PADSY

Innovations in Cardiology

Functional Diagnostic for Cardiology and Pneumology

EN

We have sound ideas.

medset
INNOVATION IN CARDIOLOGY

Medset Medizintechnik GmbH

Development

Production

Product management

Medset... Company profile

Medset was founded in 1987 by five bioengineers. Today, the managing partners still work for Medset, which promotes a high level of staff identification with the company's objectives. Starting with the development of the long-term ECG, specialist doctors today have a complete family of ECG products for cardiopulmonary functional diagnostics at their disposal. The know-how and expertise our highly motivated team deploys during development, a process which utilizes the very latest technologies, forms the basis for new functions and future-oriented products. Lasting innovations are created on the basis of cooperation and collaboration with experienced medical professionals and scientific institutions.

Our products offer problem solutions that provide cardiology experts and specialist personnel with reliable and, above all, efficient diagnostic methods for everyday medical applications.

Our key strength is our constant striving to satisfy the changing needs and demands of medical practice and to adapt quickly and innovatively to new requirements. "Sound Ideas" is not only our motto but also the principle according to which we work. Our most important asset are our highly trained, highly qualified and highly motivated staff with their acute quality awareness.

Klaus Kophstahl
Managing director

medset
INNOVATION IN CARDIOLOGY

Supply of services!

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Quality

"Made in Hamburg"

Distribution

Service

Managing director

Quality as a matter of course

Medset maintains a quality management system that conforms to EN ISO 13485:2003 + AC:2007 and the stipulations contained in Annex II, Section 3 of Council Directive 93/42/EEC, and continuously adapts this system to changing legal requirements. As a member of the Qualitätsring Medizinische Software e. V., we are actively involved in enhancing interfaces to achieve reliable communication between the systems of different manufacturers. This is the basis upon which we satisfy our selfimposed obligation to provide discerning doctors with functionally sophisticated products that will prove reliable and durable in daily routine use.

"Certified for PADSY"

As a specialist in high-class medical technology, we concentrate on manufacturing ECG systems for cardiopulmonary functional diagnostics and ambulatory patient monitoring. We carry out extensive trials and testing to ensure that our PADSY applications can be safely used in conjunction with high-quality system components made by other manufacturers. Each software and hardware component that has been successfully tested for safe operation with PADSY is given the quality seal "Certified for PADSY".

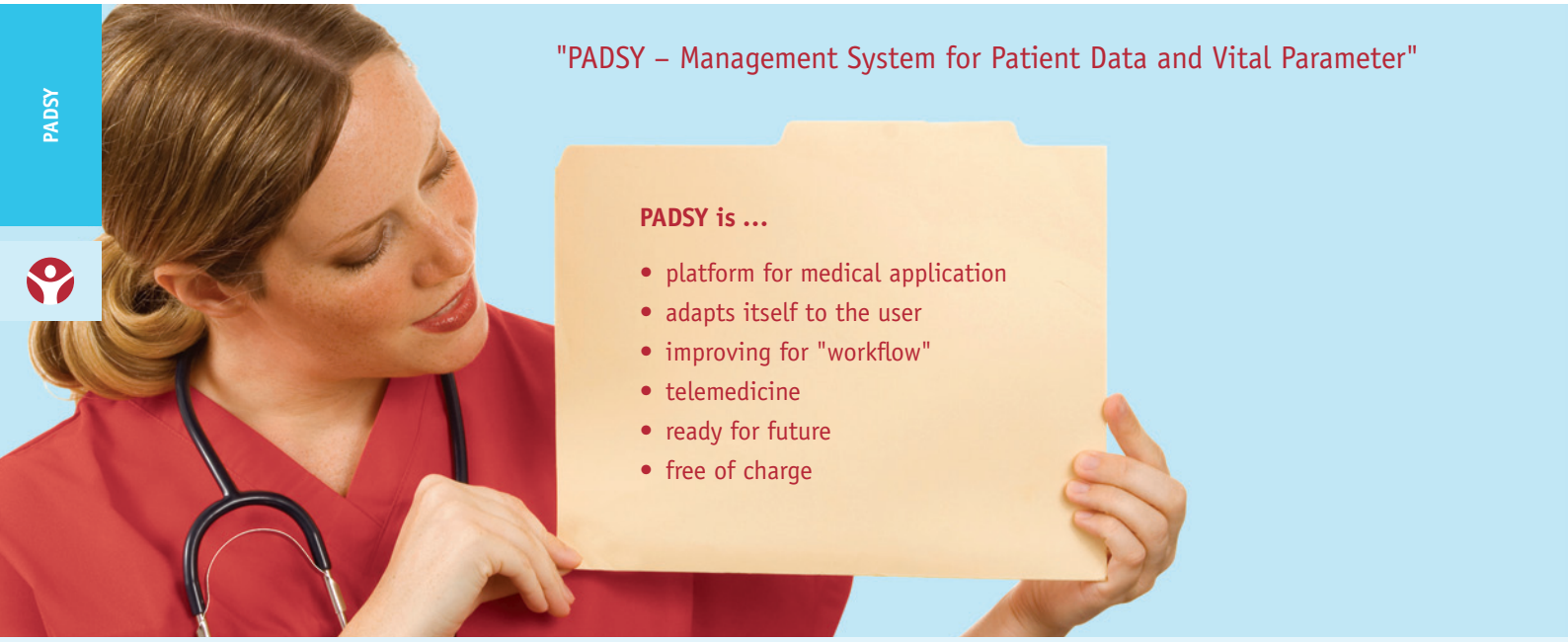
Expertise and compatibility

Ever since its foundation, Medset has continuously advanced its expertise in the area of ECG processing and imaging. On the basis of cooperation with universities and research institutions, forward-looking developments are launched that result in new functions and products, thereby keeping Medset ahead of the field at all times in terms of know-how. Our software is programmed in the Java interpreted language and is thus compatible with all current and future operating systems.

"Designed for PADSY"

Innovative medical products not only require PC software that functions well, but also devices that can reliably and conveniently derive vital parameters from patients. To meet this and other requirements, all devices manufactured by Medset are "Designed for PADSY".

PADSY



PADSY is ...

... the platform for your medical application programs, and controls all diagnosis systems and options. PADSY features a standardized user interface and standardized operation for all applications, facilitating your everyday work routine. PADSY is the only diagnosis system in the world that runs under operating systems like Windows, Apple, Linux etc. Thanks to the use of the Internet programming language Java, reliable communication in data networks, with your IT systems and with the HIS is guaranteed. PADSY can be connected directly or wirelessly (Bluetooth) to the diagnostic instruments and stress testing systems of different manufacturers.

