

Reaching 3CH

Category: NMES/FES – motion triggered with threshold

Training of forward reaching and hand opening in a standing posture. The stimulation is triggered by lifting the upper arm on which the stimulator is placed.

Indication: Paralysis or muscle weakness of the upper limbs, e.g., after SCI, MS or stroke

Stimulation pattern: sequential activation

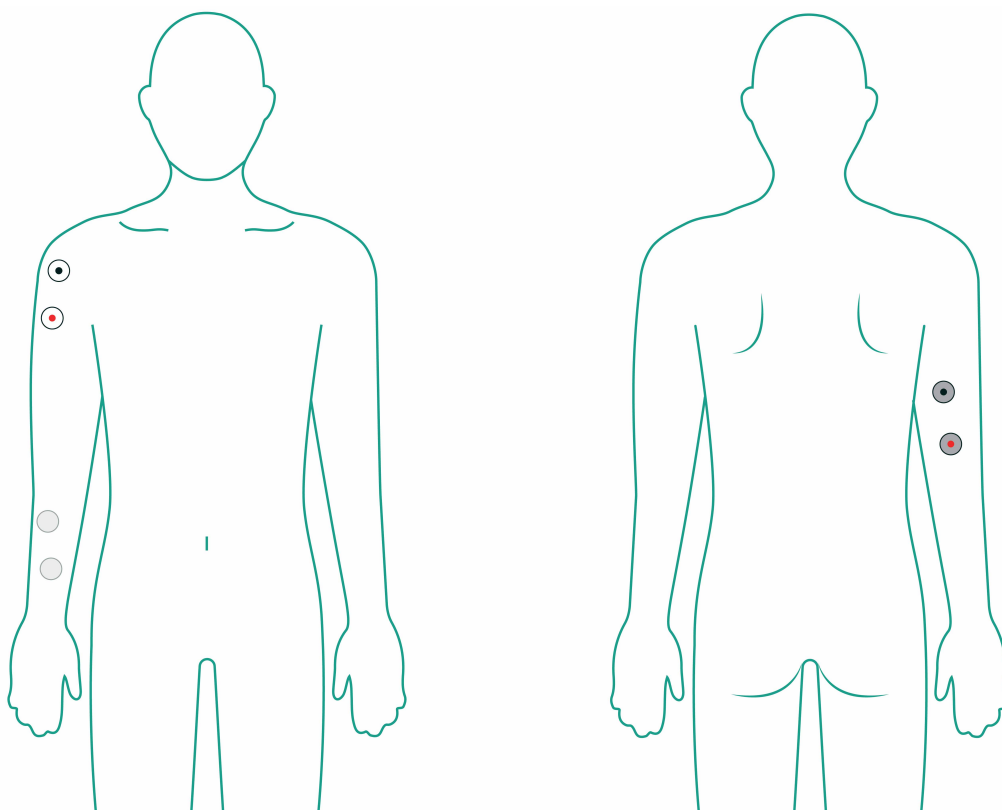
Stimulation cable: 5-channel

Active channels: Channel 1, Channel 2, Channel 3

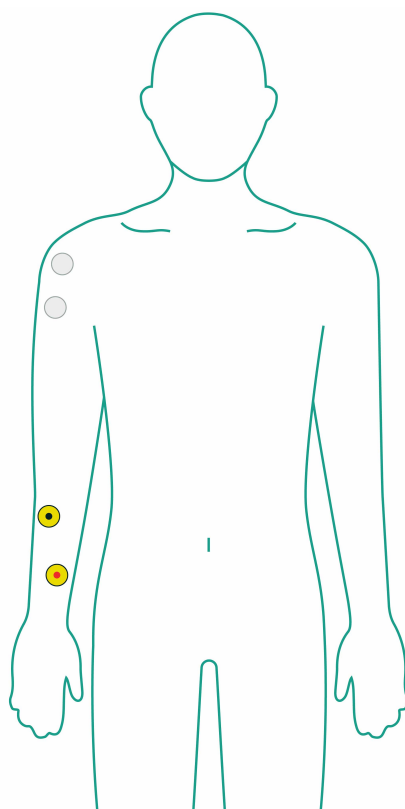
Solo mode: Yes

Placement of electrodes and stimulator

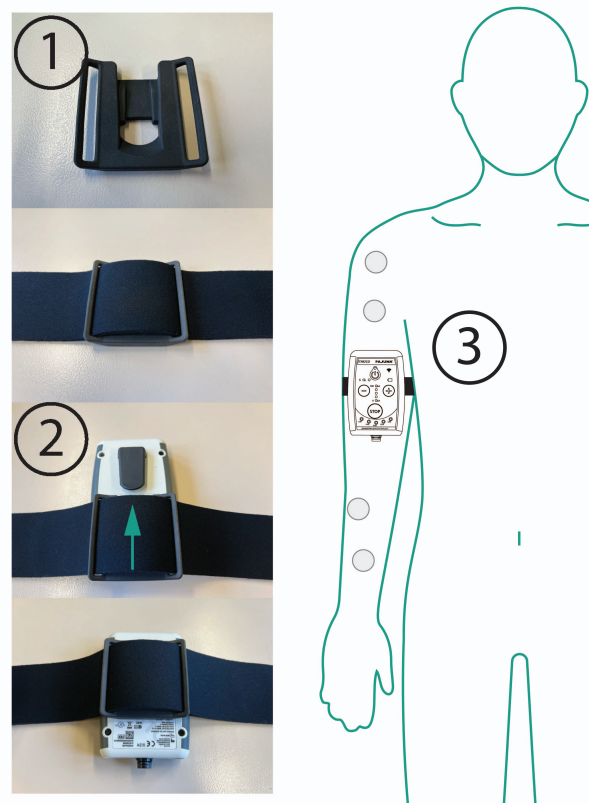
Channel	Function	Electrode type
1	anterior deltoid	bipolar, square 2" x 2" (5cm x 5cm)
2	triceps	bipolar, square 2" x 2" (5cm x 5cm)
3	wrist- and finger extensors	bipolar, round 1.25" (3.2cm)



Electrode placement: channel 1 – anterior deltoid and channel 2 – triceps



Electrode placement: channel 3 – wrist- and finger extensors

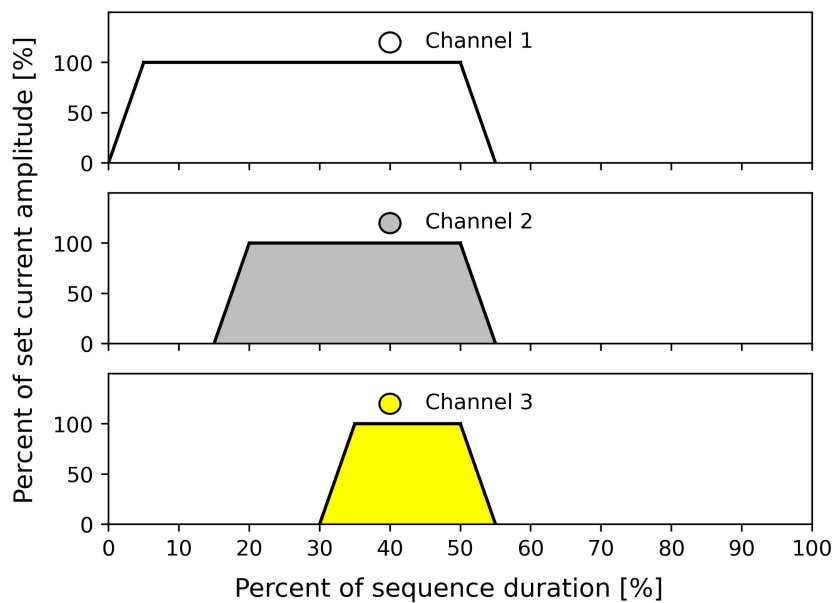


Stimulator placement

Current settings for stimulation stages

Training:

Total duration		20:00:000 (min:sec:msec)			
Sequence duration		00:22:000 (min:sec:msec)			
Sequence mode¹		motion triggered with threshold			
Threshold		70°			
Movement direction		raising			
Channel	Maximal current	Maximal pulse width	Frequency	Pulse form	Pulse mode ²
1	100.0 mA	200 μ s	33.3 Hz	biphasic (100 μ s pause)	sequential
2	100.0 mA	200 μ s	33.3 Hz	biphasic (100 μ s pause)	sequential
3	100.0 mA	200 μ s	33.3 Hz	biphasic (100 μ s pause)	sequential



Activation of the stimulation channels for training

**¹Sequence modes**

- Automatic repetition: The stimulation sequence will be automatically repeated until the total duration of the stage is reached.
- Motion triggered cyclic: The stimulator is placed on a limb and the cycle percentage will be estimated during cyclic movements like leg cycling or arm cranking. The Stimulation is controlled as a function of the current cycle percentage and can be activated in up to three phases per active channel.
- Motion triggered with threshold: The stimulation sequence will be triggered by an change in the inclination angle of a body segment on which the stimulator is placed. The angle and direction of change (increasing or decreasing) must be defined.
- Manually triggered: The stimulation sequence will be manually triggered by the therapist or patient using the Stim2Go app.

²Pulse modes

- Sequential: The stimulation is activated in up to three phases within a sequence duration or motion cycle.
- Always on: For a current amplitude larger than zero, the stimulation of a channel is permanently on over the entire sequence duration.