Magnescale

Display Unit
LT80-NE

Read all the instructions in the manual carefully before use and strictly follow them.
Keep the manual for future references.
This manual corresponds to the software version Ver 1.05.00US.
This manual describes only the added and changed functions compared to the software version
Ver 1.04.00, so be sure to also read the software version Ver 1.02.00/1.04.00 Operating Manual.

Operating Manual

・ Functions added by V1.05.00US

LT80-NE software version V1.05.00US adds and changes the following functions compared to V1.04.00US

・The measurement value display resolution can be set in the view frame.
Measurement values can be displayed at a resolution lower than the input resolution of the measuring unit.
Available display resolution settings: 0.1 μm, 0.5 μm, 1.0 μm, 2.0 μm, 5.0 μm, 10.0 μm
0.000001 inch, 0.000005 inch, 0.00001 inch, 0.00002 inch, 0.00005 inch, 0.0001 inch

・A function that sets a magnification for measurement display values has been added.
This function sets the magnification for each view frame, and also supports frames with a calculation set.
Display value = Measurement display value × Set magnification

・Preset values can be set for frames with a calculation set.

・Manual operation, display unit I/O operation, or auto save by number of data can be selected when saving measurement data to a USB memory or SD card.

・The function has been changed so that normal measurement can be performed while latch operation is stopped (standby status for operation).

* Functions 1 to 3 above support MG80-MA with serial numbers 300001 and higher.
When using functions 1 to 3 with MG80-MA with serial numbers 100001 to 299999, contact our sales representative or service desk.

1. Display resolution setting

This function sets the display resolution of the measurement values displayed in the view frame.
A display resolution lower than the input resolution of the measuring unit can be set.

Touch inside the frame to switch the display unit between "mm" and "inch"

• View frame settings screen

M1 Frame	Valid	Axis1	Ope.	Axis2	Mode	Disp. Resolution (mm)	Scaling	Preset
A	✓	1	✚	--	REAL	0.1μm	1.000000	NaN
B	✓	2	✚	--	REAL	0.1μm	1.000000	NaN
C	✓	3	✚	--	REAL	0.1μm	1.000000	NaN
D	✓	4	✚	--	REAL	0.1μm	1.000000	NaN
E	✓	5	✚	--	REAL	0.1μm	1.000000	NaN
F	✓	6	✚	--	REAL	0.1μm	1.000000	NaN
G	✓	7	✚	--	REAL	0.1μm	1.000000	NaN
H	✓	8	✚	--	REAL	0.1μm	1.000000	NaN

Display resolution setting
Touch inside the frame to cycle through the available display resolution settings.
mm : 0.1→0.5→1.0→2.0→5.0→10.0
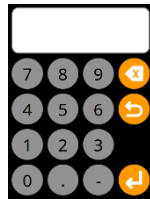inch : 0.000001→0.000005→0.00001→0.00002→0.00005→0.0001

* Display resolution values less than the input resolution of the measuring unit corresponding to that frame cannot be selected.
* When the display resolution has been changed, redo the comparator value, preset value, and reference point preset value settings.
* All processing such as comparator and data save is performed based on the display values at the set display resolution (hereafter, "measurement display values").

2. Scaling

This function sets the display magnification for the measurement display values.
This enables operations such as compensation in account of the linear expansion of the object to be measured, x2 display, 1/2 display, and average value processing of two measuring units using calculations.

・View frame settings screen

M1 Frame	Valid	Axis1	Ope.	Axis2	Mode	Disp. Resolution (mm)	Scaling	Preset
A	✓	1	✚	--	REAL	0.1μm	1.000000	NaN
B	✓	2	✚	--	REAL	0.1μm	1.000000	NaN
C	✓	3	✚	--	REAL	0.1μm	1.000000	NaN
D	✓	4	✚	--	REAL	0.1μm	1.000000	NaN
E	✓	5	✚	--	REAL	0.1μm	1.000000	NaN
F	✓	6	✚	--	REAL	0.1μm	1.000000	NaN
G	✓	7	✚	--	REAL	0.1μm	1.000000	NaN
H	✓	8	✚	--	REAL	0.1μm	1.000000	NaN

Scaling setting
Touch inside the frame and use the numerical keypad to set the magnification.
Setting range: 0.000001 to 10.000000

The Scaling column displays the results of multiplying the measurement display values by the set magnification.

Display value = Measurement display value × Set magnification

* All processing such as comparator and data save is performed using the display values after scaling.

