



Transmitter, Receiver, Charging Cradle
Model: myon m320

USER MANUAL

History of changes

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1.2	myon AG	21.03.2012	Minor addendum.
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1.7	myon AG	03.06.2013	Added initial operation check, regulatory update and minor addendums.

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1 Important information



1.1 Introduction

In this manual you will find important information, needed for the commissioning and operation of the device.

Always adhere to the safety instructions in the manual of your computer or other systems involved and the ones in this handbook! If you experience any problems, please contact your local sales agency or the respective manufacturer.

1.2 Conventions used in this text

Throughout this manual the following conventions are used.

	Indicates important information that may damage your health, the functioning of the device or the safety of your data if not adhered to.
	Indicates additional information and tips.

1.3 Important information



Please follow these safety instructions to ensure your safety and the optimal functioning of the device.

The product may be used only as intended and in compliance with the instructions, by appropriately trained and qualified personnel. Maintenance and repairs have to be carried out by the manufacturer or personnel authorized by the manufacturer.

The product can only be used in combination with accessories, that are specified in the manual or by the manufacturer by other means. Other combinations, accessories and consumable parts may only be used if they are specifically designed for the intended application and do not affect performance, and security requirements.

1.4 Power supply safety

- Disconnect the system from the mains when not in use. You can disconnect the receiver and the charging cradle by pulling the power plug from the mains power outlet.
- The power cord in devices with mains plugs is used for separation from the mains. The power outlet must be located in the vicinity of the device and must be easily accessible.
- The receiver must be used with a suitable power outlet. If you are not sure if the outlet is suitable, please contact the local power company.
- The device is not suitable for use outdoors.
- The device is not suitable for unattended continuous operation.

1.5 Cleaning and care

- Unplug the power cord from the outlet before cleaning a device.
- The devices can be cleaned with a slightly water moistened, soft, lint-free cloth. Do not use harsh cleaners, aerosol cleaners or glass cleaners.
- Objects or liquids must not get into the interior of the device.
- Check the device after each cleaning to its functions and to possible damage occurred. If you notice any damage, please do not make any repair attempts, but contact your sales agency or the manufacturer.



To maintain functionality of the myon system all electrical contacts should be kept clean.

In particular, adhesive tape or similar substances must not be attached to the charging contacts of the transmitter or the charging cradle slots' contacts.

1.6 Maintenance

Do not open or remove the protective housing yourself as you might expose yourself to dangerous voltages and other risks. In case of abuse or accident (such as dropping the unit or improper use) please contact your local sales agency or the manufacturer for maintenance. Store all devices in a secure and dry place when not in use.

2 Preface

2.1 Intended purpose

The myon320 system is designed to capture and wirelessly transmit EMG sensor signals recorded from human muscles. The myon320 can not be used for electrical stimulation of muscles.

A number of other sensors for the recording of different biophysical signals in human movement such as accelerations, forces, temperatures, pressures may also be available from the manufacturer upon request.

All product models and types of the product may only be used externally and non-invasively by professional users (e.g. healthcare professionals, doctors, researchers, etc.). Only the components (sensors, power supply, etc.) supplied by the manufacturer are to be used. Additional sensors or spare parts are available upon request from the manufacturer.

2.1.1 Transmitters and Sensors

The transmitters are intended to record a signal from a pair of electrodes. Other signal types can also be recorded by different transmitters. Some signal types do not require a cable to be attached to the transmitter. The recorded signal is immediately digitized and transmitted to the receiver.

Information about the available sensor types can be requested from your local sales agent.

2.1.2 Receivers

The receivers are intended to receive the sensor data from the transmitter and to output the received data via an analogue or digital output interface for further use with 3rd party hardware systems and/or software.

2.1.3 Charging Cradles

The charging cradle is used to re-charge the transmitter batteries. It is also intended as a place in which to safely store the transmitters when they are not in use.

2.2 Contraindications

Contraindications that relate directly to the product, are currently unknown. The medical practitioner and/or user has to decide on the basis of the general condition of the patient or subject whether or not the intended application is reasonable. Further information is accessible in current literature.

Not for use in an operating theatre, anesthetic gas or oxygen-rich environments. Not for use where there is a risk of compromising the essential performance of medical electrical equipment. Not suitable for use in high magnetic flux, ionizing radiation, sterile, or life- or safety-critical environments. The device is not suitable for unattended continuous operation.

2.3 Possible combinations

In addition to these instructions, the instructions of those products used in combination (e.g. analog-to-digital converters, video motion capture systems) must also be observed.

Potential electromagnetic or other interference that occurs between the product and other products may lead to disturbances or malfunctions.

3 System overview

The systems is comprised of three main components: Transmitter, charging cradle and receiver.



Image 1: Transmitter

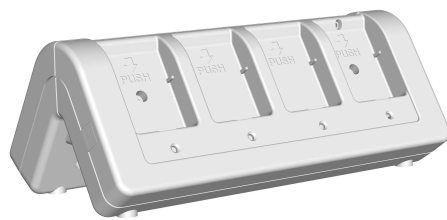


Image 2: Charging cradle



Image 3: Receiver

3.1 Power supplies

Receiver and charging cradle each require an identical external power supply to operate.

