



User Manual

# G6 Radio Remote Control System

*Made for Me*





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## Disclaimer

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## Symbols

The safety symbols provide information about personal and/or product safety. Failure to follow these instructions could result in death, serious injury, or damage to the product, the operator, and others.

The following symbols are used in this user manual.



### **WARNING!**

There is a risk of death or serious injury.



### **CAUTION!**

There is a risk of moderate or minor injury, or damage to objects.



### **NOTICE!**

This symbol identifies the parts of text in the manual that shall be read with special attention.

## Glossary

Term	Description
Actuator	Joystick, lever, toggle switch, push button, and potentiometer
CAN bus	Controller Area Network
Firmware	The operating system (OS) of a device
G6	Generation 6
LCD	Liquid Crystal Display
LED	Light Emitting Diode
Li-ion	Lithium Ion
NiMH	Nickel Metal Hydride
OEM	Original Equipment Manufacturer
PL	Performance Level
SIL	Safety Integrity Level
SISP™	Scanreco Integrated Safety Platform
VDC	Voltage Direct Current
VAC	Voltage Alternating Current





# 1. Introduction

The G6 Micro or Mini transmitter together with a G6 CAN receiver makes a complete Scanreco G6 radio remote control system. This system has been developed for professional usage in various safety critical applications in construction and industrial settings. The transmitter models Micro and Mini are very flexible and offer numerous configuration possibilities to suit different machines. The receiver is streamlined for all applications that require a CAN interface. A perfect solution when a master controller is already present on the machine. All systems use the license free frequency bands: 868 MHz, 915 MHz, or 2.4 GHz.

This user manual is intended to be generic, without describing the configuration of your Scanreco product in detail. This document is strictly a user manual and does not fully cover installation or maintenance. Furthermore, this manual is a complement to the user manual provided by the system installer or machine producer.



## **WARNING!**

Always read the user manual provided by the system installer or machine producer carefully to understand the functionality of your specific product and the machine it is controlling.

## 1.1. Scanreco Integrated Safety Platform (SISP™)

The system is equipped with a third party approved safety solution that monitors all safety classified functions. Dual microprocessors in both the transmitter and receiver will verify safe and correct functionality. This is a first of its kind modular safety solution invented by Scanreco in accordance to IEC 61508 and ISO 13849-1 safety standards.

## 1.2. Product Labels

Both the transmitter and receiver have product labels. It is important to use the part and serial/batch numbers in all communication with your point of purchase or Scanreco.



## **NOTICE!**

- Always document the product serial number found on the product label for both the transmitter and receiver. This will make traceability easier and help to identify which products that are associated with which machine.
- When exporting products outside of Europe and North America additional country specific approvals and labels will be needed. Contact your point of purchase or Scanreco for further information.
- Do not remove or cover these labels.



### 1.2.1. Transmitter Product Labels



Transmitter Product Label

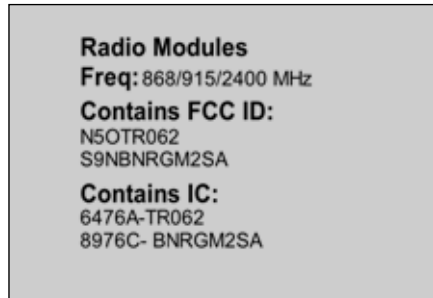


Transmitter Warning Label

### 1.2.2. Receiver Product Labels



Receiver Product Label



Receiver Radio Label



Receiver General Label





## 2. Safety Precautions



### **WARNING!**

Read and understand all safety instructions carefully before proceeding with the installation, maintenance, or operation of the products. Failure to follow the safety instructions could result in death or serious injury.



### **WARNING!**

It is the responsibility of the machine owner to:

- Train the operator on using the G6 system and the machine where the system is installed and intended to control.
- To make sure that the operator has read and understood the user manual for the machine where the G6 system is installed and is intended to control.
- Inform the operator about all potential hazardous situations that can occur when operating the machine with the G6 system.



### **WARNING!**

It is the responsibility of the machine owner and operator to:

- Read and understand the user manual for the machine where the G6 system is installed and is intended to control. This is provided by the system installer or machine producer.
- Before operation, to receive training on using the G6 system and the machine where the G6 system is installed and is intended to control.
- Before operation, to be aware of all potential hazardous situations that can occur when operating the machine with the G6 system.
- Read, understand, and follow all instructions in this manual.



### **WARNING!**

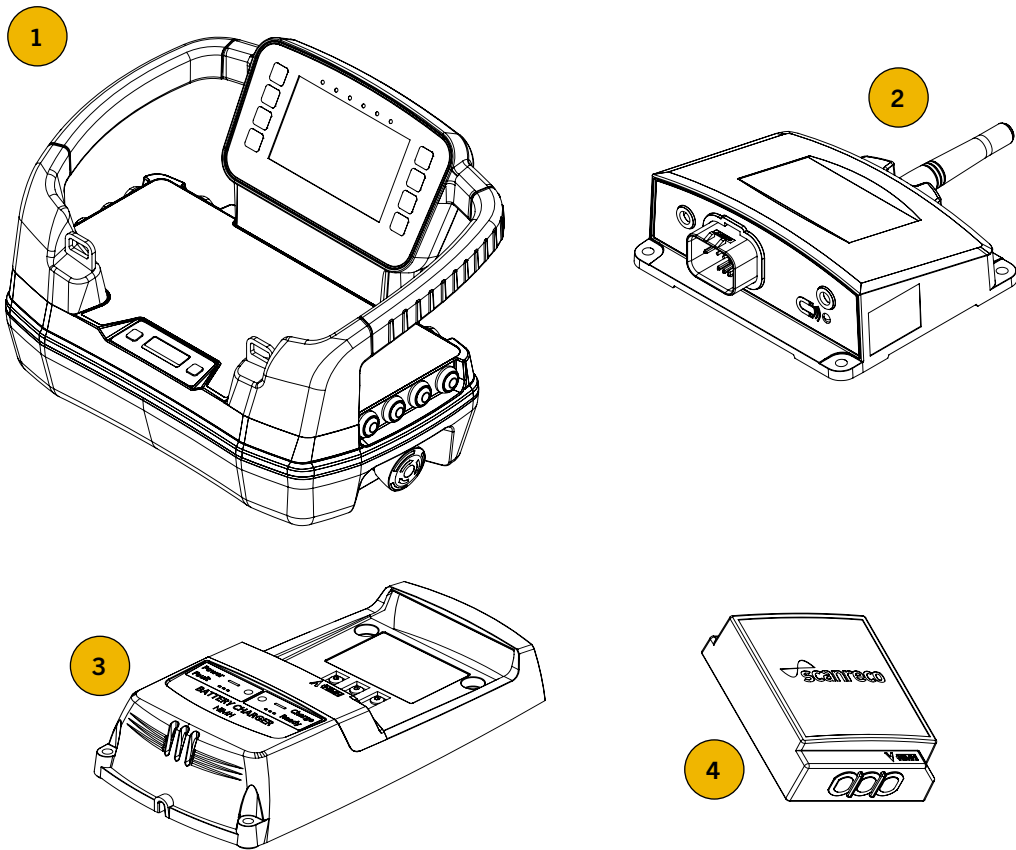
- Make sure that this document is permanently available to all machine operators.
- Make sure that only qualified, approved, and competent personnel carry out the installation, operation, and maintenance of the product.
- All repairs must be done by professionals authorized by Scanreco.
- Let only qualified and approved personnel operate the transmitter.
- Make sure the transmitter STOP button is working correctly before operating the system.
- Make sure the EMERGENCY STOP button(s) on the machine is working correctly before operating the system.
- Only use the correct transmitter unit with the matching receiver unit.
- Do not operate the transmitter if you find or suspect any faults, failure, or damage.
- Do not leave the transmitter unattended when it is switched on.
- Do not operate the transmitter when visibility is limited or the machine is out of view.
- Do not startup or operate the transmitter if there is a risk of losing balance or tripping.
- Always pay attention to warnings and visual, haptic, and acoustic signals.
- Always pay attention to the entire work area to avoid any dangerous situations.
- Always keep a safe distance from the machine during operation.
- Make sure that no unauthorized persons are within the machine's working area during operation.
- Immediately press the STOP button in case of any dangerous situations.
- Be aware that dangerous situations can occur when the STOP button is pressed, such as swinging loads.
- Do not use the products in potentially explosive atmospheres or environments.
- Always switch off the transmitter and receiver when not in use.
- Do not leave load hanging when the transmitter is switched off.
- Avoid knocking or dropping the transmitter.
- Store the transmitter in a safe place.



### 3. System Overview

These are the main components of the G6 radio remote control system:

1. Transmitter.
2. Receiver.
3. Battery charger.
4. Battery.



#### **NOTICE!**

The transmitter can be delivered with several optional accessories such as waist belt, neck strap and a tether cable.



## 4. Technical Description

### 4.1 Transmitters and Receiver Specifications



#### NOTICE!

The information below may differ in OEM customized systems. Please refer to the corresponding technical documentation provided with each system by the system installer or machine producer.