... individual and open, and adapts itself to the individual needs of every single user. Frequently used menus can be opened automatically. The size of windows and the display and complexity of their contents can be userdefined, allowing every user to create their own personal profile. PADSY can be installed on an independent PC or within a network comprising many different workstations. The available interfaces allow connections to other software and other workstations. PADSY is an open system and can also be linked to the medical devices of other manufacturers.

... interlinked, as network capability is already built in – as standard and at no additional cost. In Client/Server mode, patient and examination data can be accessed from any workstation within a local network. Our flexible licence models provide you with appropriate solutions for your workstations, thereby optimizing your organization.

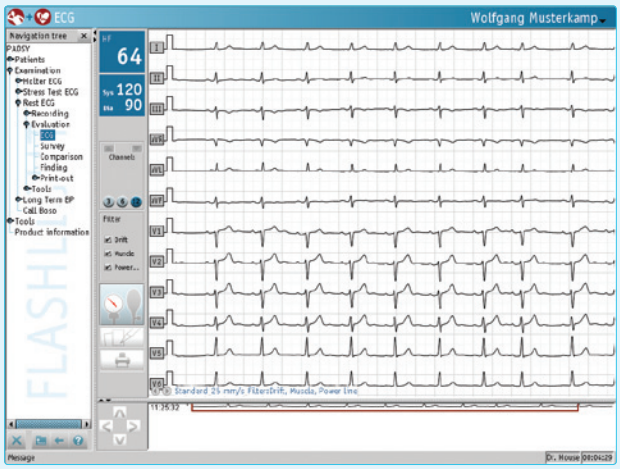
... improvement of the workflow thanks to open interfaces between PADSY and other workplaces and software. PADSY sends all findings fully automatically to your practice's EDP system or via PADSY-Connect to your HIS. PADSY-Connect is the key to connecting your HIS and your medical technology, and offers your organization valuable support. PADSY particularly supports the process of workflow improvement with its uniform operating structure and the integration of all applications. Thus PADSY optimizes your workflow and improves daily routine.

... telemedicine, as text, diagnostic data and original patient data can be quickly and conveniently forwarded to a colleague or a hospital via the Internet. Communication between the medical staff concerned is accelerated, thus allowing a diagnosis to be made earlier than was the case in the past. For example, long-term ECG data no

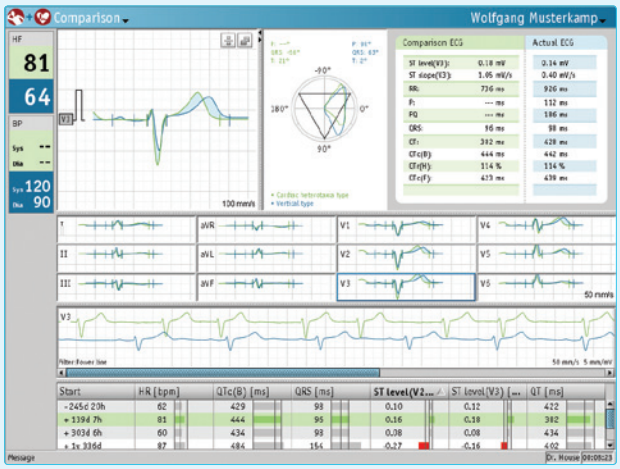
longer have to be sent on conventional data storage media to analysis centres but can be transported through the Internet or intranet via a telemedicine data platform. The diagnosis can be accessed at any time, saving time and money. It goes without saying that data security is given full consideration when data are transported.

... free of charge if you purchase a PADSY application.

... forward-looking thanks to the flexibility of the application programs, the future-oriented features and functions and the independence of certain PC platforms. This makes PADSY an investment that will benefit you well into the future!



12-Channel ECG view



Comparison of 2 ECGs

12-Channel ECG analysis: simply accurate

Efficient automatic measurement is the key of a fast and valid diagnosis. PADSY-ECG uses Biosigna's HES measurement algorithms which have undergone continuous redesign and optimization over the past 40 years. All measured values are clearly displayed together with the representative cycles. If, however, you wish to record an ECG manually, a two-dimensional calliper is available for this purpose.

Make your work easier with HES interpretation for ECG diagnosis. Providing you with a suggested diagnosis of possible pathological symptoms, this tool supports you in compiling your diagnosis.

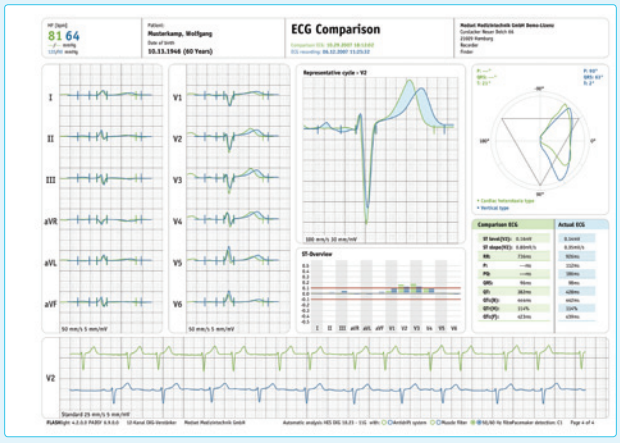
Intelligent comparison functions

The comparison function allows you to check at a glance whether pathological ECG tracings appeared since the previously recorded ECG or whether they have been there for longer. The representative complexes can be shown as differential complexes or overlaid on top of one another. A quick comparison of the heart position, which is determined automatically by frontal vector ECG display, and of rhythm strips, representative complexes and analysis values, as well as the ST level in the ST overview, is possible at any time. This allows the long-term development of any ECG parameters to be assessed, thereby ensuring successful treatment.

A Resting ECG in just a few clicks

The modern resting ECG saves you valuable time, as all of the PADSY-ECG software tools have been optimized to allow swift operation. The ECG display is flexible and can be set with just a few clicks of the mouse. In situations where time is critical, the emergency ECG function allows you to record a printout of an ECG without wasting time on entering data.

For routine daily use, many of the operating steps can be automated (e.g. a user-configured ECG printout). Once again, this saves you valuable time. Particularly useful in this context is the possibility to have a report sent to your surgery's PC or, in PDF format, to your hospital information system.



Print-out of ECG comparison

FLASHLIGHT 12-channel ECG sensor with USB

FLASHLIGHT sensor with Bluetooth™

A sensor with solid technology

The FLASHLIGHT sensor meets the highest requirements for digital signal quality and reliability on all 12 channels. With its USB port, the amplifier can be used with all modern computer systems. Pacemaker spikes are reliably detected thanks to the choice of detection channel – either C1, C2 or C3. The susceptibility to error is further reduced by an advanced defibrillator protection that does not require any resistors in the patient cable. The Sub-D analogue connector allows commercially available patient cables and suction electrode systems to be used.

