

**BLUEFORCE**  
))) **SMART PRO**



BLUEFORCE  
CLOUD



**Instructions for use**

## THANK YOU! For choosing a Microtronics product

BlueForce Smart Pro is an instrument for the measurement of crushing forces on automatic doors and motorised gates.

It is compulsory to observe the following rules of use and maintenance

Use is reserved to qualified personnel only

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## BlueForce Smart *Pro* features

Force measurements made with **BlueForce Smart Pro** are saved and shown on the display. Thanks to the integrated connectivity with GSM SIM, the measurements are immediately sent to the **BlueForce Cloud** portal to be viewed in real-time with any device (without the use of Apps) and then used for the risk analysis, which allows the creation of the Technical File documentation.



**BlueForce Smart Pro** with integrated GPS/GNSS geolocation is able to detect the position and to associate force measurements automatically with the site address.



**N.B.** The **GSM/GPS** transmission system is always active, while access to **Blueforce Cloud** services is included for the first year (annual subscription can be renewed).



BlueForce Smart Pro is equipped with a **lithium-ion battery that can be recharged via USB using the cable supplied**. See page **23** for more information on charging.



Saved measurements can be transferred to the Blueforce software, previously installed on the computer, using the supplied USB cable. The BlueForce software allows you to manage your measurements, customers and print reports. **N.B.** for installation of BlueForce software see page **14**.



**Built-in clock:** saving the measurements taken includes date and time for immediate identification.



For each measurement it is possible **to assign the reference of the measurement point** "in situ", according to the indications of the EN12453 Standard (shown in the supplied "Quick Guide" leaflet).



For each measurement, the evaluation of the parameters according to the **EN12453 Standard** is automatically displayed. (Passed / failed test with flashing of incorrect parameter on display, see page **6**)



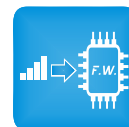
**Automatic recognition of the instrument orientation** (vertical, horizontal left, horizontal right) to simplify the association of measurements with the corresponding door type and its measuring point.



It is possible to use the instrument to test the pushing force (e.g., for panic handles), using the additional **continuous dynamometric measuring function**.



**Processor firmware** updateable directly from the instrument wirelessly via web with automatic download from the remote server.



**FTP wireless thermal printer** (optional): possibility to print short measurement reports in receipt format directly on site, see page **13**.

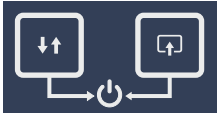


## Buttons Functions

Different functions are associated with the buttons depending on the duration of pressure:

**Short pressure <0.5 seconds**

**Long pressure >2.0 seconds**



**ON/OFF:** Right button + Left button pressed simultaneously for more than 3 seconds, turn the instrument ON or OFF.

**POWER OFF:** The battery saving function automatically switches the instrument off after about 4 minutes of inactivity.



**Left button**      short press = Scroll saved tests, forward / backward  
long press = Change direction of tests scrolling, forward / backward



**Right button**      short press = Scrolls through the options of the single tests  
long press = Select and confirm current action

**N.B.** When using the instrument to access the various menus, if no buttons are pressed, after a few seconds the instrument will return to the initial or previous menu.

## Turn-on Phase



When the instrument is turned on, the scrolling *BlueForce* writing is displayed, then the instrument performs: the **self-test**, **resetting**, and searching for the **GSM network**. (Caution! Do not press the head during this phase).



Then the writing **Loc** is displayed (with scrolling dots), it indicates the search for the **GPS location** signal.

**N.B.** if the GPS signal is missing and the instrument continues to search, you can continue (skipping the search phase) by pressing the **right** button for a few seconds.



After the turn-on phase, the instrument is ready to take measurements and displays the first available memory location followed by 4 dashes.



To check the status of GSM and GPS reception, you need to view the **indicator dot**, located on the far right of the display at the GSM/GPS signal symbol:

<b>Dot off:</b>	no reception
<b>Flashing dot:</b>	reception of GSM signal only
<b>Dot permanently on:</b>	reception of GSM and GPS signals

## Test Measurement



After the turn-on phase, move to the first available memory location (e.g., No. 1).

With the instrument in place, **apply force** with your hand for about one second, then release.



The instrument detects the crushing force above the minimum threshold, then starts the measurement acquisition for **6 sec**. The display shows the location number and the letter "A" followed by three dashes.

**N.B.** if the **Point** function is activated (see page 8) the instrument asks you to enter the measurement point.



**At the end of the acquisition, the display shows only the location number together with a short scrolling sequence of dots indicating that the measurement has been saved and that simultaneously the acquired parameters have been transmitted to the BlueForce Cloud portal. To make a new measurement, briefly press the left button.**

**These are the parameters saved inside the instrument and sent to the Cloud area:**

**Fd:** Maximum amplitude of force peak (N)

**Td:** Force peak duration (s)

**Fs:** Average value of the static force (N)

**Fe:** Value of the final force, 5 seconds after initial contact (N)

**Date and time** (in standard format)

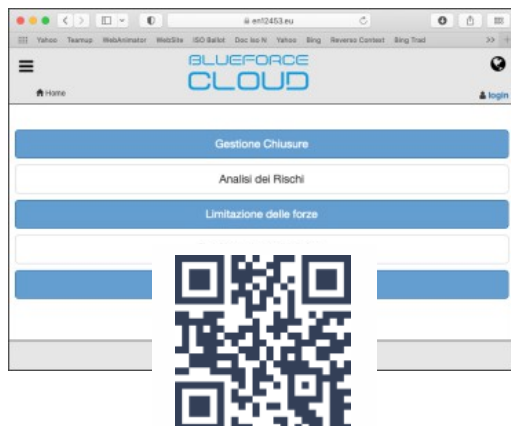
**GPS position** (geographical address and point on map)

**Instrument position** (horizontal or vertical)

**Reference number of the measurement** (indicated in the **Quick Start Guide**, see **Point** setting on p. 8)

## BlueForce Cloud Area

Each measurement taken is immediately sent and saved in the BlueForce Cloud area, to be viewed online on mobile devices (see pages 9 and 10). You can then use the measurements and their parameters to create customised print reports (see pages 11 and 12), but not only, the Cloud area also allows you to draw up all the documentation relating to the conformity of motorised doors and gates, such as: the risk analysis, the EC declaration of conformity, the maintenance log and the acceptance and testing reports.



The use of the BlueForce Cloud area requires the creation of your own account.

Link for registration: [www.microtronics.it/start.html](http://www.microtronics.it/start.html) (see QR-Code).

Access link: <https://en12453.eu>.

**N.B.** Access is valid for one year from the date of activation, then it is possible to renew your subscription. (Detailed instructions for using the BlueForce Cloud area are available in the **online help**).

## Reading Measurement Parameters with the Instrument


After turning on, press the **left** button **briefly** to go to the memory location of one of the measurements made, e.g., No. 1. Then, by **briefly** pressing the **right** button, you can scroll through the **parameters** and **other functions** (see list below).



**Fd** : Maximum amplitude of force peak (N)



**Td** : Force peak duration (s)



**Fs** : Average value of the static force (N)



**Fe** : Value of the final force, 5 seconds after initial contact (N)

**EN12453 Evaluation:** The indication of measured parameters as **NOT** correct is shown by a flashing of the numerical parameter accompanied by an acoustic warning (see allowed limits on page 22).



**Print function:** (only for owners of the *FTP* thermal printer) with a **long** press on the **right** button you can send the measurement parameters directly to the specific wireless printer. (See also use of the *FTP* Thermal Printer on page 13).

**N.B.** the function is not active if the instrument is connected with the USB cable to the PC.



Displays the **date of the measurement** with a **long** press of the **right** button.



