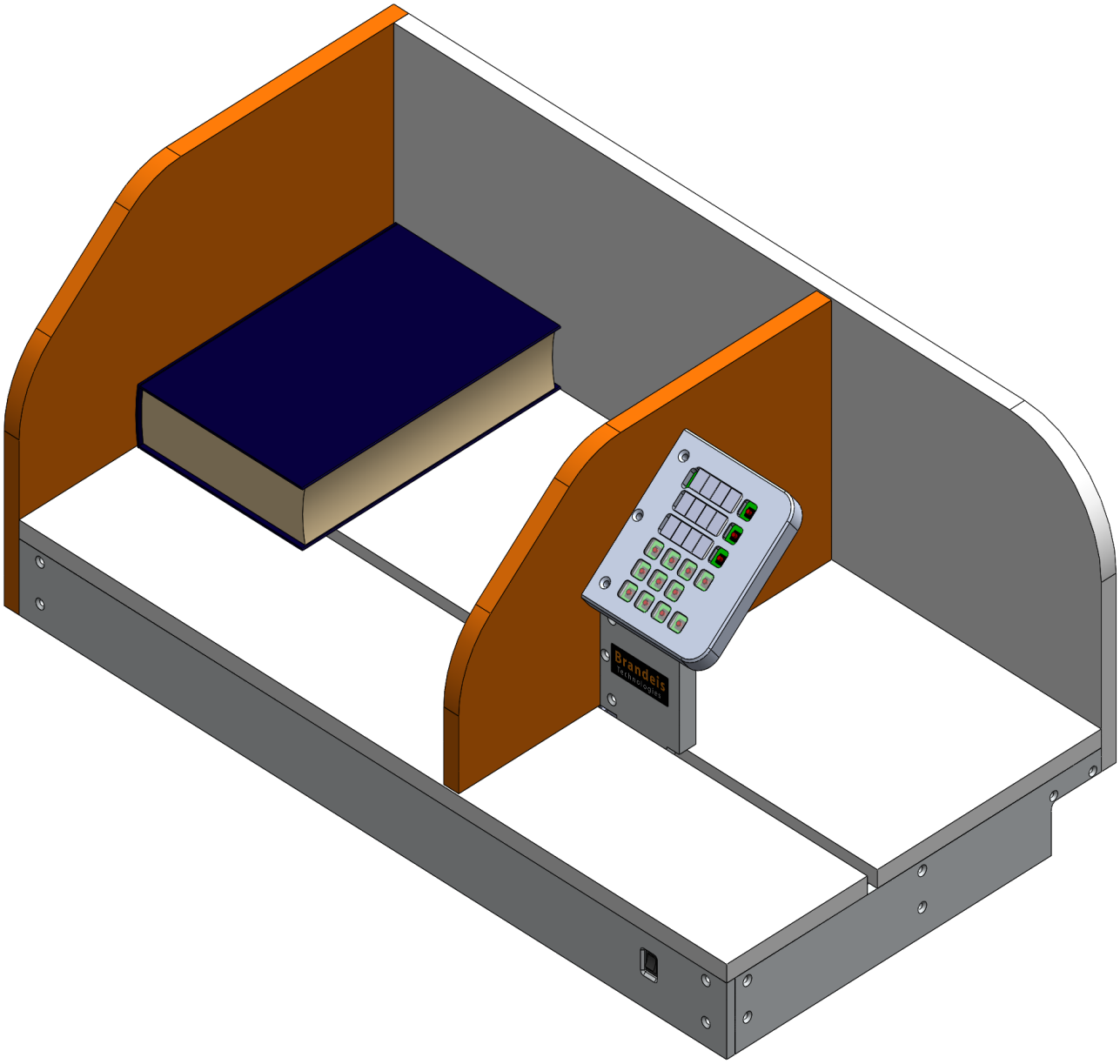
Book Caliper



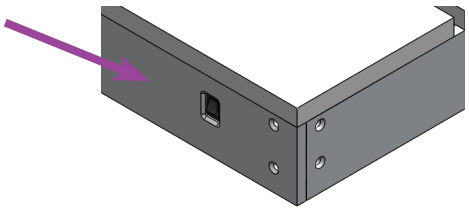
User manual

Especially for those, who do not remember (including author)

Power On

Machine is powered by external transformer. Input voltage can be in range from 10 to 24V. Minimum power requirement is 5W. Power input is fused against wrong polarity but machine is not operating with wrong polarity. Machine operates at safe voltage. No risk of electrical shok is inside or outside the machine.