An innovative and lightweight sensor

The FLASHLIGHT BT sensor is a compact 12-channel ECG amplifier, worn on the body, which runs on 2 mignon AA batteries. The ECG data are transferred to the PC online via a reliable Bluetooth™ wireless connection. Throughout the stress test, the patient can thus move freely and is not hampered by any cables leading to the PC. The small FLASHLIGHT BT sensor is a genuine lightweight and is compact enough to fit in any hand, meaning that it can be comfortably worn on the patient's body. Artefacts resulting from patient movements are thus effectively reduced.

Main Features	FLASHLIGHT Sensor	FLASHLIGHT BT Sensor
ECG channels	12	12
Interface	USB	Bluetooth™
Resolution max.	12 bit, 2.44 µV / bit	19 bit, 2.6 µV / bit
Bandwidth	0.05 – 150 Hz digital	0.05 – 150 Hz digital
Sampling rate	500 Hz	500 Hz
Pacemaker detection	Yes	Yes
Defibrillation protection to EN 60601	Yes, integrated in FLASHLIGHT Sensor	Yes, integrated in original patient cable
Electrical isolation	Yes	Yes, via wireless connection
Run time	Unlimited	> 10 hours, without replacing batteries
Power supply	via USB	2 × AA batteries or rechargeable batteries
Dimensions (H × W × D)	45 × 92 × 158 mm	23 × 60 × 100 mm
Weight	440 g (incl. USB port)	145 g (incl. batteries)

PADSY Ergo

Stress-Testing your patients – without the stress

PADSY-Ergo controls the workload your patients are subjected to – so you and your staff remain relaxed and in control. During the development of the PADSY-Ergo, the overriding priority was to achive utmost patient safety. The result is impressive and features a user interface with intuitive operation, meaning that even untrained personnel can use it safely and correctly.

For a reliable diagnosis, the entire 12-channel ECG, including pacemaker spikes, is recorded with maximum signal quality throughout the stress test.

Thanks to the use of cutting-edge amplification technology and newly developed anti-drift algorithms, the ECG can even be assessed reliably during stress test examinations on treadmills – this is achieved by a stable base line.

Main Features

- 12-channels with full recording
- Automatic measurement
- Arrhythmia detection
- Online display of ST levels as trend and bar chart
- Display of representative QRS complexes
- "Review" function
- Automatic or manual blood pressure measurement
- Pacemaker detection
- Automatic and user events
- Target load for treadmills and bicycle ergometers
- User-defined stage and ramp protocols
- Control of many bicycle ergometers and treadmills
- Remote monitoring within a network
- Treadmill Main Features (see page 10)

Online view of Stress Test examination

View of measurement function

Precision in analysis

For analysis and measurement, PADSY-ERGO uses the scientifically validated HES-BKG algorithms, allowing ECG pathologies to be reliably identified and displayed. If you want to be absolutely certain, you can use the dynamic "Time Cursor" in the "Review" function to check in no time at all the entire ECG, beat for beat. For comparison, the representative complex from the rest phase is always in view.

Trend charts provide you with an overview of how the ST segment has changed over time. Once the ECG diagnostic findings are ready a short time later, you can automatically generate a clearly structured report.

Whether your report is presented in the form of a printout or a PDF file, its contemporary and clear layout will reflect the efficiency and professionalism of your department.

Safety at all times

To ensure that you can keep an eye on the ECG at all times – especially when you are dealing with high-risk patients – you can use the unique "Review" function to view any ECG section from the entire trace, even while exercise training is taking place. This is even possible remotely when you are at a different workstation. Heart rate, cardiac arrhythmias and their frequency, and the violation of any limit values are clearly marked, meaning that you can reliably assess the ECG at any time. Current representative complexes can be assessed and compared with the patient's ECG in the rest phase. ST segment levels from all traces are displayed in the form of a trend and a clear bar chart. Deviating representative QRS complexes are shown online in a separate window.

Ergotop treadmill

Main Features

Technical Specifications

- Speed range: 0.5 – 20 km/h
- Elevation: 0 – 25 %
- Walking surface: 50 × 150 cm
- Maximum patient weight: 225 kg
- Motor power: 1.8 kW
- Interface to PC: RS 232 and USB
- Weight: 145 kg
- Dimensions (L × W × H): 212 × 76 × 110 cm
- Compliance with all Standard and Safety Norms

Options

- Emergency stop button
- Rehab speed: 0.1 – 12 km/h
- Extension to the standard handle bar
- Arm support
- Entrance plate
- Body Weight Support System
- Interface to PC: Bluetooth™ or WIFI
- Rear elevation: -10 % (electrically)
- Control Unit, programmable

Ergotop, know-how in every detail

Many years of experience went into the development of Ergotop, and optimal consideration was given to the needs of medical applications in the area of cardiac and pulmonary stress testing and in the therapy of patients undergoing cardiac rehabilitation.

Good design and uncompromising safety

Ergotop's low-level design makes mounting the treadmill easy for the patient. An optional mounting platform is available for patients with impaired mobility. A safety and emergency stop facility comes as standard; it uses a magnetic safety strap to bring the treadmill to an immediate standstill if the patient should fall off. Optional a large “emergency stop” button allows medical personnel to bring the treadmill to an immediate standstill at any time. For less stable patients the handle bar can be extended to the end of the running area, thus providing additional security for your patients.

Control even without control panel

Because speed and incline of Ergotop are controlled from a PC using the PADSY-Ergo stress test software, there is no need for a control panel on the treadmill. It is therefore impossible for patients to make changes to the exercise routines. Ergotop accelerates the treadmill evenly and steadily from 0 km/h, thus ensuring that the patient can begin moving smoothly on the treadmill, without jolts. The speed is adjustable in increments of 0.1 km/h and the incline can be adjusted in increments of 1 % to a maximum of 25 %, thus meeting the requirements for highly precise stress testing.

A good feeling while exercising

The shock-absorbing design of Ergotop, combined with the full-length shock absorber under the running area, gives the patient a good feeling while exercising. The treadmill is automatically centred and does not require any lubricants. Ergotop is sturdily built and designed to run extremely quietly – virtually no noise is generated.

Maintenance not required
Ergotop is virtually maintenance-free. All moving parts are designed for permanent operation, without any need for extensive maintenance work. The drive motor is completely maintenance-free and is controlled electronically so that the treadmill speed is always the same as the set speed. If Ergotop is mounted while it is running, the speed of the treadmill does not change.

Powerful with low power consumption
Ergotop is extremely powerful and can easily transport patients weighing up to 225 kg. Even at very low speeds, Ergotop conveys the patient evenly without stopping, thus ensuring jolt-free operation. The sophisticated power transmission system allows the use of a highly efficient motor with a power consumption of just 1.8 kW – a key prerequisite for the low-level design.