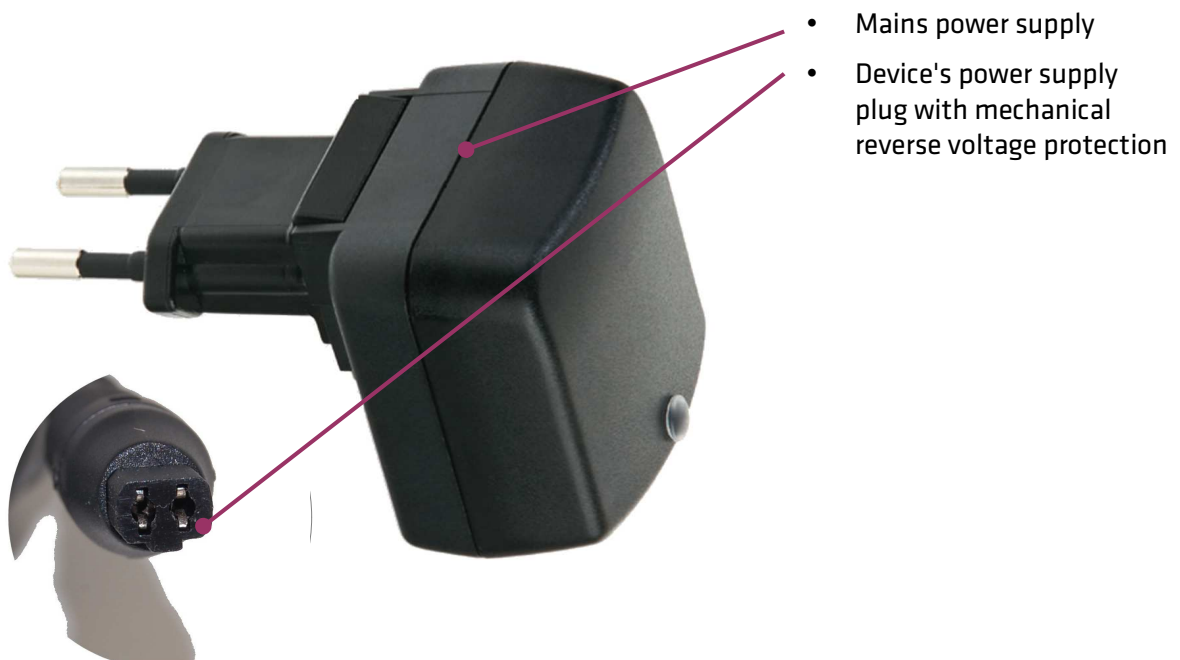


Image 4: Power supply



Power supplies other than those shipped with the myon320 system must not be used.

3.2 Transmitter

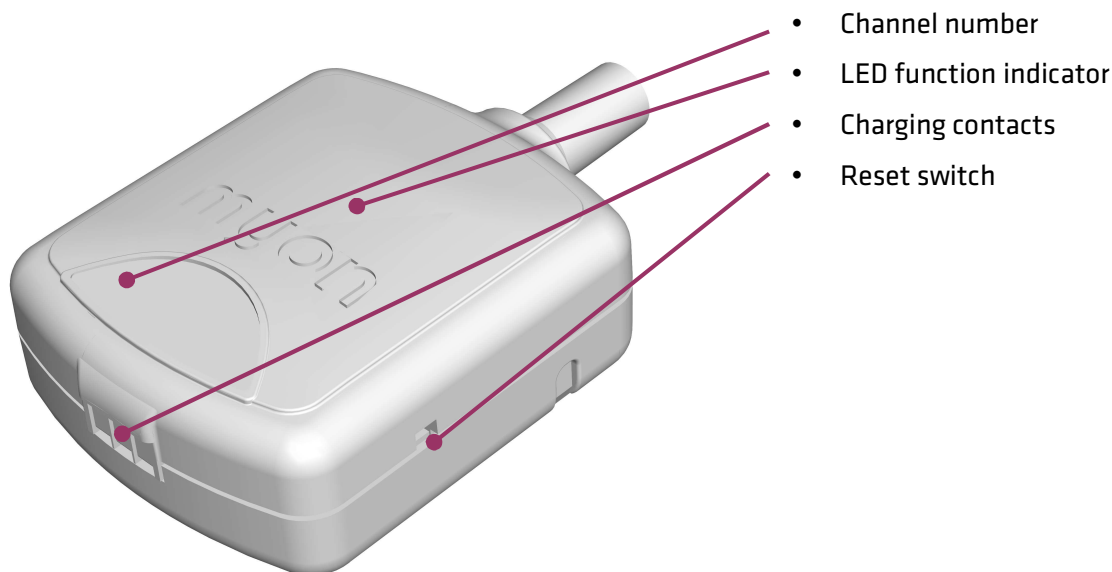


Image 5: Transmitter

3.2.1 Reset switch

In case the transmitter doesn't start transmitting or should stop operation, first check that the transmitter is fully charged. Re-insert the transmitter into a charging slot for a few seconds and try again.

If this doesn't help, resetting of the device may be required.



A reset must not be carried out without prior advice by the myon-prophysics support team.

To perform a hard-reset carefully insert the tip of a ballpen into the opening on the side of the transmitter housing and gently press and hold down the reset micro switch for about 5 seconds. The transmitter should restart itself and begin operation immediately. Please make sure that the transmitter has enough battery capacity left to start operation.

