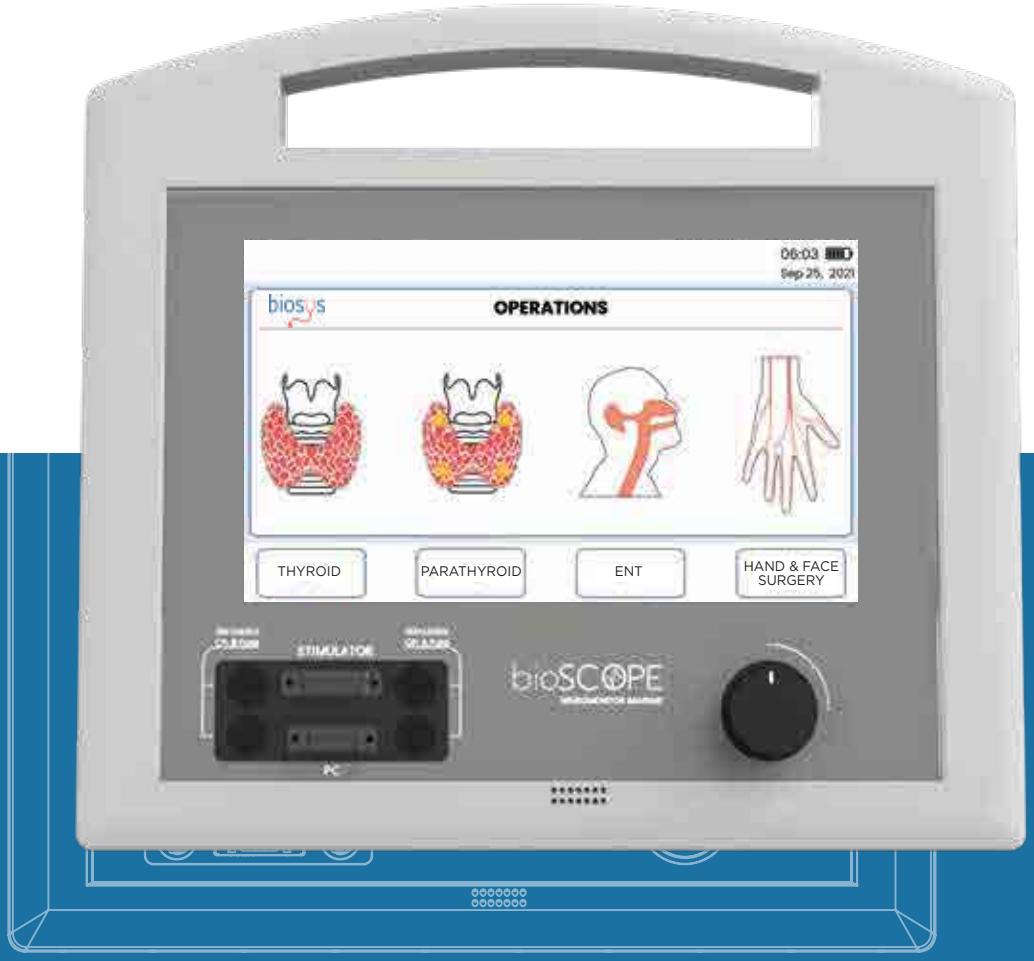
biosys

bioSCOPE

Safe Protection of **Neural Functions**



www.biosysmed.com

INNOVATIVE MEDICAL TECHNOLOGIES

Since 2012, Biosys has been producing innovative medical technologies with the combination of R&D experience of engineers who are experts in their fields, and doctors with high field experience, and creating new generation solutions by identifying the needs of the sector. Biosys is constantly working to improve health services worldwide and to enable more people to access these services.

It aims to be a pioneer with its new project Neuromonitor device "Bioscope", which goes beyond Intensive Care Type Mechanical Ventilation Device "Biyovent", "Bio2Flow" providing High Flow Oxygen therapy, Humidifier device "Bioaqua" and Patient Monitor Device "Biolog".

Biosys Biomedical Engineering, in cooperation with Aselsan, Arçelik, Baykar, and Infinium (USA) Defense in previous projects, gained experience in the sector and then started to produce the Patient Monitor Biolog in its facilities.

As of 2022, Biosys Biyomedikal A.Ş established Biosys GmbH and started to make some of its production in Germany.