Ergotop exercises your patients
Even at the conceptual phase, consideration was given to a variety of possible applications for Ergotop. Ergotop is prepared, for example, for use in rehabilitation: PADSY-Reha can be used to control the Ergotop treadmill in accordance with the doctor's instructions, following predefined exercise programmes to help patients regain their fitness. Ergotop has been equipped with suitable options for such applications, with one variant specially defined as the Ergotop-Reha. In addition to an extended handle bar, a mounting platform and a separate "emergency stop" button, the adapted speed range of 0.1 to 12 km/h is ideal for rehabilitation training.

Options for special applications with Ergotop
Various options expand the spectrum of possible applications of Ergotop, meaning that the treadmill is suitable for universal use. It is a well-known fact that it is difficult to take reliable blood pressure measurements while a patient is moving, so an arm support is available as an option to ensure that blood pressure can be monitored safely and reliably. If you wish to have the option of using Ergotop without a PC in some situations, a programmable control panel can be supplied. For patients with impaired mobility, a Body Weight Support System is available, providing support functions up to patient weights of 160 kg.

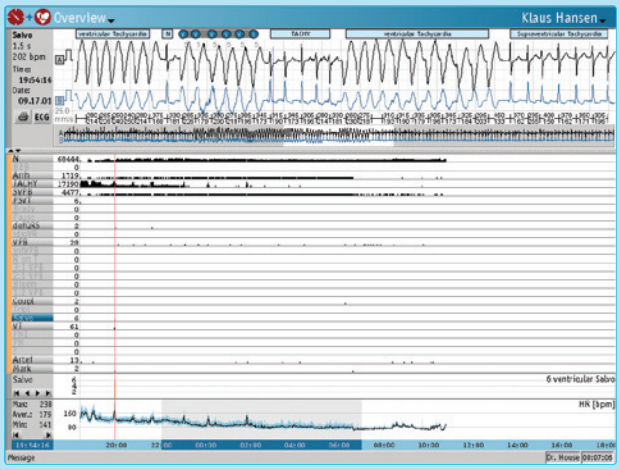
Arm support

Control panel

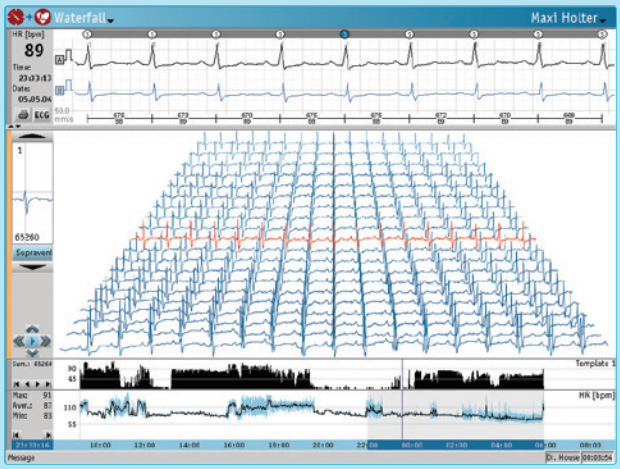
Body weight support system

Ergotop treadmill for rehabilitation

PADSY Holter



Histogram overview of ECG events



ECG waterfall presentation

Enhances your day-to-day efficiencies

You too can profit from our 20 years of experience as the pioneer of digital long-term ECG systems. At a time when the precursors to today's MP3 players were nothing more than portable cassette recorders, Medset had already set the benchmark with the world's very first fully functional digital 24 hour Holter recorder. Today, Medset is still able to offer you a premium solution to meet your needs in the form of the PADSY-Holter – no matter whether you are a GP or consultant working in partnership with a limited budget or a cardiology centre with highly specific requirements. Whether you require QT analysis, HRV analysis, atrial fibrillation diagnosis or our versatile pacemaker analysis – PADSY-Holter offer highly efficient modules capable of dealing with even the most complex demands.

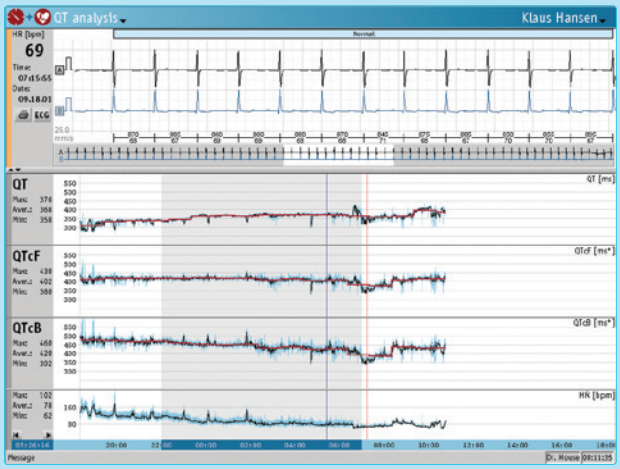
Valid results "at first glance"

Following the initial download of data, PADSY Holter analyses the ECG in the blink of an eye and presents the HR variability and all detected arrhythmias according to type and frequency for the entire recording, over a period of up to 48 hours. After just a few seconds you can assess your patient's heart rhythm status. Of course, you can zoom in on the ECG of any detected event at the click of a mouse. If you should ever be unsatisfied with the beat detection of the powerful PADSY Holter algorithm, effective tools are available in all the screen view which will allow you to conveniently edit individual beats and entire beat classes.

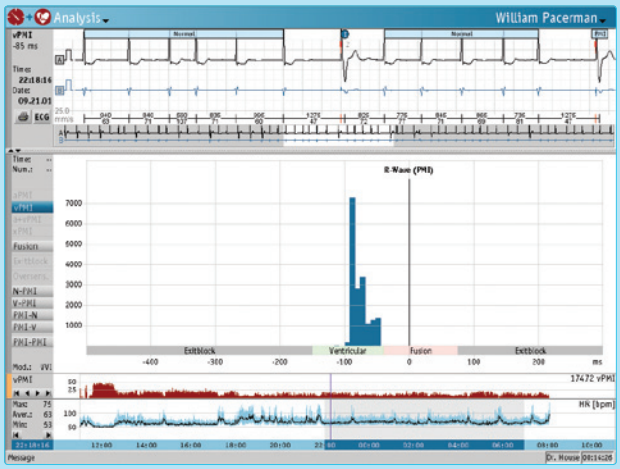
A new ECG perspective

The different complex forms of all beat classes which appear are visualized by PADSY-Holter using its template analysis. This means that the correct allocation of the beat classes from a 48 hour recording can be checked and, if necessary, corrected in a single work step. A unique feature is the "waterfall presentation" which clearly and precisely displays each ECG beat in a beat class, like on a string of beats.

Holter ECG print-out



Presentation of QT values



Response time of pacemaker induced ECG beat

PADSY-Holter whips your diagnosis into shape!

