Advanced Vascular Diagnostics

Pneumatic and Optical Oscillography Systems

www.sot-medical.com
Our Services

On-Site Deployment
Our experienced employees are happy to support you on-site at your office, clinic or institution and will take care of delivering and setting up your system so that it can be deployed in a secure and efficient way right from the beginning.

Training
Whether single- or team-trainings: Our workshops provide an optimal preparation to operate your AngE-System while taking into account the technical as well as the medical aspects. We provide training for each newly bought system and on demand either on-site or online.

Remote Assistance
Each AngE-System comes with a remote servicing tool that enables our service experts to assist you in real-time by applying settings, making technical diagnoses or supporting you during measurements.

Service and Updates
Highly trained and experienced service experts take care of maintaining your AngE-System professionally and rapidly, conduct metrological- and security checks and keep your equipment up to date. If desired, a rental system can be provided during maintenance.

Our Strengths

"We Believe in the Vascular System as a Profound and Significant Health Indicator."

It is, therefore, our aim to provide the most advanced, comprehensive and precisest vascular diagnostic systems to our customers. Consequently, our AngE-Systems are conceived as modular expert solutions for angiologic, phlebologic, diabetic as well as vascular surgery applications.

Our agile and efficient organization enables us to respond even to sophisticated customer requirements and hence provide tailor-made solutions to them.
SOT Medical Systems

SOT Medical Systems is engaged in medical business since 30 years within Austria as well as internationally. In 1991 the company started operating in the fields of angiology, phlebology and cardiology. Since 1999, a system for the fast and reliable diagnosis of pAOD patients has been self-developed: The AngE™ System. Due to its modularity, it constitutes the ideal solution for angiologists, phlebologists, vascular surgeons and for the diagnosis of diabetic patients. Today, SOT use their longtime know-how to further develop their cutting-edge AngE products.

Made in Austria

Our AngE products have been developed, produced and mounted at our headquarters in Carinthia, Austria since the beginning. While doing so, we pay close attention to observe the highest quality standards and invest steadily in the research and development of our leading vascular diagnostic systems.

As Austrian family business, we put our focus on providing sustainable solutions and the highest service quality to hospitals, clinics and doctors as well as on creating long-term and fulfilling jobs within our home region.
The AngE™ Solution

The All-in-One Vascular Diagnostics System

The AngE has been developed to obtain the diagnosis of peripheral blood flow disorders quickly, reliably, cost efficiently and without stress for the patient.

**ECG Trigger**
By recording the R-wave it allows the calculation of pulse wave runtime and pulse wave velocity.

**D-PPG/LRR**
Two optical sensors of the AngE Phlebo enable simple venous and arterial measurements.

**Phlebodynamosometry**
Invasive venous- and compartment pressure measurements with one or two channels of the AngE PDM.

AngE ANGIOLOGIC

The most advanced angiologic measuring station

Up to 8 pneumatic and 2 optical measurement channels provide comprehensive opportunities: Conduct 8-channel simultaneous measurements on fingers and toes as well as on wrists, upper-legs, lower-legs and ankles. Apply Doppler pressure measurements or multi-channel stress tests and observe the nearly unfiltered results within a detailed overview report.

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AngE PHLEBOLOGIC

Specially designed for venous applications

Whether venous valve- and muscular pump tests with or without Tourniquet, pneumatic venous occlusion plethysmography (Air VVP) or invasive phlebodynamosometry with compartment pressure measurements, this comprehensive measuring station meets all needs for phlebologists.

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AngE DIABETIC

Innovative vascular screening for diabetes

The AngE uses the innovative TOPP method to, besides measuring on ankle and wrists, also allow the measurement on fingers and toes (including forefoot- and toe pressure measurement with TBI) and therefore provide a fast and secure diagnosis of the peripheral vessel status of diabetics, despite calcified vessels (media sclerosis).

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AngE VASCULAR SURGERY

Optimal diagnostics for vascular surgery

By using the comprehensive possibilities of the AngE-System, a segmental oscillography on up to 8 measuring spots can be conducted. With the help of stress tests, the system provides the basis for a better assessment of the collateral bloodstream.

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AngE ANGIOLOGIC

The most advanced angiologic measuring station

Up to 8 pneumatic and 2 optical measurement channels provide comprehensive opportunities: Conduct 8-channel simultaneous measurements on finger and toes as well as on wrists, upper-legs, lower-legs and ankles. Apply Doppler pressure measurements or multi-channel stress tests and observe the nearly unfiltered results within a detailed overview report.

8-Channel Segmental Oscillography

Up to eight measuring tracks can be recorded segmentally and evaluated separately after the measurement. This allows the localization of occlusions as well as the fully automated calculation of different pulse wave parameters within 45 seconds only.