Displays the **time of the measurement** with a **long** press of the **right** button.



**Deleting the current single measurement:** to proceed, press the **right** button for a **long** time, **CANC** will **flash**, then press the **right** button again for a **long** time to confirm the deletion.



**Function to send measurement parameters to the BlueForce Cloud portal.** With a **long** press on the right button you can send (again) the parameters of the current measurement.

**N.B.** the function is not active if the instrument is connected with the USB cable to the PC.

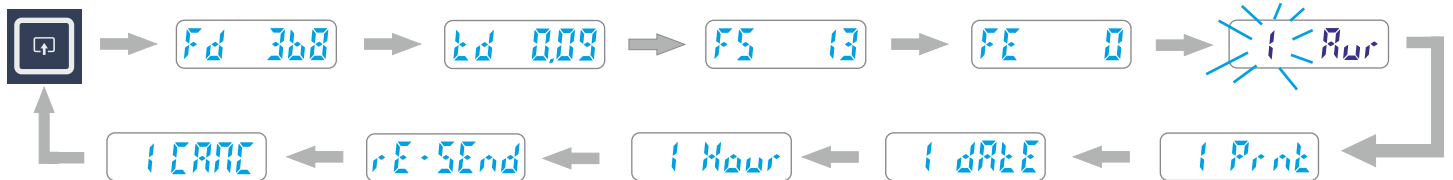


The **rE-SEnd** function can also be used in the case of a **transmission error towards the server**. The warning of a **not sent** measurement is represented by the **lighted dot at the bottom left** of the display.

## New functions of BlueForce Smart Pro - (from December 2022)

If these new functions are not present in your instrument, please update the firmware!

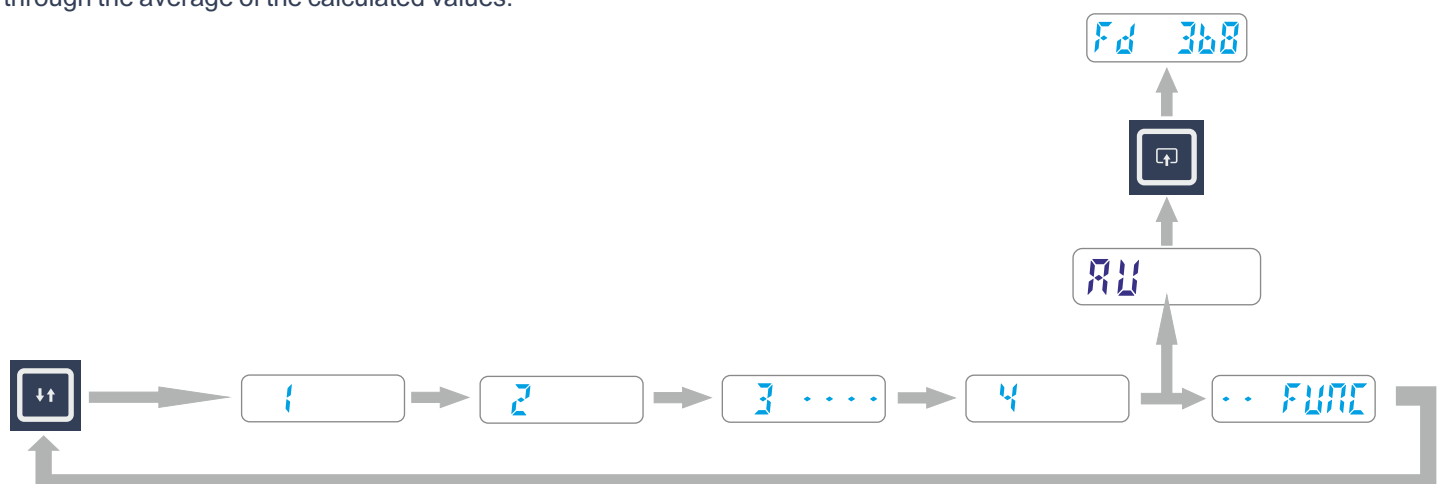
**Aur Function:** referring to the instructions described on page 6, there is now a new function (Aur) which allows you to calculate the mathematical average of the measurements stored in the instrument's memory.



To set an average of the values, go over a stored measurement (e.g. no. 1) and then press the **right** button with short presses, after the parameters there is the **Aur** function. With a long press of the **right** button the memory location flashes slowly, indicating that the measurement has been selected to calculate the average. It is now necessary to repeat the above operation to add the second measurement.

**N.B.** In order to calculate the average of the parameters, it is necessary to select at least **two** measurements; it is possible to calculate the average for a maximum of **three** measurements.

To display the **average of the set parameters** it is necessary to scroll through the stored measurements by briefly pressing the **left** button, at the end (before the FUNC menu) there will be the **AU** function, by briefly pressing the right button you can scroll through the average of the calculated values.

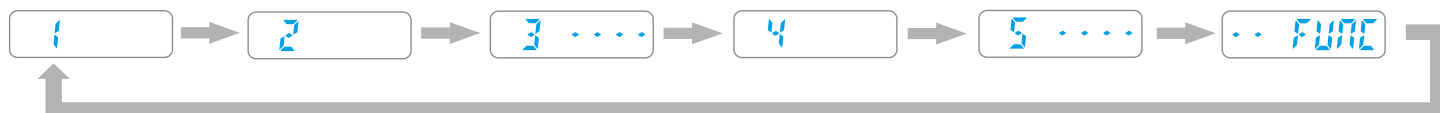


**N.B.** When the instrument is turned off, the measurements selected for the average will be automatically de-selected.

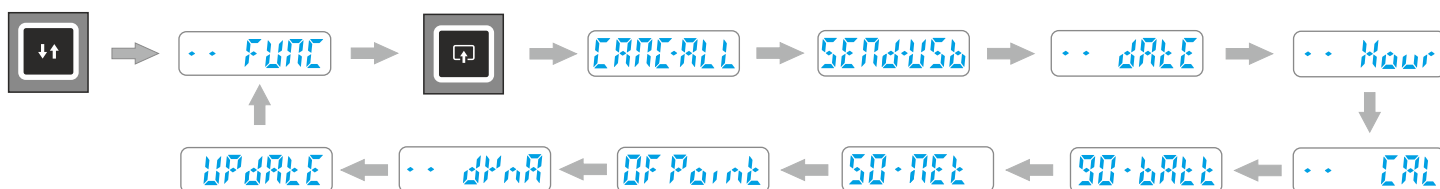
## Reading of measurements carried out and FUNC Menu

To access the **FUNC** menu, scroll through the saved force measurements by **briefly** pressing the **left** button, after the last measurement the FUNC menu is displayed, **briefly** press the **right** button to access the menu.

In the example below, 5 memory locations are shown: locations 1, 2, 4 contain the measurement parameters, while the locations with dashes indicate measurements without parameters (deleted).



The example below shows all available functions of the FUNC menu.



## Detailed Instrument Functions



**CANC-ALL:** This function allows you to delete all the measurements saved (with the relative parameters) in the internal memory of the instrument. By **long** pressing the **right** button, the word CANCEL will flash to indicate that confirmation is awaited, **long** press on the **right** button **again to confirm** deletion.



**SEND-USB:** This function allows you to **transfer all measurements saved** in the instrument to the computer, **emptying** the memory **completely**.

To transfer the measurements, you need to **connect the instrument to the computer with the supplied USB cable**, then start the **BlueForce software**, then **long-press** the **right** button to **transfer** the measurements into the software.

**N.B.** If the instrument indicates **Err2** the measurements have not been transferred, check the connection or check the **serial port configuration** on page 15.



