

# DRY CABINET II

## User's manual



**MP Elektronik Technologie, s.r.o.**

Dlouhá 219

678 01 Blansko - Klepačov

Czech Republic

Tel: +420 516 416 937

Fax: +420 516 417 641

E-mail: [info@mpelektronik.cz](mailto:info@mpelektronik.cz)

[www.mpelektronik.cz](http://www.mpelektronik.cz)

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## 1 Introduction

The purpose of the User's manual is to inform the user of the properties, use, correct assembly procedure and maintenance of MP DRY CABINET II. The User's manual contain description of construction, principle of operation, technical parameters of the device.

### 1.1 Intended Use of the Device

Drying cabinet MP DRY CABINET II is intended for drying and storage of PCB's and electronic components at very low relative humidity without having to use of vacuum packaging.

### 1.2 Acts, Regulations and Standards

The acts, regulations and standards mentioned below are in force in the European Union. In other countries, the local legislation dealing with the given issues is valid. The device complies with directives and government regulations and harmonized technical standards listed in the table.

Name	Designation
On safety of low voltage electric devices	Directive 2006/95/EC (GR No. 17/2003 Coll.)
Low voltage electrical installations - revision	EN 33 2000-6
Protection against electric shock	EN 33 2000-4-41 ed.2
Revision of electric devices	EN 33 1500
Protection class by coverage	EN 60529/1993

### 1.3 Type of the device

MP DRY CABINET I. 1x door

MP DRY CABINET II. 2 x doors

MP DRY CABINET IV. 4 x doors

## 2 Safety at Work, Fire Protection

### 2.1 Obligations of the Operator

- The operator shall be obliged to secure the compliance with generally binding safety regulations during the work with the device.
- The operator shall be obliged to perform visual checks of the device and the basic maintenance.
- The operator shall be obliged to determine responsibilities of persons for the commissioning, maintenance, cleaning and regular maintenance, setting and adjusting before the commissioning in order to secure the safety of persons and property.
- The operator shall be obliged to provide that the relevant activities are performed by persons with adequate qualification.
- The operator shall be obliged to provide safe access to the device and sufficient space for the access to the device.
- The operator shall be obliged to renew the state of the safety markings upon their damage or illegibility in accordance with their original state.

### 2.2 Qualification Requirements on Employees

- The device assembly may only be performed by an expert acquainted with the operation, safety and other regulations, if any, concerning the safety at work, valid for the place in which the device is to be located or otherwise related to the place of work.
- The assembly and wiring of the electrical configuration of the device shall only be performed by an employee with qualification complying with the valid legislation of the country in which the device is operated.
- The device may only be operated independently by employees with full physical and mental capacity, older than 18, demonstrably trained for the given type of work and acquainted with the Service Instructions which shall be kept in a well-accessible place.

### 2.3 Conditions of Safe Operation of Electric Devices

- The User's manual shall be available to all staff performing activities related to the installation, operation and maintenance of the electric device, at any time.
- The installation, operation and maintenance shall only be provided by persons qualified for these activities in accordance with valid legislation of the country in which the device is operated.
- It is **PROHIBITED** to interfere in any way with the construction of the device.
- It is **PROHIBITED** to perform maintenance, cleaning and repairs if the electric supply is not disconnected and if the related technological equipment is not secured to be off.
- It is **PROHIBITED** to have the device work with open or removed covers – blanking plates.
- It is **PROHIBITED** to touch the inner sheathing of the device and the inner side of the door while the heat may cause burns.

### 2.4 Fire Protection

- The device and its operation do not increase the fire hazard.
- **ATTENTION**, an electric device, do not extinguish with water or foam.

### 2.5 Safety Labels Used and Their Significance

Do not extinguish with water or foam!



