

Magnescale

μMATE⁺ Measurement App

μMATE Mobile

Read all the instructions in the manual carefully before use and strictly follow them.
Be sure to keep this manual for future reference.

This instruction manual corresponds to Ver. 1.0 of the application software.
For operating requirements, such as supported OS versions, and recommended specifications,
refer to the listing on Google Play or the App Store.

Instruction Manual

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[Note]

There may be some instances of restricted functionality or display differences regarding the text and display screens appearing in this instruction manual due to the version of OS used.

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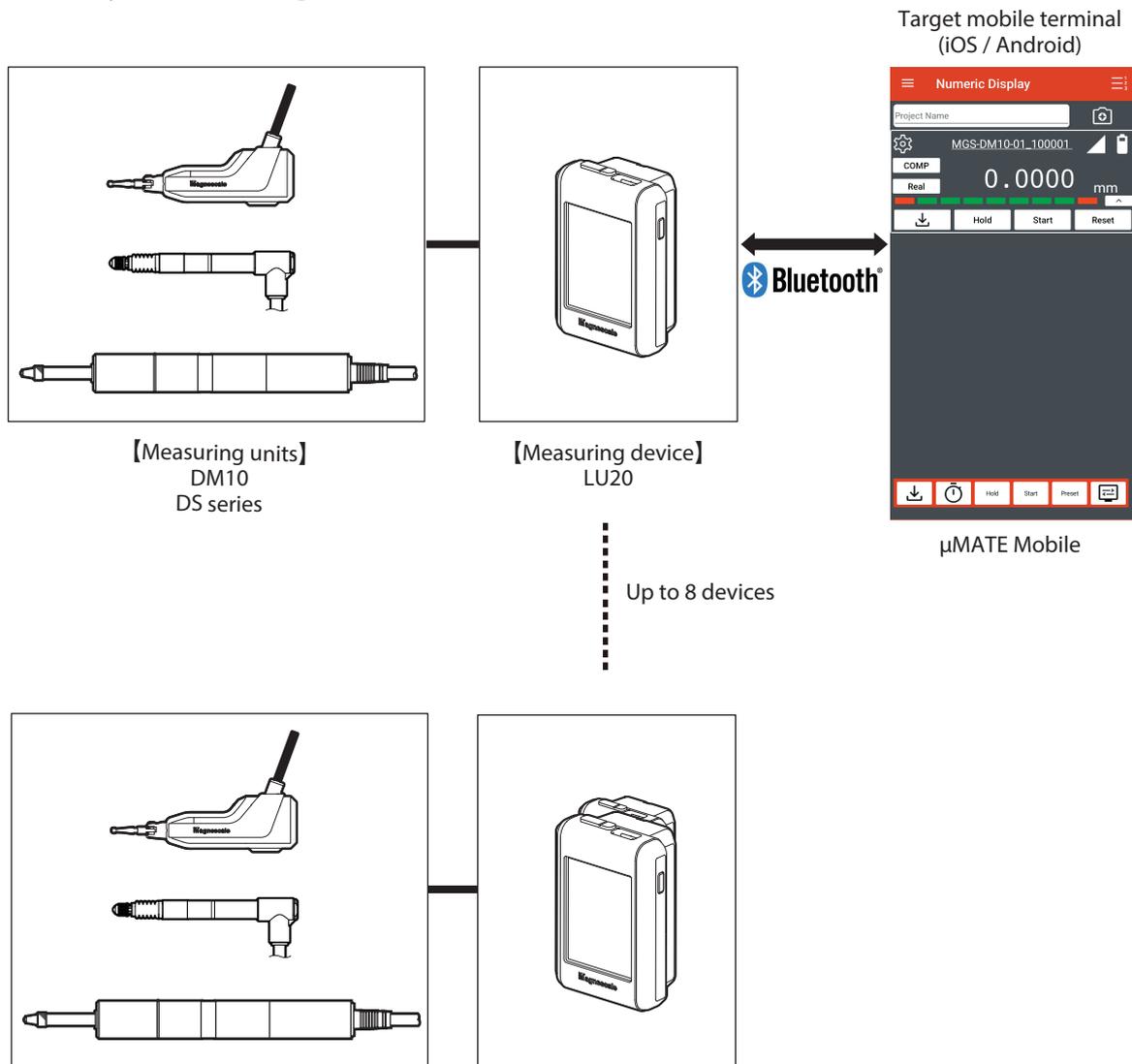
1. Outline

μMATE Mobile is a dedicated software app that enables operation of an LU20 digital indicator (hereafter, “measuring device”) via Bluetooth from a tablet PC or smartphone (hereafter, “mobile terminal”).

Target mobile terminal OS: Android, iOS

It allows to change measuring device setting values, perform operations during measurement, and acquire measurement data by remote operations from a mobile terminal.

