T&T medilogic

MEDIZINTECHNIK GmbH

Manual

medilogic Horse Saddle Pressure Measurement

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CE

Installation medium inside

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1 Important Notice and Hotline

The purchaser may make a backup copy of the software. Except for personal use by the purchaser copying or recording this or parts of it without written consent by T&T medilogic Medizintechnik GmbH is forbidden.
We retain the right to change and improve our products, without obligation to make these changes and improvements for already delivered systems.
We assume no liability or follow liability for loss of data or the consequences thereof in connection with the use of our system.
For further questions you can reach us during office ours from Monday through Friday between 8:00 and 17.00 CET: Hotline Number +49 30 63306340.

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2 Introduction

Dear medilogic User!
Thank you very much for deciding to buy our *medilogic* system.
We are convinced that the expectations you had when buying this system will be fulfilled after a short getting to know period. To make this getting to know as short as possible we strove to keep this manual as informative and easy to understand as possible without bothering you with unnecessary details.

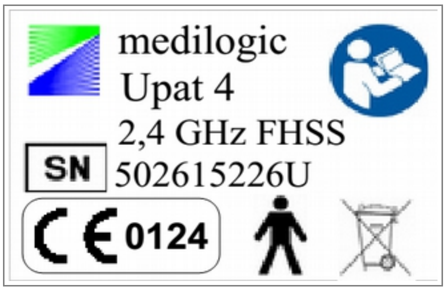
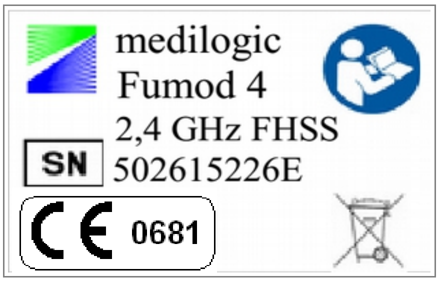
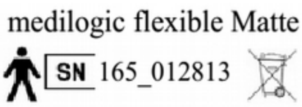
In this manual we address you the user of the *medilogic* system in order to provide you with all the necessary information.

We undertook every effort to make sure that the information herein is complete and accurate. But we can not guarantee for it. Should you notice something amiss or should passages seem misleading to you. Please kindly send us a message, so that we can improve the next edition of the manual accordingly.

2.1 Identifiers

Important information and identifiers relevant for safety you can find on the name plates of the parts of the medilogic horse pressure measurement system. All signs and symbols are explained in the following table.

CE 0633	CE- Identifier i.e. with identification number of the notified body
SN	Serial Number Identifies the device on the name plate Year of manufacture as two digits of the serial number: 5.+6. digit
	Safety Sign: Read the manual!
	APPLICATION PART Type B acc. EN 60601-1
	Disposal NOT in the household waste, but to the collection point for electronic devices or back to the manufacturer
	Name of the manufacturer on the name plate
	USB-Connection to the Computer
	Left Identifies the measuring device for the left foot: red
	Right Identifies the measuring device for the right foot: blue
	Don’t drop. Attention breakable!
	Component contains parts at risk from ESD. Don’t touch electrically conductive parts. Only touch the case.
FC	Identifier NaviLock: The device meets the interference immunity requirements of the Federal Communications Commission USA
CE 1588	Identifier TP Link: CE Identifier with number of notified body
RoHS	Identifier TP Link:Conformity with EU Directive 2011/65 / EU regarding the restriction of the use of hazardous substances
PCT ME06	Identifier TP Link:GOST-R quality certificate of the Russian Federation with identification number of the testing laboratory

Name plate wireless data transmission WLAN	
Name plate USB charger (Cradle)	
Name plate wireless data transmission Upat4	
Name plate wireless data transmission Fumod4	
Name plate pressure measuring mat	

3 medilogic – measuring system for static and dynamic measurement of pressure distribution underneath the saddle on a horses back

3.1 Application

The intended use for the *medilogic* horse pressure measurement system is a diagnostic and evaluation help in the field of saddle fitting for horses and in equitation to record the basic data of rider and horse. It afterwards evaluate the load distribution underneath the saddle on the horses back while standing and in the different ways of gait.

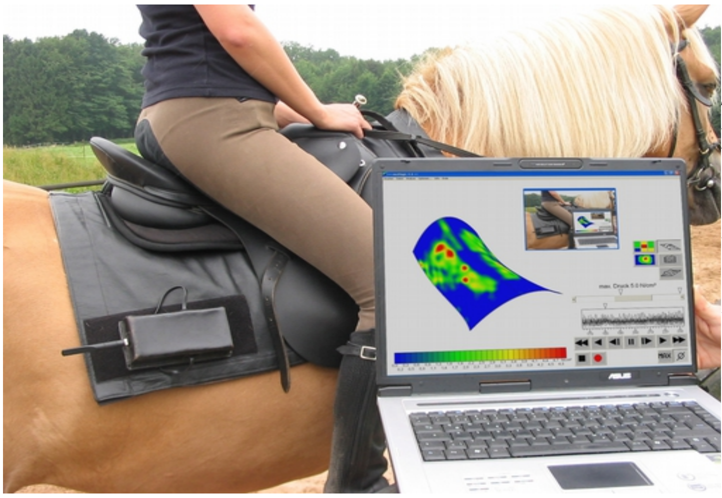
Furthermore the system aids in getting the basic data for manufacture, adaption, inspection and documentation of saddles as well as to picture the influence of the rider himself on the horse and saddle etc..

Basically *medilogic* must be viewed as an enhancement in the varied interplay between diagnostic an d crafting processes. Thus a comprehensive assessment of the individual situation can not be based on the display of the load distribution alone. It is the responsibility of the user to compare the conclusions from measurements and further examination like anamnesis, evaluation by sight, etc..

Thus *medilogic* enables the optimization of saddle fitting respectively an objective check of the fitting accuracy of a saddle. Furthermore the zones of load can be shown. This supports you in documenting the effectiveness work and can have impact on customer motivation.

With medilogic medical crafts are handed a tool, which facilitates better diagnoses and in-house quality control.

3.2 Description of the System



The medilogic *horse pressure measurement system* consists of the sensor mat which is protected by an anatomically formed leather cover a transmitter device (UPAT) and a receiver device (FuMod) which is connected via USB to the mobile Computer.
In the WLAN-Version the WLAN transmitter module which is connected at the measuring mat the recorded data is sent wireless to the WLAN interface of a computer.

The version with the Upat4 wireless data transmission has a customer modem which is attached to leather cover of the mat and transmits the data to a second modem connected to a computer.

The *medilogic* software built to run on WINDOWS® displays the recorded values instantly on the computer monitor. Immediately after turning on the measuring devices the recorded data is displayed as graphics on the monitor. The pressure distribution can be displayed as isobaric colour graphic or as three dimensional coloured mountain representation.

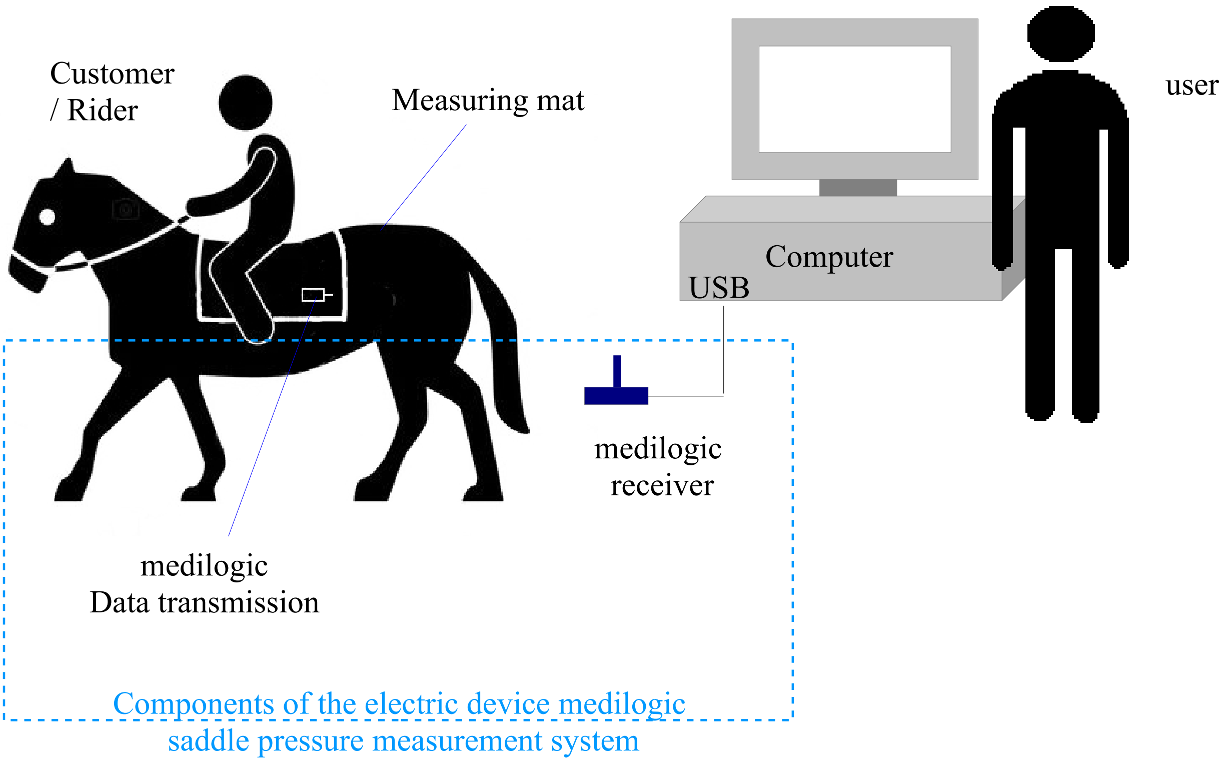
The operation of *medilogic* is comparable to a recording device. With press of a ‘button’ (mouse click) the measurement (recording) is started. After the recording is done it can be viewed in fast forward, at normal speed, in slow motion or step by step one point in time at a time.

The display of maximum pressures, of the averages, the pressure momentum as well as the path of the centre of pressure as cyclogram is possible. Images of these can be sent to a printer.

Two recordings can be compared. To store the data on hard disk each recording can be associated with a customer. Later evaluation of the data is always possible. A comprehensive data management function allows for backup, export and import of measurements.

The following graphics represent the system configurations and scope of delivery of the *medilogic* horse pressure measurement system in detail:

3.2.1 **Schematic Diagram** *medilogic* saddle pressure measurement



Scope of delivers of the *medilogic* horse pressure measurement system are the following components:

Num.	***Component***	***Classification***
1	Flexible Measuring Mat	Application part type B acc. EN 60601-1
1	medilogic wireless transmission Upat 4 / e.g. medilogic WLAN wireless transmission	Application part type B acc. EN 60601-1
1	medilogic wireless transmission Fumod 4 / e.g. WLAN-Adaptor TP-Link: TL-WN 822N	accessories
1	USB-cable 1,8m / e.g. USB-cable 1,45m	accessories
1	Manual	accessories
1	medilogic Software	Application software
1	System case incl. Foam inlay	packing

3.3 Special Instructions for Use

Using the *medilogic* system as medical device the following instructions have to be adhered to in order to insure proper and safe use.

The measuring system may only be used and handled by staff trained in the use and handling of the system. Special care needs to be taken to avoid damage to the sensors from sharp of pointed objects. Bending the mat sharply must also be avoided. (see 7)

Safety Instructions

To ensure customer safety the following precautions need to be adhered to.
The use of the medilogic system with a computer system requires the proper functioning and electrical safety of all computer components. For this the safety instructions chapter 5.3 concerning installation and checking of the computer system under operator responsibility have to be complied with.
The connector to the power grid (or the USB cable) need to be easily accessible for safety reasons in order to completely separate the system from the power grid if necessary.
Using the Li-Ion batteries of the WLAN transmission basic safety instructions have to be complied with: Do not open the devices, do not let the devices get wet, do not charge the device when it is attached to the customer.
The medilogic system is intended to be used in an electro magnetic environment that is controlled for HF disturbances. The user should avoid electro magnetic disturbances by adhering to the instructions in chapter 8.2 concerning operating environment and the recommended minimum distances to HF telecommunication devices.
Since, according to the intended purpose, the loss of the function or data of the medilogic software does not pose a risk to clients or users, the medilogic software does not contain any access control measures or protective measures against cyber attacks. The data connection established by the medilogic system to the hardware is a WPA2-encrypted direct connection as a WLAN network is only active during operation of the medilogic software and is protected against attacks by the encryption.
The risks that exist in connection with the operation of the Windows operating system on your computer must be averted by the operator through suitable cyber security measures. These include, in particular, protection against unauthorized access to the computer and thus to the medilogic software and the data stored therein (personal data, pressure measurement data, foot scan) by e.g. access control of the operating system. Furthermore, protection against cyber attacks by malware is the responsibility of the operator through suitable anti-malware software and operating system updates and security patches, and regular data backups of the data collected in medilogic must be carried out using backup processes.

Cleaning and Disinfection

Clean the sensor surface and the cases using a soft moist cloth without detergents, take special care that no moisture enters the devices; don’t use abrasive detergents or sharp edged objects.
To avoid the transfer of infections via the leather cover of the pressure measuring system the surface has to be cleaned before and/or after each horse if it seems to be necessary.
The surface of the leather mat can be cleaned with current leather soap and be treat with any known care product from saddlery.
The user must take care that no damage to the device are present, that could lead to injuries (e.G. sharp edges). Damaged components need to be send to the manufacturer for repair.

Maintenance

- **Charging the Batteries:**

The WLAN transmitters have a Li-Ion battery as power supply. Charging by the user is done with a USB charger that is attached in the same way as the measuring mat is attached to the transmitter.
First put the transmitter on the cradle then make the connection to the USB port or the NaviLock charging adaptor.
Should it be necessary to replace the Li-Ion-Battery this must be done by personal trained by the manufacturer to ensure safety.

- **Changing Block Batteries:**

The medilogic wireless transmission Upat4 have a 9V Alkaline Block Battery as power supply (the USB cable version operate without battery). The battery capacity is monitored by the software as soon as the system starts, should the voltage drop to far a warning is shown in the software. The user can change the battery. Make sure you get a alkaline or lithium battery which offer much longer operation time than cheaper batteries.

- **Calibration:**

The electronics attached to the sensors store calibration tables, which need to be checked regularly (at least once a year) by the manufacturer and adjusted if necessary. Therefore the system has to be sent to the manufacturer in the system case packed shock protected in a cardboard box.

- **Preventive Inspection:**

Additionally to the cleaning and disinfection mentioned above the user has to make a preventive inspection at least once a year to check that:

- sensor surface is clean, free of crinkles and damages
- transmitter case free of mechanical damage
- platform case free of mechanical damage
- USB-cable and connector free of damage and kinks
- insole cable and connector free of damage and kinks
- battery connector free of damage (wireless transmitter Upat4)

Disposal

The used batteries have to be disposed of according to local laws and regulations
The components of the medilogic pressure measuring system contain electronic parts, they have to be disposed of according to local laws and regulations or sent back to the manufacturer

Storage and Transport

To protest from dust, dirt and moisture and other impurities or damage the system components have to be stored in the system case or a place suitable for storing electronic measuring equipment.
Please make sure that the sensor mat is stored lying flat in the system case. Under no circumstances may the mat be stored or transported folded or bent sharply.
Transport of the mobile system components has to be done using the system case or bag designed for that purpose. Store the system case lying flat since the system case is prone to topple.

The system case protects the components from shocks and other mechanical damage during transport. Especially sending should only be done in the system case best wrapped around with a cardboard box.

All changes by the user to system components (especially improper repair) and use other than intended can cause failure and void the manufacturers responsibility and guarantee.

Don't drop, Attention breakable!

4 Installation and Commissioning

4.1 Installing the hardware

4.1.1 WLAN transmission

The transmission of measuring data is directly between the WLAN module connected to the mat and the computer. Data reception on the computer can be either with a built in WLAN device which is configured by the software for direct connection, or with a WLAN adapter connected to a USB port(TP-Link is part of the accessories). The hardware driver for the WLAN adapter delivered with the system is on the installation media in the ‘tools’ folder and has to be installed before use.

The WLAN transmitter module is to be switched on via a push-button after the mat is attached to it. Now the the WLAN connection is initiated. As soon as the medilogic software is started the selected WLAN adapter is configured for use with medilogic measurements.
Please note that the WLAN interface can now not be used to connect the computer with your network. Should this be necessary we recommend the use of the WLAN adapter delivered with the system (TP-Link)
Battery status of the WLAN transmitter module is indicated by the upper blinking LED: green means good, yellow/orange low capacity. If the LED turns red it is time to connect the module to the cradle delivered with the system.

4.1.2 Upat4 Wireless Data Transmission

The medilogic system with the Upat4 Wireless Transmission uses two modems for data transmission. One is connected to the computer and called the computer modem (FuMod). It is connected directly to the USB port.
The other modem is directly fixed on the leather cover of the sensor mat and is called the customer modem (UPAT). The sensors are connected to the customer modem.
The customer modem, provided it has sufficient power supply, instantly operational without the need for an installation procedure.
The USB computer modem is connected directly to a USB port. The hardware installation is automatic since it is detected as human interface device (HID) the driver is provided by the WINDOWS® operation system.