### 3 Technical Specification

#### MP DRY CABINET I.

Overall dimensions (š x v x d)	700 x 1070 x 690 mm
Inner dimensions (š x v x d)	640 x 800 x 520 mm
Weight	90 kg
Effective capacity	230 l
Number of shelves	3 (perforated metal sheet)
Power supply	230V 50Hz
P max	750 W
Humidity sensor sensitivity	+/- 0,5% RH
Temperature sensor sensitivity	+/- 0,1 K
Temperature range setting	0 – 60 °C
Working temperature range	15 – 45 °C
Average power consumption energy when heating off	50 W/h
Average power consumption at 40 °C	180 W/h
Average power consumption at 50 °C	280 W/h
Average power consumption at 60 °C	350 W/h
Service space required around the device	650 mm

#### MP DRY CABINET II.

Overall dimensions (š x v x d)	700 x 1920 x 690 mm
Inner dimensions (š x v x d)	640 x 1650 x 520 mm
Weight	180 kg
Effective capacity	460 l
Number of shelves	5 (perforated metal sheet)
Power supply	230V 50Hz
P max	750 W
Humidity sensor sensitivity	+/- 0,5% RH
Temperature sensor sensitivity	+/- 0,1 K
Temperature range setting	0 – 60 °C
Working temperature range	15 – 45 °C
Average power consumption energy when heating off	50 W/h
Average power consumption at 40 °C	180 W/h
Average power consumption at 50 °C	280 W/h
Average power consumption at 60 °C	350 W/h
Service space required around the device	650 mm

**MP DRY CABINET IV.**

Overall dimensions (š x v x d)	1410 x 1920 x 690 mm
Inner dimensions (š x v x d)	1350 x 1650 x 520 mm
Weight	320 kg
Effective capacity	920 l
Number of shelves	10 (perforated metal sheet)
Power supply	230V 50Hz
P max	950 W
Humidity sensor sensitivity	+/- 0,5% RH
Temperature sensor sensitivity	+/- 0,1 K
Temperature range setting	0 – 60 °C
Working temperature range	15 – 45 °C
Average power consumption energy when heating off	60 W/h
Average power consumption at 40 °C	200 W/h
Average power consumption at 50 °C	300 W/h
Average power consumption at 60 °C	380 W/h
Service space required around the device	650 mm