3.3 Receiver

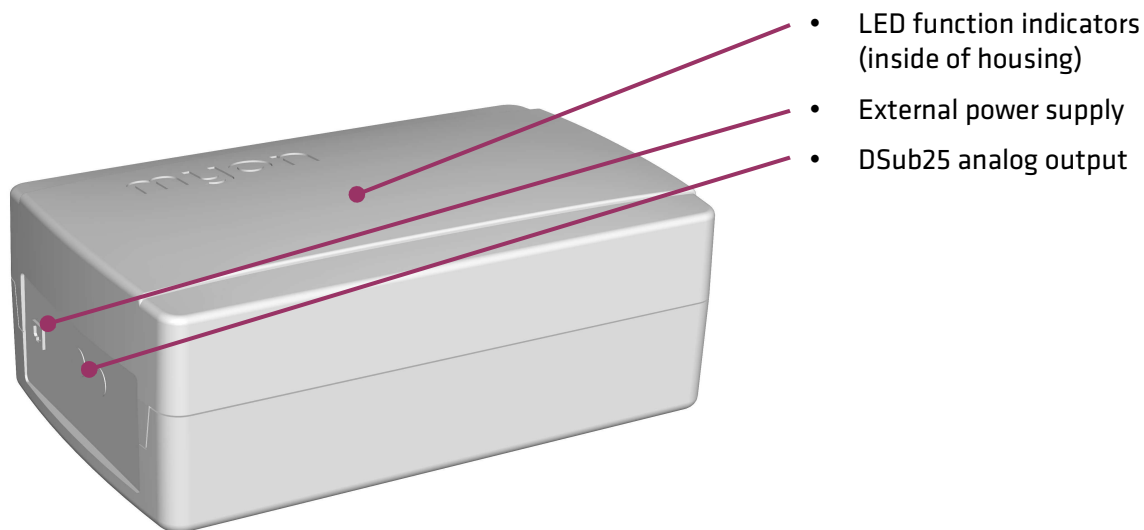


Image 6: Receiver

3.4 Charging cradle

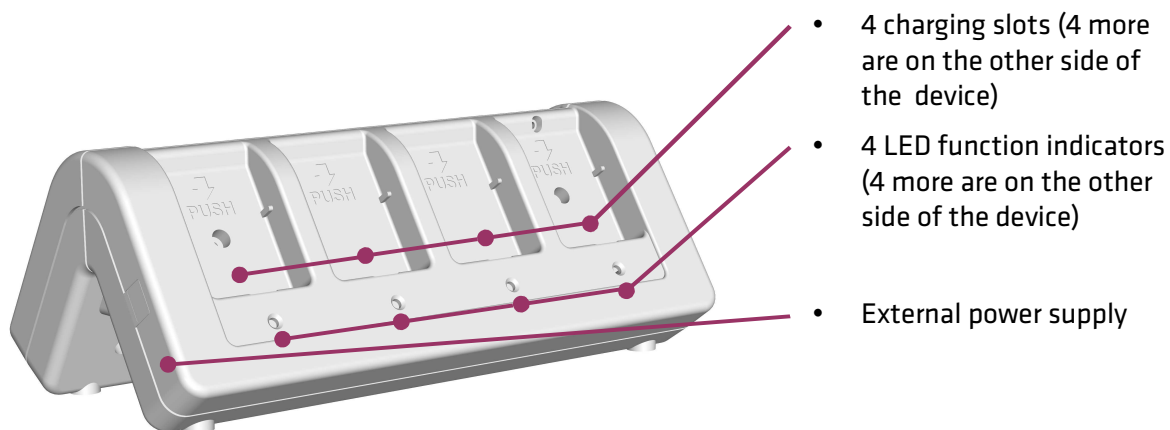


Image 7: Charging cradle

4 LED function indicators

4.1 Transmitter

The transmitter indicates its state as described below:

- When removing the transmitter from the charging cradle, the blue transmitter LED located inside the housing will flash for about 2 minutes to signal the proper operation of the transmitter.
- After about 2 minutes the transmitter LED is switched off.
Thus, **during a measurement, there is no LED indication of transmitter operation.** This is to prevent the distraction of patients by simultaneous flashing of a relatively large number of transmitter LEDs.
- If during a measurement the remaining capacity of the built-in battery reaches a low value, the transmitter's LED will begin to flash again. In this state further operation of the transmitter is possible for a maximum of about 30 minutes before the transmitter will be switched off automatically. The flashing frequency will be noticeably higher and it is advisable to put the transmitter back into the charging cradle to reload its batteries.

4.2 Receiver

- Within the receiver's enclosure there is one blue LED for each transmitted channel.
- As soon as a wireless connection between a transmitter and the receiver has been established successfully, the respective receiver LED will start flashing.

4.3 Charging cradle

Each charging slot of the charging cradle features a single indicator LED located beneath the slot. The indicator LED indicates three states:

- Battery is re-charging:
In this state, the charging slot indicator LED will flash at a low frequency, indicating that re-charging of the transmitter's build-in battery is in progress. Please note, that re-charging might take place from time to time even if the transmitter has not been used and stayed in its slot in the charging cradle.
- Battery has been re-charged:
After the transmitter's battery has been fully re-charged, the charging slot indicator LED is illuminated constantly.
- Empty charging slot / transmitter not properly inserted:
If a charging slot is empty, the respective charging slot indicator LED will not light up. The same happens if a transmitter has been inserted incorrectly into a charging slot and thus the electrical contact between transmitter and charging cradle cannot be established.

5 Operation

5.1 Parts included in shipment

The myon system is shipped in a durable carrying case. Depending on your individual system configuration, you may find a varying number of parts and accessories as part of your shipment in the carrying case:

- The number of transmitters you ordered, including the EMG sensor cable.
- A sufficient number of single-use electrodes will be included in the shipment to allow you to conduct at least one measurement with all transmitters at the same time .
- A receiver, including power supply and an analog connector cable (for the analog output version of the receiver) or a USB cable (for the digital output version).
- As many charging cradles as required to charge all ordered transmitters at the same time. The appropriate number of power supplies is also included.
- This printed manual.
- The carrying case.

