Operating Instructions

Part-No.: 315 160 002 001
Date: August 2022

Testing and Measuring Instrument

PG-UL60

Part-No.: PG-UL60.040000

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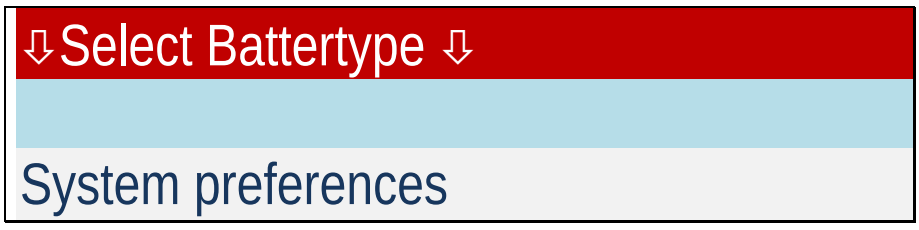
Calibration instruction for Charger / Analyzer UL60

Step 1: Setting voltage

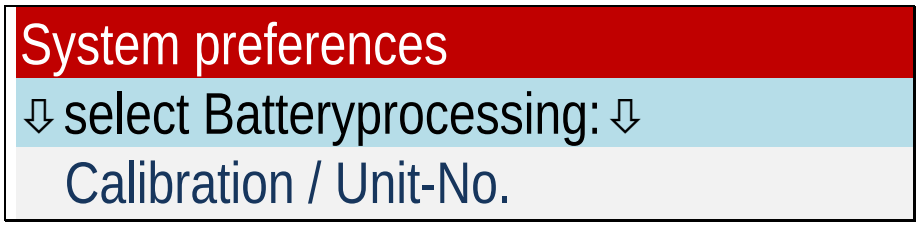
Connect the two charging cables from the PG-UL60 to the UL60.

Fig. 1: Connected PG-UL60 to UL60

Switch on the PG-UL60 and the UL60.
The selection-switch of the PG-UL60 must be on “I Regulation”.
Start the execution of the UL60 program.



Press “Enter” for the following page:



Press “Enter” and the password will be requested.

Enter password “**32**” and press “Enter”
Important: This password will be requested every time a calibration cycle is finished or canceled by pressing “Break” on the UL60.
The UL60 displays:

System preferences
serial number = 0 update = 1
calibration celltest = 2
calibration voltage = 3 current = 4

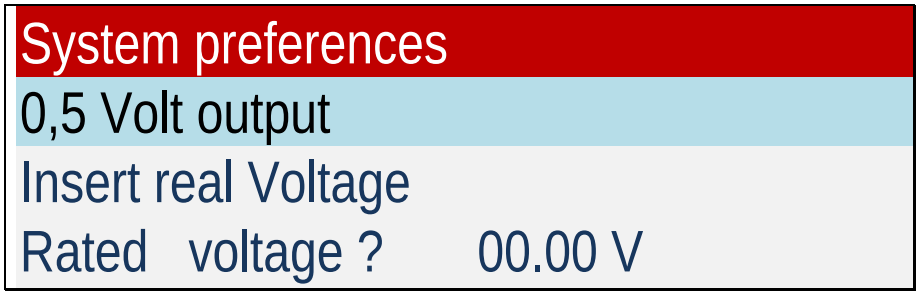
Choose 3 for calibration voltage.
The UL60 displays:

System preferences
0,5 Volt output
switch PG-UL60 on I-Regulation
ready => E ENTER

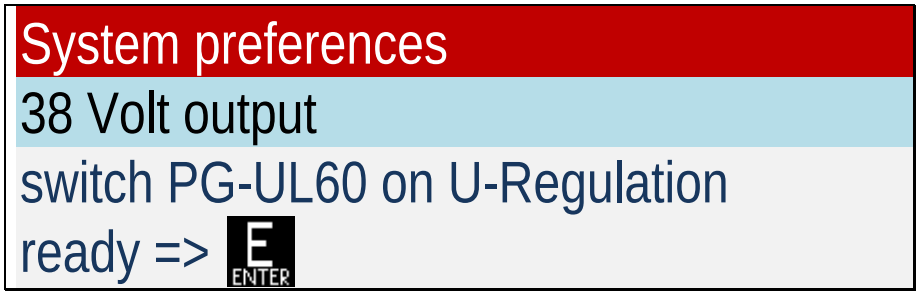
Press “Enter” and wait until the UL60 is switched on and the measurement is stable.

