OBJECTIVE CHARACTERISTICS

REHABILITATION COMPLEX ORTHESIS-1

The robotic complex Orthesis-1 is designed for treatment and rehabilitation of post stroke patients (with brain-computer interface).

TECHNICAL CHARACTERISTICS:

Number of degrees of freedom	1
Motion planes	horizontal, sagittal
Диапазон движений, град.	0-75
Rotational angles of the hand gripper, °:	
- limit rotational angle of the phalanx arm of the 3rd general hand unit	φph. ≥ 75
- limit rotational angle of the phalanx arm of the 1st and 2nd general hand units	φph. ≥ 29
Maximum torque at the exoskeleton joints, Nm	≤ 4
Nominal torque, Nm	2.8
Maximum force value that is tangential towards movement trajectory of fingertips, N	< 30
Time of full opening and closing of graspless hand, s	0,5÷3
Time of continuous operation of a hand unit, not less than, min	45
Network interface	10 Base-T/100 Base-TX Ethernet порт
Power consumption, VA	550
Voltage, V	220 ±10 %
Power frequency, Hz	50
Nominal drive angular velocity, °/s	0÷260
Kinematic accuracy, arcmin	≤ 6

OBJECTIVE CHARACTERISTICS

REHABILITATION COMPLEX ORTHESIS-1

The technology is recommended for post stroke patients, patients with posttraumatic hand and leg palsy of any intensity and limitation, and children with cerebral palsy.

COMPOSITION OF THE COMPLEX:

1	General hand unit
2	Control and power supply unit
3	Laptop or PC
4	Electrode electroencephalograph system
5	Emergency stop button
6	Stand for hand unit fixation

FUNCTIONALITY:

1. Passive opening a human hand based on the commands from the brain-computer interface in order to give proprioceptive and touch feedback while imagining hand opening.

2. Opening and closing a graspless human hand based on commands transmitted by a doctor using the interface of a specialized software.

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