Displays the **date of the internal clock** with a **long** press on the **right** button.



Displays the **time of the internal clock** with a **long** press of the **right** button.

**N.B.** Date and time are updated automatically while using the instrument





**CAL:** This function indicates the date of the last **calibration** (format DD/MM/YY); **long** press the **right** button to display.



The **bAtt** function indicates the battery charge status (from 10% to 90%).

**N.B.** for recharging see page 23.



**NEt** function indicates the reception status of the GSM/GPS system.




The **Point** function allows you to enter the **position number** after taking a measurement. The position number is described in the **Quick Guide** supplied with the instrument. By default, this function is deactivated, to activate it **long** press on the **right** button, then a **short** press to confirm.



The **dynA** function allows the instrument to be used as a "dynamometer" (e.g., for measuring the pushing force of safety doors). To take a measurement, **long** press the **right** button. To exit this function, press the **right** button again.



The **UPdAtE** function allows the firmware of the instrument internal processor to be updated via web.

To start the update, **long** press the **right** button. After a few minutes the instrument will switch off.

**N.B.** If the existing firmware has already been updated, the display will show the number of the currently saved version. Before doing this, make sure that the battery is charged (at least 40%). The update will not start if the USB cable is connected.

## Warning Messages



If the message **bAtt** is displayed when turning on, the battery charge is at a minimum (10%).



**CAL:** This warning is displayed one month before the calibration due date. When more than one year has passed, the warning will be displayed each time the instrument is turned on.



If the message **FULL** is displayed when turning on, all memory locations are occupied, you need to download or delete the saved measurements to make new ones.



The message **Err 1** indicates that the USB cable is connected but is not required for the current function.



The message **Err 2** indicates that the instrument does not communicate with the PC. (See also page 15)



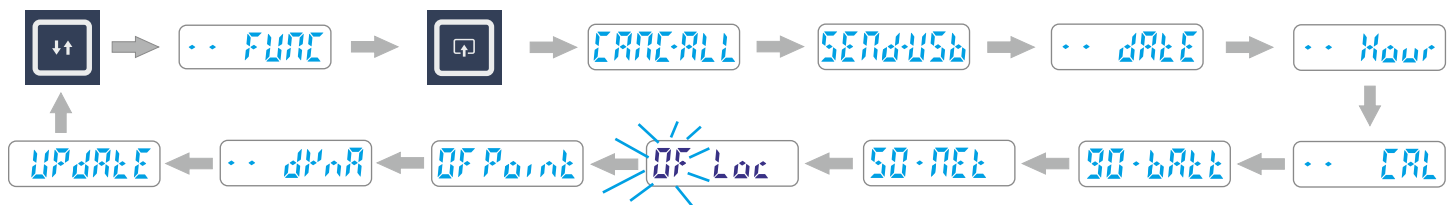
The message **Err 3** indicates that communication with the server has failed.

## New functions of BlueForce Smart Pro - (from December 2022)

If these new functions are not present in your instrument, please update the firmware!

**New GPS on/off function:** With reference to the instructions described on pages **8/9**, it is now possible to deactivate the GPS function from the FUNC menu (by default this function is active).

Scrolling through the FUNC menu functions, with short presses of the **right** button go over the indication **ON Loc**, then with long presses of the **right** button deactivate the locationing function, the display shows **OF Loc flashing**. To activate the locationing again, repeat the above procedure.



**N.B.** Deactivating the Locationing function significantly decreases the instrument's turn on time.

## Test Measurement and Visualisation on Smartphone

- 1) Use your smartphone to access the **Cloud area** with the log-in information obtained after user registration (see page 5).
- 2) Check that the **serial number** of your instrument is set correctly in the **BlueForce Info** menu.
- 3) Turn on the instrument and make a **Test Measurement** (see page 5).
- 4) On your smartphone press on **BlueForce Smart**.
- 5) Then press **Update Measurement** to display the parameters and graph.
- 6) To evaluate the measurement according to the standards, it is possible to select the **measuring point** and the **type of door**.



## Making a complete test on a door

The verification of the force limitation of a door can be carried out in two ways:

- > **Association during measurements**
- > **Association after making measurements** (page 11).

***N.B.** Please note **that the association during the making of the measurements** allows mainly the use of mobile devices in the workplace.*

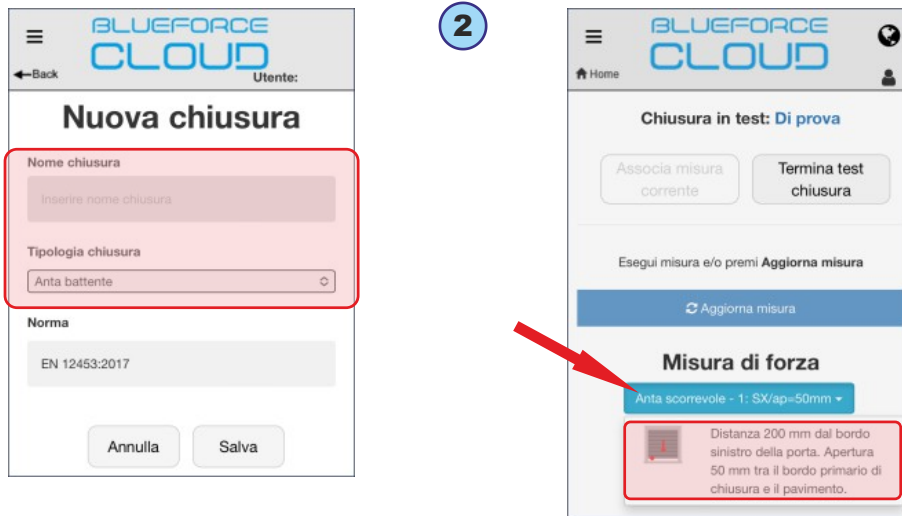
## Association during measurements

Log in to the **BlueForce Cloud** area and select the **Blueforce Smart** function (as described above).

- 1) Choose the door where you want to carry out the new measurements session by pressing on **select** (Currently testing door), then **select a door from those available** (previously saved) or create a **new one**.



2) Below, if you have chosen to create a **new door**, you will be prompted to enter the **Name** and **Type of door** (see example on the left). If, on the other hand, you have chosen to use an **existing door**, you must click on the **Type of door**, then click on the **detail box** and then select the **Measurement point** (see example on the right).



3) You can now make the measurement with the instrument at the chosen point, then press **Update** to display it.

**N.B.** By scrolling down, you can view all the details of the measurement, such as: the progressive number, date, time, instrument orientation, GPS position, test result, graph, parameters and calibration date.

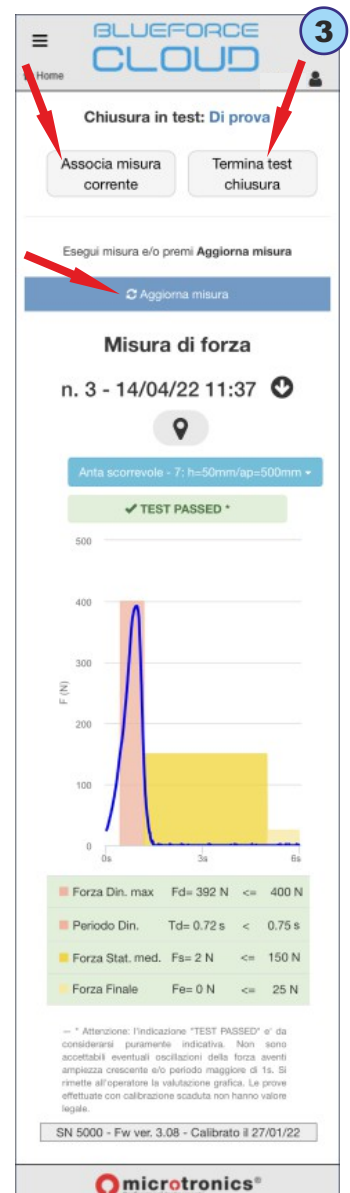
- Associate the measurement by pressing on **Associate current measurement**, (a confirmation notice will be displayed).