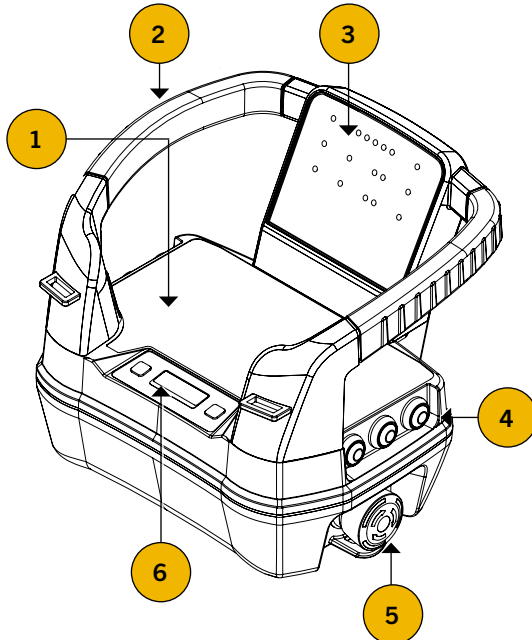
Technical data	Micro transmitter	Mini transmitter	CAN receiver
Part number	P00003	P00004	P00005
Dimensions (WxDxH)	210 x 170 x 179 mm 8.3 x 6.7 x 7 inches	297 x 194 x 204 mm 11.7 x 7.6 x 8 inches	138 x 49 x 118 mm 5.4 x 1.9 x 4.6 inches
Weight	~ 1,6 kg ~ 3.5 lb <i>Depending on configuration</i>	~ 2,2 kg ~ 4.8 lb <i>Depending on configuration</i>	560 g 1.2 lb
Protection category	IP65	IP65	IP67/UL50E Type 6
Operating temperature (Celsius/Fahrenheit)	-25 °C to +70 °C -13 °F to +158 °F	-25 °C to +70 °C -13 °F to +158 °F	-25 °C to +70 °C -13 °F to +158 °F
Storage temperature (Celsius/Fahrenheit)	-40 °C to +85 °C -40 °F to +185 °F	-40 °C to +85 °C -40 °F to +185 °F	-40 °C to +85 °C -40 °F to +185 °F
Safety classifications	IEC 61508 / EN 13849-1		
Safety classified hardware outputs	N/A	N/A	LOOP = SIL 3/PL e STOP_OUT = SIL 3/PL e ACT_MOV = SIL 3/PL e
Safety classified inputs	1 safety classified STOP button, SIL 3/PL e ≤ 16 safety classified analog actuators, SIL 3/PL e ≤ 8 safety classified digital actuators, SIL 3/PL e	1 safety classified STOP button, SIL 3/PL e ≤ 16 safety classified analog actuators, SIL 3/PL e ≤ 8 safety classified digital actuators, SIL 3/PL e	N/A
CAN bus	N/A	N/A	CAN open and Safety CAN
No safety classification	≤ 48 digital and analog input/outputs	≤ 48 digital and analog input/outputs	N/A
Overload protection	N/A	N/A	Yes (for the safety classified outputs)
Antenna	Internal	Internal	External
Radio frequency bands	868 MHz, 915 MHz, 2.4 GHz	868 MHz, 915 MHz, 2.4 GHz	868 MHz, 915 MHz, 2.4 GHz
Maximum radio frequency output power (within EU)	868 MHz: 25 mW, 2.4 GHz: 100 mW (915 MHz not used in EU)	868 MHz: 25 mW, 2.4 GHz: 100 mW (915 MHz not used in EU)	868 MHz: 25 mW, 2.4 GHz: 100 mW (915 MHz not used in EU)
Frequency management	Automatic frequency hopping	Automatic frequency hopping	Automatic frequency hopping
Range (typical)	> 100 m	> 100 m	> 100 m
Battery type	NiMH, Li-ion	NiMH, Li-ion	N/A
Power supply by tether cable	12/24VDC from receiver	12/24VDC from receiver	N/A



Technical data	Micro transmitter	Mini transmitter	CAN receiver
Power supply by battery	Nominal voltage 7.2 VDC	Nominal voltage 7.2 VDC	N/A
Power supply to receiver	N/A	N/A	12/24 VDC
Fuse	N/A	N/A	Use external fuse 10 A
Current consumption	Varies depending on configuration: 70-250 mA	Varies depending on configuration: 70-250 mA	< 200 mA (excluding external loads and in radio mode)
Operating times	Varies depending on configuration and number of functions: NiMH: 6-23 h Li-ion: 15-57 h	Varies depending on configuration and number of functions: NiMH: 6-23 h Li-ion: 15-57 h	N/A
Connector type	N/A	N/A	AMPSEAL 14-pin
Cable control	Optional, factory assembled M12 or Hirschman connector	Optional, factory assembled M12 or Hirschman connector	Optional, requires external connector

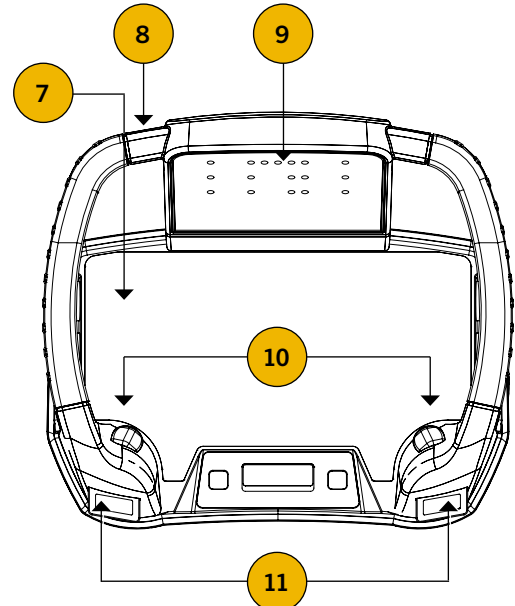
## 4.2 Micro Transmitter Dimensions and Features

### Micro Transmitter Views



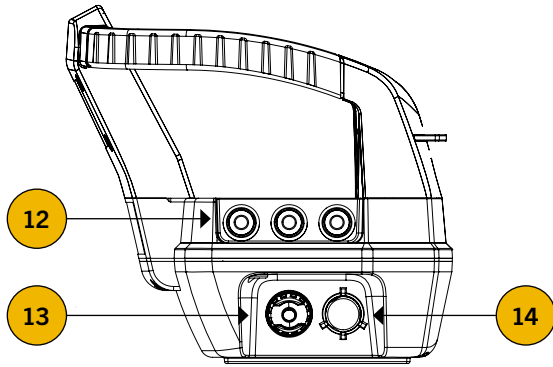
#### ISO View

1. Customizable area
2. Protective frame
3. LED display (optional)
4. Side buttons x3 (optional)
5. STOP button
6. Information center (LCD)



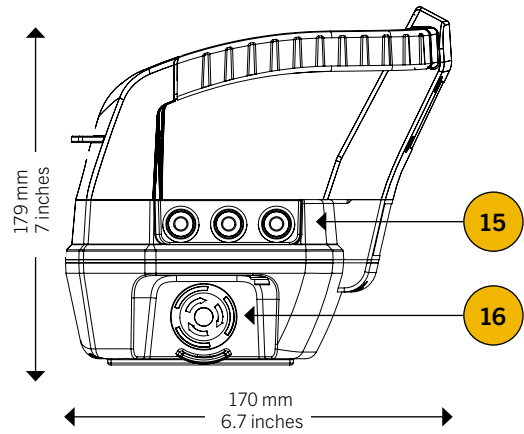
#### Top View

7. Customizable area
8. Protective frame
9. LED display (optional)
10. Panel lights (optional)
11. Metal brackets for carrying accessories



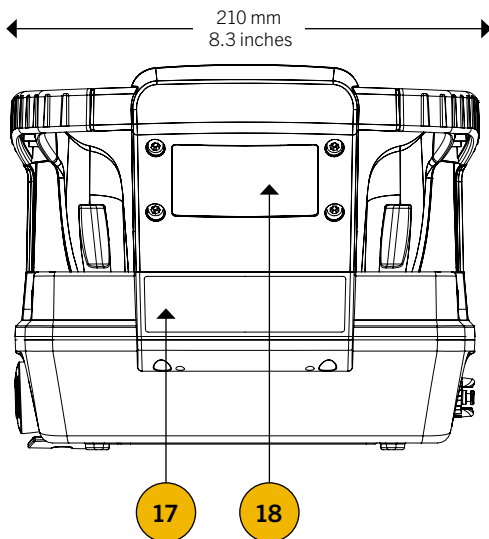
**Side View (Left)**

- 12. Side buttons x3 (optional)
- 13. Tether connector (optional)
- 14. Gore-Tex valve



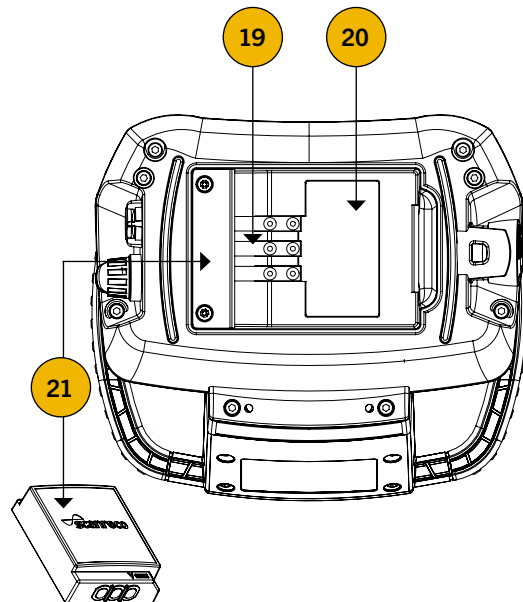
**Side View (Right)**

- 15. Side buttons x3 (optional)
- 16. STOP button



**Back View**

- 17. Branding area
- 18. Warning label



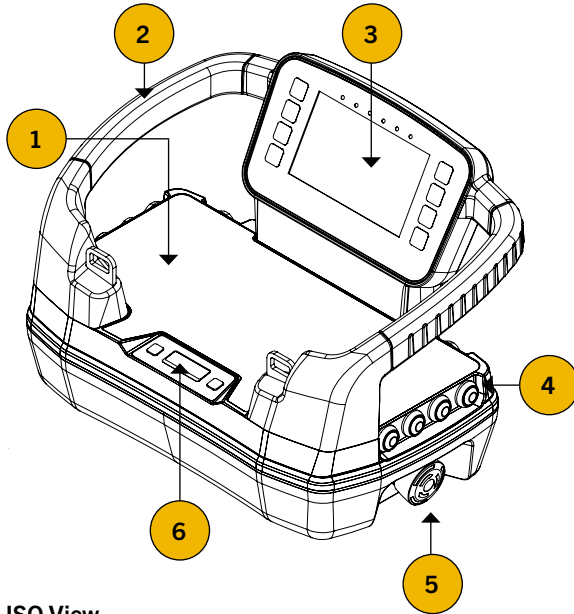
**Bottom View**

- 19. Battery compartment
- 20. Product label
- 21. Replaceable battery



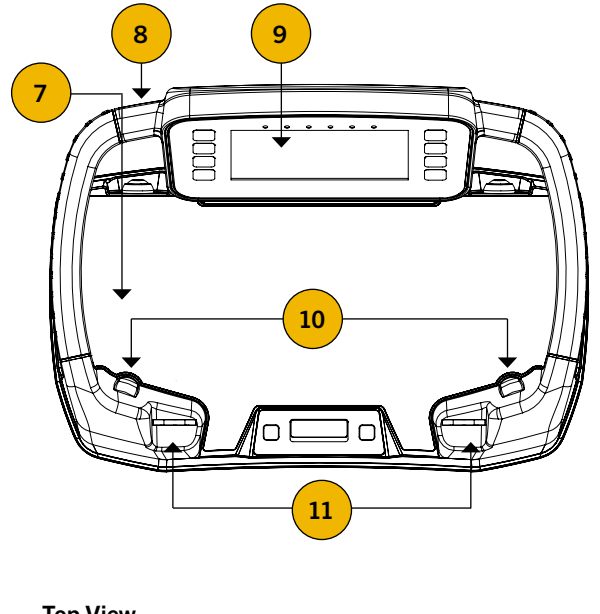
### 4.3 Mini Transmitter Dimensions and Features