Note for Windows 8, 8.1 and 10:
The orange LED on the computer modem should blink if the medilogic software is not running, while running it should light up constantly. If that is not the case the function „FuMod4USB-Problembeseitigung für Windows 8.1“ from the installation media has to be started.
The tool can also be downloaded from the medilogic home page: www.medilogic.com

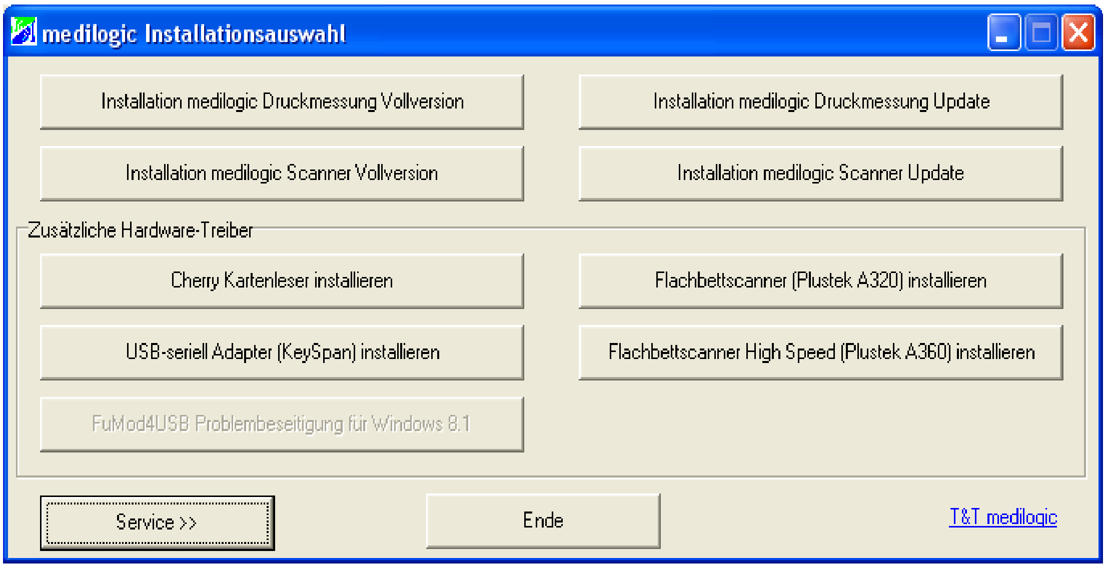
4.2 Installing the software

Before you can start using the medilogic system the software has to be installed to the hard disk of your computer. When purchasing the medilogic system together with computer hardware, the software is pre-installed. In all other cases the following point need to be checked:

- The computer is able to run Windows® operating systems (x86 compatible) and fulfils the hardware requirements:
  see 7.5 Specifications for the
- The operating system Windows® 8 /10 is already installed. If not, install the operating system first following the instructions that come with it.
- Necessary hard disk capacity.
  The programme for the medilogic horse pressure measurement system requires 200MB space on the hard disc. At least 10 GB free space are recommended for measurements and the SQL- server. If you use video capture with medilogic we recommend an additional 20 GB of hard disk space.
- *The computer system has to be certified according to DIN EN IEC 62368-1 and checked regularly according to BGV A3. The responsibility lies with the operator of the system.*
- *Furthermore operating a medilogic system and a standard Computer, DIN EN 60601-1-1 and DIN EN 60601-1 need to be adhered to, which also is the responsibility of the operator.*
- During the installation of the software on your computer admin rights are necessary. Please log in as fully privileged admin.

To install the software on the WINDOWS® operating system just connect the installation media to the computer and start the medilogic setup. The setup will guide you through the necessary steps of the installation.

Installing Version medilogic 5.x for systems with wireless transmission Upat4 :



If the setup does not start automatically when the install media is inserted, please open the file explorer find the install media and start the 'autorun.exe' by hand (double click with left mouse button)
A dialogue opens showing the default path for installation on your hard disk drive (c:\program files\medilogic or c:\program files(86)\medilogic on win7 and above).
If you don't have reason to change that click with the mouse pointer on the large, square setup symbol.

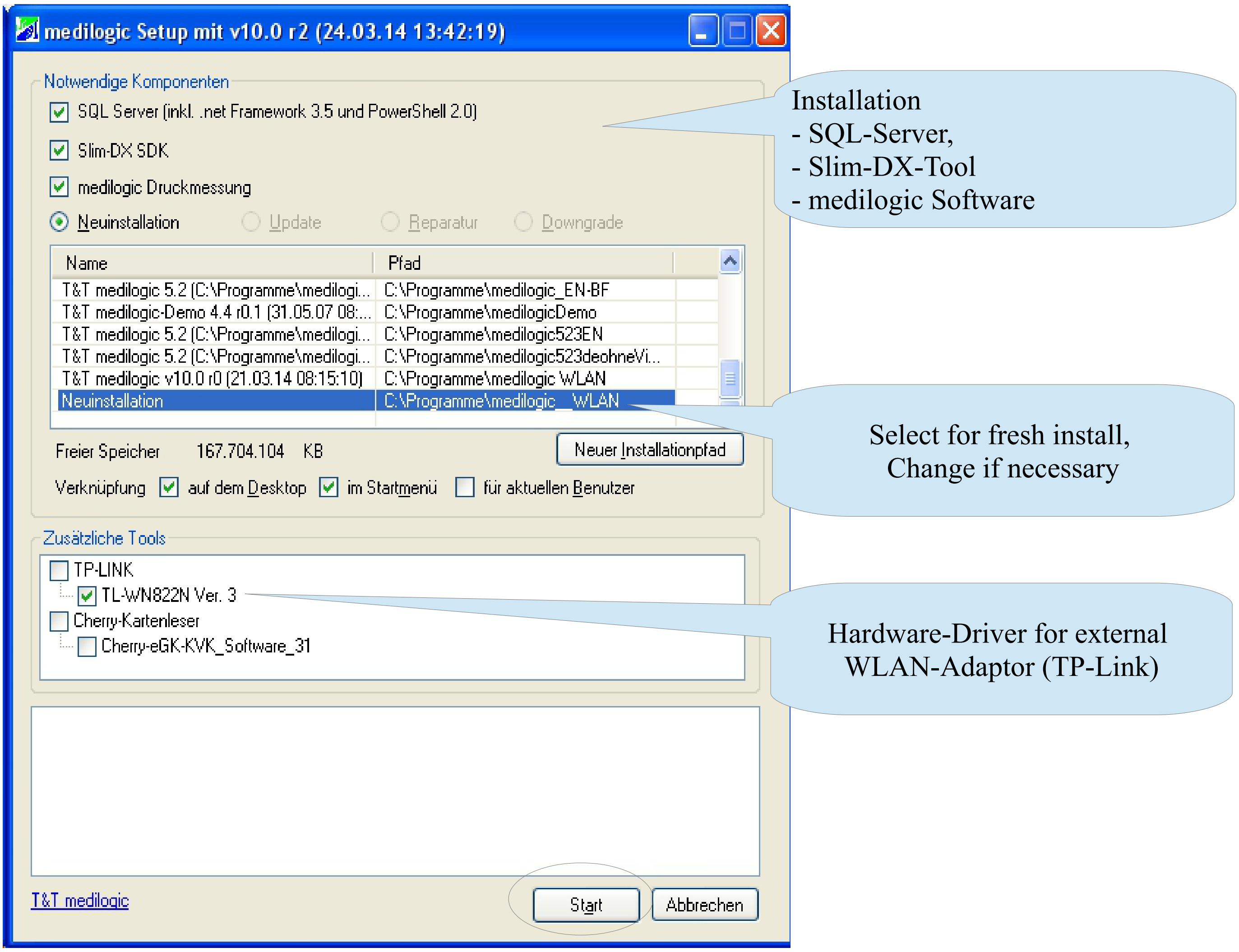
Now all necessary files are copied to the hard disk and the medilogic system is set up. The last dialogue of the installation process asks where you want the icons for medilogic to be placed and which.

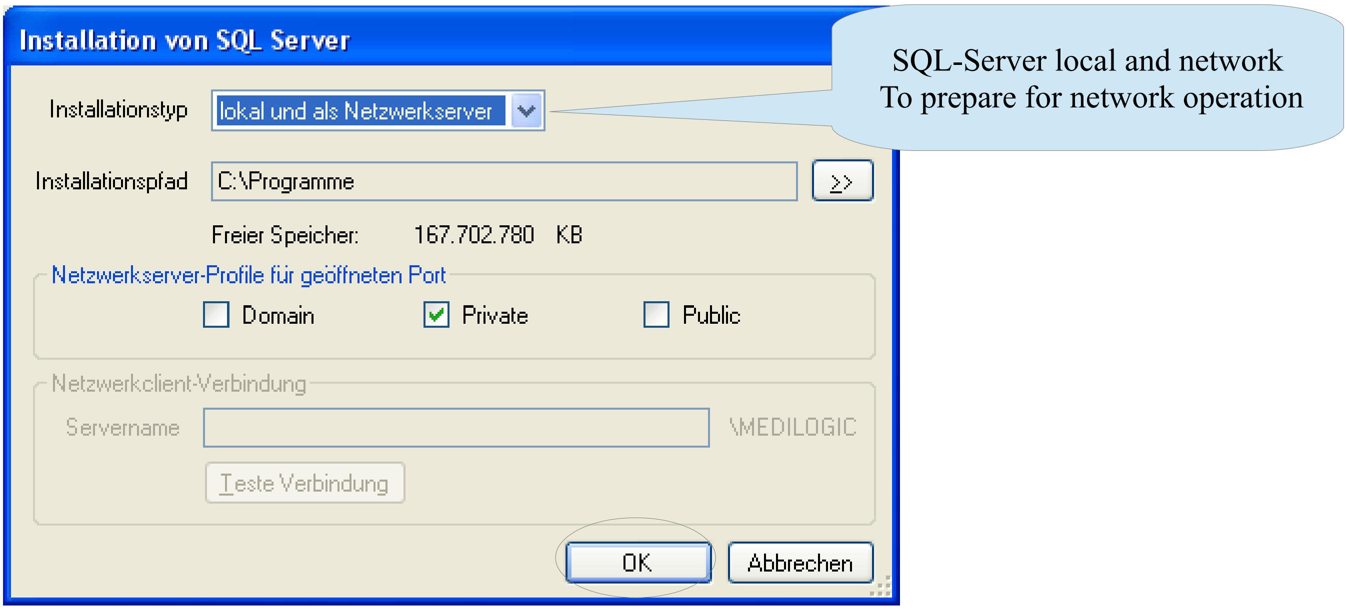
see 6.8.3 „Extra"

Note for Windows 8, 10, 11:
When the medilogic software is not running the orange LED on the computer modem should blink slowly and while the software is running it should be on continuously. If that is not the case please start:
„FuMod4USB-Problembeseitigung für Windows 8.1" from the setup menu shown above.

We also provide the configuration tool as download on our homepage www.medilogic.com.

Installing Version 10.x for Systems with WLAN data transmission:
Using the version 10.x and upwards of the medilogic system for WLAN devices, you need to install the Microsoft SQL- Server and necessary helper programmes. The necessary components are all listed in the selection of the setup programme as shown below.





5 Recording a Pressure Measurement

5.1 Quick Start – Preparation and Measurement

If you are an experienced WINDOWS® user, handling of the programme will come easy to you. The software is designed to be easily understood focusing intentionally on function relevant to everyday use. This eliminates long training. This section will show you the most important steps for preparation and measurement. The details can be found in the corresponding chapters.

Please follow these steps to use the medilogic system:

- ***Setup the Hardware*** see 4.1 Install
- ***Install the software*** see 4.2 Install
- ***Start the medilogic pressure measurement software***:
  Click or double click on the medilogic icon depending on whether the icon is located on the desktop or in the menu. The medilogic software will now start. you can use the system as soon as the software finished loading.
- ***Preparing*** for the measurement: see 7.1
  Place the sensor mat like the first layer on the horses back and saddle the horse like you are used to. Connect with the WLAN-transmitters, respectively switch on the patient modem (UPAT, transmitting unit for U4 Systems) by pressing the button (you find it hidden fromtheblack leather box).
  The pressure values of the sensors should show up on screen after a short initialisation phase.

- ***Starting*** a recording/measurement see 6.3
  Recording starts as soon as you press the red recording button.
- ***Saving*** the recording with customer information
  Enter the first name, name and date of birth and further customer data as needed.
- ***Evaluating*** the pressure measurement see 6.2.3 ff.
- ***Printing*** the pressure measurement see 6.4 Print
  Choose the appropriate print out from the menu 'Print'
- ***Finally*** detach the WLAN transmitter from the mat or switch of the Upat4 wireless transmitter by pressing the button on the side until the double beep sounds, close the software.

Everything else is easily explored. Enjoy!

5.2 Notes for dynamic pressure measurements

These notes represent the condensed knowledge from years of experience and hands on application, they can be used for easier access interpreting the results of pressure measurements. We are sure that most experienced users of the pressure measurement will know about this and operate the system accordingly.

It is a good idea to think about your personal routine of measurement. The advantage is an easy way to compare measurements and show the changes plausible.

A possible routine could be like this:

- For each pace you take a separate measurement.
  Attention: take the left and right hand into account at roughly the same time, so that both stress cases are absorbed equally.
-

- Since it is a locomotive movement - a constantly recurring, steady rhythm of the movement is enough for a recording time of approx. 60 - 90 seconds.
  When saving, enter the respective pace as a comment.
- You will receive 3 measurements for step / trot / gallop for each question to be examined.

If you follow this pattern, you can easily compare before / after measurements or measurements from different saddles within the gait.

Of course, other approaches also work, such as to record all 3 paces in one measurement.

6 Description of the *medilogic* - Software

6.1 *medilogic Systems* - Overview

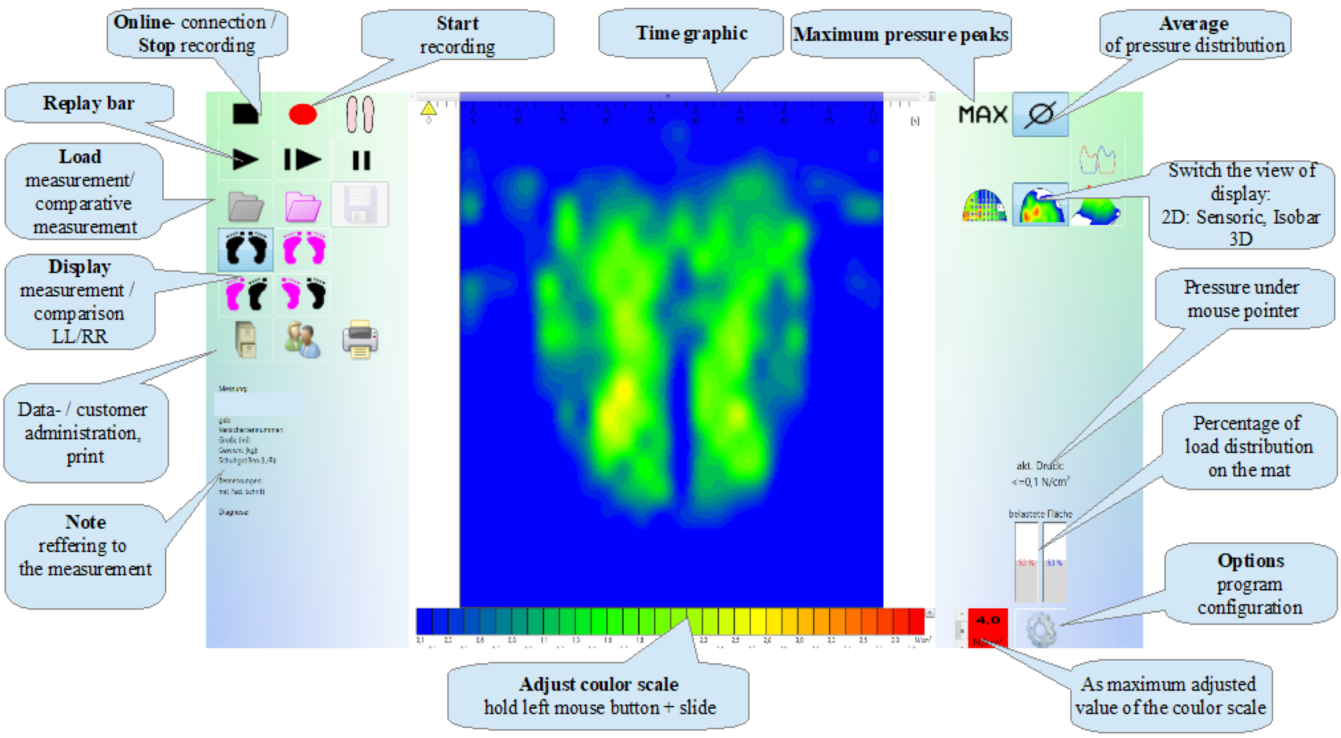
The description of the programmes is structured in these main parts:

- First are buttons described displayed on the user interface. Buttons give easy access to the most important functions like recording and evaluation. *see 6.3*
- Next the graphics of the programmes are explained. *see 6.4*
- Finally follows a detailed description of menu entries. *see 6.5 ff.*

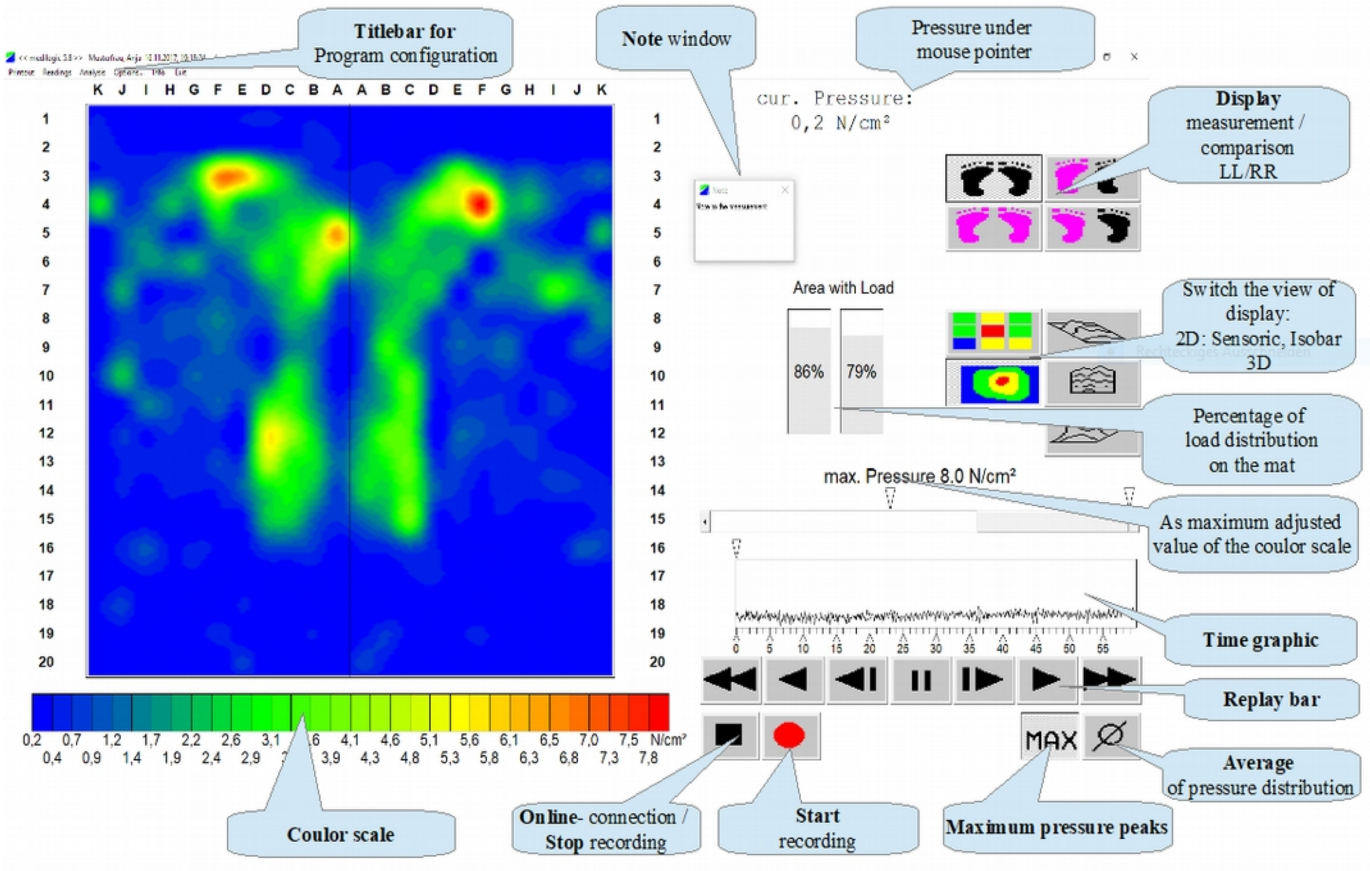
6.2 Buttons of the user interface – New basic programme interface medilogic WLAN

With software version 10.x you have the option to switch between the new basic programme interface and the classic one. We strove to organize the buttons in such a way that the functions needed most often are easily accessible.
We used the same icons to make the transition as smooth as possible for our long term users.

