the mains plug before starting any work on the control box of the calf feeder.

If the antenna connections are not already present on the automatic feeder, proceed as follows:

1. Remove the housing cover from the control box of your automatic feeder.

2. Push the antenna cable through the cable grommets on the feeding box and into the control box

1 Antenna connections

3. Connect the antenna cable to the main board of the automatic feeder according to the circuit diagram.

4. Fasten the wiring looms to the cable clamps.

NOTICE!

To ensure earthing, you must also connect a shield of approx. 1cm (if available).

► Make sure that the shield is in contact with the clamp and not separated by the core insulation.

5. Open the control box for the automatic feeder.

4.5   Training push-button with entitlement LED

The training push-button activates the training pump. The training pump is used to help the animals to get accustomed to the automatic feeder and to stimulate calves with a weak sucking behavior.

• The LED is illuminated: The calf has feed entitlement.
• The LED flashes slowly: The feed entitlement of the calf is below 0.5 L.
• The LED flashes rapidly: The calf has no feed entitlement.

Note: The maximum duration of the training push-button is 30 seconds.

4.6 Temperature sensor

As of 01.01.2013, every MultiReader identification unit is equipped as standard with a temperature sensor that measures the temperature in the calf area. You can check if your MultiReader identification unit is equipped with a temperature sensor under **Feeding > Plans > Winter feeding plans** (see the chapter "**Feeding > Plans > Winter feeding plans** in the automatic feeder's operating instructions).

Note: In order to use winter feed plans, a MultiReader identification unit with a temperature sensor must be installed at **feeding box 1**.

4.7 Software updates

Note: Antennas can only be updated if they are directly connected to the automatic feeders and the feeder was previously updated. For the color assignment for the MultiReader update via the S-program, please see the attached wiring diagram.

To update the MultiReader, proceed as follows:

1. [📖] **> Device data > Software update > SD card** or **internal**.

2. Press [Enter] in **start Multireader?**.

3. Select the required station and press [Enter].

4. Follow the instructions on the display.

5. Diagnosis

The **Diagnosis** menu of the automatic feeder is for checking the MultiReader and its functions. It facilitates troubleshooting if there is a technical problem with the MultiReader. The menus relevant for the MultiReader are available via the following menu path:

[📖] **> Diagnosis > Stations**

5.1 Checking stations

You can check whether the identification of the feeding station works here.

1. [📖] **> Diagnosis > Stations > Feed**

2. Press [<] [>] to select the required **feeding station**.

3. To check the identification (antenna test), hold the transmitter near the antenna. The transmitter number is displayed in the **No.** line.

If the transmitter number is not recognized, proceed as follows:

1. Check the data line between antenna and automatic feeder for damage.

2. Check in the setup whether the correct identification system is configured.

3. Check the setup for the allocation of the box that causes identification problems.

5.2 Monitoring

Use this menu to control how often the automatic feeder has not received any feedback from the **identification**.

1. Move via [📖] **> Diagnosis** to the submenu **Control**.

2. Press [<] [>] to select the failure that occurred.

   2.1. In **amount** you can check how often the failure occurred.

   2.2. In **since** you can check when the entries were deleted the last time.

   2.3. In **last on** resp. **last at** you can check on what day or time the relevant event occurred the last time.

3. Confirm **delete?** with [Enter] to delete the fault message.

6. Warnings

If a **Fault** occurs, the automatic mode of the automatic feeder will be interrupted. A corresponding fault message will appear on the hand terminal display, and the green LED on the hand terminal will flash.

Warnings indicate problems that do not interrupt the automatic mode of the automatic feeder. Warnings are also indicated by the flashing of the LED on the hand terminal.

Note: If the warning messages are deleted or hidden by pressing Esc then these will automatically reappear in the event of a new warning, or in any case within ten minutes.

Some warning messages and fault messages are automatically deleted once the fault has been rectified. Einige sind erst dann gelöscht, wenn Sie C₉ oder in **Störung löschen?** bzw. **Warnung löschen?** Enter drücken.

6.1 Identification

If the Identification system is not working, the **Warning Idetification appears on the display:**

1. Check the cables leading to the antenna for any visible damage (example: animal bites).

2. Also check whether in Setup the correct identification system is set.

The warning is automatically deleted when the fault has been rectified.

7.   Maintenance/servicing

The visual and functional inspection of the components can be conducted by the owner/operator.

Repair work must **always** be performed by a service technician.

7.1   Maintenance intervals and activities

Note: If you detect any faults or damage to the MultiReader between the maintenance intervals recommended below, you must make sure they are rectified immediately by a service technician as required.

7.1.1   Daily

Visual inspection of the components

All components must be checked visually every day for damage and deposits. If any damage is detected during the visual inspection, the faulty components have to be replaced by a service technician before work can be resumed with the MultiReader.

7.2   Care and maintenance

You should have dirt removed from the MultiReader from time to time. However, soiling does not have any negative effects on the identification results.

NOTICE!

Water (liquids) can damage electrical components.

► Do not spray-wash the MultiReader. Do not use any high-pressure cleaners or similar equipment either. To clean the MultiReader, only wipe it with a damp cloth.