Psychophysiological telemetric system “Rehacor-T”
model Mini

Illustrated catalogue
Rehacor-T system

MEDICOM MTD
Taganrog, Rostov region, Russia, 347900,
68 Frunze Str. – production postal address,
99 Petrovskaya Str. – legal address

www.medicom-mtd.com
www.apnox.ru

Service e-mail: service@medicom-mtd.com
Fax: +7 (8634) 61-54-05 (24 hours)

Quality management system is certified with

European Quality Certificate
CE 538571,
issued by
British Standards Institution (BSI)
Modular multifunctional psychophysiological telemetric system "Rehacor-T":

- Registration of various parameters by 4 channels with the main patient transceiver-recorder ABP-4.
- Increasing the number of recorded parameters to 16 by using additional wireless units, modules and sensors.
- Quality parameters' record by means of electrodes and sensors from the device "Rehacor-T" set, as well as using the original EEG electrodes, electrode systems and other accessories from the set of EEG electrodes ES-EEG-10/20 "Encephalan-ES", which is a part of the psychophysiological telemetric system "Rehacor-T".

Application modes of psychophysiological telemetric system "Rehacor-T":

- telemetric (wireless interface technology Bluetooth®);
- autonomous (recording data onto the memory card – Holter-type);
- autonomous-telemetric (data backup onto the memory card of the patient transceiver-recorder during telemetric registration).

Enhanced functionality and application of psychophysiological telemetric system "Rehacor-T" in clinical practice, sports, industrial and institutional medicine, psychophysiology and scientific research are provided by a basic autonomous transceiver-recorder ABP-4, additional wireless units, modules, sensors and accessories, along with methodical software (SW) from system set.

Software from the Psychophysiological telemetric system "Rehacor-T" set

<table>
<thead>
<tr>
<th>Software name</th>
<th>page</th>
<th>Medical purpose (briefly)</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;Rehacor&quot; software for functional biocontrol with biofeedback training</td>
<td>7</td>
<td>Procedures of functional biocontrol with BFB (biofeedback and neurobiofeedback) for improvement of neural regulation in various disorders, increasing stress tolerance, correction of the status, training skills of self-control and optimal functioning of the athletes, students, top managers and persons of responsible and stressful professions. Scenario Editor creates new procedures and provides the assessment of a procedure and course effectiveness.</td>
</tr>
<tr>
<td>&quot;HRV&quot; software for heart rate variability analysis</td>
<td>11</td>
<td>Assessment of autonomic nervous system and neurohumoral regulation of the patient based on a study of heart rate variability to assess the adequacy of the physical and psycho-emotional stress.</td>
</tr>
</tbody>
</table>
## Contents of the illustrated* catalogue

<table>
<thead>
<tr>
<th>Item</th>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Sets of autonomous patient transceiver-recorder (ABP-4) of &quot;Rehacor-T&quot; system</td>
<td>4</td>
</tr>
<tr>
<td>2.</td>
<td>Additional accessories of psychophysiological telemetric system &quot;Rehacor-T&quot;</td>
<td>6</td>
</tr>
<tr>
<td>3.</td>
<td>Software &quot;Rehacor&quot; for functional biocontrol with biofeedback; required equipment and accessories</td>
<td>7</td>
</tr>
<tr>
<td>4.</td>
<td>Software of system &quot;Rehacor-T&quot; for additional study types</td>
<td>11</td>
</tr>
<tr>
<td>5.</td>
<td>Poly-4 Wireless Module and electrodes and sensors with &quot;Micro-8&quot; connector for polygraphic channels</td>
<td>12</td>
</tr>
<tr>
<td>6.</td>
<td>Gels, disposable electrodes and accessories</td>
<td>17</td>
</tr>
<tr>
<td>7.</td>
<td>Required computing hardware and office equipment</td>
<td>18</td>
</tr>
</tbody>
</table>

* The external appearance of the products is given as an example and may have some differences that do not affect functionality when delivered.
**Sets of autonomous patient transceiver-recorder (ABP-4) of "Rehacor-T" system**

1. **A_6038** "BFB-telemetric" set includes:
   - **Autonomous patient transceiver-recorder ABP-4**: 4 universal polygraphic channels, 1 movement activity channel (integrated), telemetric interface (BlueTooth®) of PC connection (USB-port) to additional wireless devices;
   - **Accessories**: wireless PC Adapter "IB-4" (USB–Bluetooth), rechargeable batteries set (type – AA, 2 pcs., including 1 additional), charger, emulator, N electrode cable.
   - **Operation documentation**
   - **Patient data management – "Cardfile"**.