Following is a overview of the new basic programme interface with labelling of the elements. The buttons described in the following chapter are valid for the classic view and the new basic programme interface, if appropriate the buttons are listed for both programmes:
Left above the text: Symbol for the classic basic programme interface;
Right above the text: Symbol for the new basic programme interface



6.3 Buttons of the User Interface – classic basic programme interface



The important functions like control of a recording and evaluation can be accessed using the buttons displayed in the user interface. This gives a quick overview of the programmes functionality and shortens the work in phase considerably.
Using the programme is made even more easy by only making the buttons available, that are usable in the current state of the programme. All other buttons are either greyed out and not clickable or not displayed at all.

6.3.1 Recording a Measurement

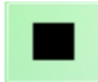
Left above the text: Symbol for the classic basic programme interface;
Right above the text: Symbol for the new basic programme interface


The button with the red circle („Start“) represents the recording button. A recording is started clicking this button. Always the current measurement is recorded not the comparative measurement.


<u>Note reffering to a loaded comparative measurement</u>: Recording is only available if the measurement (black feet) is displayed or no comparative measurement is displayed. If the comparative measurement is selected the button is greyed out to indicate that it is not available. By selecting the measurement the button becomes available again.
If trigger mats (optional) are used a small point is displayed within the ‘Start’ button. This indicates that the use of trigger mats is activated. Triggering the mats would now automatically start a recording and stop it with a second trigger impulse.
see 6.8.3 „Extra“

6.3.2 Stopping a Recording

The button with the black square („Stop / Online“) is used to stop a recording and switch the software from replay mode to online display of current values.



A recording can be stopped using this button or is stopped automatically, when the recording time is up. (The standard for the maximum recording time is 60 seconds for insole measurements and 30 for platform measurements)– this can be set in: *see 6.8.3 „Extra“*).
Since shorter recording periods lead to recordings needing less space on the hard drive and the more complex evaluations run faster, recordings should be kept as short as possible.
<u>Note reffering to a loaded comparative measurement</u>: This button is only available if the measurement (black feet) is displayed or no comparative measurement is displayed. If the comparative measurement is selected the button is greyed out to indicate that it is not available. By selecting the measurement the button becomes available again.
After the recording is stopped it is advisable to save it, if you consider it worth saving.
For every day use it is advisable to automatically display the save dialogue directly after the recording stops. This option is available in: *see 6.8.4 Options*

6.3.3 Replaying a Recording

The segmented replay bar is used to play back a recording, either after recording or loading it. I works like most devices for replaying recordings. The arrow direction indicates the play direction:

Slow motion (speed can be set in the dialogue Options/Display-General)

Replay in normal speed (depending on computer speed frames can be skipped)

Fast Forward or Fast Rewind (classic basic programme view only)

Pause (stops the replay at any chosen point in time)

All replay buttons will lock with one short click and reset with a second click (going to pause mode).
If the buttons are pressed continuously they will not lock but reset to pause after release.
The option ‘infinite loop’ will start the replay at the beginning as soon as the end is reached.

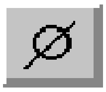
6.3.4 Loading Measurement/Comparative Measurement

Clicking the grey folder allows you to load a measurement from the database, with the magenta folder you can load a comparative measurement for comparison.
In the classic basic programme interface you can find this function in the menu ‘data’ ‘load data’ and ‘load comparative data’.
The corresponding chapters 6.5.2 and 6.5.3 in this manual give a detailed explanation.

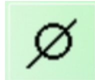
6.3.5 Evaluation Maximum Pressure

The button with "MAX" on it switches to the display of maximum pressure graphics. Now the highest values for every sensor from the whole recording or the currently zoomed period are displayed

6.3.6 Evaluation Average Pressure

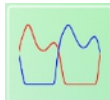


The button with the average icon switches the display to averages graphics. Now the average values for every sensor for the whole recording or the zoomed part are displayed.



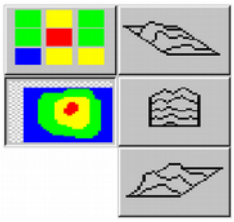
The method for the average calculation can tailored to incorporate all values or only the values above a certain threshold. This can be set using the menu ‘Options’ ‘Display/General’ ‘Method for Calculation of Averages’. For the saddle horse pressure measurement system we suggest the setting ‘0% of the maximum’. *see 6.8.1 Options „Display / General“*

6.3.7 Analysis

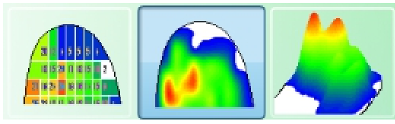


This button gives access to specific evaluations for detailed analysis.
In the classic basic programme interface the functions can be found in the menu ‘Analysis’. The corresponding chapter 6.6 of this manual gives detailed explanations for these functionalities.

6.3.8 Switching between Graphics Displays



These Buttons switch between different types of graphic display.(isobaric display, sensor display, 3D-display from different perspectives).
see 6.4.1
see 6.4.2
see 6.4.3



6.3.9 Comparing two Measurements

The buttons below appear only when a comparative measurement has been loaded. Here you can set up which parts of the two measurements are displayed.

 - current measurement (also used for recording a measurement)

 - comparative measurement (additionally loaded measurement)

 - comparison between the left halves of the mat from both measurements

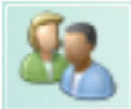
 - comparison between the right halves of the mat from both measurements

If you are looking at a comparison between both left or both right halves, the information about the measurement will be displayed in the title bar and note if the mouse cursor hovers over one of the displayed feet or platform halves. (This display is only available in sensor or isobaric display)
see 6.5.3

6.3.10 Data menu

This button is only available in the new basic programme interface and is used to access the data management functionalities and various export interfaces.
In the classic basic programme interface these can be found in the menu ‘Data’.
The details can be found in chapter 6.5 of this manual.

6.3.11 Customer Details



This button opens the a dialogue to edit customer details(e.g. name, address) and allows you to generate a new customer file prior to starting a measurement.
In the classic basic programme interface this can be found in the menu ‘Data’. Chapter 6.5.5 of this manual gives detailed information.

6.3.12 Print Out

This button will open a list of available print outs.
In the classic basic programme interface this can be found in the ‘print out’ menu. In Chapter 6.7 in this manual you can find detailed information about print outs.

6.3.13 Options

This button gives access to the options for the programme and the configuration of the WLAN data transmission.
In the classic basic programme interface these can be found in them menu ‘Options’. In Chapter 6.8 of this menu holds detailed information.

6.4 Display

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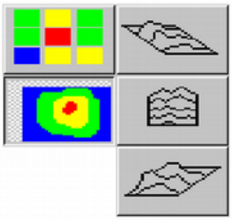
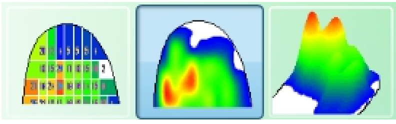
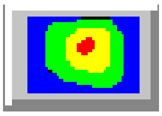


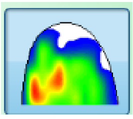
These buttons switch between the different display modes.(colour display, 3D-display with different views and isobaric display).

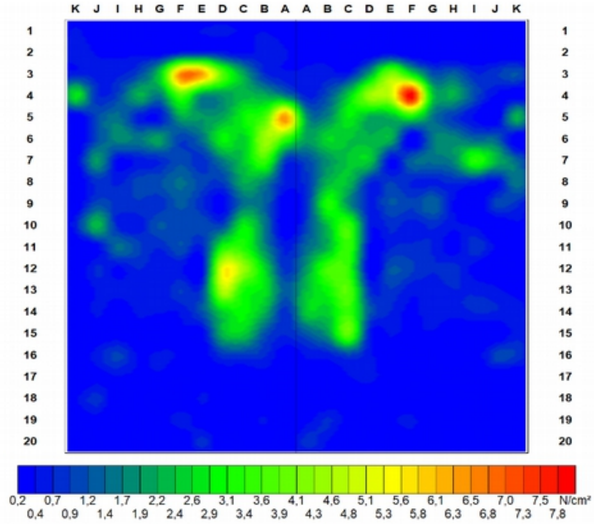


6.4.1 Isobaric - Display



The isobaric display colour codes the pressure values from the insole or platform systems so that areas with the same colour share the same pressure value. To achieve a higher spatial resolution mathematical algorithms are used to calculate pressure values between the sensors.

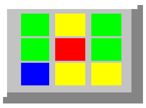




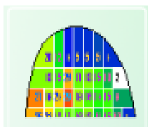
The pressure corresponding to a colour can be read from the colour scale at the bottom of the screen. The relation between colour and pressure is influenced by the zero threshold and maximum pressure set in the programme. Setting the maximum pressure with the slide bar allows you to compare measurements of customers with different weights and still using the full colour range.
This setting can be changed at any time after a recording has been made.

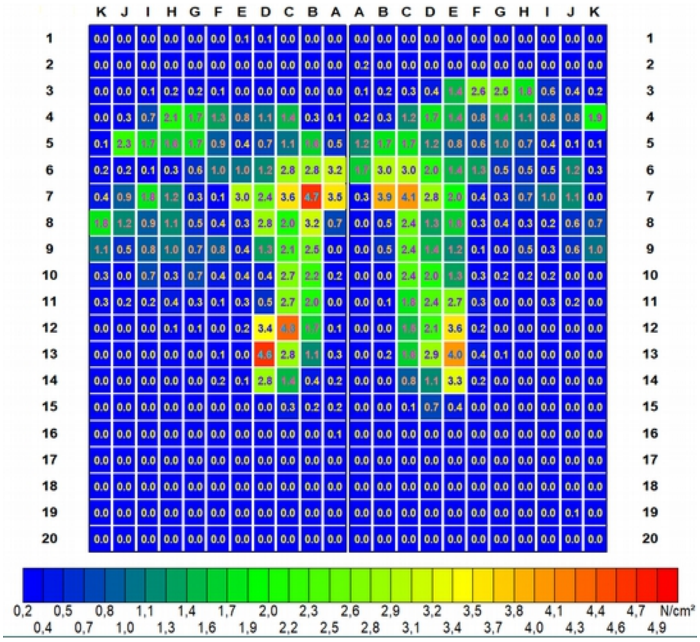
see 6.8.2 „Colour Table“
Hovering the mouse cursor over the isobaric display will show the pressure value at this position on to the right side of the graphic area as ‘current pressure’.

6.4.2 Sensor Display



If this display mode is selected the graphic will show the sensors in the mat. Pressures are represented as colours.

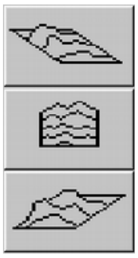




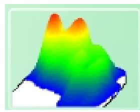
The pressure corresponding to a colour can be read from the colour scale at the bottom of the screen.
The relation between colour and pressure is influenced by the zero threshold and maximum pressure set in the programme. Setting the maximum pressure with the slide bar allows you to compare measurements of customers with different weights and still using the full colour range. This setting can be changed at any time after a recording has been made.
see 6.8.2 „Colour Table“

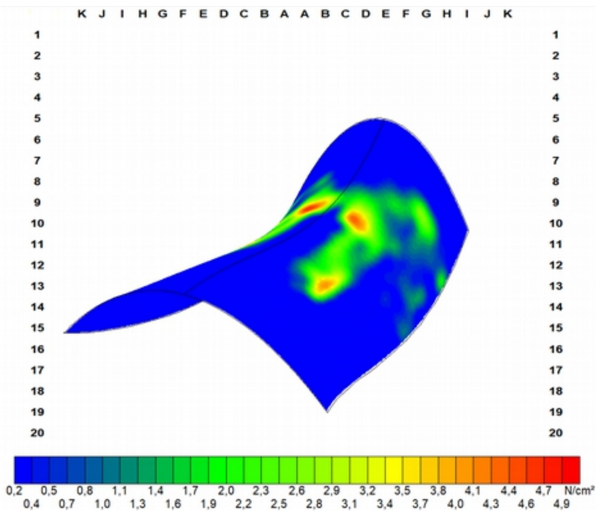
Inside every sensor field the values can be displayed as numbers (‘Options’ ‘Display/General’ ‘Numeric Value in Sensor’). These values are independent from the settings of zero threshold and maximum pressure. In the 5.x versions this option is only available in the insole programme for readability reasons.
Hovering the mouse cursor over a sensor field will show the value to the right of the graphic as ‘current pressure’.

6.4.3 3D-Display



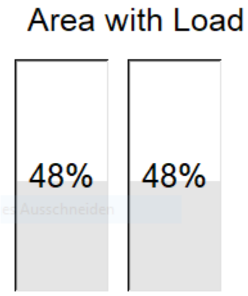
The 3D Display can be set to three predefined view points. It represents the pressure values as colour and hight. The relation between colours and pressures can be read from the colour scale at the bottom of the screen.



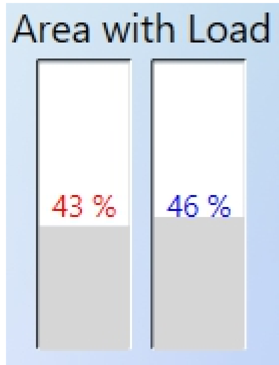


The relation between colour and pressure is influenced by the zero threshold and maximum pressure set in the programme. Setting the maximum pressure with the slide bar allows you to compare measurements of customers with different weights and still using the full colour range.
This setting can be changed at any time after a recording has been made.
see 6.8.2 „Colour Table“
Hovering the mouse cursor over the 3D display will show the pressure value at this position on to the right side of the graphic area as ‘current pressure’.

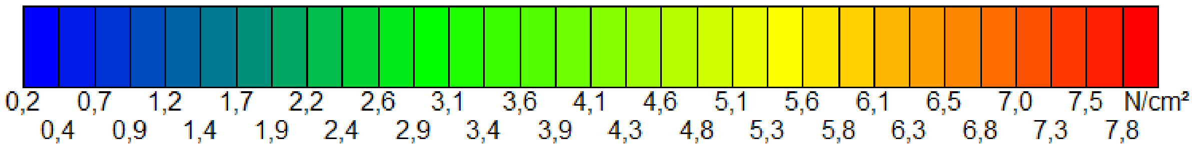
6.4.4 'Area with Load'



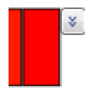
This graphic shows how many percent of pressure values are above the zero threshold. This represents the percent of mat area loaded.
If the zero threshold is set to 0.0 N/cm² the graphic vanishes, since it would always read 100%.



6.4.5 'Colour Scale'



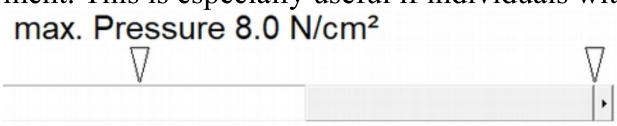
The colour scale shows the relation between colours and pressure values for the isobaric, sensor and 3D display. The lower end is defined by the zero threshold (set in the 'Options') the upper end by the maximum pressure (set with the slider for maximum Pressure).
The numbers underneath the colours represent the dividers between the colours and represent the lowest value for the colour going to the right. The values are rounded to an decimal everywhere they are shown (beneath the colour scale, in a sensor field or under 'current pressure').
The number of colour steps can be set in the 'Options'.
In the new basic programme interface the colour scale can be collapsed using the arrow key on the right hand side. This key can be used to show the colour scale again.



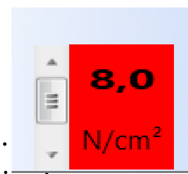
see 6.8.2 „Colour Table"

6.4.6 Adjusting the colour scale using ' maximum pressure'

The relation between colour steps and pressure values can be set using the slider 'maximum pressure' . The setting defines the pressure value (N/cm²)to be represented by the last colour step (dark red). The colour table is scaled accordingly. This allows you to set the optimal colour range for every measurement. This is especially useful if individuals with widely different weights have to be evaluated.

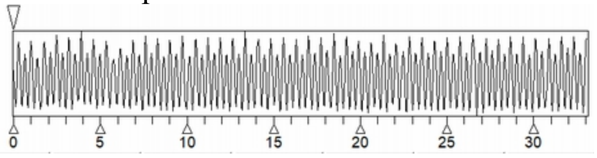


Setting the maximum pressure to the highest value of a measurement ensures the best possible contrast displaying the pressure values. It does not change the numbers.



