

# Endomed 484



Allround 4-channel  
electrostimulator



# Endomed 484

The Endomed 484 is a new generation high-performance electrostimulator for the health professional who wants it all:

- TENS (Transcutaneous Electrical Nerve Stimulation) for pain management
- NMES (Neuromuscular Electrical Stimulation) for muscular stimulation and re-education
- PENS (Percutaneous Electrical Nerve Stimulation) for electro-acupuncture and acupoint stimulation

Suitable for electro acupuncture

## Electrotherapy

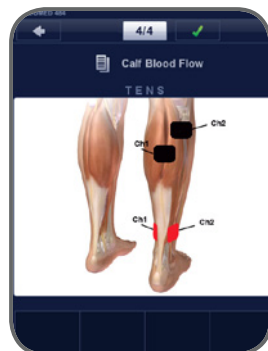
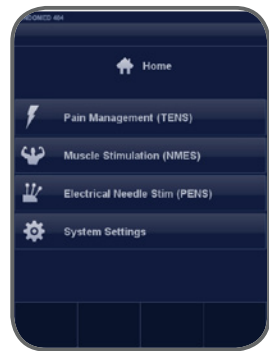
Equipment for pain management, muscle stimulation and/or diagnostics. Electrotherapy applications for fast pain relief without side effects. Muscles can be stimulated to improve the function of soft tissue. Electrotherapy can be used to measure differentiated tissue response to stimulation, to provide a diagnosis about tissue quality.



# Endomed 484

The 4 channels can be used separately, in pairs or at the same time with different programs.

The Endomed 484 is therefore the ultimate solution for the treatment of painful conditions and muscle impairment in stroke rehab (incl. dysphagia), orthopaedics, sport rehab and pelvic floor re-education (incontinence).



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## TENS

(Transcutaneous Electrical Nerve Stimulation) is a method of electrical stimulation for pain relief in acute and chronic conditions. The Endomed 484 includes multiple forms of TENS as options: Conventional (high frequency) TENS, Acupuncture-like (low frequency) TENS, Burst TENS and Modulated TENS. The different methods of applying TENS relate to the different physiological mechanisms for pain modulation. TENS is non-invasive and has few side effects when compared with drug therapy.

## NMES

(Neuromuscular Electrical Stimulation) is used to promote muscle strengthening and functional recovery of extremities (upper and lower limbs). The Endomed 484 allows the user to work with single, dual or multiple channels and offers synchronous, asynchronous and alternating (reciprocal) stimulation for muscles or muscle groups. In addition to these stimulation modes, the Endomed also features PEMS (Progressive Electrical Muscle Stimulation). This unique function is extremely beneficial in Functional Electrical Stimulation (FES) since it ensures that all four channels stop simultaneously, regardless of the contraction patterns of each channel. PEMS is highly desirable for muscle stimulation in a kinetic chain (e.g. in stroke rehab).

Endomed 484 ... 4 Pain Management and 4 Muscle Stimulation

Endomed 484 ... 4 Performance and 4 Versatility

Endomed 484 ... 4 you!





## Endomed 484

### PENS

(Percutaneous Electrical Nerve Stimulation) is a proven and effective analgesic therapy which combines the advantages of both TENS and electro-acupuncture. In PENS the current is delivered to the body using small acupuncture-like needles positioned in soft tissues and/or muscles for the relief of pain and functional improvement in patients with migraine, neuropathic pain, sciatica and chronic knee pain, for example. Electro-acupuncture and related techniques are effective for acute and chronic pain and reduces some side effects. This minimally invasive procedure is rapidly growing in popularity as the results are excellent. Some even consider it the ultimate combination of Dry Needling and TENS.



## Endomed 484

12 evidence-based protocols (6 TENS, 4 NMES and 2 PENS) including the display of the anatomic localizations and treatment instructions

4 Fully independent channels for the simultaneous stimulation of up to 8 needles/electrodes

Current wave forms:

- asymmetrical biphasic
- symmetrical biphasic
- symmetrical biphasic with interphase interval (square pulses; net zero DC)

Intensity can be regulated separately for each channel

Pulse durations up to 1000  $\mu$ s

Quick Access to evidence based parameters, even in manual mode

Powerful current output up to 140 mA (peak per channel)

Modulation modes: Frequency (FM), Pulse Width (PWM), Amplitude (AM)





## Endomed 484

Smart buttons for selection of

- frequency
- pulse width
- modulation mode

Smart buttons for the selection of

- single channel
- dual (linked) channels
- multi-channels

PEMS Progressive Electrical Muscle Stimulation: an unique function for Functional Electrical Stimulation

AUTO-mode for Frequency and Pulse Duration (available in certain programs)

Clinical guidelines & evidence-based protocols have been incorporated, providing the user with recommendations for the effective treatment of pain and various musculoskeletal disorders.

