ROYAL Eijkelkamp
Meet the difference

# Prime PRO Modem Series

## User manual (original instructions) - version April 2025


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# Table of Contents

# 1 Introduction

## 1.1 How to use this manual

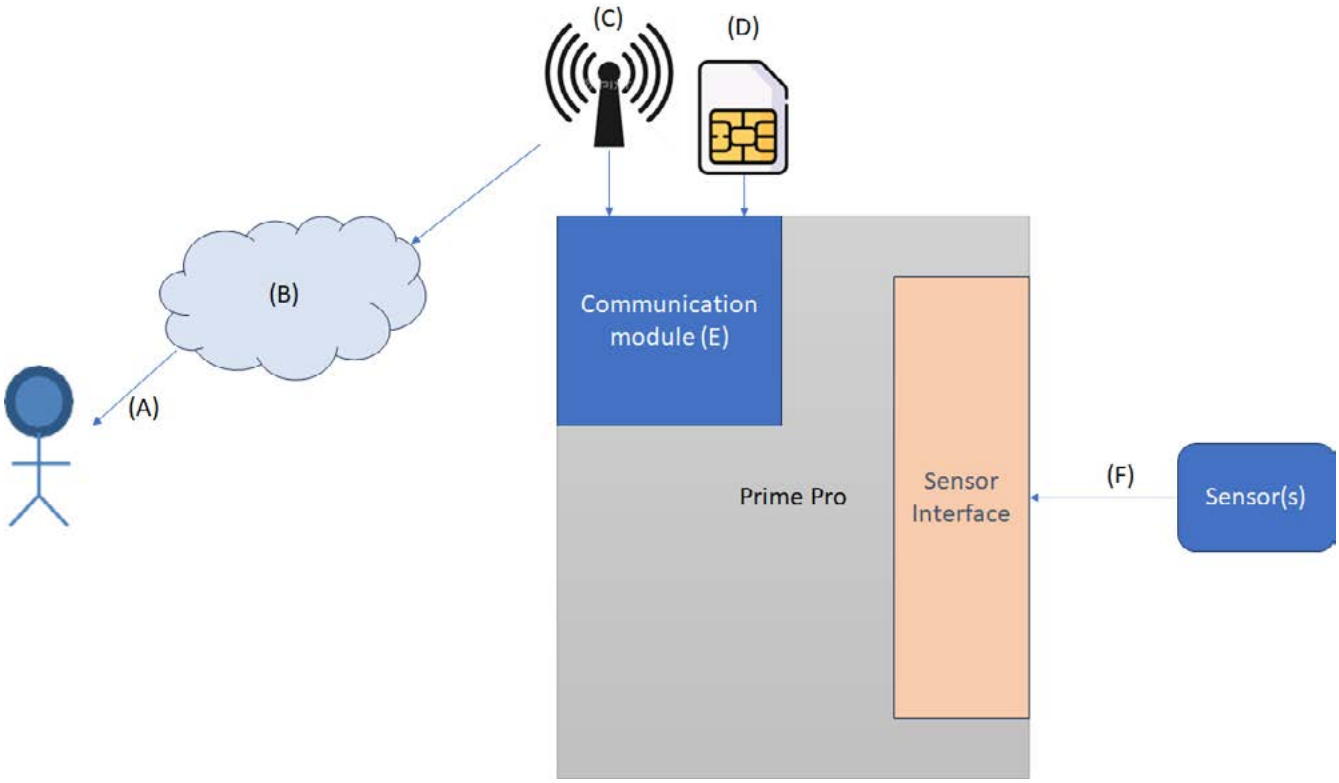
This manual is intended as a reference manual by which users can use and configure the Prime PRO modems, henceforth called the modem. Make sure you have read and understood the manual before you use the modem. For an overview of the modem and its components, refer to chapter 3.
Make sure that you:

- know the contents of this manual;
- follow up all directions;
- do not change the sequence of the procedures.

## 1.2 Original instructions

The original instructions for this manual have been written in English. Other language versions of this manual are a translation of the original instructions.

## 1.3 Working principle




A. Platform, SFTP
B. ROAK platform / FTP server
C. External antenna
D. Micro sim
E. LTE module (LTE M1/NB-IoT with 2G fallback)
F. 1x Diver interface, 1x SDI-12 bus interface, 1x 0..10V interface, 1x 4..20mA interface, 1x Digital input with high frequency pulse counter, 1x digital output *

* Prime PRO400/500 only

## 1.4 Service and support

### 1.4.1 Qualified personnel

Royal Eijkelkamp maintains a staff of experienced service personnel. Their expert knowledge could be of assistance at inspection, installation, or repair activities. For information with respect to specific adjustments, installation, maintenance or repair jobs, which fall beyond the scope of this manual, contact Royal Eijkelkamp.

Make sure you have the following data at hand:
- Product code
- Date of manufacture
- Serial number
- Date of purchase
- Invoice number

### 1.4.2 Contact details

The address and contact details can also be found on the front of this manual.
Royal Eijkelkamp
Nijverheidsstraat 9
6987 EN Giesbeek
The Netherlands
Telephone +31 313 88 02 00
E-mail info@eijkelkamp.com
Internet royaleijkelkamp.com

# 2 Safety

## 2.1 Symbols in the manual

**WARNING**
**'Warning' identifies a hazard that could lead to personal injury, including death.**

**CAUTION**
**'Caution' identifies a hazard that could lead to damage to the machine, damage to other equipment and/or environmental pollution.**

**Note**
**'Note' is used to highlight additional information.**

## 2.2 Intended use

The modem is designed to communicate with a sensor in the field. The modem has 1 (Prime PRO300) or 2 (Prime PRO400/500) sensor ports and the Prime PRO400/500 also have a connection for external power supply. The user can configure the modem according to their own wishes, for instance regarding wake-up interval.

**CAUTION**
**The modem has been tested and found protected against dust and resistant against temporary immersion (only with connected connectors). The temporary immersion must not exceed 50 hours, at a maximum of 2 meter under water. Do not continuously submerge in water. When there is water inside the enclosure, contact Eijkelkamp.**

**CAUTION**
**Every other or further use is not in conformance with the intended use.**

## 2.3 Qualification of the user

The user should have a general knowledge about the use of a computer system and computer programs. For the basic maintenance work a general technical background is required.