1-1. System configuration



2. Installation and startup

2-1. μMATE Mobile installation

For Android

Install “μMATE Mobile” from Google Play.

For iOS

Install “μMATE Mobile” from the App Store.

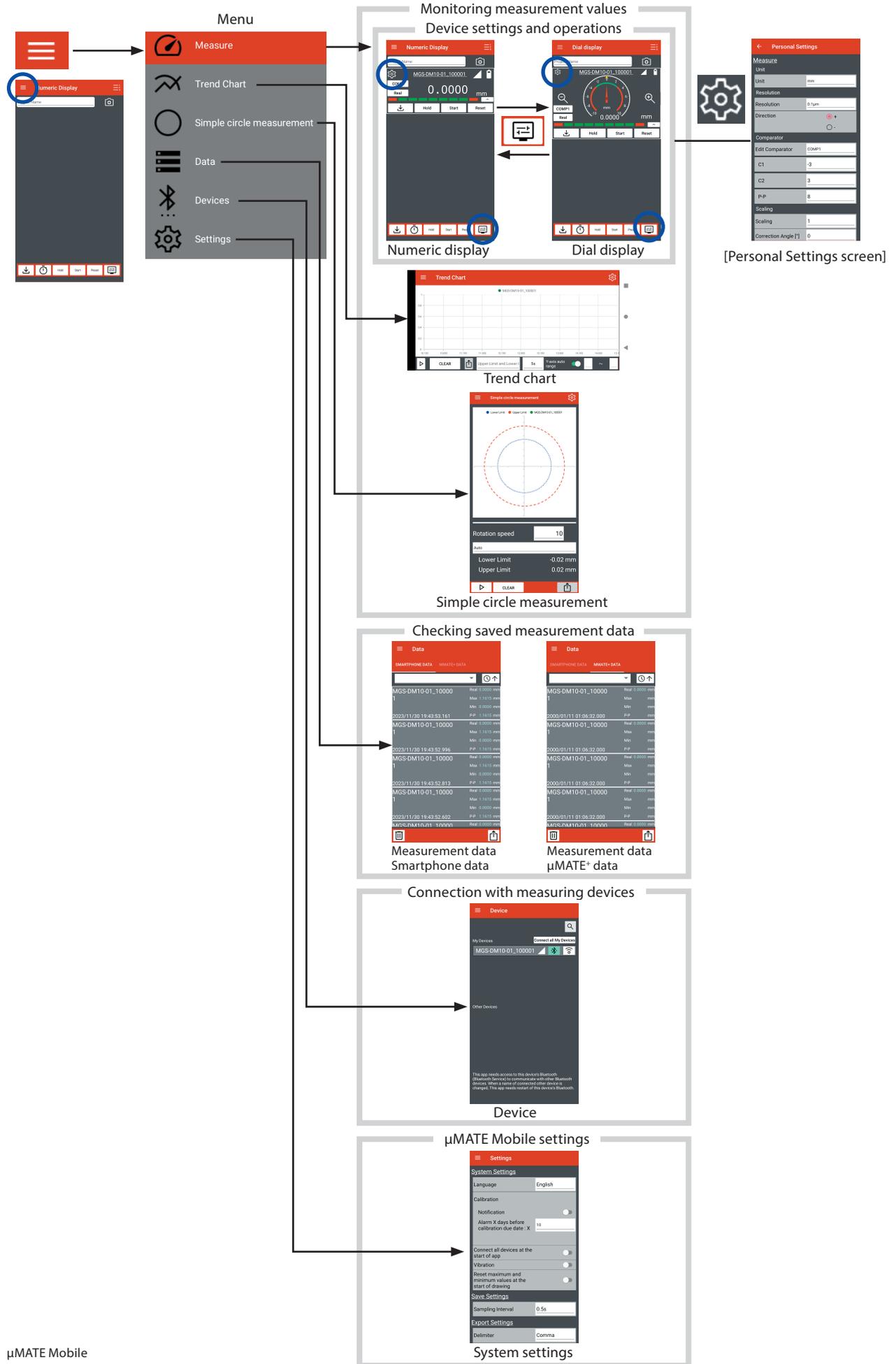
2-2. Starting up μMATE Mobile

- 1 Tap the “μMATE Mobile” icon created when the app was installed.

OS	Icon
Android	
iOS	

μMATE Mobile opens.