Detailed Report Printout

The new report combines all important details about the patient’s vascular status on a single page at the touch of a button. The oscillograms of the pneumatic measurements, the pulse wave of the optical pulse oscillography as well as the Doppler indices and the venous valve tests can all be displayed on one clear report.

Authentic Pulse Wave

Genuine: By using better pressure sensors and a sophisticated filter algorithm, the system manages to achieve a more detailed and authentic recording and illustration. Vascular patients at risk can be determined easily by evaluation of the dicrotic wave and the calculation of the RI (Reflection Index) and SI (Stiffness Index).

More Highlights

- Multi-Channel Stress Tests
- OPO - Optical Pulse Oscillography
- oABI - Oscillometric ABI (Ankle-Brachial-Index)
- PWI – Pulse Wave Index
- Arterial Reserve
- Morbus Raynaud Diagnosis
- ECG Trigger for Heart Rate Variability
- QAD - Finger/Toe Pressure Measurement
- Doppler ABI

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**AngE PHLEBOLOGIC**

Specially designed for venous applications

Whether venous valve- and muscular pump tests with or without Tourniquet, pneumatic venous occlusion plethysmography (Air VVP) or invasive phlebodynamometry with compartment pressure measurements, this comprehensive measuring station meets all needs for phlebologists.

**Venous Air Plethysmography - Air VVP**

The Air VVP allows conducting plethysmographic measurements by using cuffs only. The often used mercury-filled strain gauges become unnecessary. Make use of dedicated measurement programs for Reactive Hyperemia Tests as well as for the Venous Air Plethysmography.

**Fast arterial screening for differential diagnostics**

Quickly and easily create 4-channel oscillography measurements for the arterial evaluation of the patient - before and after stress. If necessary, the sensitive measurement cuffs allow measuring even on bandages.

**200 Seconds Open Measuring Program**

The AngE offers a special measuring program for phlebologists, in which the system starts a continuous D-PPG measurement with the aid of optical sensors for a duration of up to 200 seconds. This enables the examiner to apply diverse examination methods as well as challenges. By recording continuously, the different measurements can be compared and evaluated easily.

**More Highlights**

- VOP - Venous Occlusion Plethysmography
- PDM - Invasive Phlebodynamometry
- oABI - Oscillometric ABI (Ankle-Brachial-Index)
- Air Phlethysmography
- D-PPG/LRR Screening with Tourniquet
- Venous Valve Tests
- OPO - Optical Pulse Oscillography
- Muscular Pump Test
- Reactive Hyperemia Test
AngE DIABETIC

Innovative vascular screening for diabetes

The AngE uses the innovative TOPP method to, besides measuring on ankle and wrists, also allow the measurement on fingers and toes (including forefoot- and toe pressure measurement with TBI) and therefore provide a fast and secure diagnosis of the peripheral vessel status of diabetics, despite calcified vessels (media sclerosis).

TOPP - Tissue Optical Perfusion Pressure

AngE TOPP combines four measuring cuffs and two optical sensors to enable the measurement on six measuring spots. This creates diverse possibilities to detect blood flow disorders within the final current areas as well as to assess the wound healing success of diabetic patients.

Simple Measuring Program in under 5 Minutes

The AngE TOPP measurement can be conducted easily by following a few steps and without significant stress for the patient. After applying the cuffs on ankles and wrists, as well as the optical sensors on the toes, the system applies a pressure of 180mmHg and decreases it stepwise by 10mmHg.

By recording the optical sensors, the examiner can immediately determine the pressure step at which the patient’s toes show the first pulsations. Different key indicators like the ABI, the amplitude or the peak time of the pulse wave, are recorded simultaneously.

More Highlights

- Localization of Oclusions
- Morbus Raynaud Diagnosis
- Pneumatic Acral Oszillography
- TBI - Toe Brachial Index
- Venous Valve Test with Tourniquet Measurement
- Pulse Wave Velocity with ECG Trigger
- Measurement on Bandages if necessary
- Determination of Arterial Toe Occlusions
- Detection of Hypertensions
AngE VASCULAR SURGERY

Optimal diagnostics for vascular surgery

By using the comprehensive possibilities of the AngE-System, one can conduct a segmental oscillography on up to 8 measuring spots. With the help of stress tests, the system provides the basis for a better assessment of the collateral bloodstream.

Multi-Channel Stress Tests

Through the simultaneous or segmental measurement on up to 8 cuffs, a multi-channel stress test can be performed in a minimum of time. This allows a better determination of the extent of the collateral bloodstream.

Ultrasonic Doppler

The AngE combines ultrasonic probes with pneumatic cuffs to allow Doppler pressure measurements with up to 16 tracks. The Doppler indices can be displayed at a glance on a dedicated overview report.