## 2.4 Liability

**CAUTION**
**We prefer not to open the modem in the field. Only open the modem in a clean and dry environment. Avoid unnecessary opening of the modem.**

The following parts must be clean, dust-free and undamaged:
- enclosure;
- sealing of the enclosure;
- connector.

Furthermore, make sure that:
- The sensor cable is correctly connected. Refer to 4.4.
- The modem is mounted correctly in the monitoring well. Refer to 4.4.1.
- The work is performed according to the local ESD safety regulations.
- Only original Eijkelkamp or recommended parts are used.

## 2.5 Regulations and instructions

## 2.6 Modem

**WARNING**

- **Do not use the modem when the inside of the enclosure is wet or moist.**
- **Dry a wet or moist modem with a dry, lint-free cloth. Do not dry the modem in any other way.**

## 2.7 Batteries

The modem will operate with three Alkaline D-type batteries, refer to the parts list in section 6.1.
The lifetime will largely depend on the frequency of the wake-up interval, real time alarm conditions and power usage of the sensor connected to the sensor port 2 (top cap).

**WARNING**

- **Do not use a damaged battery.**
- **Keep the battery away from fire or heating source.**
- **Do not submerge the battery in water.**
- **Always use the correct battery. Only use recommended parts.**
- **Do not short circuit the battery.**
- **Do not charge the battery.**

## 2.8 Connection

**WARNING**
**Do not use worn and/or damaged cables.**

## 2.9 Environment and disposal of waste

**CAUTION**
**Always observe the local rules and regulations with respect to processing or disposing of (non-reusable) parts.**

**CAUTION**
**Always remove the battery first. Refer to 5.4. For correct disposal of the battery, refer to 2.9.1.**

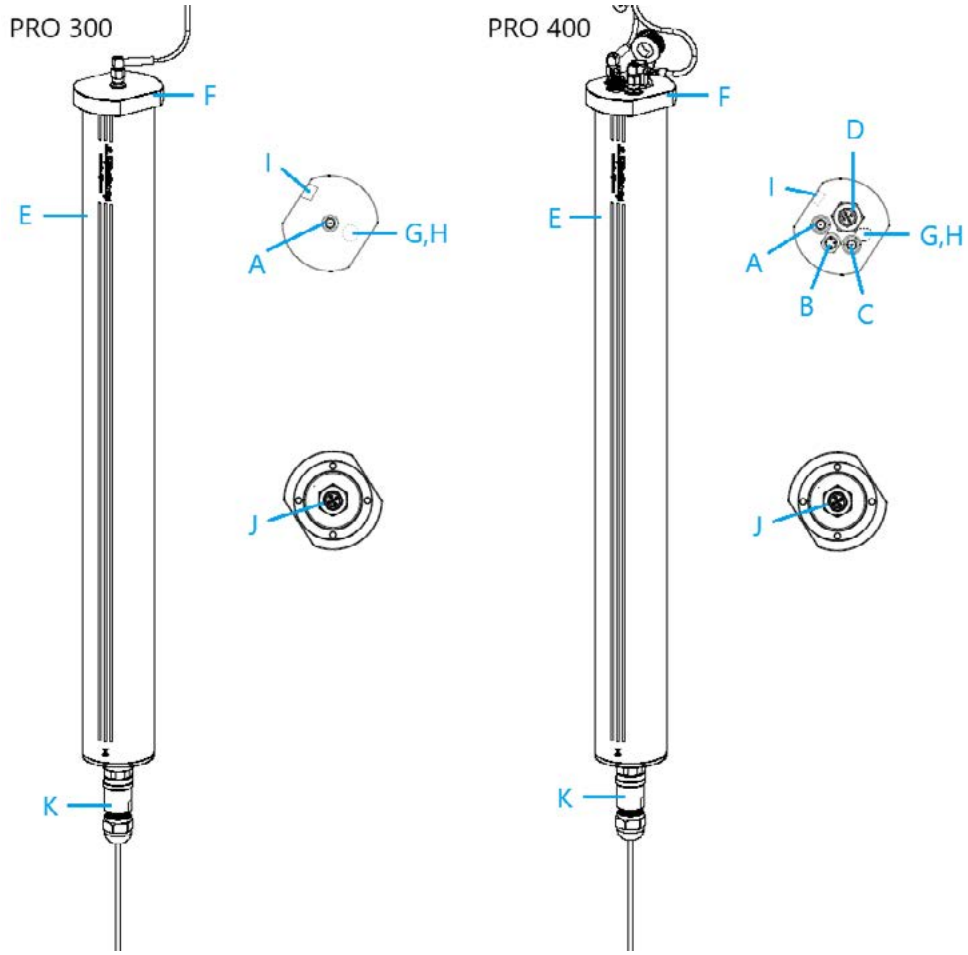
### 2.9.1 Correct disposal of the product and battery

**WARNING**
**Do not dispose with other types of waste! The battery contains substances that can cause harm to the human health or the environment.**

**To protect natural resources and promote material reuse, separate batteries from other types of waste and recycle them through your local battery return system.**

# 3 Product overview

## 3.1 Outside view

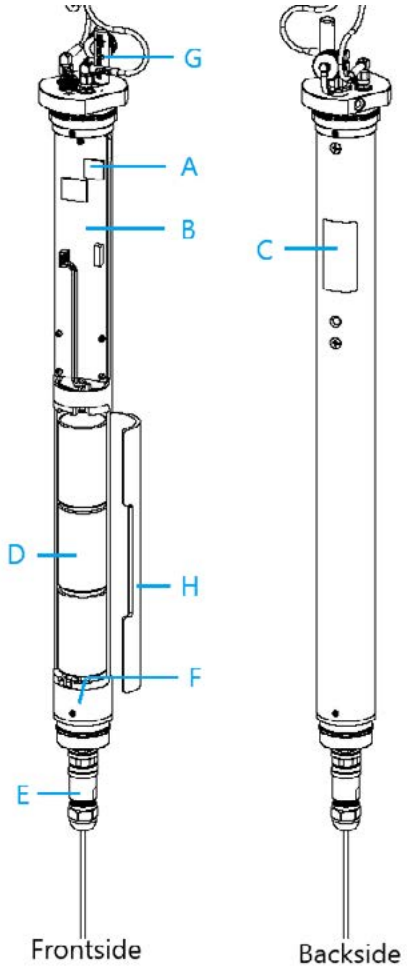



A. Antenna connector
B. External power connector (3-pin male connector)[1]
C. GPS antenna connector[2]
D. Multi sensor port (5-pin male connector, A-coded)[1]
E. Enclosure
F. Top cap
G. Start switch (magnetically activated)
H. Connection / Error LED
I. Vent
J. Sensor port[3] (5-pin male connector, A-coded)
K. Sensor cable