5.2 Unpacking and transport

The system is shipped in a durable carrying case that prevents the system from being damaged. It is therefore recommended to use the provided carrying case to store the system if you plan not to use the system for a longer period of time or if you would like to take the system with you on a journey, e.g. by plane.



- Carrying handle
- Fasteners (push to open or close)

Image 8: Carrying case

5.3 Device installation



The installation of the system must be done by qualified personnel.

- Place the receiver and the charging cradle on a flat surface.
- Plug the power connector for the receiver into the power socket on the receiver. Do the same for the charging cradle. Do not plug in the mains connector, yet.
- If you purchased a receiver with digital output, connect a USB cable's connector to the USB socket of the receiver and the other end of the USB cable to the 3rd party unit (e.g. notebook) you wish to use
- If you purchased a receiver with analog output, you will have to connect the socket for analog output signals to your specific recording system (e.g. Vicon):
 - Dismantle each individual cable of the supplied DSub cable that you intend to connect to your individual analog capture unit.
 - Connect each individual cable of the supplied DSub cable to the relevant screw terminal for the analog capture unit you wish to use.
 - Make sure that electric ground is correctly connected.
 - Make sure you chose the correct assignment of the individual pins (see Section 9.2 for details).
 - Connect the 25-pin DSub cable plug to the analog output connector of the receiver.



For the preparation of this interface specific technical knowledge may be required. If you do not have the necessary skills, please consider consulting an expert.



For this connection a specifically designed adapter cable may be required.



The analog output is designed to be acquired with “single ended” inputs of an analog-to-digital converter only. No “differential” input configuration must be used.

- Plug the external power supplies of receiver and charging cradle into a mains power outlet. You will see several blue LEDs light up inside the receiver. Blue LEDs of the charging cradle will light up if transmitters are inserted (see Section 5.5).
- You may also turn on your specific recording system (e.g. Vicon) as well as all other interacting systems (e.g. force plates, etc.).

5.4 Initial operation check

Please perform the steps below to make sure your system is correctly installed and that it is functioning as intended. If your system should not pass the tests described below, please first re-check your system's configuration and wiring again, before contacting the support team.

5.4.1 Visual check of basic functions

- Preparation
 - Ensure that the system is configured and connected according to this manual.
 - Make sure that only the components that were supplied by myon as part of your shipment are used, such as the D-sub cable, power supplies, etc.
- Conduction
 - Switch on all charging cradles and receivers and/or connect them to mains with the supplied AC adapter.
 - Insert all transmitters into the respective charging slots of the charging cradle(s).
- Check
 - Charging cradle(s)
 - For proper operation, the LEDs of all charging slots into which a transmitter is inserted, must be either flashing or be lit constantly.
 - Transmitters
 - For proper operation, all of the following conditions must be met:
 - If a transmitter is placed into a charging slot of a charging cradle, the transmitter's LED must not flash or be lit.
 - If a charged transmitter is taken out of its charging slot in a charging cradle, the transmitter's LED has to start flashing for about 2 minutes. If the transmitter is inserted back into a charging slot again, the transmitter's LED has to stop

flashing.

- Receiver
 - For proper operation, all of the following conditions must be met:
 - If all transmitters are placed into a charging slot of a charging cradle, all LEDs on the inside of the receiver have to be lit constantly but none of them must flash.
 - If a transmitter is taken out of its charging slot in a charging cradle, the LED of the associated receiver channel on the inside of the receiver must begin to flash. When the transmitter is inserted back into its charging slot in a charging cradle, the corresponding LED on the inside of the receiver has to stop flashing and must be lit constantly.

5.4.2 Check of installation and wiring

- Preparation
 - If your system is already connected to the mains, separate all system components for at least 10 seconds from the mains. Then reconnect all components to mains.
 - Completely set up your system according to this manual. Connect all components to the mains and switch on all components.
 - Place all transmitters into a charging slot of a charging cradle. The LED of each charging slot into which a transmitter has been inserted must be either constantly lit or flashing.
 - Connect the analog output port of the receiver with the supplied myon D-sub cable to a suitable analog-to-digital converter (see Section 5.3 for details).
 - Make sure that the analog output signals of the receiver are to be recorded in the analog-to-digital converter's "single ended" mode (see Section 5.3 for details) with an appropriate software and a sampling rate of at least 2000 Hz per channel.
- Conduction
 - Record all analog output channels of the receiver for a short period of time, e.g. 10 seconds.
- Check
 - For all available analog output channels of the receiver the recorded signal must be a sinus signal with an amplitude of -2.5 to +2.5 V. There must be no offset from 0V.