Overview

- Stress Tests with up to 8 Measuring Channels
- 8-Channel Pulse Oscillography
- Doppler-ABI Measurement
- OPPO - Optical Pulse Oscillography
- Thoracic Outlet Syndrome Diagnosis
- OAD - Optical Arterial Pressure Measurement
## Methods and Applications

<table>
<thead>
<tr>
<th>Method</th>
<th>Description</th>
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<tbody>
<tr>
<td>oABI</td>
<td>By use of the Gesenius-Keller method, the pulse waves are recorded at different cuff pressures. The mean arterial pressure is determined by the maximum amplitude and by comparison leads to a result similar to the ABI.</td>
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<tr>
<td>PWI</td>
<td>The Pulse Wave Index is calculated by inclusion of the pulse wave form. This blood pressure independent indicator constitutes an innovative supplement to the ABI.</td>
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<tr>
<td>TOPP</td>
<td>This newly developed method (Tissue Optical Perfusion Pressure) allows for a fast diabetic screening at minimal patient stress.</td>
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<td>PWV</td>
<td>By evaluating multiple measurement tracks simultaneously, the AngE-System is capable of calculating the pulse wave velocity at minimum time.</td>
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<tr>
<td>ECG Trigger</td>
<td>The recording of the ECG signal allows the measurement of pulse wave runtime as well as the calculation of the peripheral and central pulse wave velocity.</td>
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<tr>
<td>&quot;Swiss Method&quot;</td>
<td>By conducting a simultaneous segmental oscillography at low pressure (ca. 60mmHg), pulse waves can be recorded on four levels at two sides within 45 seconds.</td>
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<tr>
<td>OPO</td>
<td>The AngE Phlebo allows performing optical pulse oscillography to determine blood flow in fingers and toes as well to conduct arterial pressure measurements.</td>
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<tr>
<td>Toe Pressure Measurement (OAD)</td>
<td>Through recording the arterial pulsations at the toe tips, the AngE is able to calculate the TBI (Toe-Brachial-Index).</td>
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<tr>
<td>Morbus Raynaud</td>
<td>The simple and fast measurement before and after suitable provocation maneuvers facilitates the differentiation between vasospastic effects and manifest blood flow disorder.</td>
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<td>Venous Valve Test</td>
<td>The venous valve function can be examined fast and reliably by automatically calculating the pump volume (Vo) and venous fill time (To).</td>
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<tr>
<td>Muscular Pump Test</td>
<td>By comparing the results of a standing and sitting measurement it can be determined whether or not physiotherapeutic measures may improve the venous status of the patient.</td>
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<tr>
<td>Tourniquet</td>
<td>Measuring by the aid of a Tourniquet cuff enables the examiner to determine whether a valve malfunction is localized within the deep or superficial venous system.</td>
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<tr>
<td>Air VVP</td>
<td>This method allows performing plethysmographic measurements with the aid of pressure cuffs only.</td>
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<tr>
<td>Shoulder Girdle Maneuver</td>
<td>By applying different postural positions, the TOS diagnosis allows determining motion-dependent blood flow restrictions within the arms reliably.</td>
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<tr>
<td>PDM</td>
<td>Phlebdynamometry is an invasive venous pressure measurement, which can be conducted by the AngE PDM on one or two measuring channels.</td>
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</tbody>
</table>
Our AngE Products

The modular expert solution

The AngE vascular diagnostic products are combined in a modular system that can be adapted easily to your needs. The comprehensive software allows to combine and evaluate several measurement methods.

AngE Pro 8

The AngE Pro 8 provides simultaneous oscillographic measurements at up to eight positions. This allows determining the approximate localisation of an occlusion very quickly, at a measuring time of less than a minute. The specially developed pressure sensors lead to a detailed, nearly unfiltered recording of the pulse waves.

AngE Phlebo

Small and handy, the AngE Phlebo allows measurements in both, the arterial as well as the venous vessel system. The multifunctional sensor reduces clutter at the workspace. The direct power supply through the USB cable allows a maximum of mobility.

AngE Pro 4

The AngE Pro 4 differs from the AngE Pro 8 by the reduced number of channels and is built to provide fast and easy screening of the vascular system. The compact device is also ideal for monitoring the success during and after vascular interventions and as carry-on device in mobile settings.

AngE PDM

The AngE PDM allows the invasive venous pressure measurement as well as compartment pressure measurement with one or two channels and provides the examiner with an open measuring program for individual measurements.

AngE Software

The AngE Software allows for a seamless interaction of all AngE modules while offering a central patient database. Independent of the measuring method, each measurement can be assigned to the corresponding patient.

- DICOM, HL7, GDT - Interfaces
- Direct PDF Export
- Comprehensive Single-Page Report
- Windows 10 Compatible
Do You Have Any Questions? Contact Us Directly:

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