**CAUTION**
**The modem has been tested and found dust protected and resistant against temporary immersion. The temporary immersion must not exceed 50 hours, at a maximum of 2 metres under water. Do not continuously submerge in water. When there is water inside the enclosure, contact Royal Eijkelkamp.**

1 Prime PRO400/500 only
2 Future option
3 Including a protection cap

## 3.2 Inside view




A. SIM card (in SIM card holder)
B. PCB
C. Product identification sticker
D. Batteries
E. Sensor cable
F. Desiccant bag
G. Magnet
H. Battery cover plate

## 3.3 LED functions

When the unit is restarted (reset or power on) the led blinks once GREEN, BLUE, RED then goes OFF (as the unit goes to sleep).

Blue blinking: Configuration mode
Fast green blinking: Starting auto configuration
Green blinking: performing auto configuration
Steady green: auto configuration successful
Red blinking: error

**Note**
**“BLINK FAST” means about 3 flash per second with duty cycle about 50%.**
**“FLASH SLOW” means about 1 flash per second.**

When in SETUP MODE the device enables the BLE SETUP interface. The led blinks blue to indicate the BLE SETUP interface is active.

## 3.4 Start switch

The Start switch (magnetically activated) is used to initially activate the setup mode of the modem or to activate the auto-setup mode. The Start switch is concealed in the top cap.

When the Start switch is magnetically activated:
- The blue LED will blink.
- The modem will switch to configuration mode.

When the start switch is magnetically activated 5 times in a row, the auto-setup is activated. During the auto-setup, the modem detects the connected Diver sensor and create the sensor devices in ROAK.

## 3.5 Technical Data

### 3.5.1 Mechanical specifications

| Item | Specification |
|---|---|
| Housing dimensions | Enclosure 48 mm, top cap 60 mm, length 475 mm |
| Weight (incl. alkaline batteries) | Approx. 900 g |
| Enclosure material | Aluminium |
| Top cap material | Synthetic, POM (Polyoxymethylene) |

### 3.5.2 Ambient conditions

| Item | Specification |
|---|---|
| Altitude | Up to 2000 m |
| Temperature (functional) | -20 ... +55 °C |
| Temperature (storage) | -40 ... +85 °C |
| Relative humidity | 5%-95% non-condensing |
| Pollution degree | 2 |

### 3.5.3 Electrical specifications

| Item | Specification |
|---|---|
| Battery internal | 3x D 1.5 V Alkaline / Lifetime depends on sensor type |
| Modem clock accuracy | Better than 1 second/day |

| External power supply[4] | Specification |
|---|---|
| Voltage range | 7 – 26V DC |
| Power | Min 0.5W, max 2W[5] |
| Connector | M8, Female, 3-pin |
| Eijkelkamp options | Solar power kit (item 113426)<br>Mounting set solar power (item 113427) |

4 Prime PRO400/500 only
5 Power rating external sensor not included

### 3.5.4 Connections

| Messaging | Specification |
|---|---|
| Message mode | web portal, MQTT |
| GSM | GPRS (2.5 G) |
| LTE Cat-M1 | LTE frequency bands (B1, B2, B3, B4, B8, B12, B13, B20, B28) |
| LTE NB-IoT | LTE frequency bands (B1, B2, B3, B4, B8, B12, B13, B20, B28) |
| SIM card (micro-SIM card socket)[6] | Multi-network SIM M2M |
| Antenna connector | SMA connector |
| Sensor port | 5-pin male M12 connector, A-coded Diver sensor port<br>5-pin male M12 connector, A-coded multi sensor port[7] |

| Integrated barometer sensor | Specification |
|---|---|
| Barometer measuring range | 10 ... 1200 mbar [8] |
| Resolution | 0.01 mbar |
| Accuracy barometer | ± 2 mbar (at 300 ... 1100 mbar, 0 ...50 °C |
| Temperature measuring range | -40 ... +85 °C |
| Resolution | 0.01 °C |
| Accuracy temperature | ± 0.8 °C (at 25 °C)<br>± 2.0 °C (0 ... 50 °C) |

| Antenna | Specification |
|---|---|
| LTE | LTE frequency bands (B1, B2, B3, B4, B8, B12, B13, B20, B28) |
| Connector | SMA Bulkhead |

| Sensor ports | Specification |
|---|---|
| Number of sensor ports | 1 or 2 |
| Port 1 (external) | Diver sensor through sensor cable |
| Port 2 (external)[9] | Generic sensors<br>• Sensor Power supply (5V/12V, max 500mA continuous)<br>• SDI-12<br>• 0-10V (single ended)<br>• 4-20mA<br>• Pulse counter<br>• Modbus[10] |

6 SIM card exchangeable by the user. The functionality of SIM cards other than Multi-network SIM M2M is guaranteed only after the functionality tests are fulfilled by Eijkelkamp. Therefore, it is advised to use tested SIM cards only.
7 Prime PRO400/500 only
8 1 mbar is approximately 1 cmH2O
9 Prime PRO400/500 only
10 OEM version only

# 4 Getting Started

## 4.1 Unpacking

a. When unpacking, carefully follow the instructions as given on the packaging or on the product.
b. Check that your delivery is correct and complete. Refer to the order list and the delivery list. If incomplete, contact Royal Eijkelkamp.
c. Check the delivery for any transport damage. Report any damage immediately by filing a claim against the carrier and mark the bill of lading accordingly.