- To end the test session on the door, continue to make measurements with the instrument and then associate them by repeating the above operation: **Update -> Select measurement point -> Associate current measurement**.

- At the end of the session, press **Finish Test** (the list of measurements will be displayed).



4) Then you can **create the test file** (final measurements report saved in the cloud portal), or you can delete the measurements individually or all together by pressing on **Empty measurements list**.



## Association after execution of measurements

This procedure allows you to **associate** the measurements saved in the Cloud area to a **Door/Customer**, at a later time after execution. (The following graphical representation shows the use with a PC, however, the operation can also be done with mobile devices).

1) From the **Home** page, select **Doors Management**. Doors management contains all the **saved** doors (it is possible to filter only for **doors associated with a customer** from the **Filter by Customer** menu). If there are no doors available, you can create a new one by selecting **Add Door**.

2) By selecting an available door (e.g. sliding gate) you access the section dedicated to the **Technical File**, where you can create the documents required for the **Conformity** of automatic doors, e.g.: Maintenance Log, Risk Analysis, Forces Limitation, EC Declaration, etc.

3) Then select **Forces Limitation** to access the next menu (which also allows you to check/add/edit data of the Customer and of the Door).

4) Next, select **Force Measurements Association** to access the page describing the door (with graphical representation and reference points). Select **Add test on a measurement point** to start associating measurements.

**N.B.** The pictures show all the measurement points required by the reference Standards. In view of the many variants of automatic doors, it is not always possible to carry out all the measurements required by the Standards. Therefore only the actual measurements available in the Cloud area should be associated.

5) Then select one of the points available in the **Measurement Point** drop-down menu (the detailed **Description** provided for by the Standard is available under the menu), then proceed to select the test, e.g. no. 1.

**N.B.** Please note that normally **three tests/measurements** are provided for each point with the calculation of the resulting average value.

6) Later on you will access the menu that allows you to choose the measurements stored in the Cloud, then select **Cloud Measurements Register**, to access the list of Measurements (sent by the instrument in GSM mode).

**N.B.** This menu also allows you to view/edit/delete the associated measurements.

The first screenshot (5) shows the 'Aggiungi test su punto di misura ...' screen. A red circle highlights the 'Punto di misura' dropdown menu, which is set to '1 - h=50mm/ap=50mm'. Another red circle highlights the 'test' dropdown menu, which is set to 'test1'. The second screenshot (6) shows the 'test' selection screen with a table of tests. A red circle highlights the 'Registro misure cloud' button. The third screenshot (7) shows the 'Misure inviate in cloud' screen with a calendar view. A red arrow points from the 'test1' selection in screenshot 5 to the 'Registro misure cloud' button in screenshot 6, and another red arrow points from the 'Registro misure cloud' button to the calendar view in screenshot 7.

7) The list of measurements is represented by a calendar, each measurement taken is saved on the day of execution. Select a measurement to associate it with the previously selected point and press **Add**.

This screenshot shows a single measurement entry: 'Misura 04 - 15/04/22 08:34 - Via Schiavonia, 83, 31032 Casale sul Sile TV, Italia'. Red arrows point from labels A, B, C, D, and E to different parts of the entry: A points to the measurement number, B points to the date and time, C points to the location, D points to the location, and E points to the location.

In the details of the measurement we can identify:

- A- The "Point" position reference number (if set in the instrument, see page 8)
- B- Instrument **orientation** (down arrow = horizontal position, left or right arrow = vertical position)
- C- Progressive **number** of the measurement saved by the instrument and geographical address detected by the GPS locationing
- D- Preview of Measurement **Graph**
- E- **Map** view of GPS location.

8) Repeat the association operation described above for each measurement point, when finished, click **Save** to save the complete **Test Report**.

You can then **Print the Report**, see "Print PDF" menu on the left.

The screenshot shows the 'Elenco misure di forza' screen. It has a table of measurements with columns for test number, description, and status. Below the table are three blue buttons: 'Dati Cliente', 'Dati Chiusura', and 'Note conclusive'. At the bottom are two buttons: 'Chiudi' and 'Salva' (highlighted with a red circle).



## Printing Measured Parameters with the FTP Thermal Printer

Turn on the printer by pressing and holding the power button for at least 2 seconds (the power indicator lights up).

The printing of the measurement parameters is done for **every single** saved measurement using the **Print** function available after reading the parameters, e.g.: **Fd -> td -> FS -> FE -> Print -> dAtE -> Hour -> CANC -> rE-SEnd**.

To start printing, always use the **right** button, then go to the **Print** function and **long** press to display the two print settings (Short -> **Shor** or Long -> **LONG**), then with a **short** press select a mode and then a long press to print.

**N.B.** Printing is disabled if the instrument is connected with the USB cable to the PC.



Long - LONG

```

*****
FORCE TEST REPORT
BlueForce s.n.:4000
Calibration exp./scad.: 01/01/15

.....
COMPANY NAME/DITTA ESECUTRICE

.....
CUSTOMER/CLIENTE

.....
DOOR IDENTIFIC./DESCRIZ. PORTA

.....
REMARKS/NOTE

.....
N.TESTS ATTACHED/N.PROVE ALLEG.

NORM.: [ ]EN12445 [ ].....

OVERALL TEST RESULT:
ESITO GLOBALE DELLA PROVA:
[ ]PASS [ ]FAIL

01/03/16 15:45
.....
DATE(d/m/y)TIME/DATA ORA

.....
OPERATOR SIGN/FIRMA OPERATORE

*****
BlueForce by Microtronics Srl
REPORT OF FORCE TEST N.1

01/01/15 00:02
.....
DATE(d/m/y)TIME/DATA ORA

.....
VERT.DISTANCE/DISTANZA VERTIC.

.....
HORIZ.DISTANCE/DISTANZA ORIZZ.

Reminder/promemoria EN12445:
Fd: <400N <0.5m; <1400N >0.5m
Td<0.75s; Fs<150N; Fe<25N

Fd=937N [ ]PASS [ ]FAIL
Td=0.10s [X]PASS [ ]FAIL
Fs=0N [X]PASS [ ]FAIL
Fe=0N [ ]PASS [ ]FAIL

TEST RESULT after evaluation
of force diagram:
ESITO DEL TEST dopo la valutaz.
del grafico della forza:
[ ]PASS [ ]FAIL
            
```

- ◀ Instrument Serial number and calibration date.
- ◀ Insert data about: Company, Customer, Door type.
- ◀ Insert the number of tests attached.
- ◀ Select the applied Standard: EN12453 or other.
- ◀ Insert the result [x] FAIL (wrong measurement)  
PASS (correct measurement)
- ◀ Current date and time of the instrument
- ◀ Insert signature
- ◀ Date and time of the saved measurement
- ◀ Insert height of measurement point.
- ◀ Insert length of measurement point
- ◀ Reminder of measurement limits depending on the distance
- ◀ Insert [x] PASS: correct measurement and FAIL: wrong measurement  
(For parameters that have not been automatically filled in)
- ◀ Insert [x] final result of the single test.