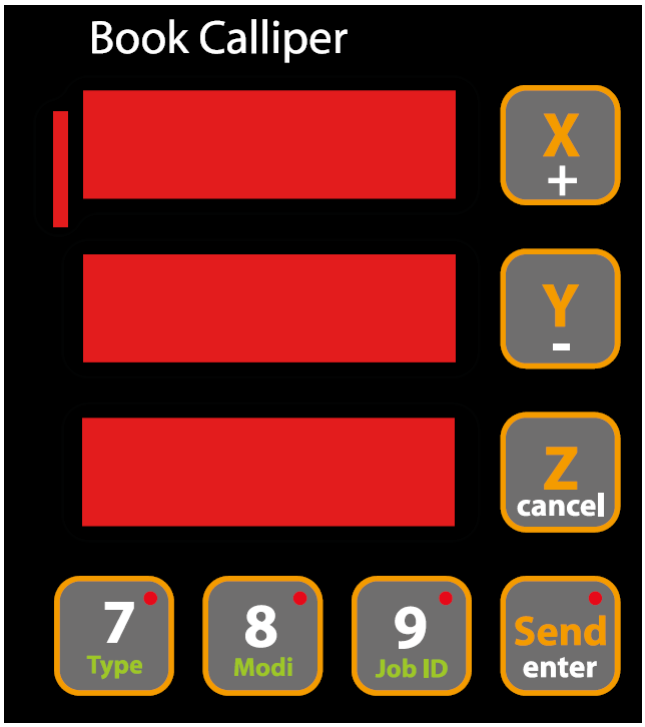
Power ON the device by switching on Power switch



Move measuring board to the left and press zero button for 2 seconds. This will zero measuring system. From now on, this will be zero posittion for measurement

Taking measurement

Device is designed for getting dimensions of all kinds of books or similar objects. Machine has three displays for keeping mesures of three dimensions. When powering on, and calibrating zero position, all three displays shows the same actual position.



Move the masuring plate towards book and press X, Y or Z button acording to dimension you are taking. This will lock position in the memory. From now on, this display will show measured value, and displays small dot at the end of display for X, Y or Z.

Repeat measurement for all three dimensions. Now all dimensions are displayed on displays. Old fashioned users can copy measures to their notebooks with sharp pencil. More usual way is to send measured data together with other informations to connected computer wia TCP / IP network. This can be done by pressing “Send” button for cca 2s. Send message will be displayed on X display for 2s together with book ID. See in next chapters.

Setting book parameters

Together with every measurement, three parameters are sent: Job ID, type, modification.
These three parameters are to be used later in the computer for identification of book and correct data generation. System of work is still under development.

Job ID - is the measurement number. It is sent as first parameter for identification. User can select any number from zero to 9999. Job ID can be automatically incremented every SEND operation. Auto Incrementation can be swithed off or set in range 1 to 10. Autoincrement 10 means IDs: 0, 10, 20 ... We can set the value from where we start.

Type - can be used for specifying type of book, Customer ID, type of cover or any other usefull value.

If, for example, before start of measurement user sets Type for number 7 as a customer code. In list of values number 7 will mean, job was made for customer James

Modification - can be used for specifying type of book, Customer ID, type of cover or any other usefull value.

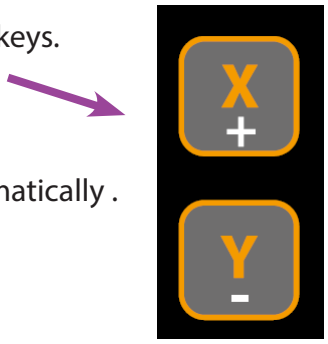
If, for example, before start of measurement Subtype will be set by user to user personal code. Later we can see who did the measurement process and we can trace problems, find reason of error etc..

Entering values

To change value of Type, Modification, Job ID, or display intensity, we have to select the option first.

Press and hold option button for 2s. Top display will show abbreviation of selected option. In bottom display user can see current value.

To change value enter numeric value 0, 1, 2, 3.. 9 or press repeatedly + or - keys.
To enter values use short (normal) press.



Enter the value just entered by pressing Enter, or cancel value by Cancel.
If user will not press anything within period cca 2s, value will be used automatically .

Display intensity setting

Intensity of display light can be set acording to light conditions and user preferences.

Hold Intensity button for two seconds.

Enter the numeric value or press +, -

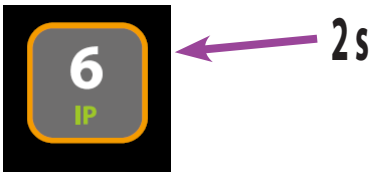
Intensity of laser is stored in EEprom for future.

Setting of IP adress

IP adress is used for PC connection to device. Ask your network administrator for avaliable IP adress in your company network. Right setting of IP adress is esential for succesfull connection to the device.