#### Mini Transmitter Views



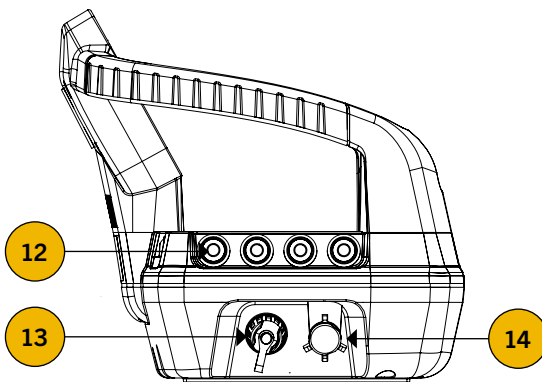
**ISO View**

- 1. Customizable area
- 2. Protective frame
- 3. Color display (optional)
- 4. Side buttons x4 (optional)
- 5. STOP button
- 6. Information center (LCD)



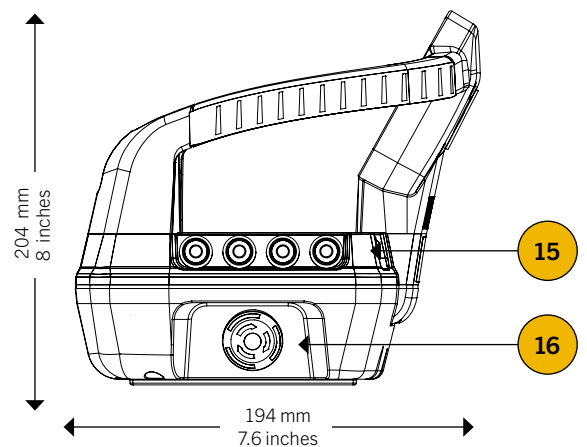
**Top View**

- 7. Customizable area
- 8. Protective frame
- 9. Color display (optional)
- 10. Panel lights (optional)
- 11. Metal brackets for carrying accessories



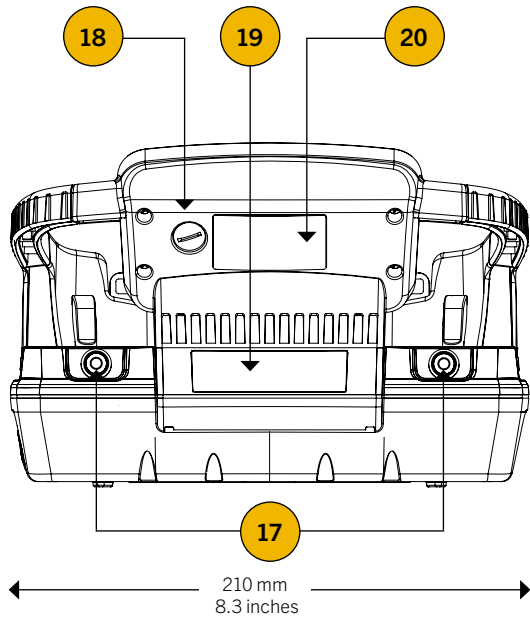
**Side View (Left)**

- 12. Side buttons x4 (optional)
- 13. Tether connector (optional)
- 14. Gore-Tex valve



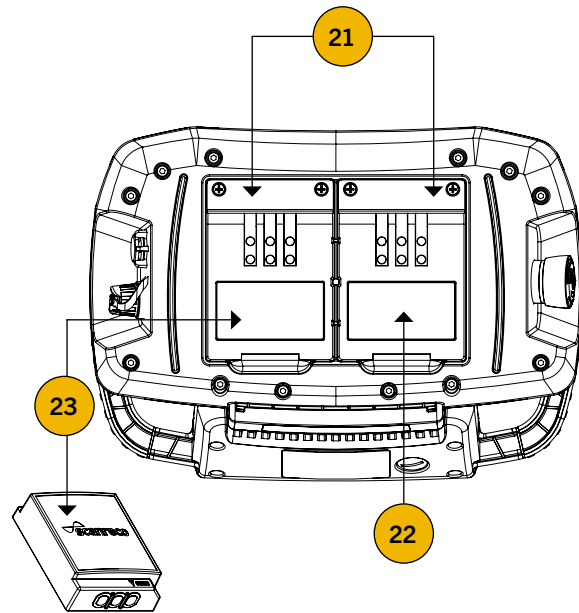
**Side view (Right)**

- 15. Side buttons x4 (optional)
- 16. STOP button (Alternative position for the STOP button is on the Customizable area)



**Back View**

- 17. Back buttons (optional)
- 18. Display connector
- 19. Branding area
- 20. Warning label

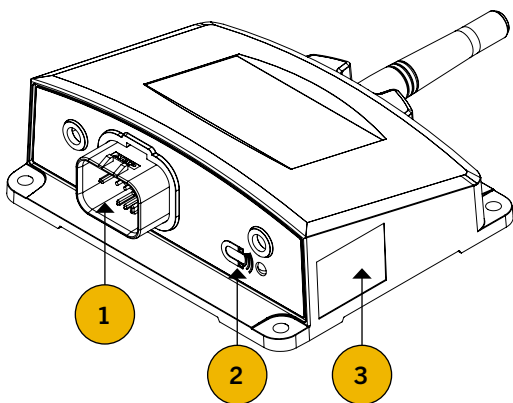


**Bottom view**

- 21. Battery compartment x2
- 22. Product label
- 23. Replaceable battery

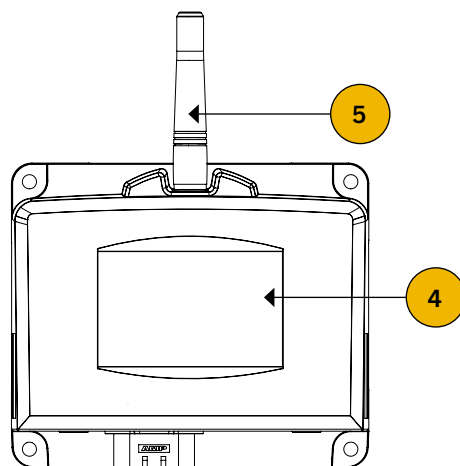
## 4.4. Receiver Dimensions and Features

### G6 Receiver Views



**ISO View**

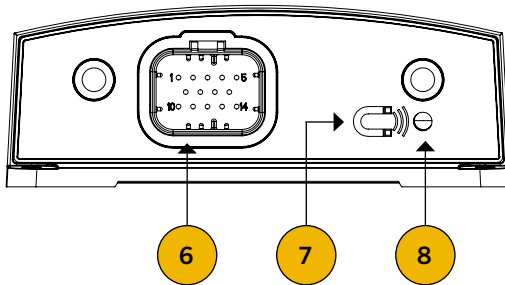
- 1. AMPSEAL connector
- 2. Magnet symbol (for pairing)
- 3. Product label (Located on left and right side)



**Front View**

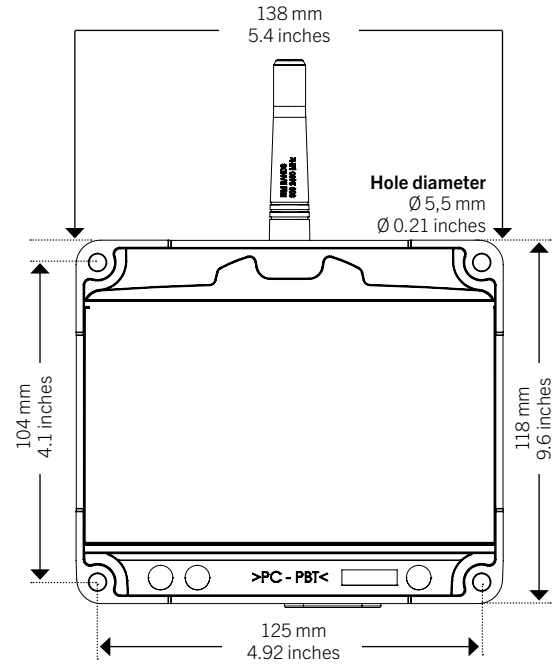
- 4. General label
- 5. External antenna



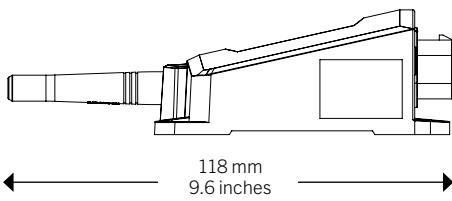


**Bottom View**

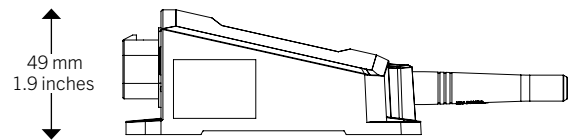
- 6. AMPSEAL connector
- 7. Magnet symbol (for pairing)
- 8. Status LED.



**Back View**



**Side View (Left)**



**Side View (Right)**



## 5. Operation

### 5.1 Starting the Transmitter

The position of the ON button is customizable. To find out which button that starts the transmitter see the instruction manual provided by the system installer or machine producer.



#### WARNING!

- Make sure to use original Scanreco carrying accessories, such as waist belt or neck strap, to avoid dropping the transmitter. Dropping the transmitter can cause accidental activation of actuators and unintended machine movements.
- Make sure that all actuators are in zero-position before startup. This is to prevent unintended machine movements when starting the transmitter.

1. Turn the STOP button clockwise to release it from the STOP-position.
2. Activate the designated ON button or Switch. In some transmitters this step is not needed, depending on the configuration.
3. The information center display will light up.
4. Check the radio signal bars or cable connection symbol in the information center to make sure that you have established a link with the receiver. See chapter 5.3.4 for information about Radio signal and 5.4.2 for Cable control.
5. The transmitter is now operational.