The analysis ends with a meaningful and clearly structured report. As with all PADSY applications, the report is user-configured. PADSY adds a cover sheet, examples an a full disclosure ECG as you require. Whether you print out the report or archive it as a PDF file, a complete and clear report documents your professionalism in cardiology diagnostics.

Main Features

- Recorder assistant for easy operation
- Filters for drift, muscle, and 50 / 60 Hz
- Automatic ECG detection and template analysis
- Re-analysis of 48 hour ECG recording in few seconds
- Full disclosure
- ECG example display with 1 to 25 examples at a time
- Extreme examples for tachycardia and bradycardia
- Pacemaker detection
- Options
  - HR variability
  - QT and pacemaker analysis
  - Atrial fibrillation diagnosis to find all AF events

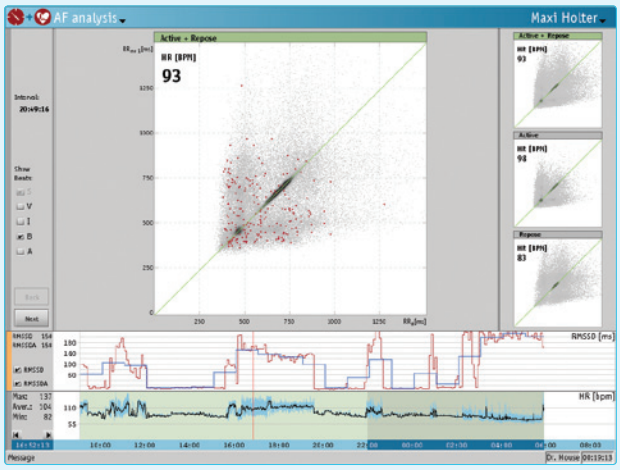
QT analysis

The "QT analysis" module helps you assess changes over time in QT intervals from 2- or 3-channel long-term ECG recordings. An advanced algorithm is used to detect beats. Absolute QT times and frequency-corrected values according to Bazett, Friderica and Holzmann can be shown one beneath the other in a clearly comprehensible way, while at the same time showing the heart rate histogram. Trends for mean, minimum and maximum values can be displayed and also printed out if necessary.

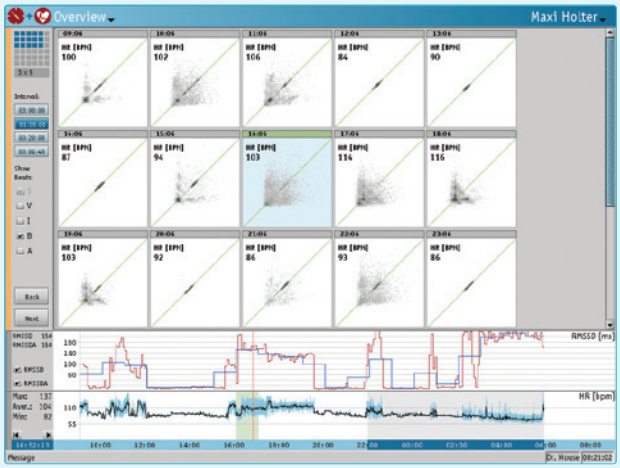
Versatile pacemaker analysis

PADSY-Holter offers precise analysis functions for evaluating pacemaker spikes recorded by 2- or 3-channel ECG recorders. The pacemaker overview already presents you with an overview of the basic pacemaker functions. A histogram allows a detailed time analysis of each individual pacemaker class with direct editing options. The effects of the programmed pacemaker parameters can be quickly, specifically and precisely analysed and monitored via the class definition and pacemaker reanalysis.

Atrial Fibrillation Diagnosis



Poincaré plot overview of 1 day



Poincaré plot overview of 6 minutes steps

Main Features

- Improves differentiation of atrial flutter and atrial fibrillation
- Display of paroxysmal phases from 10 sec. upwards
- Display of HR-Variability

Atrial fibrillation – an underestimated risk

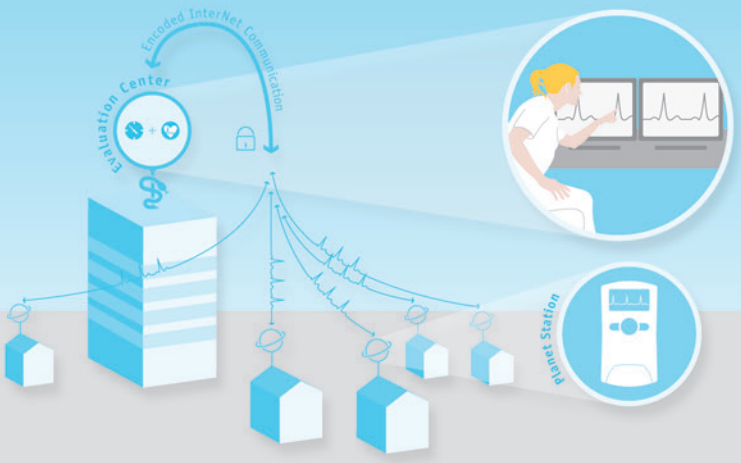
It is estimated that six million people in Europe suffer from atrial fibrillation. It is therefore important to reliably detect atrial fibrillation at a very early stage in your patients and, in the event of any risk, to take counteraction before a dangerous thrombosis develops. Armed with the PADSY-Holter Atrial Fibrillation Diagnosis module, you have the right tool to hand to reliably detect any atrial fibrillation phases which may be present.

Quick analysis of cardiac rhythm dynamics

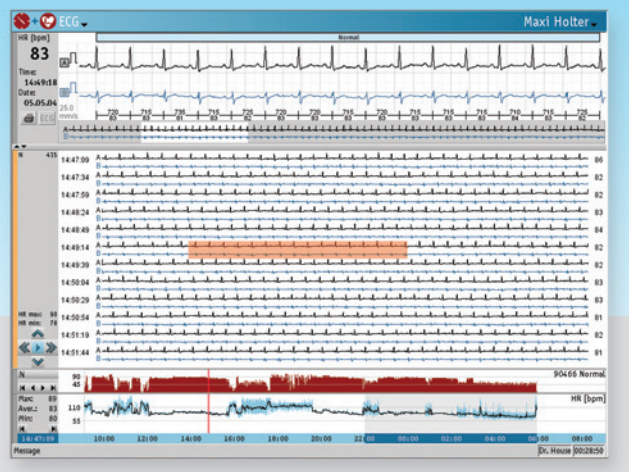
The Atrial Fibrillation Diagnosis module supports you, the doctor, when diagnosing atrial fibrillation, atrial flutter and other symptoms which affect and change the cardiac rhythm dynamics. The Poincaré diagrams allow you to identify the cardiac rhythm dynamics at a glance. Two consecutive RR intervals are shown in a two-dimensional diagram, thus illustrating your patient's cardiac rhythm dynamics. Atrial fibrillation generates a particularly characteristic image on account of its chaotic sequence of beats. Atrial flutter can also be easily detected from this diagram.