**CAUTION**
**Avoid unnecessary opening of the modem because of the risk of leakage.**

## 4.2 Providing power to the modem and/or sensor

The modem needs to be fitted with batteries, refer to 5.4 for placing them.
Depending on the type of sensor connected on the sensor port 2 (top cap) it might be preferred to also provide external power. Therefore, it is possible to connect a larger external battery or power supply.

**Note**
**Please refer to Electrical specifications (3.4.2) for requirements of external power supply.**
**Royal Eijkelkamp provides a power supply cable to be used with the modem (art.no.: 113421).**

**Note**
**Royal Eijkelkamp provides 1 solution for external power supplies:**
**Solar power kit (art.no.: 113426).**

## 4.3 Setting up first-time communication

By default, the modem is configured for connecting a Diver sensor to the modem and sending the collected data to the ROAK platform with a sim supplied by Royal Eijkelkamp.

Changing the settings can be done by the ‘Royal Eijkelkamp - Prime PRO servicetool’. Refer to the ‘Setup manual Prime PRO servicetool’.

Also testing the sensor- and network connection can be done through the ‘Royal Eijkelkamp - Prime PRO servicetool’ and is described in the Setup Guide.

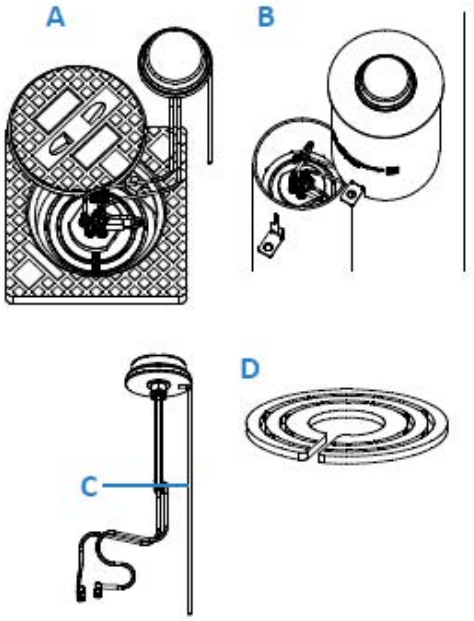
## 4.4 Installation

**CAUTION**
**The warranty will be void when the modem is not used for its intended use and/or installed incorrectly. Refer to 2.2 and 2.4.**

### 4.4.1 Mounting the modem

**CAUTION**

- **Place the modem in a protective environment.**[11]
- **Do not expose the modem to direct sunlight.**
- **Avoid deformation of the enclosure.**
  **- Do not use excessive much force when mounting the modem.**
- **The connector should be easily reachable and there should be enough space to connect the cable to the connector.**
- **All parts must be clean and dry prior to installation.**
- **Do not expose the modem to vibration, direct heat sources and/or forms of radiation and magnetism.**




We distinguish two installation methods, namely;
1. Directly in the monitoring well, e.g. finished with a street cover (A), or
2. In a monitoring well that is installed in a well cover (B)

The Prime PRO400 is fitted with a GPRS/UMTS/GNSS antenna GDT-S Prime (art. no.: 113435).

The external antenna is intended to be installed on the cover of the well cover or with the mounting plate (C) in the street cover.

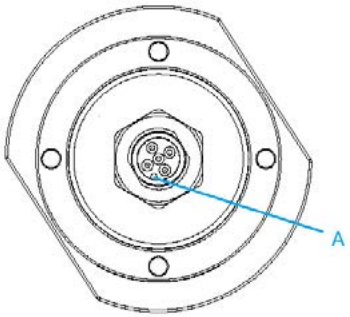
Adjust the universal monitoring well adapter ring (D) to your monitoring well in such a way that the modem hangs correctly in the monitoring well. Then connect the sensor cable to the modem. Install sensor, sensor cable and modem into the well cover.

11. If the protective environment is air-tight, the internal barometer data cannot be used. In this case, use the data of another barometer location or external Baro sensor.

### 4.4.2 Connecting the sensor cable bottom connector

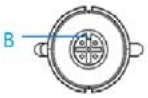
**CAUTION**
**All parts must be clean and dry prior to installation.**

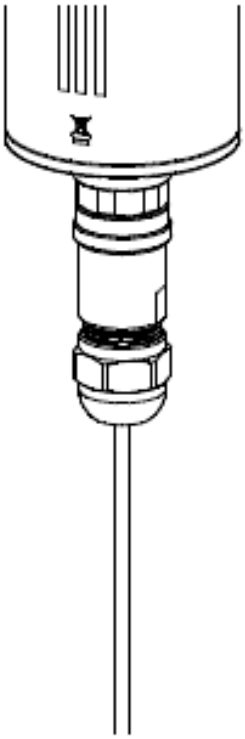
**CAUTION**
**Do not use force. There is only one way to connect the cable to the sensor port. Always check the position of the positioning cam (B).**




1. Install the sensor cable connector. Pay attention to the positioning cam on the modem connector (A) and the cable connector (B).
2. Fasten the sensor cable by turning the locking ring clockwise.

**CAUTION**
**Do not fasten the cable too tight onto the connector. Use your thumb and index finger.**

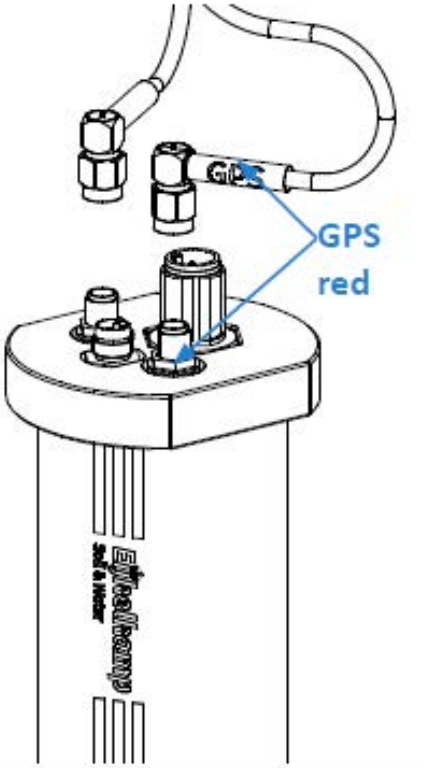


### 4.4.3 Connecting the antenna

**CAUTION**
**All parts must be clean and dry prior to installation.**

1. Mount the antenna.
2. Screw the SMA connector onto the modem.
   Do not use more torque than 5 lbs/0.57 Nm.




**CAUTION**
**Do not use force.**

**CAUTION**
**If the antenna has both GNSS and cellular, connect the GPRS/LTE labeled connector to the blue labeled connector.**