*Radio mode*



*Cable mode*

### 5.2 Switching off the Transmitter

There are several ways the transmitter can be switched off, both manually and automatically, depending on the configuration.

#### Manually:

- Press the STOP button.
- Use the optional OFF functions:
  - Press the designated OFF button. To find out which button this is, see the instruction manual provided by the system installer or machine producer.
  - Activate shutdown command by pressing a designated push button located next to the color display. To find out which button this is, see the instruction manual provided by the system installer or machine producer.

#### Automatically:

- Battery voltage is too low.
- Optional OFF functions:
  - Free fall detected.
  - Hard impact detected.
  - Battery saving feature. The transmitter will switch off after 1-60 minutes when idle, depending on the configuration. The default configuration is five minutes.



## 5.3 Information Center Display

The information center is a small display on the top section, located next to the customizable area. The main purpose of the information center is to give the operator essential information about the transmitter's operating status.

The information center will show the following information:

- Transmitter is switched on.
- Transmitter is locked.
- Battery level.
- Radio signal strength.
- Speed reduction.
- Error codes (with red backlight).
- Pairing options.
- Self-test mode.



### 5.3.1. Navigation

There are two push buttons for browsing and selecting in the information center:






Next (left side).



Confirm (right side).

### 5.3.2. Locking and Unlocking

If the transmitter is locked, the lock symbol  will be visible on the information center display. When locked, the transmitter will not be able to link up to a receiver. The button combination presented below is used to both lock and unlock the Transmitter.

1. Press and hold down **Confirm**: 
2. While holding down Confirm, press **Next** three times: 
3. Finally, release **Confirm**.
  - a. The transmitter is **unlocked** when the lock symbol is no longer visible.
  - b. The transmitter is **locked** when the lock symbol is visible.



#### **NOTICE!**

Depending on the configuration of your transmitter, the lock function might not be available. Test the transmitter according to the instructions above to find out if the lock function is available.



### 5.3.3. Operator Controlled Speed Reduction

Speed reduction is a feature that allows machine operators to reduce the maximum speed of machine movements. When activated, the speed reduction symbol will be visible on the information center display. Below the symbol a bar-graph is displayed indicating the currently selected speed reduction.







Depending on the configuration of your transmitter, the speed reduction feature might not be activated. If speed reduction is activated, two digital buttons (including information center buttons) can be configured to increase and decrease the speed reduction. When increasing or decreasing the bar-graph will change status to reflect the current speed reduction level (maximum of five levels available). When speed reduction is reduced to zero, the icon will no longer be shown. To find out which buttons that have been configured for speed reduction, see the instruction manual provided by the system installer or machine producer.

Speed reduction states	Symbol
Speed reduction is active (main screen)	
Speed reduction OFF (main screen)	
Speed reduction disabled	
Speed reduction level 1	
Speed reduction level 2	
Speed reduction level 3	
Speed reduction level 4	
Speed reduction level 5	



### 5.3.4. Radio Signal

The current state of the transmitter's radio signal strength will be visible on the main screen of the information center. The different radio signal states will be indicated by radio signal bars.

Radio signal states	Symbol
No radio link	
Radio signal strength 1-25%	
Radio signal strength 26-50%	
Radio signal strength 51-75%	
Radio signal strength 76-100%	
Radio Standby	



#### **NOTICE!**

The Radio Standby symbol indicates that something is preventing the transmitter from operating. Make sure that joysticks, levers, potentiometers, and switches are in zero-position during startup of the transmitter and that the STOP button is not activated. If this does not solve the issue, see Chapter 8 Troubleshooting.



## 5.4. Optional Features



### **NOTICE!**

The optional features are installed from factory and cannot be retrofitted. To find out what features you have in your transmitter, see the instruction manual provided by the system installer or machine producer.

### 5.4.1. Panel Lights

The panel lights are built into the protective frame of the Micro and Mini transmitters. The purpose of the panel lights is to illuminate the top section with its actuators and decal area, and to make it easier for the operator to see and operate the transmitter in the dark.

#### **The panel lights can be activated in two ways, depending on the configuration:**

1. By a toggle or a button.
2. Via CAN bus to the receiver (must be implemented by the system installer or machine producer).

### 5.4.2. Cable Control

To use cable control, simply connect the tether cable to the transmitter and receiver. A connector symbol in the information center will indicate that the transmitter is operational in cable mode. Cable control has priority over radio control. Cable mode will automatically be activated when the tether cable is connected. To return to radio mode, remove the tether cable and restart the transmitter.

#### **The cable control is used:**

- As a backup solution, for example when a battery or batteries are not charged.
- In areas where radio transmission is not allowed.

The standard length of the tether cable is 10 meters.



### **WARNING!**

- Be aware of the physical connection between the operator and machine when using cable control, especially when wearing carrying accessories such as a waist belt or neck strap. The operator must constantly pay attention to the machine and other equipment's movements to avoid any dangerous situations. The physical connection may cause the operator to be pulled or tripped by the cable.
- When working near overhead or underground power line cables there is a risk of electrical shock from the machine to the operator due to the cable control



### **NOTICE!**

The transmitter and receiver must be paired for the cable control to function.



### 5.4.3. Operator Feedback

The purpose of the operator feedback is to provide information to the operator about the machine's status and warnings. There are three main categories of operator feedback presented below: Visual, Audible and Haptic.

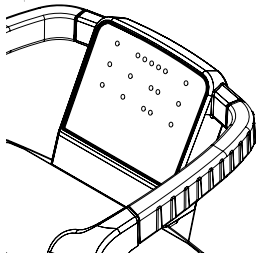


#### **WARNING!**

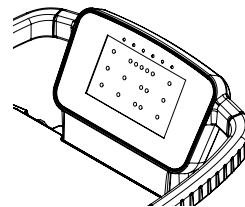
- During operation always pay attention to the information shown on the display and LEDs, as well as the machine and working area.
- The display and LED indications and warnings do not include all machine information.
- The information shown on the display and LEDs may have a delay or freeze.
- It is the responsibility of the operator to take proper action based on indications and warnings.
- Displays with Wi-Fi have two separate radio links, one that controls the machine, and one that streams video or other contents. Interruptions may occur in one or the other radio link. This will either cause the display to malfunction while the machine is operational or shut down the communications between the receiver and transmitter while the display shows information.

#### 5.4.3.1. LED display and Indicators

LEDs indicate operating status from the machine and light up in green, yellow, blue or red. The LEDs can either be centralized in the LED display or spread out individually over the customizable area. See the instruction manual provided by the system installer or machine producer for more information regarding indications and the functionality of each LED.



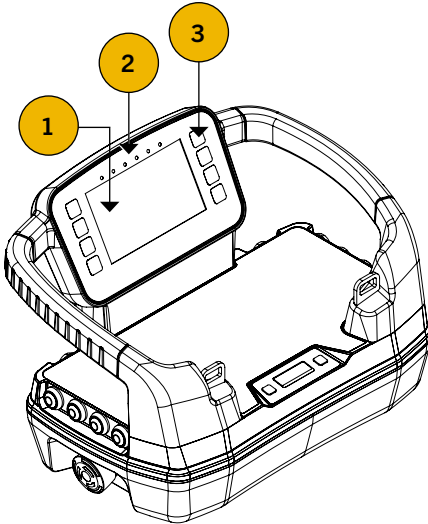
*Micro LED display*



*Mini LED display*



### 5.4.3.2. Color Display



#### ISO View

1. Color display
2. LED (5)
3. Push buttons (8)

#### There are three versions of the color display for the Mini transmitter:

- 1. Color Display Standard:** Offers advanced graphics, detailed information about the operating status, and good readability.
- 2. Color Display Premium Basic:** Offers advanced graphics, detailed information about the operating status, better readability outdoors in sunlight and shockproof glass that protects the display and reduces reflections and glare.
- 3. Color Display Premium Full:** Offers advanced graphics, detailed information about the operating status, better readability outdoors in sunlight, Wi-Fi, Compass, Accelerometer, Gyroscope, Real-time Clock, video streaming by connecting a Wi-Fi camera to the display and shockproof glass that protects the display and reduces reflections and glare.

Technical data	Color Display Standard	Color Display Premium Basic	Color Display Premium Full
Size	4.3"	4.3"	4.3"
Resolution	480 x 272 pixels	480 x 272 pixels	480 x 272 pixels
Buttons	8 push buttons	8 push buttons	8 push buttons
Storage	4 GB	8 GB	8 GB
Backlight	Yes	Yes	Yes
Wi-Fi	No	No	Yes
Compass	No	No	Yes
Accelerometer	No	No	Yes
Gyroscope	No	No	Yes
Real-time clock	No	No	Yes
Connectivity	No	No	Wi-Fi
Programming connector	Micro USB	M12 5-poles	M12 5-poles





The color display has 5 LEDs placed above the screen. See the instruction manual provided by the system installer or machine producer for more information about the LED indications.

**NOTICE!**

- The transmitter is delivered to the end user with pre-programmed display graphics developed by the system installer or machine producer. See the instruction manual provided by the system installer or machine producer for more information about the display content.
- The color display is currently not available for the Micro transmitter.

**5.4.3.3. Haptic Feedback**

The transmitters can be equipped with haptic feedback to make the operator aware of dangerous situations such as overload. Dual vibrator motors make the protective frame vibrate to alert the operator when holding the transmitter.

**5.4.3.4. Buzzer**

The Buzzer is an optional status indicator that will emit sound signals (beeps). What the sound signals indicate is determined by the system installer or machine producer, typically some type of alert triggered from the machine. See the instruction manual provided by the system installer or machine producer for more information.

**5.5. Receiver Operation**

When the receiver is powered on it is automatically in stand-by mode searching for its corresponding transmitter.

**5.5.1. Receiver Antenna**

The receiver has an external antenna that is connected to the receiver with a RP-SMA connector. If the antenna must be replaced, make sure to use an antenna for the matching frequency (maximum gain is 2dBi for 2.4 GHz and +1dBi for 868/915 MHz). Also, when attaching the new antenna, tighten it with a torque of 0.3-0.6 Nm.

