

Multistimulator OG001



- Low Voltage Directive 2006/95/EC
- Electromagnetic Compatibility 2004/108/EC
- Various Modules applicable:
 - Odorant Module Type 1
to create an odorant pulse with a defined length
 - Odorant Module Type 2
to adjust the flow rate by means of a manual flow controller
 - Taste Module
to deliver a defined amount of liquid in a defined period of time
- Fast and easy exchange of components

The OG001 Multistimulator is designed as an entry-level device for odor and taste research as well as for the application of accompanying stimuli (e.g. in fMRI).

It is a very simple, easy-to-use small device which can be used both as a simple olfactometer and as a gustometer. This is made possible by 3 module slots, which can be equipped in different ways with odor modules (2 types), taste modules or a combination of both.

If more than 3 channels shall be used, one or more additional devices can be connected with each other and controlled as a combination from a single computer.

The OG001 is a laboratory device without medical approval according to EN 2017/745 (MDR).

Software Functionality

The software is designed for high usability. It is programmed in the same way as the control software for the Gustometer and Olfactometer. The user is guided through the program and functions are clearly arranged in the main screen. The program can easily be learned due to these features.

The software allows for the creation of so-called classes and sequences. A class defines valve settings and/or release of portions of liquid, i.e., a type of stimulus. Olfactory and gustatory stimuli may also be applied in parallel. A sequence contains a series of stimuli, which can be run automatically. The length of all single stimuli can be defined in the sequence as well. These classes and sequences can be saved and loaded again.

The sequence may be controlled by an external device by means of a connection possibility for an external trigger. This is particularly interesting for fMRI experiments. In parallel to this the device sends trigger signals according to the sequence and class.

A TTL signal is needed for external triggering. The rising edge will trigger the stimulus.

The software can be extended with additional packages. These packages are listed and explained in a separate list.

COMPETENCIES

- Special device construction
- Prototype construction
- In-house and hardware-related design
- Programming
- PCB design development

SERVICES

- Technical support on-site and remotely
- Installation and setup
- Maintenance
- Application Support
- Soft- and hardware-support
- Guarantee
- Sales and distribution

FIELDS OF APPLICATION

- Laboratory applications
- Quality monitoring
- Research
- Product development
- Diagnosis
- Therapy

CONTACT

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Holm, Dec 2023



DESIGN APPLICABLE IDEAS

Multistimulator OG001

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Basic Unit

The basic unit contains all components necessary for operation of 3 modules, either gustatory or olfactory. Operation of olfactory units additionally requires purified compressed air supply of at least 2 bar and maximum 16 bar. The compressed air connection must at least supply 8 liters per minute. If no compressed air is available, Burghart Messtechnik can offer an additional external pressure pump.

The device has a wide range mains power input and can operated between 110V and 240V.

Total weight (empty):	15 kg
Weight of gustation module:	2 kg
Weight of type I olfaction module:	500 g
Weight of type II olfaction module:	1 kg
Total width:	380 mm (with handles 460 mm)
Total depth:	350 mm
Total height:	610 mm
Protection class:	IP 20

Connection Hose

- Length Up to 15 m, according to customer specifications (12m Standard length).
- Olfaction module PTFE hose 4/2.5 (outer diameter/inner diameter) (mm), Silicone hose 3/1 (mm).
- Gusto module PTFE hose 2/1 (mm)

Electrical Data

Mains connection:	110 - 240 VAC, 50 - 60 Hz
Power consumption main device powered on, standby:	20 VA
Maximum consumption in operation, (3 modules for gustation):	90 VA

Ambient Conditions

Operating temperature:	+10°C to +40°C
Storage temperature:	- 25°C to +70°C
Rel. humidity during operation:	10% to 75%
Rel. humidity in storage:	10% to 80%

Operate and store the device without exposure to frost, dew, dripping water, rain, direct sunlight.

Furthermore, a PC or notebook is needed for operation, which has the following minimum hardware- and software requirements:



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Software

Operating system Windows XP (32 bit) with minimum service pack 3, Microsoft Vista (32/64 bit) with minimum service pack 2, Microsoft Windows 7 (32/64 bit) with minimum service pack 1 or Windows 10, German or English version each.

The software can be optionally extended by features. These features are listed and explained separately.

Hardware

Desktop PC or laptop (notebook) with USB 2.0 interface. Screen resolution horizontal minimum 1280, vertical minimum 720 (wide screen format). RAM for XP minimum 1 GB. For Vista and Windows 7 32 bit minimum 2 GB, for Vista and Windows 7 64 bit minimum 4 GB.

If the basic unit is equipped with odorant modules a mask for mouth and nose is included, in case of taste units a mouthpiece will be delivered.

Odorant Module Type 1

This module type is used to create an odorant pulse with a defined length. Here, air is loaded up to saturation in a container and then released through a valve. The valve opening time is controlled via the software.

Odorant Module Type 2

Using this module type, the flow rate may be adjusted by means of a manual flow controller. There is also a second manual flow controller which allows for setting of a dilution. Both flow controllers have a range of 0.5 to 5 litres per minute by standard. Other flow ranges are available upon request, since the flow meters are equal in dimensions. Both air flows can be loaded with odorant or can be humidified. Liquid as well as solid odorants may be used.

Taste Module

A taste unit can deliver a defined amount of liquid in a defined period of time. The standard model (with 2.5 ml syringes) reaches a flow rate of 4 – 450 micro litres per second. For longer experiment duration the syringe refills automatically during the stimulus pause, if the pause is long enough. Bigger syringes - up to 5 ml - allow higher flow rates.

General Information for Operation

Depending on configuration, odorants, distilled water or taste solutions are needed, probably everything together.

If an odorant needs to be changed, the loading container and all tubes going away from the device, have to be exchanged. Burghart offers an odorant exchange kit for this.

Exchanging these components is easy and quickly.

Taste channels can be re-used with a different taste quality after intensive cleaning. This hint must be observed especially for oils and emulsions.

Bottles for taste solutions as well as taste solutions are not delivered with the device.