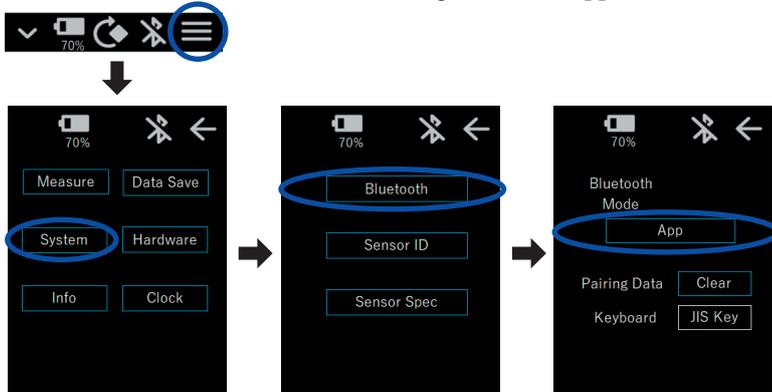
3. Screen transitions



4. Connecting μ MATE Mobile and a measuring device

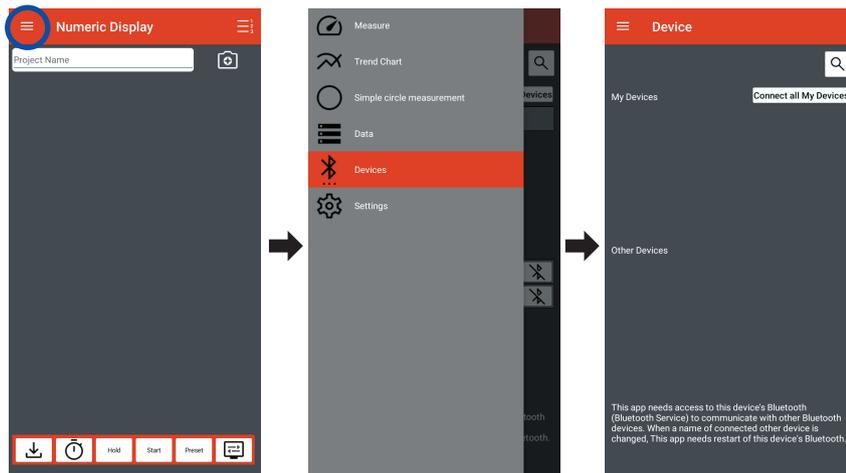
For the measuring device settings, refer to the operating manual of the measuring device.

- 1 Set the Bluetooth mode of the measuring device to “App mode”.



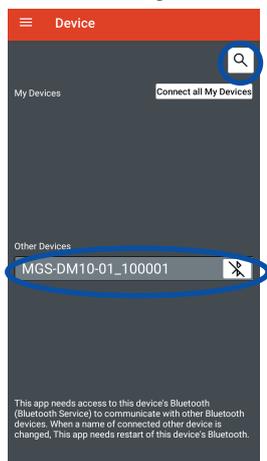
- 2 Turn on the Bluetooth setting of the mobile terminal.

- 3 Select “Devices” on μ MATE Mobile.
The “Device” screen appears.



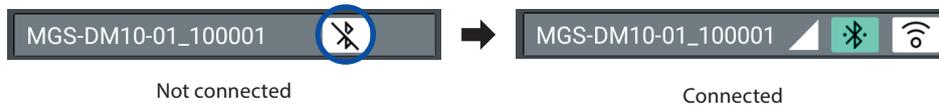
Select “Devices”

- 4 Tap the magnifying glass tool “”.
The measuring devices available for connection are displayed in “Other Devices”.



If a confirmation about the location information service of the mobile terminal appears, turn on the location information service.

- 5** Tap the Bluetooth mark of the target measuring unit for connection so that the mark changes to light blue.
A Bluetooth connection is established and the connected measuring unit automatically moves to “My Devices”.



If the mark does not change to light blue, check the Bluetooth connection of the measuring device.

-  : When tapped, connected measuring devices sound a buzzer to inform which devices are connected.
-  : Indicates the signal strength. Strong  Weak 

The connection between μ MATE Mobile and the measuring device is now complete.

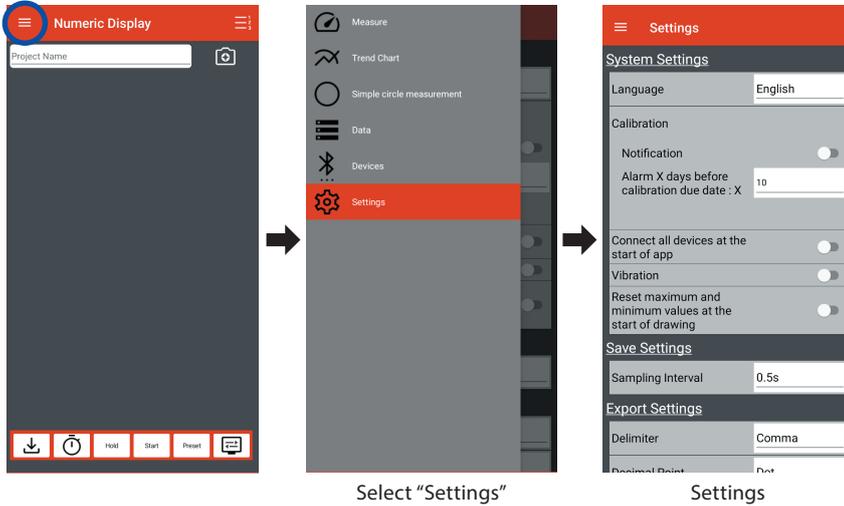
Reference

Once a measuring unit connected, it will be displayed in “My Devices” from the next startup onwards. Tap “Connect all My Devices” to automatically connect the measuring units displayed in “My Devices”.