Fig. 2: Measurement calibration voltage 0.5 volts

Enter the voltage into the UL60 incl. two decimal places:



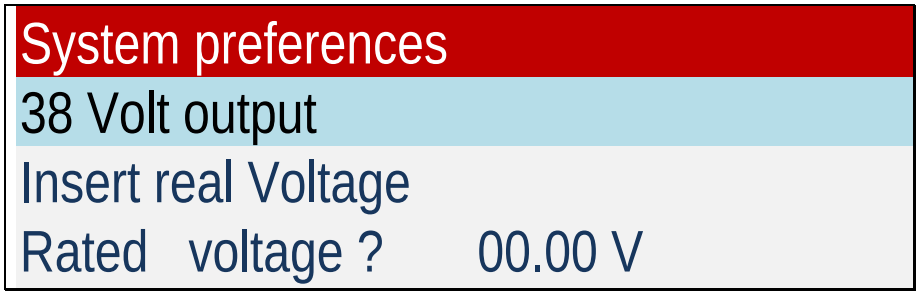
After confirming with the “Enter” key the UL60 displays:



Choose “U Regulation” with the selection-switch of the PG-UL60
Press “Enter” and wait until the UL60 is switched on and the measurement is stable

Fig. 3: Measurement calibration voltage 38 volts

Enter the voltage into the UL60 incl. two decimal places:

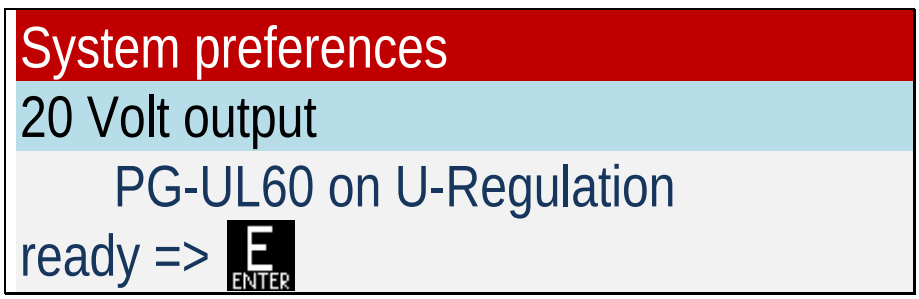


After confirming with the “Enter” key the UL60 displays the internal values for the calibration:

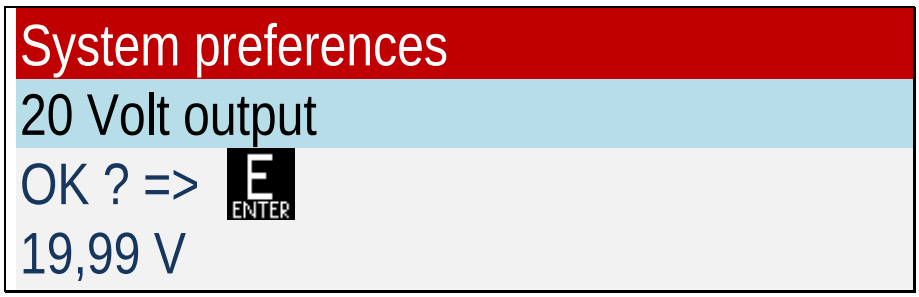
Press “Enter” for the next page:

These values are internal originated and ensure the accuracy of the displayed results.