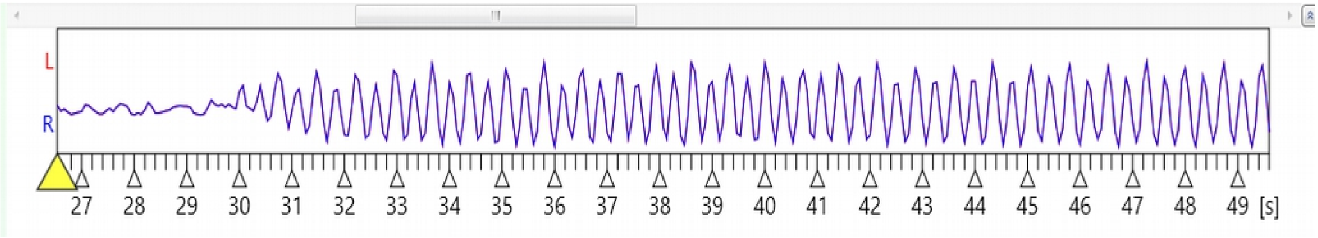
For most cases it is advisable to set the maximum pressure to the highest pressure occurring in the current measurement, ensuring the best possible pressure representation. This setting can be made by the software automatically, if 'Options' /'Colour Table' /'automatically adjust max. pressure' is set. The alternative would be to use 'manual adjustment' and set the value by hand.
In the new basic programme interface you can also click and drag the mouse over the colour scale to change the value. Moving the mouse to the right will move the colour spectrum towards red (max. pressure is decreased); reversely moving the mouse to the left shifts the colour spectrum towards blue

(max. pressure is increased). see 6.8.2 „Colour Table“ function: „max. pressure: Setting the colours for display“
Two markers are available in the classic basic programme interface above the slider. These give quick access to two setting by clicking on them. To change the marker position hold the ‘Ctrl’ -Key down click on one marker and drag it to the desired potion.
This is also available for the colour scale used with the momentum graphic (max. momentum (Ns/cm^2).
‘time graphic’
During recording and replay of a measurement the time graphic is drawn or shown. During replay you can set the point in time for values from the measurement.



This pressure/time graphic displays the typical pattern of each pace (here: trot). Therefore the avarage pressure is taken on the y-axis. The unit for the x – axis is seconds.

In the classic basic programme interface a white triangle above the time graphic indicates the current position in the measurement for which the values are displayed. The position (and with it the triangle) can be moved using click and drag with the mouse or the buttons from the replay section.
In the new basic programme interface a yellow triangle below the graphic has the same function.
In this interface a scroll bar is displayed above the time graphic, if the measurement is zoomed. The zoomed area can be moved using the scroll bar. The time graphic can in the new interface can be collapsed and unfolded using the arrow key on the right hand side.
In order to zoom in on a period of interest click the mouse on the first point in time and drag it two the last point in time you want to inspect and release the mouse button. This works wit both basic programme interfaces. you can zoom again and again until only three single points in time are visible (marked by little squares).
All evaluations and replay function (replay, slow motion, maximum, average, gait analysis etc.) only are calculated for the displayed period. If the measurement is not saved yet only the zoomed period will be saved.
To look at the whole measurement period again click once anywhere in the time graphic.
The representation is only meant for orientation purposes, a detailed graphic to scale is available in ‘analysis’/’time graphic’.



see 6.6.1
see 6.4.1
see 6.4.2
see 6.4.3

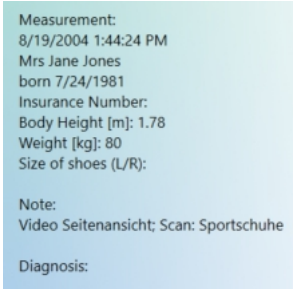
6.4.7 'Note'

For every measurement a note can be displayed, which can be entered while saving the measurement. To hide or show the note set the 'Option'/'Display/General'/'Display Note' *see 6.8.1 Options „Display / General"*) The size and position of the note can be adjusted using the left mouse button by clicking and dragging. With a saved and loaded measurement you can change or enter new information by double clicking on the note. Now you are in edit mode (cursor is blinking) and can write or change the text.
With a right click in the note a context menu will appear with these options:

- *Undo* all changes since entering edit mode
- *Select all* , to select all of the text in the note
- a selection of predefined text blocks to speed up entry of standard texts (diagnoses etc.)
- *Add new text module* , to create a new text block
- *delete text module* , to delete a text block from the list

Clicking anywhere outside the note will end the edit mode.

On the right note as displayed in the new basic programme interface.

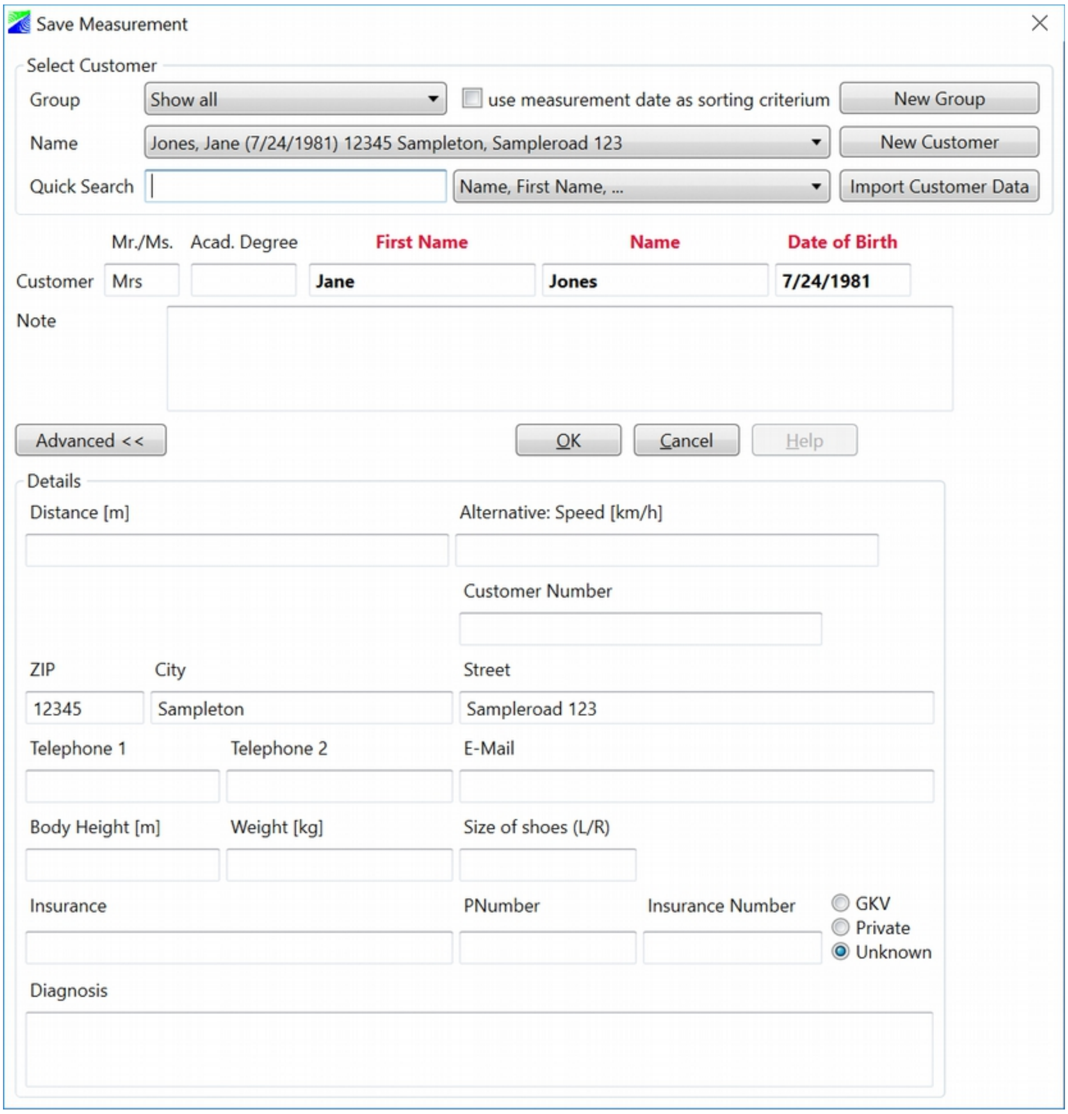


6.5 Data

Measurement data can be saved and loaded for later viewing and evaluation. The 5.x versions of the software save the data to the '\Data' subdirectory of the medilogic programme path or a specified network location. The 10.x versions store the data in the SQL server installed with the system (if not present) either locally or on a network location of your choice.
Identifying information is first name and name (additionally date of birth) of the customer as well as time and date of recording. Additional information can be saved with the measurement (e.g. note, body weight, email address etc).

6.5.1 Saving Data

After recording has stopped the measurement can be saved. The period of the measurement shown in the time graphics is saved. This offers you the chance to exclude parts at the beginning or end with unwanted data (e.g. customer just starting to walk from standing, or tripping).
see *?? 'time graphic'"*
The 'Save' button (floppy disk symbol) can be used to call up the save dialogue (or the menu 'Data/saving' in the 5.x version). To simply this the dialogue can be called up automatically when the recording stops. This can be set in 'Options' 'Usability' 'Show Save Dialogue after recording'.

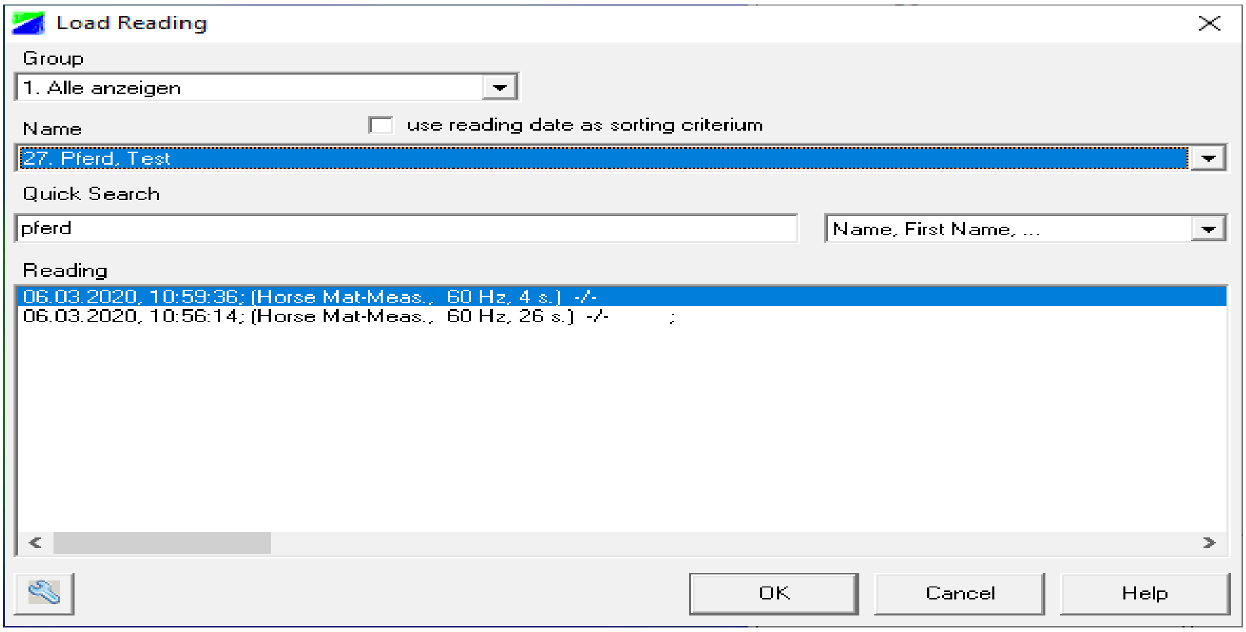


In the middle part of the memory the information about first name and name are mandatory in order to save a measurement. Entering the date of birth will further increase the programmes ability to differentiate your customers.

The notes are saved for every measurement separately, entry is not mandatory. To speed up the entry of notes and diagnoses text blocks can be inserted using the right mouse button. *see 6.4.7*
The ‘Advanced’ button unfolds (and folds) an area with additional information about the measurement and the customer (e.g. address, informations to horse, -saddle-stable etc.). This can also be accessed using the ‘Edit Customer Data’ dialogue *see 6.5.5* .
To make entry of informations like adress anf weight of the rider mandatory you can set the check in ‘Options’ ‘Usability’ ‘make entering body height and weight mandatory’.
The upper part of the dialogue gives access to customers already stored in the system in order to save a new measurement with that customer. your customers can be grouped to make it easier to locate them, if you want to access all customers select ‘show all’. The drop down selection ‘Name’ list all customers of the selected group in alphabetical order. you can also sort the customers by the date of their last measurement setting the check next to the ‘Group’ drop down list.
The field ‘Quick Search’ lets you find a customer by entering first name or name. The search start as soon as you start entering letters and will show information for the first hit immediately. The drop down list lets you choose insurance number or customer number as alternate criteria.
To enter a new customer click the ‘New Customer’ button (all fields will be emptied). If you need a new group you can create one by clicking ‘New Group’, otherwise select the group from the drop down list you wish to associate with the customer.
When the dialogue opens the most recent customers information will be shown. If the information about the customer is correct you can confirm by clicking the ‘OK’ button. Otherwise use the ‘New Customer’ button to create a new customer entry and fill in the information necessary.
To jump from field to field use the TAB-key or click into the field of interest.
<u>Note:</u> For quick handling the dialogue will position the cursor in the field ‘First Name’ hitting the ‘ENTER’ key will set it to the ‘Name’ field , then the ‘Date of Birth’ field the next hit on the ‘ENTER’ key will operate the ‘OK’ button and save the measurement.
Saving a measurement is only possible if a new recording has been made, otherwise the access is denied (greyed out). This is meant to prevent saving a measurement twice.
If you configured the medilogic system to access external data bases for customer data (‘Options’’Extra’’External Databases’) data entry can be speeded up.

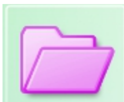
6.5.2 Loading Data

Saved data can be loaded into the software. Thus the data is again available for viewing and evaluation. Please use the ‘Data’’Load’ menu item to do this.



Choose the customer group (or ‘Show all’) and the customer you are looking for from the drop down list ‘Name’. Default sorting criterium is the name, if the check ‘use measurement date as sorting criterium’ is set the customers most recently measured will be listed first. For every day use this eases locating your customers.
In the list below you can select the desired measurement by clicking on it. The entries show time and date of the measurement, the sensors used, length of the measurement, sampling rate and the note if entered. Using the ‘OK’ button will cause the measurement to be loaded into the software and the dialogue to close.
Note: you can also double click on the measurement for more speedy loading.
The ‘Quick Search’ field lets you locate customers quickly using first name, name, insurance number or customer number.
If you select a measurement made with a different programme mode (e.g. insole, platform) the current one, the software will automatically switch to the needed programme.

6.5.3 Loading Comparative measurement

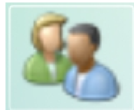


It often is useful to compare two measurement side by side. To do that Use ‘Data’’load comparative measurement’.
The dialogue mirrors the one used for loading a current measurement. (*see 6.5.2*)
After successfully loading a comparative measurement an additional button block is displayed. The black feet represent the measurement first loaded (current measurement), the magenta coloured feet represent the second measurement loaded (comparative measurement)*see Fehler: Referenz nicht gefunden*
All evaluations are also available for the comparative measurement. The measurements are compared for the side of the sensor mat half (left-left or right -right). Use the corresponding buttons to select.

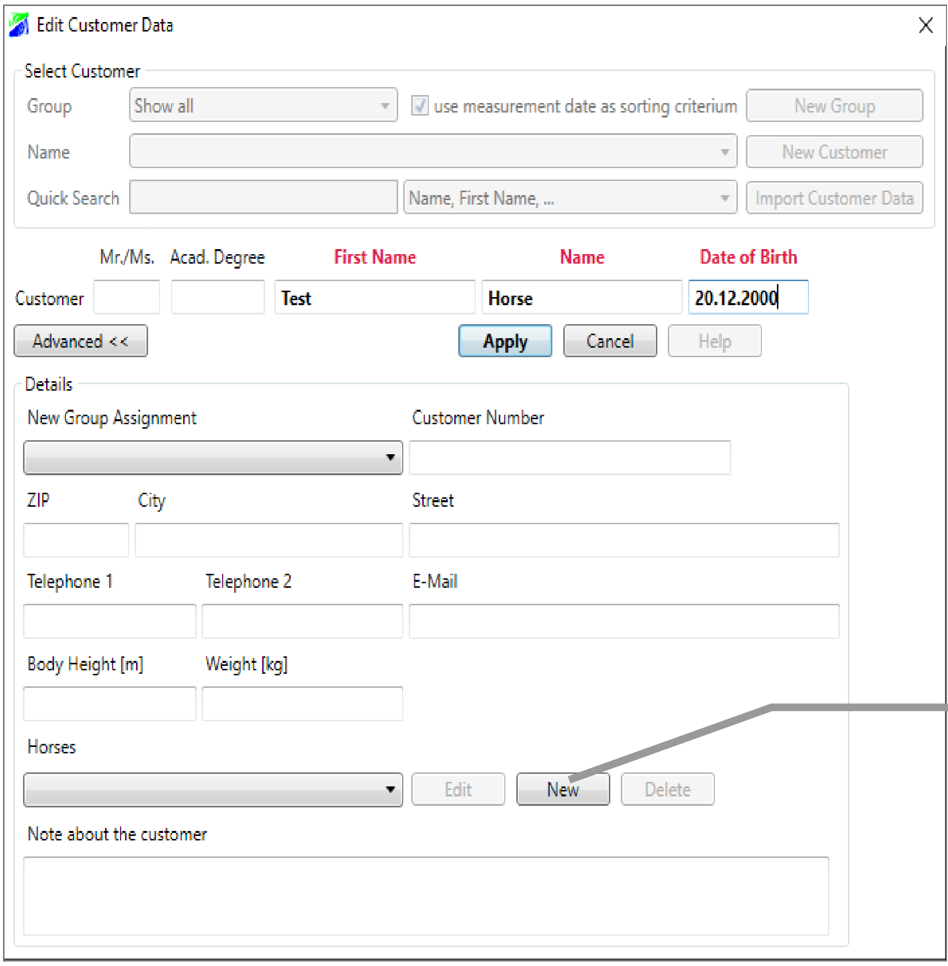
6.5.4 Deleting measurements / Customers / Groups

The menu item 'Data''Delete...' allows you to delete measurements, customer entries and groups no longer needed. Selecting the element to be deleted is analogue to *6.5.2* .
Pressing the button 'Delete Group' or 'Delete Customer' will delete the customer shown in the drop down list or the group from the drop down list with all its customers. Clicking 'Delete measurement(s) will delete all measurements selected in the list 'measurement'. *Please check carefully whether to confirm the confirmation dialogue whether these object should really be deleted*.