**Comments**

- **Provides**: connection with additional wireless units, modules and sensors

Set A_6038 (depending on application) should be supplemented with:
- sensors, electrodes and accessories;
- required software;
- accessories, wireless modules;
- computing hardware.
“Autonomous-Telemetric” set includes:

- **Autonomous patient transceiver-recorder ABP-4**: 4 universal polygraphic channels, 1 movement activity channel (integrated), telemetric interface (BlueTooth®) of PC connection (USB-port) to additional wireless devices;
- **Memory card and function of autonomous data recording onto memory card.**
- **Accessories**: wireless PC Adapter “IB-4” (USB–Bluetooth), rechargeable batteries set (type – AA, 2 pcs., including 1 additional), charger, emulator, N electrode cable.
- **Operation documentation**
- **Patient data management – "Cardfile".**

Provides:
- telemetric connection to the base station (PC) for registration quality control during the attachment of sensors and electrodes;
- connection with other modules during the study;
- transfer of recorded data from the memory card to the base station after the study.

Set A_6038-2 (depending on application) should be supplemented with a set of electrodes and sensors; required software; accessories, wireless modules; computing hardware.
<table>
<thead>
<tr>
<th></th>
<th></th>
<th>Additional accessories of psychophysiological telemetric system &quot;Rehacor-T&quot;</th>
</tr>
</thead>
</table>
| **2.** | **2.1** | A_5346-1 USB Power Supply Adapter  
For ABP-4  
- Power from PC USB;  
- From mains (220V, 50Hz). |
|   |   | For stationary use, alternatively to autonomous powering from accumulators.  
**Can be used with**  
ABP-4;  
Wireless pulse oximeter module. |
|   | **2.2** | A_5362 Table support for ABP-4  
**The set** includes a clamp and a bag. |
|   |   | At customer's option |
|   | **2.3** | A_2329 SW-key (USB) |
|   |   | Allows working with software at any additional PC, including network variant. |
3. Software "Rehacor" for functional biocontrol with biofeedback; required equipment and accessories

<table>
<thead>
<tr>
<th>3.1</th>
<th>A_1010-01</th>
<th>&quot;Rehacor&quot; Software for Functional Biocontrol with Biofeedback Training, &quot;Basic&quot; Suite</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Software provides procedures of functional biocontrol with biofeedback (BFB training) with the control of various physiological parameters for:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- non-medicated restoration of damaged functions;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- improvement of nerve regulations in different diseases, phobias, pathological addictions;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- improvement of stress resistance;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- control and correction of psychophysiological state in different situations and sicknesses;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- forming the optimal state for performance for sportsmen, persons with stressful and responsible jobs;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- overcome the attention deficit hyperactivity disorder (ADHD) in children and adolescents.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SW contains procedure library and procedures editor, which allow changing procedures and creating new ones.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3.2</th>
<th>A_1010-02</th>
<th>&quot;Rehacor&quot; Software for Functional Biocontrol with Biofeedback Training, &quot;Professional&quot; Suite</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Extended suite of procedures library, using features of ABP-4 and additional wireless modules for multichannel EEG and other parameters registration. In addition to &quot;Basic&quot; suite it contains neurofeedback procedures:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- for functional brain asymmetry;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- optimization of brain rhythms and zonal differences of alpha-rhythm;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- very low frequency brain activity;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- combined training for brain electric activity and cerebral blood flow (REG);</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- multiparametric training for correction of psycho emotional state and psychological stress.</td>
</tr>
</tbody>
</table>

Requires purchasing of: electrodes, sensors and accessories from the ABP-BFB kit. Additional impedance adapters with sensors to work with biofeedback training procedures by circulatory parameters (ICG and impedance plethysmography).

Requires purchasing of: electrodes, sensors and accessories from the ABP-BFB kit. Additional impedance adapters with sensors to work with biofeedback training procedures by circulatory parameters (ICG and impedance plethysmography), electrode systems like ES-EEG-4K-3 and accessories to them (from the set of EEG electrodes ES-EEG-10/20 "Encephalan-ES") for BFB procedures of neurobiocontrol; additional modules and sensors depending on type of multiparameter training.
ABP-BFB electrodes, sensors and accessories kit – for “Rehacor” software

Includes:

- GSR sensor (length – 1.2 m);
- respiratory effort sensor (length – 1.2 m) – 2 pcs.;
- PPG sensor with fixers (length – 1.2 m);
- skin conductance sensor (length – 1.2 m);
- envelope EMG sensor (length – 1.2 m) – 2 pcs.;
- EMG or Skin Conductance cables from disposable electrodes (length – 1.2 m) – 2 pcs.;
- EEG bipolar cables with adhesive electrodes (length – 1.5 m) – 2 pcs.;
- cable for 1 ECG derivation for disposable electrodes (length – 1.5 m);
- temperature sensor (length – 1.2 m) – 2 pcs.;
- adhesive electrode paste;
- ECG, EMG disposable electrodes – 50 pcs.;
- brush for electrode cleaning;
- adhesive plaster Omnifix.