Short - Shor

```

*****
FORCE TEST REPORT
BlueForce s.n.:4000
Calibration exp./scad.: 01/01/15

.....
COMPANY NAME/DITTA ESECUTRICE

.....
CUSTOMER/CLIENTE

.....
DOOR IDENTIFIC./DESCRIZ. PORTA

.....
REMARKS/NOTE

.....
N.TESTS ATTACHED/N.PROVE ALLEG.

NORM.: [ ]EN12445 [ ].....

OVERALL TEST RESULT:
ESITO GLOBALE DELLA PROVA:
[ ]PASS [ ]FAIL

01/03/16 15:45
.....
DATE(d/m/y)TIME/DATA ORA

.....
OPERATOR SIGN/FIRMA OPERATORE

*****
BlueForce by Microtronics Srl
REPORT OF FORCE TEST N.1

01/01/15 00:02
.....
DATE(d/m/y)TIME/DATA ORA

.....
VERT.DISTANCE/DISTANZA VERTIC.

.....
HORIZ.DISTANCE/DISTANZA ORIZZ.

Reminder/promemoria EN12445:
Fd: <400N <0.5m; <1400N >0.5m
Td<0.75s; Fs<150N; Fe<25N

Fd=937N [ ]PASS [ ]FAIL
Td=0.10s [X]PASS [ ]FAIL
Fs=0N [X]PASS [ ]FAIL
Fe=0N [ ]PASS [ ]FAIL

TEST RESULT after evaluation
of force diagram:
ESITO DEL TEST dopo la valutaz.
del grafico della forza:
[ ]PASS [ ]FAIL
            
```

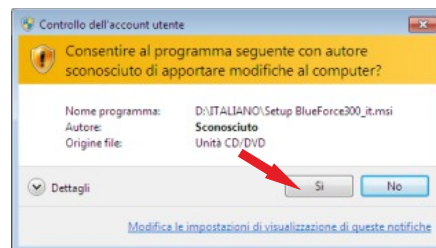
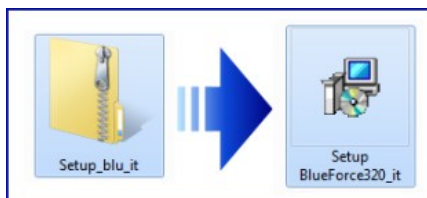
## Software for Windows PC - Download

Web link to download **BlueForce** software for PC- Windows: [www.microtronics.it/start.html](http://www.microtronics.it/start.html)

To download **updates**, visit: [www.microtronics.it/area\\_download.html](http://www.microtronics.it/area_download.html)

**ATTENTION !** The file is not harmful, please allow your Browser or Antivirus to download the file **Setup\_blu\_en.zip** or the **update\_blueforce\_en.zip**

Download the **zip file**, then extract the **setup file** to the desktop of your computer and finally run the application to install the BlueForce software on your PC.

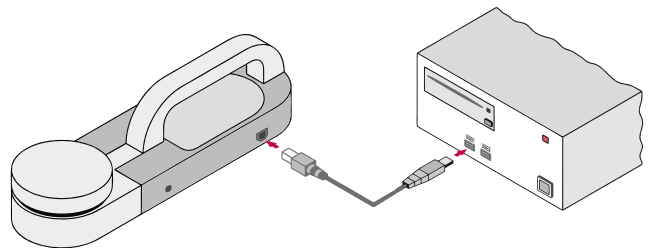


### ATTENTION!

Before starting the BlueForce software it is necessary to install the drivers as follows

## USB driver installation

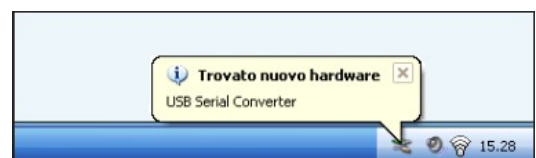
Connect the instrument to the PC with the supplied USB cable, as shown in the figure (the instrument does not need to be turned on).



### ATTENTION!

If there are several USB sockets, remember to always insert the USB cable into the same socket.

Wait a few seconds for the **drivers** of the new hardware to be installed (see pop-up in the task bar).

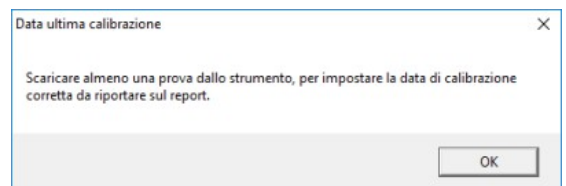




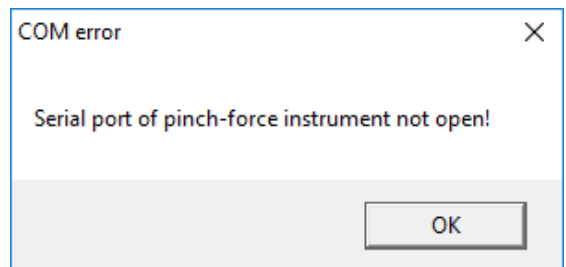
## Software Launch - Warnings

When starting the BlueForce software for the first time, some warnings may be displayed:

**Calibration date setting:** the software will prompt you to download at least one test from the instrument to enable the calibration date (this can be done after setting up the serial port).

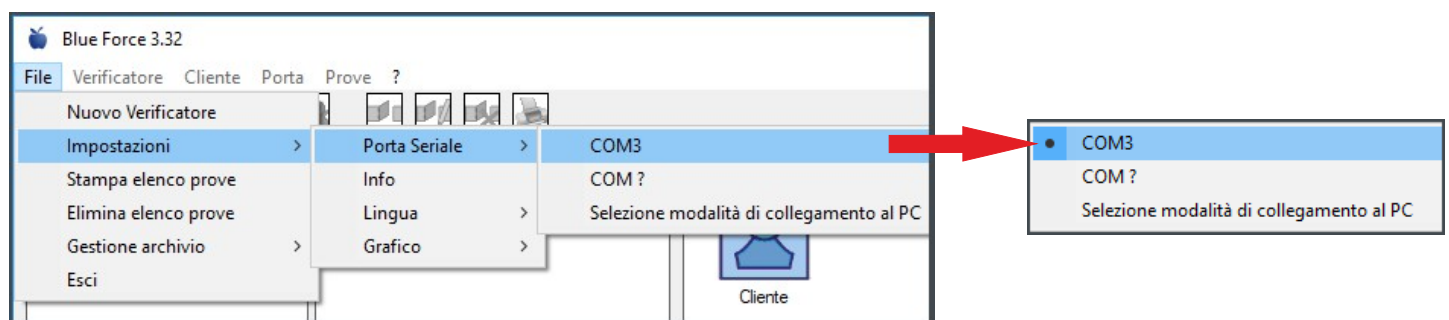


**Serial port setting detection:** if the serial port has not been set automatically, the software will ask you to set it manually (see next paragraph).



## USB-Serial Port Setup

If the software displays the warning "**serial port of pinch-force...**" you need to **close** the BlueForce software, make sure that the USB cable **is connected** between the instrument and the PC, then **start** the software. If the warning still persists, then **set the USB-Serial port manually**: open the menu **File-> Settings-> Serial Port->** and click on the free serial port (e.g. COM3), a **black dot** confirms the serial port setting (if the dot is not displayed, exit and enter the **File** menu to update the setting).