5.5 Charging of transmitters

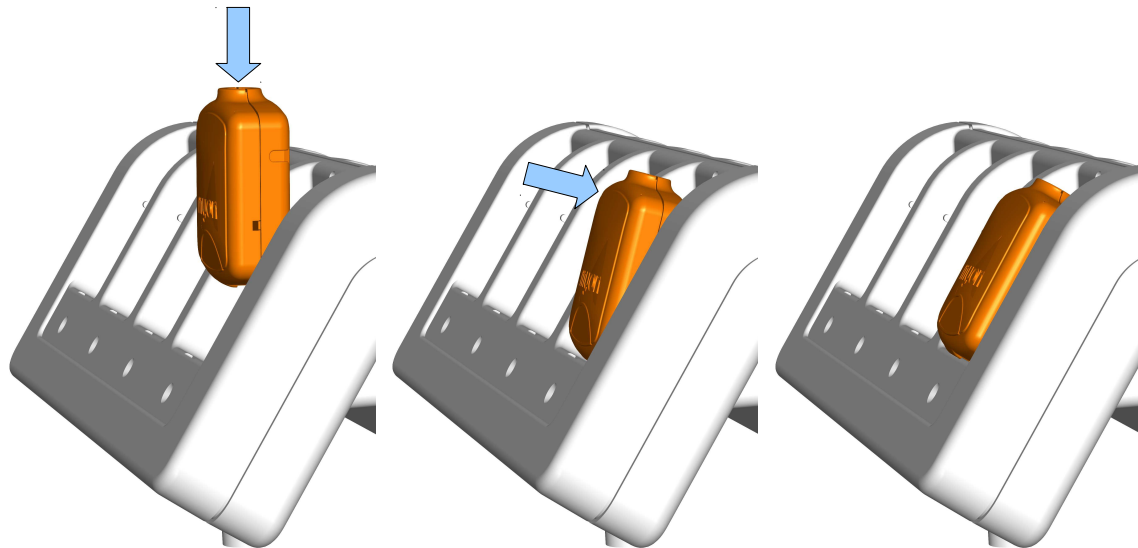
- Make sure that the charging cradle is connected to its external power supply.
- If not done already carefully place each transmitter in a charging slot: Insert it by vertically pushing the transmitter into the charging slot. Then let the transmitter snap into place by pushing the top of the transmitter as shown in the three images below.



Make sure that no double sided tape or similar adhesive material still remains on the transmitter's rear side from the last measurement. This could make it difficult to remove the transmitter from the charging cradle after charging.

- When charging, the charging slot indicator LED will start to flash. This indicates that re-

charging of the transmitter's battery is in progress. After the battery has been recharged, the charging slot indicator LED is lit constantly. See Section 4.3 for details.



Charging transmitters: Step 1

Charging transmitters: Step 2

Charging transmitters: Step 3

- Depending on the charge condition of the battery, the re-charging process can take between 30 and 90 minutes. When the battery is charged for the first time, the charging process may take longer.



You cannot overcharge the battery.
You can top up the battery by charging it before it is fully exhausted.



Further increasing battery life

All transmitting modules are equipped with newest generation LiPo batteries that do not suffer the problem of "memory effect" common to older batteries. These batteries can be recharged any time regardless of their current charge condition without reducing the performance of the battery.

In addition, in certain situations, the battery life can be increased further by observing the following instructions:

- When the system is not in use for a short time, the batteries should be charged. The transmitter modules should be plugged into the charging cradle all the time when the system is not in use.
- When the system is not in use for an elongated period of time (e.g. several days or holidays), the whole system - including receiver and charging cradle - has to be disconnected from the mains. The batteries should not be charged in this case.

5.6 Conduction of measurements

5.6.1 Establishing a wireless connection

- Make sure that the receiver is connected to its external power supply. You will see blue LEDs inside the unit.
- Take the transmitters you need from the charging cradle.
- The transmitter's LED will start flashing. This indicates that the transmitter is transmitting data.



The transmitter indicates its state by use of the indicator LED as described in Section 4.1.

- An LED in the receiver will start flashing. There is one LED per transmitter. When the LED is flashing, the data from the transmitter is received.
- Look at the software used with the system to check the signal. The software will show the signal in real time. Make sure the signal quality is good before you do the experiments.

5.6.2 Capturing and transmission of sensor signal

- With the steps described in Section 5.6.1 the wireless connection is established and the device is ready to start measuring.
- A minimum sampling rate of 2.000 Hz is highly recommended for each analog output channel.

5.6.3 If you use transmitters with EMG electrode cable

- Connect a pair of electrodes to each electrode cable. The connectors on the cable will snap onto the electrode.



The following single-use electrodes can be used with transmitters with EMG electrode cable: Ambu Blue Sensor N, REF: N-00-S / 25. Manufactured by Ambu A/S, Baltorpbakken 13, DK-2750 Ballerup, Denmark. www.ambu.com.

- Prepare the muscle area to be measured. Please see clinical guidelines for measuring surface EMG.
- Attach the electrodes to the muscle. Please use a clinical guideline to find the best place and on how to affix the transmitter securely to the body. Note that myon offers special fastening straps (P/N PA0003 ... PA0009) for this purpose.

5.7 Recommendations for optimal signal transmission and radio coverage

Because of the nature of wireless transmission, radio signals sent by the transmitter are not guaranteed to reach the receiver. The maximum legal limit on the transmission power means that the maximum theoretical transmission distance is up to 200 metres. In practice, indoor environments tend to limit the distance to 20-30 metres. Walls, floors and furniture limit the transmission range depending on what type of material they contain. Concrete walls, for example, are not easily penetrated, and such walls will limit the range.

Low signal strength at the receiver can be caused by poor positioning of the receiver as well as interference from other sources of radio waves such as mobile/cordless phones or an active microwave oven. Please read the next sections carefully and follow the recommendations to achieve optimum range of the system.

5.7.1 Receiver

- An elevated position may be advantageous.
- The receiver should be positioned with a free line of sight to the measurement area.
- As far as possible, try to position the receiver centrally in the measurement volume.
- As far as possible, avoid using other signal emitting devices such as wireless phones and microwave ovens in the measurement volume.
- Depending on the room's geometry, small changes in the receiver's position may have a large impact on the transmission range; if the range is insufficient, try to reposition the receiver.

5.7.2 Transmitter

- Optimum placement of the transmitter improves the range; the transmitter is designed so that the signal is focussed towards its top hemisphere.
- As a rule of thumb, the transmitters should be positioned as much lateral on the body as possible and ideally within a line of sight with the receiver.