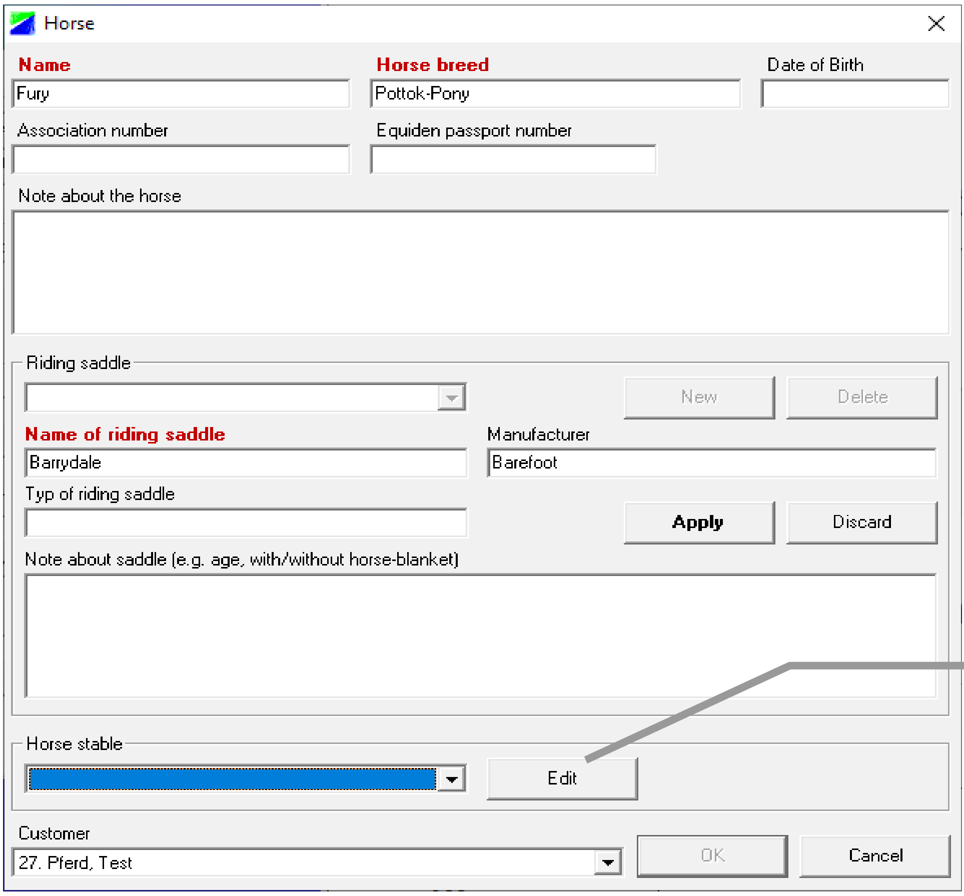
6.5.5 Edit Customer Data



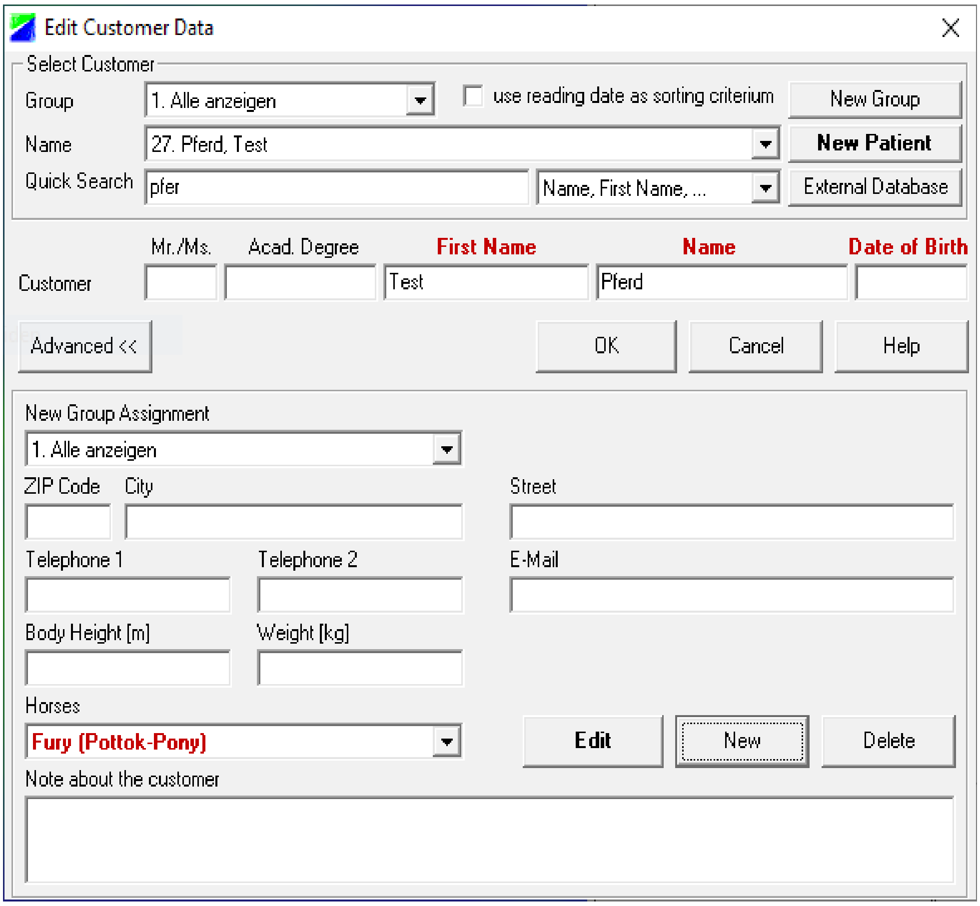
The menu item 'Data''Edit Customer Data' is used to call up the dialogue used to access and edit customer data (e.g. name, address etc.). you can also use it to create new groups or customer entries with the buttons 'New Group' 'New Customer' before recording a measurement and saving it to the database. Handling is similar to 6.5.1Saving Data. Entry can also be done using external databases *see 6.8.3 „Extra“* The drop down list 'New Group assignment' lets you shift customer entries between the groups.
When the dialogue is opened it always presents the customer called up most recently. But you can access any customer from this dialogue.
If any information for a customer has been changed, selecting other customers is denied until the 'Apply' button is clicked.



Informations to the horse/horses can be added here in preparation to a measurement or direct while saving.

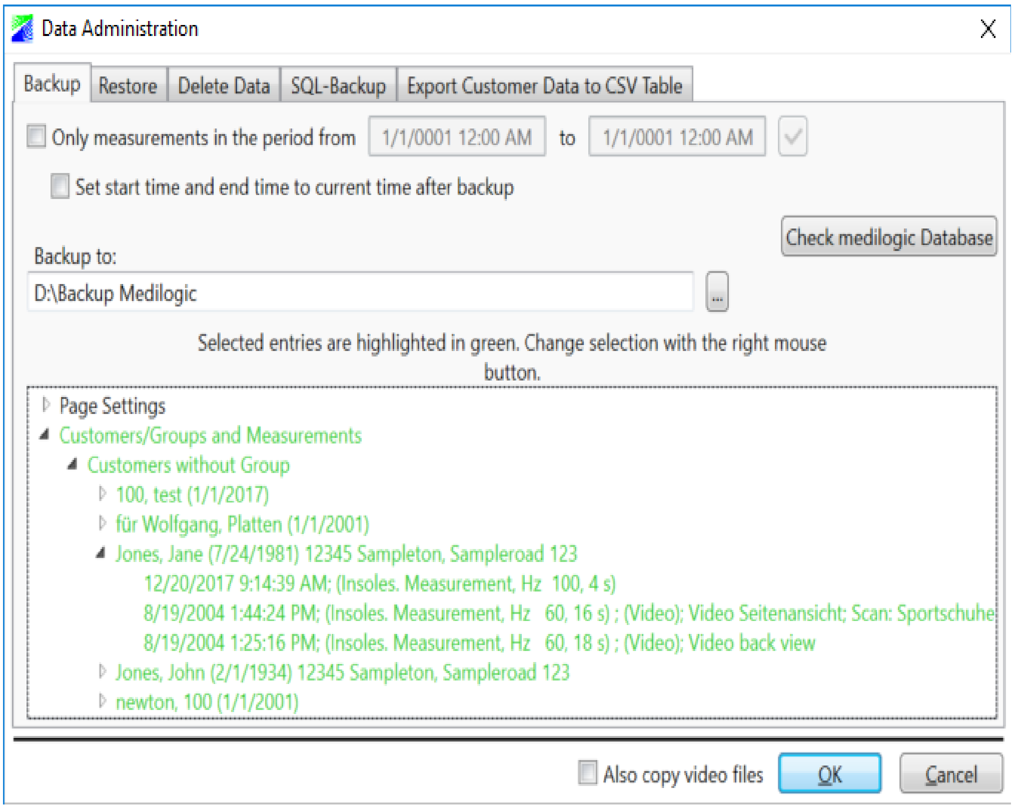


Informations about the horse stable can be setted new or be chosen from a list which has been setted before in the menue "Readings/Horse stables".



6.5.6 Data Administration (Backup / Restore/ Export Customer data to CSV table)

Making a backup to an external storage device, other computer or server is a good idea for all systems. The menu item ‘Data’ ‘Data Administration’ opens a dialogue to do that.



‘Backup’

Data selected by the user can be saved to a location as entered in the field ‘Backup to:’. Information about the customer and the selected measurements as well as printer page settings will be saved . For the 5.x version a file backup.mdb, a ‘Data’ folder and if applicable the ‘logo.bmp’ are written to the chosen location. The 10x. Version write a file like:
‘medilogic.T&T medilogic_Database_Backup_2017.12.13_10.08.51.tar’
If the check ‘Also copy video files’ is set video files are copied too, please make sure sufficient space is available in the storage location.
It is advisable to check the medilogic data base for consistency using the button ‘Check medilogic Database’, to avoid backing up corrupted data.
<u>Note</u>: Only use this process to backup data, copying by hand can lead to the loss of customer data.

‘Restore’

The reverse process to backup is data restoration (‘Restore’). Data is retrieved from the location entered in the field ‘Restore from’. The medilogic software has to find the file(s) that were created by the backup process.

„Export Customer data to CSV table“

This function will convert the customer information from the data base and export it to a csv-file readable with spreadsheet software like LibreOffice Calc. you can use the customer information in other applications, for example to generate a serial letter using LibreOffice Writer. you can export the whole data set or select only some customer. see *6.5.5*

6.5.7 Save to.. ; Import from...

To transfer a measurement currently loaded use the menu item ‘Data’’Save to...’ to save it to USB-Stick, network drive or similar. The target directory set in ‘Options’’Extra’ has to be writeable and provide enough storage space. measurements stored in the location can be imported into the software using the menu item ‘Import from...’
If specified in the options the measurement will be deleted after successful import and display.

6.5.8 E-Mail

This menu item gives access to a dialogue for sending and receiving measurements using e-mail. After receiving the measurements can be viewed and evaluated in medilogic software.

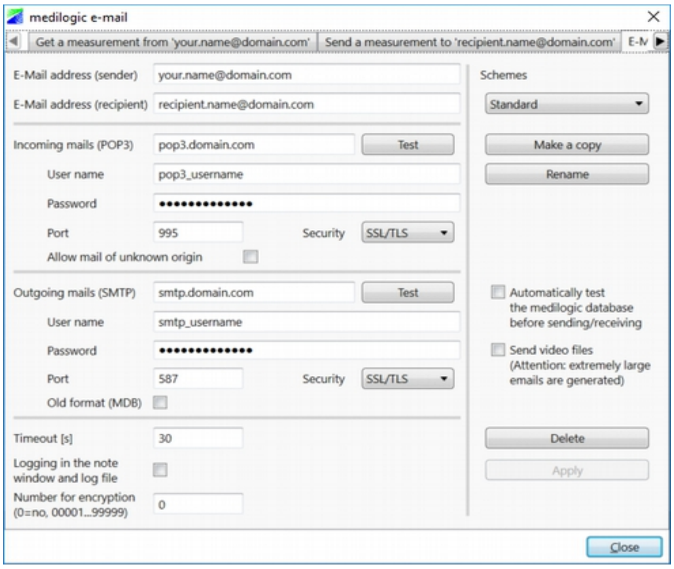
How does E-Mail work – a short introduction

you need to have an e-mail account with a provider of your choice with at least one email address. We also assume that you use this address only to transfer data for the medilogic system. Since there are a lot of free email providers out there, this poses no limitation and makes handling much more comfortable.
Lets assume Bob wants to send Alice an e-mail, then they have to follow the steps below:

1. Bob presses the ‘send’ button when the e-mail is ready for sending. The software now connects Bobs computer with the server of his e-mail provider. Between the computers the SMTP (Simple Message Transfer Protocol) is used to transfer the email. This simple protocol provides no authentication mechanism. Since many providers now insist on one to prevent spam and phishing we need one of the following methods. „POP before SMTP“ will use the information provided to receive email to send it, so Bob will have to receive mail first providing username and password. „SMTP_Auth“ is the SMTP enhanced with an authentication mechanism, it is the usual method nowadays and therefore default.
2. After successful authentication by Bob the e-mail gets send.
3. Bobs provider will send the e-mail to a POP server used by Alice where it waits for retrieval.
4. Alice clicks the ‘Check Post Office Box’, the Software connects to the POP Server and retrieves the e-mail after successful authentication.

E-Mail Settings

As you can see from the preceding section some settings are necessary to successfully send and receive e-mail. you find these clicking the menu item ‘Data’’E-Mail’.
Should you not have the information needed here please contact your e-mail provider.
For data security reasons we strongly suggest encryption. To do this please enter a 5 digit security code and send it to the receiver of the e-mail, otherwise the data can not be read and imported into the medilogic software.
Should the remainder of the window not be self-explanatory please contact hotline support

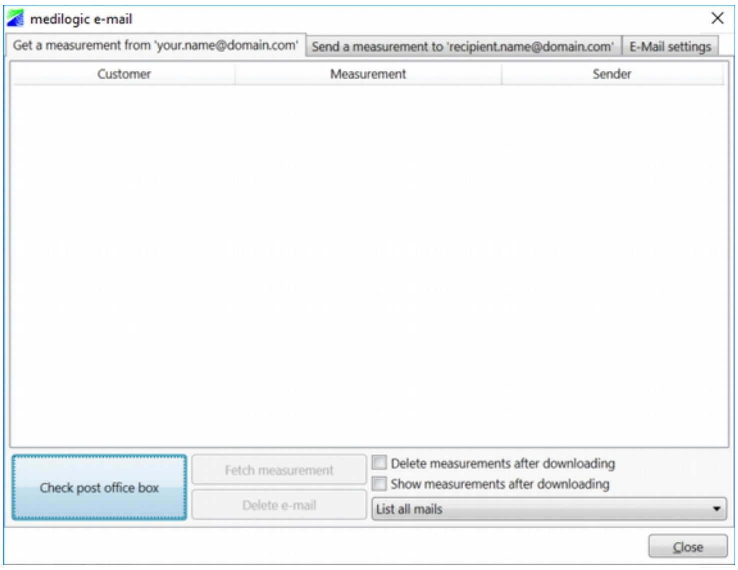


Fetch e-mail from your.name@domain.de

After entering the POP3 information in the e-mail settings, check whether e-mails are available for retrieval. If that is the case the buttons 'Fetch measurement' and 'Delete e-mail' become available.

The check 'Clear measurements after downloading' will cause the software to delete the e-mail from the server after successful retrieval. 'Show measurements after downloading' will display the measurement after it was successfully retrieved.

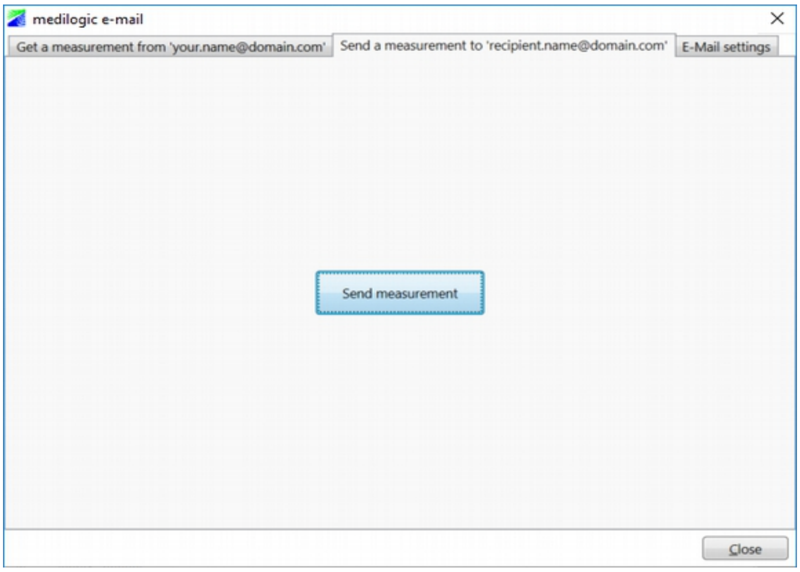
To save time you can limit the number of e-mails listed.



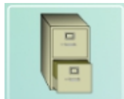
Send measurement to recipient.name@domain.de

After entering the SMTP information in the E-Mail settings and the recipients e-mail address, you can send the measurement currently loaded using the 'send measurement' button.