5. μMATE Mobile setup

Make the μMATE Mobile settings.

Select “Settings” from the menu.



Select “Settings”

Settings

(Bold text: Defaults)

Item	Setting contents		Details
System Settings	Language	Japanese/English/ German	The default is the same as the language setting of the measuring device.
	Calibration		
	Notification	ON/ OFF	ON: When the number of days until the calibration date set for each measuring device falls below the set number of days, a message is displayed when that measuring device is connected.
	Alarm X days before calibration due date: X		The calibration date can be set only when using a DM10 measuring unit.
	Connect all devices at the start of app	ON/ OFF	
	Vibration	ON/ OFF	ON: When an operation button used for measurement is tapped, the mobile terminal vibrates.
Save Settings	Reset maximum and minimum values at the start of drawing	ON/ OFF	ON: Resets the maximum and minimum values when graph drawing starts on the “Trend Chart” or “Simple circle measurement” screen.
	Sampling Interval	0.1s / 0.5s /1s /5s / 10s /30s /60s / 300s /600s	Sets the save interval for timer save for all measuring devices. This setting is used as the save interval for collective timer save. (Refer to “6-1-3. Collective operation of measuring devices”.)
Export Settings	Delimiter	Comma /Semicolon/ Tab/Space	Sets the delimiter character in data output.
	Decimal Point	Dot /Comma	Sets the decimal point in data output.
	Terminator	CR /LF/CR+LF	Sets the terminal character in data output.
Information	Displays the μMATE Mobile version.		

6. Measurement

This section mainly describes the screens used for measurement. Each measuring device can be controlled from this app.

Reference

Details of each function ⇒ Refer to the operating manual of the measuring device.
Transition to each screen ⇒ Refer to “3. Screen transitions”.

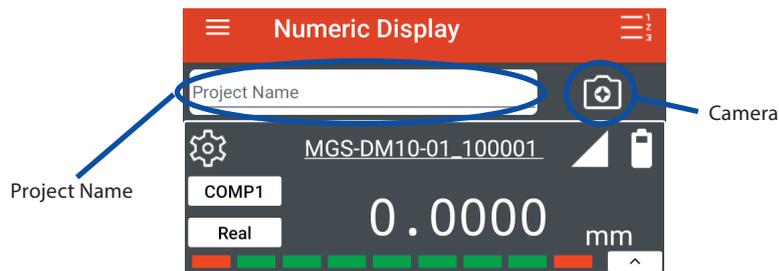
6-1. Before measurement

Multiple measuring devices can be connected to this app. Check the following settings and operations before starting measurement.

6-1-1. Setting the project name

The project name is saved with the measurement data. The measurement project name can be set on the “Numeric Display” or “Dial display” screen. It can also be set by scanning the barcode on the measurement subject with the camera.

<Settings screen> “Numeric Display” or “Dial display”



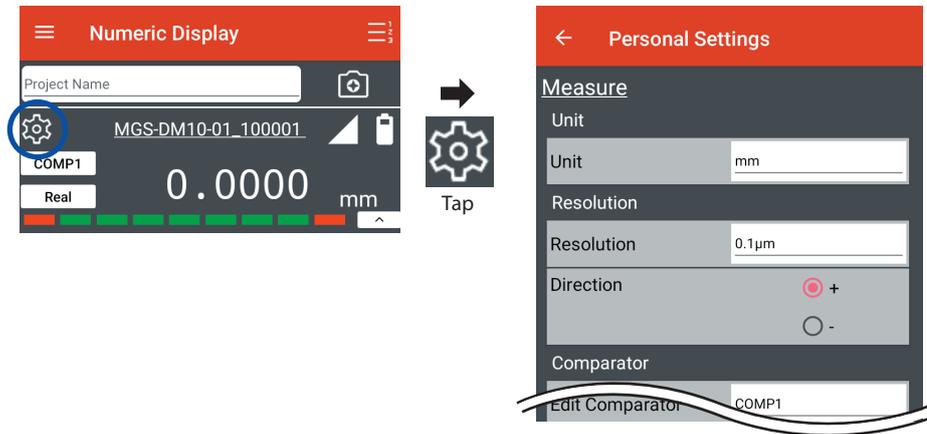
Item	Setting details
Project Name	Tap the input field to enable input. Maximum number of input characters: 100 characters
Camera	Tap the camera icon and then scan the barcode of the measurement item. The product name of the barcode is automatically input. Scannable formats: UPAC-A, EAN-13, CODE 39, QR code, Data matrix

6-1-2. Checking the measuring device settings and information

Each connected measuring device can be set remotely from this app.