## 4 General Description

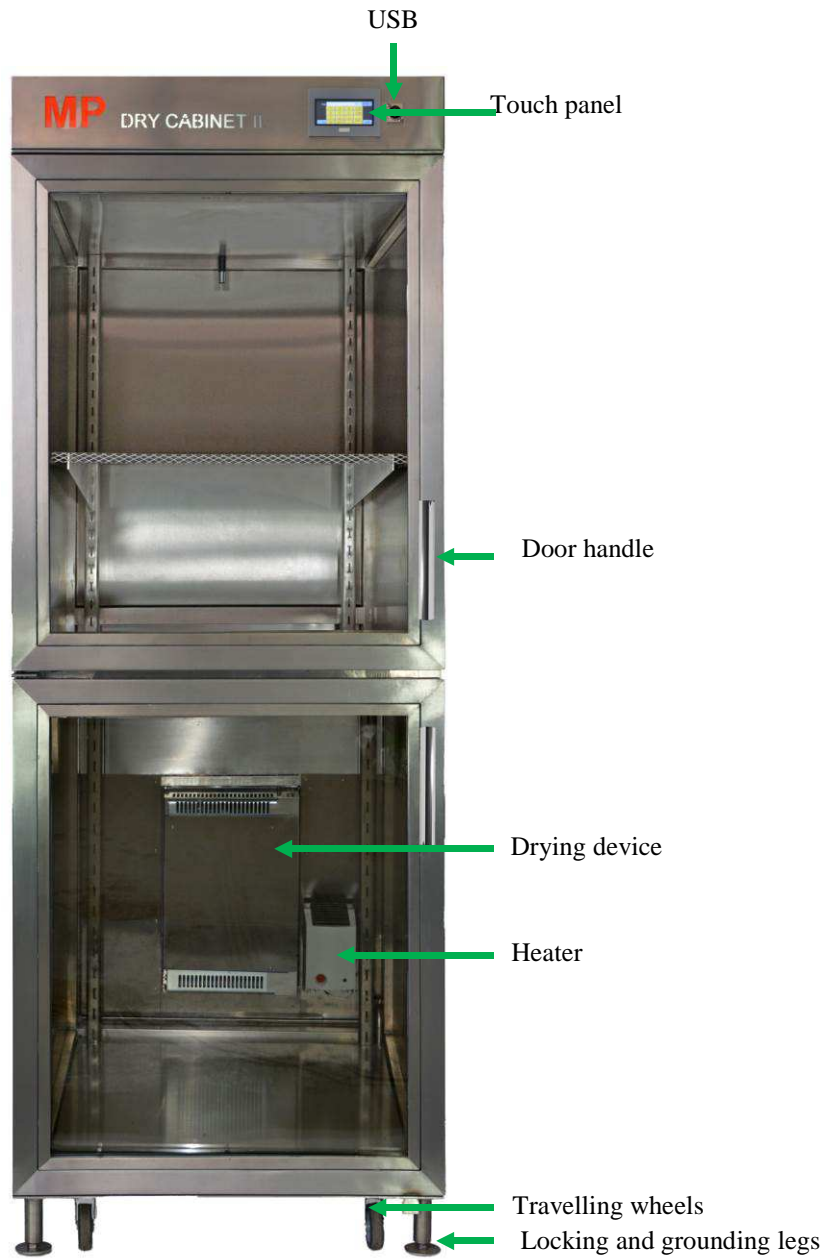


**MP DRY CABINET II**

Drying cabinet MP DRY CABINET II is a separate drying device for drying of printed circuit board assemblies, electronic components and ESD components of all classes. The device can be used in operations and processes sensitive to humidity, during PCB assembly for interoperation storage and storage of sensitive electronic components.

The device can reach a very low relative humidity (0.5% RH) and high temperature (60 ° C) to effectively shorten the drying time. The equipment is stainless steel with glass doors. The device is equipped with a touch screen with the option to set the desired temperature, to set frequency of storage pre-set parameters to memory and set the door open alarm. Progress of temperature and humidity can be monitored on the chart and data record can be exported via the USB connector to the PC.

### 4.1 Construction layout



FRONT VIEW





**REAR SIDE VIEW**

## 5 Preparation for Use

- Unpack the device and clean it from the leftovers of the transport material.
- Check the supply for completeness against the packing bill.
- Check the intactness of all the parts supplied (mainly the glass ones).
- Check the control unit, display, indicator lights and connectors for mechanical damage.

! Should you detect any shortcomings during the initial preparation, provide for their repair before the device is connected to the mains.

### 5.1 Storage

- Store **MP DRY CABINET** device in a place with temperatures from 0 to 45 °C and relative humidity up to 70%.
- Avoid contact with water, chemical substances or rain.
- Protect against dust when stored.

### 5.2 Transport and Assembly

! When handling the device, observe the safety regulations applying to this activity!

! Be extra cautious when handling the heavy device. Its weight is 90, 180, 320 kg according the type!

! IT IS PROHIBITED to expose the device to mechanical shocks and hits.

- The device is transported assembled and ready to use.
- When handling the device, never put your hands or other parts of the body under those parts of the device which are not perfectly mounted or which are moving.
- Transport the device in a locked position on a common van or truck as means of transportation.
- During transport, always lock the wheels with the lock mechanism and wedge them with a common wedge for both front and both rear wheels.
- Locate the device to the place of operation to allow easy access from all the sides, 150 mm from the wall, as a minimum.
- On a place intended for use, secure stability and grounding of device with 4 adjustable legs so that all 4 are firmly connected to the floor.

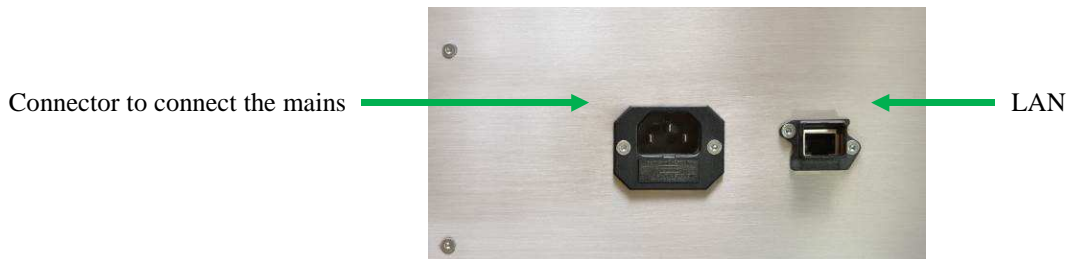
! **Device while operating cannot stand only on the transport wheels, but on adjustable legs only.**