PADSY-Holter shows every Atrial Fibrillation

With the Atrial Fibrillation module, PADSY shows you immediately whether your patient's heart is beating in a healthy sinus rhythm. If atrial fibrillation is present, you can determine whether it is happening mainly during the patient's resting or active phases. A diagram overview allows you to track the development of cardiac rhythm dynamics over time. How long do the suspicious episodes last? Does anticoagulant therapy need to be initiated? You will be able to answer these and other questions after just a few clicks of the mouse. The mountain diagram will provide you with final certainty of your diagnosis – the ECG is presented in a particularly easily comprehensible three-dimensional form. If you so wish, an ECG strip can be displayed and documented with examples.



Holter community concept



Full disclosure ECG with enlarged episode

The long-term ECG analysis community

As a doctor with your own practice, you face increasing pressure on costs! The Planet system from PADSY-Holter is the solution for your forward-looking long-term ECG diagnosis and combines maximum cost efficiency with the diagnostic quality of a cardiology centre. Take advantage of the expert knowledge of our analysis community for your long-term ECG diagnostics and offer your patients convenient digital long-term ECG recording with top-notch recording quality. The Planet system can be seamlessly integrated into your practice's EDP system and can exchange all necessary data with the analysis centre either via the Internet or by post. Your sensitive data are only shared with the analysis centre via securely encrypted connections. Computer viruses and hackers haven't a chance!

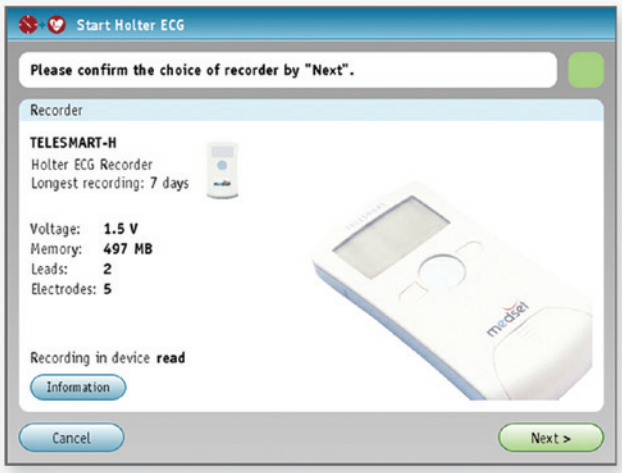
The Planet system as analysis participant

The Planet system contains the TELESMART ECG recorder and the PADSY-Holter online software. TELESMART with Bluetooth™ technology is tailored to the planet system and offers you maximum flexibility and recording quality. At the end of the ECG recording, the data are sent to the PC, encrypted and forwarded automatically to the analysis centre via the Internet in just 20 seconds. The results are sent back as soon as the analysis is complete and can be viewed, printed out and archived by the Planet participant.

The professional analysis centre

The analysis centre has an individually configured long-term ECG system for the Planet application with supplementary central function. Once a Planet has sent an ECG recording, the centre receives a notification of the received recording together with information relating to the patient, recording and sender. An analysis of the long-term ECG recording is carried out at the analysis centre. At the end of the analysis, the results are not printed out but sent back to the Planet. This happens at the press of a button, and minutes later the analysis participant is able to print out the diagnosis and discuss it with the patient. For saving data transmission capacity not all the information is sent, only changes and comments.

TELESMART Holter recorder



Recorder assistent with all important information

HOLTER

Flexible and efficient Holter ECG recorder

With TELESMART, Medset is setting new standards in long-term ECG diagnostics. Using the very latest technologies, TELESMART combines outstanding quality of recording with modern design and maximum patient comfort. With three genuine ECG channels and a maximum recording time of seven days with one battery, TELESMART supports you in making even difficult diagnoses.

Always perfect for your workflow

Wheater patients come to you or you go to them, TELESMART is always ready. Whatever the application, you will always have the best possible patient cable at your disposal. 2 or 3 channels with 5 or 7 electrodes – TELESMART automatically recognizes which the right patient cable is. To check that the electrodes are properly attached, you can follow the ECG "live" on the PC monitor or – if your patient is outside the range of your PADSY-workstation – have it displayed on the recorder's screen.

Patient data are wirelessly transmitted by Bluetooth™ technology and saved in the recorder. If the patient master data have yet to be entered, simply dictate the patient's name using the integrated microphone.

Main Features

Recorder:

- Ergonomic design with central event key
- Simple menu-guided operation with just three keys
- Large graphic display with five lines
- Online ECG on the display
- Speech input for subsequent patient allocation
- One battery allows up to seven days of recording
- ECG can be saved on removable CF memory card
- Pacemaker spike detection

Bluetooth™ functional interface for:

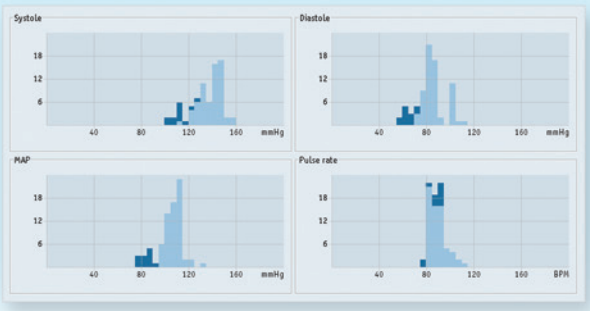
- PC-based online ECG monitoring
- Patient data transmission

ECG tracing via coded patient cables:

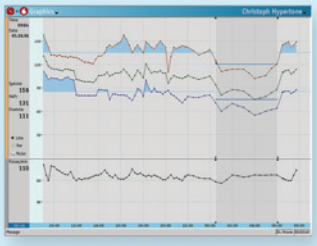
- 3 electrodes for 3 ECG channels
- 5 electrodes for 2 independent ECG channels
- 7 electrodes for 3 independent ECG channels

General data:

- Power supply:
  one mignon battery or rechargeable battery
- Dimensions: (122 × 65 × 20) mm
- Weight: ca. 130 g incl. battery



Histograms of systole, diastole, MAP, and pulse rate



Overview of measured blood pressure values

Kind to your patient's circadian rhythm

PADSY-RR is a long-term blood pressure system for discerning doctors and patients. The 24 hour recorder helps you obtain a reliable blood pressure reading, avoiding the "white-coat effect". The accuracy of SCANLIGHT has been documented in scientific studies, and your patients will confirm how comfortable the instrument is to wear on a daily basis. The oscillometric measurement method only pumps up to the systolic blood pressure, and is characterized by short measurement times for the patient. The small and lightweight casing, not to mention the instrument's quiet operation, have a positive effect on patient acceptance, which in turn increases the reliability of the measurement results. The recorder assistant helps you prepare the recorder quickly and safely, ruling out any mixing up of patient and diagnostic data.