<u>Note</u>: If the time graphic shows a zoomed period, only that will be sent



6.5.9 Exporting Data to External Programmes



This menu item allows you to write the currently displayed measurement to file, which can be read by external programmes. Export to csv-file writes the current measurement so that it can be opened with spreadsheet programmes like LibreOffice Calc and evaluated using statistical or other tools.
see 6.8.1 Options „Display / General“: Methods for Average Calculation

Export Data to CSV-Table
The menu item ‘Data’’Export’ opens a dialogue to export the currently loaded measurement to a csv table. As ‘Path’ enter or select the desired location.
Five sets of files are generated if appropriate:
Name_firstName_DateOfBirth_time of recording_

_CYCL.CSV	→ COP coordinates of the whole mat
_GL_L.CSV	→ COP coordinates of left half of the mat
_GL_R.CSV	→ COP coordinates of right half of the mat
_L.CSV	→ sensor values left half of the mat
_R.CSV	→ sensor values right half of the mat

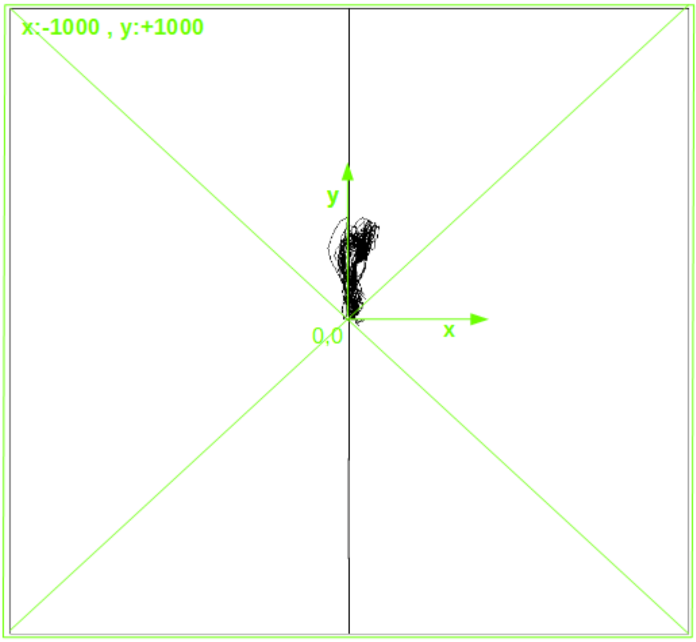
To import the data to the spreadsheet programme select ‘;’ as field separator in the dialogue displayed before import.
The sensor values are the raw ADC (Analog Digital Converter) values from the system (unless the check ‘in metric unit of measurement N/cm², otherwise ADC value’ is set, which is available 10.x upwards).
To calculate N/cm² from the ADC values follow these steps:

1. Find out the maximum Pressure the system is calibrated to (the maximum Value the slider ‘maximum pressure’ allows)For insole an platform measurement typically 8 N/cm².
2. Calculate N/cm² from ADC values (Digits):

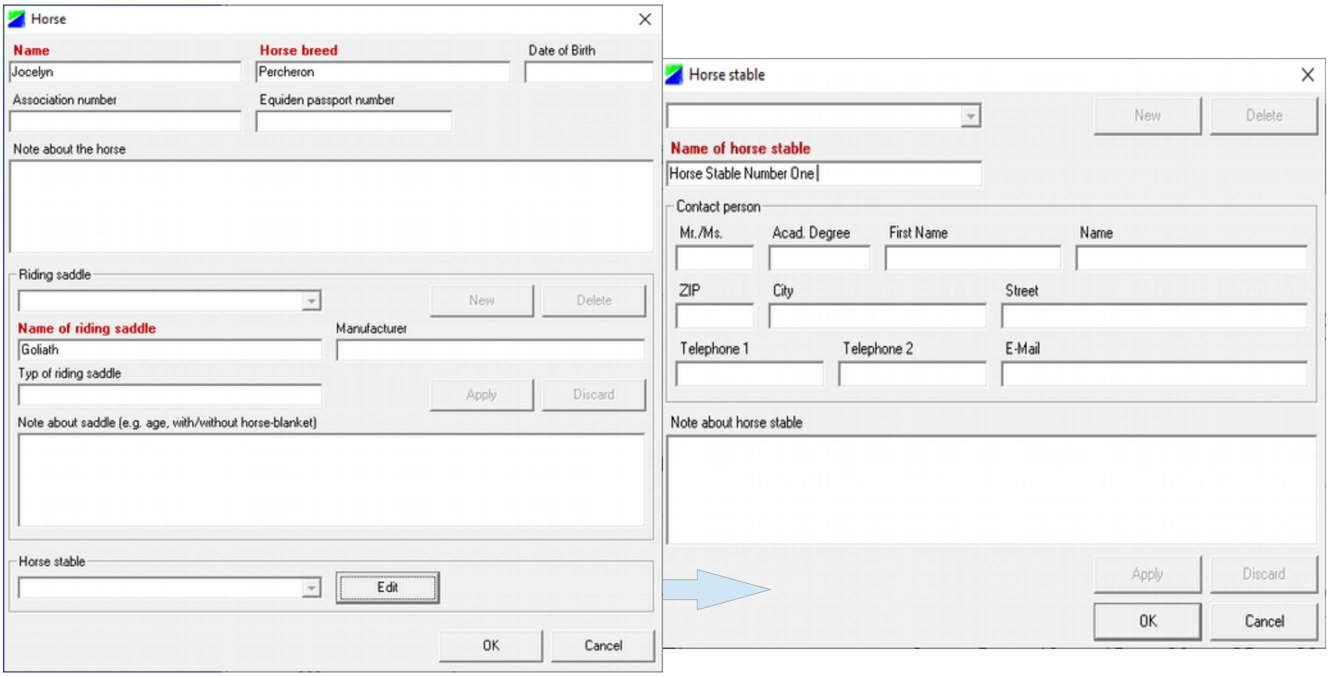
$$\text{Pressure Value}[N/cm^2] = \frac{\text{csv}-\text{value}[\text{ADC Digit}] * \text{max.pressure}[N/cm^2]}{255[\text{ADC Digit}]}$$

ONLY use the export of gait line and cyclogram when the display mode is set to an isobaric display (either 2D or 3D)

The coordinate system below is the frame of reference:



6.5.10 Horse ...

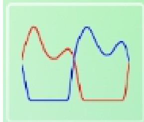


This menu item is for maintaining afterwards the measurement is done. It is an alone-standing item, which allocates informations to the horse, the saddle and if necessary the stable to an already svaed measurement.
The item “Edit patient details” respectively “Save” you already have the option in preparation of a reading or while saving a reading to add these informations to the data base.

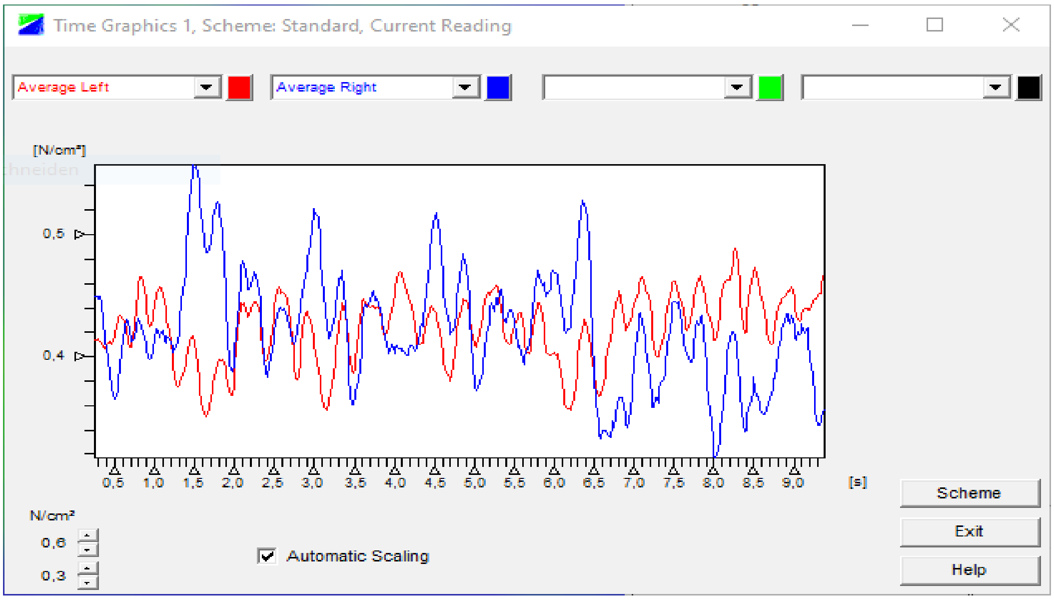
6.5.11 Horse stables …

Here you can generate a choice of horse stables you are working with more frequently.
You can choosing and allocate them to the actual measurement while saving or in preparation : “Edit patient details” or later on with this allone-standing menu item

6.6 Analysis



6.6.1 'Time Graphic'

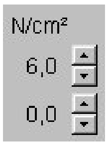


This dialogue displays the pressure values for the whole measured period. In the upper part of the window four drop down lists give access to the avarage pressure of the left and right half of the mat of the current and comparative measurement.

Clicking on the menu item 'Analysis''Time Graphic' repeatedly will open multiple instances of this dialogue. This can be useful for complex evaluations.

The period displayed in this dialogue is the same displayed in the main window. That means a zoomed view in the main window results in a zoomed view in this dialogue.

Changes to zoom in the main window get passed right away to this dialogue without the need to reload it.

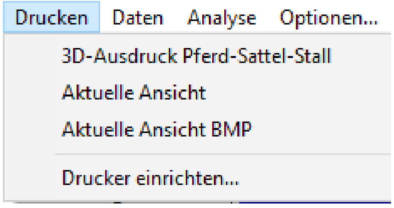


The sliders underneath the graphic area allow you to change the minimum and maximum value displayed on the y axis. The setting can be saved with a scheme.The check 'automatic scaling' uses the graphic display to the fullest.

If you loaded current and comparative measurement the coloured feet on the right hand side let you switch between the measurements or show both of them side by side. The left drop down lists are used for the current the right ones for the comparative measurement.

you can print the results using the menu item 'Print''Time Graphic' as long as the dialogue is open.

6.7 Print



Basically every graphic displayed on your screen can be sent to the printer. Additionally relevant information about the customer and the measurement are added.
There are various options to print the information from the screen to a printer installed on the WINDOWS® Operating system
Note: Like in all the menus items not available at the moment are greyed out and not selectable. The gait analytical evaluations can only be printed when the corresponding dialogue is open.
The printer can be selected using the menu item ‘Print’ ‘medilogic Printer setup’.

6.7.1 Print Current View

This will create a printout of the graphic currently displayed and include the relevant information about the customer (e.g. first name, name, note etc). This insures that the printout can later be attributed a customer. If the current measurement has not been saved yet the information about the customer is left empty. To avoid this save any measurement before printing. Independent of that the company logo is put on the printout.
If you use the video option you can print the current view with a picture from the video associated with that point in time (‘Current View (Video)’).

6.7.2 Print 3D-horse-saddle-stable

This printout gives all informations to the customer inclusive the note and the given information according to horse and horse stable. Two displays from right and left side in of 3D-view asl well the Pressure-time-diagram and the colour scale are part of the printout.

6.7.3 Print to bmp file

Printouts can be saved as *.bmp files instead of being printed on paper. These files can then be sent to external programmes. The first time this function is used the subdirectory ‘pictures’ in the medilogic path (normally ‘c:\programme files(86)\medilogic\’). Here the bmp files will be put with a filename concatenated like that: name_firstName_DateOfBirth_current_number.

6.7.4 Setup Printer

The menu item ‘Print’’medilogic printer setup’ calls up the standard WINDOWS® dialogue used for choosing end configuring a printer. Here you can set the paper size, the orientation (must be set to portrait) and the print quality. The print quality influences printout speed and colour use.
Other parameter that can be set up are printer specific. If in doubt consult your printer manual.
When printing to a black and white printer the software will switch from colour table to greyscale for a short moment to display pressure gradients as detailed as possible.
To speed up printout for every day use ‘Options’ ‘Usability’ ‘Suppress Printer Dialogue Before Printing’. The printout will now start immediately without the need to confirm the printer settings.

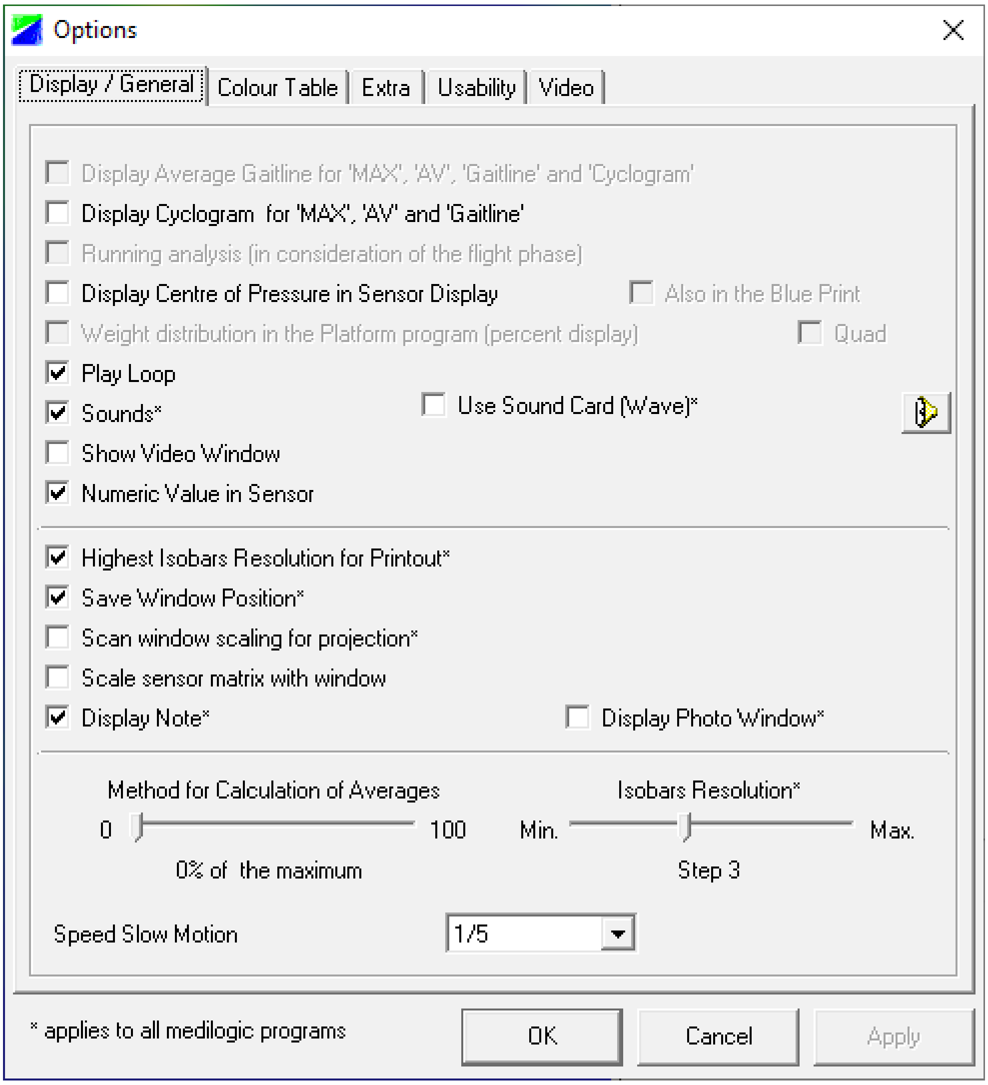
6.7.5 Including a Company Logo

The medilogic software can add your company logo to printouts. By default it is displayed in the upper right hand corner. your company logo should be in the bitmap format and have the name logo.bmp. It replaces the default logo.bmp in the medilogic path (normally ‘c:\programme files(86)\medilogic\’). you can save the printer settings and your logo.bmp when making a backup.
(*see 6.5.6*) .

6.8 Options

The menu item opens a dialogue that lets you change settings to adapt the medilogic software to your needs. If an option is activated that is indicated by the check in front of it. Clicking on the check will set and reset it. The setting are saved when you click ‘OK’ or ’Apply’ and loaded at the next start of the programme.
Some options are not valid for the saddle horse pressure measurement system. The irrelevant options are greyed out.

6.8.1 Options „Display / General“



Option: „Display Cyclogram for ‘Max’ ‘AV’ and Gait Line“
The cyclogram depicts the progression of the centre of pressure over the measurement period. It can be overlayed over the maximum graphic the average graphic.

Option: „Display Centre of Pressure in Colour Graphic“
The current centre of pressure is displayed as cross-hair in colour graphic.

Option: „Play Loop“
When replaying a measurement the replay will not stop when it reaches the but start at the beginning again. If the period has been zoomed into only the part shown will loop.

Option: "Sounds"
This option activates the audio signal the medilogic programme put out when starting or when sensors are connected. They give screen independent information about the state of the programme and alert you to messages.

Option: "Use Sound Card (Wave)"
This option will send the sounds to the sound card instead of the internal speaker. These wave files sound smoother than the beeps from the internal speaker. you can test the sounds using the button to the left.

Option: "Show Video Window"
If a video source is connected to your computer (e.g. a webcam) this option will display a window which shows the video from that source. This option can be purchased separately as software update. To control recording and replay use the same buttons as for recording and replaying a measurement. After recording a video the file is compressed and saved to hard disk, depending on computer speed *see 6.8.5 Options „Video“*

Option: "Numeric Value in Sensor"
This will put the pressure value for every sensor in the coloured field representing that sensor in the sensor graphic. For the platform programme this option is only available for the 10.x versions.

Option: „Highest Isobars Resolution for Printout“
For speedy recording and evaluation of measurement it can be helpful (esp. for slow computers) to set the isobars resolution to a lower then maximum level. For the best possible printout the highest resolution is desirable and since it is only used just before the printout will not take up too much time.

Option: „Save Window Position“
This option saves the window position when the software is closed and reopens them in the same position when the software starts again. After installation this option is not selected, should you wish to use this function please activate it.

Option: „Projection mode (fix display size)“
If you use medilogic projection the display size has to be adjusted to ensure 1:1 projection of pressure distribution. This option will save the setting and call it up with every start of the programme.
The button ‘Use Current Size’ will overwrite the value saved with that of the current window.

Option: „Scale Sensor Matrix with Window“
If this option is set the sensor matrix is scaled with the programme window. If you have a 16:9 screen aspect ratio we suggest not using this option to avoid distorted display of insole or platform graphics.

Option: „Show Note“
Set this option to display the note in a separate window *see 6.4.7*

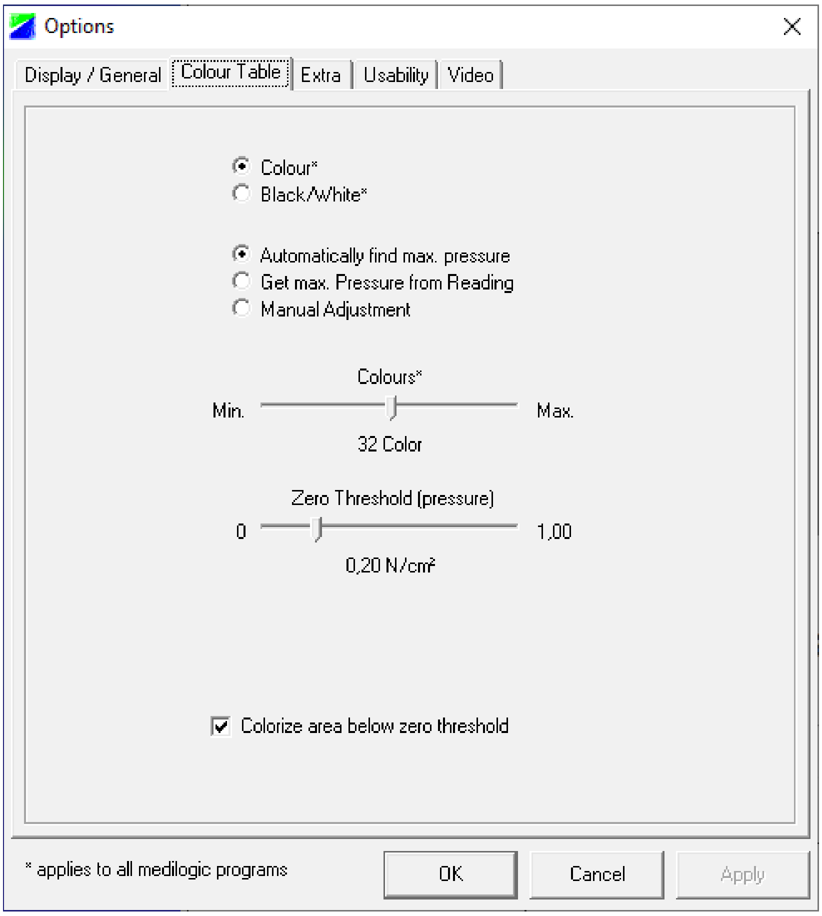
Option: „Show Photos“
you can associate up to nine photos with a measurement. The photos can be used for documentation purposes and come from a digital camera or if you use the video option as frames from the video window. The photos associated with a measurement will be displayed if the measurement is loaded. A special print scheme will send them to your printer.