### 4.4.4 Connecting the GNSS antenna (future option - Prime PRO400 only)

**CAUTION**
**All parts must be clean and dry prior to installation.**

1. Mount the antenna.
2. Screw the SMA connector onto the modem.
   Do not use more torque than 5 lbs/0.57 Nm.

**CAUTION**
**Do not use force.**

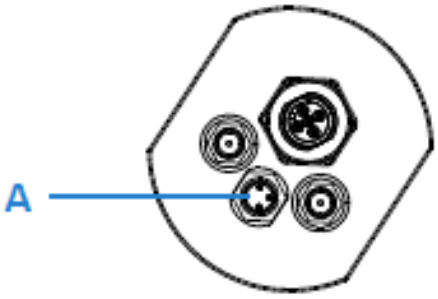
**CAUTION**
**Connect the GPS labeled connector to the red labeled connector.**

### 4.4.5 Connecting the external power connector (Prime PRO400/500 only)

**CAUTION**
**All parts must be clean and dry prior to installation.**

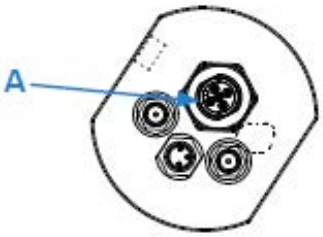
**CAUTION**
**Do not use force. There is only one way to connect the cable to the power port. Always check the position.**

1. Install the power cable connector, pay attention to the positioning.
2. Fasten the power cable by turning the locking ring clockwise.



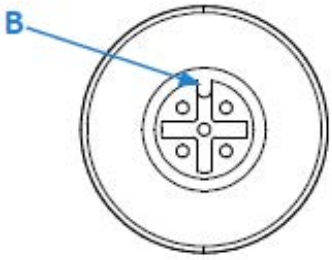

**CAUTION**
**Do not fasten the cable too tightly onto the connector. Use your thumb and index finger. Use a torque of 0.4 Nm.**

### 4.4.6 Connecting the sensor cable top connector (Prime PRO400/500 only)




**CAUTION**
**All parts must be clean and dry prior to installation.**

**CAUTION**
**Do not use force. There is only one way to connect the cable to the sensor port. Always check the position of the positioning cam (B).**

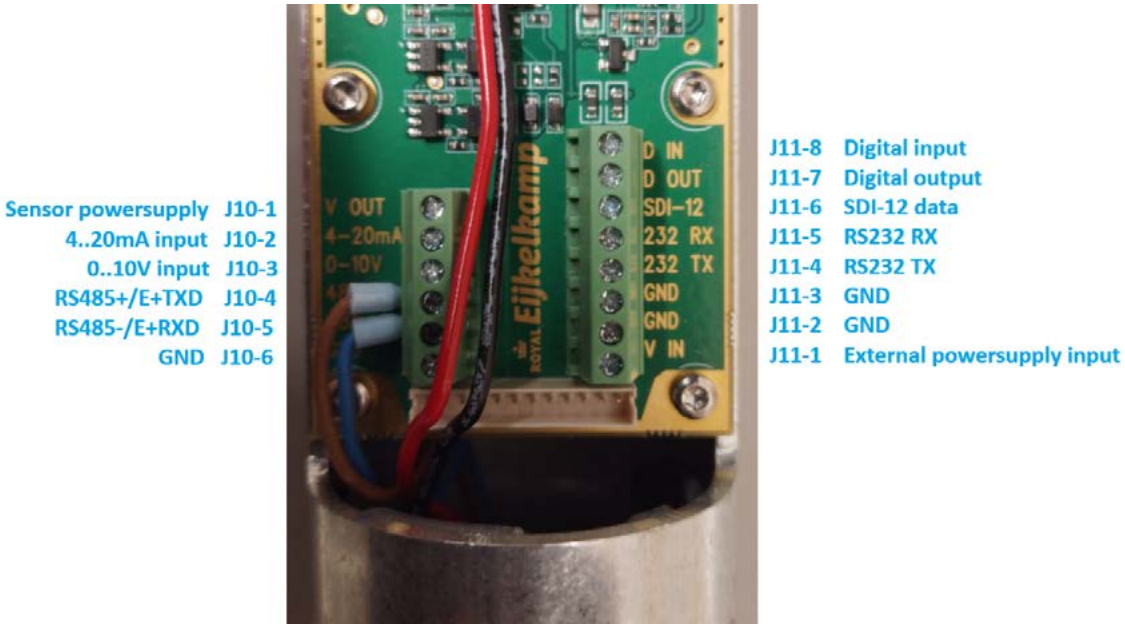



1. Install the sensor cable connector, pay attention to the positioning cam (B).

**CAUTION**
**Do not fasten the cable too tightly onto the connector. Use your thumb and index finger. Use a torque of 0.6 Nm.**

2. Fasten the sensor cable by turning the locking ring clockwise.
3. Connect the internal wiring from the M12 connector to the required functions on the PCB.

| M12 pin number | Wire colour |
|---|---|
| 1 | Brown |
| 2 | White |
| 3 | Blue |
| 4 | Black |
| 5 | Gray |




| PCB connection number | Name | function |
|---|---|---|
| J10-1 | Sensor power supply | Power supply output (5V/12V) to power the sensor |
| J10-2 | 4..20mA input | Current input (sensor -> modem) |
| J10-3 | 0..10V input | Voltage input (sensor -> modem) |
| J10-4 | RS485+/E+TXD | Replace the antenna. |
| J10-5 | RS485-/E+RXD | Diver I/O RXD pin<br>Or:<br>Modbus RS485- pin (OEM version)<br>Refer to 5.5 |
| | | |
| J11-1 | External power supply input | External power source to supply the modem |
| J11-2 | GND | GND connection - usable for GND connection of the external power supply, sensor power supply, or sensor inputs |
| J11-3 | GND | GND connection - usable for GND connection of the external power supply, sensor power supply, or sensor inputs |
| J11-4 | RS232 TX | Transmit output line to the PC |
| J11-5 | RS232 RX | Receive input line from the PC |
| J11-6 | SDI-12 data | Data IO line to/from SDI-12 sensor |
| J11-7 | Digital output | Digital output |
| J11-8 | Digital input | Can be used for pulse count input like a rain gauge |

# 5 Maintenance

## 5.1 Preparation

**CAUTION**
**Only original parts must be used, otherwise the warranty will be void.**

Make sure you take with you the following tools and accessories:
- Cloth (clean, dry and lint-free);
- Replacement desiccant kit. Refer to 6.1.
- Replacement battery. Refer to 6.1.
- Replacement SIM card (optional).
- Replacement antenna.
- Replacement cable and sensor.