DETAILED RESEARCH
CORRECT RESULT

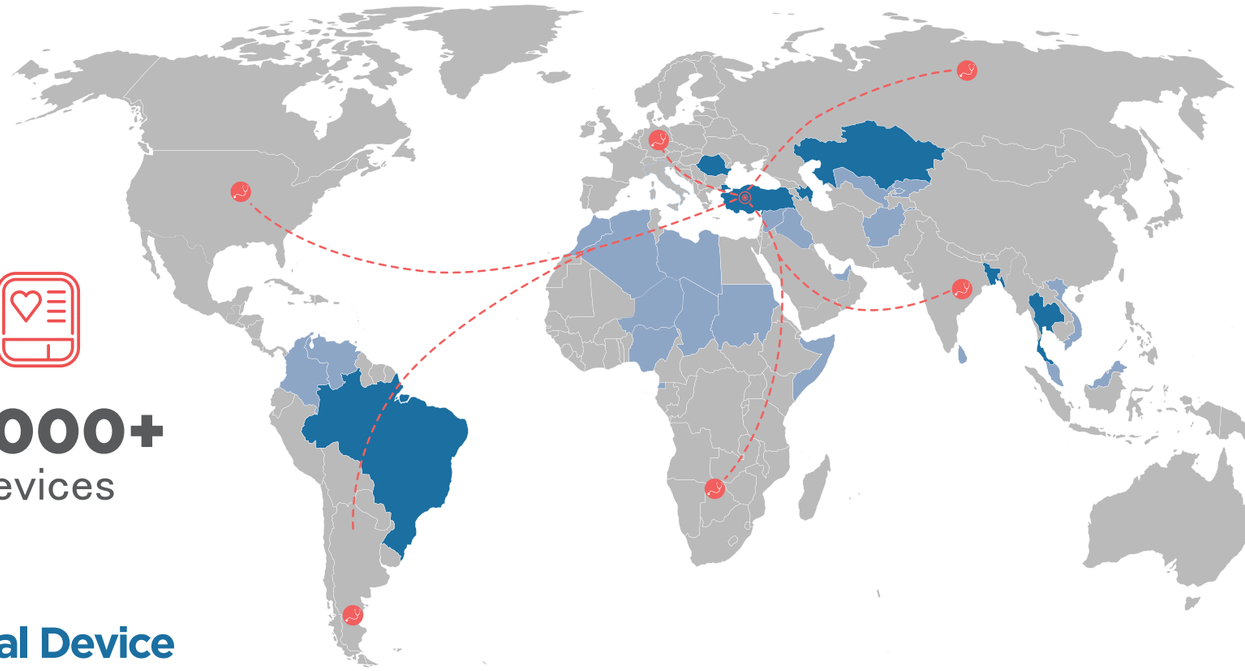
NOW

NOW
We are in

4
contients

40+
countries

15000+
devices



FUTURE
Projects

Hemodialysis Machine
Anesthesia Machine
Home Type Ventilator
Nebuliser
Endoscopic Capsule

FUTURE

We Make a Difference in the **Medical Device Industry** with New Generation Technology.

As Biosys, we realized that, as a result of our research to meet the needs of the health sector, there are deficiencies, especially in intensive care systems, and that these deficiencies directly affect both healthcare professionals and patients. In the direction of this awareness, we have developed the Biyovent Intensive Care Type Mechanical Ventilator Device as a result of the 5 years R&D work that we have progressed with the opinions of experienced doctors.

We are making a breakthrough in Turkey by producing a mechanical ventilator device for intensive care with Biyovent, which we developed with the support of the Ministry of Science, Industry, and Technology, TÜBİTAK, and Bilkent University Cyberpark. With its advanced features, Biyovent is making a difference in the world healthcare sector. In addition to achieving great success in a short time with this new generation of technology, we also make contributions to the health of many people all around the world.

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bioaqua biO2flow bioSCOPE BİYOVENT bioLOG

INNOVATIVE DESIGN, FUNCTIONAL USAGE

Designed for patient safety, Optimized with doctors.

The Bioscope Neuromonitoring Device minimizes the risk in operations such as thyroid, parathyroid, hand-face surgery, and ENT surgery where the nerve injury risk is high. It provides patient safety by testing nerve-function integrity during the operation. Audio and visual feedback based on data collected from the patient guides the operator. This prevents injuries and permanent damage.

Why Bioscope?

- **Maximum patient and doctor safety**
- **Long-term battery life**
- **Detailed operation report and documentation**
- **Functional and aesthetic interface**
- **Portable design and easy installation**

EASILY PORTABLE, MULTIFUNCTIONAL NEUROMONITOR

Working Principle

- Electrodes are used for direct contact with the nerve and surrounding tissues.
- Electrical stimulation is generated with the electrode used.
- The electrical stimulation that occurs is transmitted to the relevant muscle by the stimulated nerve.
- This electrical signal generated in the muscle is transferred to the device.
- The electrical signal transferred to the device is converted into sound and image in the device.
- The obtained signals are controlled by the operator.
- The operator processes the signal along with the acquired image and sound.