Option: „Method for Calculation of Averages“
This option influences the display of average pressures (*see 6.3.6*)) . The threshold is set to eliminate values below the number indicated beneath the slider. This helps to discern between periods with little pressure (e.g. swing phase) and periods with higher values (e.g. stance phase).
For the program of the saddle mat for horses a threshold value of 0% is recommended.

Option: „Isobars Resolution"
The higher the isobars resolution the more computing power is needed to display it. Should you notice lag in displaying or recording pressure distributions, please choose a lower resolution. This will speed up the display process.

Option: „Slow Motion Speed"
This set the ratio at which the measurement is slowed down compared to normal speed. The frame rate for normal speed is calculated and multiplied with the values set in the drop down list. To achieve correct timing even with a slow machine frames may be dropped.

6.8.2 Options for „Colour Table"



Option : „Colour – Black/White"
If you use a black and white display it is important to set this option. The pressure will then be coded according to a grey scale. If you print to a black and white printer the software will automatically switch to this mode for a short period to generate the correct grey scale.

Option: „Automatically adjust Max. Pressure"/'Get Max. Pressure from measurement'/'Manual Adjustment'
These three options influence how the max. pressure slider works. The option we suggest is to let the programme automatically adjust the colour distribution. That way the programme will parse the measurement when it is loaded and set the colour red to that value. This displays the measurement the highest number of colours available.
Getting the max. pressure value from the measurement will read the value set by the user when saving the measurement. The measurement will then be displayed with the value set be the user.
The third option is to set the max. pressure value manually. The programme will not touch that value except to call up the value set by the user in the previous session. This is useful if you want to have a

fixed relation between colour and pressure. With this setting you can compare two measurements by just looking at the colours.

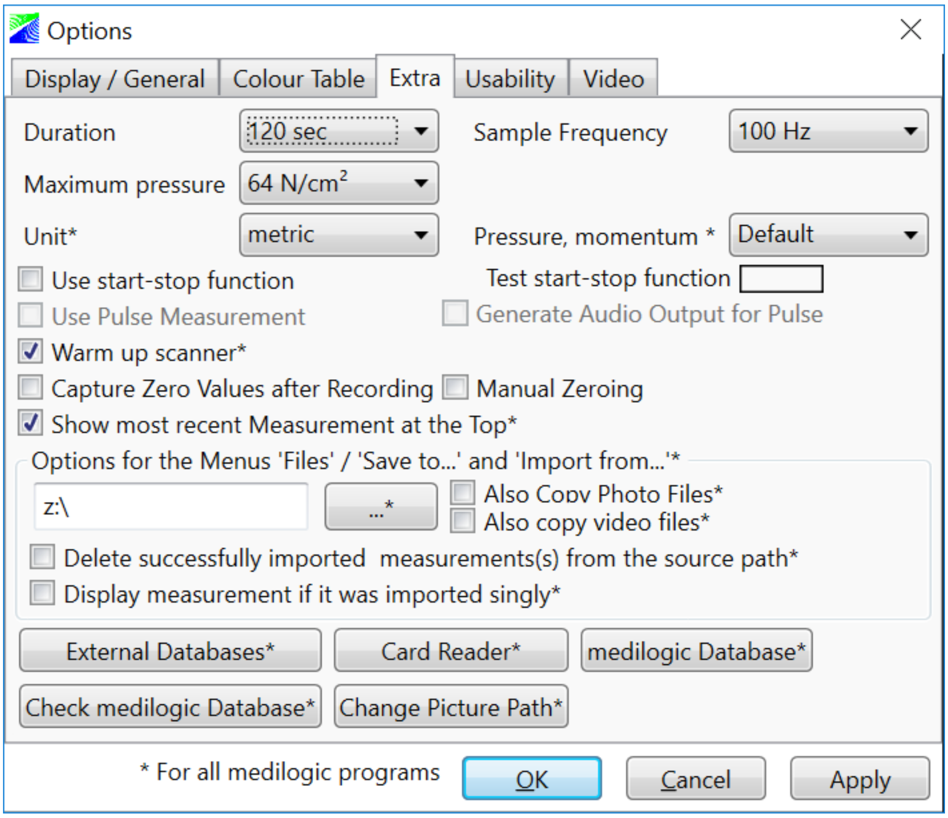
Option: „Colours"
This set the number of colours used to display pressure distributions between 8 and 128. The more colours are used the more computing power is needed. For the average computer 32 colours is a good setting . If you stet the number of colours higher than 32 that number is used, but the colour scale at the bottom of the screen stays at 32 intervals, because of readability.

Option: „Zero Threshold (Pressure / Momentum)"
Only the values above the set zero threshold are displayed as colours. The colour scale starts with the value set here. It can be set separately for pressure (N/cm^2) and momentum ($N/cm^2 * s$) graphics.
see 6.4

Option: „Colorize area below zero threshold
Areas underneath the zero threshold are displayed in the lowest colour of blue. The display is more pleasing for the eye. Otherwise all areas without load are shown white.

6.8.3 Options „Extra"

Normally the software and system are setup by a technician sent by the company, he or she will make the proper adjustments in this section. Should you feel uncertainty concerning these settings, please don't hesitate to contact the manufactures hotline.



Option: „Duration"
The maximum recording duration is set with this option. Keep in mind that this directly influences the amount of storage space you need for each measurement. Use the amount of time suitable for the task. For measurements with the saddle mat we suggest 60 s - 180s.

Option: „Sample Frequency"
The number of samples per second is set by this option. Like the option 'Duration' this setting influences the storage space required for each measurement. A higher sample frequency will let you catch

shorter events. For sports measurements the WLAN system offers up to 400Hz the Upat4 system 300Hz.
For a standard measurement 60Hz are sufficient.

Option: 'Unit'
For users in the anglophonic world this option can be set to English in order to display pressure units and speed in English units.

Option: „Capture Zero Values after Recording“

For special applications of the medilogic system like in sports locomotor analysis the values of the foot in unloaded phases can be subtracted as zero values. The smallest values from the whole measurement are identified for each sensor and subtracted from all the values in the measurement.

Option: „Manual Zeroing“

In the case of special tasks, it may be of interest not to measure a basic load. For example, the load on the rider when standing:
The horse is ready to measure with a mat, saddle and rider. Manual zeroing is now carried out. All sensors are set to zero despite the current load by the tab. You will see an unloaded, blue mat in the software.
The following picture shows only the additional load areas created by the dynamics of the movement.

If this option is set the recording button (red circle) will turn yellow indicating that the zero values are being captured. A second click on the button will start the actual recording.

Option: „Show most recent Measurement at the Top“

The dialogue for loading current and comparative measurements will sort the measurements according to their recording date and time, if this option is set.

Option: "Show Scan Window Automatically When loading a Pressure Measurement'
This option is only available in the 5.x version and will open a scan window, if a scan is associated with the measurement being loaded.

Option: 'Options for the Menu 'Data'/'Save to...' and 'Import from...'
Speedy data exchange for mobile storage devices can be preconfigured using these options. Choose a removable storage device, where you want to save or restore the measurements. Decide whether to save images and videos to this location as well. Make sure there is enough space on the device, especially for the last to options.

Option: „Delete successfully imported measurements(s) from the source path“
The measurement is deleted from the storage device after it has successfully been imported.

Option: „Display measurement if it was imported singly“
If only one measurement was in the location specified above, display it immediately after importing.

Option: „DX-Diag“
The DirectX graphics module provided by WINDOWS® is used to display the isobar or 3D representation. It is possible to start the DirectX diagnostic program using the "DX-Diag" button to check the functionality if necessary.

Option: „medilogic Database“
This button will call up a dialogue that lets you choose the location of the medilogic database, to which measurements and customer information are stored. you can point the software to server on your network. From now on data will be saved and retrieved from this location. Multiple instances of the medilogic software on computers in different locations can access the same database and thus share the information without the need for a backup and restore process for synchronisation. This allows you to work on measurements and customer information simultaneously from different locations.

The information currently changed on one computer is protected from change made at a different location, to prevent conflicts.
Changes that do not pertain to customer information or measurements (e.g. Options or printouts) get stored in a local database.

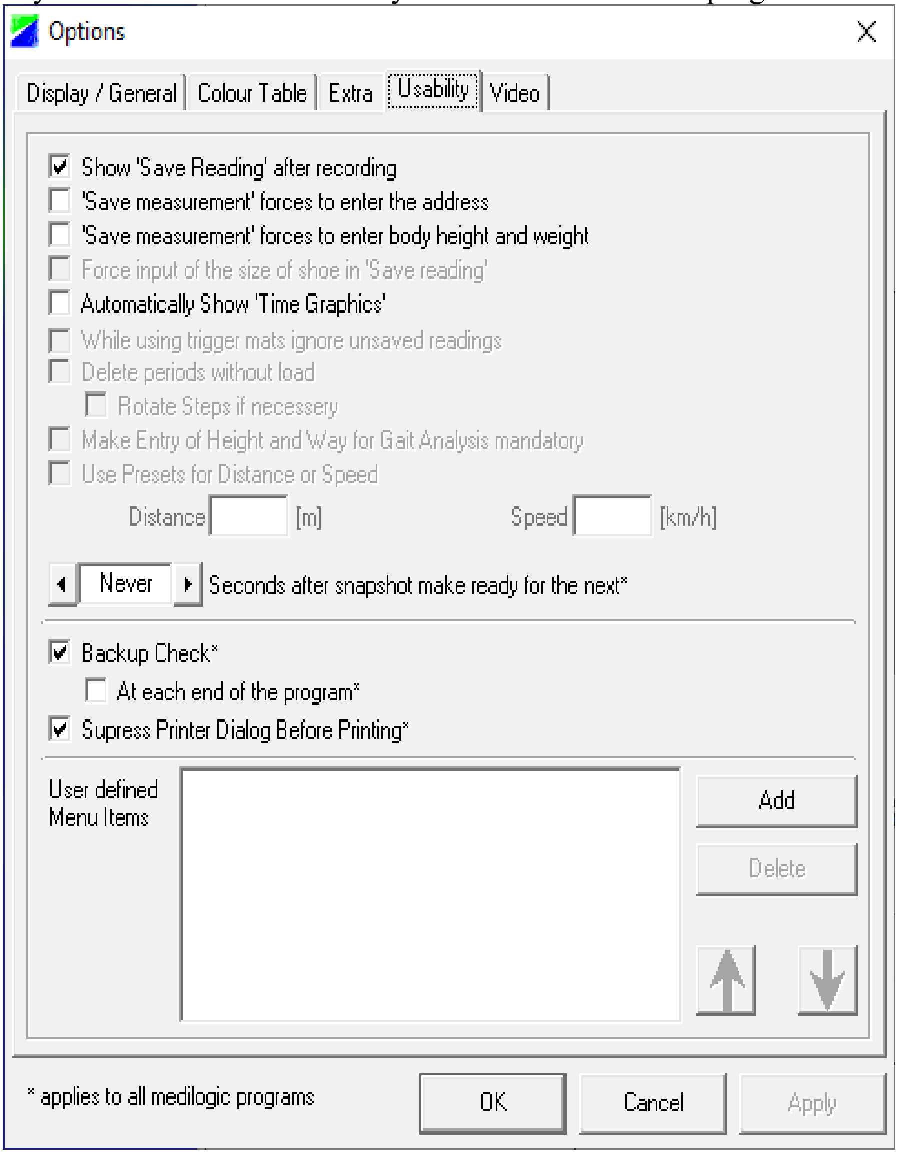
Option: "Check medilogic Database"
To check the database for inconsistencies concerning measurements and customer information click this button. This check should be done regularly and always before making a complete backup.

Option: 'External Databases'
This option lets you set up import of customer data from external databases. This is mainly meant to speedily enter customer data already existing in other programmes.
you can choose from a number of databases and programmes for which we have programmed an interface. Select a database name from the drop down list and activate the check 'use'. you can choose more than one database to import customers from.
The field 'database path' lets you set the path to the external database, if the database is installed at the default location you can leave the entry as it is. If not you can use the button 'Search for Database' to locate it. The same is true for the field 'Database file'.
Should the database you use not be in the drop down list please contact the manufacturer of the medilogic system.

Option: "Change Picture Path"
This option lets you choose a path where the printout scheme 'Current View (BMP)' put the image file. The default directory is the 'pictures' - path in the medilogic programme directory.

6.8.4 Options 'Usability'

These options category contain programme settings which can streamline your everyday work. Depending on your work mode and habits you can choose how the programme 'reacts'.



Option: 'Show Save Dialog after recording'
The save dialogue opens automatically as soon as a recording is stopped, either by clicking the stop button or when the maximum recording duration is reached. If you choose not to save the measurement just recorded (e.g. you want to do it again) , click on 'Cancel' to return to the main window and the online mode.

Option: 'make entering address mandatory'
If you want to save an address with every customer set this option to make entering the information mandatory.

Option: 'make entering body height and weight mandatory'
For gait analytical evaluations the information about body weight and height is necessary and can be made mandatory setting this option

Option: 'Automatically Show Time Graphics'
The evaluation 'Analysis/Time Graphics' opens automatically after a recording is finished. The save dialogue might appear before that if the option (see above) is set.

Option: "Ignore unsaved measurement when using start-stop function"
If you use the trigger mats provided additionally by medilogic to start and stop recordings, this option will overwrite existing unsaved measurements. This prevents the save dialogue from delaying the start of the recording, If you use this option make sure to save recordings right after stopping them.

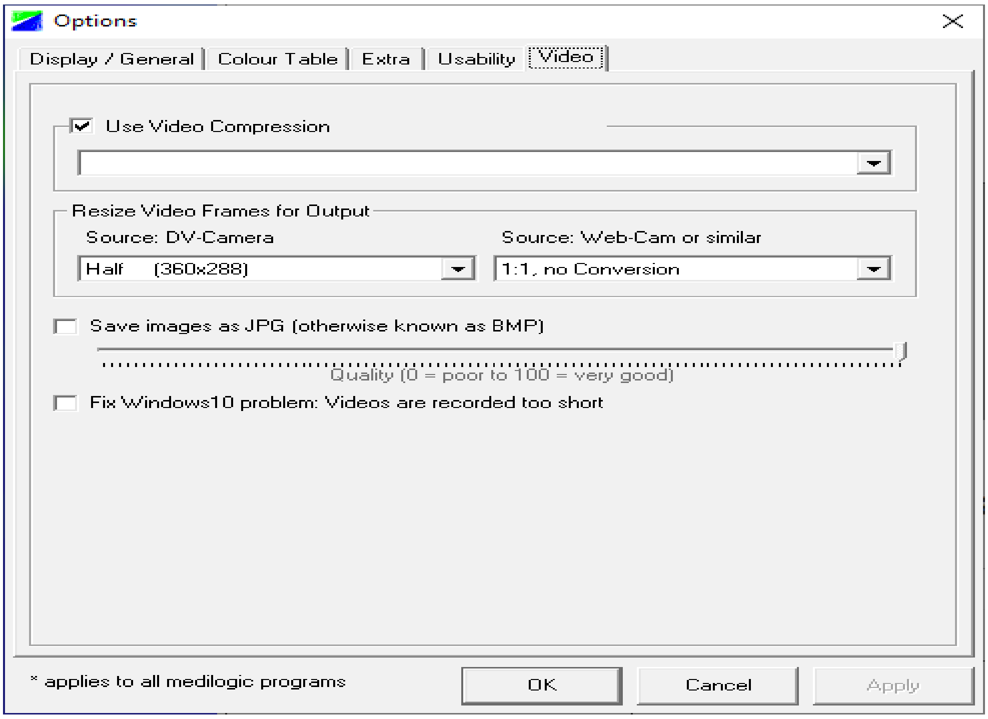
Option: „Backup Check“
This option ensures that the programme checks regularly whether a backup has been made. If no backup has been made after 20 measurements or one week the programme will prompt the user to make a backup. This check is performed when the software starts and finishes. If you answer ‘Yes’ the backup dialogue will open and you can change the settings. Clicking ‘Start’ will make a backup.
see 6.5.6

Option: „Suppress Printer Dialogue before Printing“
If you use the same printer with the same settings for all medilogic printout, this option will skip the printer setup dialogue for faster printing.

Option: „User defined Menu Items“
To quickly access sub menu items (e.g. like a printing scheme) you can define the menu items needed most often and put them in the menu bar on the right hand side. This makes your every day handling of the medilogic system much faster.

6.8.5 Options „Video“

If you use the medilogic system with the video (*see 6.8.1 Options „Display / General“)* option (additionally available) you can save the current frame and store it in the photo dialogue. By default the images are saved as bmp the checkbox ’Save images as JPG’ compresses the images according to the jpeg standard. The quality slider sets the compression rate which is inversely related to storage space uptake.



Only relevant for the 5.x version:
The videos have to be compressed to conserve storage space on your hard drive. There are a number of compressors available. The default is the ‘Indeo’ compressor.
you can set the size of the video window, depending on the video source used. This allows you to adapt the video window to the space available on your screen.
For webcams we suggest the setting ‘1:1 no conversion’. To access the settings available for your video device use the right mouse button to click the video window, showing the live view.

7 Description of Hardware Components

7.1 Horse Saddle Pressure Measurement

7.1.1 Description

The measuring mat belonging to the medilogic horse saddle pressure measuring system is used to determine the pressure distribution on the horse's back under static and dynamic loads. The focus here is mostly on the pressure distribution that is brought to the horse by the saddle and rider.