## 5.2 General inspection overview

The modem requires little maintenance. However, if you need to do maintenance work, always check the following points during maintenance.

| Inspection | Check | Action (if required) |
|---|---|---|
| Enclosure (external) | Dirt / Humidity | Clean and dry with a dry, lint-free cloth. |
| Enclosure (internal) | Humidity | Replace the desiccant kit. Refer to 5.3.6.<br>If wet or moisty, contact Royal Eijkelkamp |
| Sensor cable | Wear or damage | Replace the cable. |
| Antenna | Wear or damage | Replace the antenna. |
| Power cable | Wear or damage | Replace the cable |
| SIM card | | Refer to 5.5 |

**Note**
**It is advised to always take a replacement battery with you. Check the battery capacity level beforehand via the Royal Eijkelkamp Web Portal or the e-mail functionality. This will only apply when there is no external power supplied.**

## 5.3 Inspection and cleaning

**We advise you to take the necessary ESD safety regulations into account during the modem assembly. If the o-rings are damaged, contact Royal Eijkelkamp.**

### 5.3.1 Inspecting and cleaning the outside of the modem

1. Check the outside of the modem for dirt and humidity. Pay special attention to the vent. The vent has to be free of dirt. Never use sharp tools to clean.
2. Clean and dry the modem with a dry, lint-free cloth.

### 5.3.2 Dismounting the modem

**Note**
**If you need to open the enclosure, it is advised to remove the modem from the measuring site, so the modem can be taken to a clean and dry environment.**

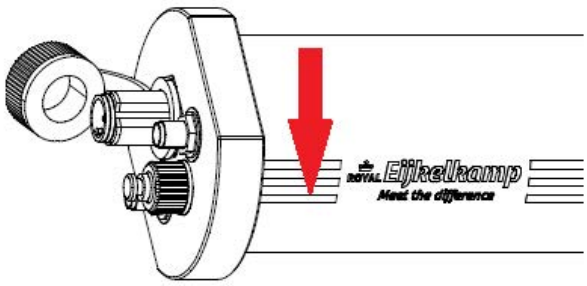
1. Check if the cable and connector are still connected correctly. Also check the cable and connector for possible defects.
2. Disconnect the antenna from the antenna connectors. Turn the hexagon locking counter clockwise.
3. Disconnect the sensor cable from the sensor port. Turn the hexagon locking counter clockwise.
4. Disconnect the power cable from the power connector. Turn the hexagon locking counterclockwise.
5. Clean the antenna connectors and sensor port with a dry, lint-free cloth.
6. Take the modem to a clean and dry environment.

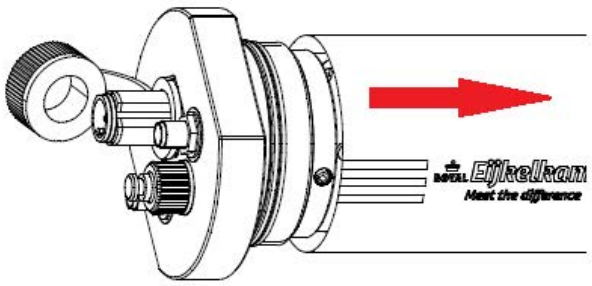
### 5.3.3 Opening the enclosure

**CAUTION**
**Do not open the modem in the field. Only open the modem in a clean and dry environment.**

**Note**
**It is advised not to open the enclosure unless it is really necessary (e.g. for placing / replacing the batteries). Opening the enclosure increases the risk of leakage afterwards.**

1. Turn the housing counter clockwise and **carefully** remove the slider out of the housing.




### 5.3.4 Inspecting and cleaning the inside of the modem

Check the inside of the modem for dirt, dust, humidity and damage. Pay special attention to the sealings of the slider top cap and the bottom cap; the sealing rings must be free of dirt, undamaged and not-twisted.

**WARNING**
**The modem must be free from dirt, dust, humidity and damage. Only clean the seal and flash ridge with a clean lint-free cloth if necessary. Never touch the electronics of the printed circuit board (PCB)!**

**CAUTION**
**Do not use greasy substances and agents, such as white spirit, acetone or thinner.**

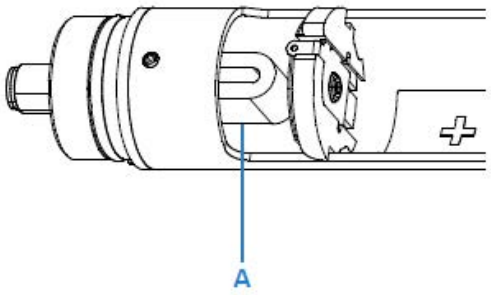
### 5.3.5 Replacing the desiccant bag

**CAUTION**
**Only use original parts. A new desiccant kit can be ordered from Royal Eijkelkamp. Refer to 6.1.**

**CAUTION**
**Work in a dry environment only, try to act quickly during the replacing of the desiccant bag!**

1. Remove the old desiccant bag carefully and check whether this bag is excessively wet. If this is the case, this could be an indication of leakage. Please contact the Royal Eijkelkamp service department.