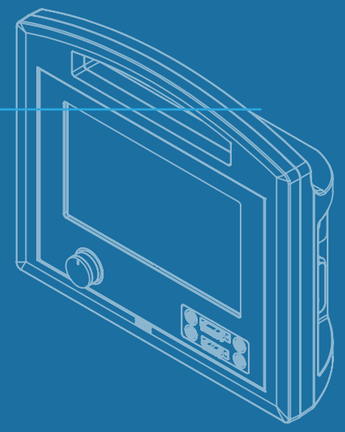
Neuromonitoring not only identifies the location of the recurrent laryngeal nerve, but also accurately detects variant nerve tissues, finds damaged loci, helps determine the position of neural restoration, and assists in interpreting the condition of vocal cord function after the operation.

Physical Features

- Height: 30 cm
- Depth: 12 cm
- Width: 35 cm
- Weight: 4.5 Kg

BIOSCOPE

Safe Protection of Neural Functions



HIGH DATA SECURITY, AND DETAILED DOCUMENTATION

Your Health is in Safe Hands with High Safety Measures

Consumables and Accessories

- The device is used by an adapter cable and a control connection cable.
- It is compatible with the use of monopolar and bipolar probes.
- It is suitable for the use of EMG Endotracheal Tubes and EMG electrodes.

Technical Features

- Audio and visual feedback
- Data recording and reporting
- Electrode status control with impedance measurement
- 2-hour battery strength
- Artifact cancellation.
- Hibernate (Display Disabled Mode)

Modes

- Single channel measurement,
- Dual channel measurement,

Electrical Supply

- Current: 2 A
- Power: 40 W
- Voltage: 19 VDC
- Stimulator Isolation: 3750 V
- EMG Isolation: 5000 V
- Use of Medical Grade Adapter

Stimulator Parameters

- Current: 0.01-30 mA
- Frequency: 1 Hz-5 Hz
- Output Sensitivity: ±0.01 mA ± 10%
- Measurement Sensitivity: ±0.02 mA ± 10%
- Compliance Voltage: 36 V (Optional 90 V)
- Wave Width: 50, 100, 150, 200, 250, 300 us
- Duration: 10, 20, 30, 40, 50, 100 ms
- Time to Reach Target Current: Less than 10 us

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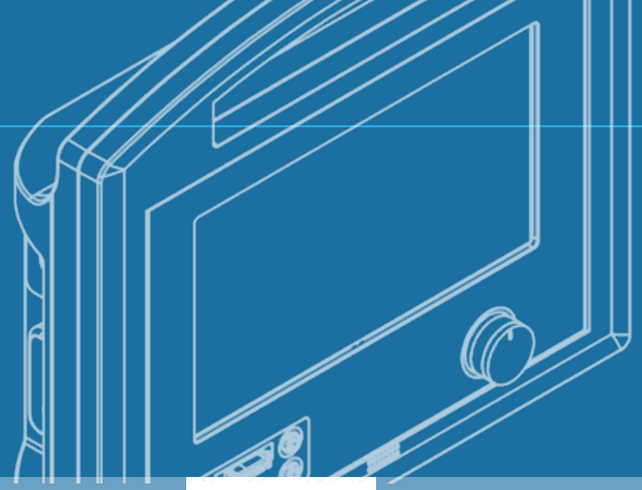
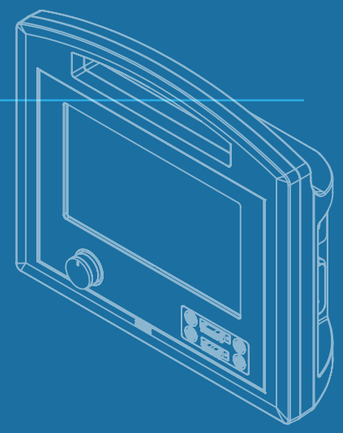