Optional supply of sensors at customer’s option from this catalogue. Cable length can be changed on request.
<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
</table>
| 3.4 | A_2229 | **Set of ECG electrodes**  
The set includes 3 clips | It can be used in biofeedback training with the use of the ECG, as an alternative to disposable electrodes |
| 3.5 | A_6595-8 | **Electrode system ES-EEG-4K-3A**  
4 monopolar EEG derivations with cup electrodes for silicone tube caps for biofeedback procedures (neurofeedback) on brain functional asymmetry, optimization of brain rhythms and zonal differences of alpha-rhythm, very low frequency brain activity from "Professional" procedures library. | From "Encephalan-ES" set  
Required:  
- electrode gel;  
- set of silicone tube caps for EEG/REG electrodes attachment (A_2804-2). |
| 3.6 | A_5202-1 | **Bipolar EEG Cable**  
with electrodes for contact gel  
Electrodes are fixed with silicone tube caps.  
The cable contains 2 recording electrodes, there is no neutral electrode.  
Cable length – 1.5 m. | Used with N-electrode attached onto the patient and connected to the same registration unit to which these cables can be connected to.  
Electrode gel and set of silicone tube caps for EEG/REG electrodes attachment are required (A_2804-2). |
| 3.7 | A_2804-2 | **Set of silicone tube caps for EEG/REG electrodes**  
Silicone tube caps to attach a small amount of EEG electrodes for contact gel and REG derivations for biofeedback procedures.  
**The set includes** caps of 3 sizes from 48 to 62. | From "Encephalan-ES" set  
For electrode system ES-EEG-4K-3A or electrodes with a cable for 2 EEG bipolar derivations. |
| 3.8 | A_6595-2 | **Electrode system ES-EEG-4K-3A(c)**  
with adhesive cup electrodes  
4 monopolar EEG derivations with adhesive cup electrodes for biofeedback procedures (neurofeedback) on brain functional asymmetry, optimization of brain rhythms and zonal differences of alpha-rhythm, very low frequency brain activity from "Professional" procedures library.  
**The set includes** adhesive plaster Omnifix. | From "Encephalan-ES" set  
For EEG registration in BFB training ("Rehacor" Software for Functional Biocontrol with Biofeedback Training)  
**Requires** electrode paste EC2, TEN-20 or similar.  
**For additional fixation** use Glue-collodion, glue remover and compact hair-dryer for quick gel drying (purchased individually at pharmacy or shop, consultations on demand). |
| 3.9 | A_4008-99 | **Wireless Electrostimulator**  
**The set includes:**  
- biofeedback procedure of stress resistance training;  
- battery (type – AAA, 4 pcs., including 2 additional). | Procedure of stress resistance training additional to the "basic" or "professional" library. |
### 4. Software of system "Rehacor-T" for additional study types

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>4.1</strong></td>
<td><strong>A_1964</strong></td>
<td>&quot;HRV&quot; Software for Heart Rate Variability Analysis</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Software is used to assess the state of the autonomic nervous system and neurohumoral regulation of the patient, to evaluate the adequacy of physical and psycho-emotional stress taking into account the autonomic reactivity to a provoking effect, as well as to control the effect of medicinal drugs and efficiency of treatment prescribed. Software uses standard recommended types of quantitative analysis and results representation in the form of cardiointervalogram trends (HR, RR), statistical and spectral parameters, hystograms and scattergrams (correlation rhythmograms) of RR-intervals allocation, spectrograms with frequency ranges that characterize the state of ANS and balance of sympathetic and parasympathetic sections (HF, LF, VLF). There is an option of forming the formalized protocol with initial state description and autonomic reactivity. Software allows analyzing selected fragments of continuous ECG records (24 hrs, night recording) at long-term EEG studies or multiparameter monitoring.</td>
</tr>
<tr>
<td><strong>4.1.1</strong></td>
<td><strong>A_4740</strong></td>
<td>ECG Cable for bipolar derivation with neutral electrode</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3 snaps for disposable electrodes. Length – 1.5 m.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Used for BFB training (software &quot;Rehacor&quot;), heart variability analysis (software &quot;HRV&quot;) or for record under stationary conditions</td>
</tr>
</tbody>
</table>