**CAUTION**
**The new desiccant bag (A) must be taken out of its package at the last moment. It must be protected against all kinds of moisture before it is placed in the dry enclosure of the modem.**

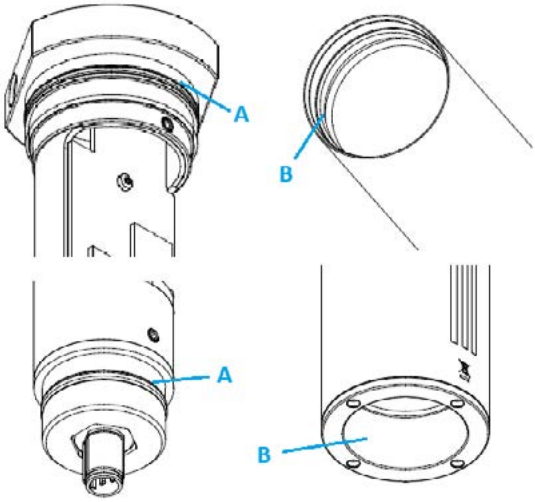



2. Carefully place the new desiccant bag into the same place as the old one
3. If it is not necessary to replace the battery, close the enclosure immediately. See 5.3.6.

### 5.3.6 Closing the enclosure

1. Check whether the O-rings (A) are clean and undamaged.
2. Check whether the top cap and the bottom cap with the O-rings is dirt-free, along with the sealing surfaces (B) in the housing tube.
3. If the O-rings are black and no grease is visible on the surface, apply a thin layer of acid-free vaseline (prevent dirt, work clean).

**CAUTION**
**Use only proper grease, suitable for VITON X-rings.**



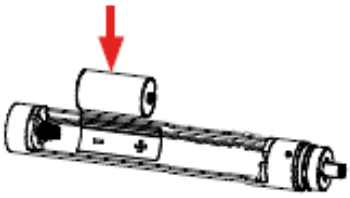

4. Carefully slide the modem back into the housing tube and turn the slider into the housing with a turning movement completely to the top cap.

### 5.3.7 Mounting the modem

1. Connect the antenna to the antenna connectors. Refer to 4.4.4.
2. Connect the sensor cable to the sensor port. Refer to 4.4.2 and 4.4.5.
3. Connect the power cable (if used). Refer to 4.4.3.
4. Re-install the modem in the monitoring well or well cover.
5. Start the commissioning process. Refer to 4.5.

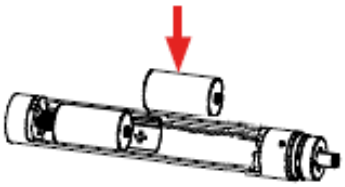
## 5.4 (Re-)placing the battery

When the battery is empty, the battery must be replaced along with the desiccant bag.



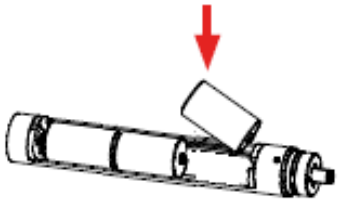
**CAUTION**
**We advise you to take the necessary ESD safety regulations and to apply new acid-free vaseline to the X-rings of the modem during assembly.**

**Note**
**When X-rings are damaged, contact Royal Eijkelkamp.**



**Note**
**Use original or recommended parts. Refer to 6.1.**

1. Follow all procedures of 5.3.1 to 5.3.5.



**CAUTION**
**Work according to your local ESD safety regulations. Avoid touching the printed circuit board (PCB).**

**Note**
**All setting changes that have not yet been saved will be lost when the battery is disconnected.**

2. Carefully remove the empty battery.
3. Place the replacement battery pack.
4. Close the battery cover.

**CAUTION**
**Prevent damage to the battery.**

**Note**
**Make sure the battery is placed in the correct position.**

**Note**
**When the battery is inserted into the modem:**
- **The LEDs will briefly turn on to indicate the modem is powered**
- **If this is not the case, check if the contacts of the battery holder are correctly aligned with the ends of the battery.**

5. Follow all procedures of 5.3.6 to 5.3.7.
6. Dispose of the old battery in a proper way. Refer to 2.6.2.

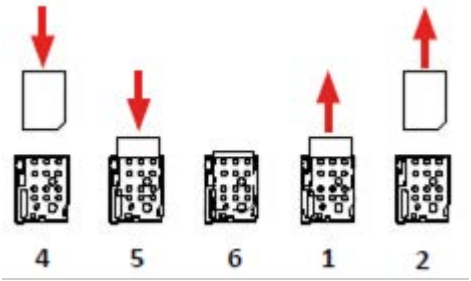
## 5.5 (Re-)placing the SIM card

**WARNING**
**Depending on the new SIM card the modem settings may need to be changed, therefore always contact Royal Eijkelkamp first.**

**WARNING**
**Always disconnect the battery before replacing the SIM card.**

**CAUTION**
**Make sure that the PIN code of the SIM card is turned off.**

1. Follow all procedures of 5.3.1 to 5.3.5.
2. Remove the battery. Refer to 5.4.
3. Pull out the SIM card from the holder. Refer to step 2 in the figure.
4. Place the new SIM card into the holder. Refer to step 4 and 5 in the figure.
5. Place the battery. Refer to 5.4.
6. Follow all procedures of 5.3.6 to 5.3.7.




## 5.6 (Re-)placing the sensor(s)

Sensor types are not automatically recognized by the modem. So, when you have to change the sensor(s) connected to the modem you need to change the setup of the modem.

Refer to the 'ROAK Setup manual Prime PRO' how to setup the connected sensors to the modem.

## 5.7 Storage

**CAUTION**
**Do not place the modem in a humid and dusty environment. Do not place any heavy materials on top of the modem.**

1. Clean the outside of the modem. Refer to 5.3.1.
2. Dismount the modem. Refer to 5.3.2.
3. Store the modem in a clean and dry place.