The set contents will be interlinked with the settings in the measuring device main unit. For details of setting items, refer to the operating manual of the measuring device.

<Settings screen> “Numeric Display” or “Dial display” ⇒ Go to Personal Settings screen



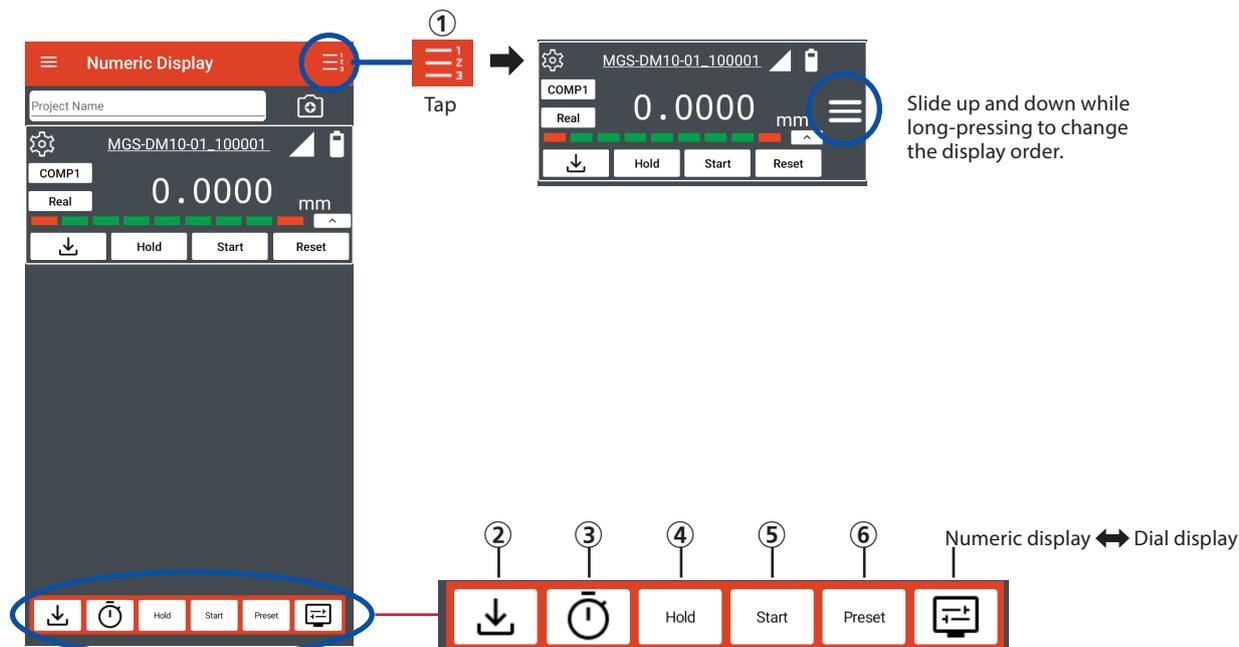
6-1-3. Collective operation of measuring devices

Use of this app enables collective operation of connected measuring devices.

<Available collective operations>

Change device order, data save, timer save, hold, start, reset/preset

<Settings screen> “Numeric Display” or “Dial display”



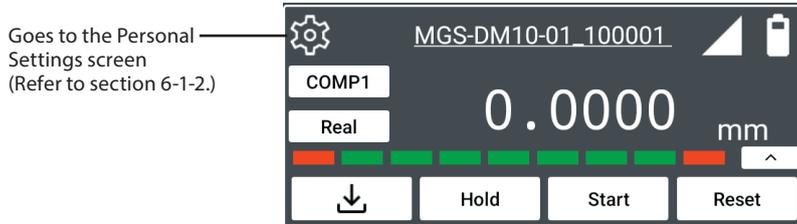
Item	Setting contents
① Change device order	Tap to display on the screen of each measuring device. Long-press and slide it up and down to change the order of each measuring device. The measurement data display is not updated while changing the device order.
② Collective data save	The measurement values (current, maximum, minimum, and P-P values) of all the connected measuring devices are saved each time this button is tapped. The saved data can be checked with “SMARTPHONE DATA” of “Data”. (Refer to “7. Data save”.)
③ Collective timer save	Starts timer save of the measurement values (current, maximum, minimum, and P-P values) of all connected measuring devices. The data is saved according to the data save settings in “Personal Settings” of each device. The saved data can be checked with “SMARTPHONE DATA” of “Data”. (Refer to “6-1-2. Checking the measuring device settings and information” and “7. Data save”.)
④ Collective hold	Starts/stops measurement value updating for all connected measuring devices. Updating: Stopped:
⑤ Collective start	Sets the maximum and minimum values to the current value and the P-P value to 0 for all connected measuring devices.
⑥ Collective reset/preset	Sets the current, maximum, and minimum values to the preset values and the P-P value to 0 for all connected measuring devices. Reset indication: The preset values are 0. Preset indication: The preset values are other than 0. (For the preset value settings, refer to “6-1-2. Checking the measuring device settings and information”.)