When the receiver is installed inside an enclosure, an extension cord can be used to place the antenna in an optimal position. The extension cable must be a 50 Ohm coaxial low loss cable with a maximum length of 10 meters.



## 6. Initial Pairing

Transmitters and receivers can be delivered either as a pre-paired system or as individual parts that will require pairing during initial setup. If the system is pre-paired the status LED on the receiver will switch from a green continuous light to a fast-flashing green light, when starting the transmitter.

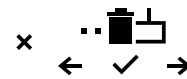
To pair the transmitter and receiver, follow the instructions below.

- 
1. Press the two buttons next to the information center display, **Next** (left side) and **Confirm** (right side), at the same time.
- 

2. Navigate to **option 2** and press **Confirm**.
- 



3. *Optional:* The option to cancel pairing will be shown on the screen. If you want to cancel the pairing process press **Next** to return to the main screen. Otherwise continue to the next step.
- 

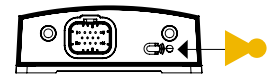


4. Press and hold down the buttons **Next + Confirm** at the same time for 3 seconds.
- 

5. The transmitter will start searching for receivers.
- 



6. Start pairing mode on the receiver.
    - a. Switch off the receiver.
    - b. Switch on the receiver.
    - c. Within five seconds after switching on the receiver, place the pairing magnet on the magnet symbol. The pairing magnet is supplied with every system delivery. If you do not have the pairing magnet, you can use any magnet with a force greater than 1 kg.
    - d. The LED on the receiver will flash orange with fast pulses, indicating that pairing is pending.
    - e. Immediately remove the magnet.
- 



7. When the receiver is found its serial number will show on the information center.
- 



8. Make sure the serial number seen in the information center matches the intended receivers' serial number found on the product label.
    - a. If it does not match, find the receiver with the non-matching serial number, and switch it off.
    - b. Then you will have to switch off the transmitter and switch it on again. This will restart the pairing process from step one.
-



---

9. If the serial numbers match, press Confirm to continue pairing.

---

10. The pairing confirmation symbol will show for 2 seconds.



---

11. The OFF symbol will show.



---

12. Switch OFF the transmitter and power OFF the receiver.

---

13. Power ON the receiver and switch ON the transmitter.

---

14. The transmitter is now paired with the receiver.

---

**NOTICE!**

The radio and cable communication protocols in G6 are different from other Scanreco platforms. Therefore, it is not possible to mix transmitters and receivers from different platforms, pair transmitters/receivers from different platforms, or to operate transmitters/receivers from different platforms in a system.



## 7. Battery and Charger

There are two different battery technologies available: Nickel Metal Hydride (NiMH) and Lithium Ion (Li-ion). These are not compatible with each other and that is why two different charger models are available. Use the matching battery and charger. Both types of batteries can be used in any G6 transmitter. The Mini transmitter also has dual battery compartments and a hot swap feature that makes it possible to change batteries without the transmitter switching off.

Copy protection is built into the battery, charger, and transmitter. This prevents the use of non-original batteries. The transmitter will only operate for a few minutes if powered by non-original batteries. The information center display will show a battery symbol with an exclamation mark and then the error codes 3201/3202 with a red backlight.

### 7.1. Specifications



#### **NOTICE!**

The Lithium Ion (Li-ion) battery will enter “shipping mode” if it is not used for several days. This is not a fault, but a standard feature of the lithium battery cells. This is to extend the battery service life and to ensure safe shipments. The battery can be reactivated by putting it in the charger shortly.

#### 7.1.1. Battery Specifications

Technical data	NiMH battery	Li-ion battery
Part number	700	701
Battery type	NiMH	Li-ion
Dimensions (W x H x D)	74 x 93 x 28 mm 2.9 x 3.7 x 1.1 inches	74 x 93 x 28 mm 2.9 x 3.7 x 1.1 inches
Weight	227 g 0.50 lb	227 g 0.50 lb
Protection category	IP65	IP67
Battery capacity	2000 mAh	5100 mAh
Operating voltage	Nominal 7.2V	Nominal 7.2V
Charging time	2h	3h
Charging cycles	>500	>1 000
Charging temperature	0 °C to +45 °C 32 °F to 113 °F	10 °C to +45 °C 50 °F to 113 °F
Discharge temperature	-20 °C to +50 °C -4 °F to 122 °F	-20 °C to +60 °C -4 °F to 140 °F
Storing temperature	-20 °C to 35 °C -4 °F to 95 °F	Less than: 1 year 3 months 1 month -20 °C to +20 °C 4 °F to 68 °F -20 °C to +40 °C 4 °F to 104 °F -20 °C to +50 °C 4 °F to 122 °F



## 7.1.2. Battery Charger Specifications

Technical data	NiMH charger	Li-ion charger
Weight	212 g 0.46 lb	214 g 0.47 lb
Dimensions (W x D x H)	97 x 47 x 185 mm 3.8 x 1.8 x 7.3 inches	97 x 47 x 185 mm 3.8 x 1.8 x 7.3 inches
Protection category	IP21	IP21
Input voltage	12/24 VDC	12/24 VDC

Each type of battery charger is made in three versions:

Description	Part numbers NiMH chargers	Part numbers Li-ion chargers
12/24 VDC with 1.8 m / 5.9 ft cable for terminal supply connection	102232	102242
12/24 VDC with 1.8 m / 5.9 ft (extended length) coiled cable with car adapter	103141	103216
110/230 VAC power supply with 1,5 m/4.11 ft power cable	103142	103217



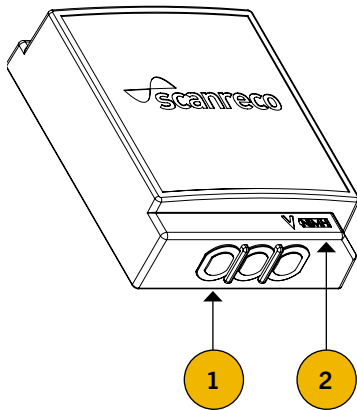
### **NOTICE!**

Use only original batteries and battery chargers manufactured by Scanreco.



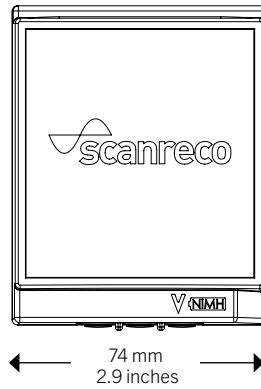
## 7.2. Battery and Charger Dimensions

### NiMH Battery

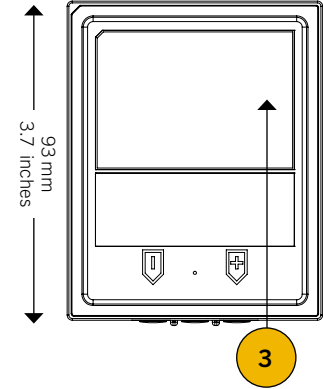


ISO view

- 1. Poles
- 2. Mechanical stop

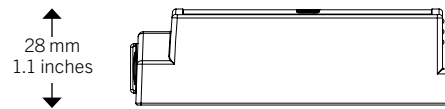


Top view



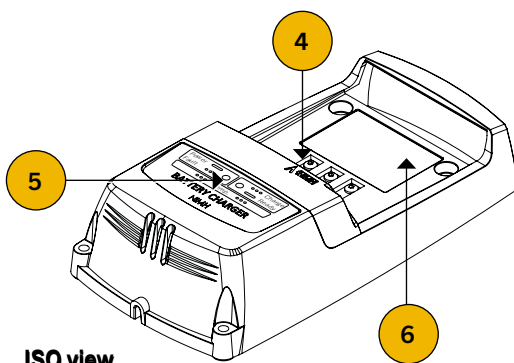
Bottom view

- 3. Product label



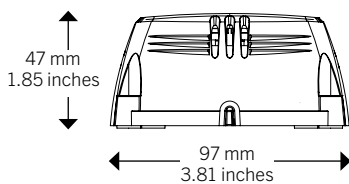
Side view

### NiMH Battery Charger

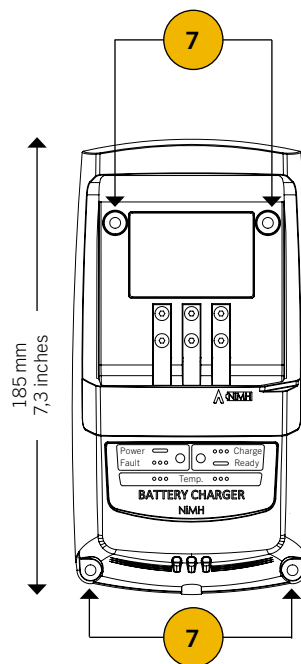


ISO view

- 4. Poles
- 5. LED Status Indicators
- 6. Product label

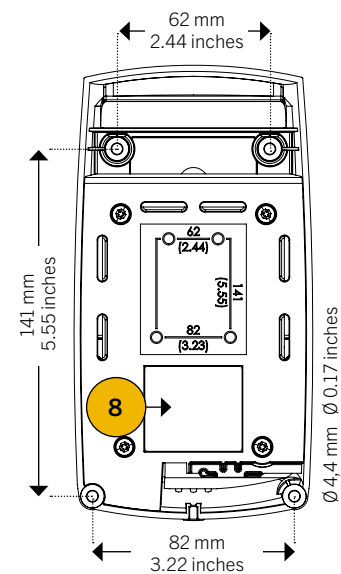


Side view



Top view

- 7. Screw holes (for fixing the charger)

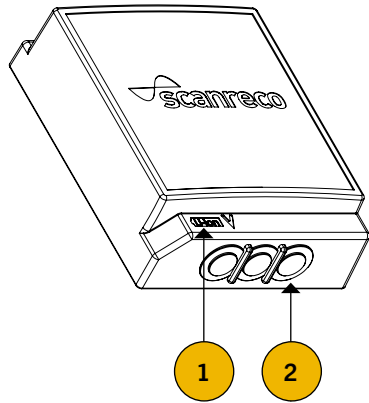


Bottom view

- 8. Information label.