### SECURING STABILITY OF THE DEVICE

### 5.3 Power Supply Connection

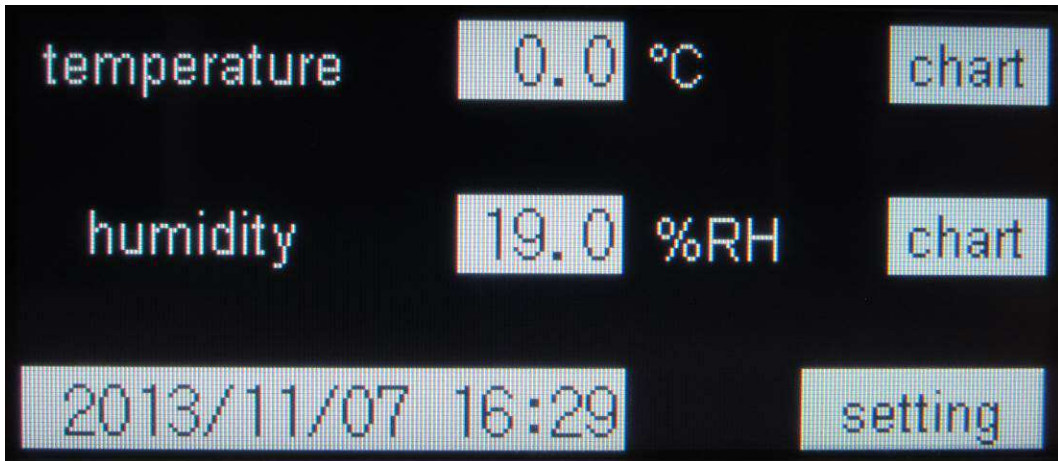
- Connect the power supply cable to the mains. (Cu 3 x 1,5 mm)
- The device is supplied with line voltage 230V 50 Hz via connecting cable. The protective conductor is connected to the frame of the container in the earthing point. Cable is part of the delivery.



- The device is ready for the operational check

#### 5.4 Operational Check

- Connect device via cable to the mains.
- After the start-up of the display, the basic menu of the program will go on and device starts operation.



**BASIC MENU**

## 6 Instructions to use

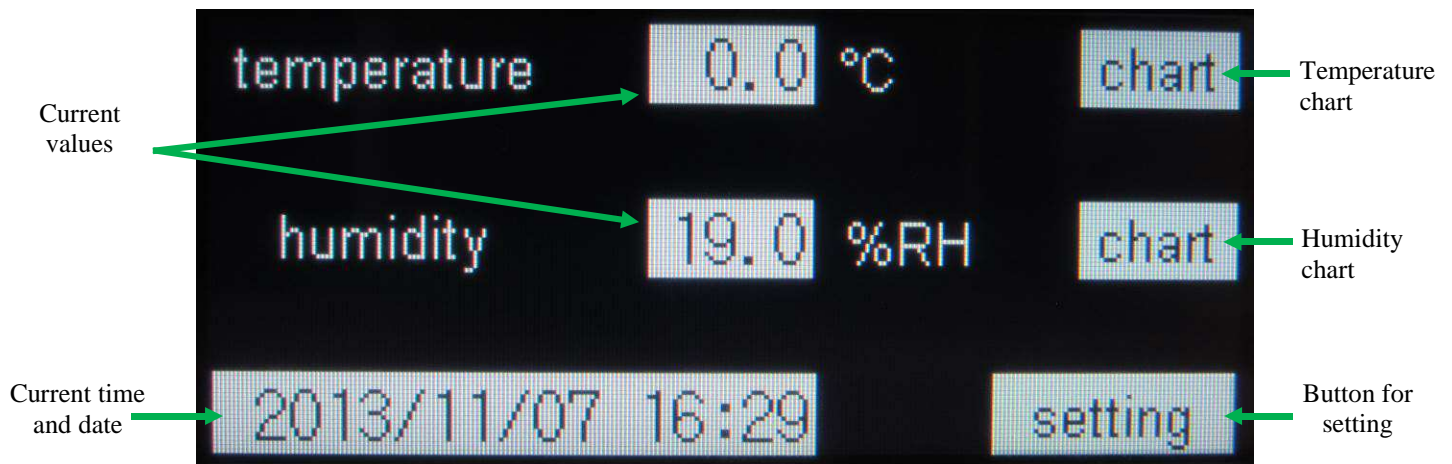
All the technological processes are set on the touch panel located in the front of the device.