6-2. Measurement display screens and main screen operations

This app enables to check the measurement values on four types of screens.

6-2-1. Numeric display

This screen displays the measurement values numerically for each connected measuring device.



The contents for the connected measuring device are displayed. For details of each item, refer to the operation manual of the measuring device.

6-2-2. Dial display

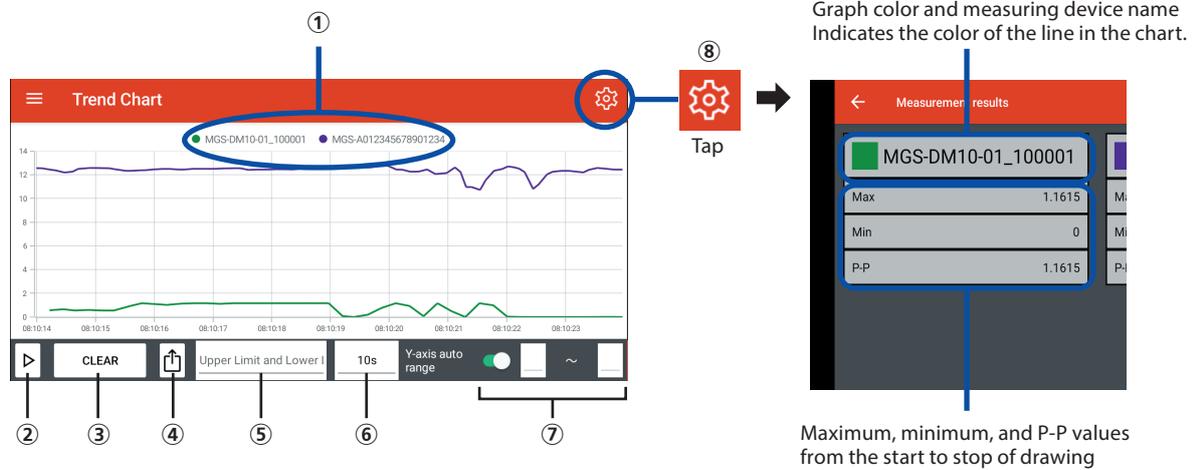
This screen displays the measurement values with a dial for each connected measuring device.



The contents for the connected measuring device are displayed. For details of each item, refer to the operation manual of the measuring device.

6-2-3. Trend chart

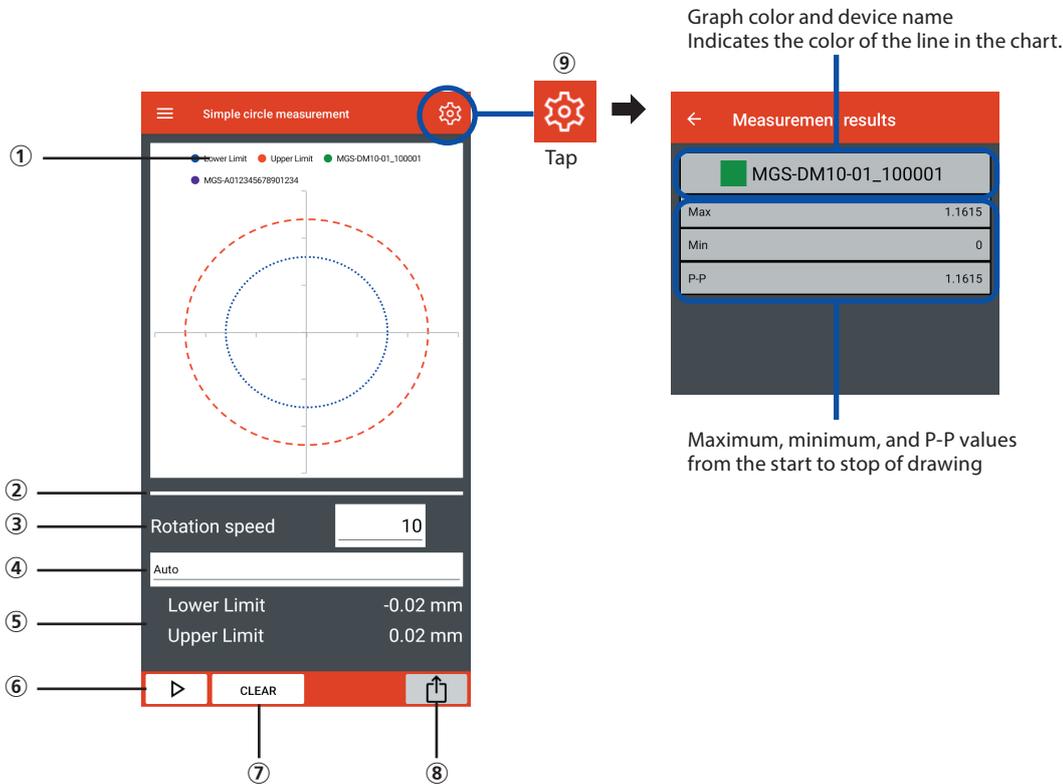
This screen draws the measurement values of all connected measuring devices in a single graph.