SAFE PROTECTION OF NEURAL FUNCTIONS

Neuromonitoring

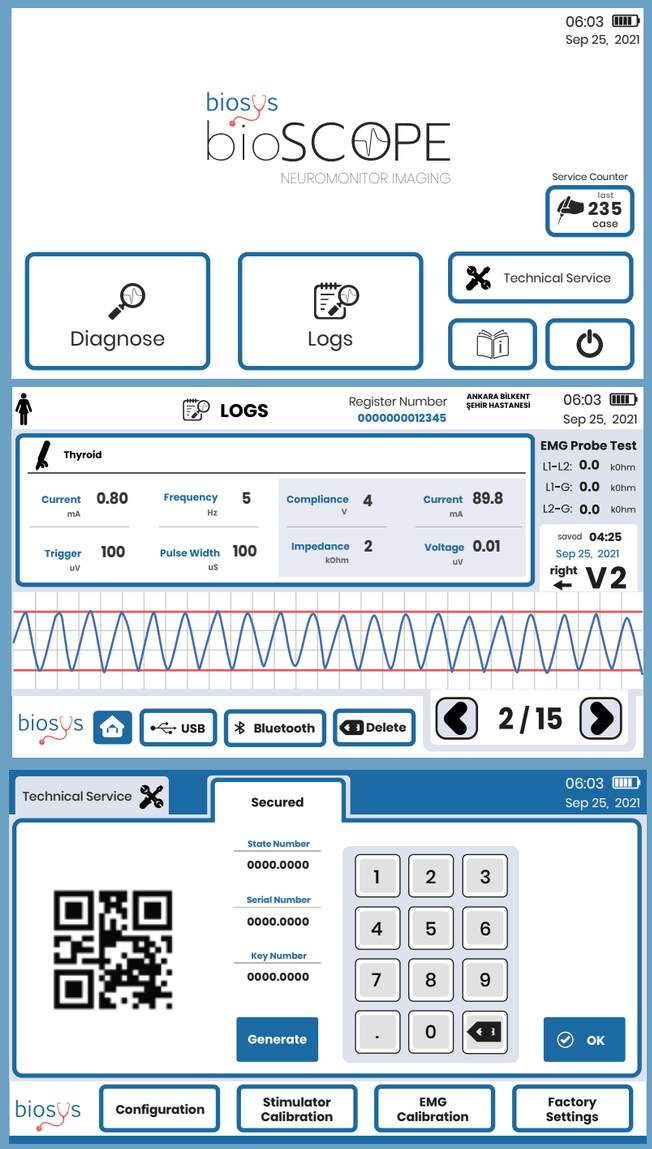
Intraoperative neuromonitoring (IONM) is the process of examining the effects on nervous system by creating electrical impulses. Electrodes are attached to certain muscle groups based on the type of surgery. The attached electrodes record your nervous system's response to electrical stimulation and show changes in your nervous system's functioning on the neuromonitoring device's screen. It transmits the unusual data emerging in the nervous system to the operators.

Display Features

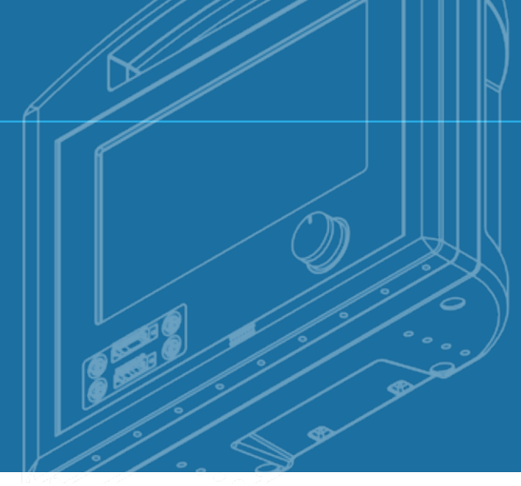
- 10.1" sized touchscreen
- 1024 x 600 resolution
- 50 uV- 50 mV Vertical Display Modes

BIOSCOPE aims to convey the desired operations to the operator quickly and accurately by aiming at simplicity with its screen design.

It provides easy use with its user-friendly interface and design.



TECHNICAL FEATURES



General Features
Audio and visual feedback
Data recording and reporting
Electrode status control with impedance measurement
Artifact cancellation

EMG Amplifier	
Input	1/2 channels
Automatic/Manuel Gain Selection	1-50K
Band Width	30 Hz-30 KHz
Input Sensitivity	1uV- 40 mV
Input Noise	Maximum input voltage noise of 8 nV/√Hz at 1 kHz 100 fA/√Hz current noise at 1 kHz
Input Impedance	30 GΩ
Common Mod Rejection	>90 dB@60 Hz
DC Offset Rejection	±4.00 vDC

Physical Features	
Height	30 cm
Depth	12 cm
Width	35 cm
Weight	4.5 Kg

Internal Fuse
32 mA Model F, 250 V 5 x 20 mm (Other similar fuses may not provide the same degree of protection.)

Display Features
10.1” sized touchscreen
1024 x 600 resolution
50 uV-50 mV Vertical Display Modes
Hibernate (Display Disabled Mode)

Stimulator Parameters	
Current	0.01-30 mA
Frequency	1 Hz-5 Hz
Output Sensitivity	±0.01 mA ± 10%
Measurement Sensitivity	±0.02 mA ± 10%
Compliance Voltage	36 V (Optional 90 V)
Wave Width	50, 100, 150, 200, 250, 300 us
Duration	10, 20, 30, 40, 50, 100 ms

Electrical Supply	
Current	2 A
Power	40 W
Voltage	19 VDC
Usage of Medical Grade Adaptor	
Double Electrical Isolation	
2 hour battery strength	

Alarms
Battery Alarm
High Current Alarm
High Voltage Alarm
High Temperature Alarm
Voltage Alarm
Probe Connection Alarm

Modes
Single channel measurement
Dual channel measurement

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Safe Protection of
Neural Functions

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