6 Turning off the device



Always turn off the device after concluding your measurements.

Leaving the device running continuously may negatively influence its expected lifetime as well as stability and has a negative impact on the environment.

6.1 Transmitters

Transmitters that are inserted into a charging cradle slot will stop transmitting and switch themselves off. They will remain switched off even if the charging cradle is disconnected from its external power source. However, note that the transmitter's battery will slowly discharge when the charging cradle is disconnected from mains power. In case of doubt, make sure that you reconnect the charging cradle to the mains prior to an important measurement session.

If a transmitter is not placed into a charging cradle slot, it will keep transmitting until its battery capacity is exhausted and then switch itself off.

6.2 Receiver

To turn off the receiver, please disconnect the receiver's external power supply from the mains. You may also want to disconnect the cables between the receiver and other interacting devices (e.g. video based motion capture systems) if you intend not to use the receiver for an elongated period of time.

6.3 Charging cradle

To turn off the charging cradle, disconnect the charging cradle's external power supply from the mains.

7 Checks



Please follow the suggested checks before each use of the device.

- Check the system for potential damage and completeness. If you notice any damage, do not use the device and contact your local sales agency or the manufacturer.
- Check all connecting cables and accessories for damage. If you notice any damage, do not use the device and contact your local sales agency or the manufacturer.
- Avoid excessive bending and stretching when positioning the cables, and make sure that the cables never pose a tripping hazard.
- Check that all connectors fit properly.
- Check that all connection contacts are clean.
- Check that the labels are complete and legible.

8 Solving problems

No.	Symptom	Solution
1	The transmitter LED does not flash after you remove the transmitter from the charging cradle	<ul style="list-style-type: none"> • Check that the transmitter is charged. • Re-insert the transmitter into a charging slot for a few seconds and try again. • See Section 3.2.1 in case a reset of the device is required.
2	The receiver LED does not start flashing when the transmitter LED starts flashing	<ul style="list-style-type: none"> • Check that the receiver is connected to its external power supply. • Move the transmitter closer to the receiver. • Move the receiver away from other radio transmitting devices. For example: laptops, mobile phones, etc. • Reset the receiver by pulling out the power adapter. Plug in the power adapter again after a few seconds.
3	You do not see a signal in your software.	<ul style="list-style-type: none"> • Check that the transmitter is charged. • Make sure that external sensors are connected to the transmitter. • Make sure that the EMG electrodes are attached to the muscle. • Check that the analog-to-digital device is correctly connected to your computer. • Check that all the wires from the receiver's analog output are connected correctly. • Check that pin 25 from the receiver's analog output is connected to ground. • Reduce the distance between transmitters and receivers.
5	There are strong noise / hum artefacts on EMG channels	<ul style="list-style-type: none"> • Check that all interacting systems (PCs, notebooks, etc.) are firmly connected to ground. • Make sure that you are using fresh electrodes from a recently opened package and that their expiry date is not exceeded.

9 Technical description

9.1 Technical data

		Receiver	Transmitter ¹	Charging cradle
Manufacturer		myon AG, Sonnenrain 75, 6103 Schwarzenberg, Switzerland		
Model series		m320RX	m320TX	m320CC
P/N		PR0006	PT0001	PA0001
Operating voltage		110-240 V / 50-60 Hz (ext. power supply)	Built-in battery	110-240 V / 50-60 Hz (ext. power supply)
Power consumption		5W / 1A / 5V DC	0,75W / 0,15A / 5V DC	6W / 1,2A / 5V DC
Properties	Weight	430 g	23 g ²	319 g
	Housing color	blue		
	Dimensions	203 x 123 x 77 mm	36 x 45 x 16 mm ¹	215 x 115 x 80 mm
	Inputs / outputs	Power supply socket, 25 Pin DSub socket	Charging contacts, EMG electrode sockets	Charging contacts, power supply socket
	Sampling rate	n/a	4000 Hz	n/a
	Resolution	14 bit	12 bit	n/a
		System ENOB: 11,4 bit (typical)		
	Bandwidth	5...500 Hz		n/a
	Range	n/a	up to 30 m	n/a
	Transmission protocol	2,4 GHz proprietary		n/a
	Battery life	N/A	up to 10 hours	n/a
	Battery re-charging time	N/A	30-90 min	
	Latency	16 ms, constant		n/a
	Inter channel offset	≤ 2 samples		n/a

¹ Excluding EMG sensor cable and sensor, if not specified otherwise.

² Including EMG sensor cable.

	Included accessories	Ext. power supply, DSub25 connector cable (with flying wires)	n/a	Ext. power supply
Environment	Operation	+10...+40°C ; 20...80% humidity		
	Storage	-20...+60°C ; 10...90% humidity		
Certifications		According to ED1999/5/EC (R&TTE) and ED1993/42 (Medical Devices). The corresponding declaration of conformity can be obtained from the manufacturer. See section 10 for details.		

9.2 Description of interfaces



The interface layout may differ from the ones presented below in myon systems that have been specifically adapted to your needs. Each system therefore includes a **pin assignment sheet** showing the mapping of the individual output pins. Contact your local sales agency if you need further assistance.

9.2.1 Models with analog EMG output for up to 16 channels

The analog output is provided via a female DSUB25 socket located in the receiver. For the numbering of the individual pins, please refer to the following figures.