Press and hold the “Enter” key to perform a further control measurement with 20 volts:



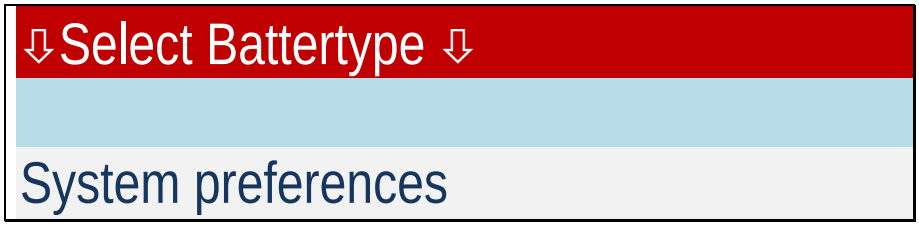
Press “Enter” for the next step:



If the value is between 19.98 and 20.02 volts the result is fine.
Press the “Enter” key and the calibration will be saved.

If the value exceeds the limit of the permitted range press “Break” and restart this procedure.

Before the next procedure can be started press “Break” on the UL60 to return to the System preferences:



Step 2: Setting current.

Connect the two charging cable from the PG-UL60 to the UL60.

The selection-switch of the PG-UL60 must be on “I Regulation”.
Enter password “**32**”
Start the execution of the UL60 program:

System preferences
serial number = 0 update = 1
calibration celltest = 2
calibration voltage = 3 current = 4

Choose 4 for calibration current.
The UL60 displays:

System preferences
0,5 Amp output
switch PG-UL10 on I-Regulation
ready => E ENTER

Press “Enter” and wait until the UL60 is switched on and the measurement is stable.
The current in newer versions of UL60 is now 2,0 Amps.

Fig. 4: Measurement calibration 0.5 amps or 2 amps

Enter the amps into the UL60 incl. two decimal places:

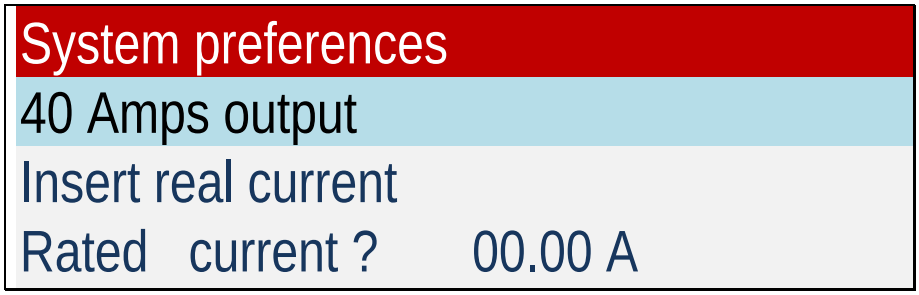
System preferences
0,5 Amps output
Insert real current
Rated current? 00.00 A

After confirming with the “Enter” key the UL60 displays:

System preferences
40 Amps output
Insert real current
Rated current? 00.00 A

Fig. 5: Measurement calibration 40 amps

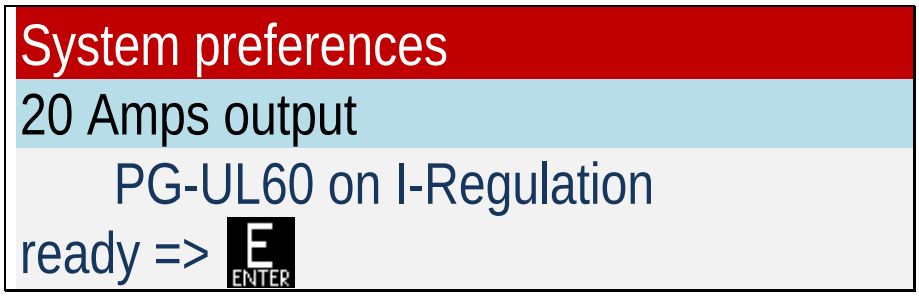
Enter the amps into the UL60 incl. two decimal places:



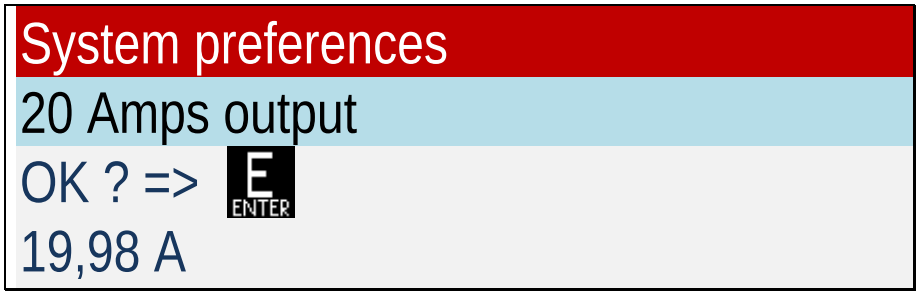
After confirming with the “Enter” key the UL60 displays the internal values for the calibration:

Press “Enter” for the next page:

Press and hold the “Enter” key to perform a further control measurement with 20 amps:



Press “Enter” for the next step:

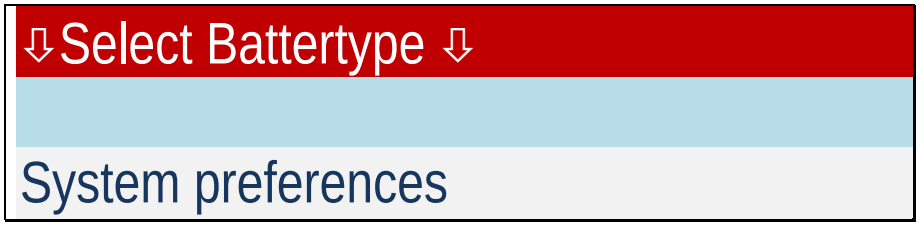


If the value is between 19.98 and 20.02 amps press the “Enter” key and the calibration will be saved.

Fig. 6: Measurement calibration 20 amps

If the value exceeds the limit of the permitted range press “Break” and restart this procedure.

Before the next procedure can be started press “Break” on the UL60 to return to the System preferences:



Step 3: Adjust the celltest.

Connect the cable type 025D to the UL60.

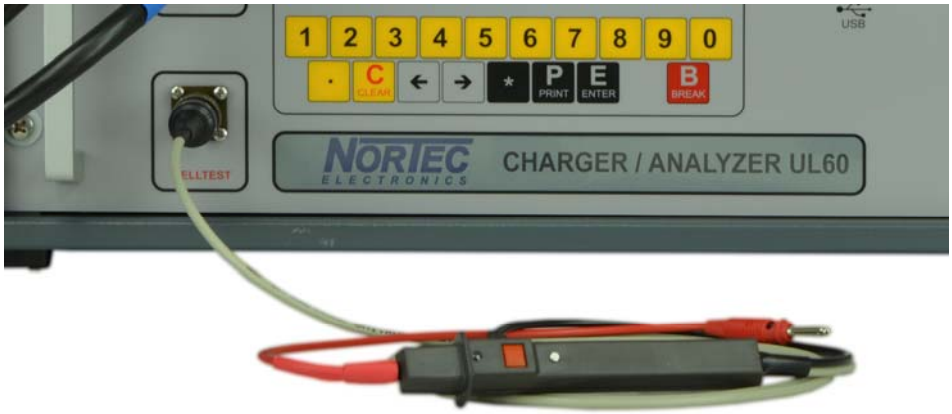


Fig. 7: Connected celltest 025D to the UL60

The selection-switch of the PG-UL60 must be on “I Regulation”.
Enter password “**32**”
Start the execution of the UL60 program:

The red and black connector of the celltest has to short circuit:

Fig. 8: Celltest 025D 0 volts

Start the execution of the UL60 program:

System preferences
serial number = 0 update = 1
calibration celltest = 2
calibration voltage = 3 current = 4