Clarity means diagnostic reliability

Histogramms compiled separately for the day and night phases visualize the blood pressure variability of your patients. Scatter diagrams show the correlation between pulse and blood pressure. Once the finding are available, you can individually configure your report. The printout presents graphical and/or numerical measured values in a clear format.

Main Features

PADSY-RR Software:

- Recorder Assistant for quick recorder preparation
- Free definition of measurement records
- Graphical and numerical analysis of systole, diastole, MAP (mean arterial pressure), PBP and pulse
- Display of waking and sleeping phases
- Histogram display
- Scatter diagrams for determining the correlation between pulse and blood pressure
- Individual printout
- Tabular display of false measurements with error diagnosis
- PADSY-RR is compatible with ABPMs of other manufacturers

SCANLIGHT Recorder:

- Bluetooth™ interface
- Oszillometric measurement method
- Accuracy: ± 3 mmHg
- Storage of patient data and measurement record
- Storage capacity: 300 measurements
- Day / Night key
- Measurement of systole, diastole and pulse
- Dimensions: (130 × 80 × 28) mm
- Power supply: 2 Mignon batteries or rechargeable
- Weight: 240 g incl. batteries

PADSY Spiro

SPIRO

PADSY-Spiro Outstanding spirometry software

During spirometry measurements, PADSY-Spiro shows you exactly what really matters. Sophisticated screen elements display with great precision those aspects which are most important when it comes to assessing your patient's effort. You or your staff can see instantly whether the breathing manoeuvre was performed correctly or needs to be repeated. This is generally the case, for example, when the reproducibility and acceptance do not satisfy the guidelines of the European Respiratory Society (ERS) and the American Thoracic Society (ATS), or if the quality requirements have not been fully met. PADSY-Spiro allows your personnel to effortlessly produce valid measurement results, thus reducing their workload. The PADSY-Spiro workflow is perfectly tailored to meet the requirements of daily practice; for example, static and forced manoeuvres can be recorded and assessed in a single work step. Once completed, pre- and post-measurements are grouped together, showing you the effect of the bronchial spasmolysis at a glance. For all other questions too, PADSY-Spiro displays everything you need for a reliable diagnosis in a single view.

Quality thanks to guideline-compliant spirometry measurement

PADSY-Spiro was designed in accordance with the current guidelines of the European Respiratory Society and the American Thoracic Society, allowing you to verify your patient's effort at any time. This is done by displaying details of all identified manoeuvres, with parameters for acceptance and reproducibility. Naturally, PADSY-Spiro also offers scope for individual assessment criteria.

Recording view of PADSY-Spiro

The evaluation view of PADSY-Spiro

Innovative technology for PADSY-Spiro

Spirosound, is the device which incorporates an ultrasonic transit time technology to measure the flow of air in and out of the patients lungs. Ultrasonic transit time measurement eliminates problems associated with traditional methods of flow measurement and helps make the Spirosound extraordinarily fast, reliable, accurate, and error proof.

There are no moving parts, no codes to enter, no screens to catch sputum, and no disposables to calibrate. Ultrasonic flow measurement is independent of gas composition, pressure, temperature, and humidity; and eliminates errors due to these variables. The disposable breath tube acts only as a hygienic shield and is transparent to the ultrasonic pulses travelling between the measurement transducers. Since the disposable breath tube has no sensor elements, it does not perform a measurement function and does not require calibration.

Main Features

PADSY-Spiro Software

- Developed in accordance with ERS / ATS guidelines
- Recording of static and forced manoeuvres in one measurement
- Novel display of feedback on manoeuvre acceptance and reproducibility
- Automatic determination of all key spirometry parameters
- Flow-volume / volume-time and Tiffeneau displays
- Comparison of reference values in charts and numeric tables
- Pre- / post-comparison with indication of significance of spasmolysis effect
- Detailed view for assessing patient effort
- One-glance diagnosis with summary of key parameters
- Compatible with Spirojet, Spiroscout and easy-One PC measurement recorders

Spirosound

- Measurement Principle: Ultrasonic transit-time
- Dead space: 30 ml
- Flow Accuracy: ± 3 % or 20 ml/s
- Flow range: ± 16 l/s
- Flow sampling rate: 200 Hz
- Interface: USB

PADSY Ergospiro

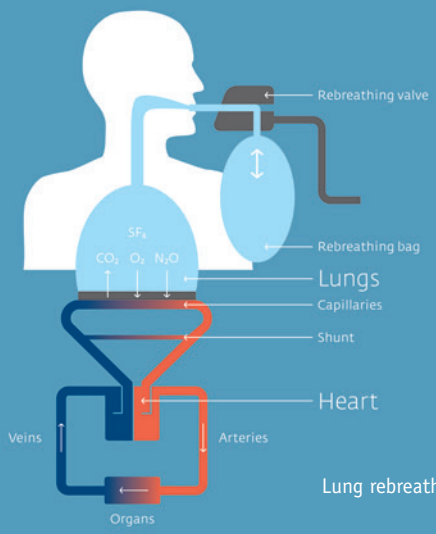
Complete cardiovascular diagnostics

PADSY-Ergospiro combines expertise in 12-channel ECG stress testing with expertise in pulmonary function testing. An innovative and efficient 12-channel stress ECG system, PADSY-Ergo is connected to the ergo spirometry system via an intelligent link, thus allowing highly precise cardiovascular analyses. The stress ECG and stress spirometry are recorded synchronously, identifying cardiac, pulmonary and vascular function in just a single measurement. Patient data, heart rate and stress testing data are transferred by PADSY-Ergo to the respective ergo spirometry system. This multifunctional measurement station expands the possibilities of cardiovascular diagnostics, thus providing key information for patient-appropriate diagnosis and therapy. PADSY-Ergospiro is compatible with the most important ergo spirometry systems and, thanks to its flexibility, is the perfect solution for existing and future ergo spirometry systems.