3. Preset settings for frames with a calculation set

Starting from this version, preset values can also be set for frames with a calculation set.
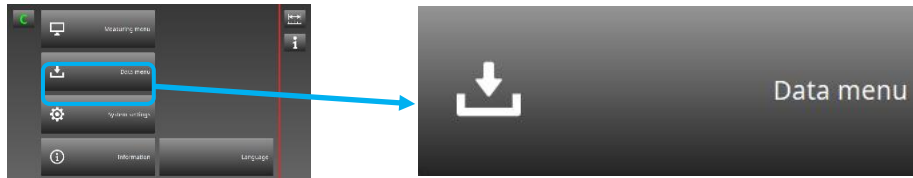
・View frame settings screen

Touch inside the frame and use the numerical keypad to enter the preset value. (unit: mm)

4. Measurement data save

An auto save function by number of data has been added, and the Data menu has been changed.
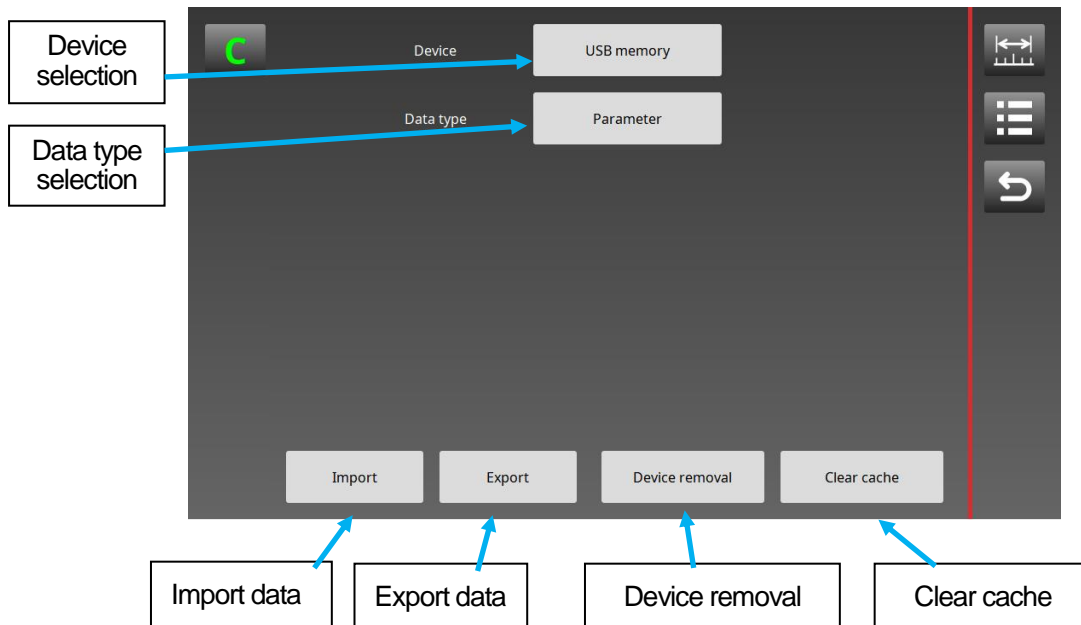The operation related contents are as follows.

Setting contents: Import setup parameters from external memory
Export setup parameters and measurement data to external memory
Measurement data auto save setting
Clear measurement data saved in display unit

• Device selection
Touch this button to select the external device for import and export operation.

• Data type selection
Touch this button to select the type of data to be imported or exported.

• Device removal
Touch this button when removing the external memory from the display unit.