**Note**
**If a modem is not to be used for a longer period of time, it is important that the modem engine will be stopped through the 'Royal Eijkelkamp - Prime PRO servicetool' . Refer to the 'Setup manual Prime PRO servicetool' how to switch off the modem engine. In case the modem will not be used for a very long period of time, it is also advised to disconnect the battery. Even if the modem engine is stopped, it actually continues to draw a minimum amount of current and thus drains the battery.**

**However, it is also advised not to open the enclosure of the modem unless you really need to do so. Opening the enclosure increases the risk of leakage afterwards. Consider whether the battery needs to be removed or not. If the battery needs to be removed, refer to step 1 and 2 of 5.4.**

# 6 Specifications

## 6.1 Parts list

| Article number | Part name |
|---|---|
| D0040071 | Prime PRO300 NE-ST-0000-0000 |
| D0040957 | Prime PRO400 NE-ST-0000-0000 |
| D0039764 | Battery D, 1,4V (alkaline), per piece |
| 113121 | Battery (D, LR20, MX1300), 1.5 Volt, alkaline, low in mercury and cadmium free, blister pack of 2 pieces (or similar). |
| D0039763 | GPRS/UMTS/LTE antenne GDT-S Prime |
| D0041032 | GPRS/LTE + GPS antenna |
| D0039366 | Cable for external power supply |
| 113426 | Solar power kit |
| 113427 | Mounting set for solar power |
| D0041529 | Antenna mounting plate |
| 113135 | Adaptor ring GDT-S |
| D0034870 | Dessicant bag 5 gr. |

# EC Declaration of Conformity

*The undersigned, representing the manufacturer*:

Royal Eijkelkamp BV
Nijverheidsstraat 9
6987 EN Giesbeek
The Netherlands

*Herewith declare that the product:*

| | |
|---|---|
| **Type:** | Prime PRO300 |
| Art. no. | D0040071 |
| Function(s): | Connecting element between sensor (e+-logger or Diver) and the ROAK data platform.<br>The most important functions of the modem:<br>• Passing through the collected data of the connected sensor to ROAK;<br>• Enabling remote monitoring of the connected sensor. |

*is in conformity with the essential requirements of the following EC Directive(s) when installed in accordance with the installation instructions contained in the product documentation:*

a) Radio Equipment Directive 2014/53/EU

*and that the standards and/or technical specifications referenced below have been applied:*

| | |
|---|---|
| EN 300 328 v2.2.2 | Clauses 4.3.2.2, 4.3.2.9 and 4.3.2.10. Data transmission equipment operating in the 2,4 GHz band |
| EN 301 511 v12.5.1 | Clauses 5.3.16 and 5.3.17. Global System for Mobile communications (GSM); Mobile Stations (MS) equipment; Harmonised Standard covering the essential requirements of article 3.2 of Directive 2014/53/EU |
| EN 301 908-1 v15.2.1 | Clause 4.2.2. IMT cellular networks; Harmonised Standard for access to radio spectrum; Part 1: Introduction and common requirements; |
| EN 301 489-1 V2.2.3 | ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 1: Common technical requirements; Harmonised Standard for ElectroMagnetic Compatibility |
| EN 301 489-17 V3.2.4 | ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 17: Specific conditions for Broadband Data Transmission Systems; Harmonised Standard for ElectroMagnetic Compatibility |
| EN 301 489-52 V1.2.1 | ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 52: Specific conditions for Cellular communication User Equipment (UE) radio and ancillary equipment; Harmonised Standard for ElectroMagnetic Compatibility |
| EN 62311:2020 | Assessment of electronic and electrical equipment related to human exposure restrictions for electromagnetic fields (0 Hz to 300 GHz) |

Giesbeek, 4 April 2025

*Manufacturer:*

*Signature*

*Huug Eijkelkamp*
*CEO*

# EC Declaration of Conformity

*The undersigned, representing the manufacturer:*

**Royal Eijkelkamp BV**
Nijverheidsstraat 9
6987 EN Giesbeek
The Netherlands

*Herewith declare that the product:*

| | |
|---|---|
| **Type:** | Prime PRO400 |
| Art. no. | D0040957 |
| Function(s): | Connecting element between sensor (e+-logger or Diver) and the ROAK data platform.<br>The most important functions of the modem:<br>• Passing through the collected data of the connected sensor to ROAK;<br>• Enabling remote monitoring of the connected sensor. |

*is in conformity with the essential requirements of the following EC Directive(s) when installed in accordance with the installation instructions contained in the product documentation:*

a) Radio Equipment Directive 2014/53/EU

*and that the standards and/or technical specifications referenced below have been applied:*

| | |
|---|---|
| EN 300 328 v2.2.2 | Clauses 4.3.2.2, 4.3.2.9 and 4.3.2.10. Data transmission equipment operating in the 2,4 GHz band |
| EN 301 511 v12.5.1 | Clauses 5.3.16 and 5.3.17. Global System for Mobile communications (GSM); Mobile Stations (MS) equipment; Harmonised Standard covering the essential requirements of article 3.2 of Directive 2014/53/EU |
| EN 301 908-1 v15.2.1 | Clause 4.2.2. IMT cellular networks; Harmonised Standard for access to radio spectrum; Part 1: Introduction and common requirements; |
| EN 301 489-1 V2.2.3 | ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 1: Common technical requirements; Harmonised Standard for ElectroMagnetic Compatibility |
| EN 301 489-17 V3.2.4 | ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 17: Specific conditions for Broadband Data Transmission Systems; Harmonised Standard for ElectroMagnetic Compatibility |
| EN 301 489-52 V1.2.1 | ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 52: Specific conditions for Cellular communication User Equipment (UE) radio and ancillary equipment; Harmonised Standard for ElectroMagnetic Compatibility |
| EN 62311:2020 | Assessment of electronic and electrical equipment related to human exposure restrictions for electromagnetic fields (0 Hz to 300 GHz) |

Giesbeek, 4 April 2025

*Manufacturer:*

*Signature*

*Huug Eijkelkamp*
*CEO*

## REACH - Declaration of Conformity

We as Royal Eijkelkamp hereby declare that,

D0040071 Prime PRO300 NE-ST-0000-0000

D0040957 Prime PRO400 NE-ST-0000-0000

and all subvariants of the Prime PRO

from Royal Eijkelkamp do not include any use of Chemicals and other materials as set by Regulation EC 1907/2006 REACH.

Therefore Royal Eijkelkamp meets the requirements set by Regulation (EC : 1907/2006 REACH) and it is not required to register according this REACH declaration.

All suppliers of Royal Eijkelkamp do cooperate in this by actual purchase agreements.

Giesbeek, 4 April 2025

H. Eijkelkamp
CEO