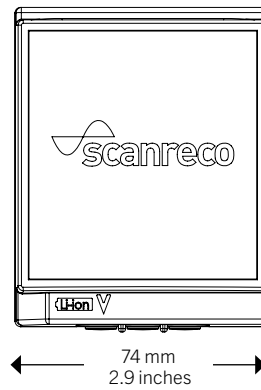


### Li-ion Battery

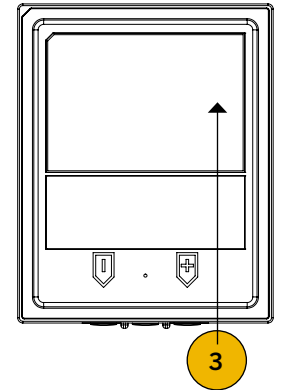


**ISO view**

- 1. Mechanical stop
- 2. Poles

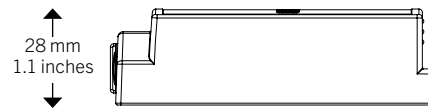


**Top view**



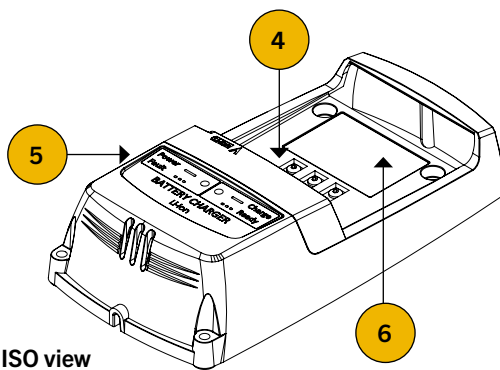
**Bottom view**

- 3. Product label



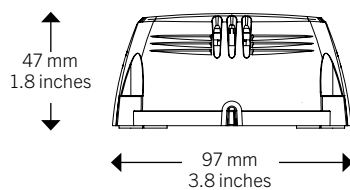
**Side view**

### Li-ion Battery Charger

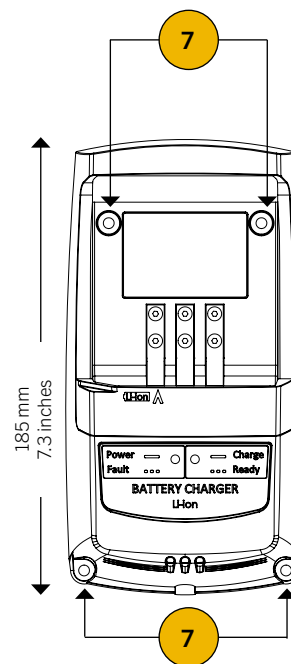


**ISO view**

- 4. Poles
- 5. LED Status Indicators
- 6. Product label

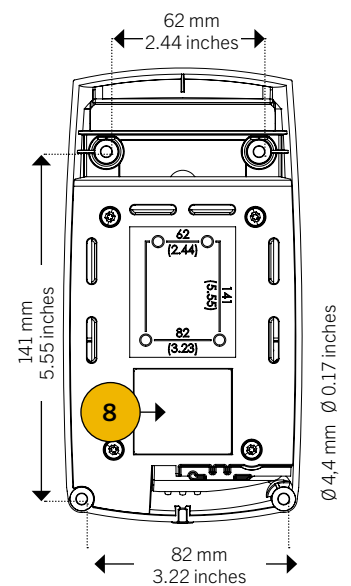


**Side view**



**Top view**

- 7. Screw holes (for fixing the charger)



**Bottom view**

- 8. Information label.



## 7.3. Battery and Charger Safety Information



### **NOTICE!**

Carefully read the following safety instructions and warnings before using and charging the batteries.

### 7.3.1. Battery Safety Information



### **CAUTION!**

- Remove battery if the transmitter will not be used for an extended period (longer than one week).
- Only use original batteries and battery chargers manufactured by Scanreco.
- Never use or charge damaged, faulty, leaking, swollen or corroded batteries.
- Avoid using batteries in temperatures other than specified.
- Avoid exposing the batteries to direct sunlight.
- Always insert batteries correctly with regards to polarity (+ and -).
- Always keep the batteries out of reach of children.
- Do not store or transport batteries in such a way that the battery terminals touch conductive materials: keys, coins, or hand tools.

### 7.3.2. Battery Charger Safety Information



### **CAUTION!**

- This appliance is not intended for use by persons (including children) with reduced physical, sensory, or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.
- Children should be supervised to ensure that they do not play with the appliance.
- This appliance must only be supplied at SELV (Safety Extra-Low Voltage) corresponding to the marking on the appliance.
- Do not recharge non-rechargeable batteries.
- Never use a damaged or faulty battery charger.
- Never short circuit battery charger terminals.
- Avoid using the battery charger in temperatures other than specified.
- Avoid exposing the battery charger to direct sunlight.
- Always disconnect the battery charger from the power supply if it is not being used.
- Always install the battery charger indoors on a vibration-free and dry area.
- The battery charger must be externally fused with 3 A fuse.
- Do not install the battery charger in a closed compartment. The battery charger must be able to ventilate heat and/or gas.
- Do not use the battery charger if the connection cable is damaged or faulty.
- Do not use the battery charger in hazardous locations or near explosive substances.
- Do not cover the battery charger.
- The connection to the supply mains must be in accordance with the national wiring rules.





## 7.4. Installation and Charging

### 7.4.1. Battery Charger Installation

Follow the instructions below to correctly install the battery chargers.

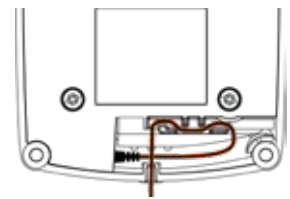


#### **NOTICE!**

Read the safety instructions in chapter 7.3 carefully before proceeding with the installation.

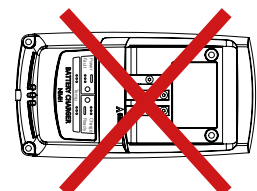
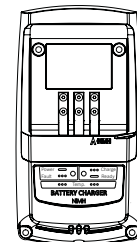
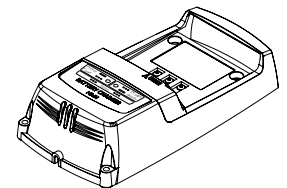
#### **Step 1: Connect the power cable.**

1. Connect power cable to DC connector.
2. Place the power cable in the cable track to prevent it from disconnecting.
3. The power supply of battery charger is made in three versions:
  - a. 12/24 VDC with 1.8 m / 5.9 ft cable for terminal supply connection. Use a 3A external fuse.
  - b. 12/24 VDC with 1.8 m / 5.9 ft (extended length) coiled cable with car adapter.
  - c. 110/230 VAC power supply with 1.5 m/4.11 ft power cable
4. After installing the power supply cable in the Li-ion battery charger, clamp the ferrite onto the cable 5 cm / 2 inches away from the charger housing. Ferrite is included in the cardboard box with the Li-ion charger. Ferrite does not apply for NiMH battery chargers.



#### **Step 2: Mount the charger.**

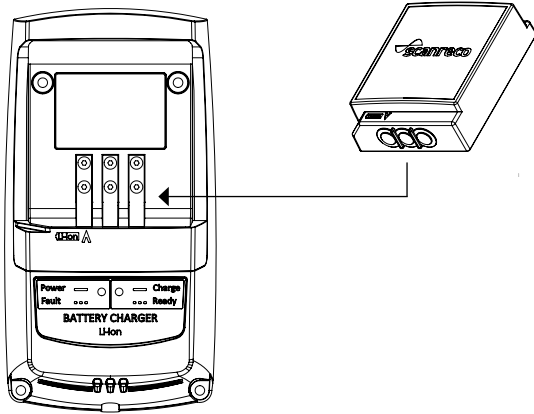
1. Mount the battery charger on a flat surface, preferably on a wall or table. When mounting on a wall make sure to mount it vertically with the power cable facing downwards.
2. Make sure to mount the charger at a height of maximum 2 meters above the floor. This is to comply with the electrical safety standards.
3. Use four (4) M5 screws (one in each corner) when mounting the charger.
  - a. Screw holes:  $\varnothing$  4.4 mm / 0.17 inches.
  - b. Tighten the screws with a torque of 0.7 Nm.



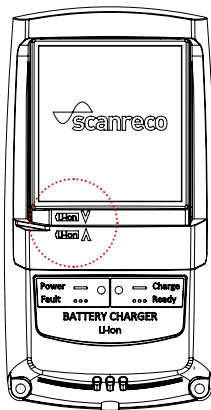


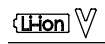
### 7.4.2. Battery Charging


#### Step 1: Insert the battery into the charger.



#### Step 2: Make sure that the battery and charger names match, and arrows align.



 Alignment on (Left) side for Li-ion.

 Alignment on (Right) side for NiMH.

The Status LED will start flashing green when battery is charging.

The lifespan of the batteries is estimated to be 500 charging cycles for the NiMH battery and 1 000 cycles for the Li-ion battery. The batteries shall then have at least 70% nominal capacity.

#### Follow these tips to maximize the lifespan of the batteries and battery charger:

- The batteries should always be charged before use.
- Charge the batteries at least once every six months.
- Avoid short circuits between the battery contacts. For example, do not transport charged batteries in toolboxes or next to other metal objects.
- Always charge batteries within the specified temperature ranges.
- Always keep poles clean.



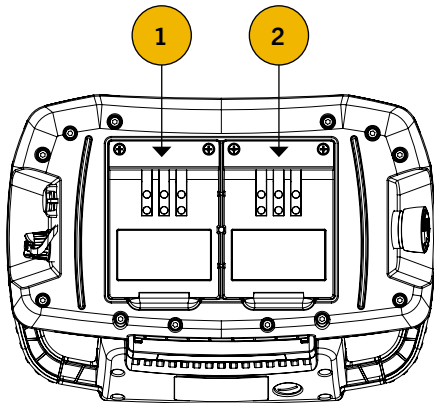
## 7.5. Battery and Charger Status Indications

The purpose of the status indications is to give the user information about the status of the batteries' charge and the batteries' condition. There are two status indicators:

1. Transmitter: Symbols are visible on the main screen of the Information center display.
2. Charger: Two LEDs on the battery charger.

### 7.5.1. Battery Status Indications

Symbols will be visible on the main screen of the transmitter's Information center display that indicates the status of the batteries' charge and the batteries' condition. If the transmitter has two battery compartments, two status symbols will be visible, one for each battery.