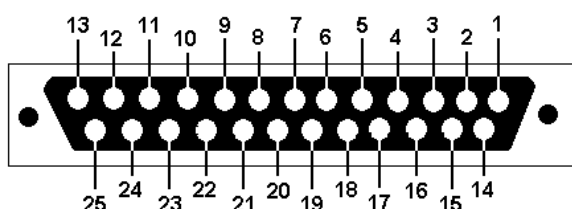


Image 9: Female DSub25 socket. View from outside into the socket.

Pin no.	Signal
1...16	Transmitter signal 1...16
17...24	NC
25	GND

9.2.2 Models with analog EMG output for more than 16 channels

The analog output of output channels 17 to 32 is provided in quite the same way as described in Section 9.2.1. The only difference is that the pin numbers 1...16 reflect the signals of transmitters 17...32, instead of transmitters 1...16.

9.2.3 Pin assignment of DSub25 connector

The pin assignment of the male DSub25 connector is shown in the following figure.

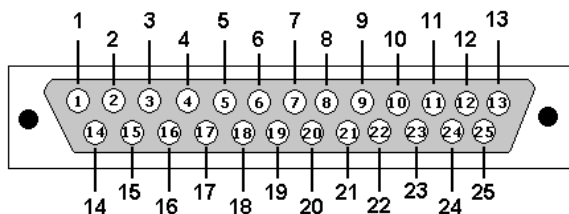


Image 10: Male DSub25 connector. View from outside into connector.

For all myon m320 systems that have been shipped later than 1st May 2012, the following colour code for the single wires of the respective DSub cable applies.

Pin no.	Wire color	Assignment
1	white	Channel 1
2	brown	Channel 2
3	green	Channel 3
4	yellow	Channel 4
5	gray	Channel 5
6	pink	Channel 6
7	blue	Channel 7
8	red	Channel 8
9	black	Channel 9

Pin no.	Wire color	Assignment
10	purple	Channel 10
11	white-green	Channel 11
12	gray-pink	Channel 12
13	red-blue	Channel 13
14	white-gray	Channel 14
15	yellow-brown	Channel 15
16	brown-green	Channel 16
17 - 24	-	unused
25	white-yellow	Signal GND
	gray-brown	Shield

9.3 Technical support

In the following paragraphs more in depth information about the myon m320 system and how it works in detail is provided. The information provided however, is neither complete nor is it mandatory to operate the system as intended.

Please contact your local sales representative for further technical support.

9.3.1 How your EMG signals should look like

This is an example of an EMG signal recorded from the small superficial m. extensor carpi ulnaris of the lower arm. Signals from other sensors (e.g. accelerometers) may look different.

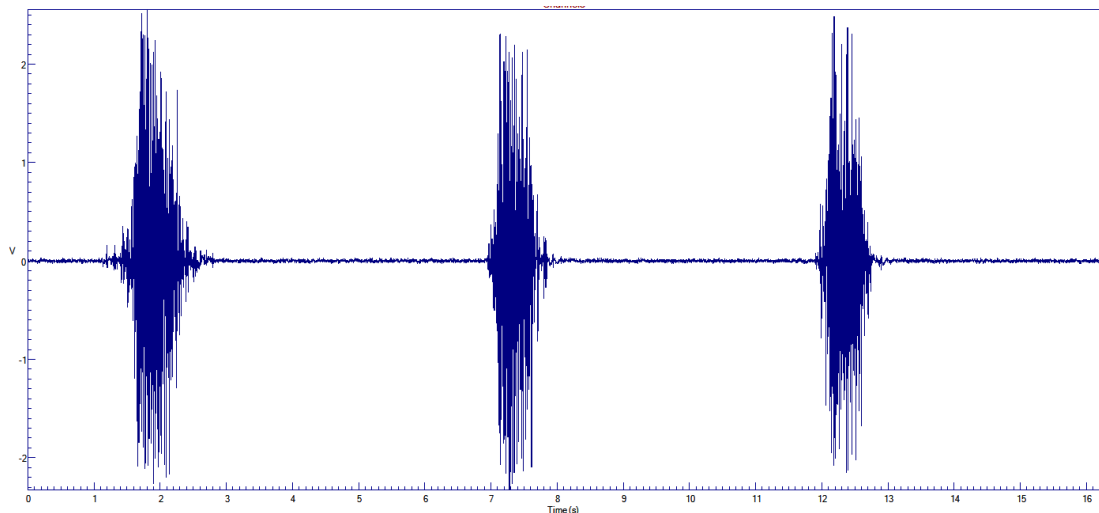


Image 11: Proper EMG signal recording

9.3.2 Visualization of transmission errors

The visualization of transmission errors is done in two different ways:

- If the wireless connection between a transmitter and the receiver is broken only shortly for less than one second, the receiver will output a zero amplitude signal on the affected channel.
In most cases only one or two frames of transmission may be lost, resulting in a signal drop to zero for 5 or 10 ms. The example in Image 12 below shows a longer drop in transmission for about 150 ms.