**TOUCH PANEL**

### 6.1 Control Panel Description

After the start-up is displayed basic menu.



**BASIC MENU**

To display temperature or humidity in the chart press „chart“

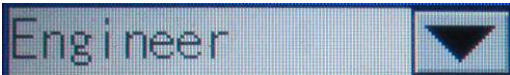



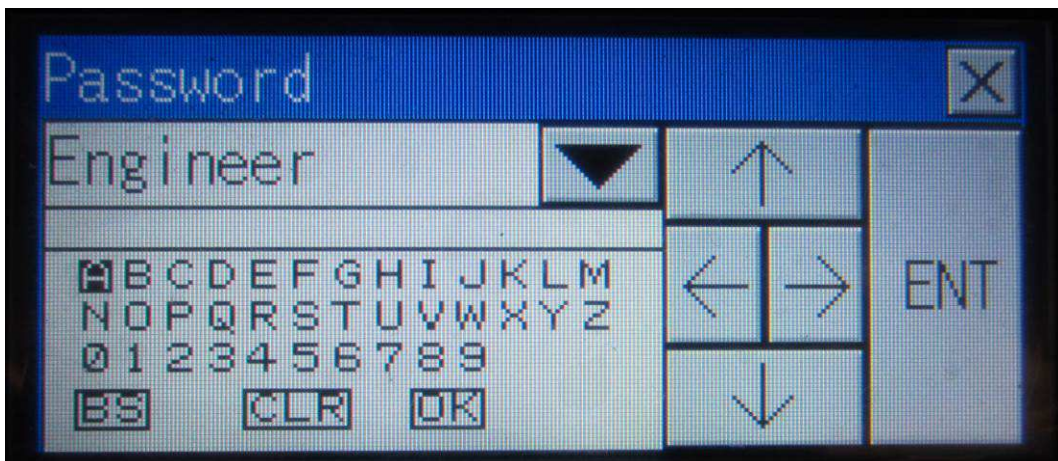
EXAMPLE OF THE CHART

## 6.2 Log in of the Engineer

The device may be controlled in two access profiles „User“ and „Engineer“. Profile „User“ is set after the start-up of the device and any parameters can be changed.

To log in as the „Engineer“ press „log.“

Select profile  and using arrow  insert access password „4856“ and press „Ent“.



ACCESS KEYBOARD

### 6.3 Setting

For parameters setting press „**setting**“. Following screen will be displayed.



For temperature setting press active field “**temperature**”.

Following keyboard will be displayed. Insert required temperature and save by press „**ENT**“ For correction press „**CLR**“, to cancel operation press „**CAN**“.

			5
7	8	9	CLR
4	5	6	CAN
1	2	3	ENT
0	+/-	.	