• Clear cache
Touch this button to clear the measurement data saved in the display unit.
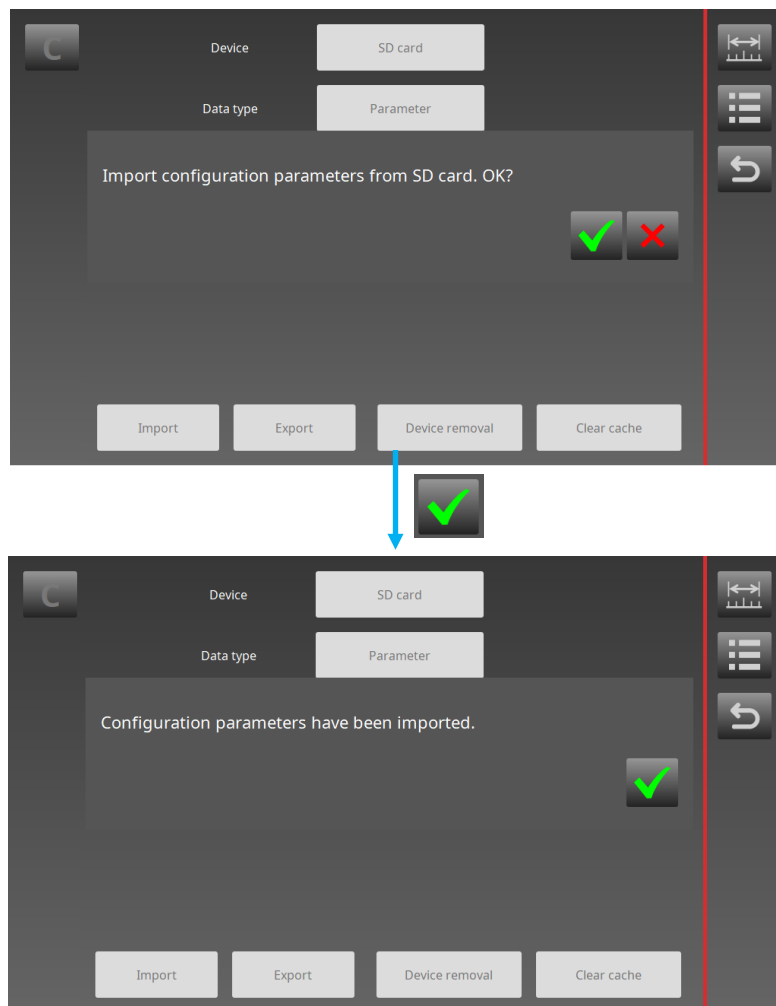
• Import/Export data

These buttons are used to import and export data from and to an external memory.

Import: Imports setup parameters from an external memory to the display unit.

Export: Exports setup parameters and measurement data from the display unit to an external memory.

Follow the instructions in the pop-up message to perform import and export operation.

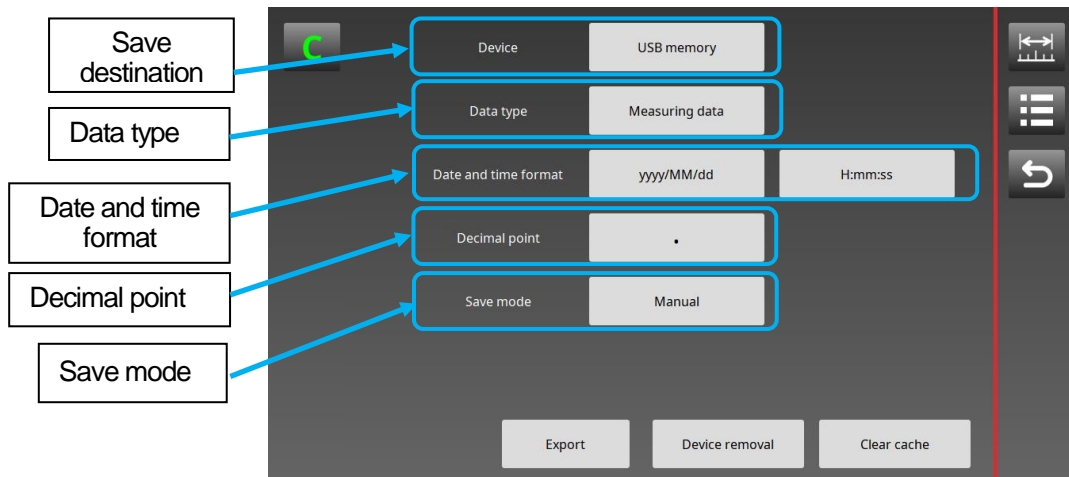Example: Operation to import setup parameters from a SD memory card to the display unit

* Do not cut off power supply to the display unit while data import or export is in progress. Doing so may corrupt the data.

• Measurement data format settings and auto save settings

The following date and time formats and Decimal points can be selected for the format when saving measurement data in an external memory.

Save mode selects whether to export data to an external memory manually or automatically according to the number of measurement data.