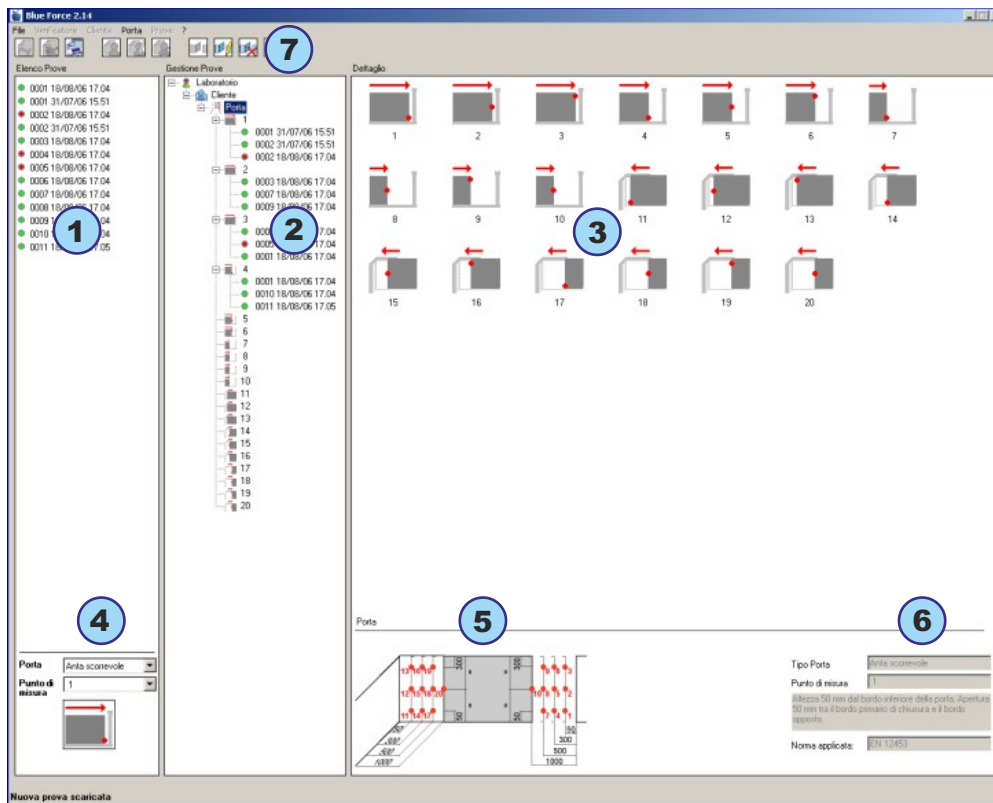


**N.B.** In some cases it is necessary to check the PC connection setting, so open the menu **File-> Settings-> Serial Port-> Select PC Connection Mode-> Set USB Cable** and Confirm.



## BlueForce Software - Overview

- (1) **Measurements list area** - Measurements transferred from the instrument with the USB cable are listed in the left area
- (2) **Measurements management area** - The central area allows the association of measurements from the list to the doors
- (3) **Detail area** - On the right side you can view the details of the doors added.
- (4) **Control Area** - In the lower left corner there is a preview box that allows evaluation of measurements.
- (5) **Detail of measurements points** - Representation of measurement points with reference to the type of door.
- (6) **Reference standard** - Detail of the measurement point defined by the applied Standard.
- (7) **Functions menu** - Menu for selecting software functions.



## BlueForce Software - First Use

Make a 'Test Measurement' as described on page 5.

Transfer the measurements to the software using the **USB cable** and the **SEND-USB** function on the instrument, as described on page 7.

Measurements sent to the software are arranged at the top left and continue downwards. Each measurement includes a sequential number, date and time. To the left of the measurement there is a **dot** that can be either **green** or **red** to indicate the result: positive or negative.

The colour/result evaluation is defined by the control area below, then by selecting the door type and the measurement point, the results of the listed measurements are automatically displayed.

Before associating the measurements in the left box, it is necessary to create at least one **Verifier**, then a **Customer** and finally a **Door** (N.B. a new door must contain at least one description in the **Door Identification** field).

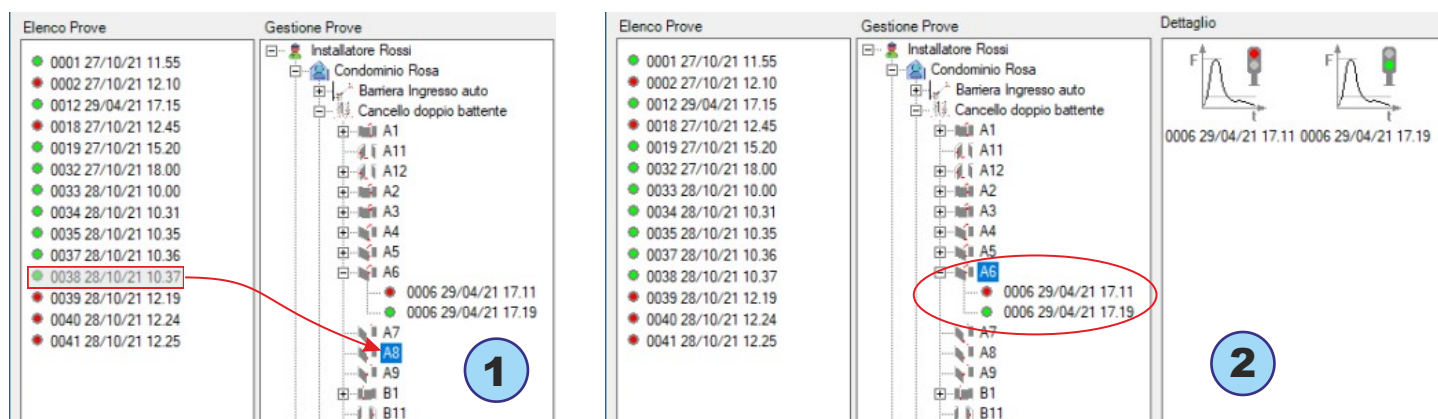
The main menu at the top of the screen can be used for these operations, or simply **right-click** on the **Verifier** and use the contextual window to **Add, Edit, Delete**, etc.

The creation of a **new Customer** with its associated **Door**, allows the software to automatically create all the **Measurement Positions** and to set the relative limits as indicated in the Standard.

By clicking on any reference in the central part (Verifier, Customer, Door and Measurement Point), on the right side you can view the information detail.

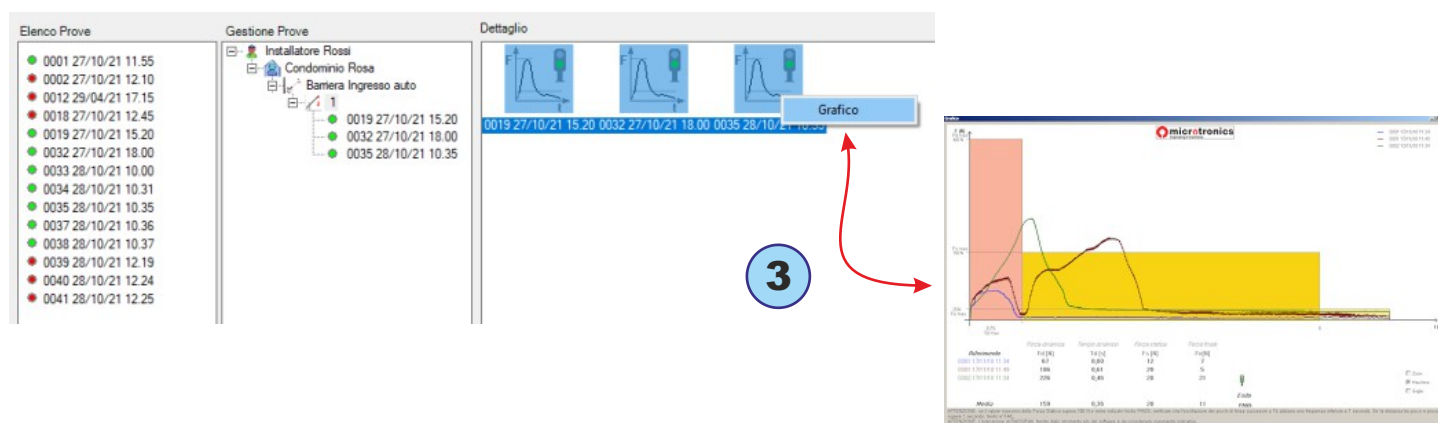
To **associate a measurement**, **highlight** the corresponding measurement point with the **left** mouse button (e.g., point No. 8) and then **drag the measurement** (e.g., No. 0038) to point No. 8 (see Fig. 1).