Active Rest button: starts electrical stimulation during the rest phase for the prevention of muscle atrophy

Stores up to 1000 favorites



## Endomed 484

Programming function: enables the user to define personalised programs and store them as favourites

Safe and comfortable: the biphasic nature of the waveforms minimize any skin reaction due to the build-up of electrolytes under the electrodes

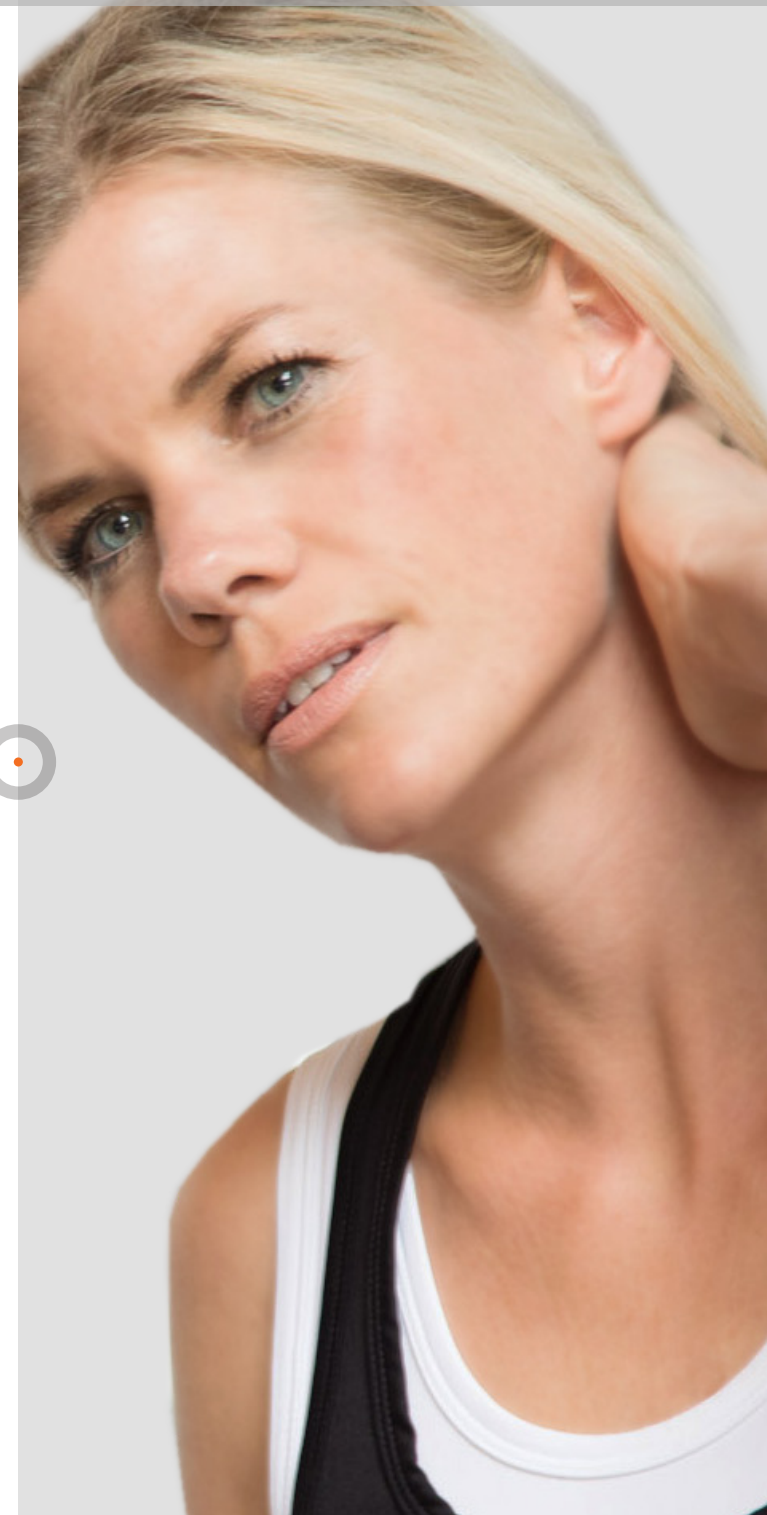
Sequential programming: combine up to 15 program steps and run them automatically one after the other