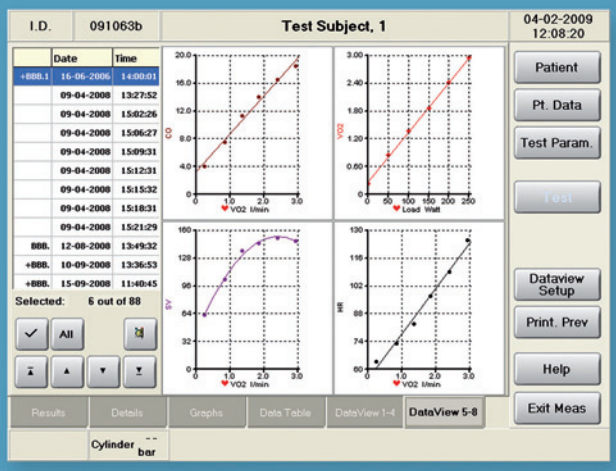
Revolution in Ergospirometry measurement

Combining PADSY-Ergo with the innovative Innocor ergo spirometry system increases reliability when it comes to assessing cardiovascular examinations. Innocor® utilises a proprietary gas analyser technology for measuring nitrous oxide (N_2O, blood soluble), sulphur hexafluoride (SF_6, insoluble) and CO_2 continuously and simultaneously. The advanced analyser is a photo-acoustic infra-red type which combines a fast response with unsurpassed sensitivity and accuracy and inherent stability. No tedious calibrations are required – all you need is a yearly calibration check. This technology replaces a medical mass spectrometer for inert gas analysis and offers superior performance. The oxygen sensor uses laser diode absorption spectroscopy, meaning no limited life parts. A Nafion sampling tube ensures optimal humidity removal. Use of these innovative technologies produces valid breath-by-breath measurements, and allowing reliable determination of the anaerobic threshold.

Ergospirometry & Cardiac Output



Lung rebreathing model



Hemodynamic graphics

Cardiac Output for hemodynamic measurements

Innocor® gives the complete metabolic and hemodynamic profile comprising a conventional CardioPulmonary Exercise Test (CPET) together with non-invasive measurement of Cardiac Output. This unique combination enables the possibility to distinguish between ventilatory, central circulatory or peripheral causes of exercise intolerance. By using inert gas rebreathing for hemodynamic measurements the hazards and costs of using PA-catheters are eliminated and inaccuracies of other methods avoided.

Inert gas rebreathing method

During a rebreathing test the subject rebreathes an oxygen enriched mixture containing very small amounts of two physiologically inert gases – one blood soluble and one insoluble component – from a closed rebreathing system. The test lasts about 5 breaths or 15 seconds. During this time the blood soluble gas is dissolved in the blood perfusing the ventilated parts of the lungs. Innocor® measures the concentration curve of the blood soluble gas and calculates the wash-out rate, which is proportional to the Cardiac Output. In patients with a significant intra-pulmonary shunt, the shunt flow is calculated by using the well proven Fick principle for oxygen. The blood insoluble gas is measured to determine the lung volume and to account for other factors that affect the distribution of the blood soluble gas.

Main Features of Innocor®

Ergo-Spirometry

- No daily gas calibration
- The oxygen measurement is done by absorption spectroscopy (no needs of consumables)
- Spectroscopic measured parameters during examination within each load level of
  - VO_2, VCO_2, VE, and further derived parameters
  - Spirometry measurements

Hemodynamic

- Cardiac Output (CO) measurement with parameter of VL, HR, SpO_2 and derived parameters like CI, SV, SI
- Option Oxygen with parameters of VO_2, A-VO_2, VO_2, SVO_2

ERGOSPIRO

We have sound ideas.

medset INNOVATION IN CARDIOLOGY

PADSY Care

Efficient service for PADSY

Medset is a dynamic firm which constantly redesigns and enhances its PADSY software products. These developments guarantee continuous adaptation to the requirements of the latest PC and network technology. Our services are designed to meet the requirements of our customers and the needs of our products.

Hotline service

Our expert hotline service is available during normal office hours to provide quick solutions to any problems. The staff who work for our hotline service are highly experienced and undergo constant training. Many questions can be answered instantly on the telephone. It is also often possible to provide the necessary support immediately in the event of challenging customer problems, and to give our sales partners expert advice.

Remote service

Remote service of a medical device is possible thanks to a secure data connection linking the customer's PC and Medset or its service partner. This data link gives Medset or its service partner access to the data of the medical device applications, allowing a remote diagnosis to be undertaken in the event of problems or error messages. In many cases, the error can be corrected and eliminated online.

Software updates can also be downloaded onto the PC, ensuring that the application always uses the very latest software version. Proactive monitoring allows early detection of defective components before they cause errors. Once the connection between your system and Medset has been established, other services such as online help can be made available.

Repairs

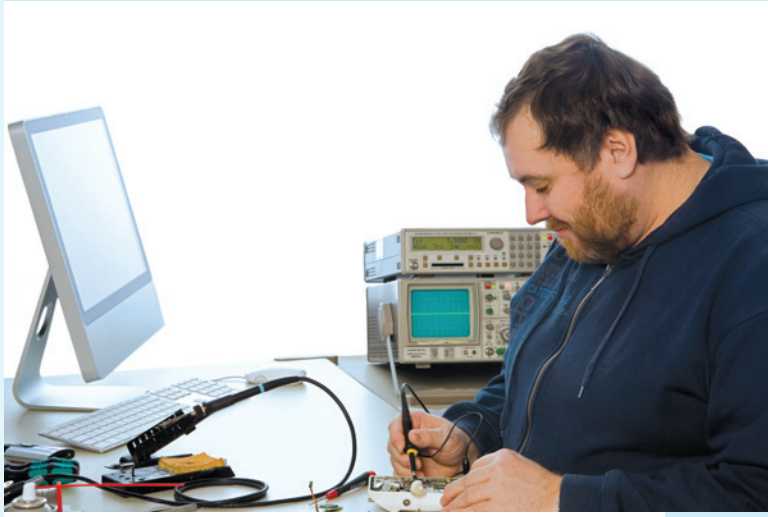
Medical devices are high quality medical products which are subject to the legal requirements contained in the German Medical Device Act (MPG) and European standards (MDD). By taking precautionary measures, operators can play a key part in ensuring that medical devices can be operated safely and smoothly for the duration of their service life.

It is possible nonetheless that faults will occur or that functionality will be impaired as a result of improper handling (e.g. drop damage). In such cases, equipment needs to be repaired – something we can accomplish quickly and reliably in our central repair workshop in Hamburg. To help with troubleshooting in faulty medical devices, our expert hotline staff are available at any time. Due to the low incidence of errors, it is generally not necessary for sales partners to set up a dedicated repair department.

Training to our sales partners

Our complex PADSY products are run on the very latest PC systems which are subject to extremely short innovation cycles. Consequently, our sales partners must be capable of providing highly qualified service. Medset therefore offers regular product training seminars to guarantee effective servicing. At the end of June each year, a seminar is held over a number of days at Medset's headquarters in Hamburg. We also offer our sales partners an additional training seminar each year in connection with the "Arab Health" fair in Dubai.

Training to our sales partners



Repair service

Hotline and remote service

SERVICE

Medset

Product Overview

PADSY

REST & STRESS

HOLTER

ABPM

SPIRO

ERGOSPIRO

SERVICE

EN

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