**KEYBOARD TO INSERT REQUIRED VALUE**

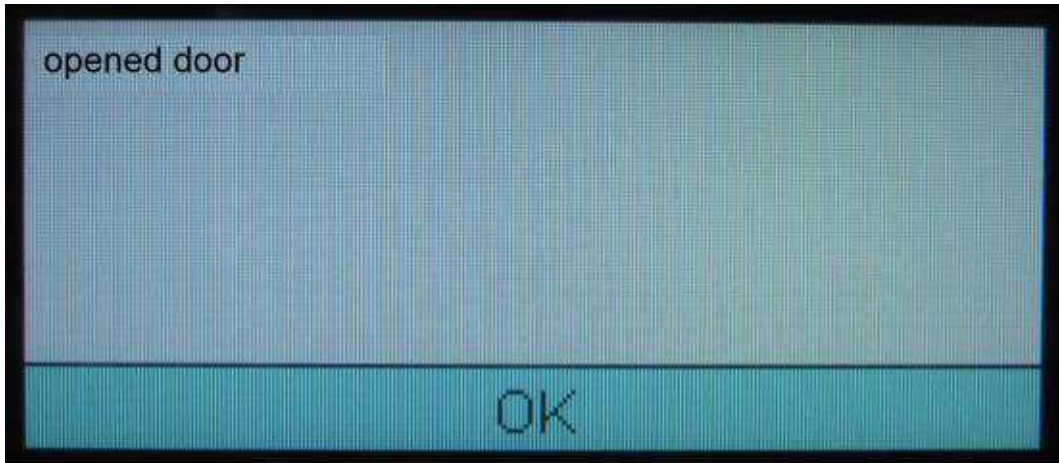
For opened door alarm setting press active field “**opened door**”.

Following keyboard will be displayed. Insert required temperature and save by press „**ENT**“ For correction press „**CLR**“, to cancel operation press „**CAN**“.

			5
7	8	9	CLR
4	5	6	CAN
1	2	3	ENT
0	+/-	.	

### KEYBOARD TO INSERT REQUIRED VALUE

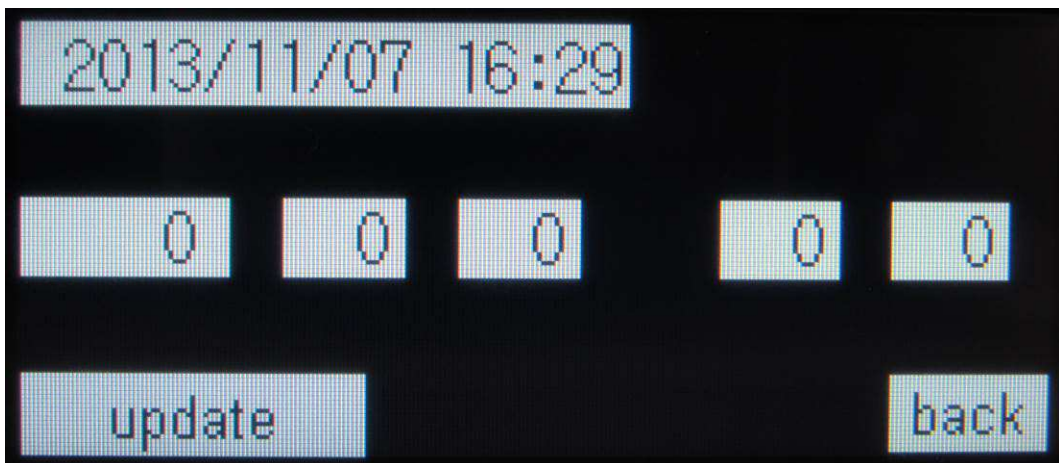
When exceeded the time allowed for opened door, sweeping sound will go on and following warning will be displayed.



Close door and press „**OK**“.

For language selection press „**EN**“ or „**CZ**“

For time and date setting press „**set time**“. Following screen will be displayed.



### TIME AND DATE SETTING

Set time and date into individual fields. When field pressed, following keyboard will be displayed. Insert required value and save by press „**ENT**“ For correction press „**CLR**“, to cancel operation press „**CAN**“.