①	Legend	Displays the legend of all connected measuring devices. Tap the legend to show/hide the chart.
②	Start/stop drawing	Starts/stops drawing.
③	CLEAR	Clears the currently displayed chart. The chart cannot be cleared while drawing is in progress.
④	Data output	Outputs the measurement data in CSV file format. Tap to specify the output destination. Designate the output destination and output the data. However, output is not possible while drawing is in progress.
⑤	Upper/lower limit value settings	Tap to display the names of the connected measuring devices. Select the measuring device to set the upper and lower limit values. The upper and lower limit values of the selected measuring device are displayed with green bands in the graph.
⑥	X-axis display range	Sets the X-axis display range. Setting range: 5s / 10s / 30s / 60s
⑦	Y-axis display range	When auto is on, the display range is set automatically. Turn auto off to set the display range by numeric input.
⑧	Measurement results	Tap to display a screen showing the measurement results in the trend chart.

6-2-4. Simple circle measurement

This screen plots the measurement values of the connected measuring devices in a circle chart. Set the rotation speed and tap  to draw at an angle corresponding to the rotation speed. The drawing is overwritten every lap.



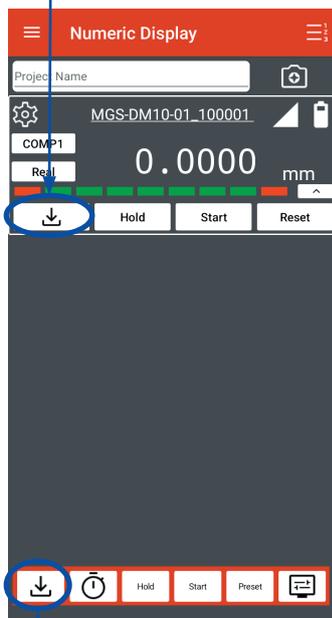
①	Legend	Displays legend of the upper and lower limit values and the connected measuring device. Tap the legend to show/hide the chart.
②	Drawing progress bar	Displays the drawing progress through one lap of the circle chart.
③	Rotation speed	Sets the drawing speed. Setting range: 1 rpm to 600 rpm (Default: 10 rpm)
④	Upper/lower limit value setting	Select "AUTO" or the measuring device name. AUTO : Every lap, the current maximum and minimum values are automatically updated as the upper and lower limit values. Select a measuring device : The upper and lower limit values of the selected measuring device are displayed on the screen.
⑤	Upper/lower limit value display	Displays the upper and lower limit values of the selected measuring device.
⑥	Start/stop drawing	Starts/stops drawing.
⑦	Clear	Clears the currently displayed chart. The chart cannot be cleared while drawing is in progress.
⑧	Data output	Outputs the measurement data in CSV file format. Tap to specify the output destination. Designate the output destination and output the data. However, output is not possible while drawing is in progress.
⑨	Measurement results	Tap to display a screen showing the measurement results in the simple circle measurement.

7. Data save

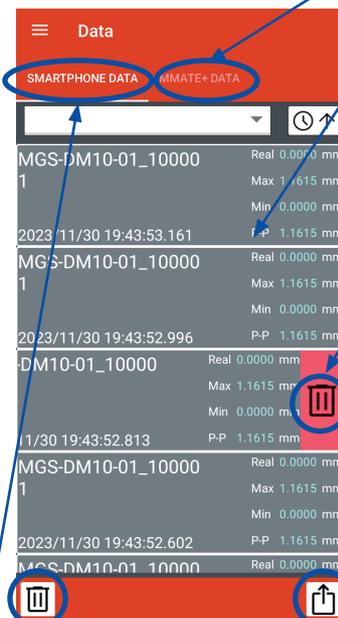
Measured data can be saved as follows.

Individual save: The data of each measuring device can be saved individually. If the data is saved in "MMate+ DATA" in the app and a microSD card is inserted into the measuring device, the data is also saved on the microSD card.

* MMate+ DATA is the same as the data saved on the microSD card, but does not indicate the contents of the microSD card.