In the example shown in fig. 2, 2 measurements have been associated with point 6.



**N.B.** The EN 12453 Standard requires that **at least three measurements** are inserted for each point. The software will automatically calculate the average of the values (see paragraph Print Report on page 19).

For each measurement it is possible to view **the graph and its parameters** by clicking on the measurement itself, or it is possible to view **the graph of the resulting average** by selecting two or more measurements in the detail box, then clicking with the **right** button on the selection and choose **Graph** from the menu, see figure 3.



## Menu Functions

**File-> New Verifier:** a **New Verifier** can be added in this menu.

**File->Settings->Serial Port:** in this menu you can check the serial port assigned to your instrument; a black dot marks the serial port COM set, see also page **15**.

**File->Settings->Info:** this menu displays some information about the instrument: Model, Serial No., Calibration Date, Firmware Version.

**File-> Settings-> Language:** in this menu you can change the language setting.

**File-> Settings-> Graph:** in this menu you can set up some ways of displaying graphs.

**File-> Settings-> Door Type:** In this menu you can select the types of doors you want to enable in the software with reference to the current Standards. **N.B.** it is advisable to tick only the types that are normally used in your work environment.

**File-> Print/Delete Tests List:** in this menu you can print/delete all the measurements present in the left box "Tests List".

**File-> Settings-> Archive Management:** in this menu you can locate the path to your customers/measurements database. You can select another database or import a backup database.

**Verifier:** in this menu you can edit **Verifier** data and add a **Customer**.

**Customer:** in this menu you can edit the **Customer** data and add a **Door**.

**Door:** in this menu you can edit the **door** data and start the **print preview**.

**Tests:** in this menu it is possible to modify only some data of the selected measurement

To download BlueForce **software updates** visit: [www.microtronics.it/area\\_download.html](http://www.microtronics.it/area_download.html)

## Print Report

The Print Report consists of several pages, the contents of which include installer, customer and door data. The data can be edited before printing in the **Door Detail** menu.

## Print Preview

The Print Preview allows you to view and add **more details** about the report before printing it; it can be printed also in electronic format (PDF). You can also attach a printout of the graphs by checking the menu **Attach Graphs** and clicking on **print PDF**.

Then you are prompted to select one or more graphs from the list.

## Logo Print - Single Measurement

In the **Verifier** menu, you can add **your logo** in PNG or JPG format in the detail window.

The logo will be reproduced on the printout of the single measurement graph.

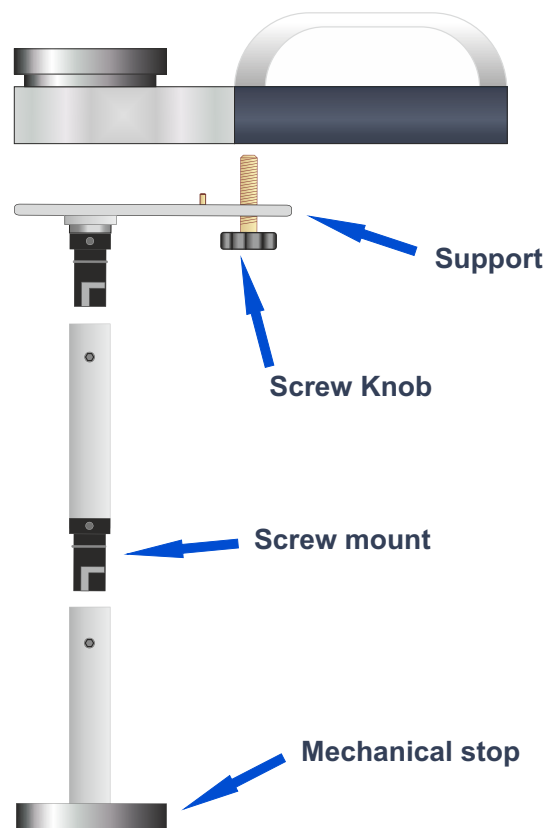
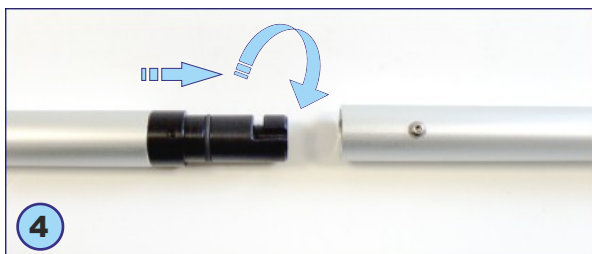
## Accessories Assembly

To install the accessories (Straight, Angular and Vertical) it is necessary to remove the handle of the instrument using the supplied hexagonal key (1).

The support (supplied with the straight accessory) can then be fitted and secured to the handle with the large knob screw supplied (2). **N.B.** If the instrument is used without the handle, the support can be secured using the large and small knob screws supplied.

Other accessories, such as the mechanical stop or other extension elements (3), can then be inserted using the screw mount (4).

To assemble the screw mount correctly, push the screw mount with the O-ring firmly into the tube in the direction of the screw and then turn it 180°, see fig. (4).





## Correct use of the instrument



**WARNING!** Follow the rules of "good use and safety at work".

## Measurement Positions

(1) Sliding door, instrument **with straight accessory+element** (50 cm total)

(2) Hinged door, instrument **with straight accessory+element** (50 cm total)

(3) Vertical door **with straight accessory+element** (50 cm total)

(4) Vertical door **with angular accessory** (2.5 m total)

(5) Vertical door **with vertical accessory+element** (50 cm total)



## Appendice Informativa EN12453

For further information, please visit [www.microtronics.it](http://www.microtronics.it) under "Measurements and Compliance" or "Training Courses".



**TRAINING COURSES  
PROGRAM**

### Briefly, what does EN 12453 describe?

The EN 12453 Standard "Industrial, commercial and garage doors and gates - Requirements and test methods - Safety in use" describes in detail the types of risks of automatic doors and the solutions for user safety. The standard also establishes how to carry out the crushing/impact tests with their physical limits of force, both for amplitude (N) and duration (s).

### What are the obligations for the installer?

The provisions of European Directives and Standards make CE marking of motorised doors and gates compulsory. The installer is obliged to draw up the Technical File which must contain: the Risk Analysis, the verifications of the Force Measurements, the EC Declaration of Conformity, and finally, to affix the indelible CE mark on the motorised door.

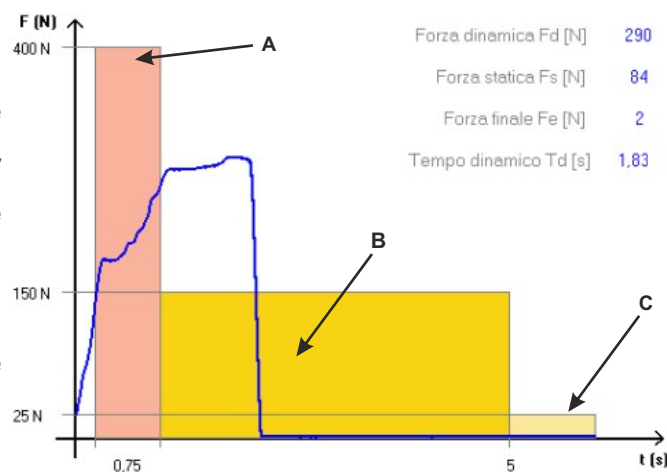
### How should the resulting graph be interpreted?