• Data menu (when reading measurement data)

Save destination	→	Device	USB memory
Data type	→	Data type	Measuring data
Date and time format	→	Date and time format	yyyy/MM/dd	H:mm:ss
Decimal point	→	Decimal point	.
Save mode	→	Save mode	Manual

Export | Device removal | Clear cache

• Examples of selectable date and time formats

Date format	Example of display
yyyy/MM/dd	2019/06/13
yyyy.MM.dd	2019.06.13
MM/dd/yyyy	06/13/2019
MM.dd.yyyy	06.13.2019
dd/MM/yyyy	13/06/2019
dd.MM.yyyy	13.06.2019

Time format	Example of display
H:mm:ss	13:57:09
h:mm:ss AP	1:57:09 PM

• Selection of Decimal points

Dot | Decimal point | . | Comma | Decimal point | , |

* The delimiter in the data format is a comma (,) when dot is selected or a semicolon (;) when comma is selected.

• Save mode

The following selections are available.

Manual : Export operation using the Data menu, or save operation using the display unit I/O

No. of data : Set the number of data. The measurement data is automatically saved in the external memory when the set number of data is reached.

(Export operation can be performed via the Data menu even when this number of data is set.)

• Data menu (when No. of data is selected for Save mode)

| Save mode |
| Number of data |
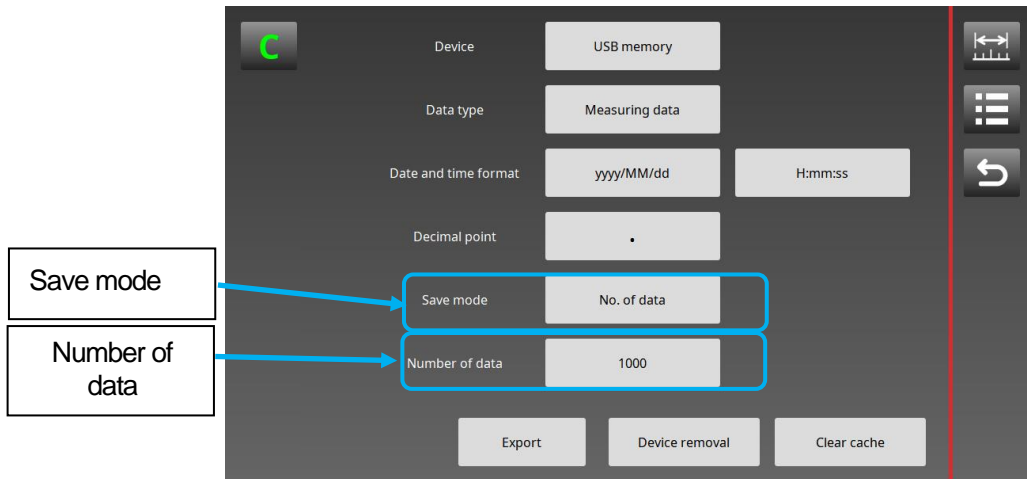
• Number of data

Touch the Number of data frame and use the numerical keypad to set the number of data at which to automatically save the data.

The number of data can be set up to 300000.

* When auto save by number of data is selected, export operation is performed during measurement, and a progress bar such as the following is displayed while export is in progress. Note that measurement processing is not performed while export is in progress.

Data export in progress
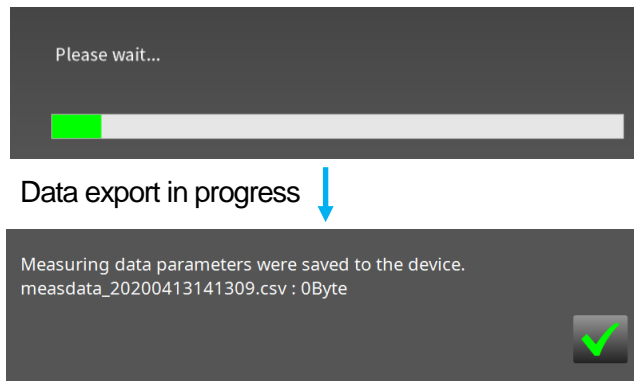
Data export finished

* When the amount of data to be exported is large, export will take some time.

* The display unit I/O SaveProc output (refer to the following page) changes to ON while export is in progress, enabling to confirm that save is in progress.

* When the available space in the external memory is approximately 310 MB or less, data cannot be saved, and the progress bar is not displayed. (SaveProc does not change to ON.)

8

• Addition of data save function set via the display unit I/O

Save operation can be performed from the display unit I/O regardless of whether manual or auto (No. of data) is selected for Save mode.