Easy-to-use

High resolution full-colour touchscreen

Compact & stylish Light-weight device can be used on a mobile basis (portable)

Mains-powered or battery-powered (optional)





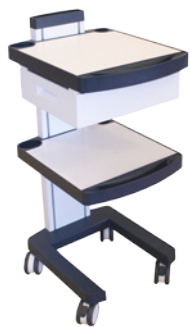
# Endomed 484

1498981 Endomed 484

- 1498740 CD-ROM with Instructions For Use (PDF on CD-ROM)
- 1498742 Information Booklet
- 3444290 Mains cable 230V-EUR
- 1498010 Device base (inclination support)
- 8x xxxxxx self-adhesive electrode (EN-Trode) 5x5 cm, 2 mm female
- 8x xxxxxx self-adhesive electrode (EN-Trode) 5x9 cm, 2 mm female
- 4x 3444211 Patient cable 2-core & 2 mm male plugs - black, with colour clips
- 3444180 Point Electrode, 2mm female connector,  
incl. 10 silicone conductive caps
- 2x 3444182 Crocodile clamp with 2 mm female connector (set of 2)

## Optional accessory

1468960 EN-Car



## ORDERING DATA



# Endomed 484

## TECHNICAL SPECIFICATIONS

Power supply	100–240V, 50/60 Hz, max. 100 VA
Dimensions of device (WxDxH)	24 x 28.6 x 9.3 cm
Dimensions of device with base	24 x 30.5 x 18.2 cm
Weight	2.5 kg
Weight, including optional battery	3.5 kg
Number of channels	4 (100% independent)
Intensity	0–140 mA (in steps of 0.1 mA)
Output:	Constant current
Timer	0–90 min (in steps of 1 min)
Current wave forms (TENS/NMES/PENS):	
• Asymmetrical biphasic pulsed current (net zero)	
• Symmetrical biphasic pulsed current (net zero)	
• Symmetrical biphasic pulsed current with interphase interval (net zero)	
Pulse duration	10–1000 $\mu$ s (for symmetrical biphasic pulsed current) and 5–450 $\mu$ s (for asymmetrical biphasic pulsed current)
Range of interphase interval	0–250 $\mu$ s
Frequency	0.5 – 200 Hz
Modulation frequency	0 – 180 Hz
Modulation programs	1/1, 3/3, 6/6, 12/12, 30/30 and 60/60s



# Endomed 484

## TECHNICAL SPECIFICATIONS

TENS stimulation modes:

- High Frequency TENS
- Low Frequency TENS (acupuncture-like)
- Burst Frequency TENS
- Modulated TENS: Frequency Modulation (FM), Pulse Width Modulation (PWM) and Amplitude Modulation (AM)

NMES stimulation modes:

- Single channel stim
- Dual channel stim: synchronous, asynchronous and alternating (reciprocal)
- Multi channel stim: synchronous, asynchronous, alternating and PEMS (Progressive Electrical Muscle Stimulation)

Active rest stimulation (fixed frequency of 8 Hz during resting period):	yes
ON/OFF time:	0 -120 s
Ramp UP/DOWN time:	0 – 10 s
Delay time:	0.1 – 120 s





# Endomed 484

## TECHNICAL SPECIFICATIONS

PENS stimulation modes:

- High-Frequency Electro-acupuncture
- Low-Frequency Electro-acupuncture
- Burst Frequency Electro-acupuncture
- Modulated Electro-acupuncture: Pulse Width Modulation (PWM), Amplitude Modulation (AM), HAN Stimulation

Programmable positions: 300

Sequential programs: Max. 15 phases

This is a medical device. It complies with all applicable medical regulations. For more details please consult the instructions for use (downloadable via [www.enraf-nonus.com](http://www.enraf-nonus.com)).