**A) Impact** - "Dynamic period": represents the development of the force in the first moments of contact, and shows the energy released at the moment of impact, related to the speed of the movement and to

the mass of the gate; the measured parameters are:

-> **F<sub>d</sub>** : maximum amplitude of force peak (N) depending on the type of gate, it must be less than **400N or 1400N**.

-> **T<sub>d</sub>** : duration of force peak (s), must be less than **0.75s**.



**B) Crushing** - "Static period": represents the trend of the force after the initial contact. It shows the crushing generated by the gate motor that insists on pushing even after impact; the measured parameters are:

-> **F<sub>s</sub>** : is the average value of the static force, normally it should not exceed **150N**.

**C) Final Phase** : - 5 seconds after initial contact, the residual force must remain at a level less than or equal to 25N, the graph shall remain entirely within the coloured mask.

-> **F<sub>e</sub>** : is the value of the final force, 5 seconds after the initial contact. Normally, the force should decrease until it is within a maximum of **25N**.



### Battery Recharging

To recharge the internal Li-On battery, you need to use the USB cable and power adapter supplied. The battery can also be charged with the instrument turned off, in this case the display will show **"chr"** preceded by one or more flashing dashes to indicate the charging status (three lit dashes indicate charging completed). To see the charge status in detail, it is possible to enter the instrument **FUNC** menu as shown on page 8.



### Instrument Maintenance

If possible, always store the instrument in its suitcase.

- In case of intensive use, clean the instrument with a slightly damp cloth.
- Do not unscrew the screws on the side and on the knocker, as they are locked internally.
- Do not remove the battery. Improper removal may result in personal injury and damage to the instrument.
- Do not remove the internally installed data SIM card.

*Every year the instrument needs a general check and calibration (mandatory). Contact your dealer or book the calibration service on the Microtronics website.*

### Warranty Conditions

The hardware of the products is guaranteed for 24 months from the date of delivery of the product, during which time any part found to be defective will be replaced or repaired free of charge. Products in need of repair must be returned to Microtronics or to a Microtronics authorised service company only after approval.

The above warranty does not cover:

- Any minor aesthetic imperfections intrinsic to the particular manufacturing process
- Normal use of the instrument
- Faults due to tampering or attempted repair by personnel not authorised by Microtronics
- Faults due to neglect, poor maintenance, or incorrect use of the instrument.
- Possible bugs (imperfections) in the software and/or incompatibility with PCs or external peripheral devices.
- Damage caused by transporting the instrument.

### Liability

**N.B.:** The indication of PASSED / FAILED measurement provided by the instrument and/or the software depends on the type of door and on the behaviour of the operator. Microtronics Srl cannot be held liable in any way for any damage to persons and/or things resulting from the incorrect interpretation of the measurements and from the behaviour of the operator.

## Technical Data

**Dimensions and weight:** 280x80x50mm - approx. 1.6Kg

**Power supply:** non-removable Li-ion battery 650mAh – rechargeable via USB 5Vdc 500mA

**Local storage capacity:** 80 tests

**Force acquisition interval:** 6 sec, sampling 1kHz

**Force measurement range:** 0-2000N (mechanical stop at approx. 2100N)

**Force measurement resolution:** 1N

**Dynamic time measurement resolution:** 0.01s

**Maximum force measurement error:** range from 25 to 400N:  $\pm 0.5\%$  F.S.; from 400N to 1000N:  $\pm 1\%$  F.S.; from 1000N to 2000N:  $\pm 2\%$  F.S.

**Complies with standards:** EN12453, EN16005, EN60335-2-95, DHF TS 013, ASR A1.7

**Satellite receiver :** GPS/GLONASS


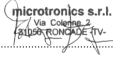
**Quad band GSM/GPRS modem radio interface:** GSM850MHz, EGSM900MHz, DCS1800MHz, PCS1900MHz

**Bluetooth radio interface:** v. 3.0

**USB Interface:** v.2.0 specification compliant

**Cloud area access (always included):** visualization of measurements and graphs on mobile devices

**Cloud area access (included for the first year):** compilation of documentation for the compliance and Technical File

<b>DICHIARAZIONE DI CONFORMITA' CE</b>	
	
<p>■ <b>IL PRODUTTORE</b></p> <p>Microtronics S.r.l. Via Schiavonia, n° 93 - 31032 Casale sul Sile - Treviso (Italy)</p>	
<p>■ <b>DICHIARA DI SEGUIRE CHE IL PRODOTTO:</b></p> <p>Tipo: Strumento misuratore di forze d'impatto per chiusure elettriche Modello: BlueForce Smart art. 50V001G (e varianti con personalizzazioni)</p>	
<p>■ <b>RISULTA IN CONFORMITA' A QUANTO PREVISTO DALLE SEGUENTI DIRETTIVE COMUNITARIE:</b> (Comprese tutte le modifiche applicabili)</p> <p>DIRETTIVA EMC: 2014/30/UE DIRETTIVA R&amp;TTE: 2014/53/UE DIRETTIVA RoHS II: 2011/65/CE</p>	
<p>■ <b>INOLTRE DICHIARA CHE SONO STATE APPLICATE LE SEGUENTI NORME TECNICHE:</b> (Comprese tutte le modifiche applicabili)</p> <p>EN 60950-1:2007 + A11:2009 + A12:2010 + A12:2011 + A2:2013 Apparecchiature per la tecnologia dell'informazione - Sicurezza EN 62311:2008 Emissioni elettromagnetiche - Sicurezza (Art. 3.1a) EN 62479:2010 Emissioni elettromagnetiche - Sicurezza - Valutazione EN 55022:2010: Apparecchiature per la tecnologia dell'informazione - Caratterizzazione disturbi radio EN 55024:2013: Apparecchiature per la tecnologia dell'informazione - Caratteristiche di immunità EN 301 511 V12.5.1, EN 300 328 V2.1.1, EN 303 413 V1.1.1 Compatibilità Elettromagnetica e spettro delle radiazioni elettromagnetiche (Art. 3.2) EN 301 489-1 V2.2.0, EN 301 489-17 v3.2.0, EN 301 489-19 V2.1.0, EN 301 489-52 V1.1.0 Compatibilità Elettromagnetica e spettro delle radiazioni elettromagnetiche (Art. 3.1b) EN 61000-4-2/3/4/6: EMC immunità ai disturbi: metodi di prova EN 61000-6-1/3: EMC emissioni: metodi di misura</p>	
<b>LUOGO:</b>	Casale sul Sile (TV)
<b>DATA:</b>	4 aprile 2022
<p><b>NOME DELLA PERSONA INCARICATA:</b> Ing. Fabrizio Montagner</p>	
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### WEEE - Waste of electric and electronic equipment

In the European Union, this label indicates that this product must not be disposed of with household waste. It must be deposited in an appropriate facility capable of carrying out recovery and recycling operations.

## Risks associated with the use of radio equipment



Pay attention while driving



Enable the airplane mode in your mobile phone or switch it off



Attention: wireless devices may cause interference



In case of urgency use the emergency call



Attention: possible interference near electric equipment



In areas with potentially explosive atmosphere, turn off wireless devices.

# **BLUEFORCE**

## **))) SMART PRO**

*...designed and developed  
around the needs of installers...*



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