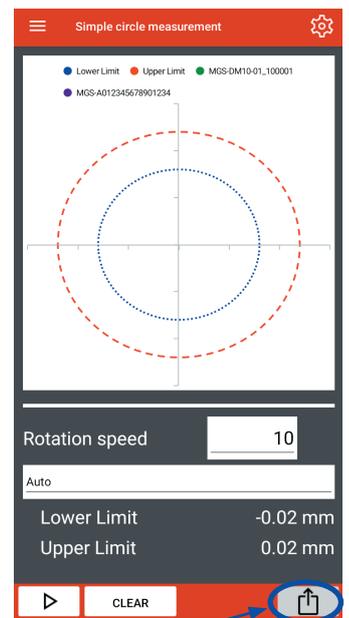


Collective save: When multiple measuring devices are connected, the measurement values of all the measuring devices can be saved simultaneously. The data is saved in "SMARTPHONE DATA" of "Data" in the app. The data is not saved on the microSD card of each measuring device.



Deletes all of the saved data.

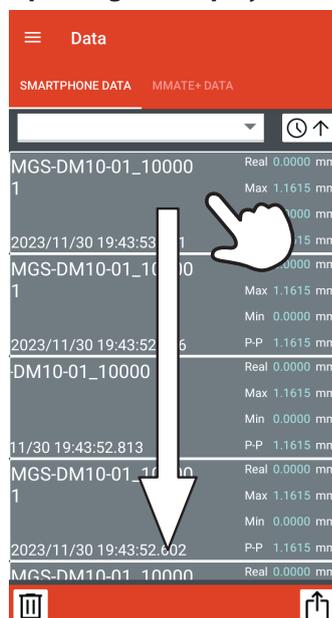
Slide the data display of each measuring device to the left to display the trash can mark. Tap the trash can mark to delete the data.



To save the acquired data and the trend chart and simple circle measurement data, tap this button to designate the output destination and output a CSV format file.



Updating the display



Swipe down near the center of the screen to update the display.

8. Troubleshooting μ MATE Mobile

If there are problems using μ MATE Mobile, try checking the following and taking the suggested actions. If the problem is not resolved contact us.

The target measuring device for connection is not displayed.	<ul style="list-style-type: none">• Is the Bluetooth Mode of the measuring device set to “App”?• Is the Bluetooth function of the measuring device turned on?• Are there obstacles between the measuring device and the mobile terminal?• Is the measuring device too far away from the mobile terminal?• Is another device already connected via Bluetooth?
Buttons cannot be operated.	<ul style="list-style-type: none">• Is the measuring device connected? Some buttons will not function when no measuring device is selected or if no communication link has been established.
Cannot connect to measuring device.	<ul style="list-style-type: none">• Are there obstacles between the measuring device and the mobile terminal?• Is the measuring device too far away from the mobile terminal?• Try disconnecting from the measuring device and then reconnecting.
Cannot update measurement values.	<ul style="list-style-type: none">• Is the change device order button pressed?• Check the measurement value mode.• The communication link may be unstable. Try disconnecting from the measuring device and then reconnecting.• Is the measuring device on hold?
<Other>	
Operation is unstable.	<ul style="list-style-type: none">• Try reconnecting.• If this does not resolve the problem, try restarting the mobile terminal.

9. Message display

Calibration notification messages

Message	Action
Until calibration due date, X days	<ul style="list-style-type: none">• There are X days left until the calibration due date. Calibrate the measuring unit and set the next calibration date in the measuring unit.• This notification can be turned on/off with the μMATE Mobile setting.
The calibration due date for this device has passed. Please calibrate.	<ul style="list-style-type: none">• The calibration due date has passed. Calibrate the measuring unit and set the next calibration date in the measuring unit.• This notification can be turned on/off with the μMATE Mobile setting.

Connection/communication error messages

Message	Action
Bluetooth is off	Turn on the Bluetooth function of the mobile terminal.
This app need access to the device's location information to communicate with Bluetooth devices.	Turn on the location information function of the mobile terminal.
Bluetooth and location permission are required. We do not store or use your location at all.	Permit use of this app's location information with the mobile terminal.
Can not delete connected device.	A connected measuring device cannot be deleted. Disconnect the device and then delete it.
Can not connect.	<ul style="list-style-type: none">• Check the Bluetooth settings of the measuring device and the mobile terminal.• Check whether there are obstacles between the measuring device and the mobile terminal.• Check whether the measuring device is too far away from the mobile terminal.
Up to 8 devices can be registered in My Device. If you connect to a new device, remove it from My Devices.	Check the number of measuring devices in "My Devices", and delete/add devices so that there are up to 8 devices.
No Connected Device	Connect with a measuring device before starting to draw the trend chart or simple circle measurement.

Other alert/error messages

Message	Action
Deletes all saved data. Is it OK?	This message appears when the button for deleting all data is tapped. Select whether or not to delete all the data.
The number of data exceeded the maximum number of data that can be stored.	Delete some saved measurement data.
Stops the timer for all connected devices.	This message appears when an attempt is made to switch from the measurement screen to a different screen while collective timer save is in progress. Do not switch the screen while collective timer save is in progress.

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