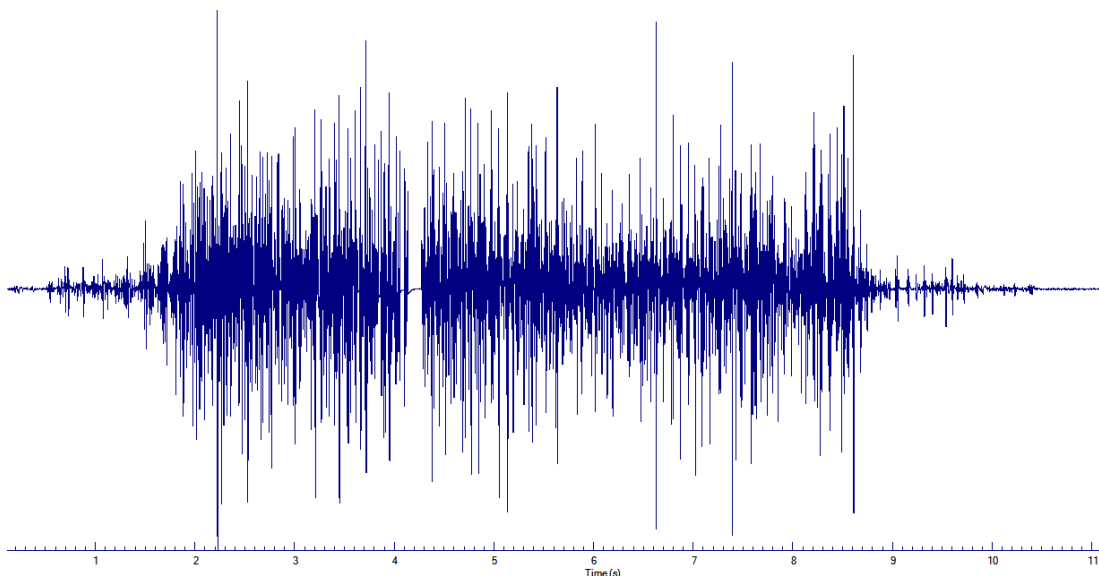


Image 12: Visualization of short transmission errors

- If the wireless connection between a transmitter and the receiver is broken for more than one second (e.g. because of a transmitter switching itself off due to battery drainage or because the distance between the transmitting module and receiving unit is exceeded), the receiving unit will output a sine signal with maximum output amplitude (+/- 2,5 Volts) on the affected channel.

10 Regulatory Information

10.1 For customers within the European Economic Area

10.1.1 Restriction of the Use of certain Hazardous Substances in Electrical and Electronic Equipment (RoHS)

myon m320 hardware is fully RoHS-compliant. The European Union Directive 2002/95/EC provides that new electrical and electronic equipment put on the market for the first time from 1 July 2006 shall not contain more than permitted levels of lead, cadmium, mercury, hexavalent chromium, polybrominated biphenyls (PBB), or polybrominated diphenyl ethers (PBDE).

10.1.2 Waste Electrical and Electronic Equipment (WEEE)



WEEE-Reg.-No.
DE 73916203

The use of the symbol indicates that this product may not be treated as household waste. By ensuring this product is disposed of correctly, you will help prevent potential negative consequences for the environment and human health, which could otherwise be caused by inappropriate waste handling of this product.

Please contact myon AG or your local sales agency for information about myon's acceptance of returned goods at product's end-of-life.

10.1.3 Declaration of Conformity



Declaration of conformity

myon AG, Sonnenrain 75, 6103 Schwarzenberg, Switzerland declares under our sole responsibility that the devices, listed hereafter;

- myon m320 system consisting of
 - myon m320 transmitters (Model m320TXA, Type PT0001)
 - myon m320 receiver (Model m320RX, Type PR0006)
 - myon m320 charging cradle (Model m320CC, Type PA0001)

are in conformity with

- the Council Directive 93/42/EEC for medical devices (MDD), and
- the essential requirements and other relevant requirements of Council Directive 1999/5/EC on radio equipment and telecommunications terminal equipment and the mutual recognition of their conformity (R&TTE).

3rd January 2013
Schwarzenberg, Switzerland

Dr. Lars Meinecke


Director of Regulatory Compliance

Not for use in an operating theatre, anesthetic gas or oxygen-rich environments. Not for use where there is a risk of compromising the essential performance of medical electrical equipment. Not suitable for use in high magnetic flux, ionizing radiation, sterile, or life- or safety-critical environments. The device is not suitable for unattended continuous operation. This declaration does not apply to custom made systems. Further details regarding the declaration of conformity is available upon request from myon AG, Switzerland.

10.1.4 Medical Device Adverse Event Reporting

Should an adverse incident occur, the appropriate form is to be completed and forwarded within one working day to myon AG at the following address:

myon AG
Sonnenrain 75
6103 Schwarzenberg
Switzerland
email: info@myon.ch

10.2 For customers within the United States of America

10.2.1 Federal Communications Commission (FCC)



This device (FCC ID: SZSM320-1) 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.

Modifications not expressly approved by this company could void the user's authority to operate the equipment.

NOTE: 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 residential installation. 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. However, there is no guarantee that interference will not occur in a particular installation. 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.

10.3 For customers within all other countries

Please contact myon AG for more information.

11 Safety and usage guidance

We have made every effort to ensure that we have provided you with a safe and robust product. For your safety and to ensure that your myon m320 continues to meet your requirements, note the following guidance:

- Warranty is void if any part of the system is disassembled.
- The device is not suitable for unattended continuous operation.
- Prevent the system being exposed to long periods in direct sunlight, such as car interiors or hot surfaces, such as radiators.
- Use the system indoors, only. Do not use the system in wet or damp conditions.
- Insert only supplied cables into the system's interface ports.
- Do not spill food or liquids onto the system (including the transmitters).
- Do not insert any objects into any openings of the system, except the reset switch of the transmitter.
- When transmitters are not in use, place them in the charging cradle.
- Do not wear the transmitters when they are being charged.
- Use only the supplied power adapter. Other adapters may be dangerous for your health and/or they may damage the device.
- Use only the supplied cables.
- Do not touch the connectors as these are delicate and may be damaged.
- In the unlikely event that the device should become unusually warm during use, remove it from contact with the body and any clothing. If charging, immediately disconnect the product from the adapter.