7.1.2 Intended Use

The measuring mat is placed directly on the horse's back and optimally positioned as possible according to the shape of the horse's back. The horse is then saddled in the usual way. If the saddle is ridden with a saddle pad or any other kind of pad, please put it on.
Before tightening the saddle belt, please chamber out the measuring mat at the front.
After saddling, make sure that the mat is still symmetrical on the horse's back.

7.1.3 Sensor Principle

The sensors are surface resistive pressure sensors, that means with rising load the electric resistance of the sensors goes down. To achieve maximum accuracy each sensor is calibrated individually. The resulting calibration tables are stored in the insole electronics.
The calibration tables have to be checked regularly. We suggest at least once a year or after 5000 loads/steps (what ever comes first) a computer based polybaric calibration is done by the manufacturer.

7.2 Wireless Transmitter Fumod4

The wireless transmitter Fumod4 for the medilogic foot pressure measuring system in the version Upat4 and the for the platform system has to be attached to a USB-port of your computer using the cable provided.
Switching it on and off is done by the software/computer. If it is switched on this is indicated by an orange LED (blinking=ready for use, but not yet activated by the software; continuously on = activated by the software an ready for use). The reception of data is indicated by the green LED on the transmitter Fumod4.
Note: for Windows 8, 8.1 and 10
Should the orange LED not blink while the software is off or not light up continuously when the software is running, the USB interface needs to be reconfigured. Start the function „FuMod4USB-Problembeseitigung für Windows 8.1“ from the medilogic install medium.
you can also download the tool from our homepage www.medilogic.com.

7.3 WLAN-Transmitter

For a completely cable free data transmission a WLAN transmitter is connected to the left and right insole respectively. These transmitters transfer the data to a WLAN interface on your computer and thus provide online display on the screen.
A built in rechargeable battery is the power supply for the WLAN transmitter. The charging status is indicated by the upper LED. Green = charge OK, if it turns orange or red first connect the transmitter to the USB cradle and then connect the cradle to the computer USB port.
The lower LED indicated data transmission: when an insole is connected the initialisation phase is indicated by orange blinking, after that the data transmission starts. Continuous green light indicates that a recording has not been started by the software. During recording the LED blinks green.
To restart the transmitter disconnect and reconnect the insole.

7.4 Technical Specifications of the Saddle Pressure Measuring System – WLAN-Pressure measuring mat

Sensor mat:

240 to 480 surface resistive SSR-Sensors
Measuring area: div. sizes
305mmx200mm to 758mmx808mm
Meas. range: 0,6 bis 100 N/cm^2 (default: 64N/cm^2;max. allowed load: 200 N/cm^2)
Maximum Error ± 5% FSO

Sample Frequency: 50 to 100 *Hz*

Calibration:
Computer base polybaric calibration table capturing by the manufacturer
Calibration interval: once a year or after 5.000 loads/step whatever comes first

Sample Frequency:
50 to 100 Hz

WLAN Mat:
Weight: 125g including transmitter
Dimensions of the WLAN transmitter incl. Connector :90mm x 60mm x 20mm
Power supply: internal Li-Ion-battery (Type PL103450P: 3,7V / 1.800mAh); Charging of the battery only using the USB cradle provided. Replacement of the battery only by the manufacturer!

WLAN Wireless Transmission:
Frequency: 2,4 GHz
Range: max. 100m in the open, inside buildings approx. 25m

Connections:
USB-connection of the USB cradle to the computer or the adapter Navi Lock
Operation only with the power adapter provided: USB 5V / 2A (Hersteller: NaviLock, Typ: 61863).
Disconnection from the supply network by pulling out the power connector

Environmental conditions:
Storage/Transport: Don't drop. Breakable*!*
-20 bis +40°C; 20-80% rel. humidity, not condensing; 700-1060hPa atm. pressure

Operation: +5 bis +30°C; 20-80% rel. humidity, not condensing, 700-1060hPa atm. pressure

Test certificates:
EMC test report according to DIN EN 60601-1-2
Registered with the Landesgesundheitsamtes Reg.-Nr. DE/CA 76/H 00024/01

FDA Reg.-No. *003995459* ; *Owner Operator Number: 10037104, Medical Device Listing : D125603*

Computer System (minimum configuration):
Computer system approved according to IEC 62368-1

8 GB RAM
x86 compatible Processor
Colour Monitor/LCD-Display with at least 1.024x768 Pixel, DirectX 8.1
Colour Printer
1 free USB-port for WLAN-Adaptor or internal WLAN-interface
add. 1 USB-interface if printer needs to be connected directly
add. 1 free USB-port for connection of video source
Operating: Windows® 10, 11

7.5 Technical Specifications for the Saddle Pressure Measuring System incl. Upat4 Data Transmission

Sensor mat:

240 to 480 surface resistive SSR-Sensors
Measuring area: div. sizes
305mmx200mm to 758mmx808mm
Meas. range: 0,6 bis 100 N/cm^2 (default: $64N/cm^2$;max. allowed load: 200 N/cm^2)
Maximum Error ± 5% FSO

Sample Frequency: *60 Hz*
Calibration:
Computer base polybaric calibration table capturing by the manufacturer
Calibration interval: once a year or after 5.000 loads/step whatever comes first
Wireless Transmitter Upat4:
Weight: 180g
Dimensions:145mm x 60mm x 30mm
Power Supply: 9V Standard-Block Battery
Wireless Transmitter Fumod4:
Weight: 150g
Dimensions: 93mm x 75mm x 28mm
USB-interface to the computer incl. Power supply via USB
Wireless Data Transmission:
Frequency: 2,4 GHz
Range: max. 100m (outside), inside buildings approx. 25m
Connections:
USB connection to the Computer
Disconnection from the supply network by pulling out the power connector
Environmental conditions:
Storage/Transport: Don't drop. Breakable!
-20 bis +40°C; 20-80% rel. humidity, not condensing; 700-1060hPa atm. pressure
Operation: +5 bis +30°C; 20-80% rel. humidity, not condensing, 700-1060hPa atm. pressure
Test certificates:
EMC test report according to DIN EN 60601-1-2
Registered with the Landesgesundheitsamtes Reg.-Nr. DE/CA 76/H 00024/01
FDA Reg.-No. *003995459* ; *Owner Operator Number: 10037104, Medical Device Listing : D125603*

Computer system (minimum configuration):
Computer system approved according to IEC 62368-1
8 GB RAM
x86 compatible Processor
Colour Monitor/LCD-Display with at least 1.024x768 Pixel, DirectX 8.1
Colour Printer
1 free USB-Port for data transmission
add. 1 USB-interface if printer needs to be connected directly
add. 1 free USB-port for connection of video source
Operating: Windows® 10, 11

8 Appendix:

8.1 Possible System Messages and what they mean

The medilogic programme catches occurring errors automatically and displays them on screen. The most important of these and what to do are explained here in short.

8.1.1 Message: ‘Error connecting to FuMod4USB / Channel 0. No FuMod4USB found on this channel

This message might appear at the start of the software. It indicates that the software was unable to make a connection to the transmitter Fumod4. If you use the software just to view and evaluate measurements you can ignore the message (Click ‘OK’).
If you want to record a pressure measurement check the following to establish a connection to the transmitter Fumod4

- The transmitter Fumod4 is connected to the USB-port of your computer
- The operating system has detected the transmitter and the medilogic software has activated it (orange LED continuously on)

Note: for Windows 8, 8.1 and 10
Should the orange LED not blink while the software is off or not light up continuously when the software is running, the USB interface needs to be reconfigured. Start the function „FuMod4USB-Problembeseitigung für Windows 8.1“ from the medilogic install medium.
you can also download the tool from our homepage www.medilogic.com.

8.1.2 Message „Battery of the Upat4 is low“

Depending on the battery type used only a limited number of recordings are still possible. The power LED on the transmitter Upat4 starts to blink.
Replace the battery with a new 9V standard block

8.1.3 Message „UPAT not connected or switched on“

This message indicates that the software is temporarily unable to connect to the transmitter Upat4.
To remedy this:

- Switch on the transmitter Upat4 (power LED lights up)
- Check that the transmitter Fumod4 is connected and activated (orange LED is on continuously

8.1.4 Message „No sensors connected!“

This indicates that the software was able to connect to the transmitter Upat4 via the transmitter Fumod4 but no information about connected sensors (insole/platform) was transmitted.
Please check the following;

- The cables of the mat are connected securely to the transmitter Upat4
- The plugs connect with an audible click. If not carefully bend the lever up carefully.
- Switch the transmitter Upat4 off and on again

8.1.5 Message: „No wireless interface found“

This indicates that the programme was unable to detect a WLAN interface.
Make sure that the WLAN adaptor is connected (TP-Link via USB cable) or the internal WLAN interface is activated.
After you made sure that has happened got to ‘WLAN’ /’Find Transmitter’ clicking the button ‘Options’. All available WLAN adaptors will be listed with currently active medilogic transmitters. Please choose the appropriate one.

8.1.6 Message : „your Computer has no WLAN interface configured for the medilogic transmitter network 'A...'“

This message might appear at the start of the software if the WLAN adaptor is not configured correctly to be used as data transmission for the sensors.
you have the following choices when asked whether to reconfigure the adaptor:

Yes - The IP address and subnet mask of your hardware will be reconfigured, please make sure that the WLAN Adaptor is not needed to access your network.

No - A new search is started to detect a suitable WLAN adaptor. you should connect the TP-Link or activate your internal WLAN adaptor

Cancel – Starts the software without WLAN adaptor. you can now only view and evaluate measurements not record new ones.

8.2 Radiation and safety distances - manufacturer's declaration for EMC

For safety reasons, the following tables must be observed with regard to EMC (Electromagnetic Compatibility). They are part of the certification according to the standard EN 60601-1-2 and taken from it accordingly.
Portable and mobile RF communications equipment (radios) should not be used closer to any part of the medilogic pressure measuring system, including the connecting leads, than the recommended safety distance specified in the tables below.
In the following tables, the term of above listed EMC standard ME device for 'medical electrical device' is used and specifically describes the medilogic horse saddle pressure measurement described in these instructions for use

8.2.1 Cable Lengths of auxiliaries

connecting cable	***length***
USB – connection to the computer for Fumod4	180 cm
USB – connection to the computer for cradle	105 cm
USB – connection to the computer WLAN-Adaptor TP Link	145 cm

8.2.2 Electromagnetic emissions: manufacturer's declaration and guidelines (Table 1 according to EN60601-1-2)

Guidance and manufacturer's declaration - electromagnetic emissions		
The ME device is intended for use in an electromagnetic environment as specified below. The user of the ME device should ensure that he is operating in such an environment.		
EMI measurements	**Conformity**	**Electromagnetic environment - guidelines**
RF emissions to CISPR 11	Group 1	The ME device uses RF energy only for its internal function. Therefore, its RF transmission is very low and it is unlikely that neighbouring electronic devices will be disturbed.
HF emissions to CISPR 11	Class B	The ME device is suitable for use in facilities other than residential and those directly connected to the public utility network that also supplies buildings used for residential purposes
Transmission of harmonics according to IEC 61000-3-2	Not applicable	
Transmission of voltage fluctuations / flicker according to IEC 61000-3-2	Not applicable	

8.2.3 Electromagnetic immunity: manufacturer's declaration and guidelines (Table 2 according to EN 60601-1-2)

Guidance and manufacturer's declaration - electromagnetic immunity			
The ME device is intended for use in an electromagnetic environment as specified below. The user of the ME device should ensure that he is operating in such an environment.			
immunity	**IEC 60601 test level**	**Matching level**	**Electromagnetic environment - guidelines**
Static electricity discharge (ESD) according to IEC 6100-4-2	± 6 kV contact discharge ± 8 kV air discharge	± 6 kV contact discharge ± 8 kV air discharge	Floors should be wood, concrete or ceramic tile. If the floor is covered with synthetic material, the relative humidity must be at least 30%
Fast transient electrical disturbances / bursts according to IEC 61000-4-4	± 2 kV for power lines ± 1 kV for power lines	Not applicable	The quality of the supply voltage should be that of a typical business or hospital environment.
Surge voltages / surges according to IEC 6100-4-5	± 1 kV Voltage outer conductor outer conductor ± 1 kV Voltage outer conductor ground	Not applicable	The quality of the supply voltage should be that of a typical business or hospital environment.
Voltage dips, short-term interruptions and fluctuations in the supply voltage according to IEC 61004-11	< 5% U_T (> 95% dip of U_T) for 1/ 2 period 40% U_T (60% dip of U_T) for 5 periods 70% U_T (30% dip of U_T) for 25 periods < 5% U_T (>95% dip of U_T) for 5s	Not applicable	The quality of the supply voltage should be that of a typical business or hospital environment. If the user of the ME device requires continued operation even in the event of power interruptions, it is recommended that the foot scanner be powered from an uninterruptible power supply or a battery.
Magnetic field at the supply frequency (50 / 60Hz) according to IEC 601114-8	3 A/m	Not applicable	Mains frequency magnetic fields should be the typical value found in the business and hospital environment.
Note: U_T is the mains AC voltage before the application of the test levels			

8.2.4 Electromagnetic Immunity: Manufacturer's Declaration and Guidelines for Non-Life-Causing ME Equipment (Table 4 according to EN 60601-1-2)

Guidance and manufacturer's declaration - electromagnetic immunity			
The ME device is intended for use in an electromagnetic environment as specified below. The user of the ME device should ensure that he is operating in such an environment.			
Immunity	**IEC 60601 test level**	**Matching level**	**Electromagnetic environment - guidelines**
Conducted RF interference according to IEC 610004-6 Radiated RF interference according to IEC 61000-4-3	$3V_{RMS}$ 150kHz to 80MHz 3V/m 80MHz to 2,5GHz	3V 3V/m	Portable and mobile radios should be used no closer to the ME device, including the wires, than the recommended safe distance calculated using the equation applicable to the transmit frequency. **Recommended safety distance in meters:** $d = (3,5/3) * \sqrt{P}$  $d = (3,5/3) * \sqrt{P}$ 80MHz to 800MHz $d = (7/3) * \sqrt{P}$ 800MHz to 2,5GHz with P as the nominal power of the transmitter in watts (W) according to the transmitter manufacturer and d as the recommended safety distance in meters (m). The field strength of stationary radio transmitters should be lower than the compliance level at all frequencies according to an on-site survey. In the vicinity of devices bearing the following icon, interference is possible.
Note 1: At 80 MHz and 800 MHz, the higher frequency range applies. Note 2: These guidelines may not be applicable in all cases. The spread of electromagnetic quantities is influenced by absorption and reflection of buildings, objects and people.			
[a] The field strength of stationary transmitters, e.g. Base stations of radio telephones and land mobile radios, amateur radio stations, AM and FM radio and television stations can not be theoretically accurately predicted. In order to determine the electromagnetic environment with respect to the stationary transmitters, a study of the electromagnetic phenomena of the location should be considered. If the measured field strength at the location where the ME device is used exceeds the above compliance levels, the ME device should be observed to verify its intended function. If unusual performance is observed, additional measures may be required, such as: a changed orientation or another location of the ME device. [b] Over the frequency range of 150kHz to 80MHz the field strength should be less than 3V / m.			

8.2.5 Recommended separation distances between portable and mobile HF telecommunications equipment and the ME device (Table 6 according to EN 60601-1-2)

Recommended safety distances between portable and mobile HF telecommunications equipment and the ME device			
The ME device is intended for operation in an electromagnetic environment in which the RF disturbances are controlled. The user of the ME device may thereby help to avoid electromagnetic interference by maintaining the minimum distance between portable and mobile RF telecommunications equipment (transmitters) and the ME equipment, depending on the output power of the communication equipment as indicated below.			
Rated power P of the transmitter W	**Guard distance, depending on the transmission frequency** m		
	150kHz to 80MHz $d=(3{,}5/3)*\sqrt{P}$	**80 Mhz to 800MHz** $d=(3{,}5/3)*\sqrt{P}$	**800MHz to 2,5GHz** $d=(7/3)*\sqrt{P}$
0,01	0,12	0,12	0,23
0,1	0,37	0,37	0,74
1	1,17	1,17	2,33
10	3,69	3,69	7,38
100	11,67	11,67	23,33
For transmitters whose maximum rated power is not specified in the table above, the recommended guard distance d in meters (m) can be obtained using the equation associated with each column, where P is the transmitter maximum power rating in watts (W) as specified of the transmitter manufacturer. Note 1: At 80 MHz and 800 MHz, the higher frequency range applies. Note 2:These guidelines may not be applicable in all cases. The spread of electromagnetic quantities is influenced by absorption and reflection of buildings, objects and people.			

8.3 EU guarantee certificate

Dear customer,
We would like to thank you for choosing a medilogic system. We are sure that you will be satisfied with your choice as this product has been designed to meet your needs and ensure trouble-free use.
In addition to the manufacturer's two-year statutory warranty period for defects due to defective materials or faulty processing, we hereby certify the additional EU manufacturer warranty specified below.

manufacturer's two-year statutory warranty period for defects:

1. This warranty is only valid upon presentation of the original invoice. It is important that the information contained is complete and legible.

2. The warranty is not valid if the serial number on the product has been altered or removed in any way or is illegible.

3. The system must be sent insured to the manufacturer's address. In order to avoid transport damage, it is necessary to package the device well. To do this, use the system case in which the system was delivered. The costs for the return transport of the repaired or exchanged product shall be borne by the manufacturer.

Legal warranty obligation of the manufacturer:

The warranty period begins on the date of delivery of the system to the customer and ends two years after that date.

The manufacturer is responsible for defects or defects due to faulty materials or incorrect processing.

Consumables such as Batteries, pressure measuring soles are excluded from the statutory warranty, unless they have been proven to have been faulty at delivery.

The following items are expressly excluded from this warranty:

a) Batteries in the transmission equipment

b) Damage caused by misuse or misuse of the product. The system should be used according to the directions in the instructions for use.

c) Malfunctioning of the software caused by any manipulation of the computer after proper installation by the manufacturer.

d) Damage due to repairs performed by unauthorized service personnel or by the customer himself.

e) Transport damage due to inadequate or incorrect packaging.

f) Damage caused by accident and damage caused by lightning, water, fire, or intentional damage.

Manufacturer: T&T medilogic Medizintechnik Gmb
Mittelstr. 9,
D-12529 Schönefeld, Germany

T&T medilogic
MEDIZINTECHNIK GmbH