* Save operation can be performed before the set number of data in auto mode is reached, but note that measurement operation stops while save is in progress.

Input

Selection symbol	Description	Function	Terminal logic
SaveMeas	Data save	Saves the acquired cache data in the external memory.	ON
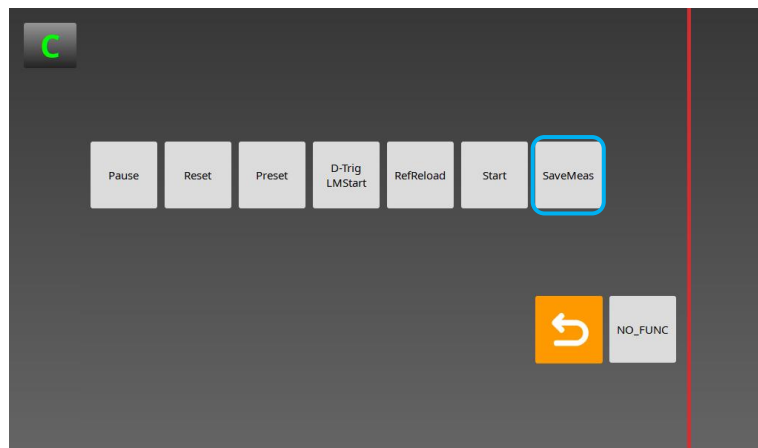
Input terminal selection screen

Output

Selection symbol	Description	Function	Terminal logic
SaveProc	Data export in progress	Outputs ON while cache data save to the external memory is in progress.	ON

Output terminal selection screen

9

5. Function change when using the MG80-LM

In previous versions, measuring screen refresh was not performed while latch operation is stopped (standby status for operation, measurement start button text color is gray). From this version, however, normal operation is possible and the display is refreshed even while latch operation is stopped.

Measurement start/stop button
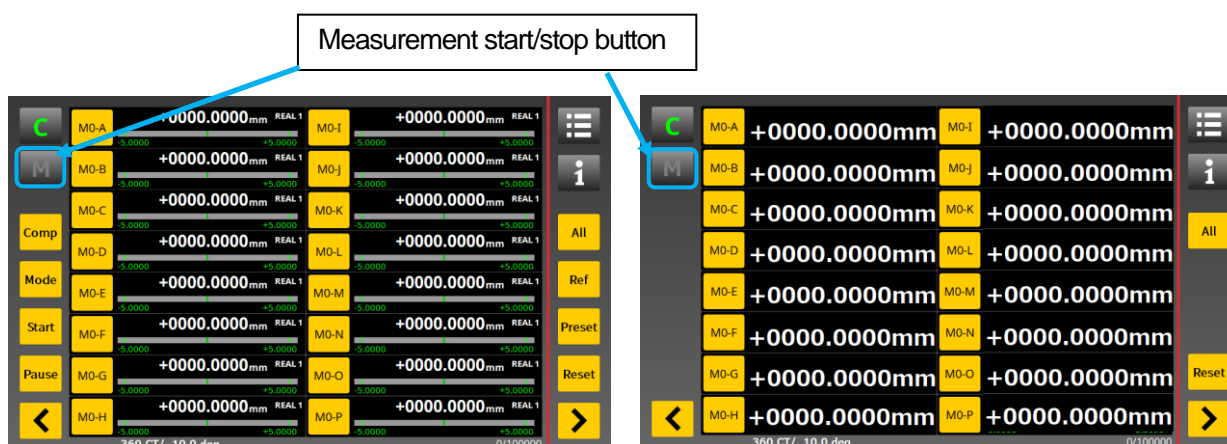
When set to "Encoder"   When set to "Encoder (High-speed)"

• Measurement start/stop button
 Measurement is performed using the measurement start/stop button.
 The button text color changes according to the status as follows.

M : Latch operation stopped (Standby status for operation)
   The button text color changes to gray after power-on, after settings are changed, and after latch operation ends (the set latch count is reached).
   Normal operation can be performed.

M : Latch operation in progress, standby for encoder signal input
   When the measurement start/stop button is touched while latch operation is stopped, operation enters the standby status for encoder operation and the button text color changes to orange.

M : Latch operation in progress
   When the encoder signal is detected and latch operation starts, the button text color changes to green.

M : When a latch error or encoder error occurs
   When a latch timing or encoder abnormality is detected, the button text color changes to red.
   Touch the measurement start/stop button to cancel the error.

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