Hold IP adress button for two seconds.

Now enter whole IP adress as a numeric three digit values.



For 192. 168. 1. 1 you have to press 1 9 2 1 6 8 0 0 1 0 0 1

!!! Note zeroes are important !!!

Value is trored in the in eeprom immediatelly. After powering device off and on, IP adress will be valid.

Now you can connect to device from any computer in the network.

See more details later in the manual.

Incrementation setting

By pressing Send button, job ID can be automatically incremented

Hold Increment button for two seconds.

Change value by pressing +, -

User can switch function to “no” or values 1 to 10

Autoincrement is stored in EEprom for future.

Auto unlock

Auto unlock function is unlocking all locked values in displays when Send button is pressed.

Hold Auto button for two seconds.

Change value by pressing +, -

Function has only "yes" or "no" values.

If we measure books that have same size but only thickness is changing from book to boook, than we can keep two values and measure only tha Z value and unlock it manually by pressing Z button.

Normally it should be "on"

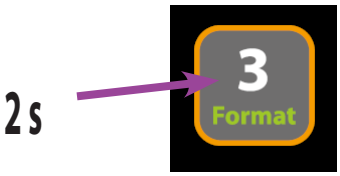
All three values can be unlocked manually by pressind "Clear" button

Format

Output and display format can be set to customer preferences and local aplication settings.

Hold Format button for two seconds.

Change value by pressing +, -



If you connect to the device from PC with telnet aplication, we will receive line of data for every measurement. These data can be opened in Excel, Open Office or Libre office. These aplications require decimal separator to be acording to local setup. "Comma" separator(0) is used in czech republic and some other Slavic countries. In most of other countries "Dot" is used(1)

Value 2 is without decimal places on the output.

Value 3 does not show decimal places even on display.

Machine reads in micron resolution. Vallues are rounded matematically to closest value. Means from 0.5 upwards.

Format is stored in EEprom for future.

Safety

Machine, if we call it so, is relativelly safe. As a measuring device it's construction is heavy, be carefull during transport.

Machine operates from 12V power suply. This is safe voltage under all conditions.

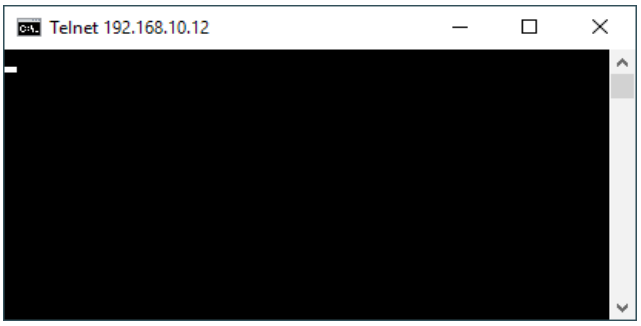
Do not smoke while working with the device, this causes cancer.

Telnet connection

Relatively fast changes in computer technology, brings also changes in computer connection posibilities. Serial port dominated for many years. But it is over, and USB communication changes from year to year, and drivers are system specific.

On the other hand device like this can work succesfully for decades. This was the reason for IP protocol connection over ethernet network, that seems to survive some more time. Device sends all data in ASCII code and can be grabbed with simple tools like Telnet. Telnet has many competition, usually avaliable for free.

Telnet is not installed in Windows any more automatically. User have to select this as an option in windows settings. Ask your network administrator to do it for you.



The easiest way to connect to telnet is to use a batch. This is the batch, that mr. Nejedlik from Macron wrote for this purpose:

```
@echo off
setlocal

SET IpAddress=192.168.10.12
SET PortNumber=3000
SET LogDir=C:\LogDir
SET BaseName=Measurements.csv

for /f "skip=1" %%x in ('wmic os get localdatetime') do if not defined MyDate set MyDate=%%x

SET Year=%MyDate:~0,4%
SET Month=%MyDate:~4,2%
SET Day=%MyDate:~6,2%
SET Hours=%MyDate:~8,2%
SET Minutes=%MyDate:~10,2%
SET Seconds=%MyDate:~12,2%

SET TimeStamp=%Year%%Month%%Day%-%Hours%%Minutes%%Seconds%

IF NOT EXIST %LogDir% (MKDIR %LogDir%)
telnet -f "%LogDir%\%TimeStamp%_%BaseName%" %IpAddress% %PortNumber%

endlocal
exit
```

IP adress must be changed for your specific adress

Batch will create file with the date and time file name in LogDir. Data are stored in standart CSV format. Data are separated with semicolon, lines are separated with LF and CR. File can be imported to Microsoft Excel later, by simple doubleclick.

Separate aplication with much more features is under development.