Status	One Battery	Two Batteries (Only for Mini transmitter) Battery compartment 1 (left) Battery compartment 2 (right)
Battery 0%		or
Battery 25%		or
Battery 50%		or
Battery 75%		or
Battery 100%		
Battery FAULTY	+ Error code 3201	or   + Error codes 3201/3202
Cable Connection		



## 7.5.2. Charger Status Indications

There are two LEDs on the battery charger that indicate the status of the batteries' charge: Power LED (● Red) and Status LED (● Green)

Power LED	Status LED	Indicating
● Red	○ Off	Charger powered. No battery is present.
● Red	● Green	Charger powered. Battery fully charged.
● Red	● Green flashing	Charger powered. Battery charging.
● Red flashing	○ Off	Error on battery or charger, or temperature out of charging span.
● Red flashing	● Green flashing	Only for NiMH: Battery is not charging because of too high or low temperature.



## 8. Troubleshooting



### WARNING!

Always take a product out of use if you experience errors until they are troubleshooted and resolved. Contact the point of purchase or Scanreco for further support if needed.

### 8.1. Transmitter Troubleshooting

If the transmitter does not operate after normal startup, there are several things that can be examined before contacting the point of purchase or an authorized service workshop.

Problem	Possible Cause	Correction
Transmitter does not start.	Battery discharged.	Replace with fully charged battery.
Transmitter is switched on, but no commands function.	Receiver is powered off.	Make sure that the receiver is powered on (in remote mode).
	Transmitter and Receiver are not paired.	Pair the Transmitter and Receiver.
	Transmitter is out of range.	Bring the Transmitter back into the range of the Receiver.
	Component failure.	Test the Transmitter via tether cable if tether cable is available.
	Radio communication between the units is intermittent due to radio interference.	Turn off all other radio equipment that may be the cause of the interference.
Some commands do not function.	Receiver antenna issues	Check if the antenna is correctly installed, in vertical alignment and in line of sight from the transmitter.
	Actuators were not in neutral (zero) position during startup.	Restart the Transmitter: <ul style="list-style-type: none"> <li>• Push the Stop button</li> <li>• Set the actuator(s) in zero-position</li> <li>• Push the Start button.</li> </ul>
	The actuators are faulty or not correctly connected.	Activate the Self-test mode to check if the actuators are working. If any actuator does not appear in the information center when activated in this mode, contact the point of purchase.
	System logic does not allow the operation due to safety reasons.	Check the manual from the system installer or machine producer.
Information center lights up in red.	Damaged or loose cables that connect the receiver to the machine.	Check the receiver connector and cables.
	Shut down of the system due to error.	See chapter “8.1.1. Transmitter Error Codes” in this manual for more information.



### 8.1.1. Transmitter Error Codes

If the information center lights up in RED a system error has occurred. A four-digit error code will be visible on the display. If there are multiple errors, the error codes will be shown cyclical.

If the suggested correction in column three does not work, please write down the error codes and contact the point of purchase or an authorized service workshop.

Error code	Possible reasons	Correction
1001	The operator has pressed or released the stop button very slowly. Faulty stop button or main board error.	Repair or replace the transmitter if the stop button is pressed and/or released correctly and the error continues.
1101-1116	A safety classified lever, joystick, or potentiometer was active at startup. The actuator is broken. Main board error.	Make sure that all analog actuators are in the zero-position when starting the transmitter. Especially safety potentiometers. Repair or replace the transmitter if the error continues.
1401-1408	A safety classified digital toggle switch or push button was moved very slowly or rapidly between two positions. The actuator is broken. Main board error.	Repair or replace the transmitter if the actuator is operated correctly and the error continues.
1901-1916	A non-safety classified potentiometer was active at startup. The potentiometer is broken. Main board error.	Make sure that all potentiometers are in the zero-position when starting the transmitter. Repair or replace the transmitter if the potentiometer is in zero-position and the error continues.
2025/2225	The transmitter temperature is too high. Hardware error.	Wait for the transmitter to cool down. Repair or replace the transmitter if the error continues.
2026/2226	The transmitter temperature is too low. Hardware error.	Wait for the transmitter to heat up. Repair or replace the transmitter if the error continues.
3201/3202	A non-original or faulty battery is used. Dirty battery poles and/or springs.	Replace the battery with an original Scanreco battery. Clean battery poles and springs.

## 8.2. Self-test Mode

Use Self-test mode to diagnose errors in actuators on the customizable area of the transmitter. Self-test mode is started from the information center display. The purpose is to either identify a broken actuator or rule out errors in actuators. If no errors are found, further troubleshooting is required.

When starting the Self-test mode, all digital and analog data will be visible on the information center display and on the color display, if the transmitter is configured with a color display. The displays will allow users to monitor data in real-time during testing. There will also be several screens that display different kinds of data. To switch between them press the Confirm button (right side of the information center).








#### **NOTICE!**

Before testing, set rotary potentiometers to zero-position.



### How to use Self-test mode:

1. Press the two buttons next to the information center display, Next (left side) and Confirm (right side), at the same time.
2. Press the Next button to navigate between options in the information center menu.
3. Navigate to option 1, Self-test mode, indicated by the symbol:  1.
4. Press the Confirm button to enter Self-test mode.
5. When Self-test mode is entered the following will occur:
  - a. All communication is stopped, preventing link-up with the receiver.
  - b. An automated sequence of test will be done, one time for each optional feature (buzzer, haptic feedback, panel lights and LEDs), according to below event timing:
    - i. Panel LEDs and display LEDs will light up.
    - ii. The buzzer will make a sound.
    - iii. The panel lights will light up.
    - iv. The haptic feedback motors will vibrate one time for each motor (left and right).
6. The information center will display four different self-tests to choose from:

Option	Self-test	Symbol
1.1	Analog actuators	 1.1
1.2	Digital actuators	 1.2
1.3	Rotary encoders	 1.3
1.4	Pitch and roll angle of the transmitter	 1.4

7. Navigate to the test that you want to do.
  - a. Press the Confirm button to start the test.
  - b. Manually test the actuators one-by-one.
  - c. Press the Next button to exit the test and return to the menu.
8. Repeat steps 6 through 7 to select and start another test.
9. Switch off the transmitter to exit Self-test mode.
10. Switch on the transmitter to resume normal operation.



#### **NOTICE!**

For detailed information regarding the four different tests when using Self-test mode, read subchapters 8.2.1 through 8.2.4.

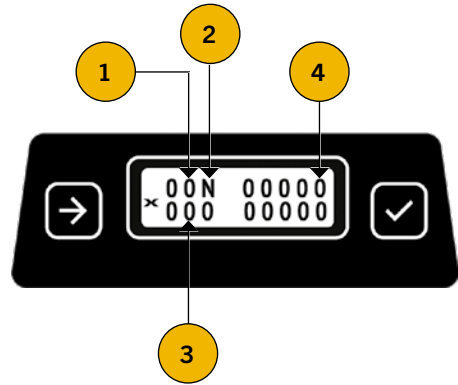


### 8.2.1. Analog Actuators

The analog actuators are joysticks, levers, and potentiometers. A set of numbers will show on the display when the Analog actuator self-test is started.

**The numbers shown on the display refer to:**

1. The analog actuator that is being moved. If multiple actuators are moved at the same time the actuator with the lowest number will be displayed.
2. The type of analog actuator that is being moved.  
N = Non-safety classified actuator  
S = Safety classified actuator.
3. The direction the analog actuator is being moved in. When moved in an opposite direction the colors of the numbers will be shown as inverted (white text on a black background). Values will range between 0-127.
4. These numbers are not detailed in this user manual since they are only used for advanced factory troubleshooting.



**NOTICE!**

If the numbers shown on the display do not change and remain zero (0) when moving the actuator:

1. The analog actuator is broken.
2. The analog actuator has not been implemented or activated in the software setting.



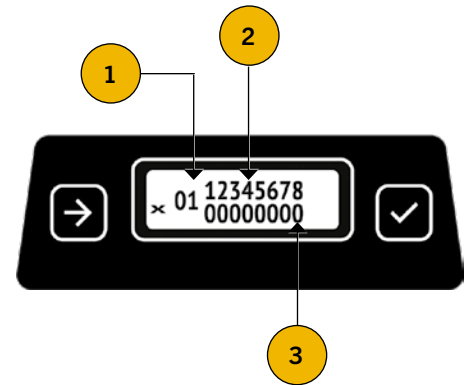


## 8.2.2. Digital Actuators

The digital actuators are push buttons, toggle switches and rotary switches. A set of numbers will show on the display when the Digital actuator self-test is started.

### The numbers shown on the display refer to:

1. The last activated (moved or pushed) digital actuator. If another digital actuator is activated during the test, the numbers will change.
2. The number of safety classified digital actuators. The numbers 1-8 will always show on the display. This is because eight is the maximum number of safety classified digital actuators that can be configured.
3. The status of the safety classified digital actuator:
  - a. 0 = Not present or inactive
  - b. 1 = Activated
  - c. 2 = Invalid
  - d. 3 = Faulty.



### **NOTICE!**

If the numbers do not change when activating a digital actuator during the self-test:

1. The digital actuator is broken.
2. The digital actuator has not been implemented or activated in the software setting.

Depending on the configuration of the transmitter, the number of safety classified digital actuators can vary. To find out how many safety classified digital actuators the transmitter has, refer to the technical specification for your configuration.

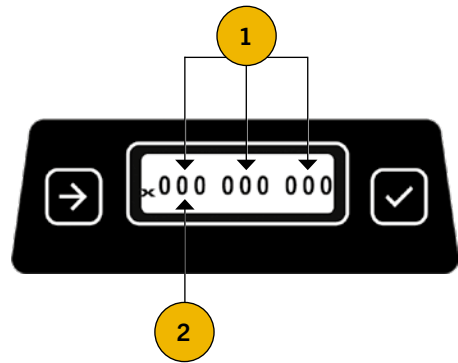


### 8.2.3. Rotary Encoders

A maximum of three rotary encoders can be configured on the transmitter. A set of numbers will show on the display when the Rotary encoders self-test is started. Check the status of the rotary encoders by turning them individually in increments of one (1) between the minimum and maximum values (000-255).

#### The numbers shown on the display refer to:

1. The status of each individual rotary encoder.
2. The position of the rotary encoder.
  - a. The minimum value is 000.
  - b. The maximum value is 255.