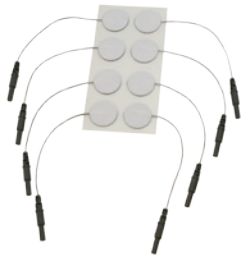


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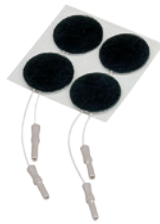
## ACCESSORIES

### Adhesive electrodes

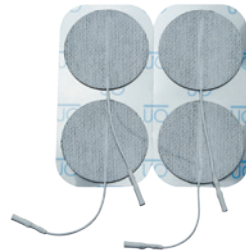
- 3444222 Adhesive electrodes Ø 2,2 cm, 2 mm female, 10 sheets of 8 (also for EMG)
- 3444056 EN-Trode Ø 3,2 cm, 2 mm female, 10 sheets of 4
- 3444135 EN-Trode Ø 5,0 cm, 2 mm female, 10 sheets of 4
- 3444057 EN-Trode 5x5 cm, 2 mm female, 10 sheets of 4
- 3444058 EN-Trode 5x9 cm, 2 mm female, 10 sheets of 4



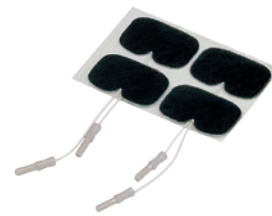
3444222



3444056



3444135



3444057



3444058



# Endomed 484

## ACCESSORIES

### Point electrodes

3444180 Point electrode (pen model), 5 mm Ø, 2 mm female, incl 10 conductive rubber caps

3441181 Silicon conductive caps (set of 10 pcs) for 3444180

### Adapters

2523524 Adapter plug, 2 mm female, 4 mm male, red

2523523 Adapter plug, 2 mm female, 4 mm male, black

3444182 Crocodile clamp with 2 mm female connector (set of 2)



3444180



3444181



2523524



2523523



3444182





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## ACCESSORIES

### Rubber electrodes

- 3444128 Rubber electrodes 4x6 cm, 2 mm female, set of 2.
- 3444129 Rubber electrodes 6x8 cm, 2 mm female, set of 2
- 3444130 Rubber electrodes 8x12 cm, 2 mm female, set of 2

### Moist pads for rubber electrodes

- 1460273 Moist pads for rubber electrodes 4x6 cm, set of 4
- 1460266 Moist pads for rubber electrodes 6x8 cm, set of 4
- 1460275 Moist pads for rubber electrodes 8x12 cm, set of 4

### Fixation straps

- 3444020 Strap 100x3 cm
- 3444021 Strap 250x3 cm
- 3444022 Strap 100x5 cm
- 3444023 Strap 250x5 cm



3444128



3444129



3444130



1460273  
1460266  
1460275



3444020  
3444021



3444022  
3444023



# Endomed 484

## Patient cable

3444211 Patient cable 2-core & 2 mm male plug - black, with coloured clips

## Bag

3444675 Carrierbag 4-series

## Battery

2501016 Battery 12.0V 1.8AH



3444211

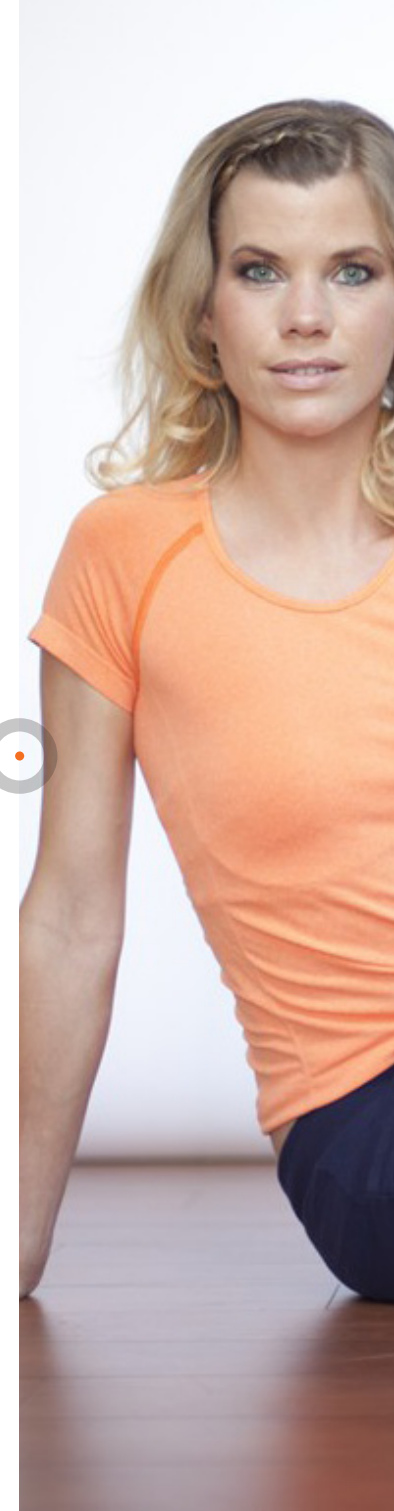


3444675



2501016

# ACCESSORIES





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