**Additional equipment is required**

It can be used both independently and as concomitant software, related to the basic study. Requires purchasing ECG cable (A_4740) if it is not included into delivery set.
### Poly-4 Wireless Module and electrodes and sensors with "Micro-8" connector for polygraphic channels

| 5.1 | A_5359-2 | Poly-4 Wireless Module | Requires purchasing of:
|      |          | Provides synchronous with ABP-4 data registration of signals via 4 polygraphic channels. | set of electrodes, sensors and accessories for Poly-4 module;
|      |          | The set includes: | PG-ECG connector with derivation cables (A_4768);
|      |          | • rechargeable batteries (type – AA, 2 pcs., including 1 additional); | set of fixing belts (A_7652).
|      |          | • N-electrode cable. |  

| 5.1.1 | A_4731 | Simulator | At customer's option |
|       |       | Meant for technical verification of workability of Poly-4 module channels, as well as to check the connection between the Poly-4 module and the base transceiver-recorder ABP-4. |  

| 5.1.2 | A_5346-1 | Mains Power Supply Adapter for Poly-4 | For stationary use, alternatively to autonomous powering of Poly-4 module from accumulators. |
|       |          | Connected to mains (220V, 50Hz) or USB port of computer equipment |  

<p>| 5.2 | A_5361 | Reader Module |  |
|      |       | Measures and processes |  |</p>
<table>
<thead>
<tr>
<th>Section</th>
<th>Code</th>
<th>Description</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2</td>
<td>A_2673-5</td>
<td><strong>Respiratory Effort Sensor</strong> (<em>RespEff</em>)</td>
<td>For evaluation of parameters of abdominal and thoracic respiration (breathing rate and amplitude, duration of in- and exhalation phases). Cable length – 1.2 m. The set includes belts for children and adults.</td>
</tr>
<tr>
<td>5.2.1</td>
<td>A_7350</td>
<td><strong>Small additional belt for respiratory effort sensor.</strong></td>
<td>For chest circumference of 40-80cm.</td>
</tr>
<tr>
<td>5.3</td>
<td>A_4141-3</td>
<td><strong>Photoplethysmogram (PPG) Sensor</strong></td>
<td>For evaluation of parameters of peripheral blood circulation which characterize pulse blood filling and tone of variable diameter vessels. Cable length – 1.2 m. The set includes: - finger cuff; - sensor fixer &quot;ear clip&quot;. Additional sensors at customers' option for various applications, as well as for multiparameter registration in sports medicine, psychophysiology, clinical and scientific research.</td>
</tr>
</tbody>
</table>
| 5.4 | A_4139-1 | **Temperature Sensor**  
For evaluation of skin surface temperature in selected body area.  
Cable length – 1.2 m. | Additional sensors at customers’ option for various applications, as well as for multiparameter registration in sports medicine, psychophysiology, clinical and scientific research. |
| 5.5 | A_4142 | **Envelope EMG Sensor (double)**  
For evaluation of tone of selected muscle basing on envelope EMG measurement.  
Cable length – 1.2 m. |
| 5.6 | A_5731 | **Envelope EMG sensor (triple)**  
For evaluation of tone of selected muscle basing on envelope EMG measurement.  
Cable length – 1.2 m. |
| 5.7 | A_4143 | **GSR Sensor** ("GSR")  
For evaluation of vegetative manifestations and emotional stress basing on the measurement of GSR phase component.  
Cable length – 1.2 m. |
| 5.8 | A_5119-1 | **Skin Conductance Sensor** (EDA-ElectroDermal Activity)  
For evaluation of vegetative manifestations and emotional stress basing on the measurement of phase and tonic components of skin conductance.  
Cable length – 1.2 m. | Additional sensors at customers’ option for various applications, as well as for multiparameter registration in sports medicine, psychophysiology, clinical and scientific research. |
| 5.9 | **Movement sensor (Move) wired** |
| 5.9.1 | A_5361 | **Movement sensor (Move) wired** 1.2 m long |
| 5.9.2 | A_5361-1 | **Movement sensor (Move) wired** 2 m long |
| 5.10 | A_4740-1 | **ECG Cable** for bipolar derivation with neutral electrode  
3 snaps for disposable electrodes.  
Cable length – 1.5 m. | **Used for:**  
BFB training (software “Rehacor”);  
heart variability analysis (software “HRV”);  
record under stationary conditions. |
| 5.11 | A_4194-3 | **Bipolar Cable for EMG/SP**  
The cable contains 2 recording snap electrodes, there is no neutral electrode.  
Cable length – 1.45 m.  
**For disposable electrodes.** |
| 5.12 | A_5202-2 | Bipolar EEG Cable with electrodes for contact gel  
**Electrodes are fixed with silicone tube caps.**  
The cable contains 2 recording electrodes, there is no neutral electrode.  
Cable length – 1.5 m. |
|---|---|---|
| 5.13 | A_4031-1 | Bipolar EEG Cable  
**Cup, adhesive electrodes.**  
Cable length – 1.5 m.  
The cable contains 2 recording electrodes, there is no neutral electrode.  
Used with N-electrode attached onto the patient and connected to the same registration unit to which these cables can be connected to.  
Electrode gel and set of silicone tube caps for EEG/REG electrodes attachment are required (A_2804-2). |
| | | **Required:**  
electrode paste EC2, TEN-20 or similar;  
adhesive plaster (A_1302);  
glue-collodion (probe is provided); compact hair-dryer for quick gel drying (purchased by customer’s option at pharmacy or shop). |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th>Gels, disposable electrodes and accessories</th>
</tr>
</thead>
</table>
| 6.1 | A_2669 | Ten20 Conductive Paste  
For adhesive cup electrodes (114 g). |
| 6.2 | A_6532 | Electrode Cream EC-2 or similar  
For adhesive cup electrodes (100 g). |
| 6.3 | Electrode gel |   |
|   | • for cup EEG electrodes for contact electrode gel;  
• for EEG electrodes from removable electrode systems with fixing EEG electrodes in eyelets. |   |
| 6.3.1 | A_1854 | Electrode gel  
250 ml bottle |
| 6.3.2 | A_1854-1 | Electrode gel  
1 L bottle |
| 6.4 | A_1302 | Adhesive plaster (OMNIFIX elastic or similar)  
To fix electrodes and sensors.  
Dimensions 10 m x 5 cm |
| 6.5 | A_2714 | Disposable snap ECG Electrode  
(for EOG, EMG)  
50 pcs. in 1 pack |
## Required computing hardware and office equipment