#### **NOTICE!**

If the numbers shown on the display do not change when turning the encoder:

1. The rotary encoder is broken.
2. The rotary encoder has not been implemented or activated in the software setting.

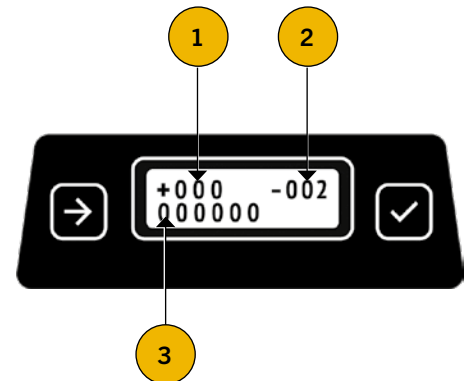


### 8.2.4. Pitch and Roll Angle of Transmitter

The transmitter can be configured with a tilt-sensor that measures the tilt of the transmitter in the x- and y-directions. A set of numbers will show on the display when the Pitch and roll angle self-test is started. The numbers will show the output from the tilt-sensor.

#### The numbers shown on the display refer to:

1. The roll angle of the transmitter.
  - a. A minus sign (-) will show the left roll angle.
  - b. A plus sign (+) will show the right roll angle.
2. The pitch angle of the transmitter.
  - a. A minus sign (-) will show the left pitch angle.
  - b. A plus sign (+) will show the right pitch angle.
3. The events that are triggered. Triggered events are indicated by the number one (1), and no triggered events by the number zero (0). The triggered events are counted from left to right, as follows:
  - a. Roll event
  - b. Pitch event
  - c. Freefall event (momentary)
  - d. Impact event (momentary)
  - e. Freefall event (static)
  - f. Impact event (static).



#### **NOTICE!**

- The tilt-sensor is broken if the numbers shown on the display do not change when tilting the transmitter during the self-test.
- Depending on the configuration, the transmitter can be switched off automatically if it is tilted too much in a certain direction. To find out if the transmitter is configured with this feature, see separate technical specification.
- The transmitter Pitch and roll functionality is optional to implement. The values from the sensor are presented as raw data via the CAN bus protocol.



## 8.3. Receiver Troubleshooting

If the receiver does not operate after normal startup, there are several things that can be examined before contacting the point of purchase or an authorized service workshop.

Problem	Possible Cause	Correction
No functionality from the transmitter	The Transmitter is OFF.	Switch the Transmitter ON.
	The Receiver is in MANUAL mode.	Switch the machine/receiver to RADIO mode.
	Stop buttons of the machine are pressed down.	Turn the Stop buttons of the machine clockwise to unlock.
	No power to receiver.	Turn the power supply on in the machine.
	The external 10A fuse is broken.	Replace the 10A fuse.
	Battery in the Transmitter is discharged, faulty or old.	Replace with fully charged battery.
	Faulty radio circuit boards in transmitter or receiver.	Contact the point of purchase.
	Receiver's antenna is loose or missing.	Tighten the antenna/order a new antenna from the point of purchase.
	External antenna extension cable is broken or loose.	Tighten the extension cable/order a new extension cable from the point of purchase.
The Receiver is not paired with the correct Transmitter.	Do the pairing of the Receiver with the correct Transmitter.	

### 8.3.1. Receiver Error Codes

If the information center lights up in RED a system error has occurred. A four-digit error code will be visible on the display. If there are multiple errors, the error codes will be shown cyclical.

If the suggested correction in column three does not work, please write down the error codes and contact the point of purchase or an authorized service workshop.

Error code	Possible reasons	Correction
2021/2221	The receiver supply voltage to the transmitter is too low. Hardware error.	Increase the supply voltage to the receiver if a tether cable is used for operation. Switch from cable control to radio by removing the tether cable.
2022/2222	The receiver supply voltage is too high. Hardware error.	Decrease the supply voltage to the receiver if a tether cable is used for operation. Switch from cable control to radio by removing the tether cable.
2117/2317	The receiver supply voltage is too high. Hardware error.	Decrease the supply voltage to within specification. Replace the receiver if the error continues.
2118/2318	The receiver supply voltage is too low. Hardware error	Increase the supply voltage to within specification. Replace the receiver if the error continues



Error code	Possible reasons	Correction
2119/2319	The receiver temperature is too high. Hardware error.	Wait for the receiver to cool down. Replace the receiver if the error continues.
2120/2320	The receiver temperature is too low. Hardware error.	Wait for the receiver to heat up. Replace the receiver if the error continues.
2123/2323	Power supply has been detected on both manual and remote mode inputs. Incorrect wiring. Hardware error.	Ensure that power is supplied to only one of the inputs at any time. Replace the receiver if the error continues.
8101-8107	CAN error has occurred: <ul style="list-style-type: none"> <li>• Incorrect CAN wiring.</li> <li>• Wrong baud rate setting.</li> <li>• Incorrect CAN termination.</li> <li>• Hardware error.</li> <li>• Too high CAN bus load.</li> <li>• Incorrect RPDO length has been received.</li> <li>• Node guarding protocol is not respected.</li> </ul>	Contact your point of purchase to ensure correct CAN wiring and settings between the receiver and the controller on the machine. Replace the receiver if the error continues.
9501-9505	Real-Time Clock (RTC) error: <ul style="list-style-type: none"> <li>• No hardware support for RTC.</li> <li>• Hardware error.</li> <li>• The RTC battery service life has expired.</li> </ul>	Repair or replace the receiver if the error continues.

### 8.3.2. Receiver LED Indications

There is one LED on the receiver that indicates status for errors, pairing and connection. The LED will light up in three different colors: ● Red, ● Green and ● Orange.

Status LED	Indicating
○ Off	No power supply
● Red continuous	Major error
● Red fast flashing	Minor error
● Orange continuous	Refuse link with transmitter
● Orange fast flashing	Pairing pending
● Orange slow flashing	Pairing
● Green continuous	Power supplied – No link to transmitter and no CAN communication
● Green fast flashing	Linked with transmitter
● Green slow flashing	Power supplied – No link to transmitter CAN in operational mode
● Green + Orange alternating	Linked over Bluetooth Low Energy to diagnostic tool



## 9. Maintenance

The Scanreco G6 radio remote control system is developed with Scanreco Never-Stop Technology™ and expected to work for many years even in tough conditions. The receiver is potted with a molding compound to protect against dust and water which makes the receiver maintenance free. To prolong the product life and minimize the risk of sudden failure, do regular visual inspections, and follow the recommendations below.



### WARNING!

- Do not open the transmitter or receiver housing to try to repair or replace internal parts. This must be done by authorized service workshops. Opening the transmitter or receiver housing will void any warranty and product liability from Scanreco.
- The inspection of the machine and Scanreco radio control system must comply with national requirements, and it must be done by authorized companies, according to the statutory inspection intervals.



### CAUTION!

- Service the equipment periodically.
- Clean the transmitter and receiver regularly with a damp cloth.
- Never use high pressure water jets or steam cleaners for cleaning.
- Do not use sharp or pointed objects to clean with.
- Do not use solvents or flammable/corrosive materials for cleaning.
- Check the rubber bellows and rubber seals of the switches, buttons, levers, and joysticks for damage. Immediately replace any broken rubber bellows and/or rubber seals.
- Only use tested and approved original parts.
- Do not allow materials such as concrete, sand, grease, dirt, or dust to collect on the receiver, transmitter, or battery charger because it can impair the functions or damage the components.
- When welding on the machine, switch off the radio control system and disconnect the receiver AMPSEAL connector.
- Contact your point of purchase (the producer of your machine or crane) if you have a problem with the product.



## 10. Regulatory Information

### 10.1. Europe

Hereby, Scanreco AB certifies and declares that the products listed below comply with the essential requirements and other relevant provisions in the directives and regulations listed below.

The complete Scanreco EU declaration of conformities are available at: [scanreco.com/compliance](http://scanreco.com/compliance). To access the web page, enter the password: 1984.

Product	Part number	Directives
Transmitter G6 Micro and Mini	P00003, P00004	2014/53/EU Radio Equipment Directive 2006/42/EC Machinery Directive 2011/65/EU+2015/863+2017/2102 RoHS Directive 2012/19/EU WEEE Directive 1907/2006 REACH Regulation
Receiver G6 CAN	P00005	2014/53/EU Radio Equipment Directive 2006/42/EC Machinery Directive 2011/65/EU+2015/863+2017/2102 RoHS Directive 2012/19/EU WEEE Directive 1907/2006 REACH Regulation
Battery Charger NiMH	102232	2014/30/EU EMC Directive
Battery Charger Li-ion	102242	2014/35/EU Low Voltage Directive 2011/65/EU+2015/863+2017/2102 RoHS Directive 2012/19/EU WEEE Directive 1907/2006 REACH Regulation
Battery NiMH	700	2014/30/EU EMC Directive
Battery Li-ion	701	2006/66/EC Battery Directive 2011/65/EU+2015/863+2017/2102 RoHS Directive 2012/19/EU WEEE Directive 1907/2006 REACH Regulation



## 10.2. North America

### **Radiation Exposure Statement**

To satisfy FCC and IC RF exposure requirements, a separation distance of 20 cm or more should be maintained between the antenna of this device and persons during device operation. To ensure compliance, operations at closer than this distance are not recommended.

### **FCC Statement (USA)**

This device complies with part 15 of the FCC Rules. 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.

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

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a commercial environment. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, 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. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

### **IC Statement (Canada)**

This device contains license-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's relevant EMC and radio standards. Operation is subject to the following two conditions:

1. This device may not cause interference.
2. This device must accept any interference, including interference that may cause undesired operation of the device.





### 10.2.1 Radio Modules

The transmitters and receivers described in these instructions contain the following radio modules.

Radio module	Description	FCC ID	IC ID
TR06 001	Single band 2.4 GHz	N50TR061	6476A-TR061
TR06 002	Multi band 868/915 MHz 2.4 GHz	N50TR062 Approved for 915 MHz and 2.4 GHz.	6476A-TR062 Approved for 915 MHz and 2.4 GHz.
Bluetooth Low Energy	Connectivity used for product configuration.	S9NBNRGM2SA	8976C-BNRGM2SA
	Not available for end-users.		
Wi-Fi	Optional connectivity, only for color display with wi-fi.	QOQWF111	5123A-BGTWF111





*Made for Me*

Name:

Machine:

Additional Information:

Distributor/Machine Manufacturer:

Date:

Serial Number Transmitter:

Serial Number Receiver:



English