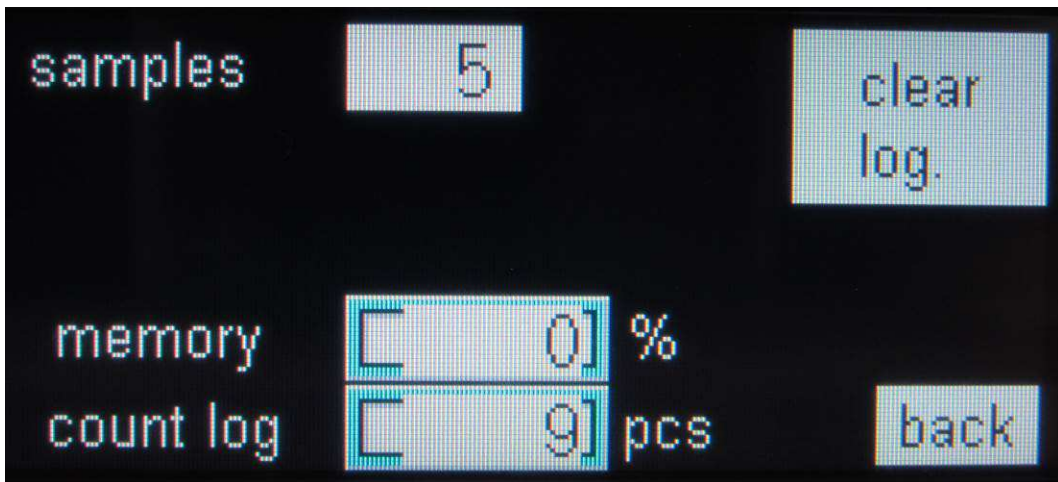
			5
7	8	9	CLR
4	5	6	CAN
1	2	3	ENT
0	+/-	.	



**KEYBOARD TO INSERT REQUIRED VALUE**

Press „**update**“ and press „**back**“ for return into setting menu.

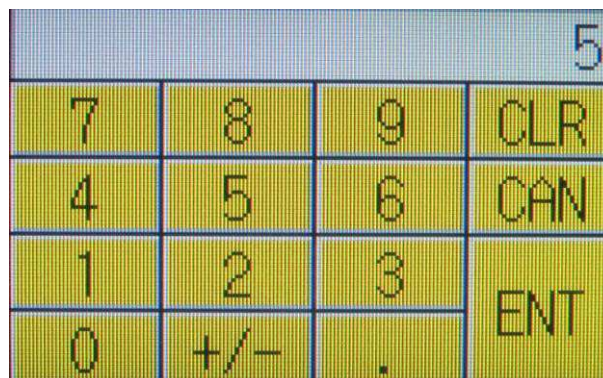
To set sampling frequency of storage pre-set parameters onto memory press „**set log**“.



**PARAMETERS LOG SETTING**

Temperature and humidity values are recorded on memory according to the set sampling rate. They are stored in "CSV" file with the appropriate date and time.

To set the sampling frequency press active field sampling. Following keyboard will be displayed. Values can be set in range from 0 to 9999 seconds. Insert required value and save by press „**ENT**“ For correction press „**CLR**“, to cancel operation press „**CAN**“.



**KEYBOARD TO INSERT REQUIRED VALUE**

Upon reaching 100% occupancy of the memory, stored data will be overwritten from the oldest values. Memory data can be deleted by pressing the "clear log."

To return to the setup menu, press the "back".

### 6.4 Saving measurement data on storage device

To copy the measurement data from the internal memory to a PC using a USB storage device (insert it into the connector located on the front of the device).

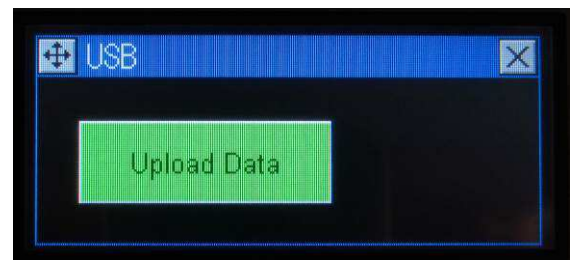
In the table for data transfer press **"Upload Data"**. Displayed is copying process **"Project transfer"**. After copying the file, press the **"Ack"**.

Slide out the memory device and press **"Ack"** to return to the **"Main menu"**.

Files are stored in a memory device in a directory named **"HGDATA01"**, later in the subdirectory **"DATALOG"** in files **„log files.csv“** and **„door.csv“**.