**At Customer’s option**

### 7.1 Personal computer

Software of Psychophysiological telemetric system "Rehacor-T" is installed on the computer in accordance with selected sales package.

#### 7.1.1 A_2380

**Personal computer** portable.

- **One** additional monitor is connected.

#### 7.1.2 A_2380-1

**Personal computer** portable.

- **Two** additional monitors are connected.

#### 7.1.3 A_4305

**Personal computer** stationary.

- **One or two** additional monitors are connected.

### 7.2 Additional accessories and software for the personal computer

#### 7.2.1 A_6843

**Mobile HDD 1000 GB**

#### 7.2.2 A_4300

**Computer Acoustic System** *(2.1, 3.1 or quality closed type headphones – at customer’s option)*

Required if FBC with biofeedback "Rehacor" software is present in sales package

#### 7.2.3 A_5109

**Antivirus application "Kaspersky Internet Security"**. Recommended to protect PC from viruses

#### 7.2.4 A_4319

**MS Office ENG. Recommended to be installed at PC**. Required package contains Word and Excel

#### 7.2.5 A_2604

**Bag for laptop transportation**

**Configuration and characteristics are approximate and should be specified when order.**

**Minimal requirements:**

- Intel Core i5;
- RAM 4GB;
- HDD 500GB;
- monitor 15”;
- OS Windows 10.

If the customer requires and is able to purchase the improved characteristics, inform the manufacturer about it: advanced characteristics should be approved by the manufacturer.
<table>
<thead>
<tr>
<th></th>
<th>Code</th>
<th>Description</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.2.6</td>
<td>A_4299</td>
<td>Uninterruptible power supply</td>
<td></td>
</tr>
</tbody>
</table>
| 7.3  | A_0687 | Additional Monitor (minimal diagonal 23")        | Monitor is required if the following software is present in sales package:  
|      |       | • resolution 1920x1080,                         | • FBC with biofeedback "Rehacor".          |
|      |       | • aspect ratio 16x9.                            |                                              |
| 7.4  | A_5565 | Digital widescreen TV-set                        | At Customer's option if the following software is present in sales package:  
|      |       |                                                  | • FBC with biofeedback "Rehacor".          |
| 7.5 | A_3750 | **Electronic tablet** | OS Windows 10. Required for operational control of data record at free state of a test person. |
| 7.6 | A_4087 | **Printer**  
Laser Black-And-White A4 format | Another printer type supply – by agreement. |