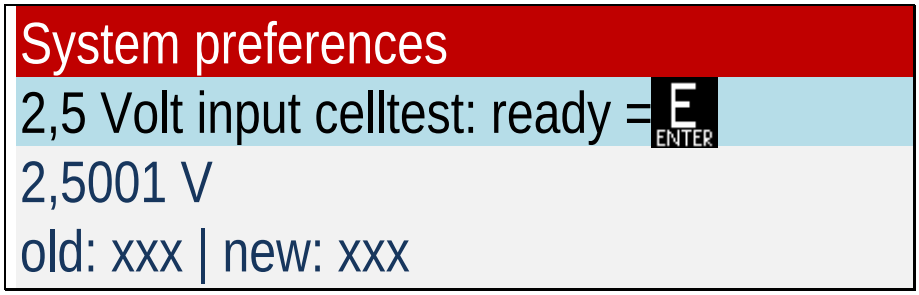
Choose 2 for calibration celltest.
The UL60 displays:

System preferences
0 Volt input celltest: ready => E ENTER
0,0001 V
old: xxx | new: xxx

Press the “Enter” key and connect the celltest cable to the PG-UL60 with the reference voltage of 2.500 volts and press “Enter” again.

Fig. 9: Celltest 2.500 volts

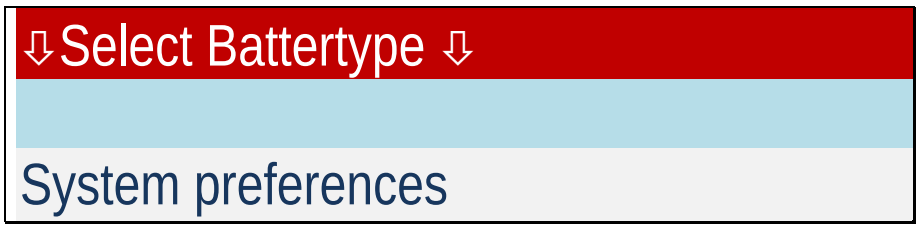
The UL60 displays:



If the value is between 2.49 and 2.51 volts the result is fine.
Press the “Enter” key and the calibration will be saved.

If the value exceeds the limit of the permitted range press “Break” and restart this procedure.

Before the next procedure can be started press “Break” on the UL60 to return to the System preferences:



Technical Specifications:

Input:	230 V
Output:	2.500 ± 0.001 V for cell test 3.00 ± 0.01 V for temperature ≅ 300 K ≅ 27 °C
Measurement:	50 V ± 0.01 V for U-Regulation 40 A ± 0.02 A for I-Regulation With temperature protection switch against overheating
Load:	For U-Regulation: 50 Ω For I-Regulation: ca. 0.5 Ω

Manufacturer:

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Calibration Certificate (for copy)

Results before calibration

		Soll	Ist
U 0.5	Output	0.50 V ± 1%	
U 0.5	Display	0.50 V ± 1%	
U 38	Output	38.00 V ± 1%	
U 38	Display	38.00 V ± 1%	
I 0.5	Output	0.50 A ± 2%	
I 0.5	Display	0.50 A ± 2%	
I 40	Output	40.00 A ± 2%	
I 40	Display	40.00 A ± 2%	
Zell 0	Display	0.0 V ± 1%	
Zell 2.5	Display	2.50 V ± 1%	

Results after calibration

		Soll	Ist
U 0.5	Output	0.50 V ± 0.01 V	
U 0.5	Display	0.50 V ± 0.01 V	
U 38	Output	38.00 V ± 0.01 V	
U 38	Display	38.00 V ± 0.01 V	
I 0.5	Output	0.50 A ± 0.01 A	
I 0.5	Display	0.50 A ± 0.01 A	
I 40	Output	40.00 A ± 0.01 A	
I 40	Display	40.00 A ± 0.01 A	
Zell 0	Display	0.0 V ± 0.01 V	
Zell 2.5	Display	2.50 V ± 0.01 V	

○ Passed **○ Not passed**