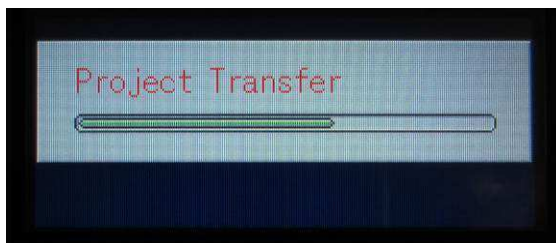


USB stick connection

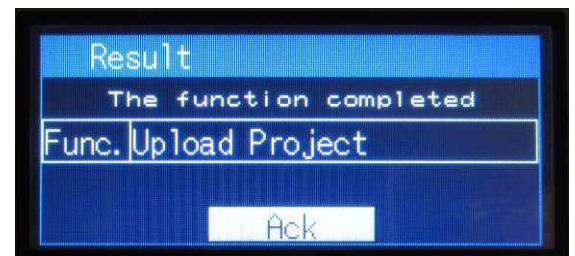


USB  
connector

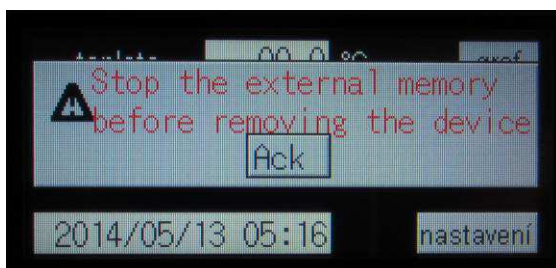
Copy confirmation



Copy progress



Copy finished



Remove USB



Main menu



## 8 Packing List

### 8.1 Parts of Delivery

Item Specification	Amount
1. MP DRY CABINET	1 pc
2. Connecting cabel	1 pc
3. User's manual	1 pc

## 9 Delivery, Service and Warranty Conditions

The device is delivered and the warranty and after-warranty services are performed by:

### **MP Elektronik Technologie, s.r.o.**

Dlouhá 219  
678 01 Blansko - Klepačov  
Czech Republic

Telephone: +420 516 416 937

Fax: +420 516 417 641

E-mail: [info@mpelektronik.cz](mailto:info@mpelektronik.cz)

web: [www.mpelektronik.cz](http://www.mpelektronik.cz)

The warranty applies to all the defects originated due to a defect of the material, or as the case may be, due to faulty function of the device. The warranty performance is conditioned by compliance with the User's manual and performance of basic maintenance without any interference with the product's construction.

The manufacturer shall provide the repair free of charge, within the warranty period, under the following conditions:

- complaint is applied to defects raised during the warranty period
- the product was used according to manufacturer's recommendations
- the product is complete with warranty card

Defects on the product within the warranty period, does not remove the user, but advise the distributor to ensure an agreed deadline to remove defects. The warranty does not cover normal wear and tear parts and defects caused by mechanical damage, abuse, improper installation or handling, intrusion of foreign bodies into the working mechanism of the device, use for any purpose other than for what the equipment is intended or natural disasters.

The supplier is not liable for any damage caused to persons, animals or things that are a direct consequence of non-compliance with the recommendations contained in the user's manual.

### **The product cannot be repaired free of charge within the warranty:**

- upon failure to comply with the manner of use and maintenance of the product stated in the User's manual
- upon damages and breakdowns originated due to unprofessional and improper installation of the product, use of unsuitable supplies and installation not complying with technical standards
- upon performance of any repairs, modification of the product, changes or adjustments not approved in advance by the manufacturer
- upon defects caused by natural disasters
- upon any use in discrepancy with the intended use of the device stated in chapter upon damage obviously related to wrong voltage, short circuits or instability of the distribution network
- after previous repair by unauthorized service partner
- upon defects of non-operational aesthetic components like grips, glass, control switches etc., as a result of usual wear and tear
- upon changes in color of the plastic components (as it is a common physical phenomenon occurring after some time in use)
- upon defects caused by improper manipulation or inadequate handling
- upon the interference into the product by an unauthorized person