USER MANUAL

ALR3203   0 – 32 V ; 0 – 6 A ; 96W max

DC STABILIZED PROGRAMMABLE POWER SUPPLY

SYNOPSIS

1 PREFACE

Manufacturer : ELC 59 avenue des Romains 74000 ANNECY - FRANCE

Phone   : +33 (0)4 50 57 30 46   Fax : +33 (0)4 50 57 45 19

Website   : www.elc.fr   -   Email : commercial@elc.fr
Item   : DC STABILIZED PROGRAMMABLE POWER SUPPLY

Brand   : elc
Type   : ALR3203

2 DESCRIPTION

2.1 PRESENTATION

You just bought a DUAL DC STABILIZED PROGRAMMABLE POWER SUPPLY type elc ALR3203. We thank you and congratulate you for your good choice.

elc's company is a specialist manufacturer proposes a wide range of POWER SUPPLIES and many other electronic test instruments : FUNCTION GENERATORS, DECADE BOXES, DIGITAL PANEL METERS...

This item has been conceived according to the European standard EN61010-1 and supplied in good condition. This electrical instrument is intended to professionals, industrials and school users. This instructions manual contains information and notes, which must be respected by the purchaser, in order to ensure a safe working and to maintain the instrument in good condition.

2.2 FUNCTIONAL DESCRIPTION OF THE UNIT

This item is used in laboratories. It is designed with :

a large graphic display, a touch keypad, a compact vertical box with an handle and a cord storage integrated in the rear panel. This item will give you satisfaction by offering many possibilities.

Fully programmable, this power supply can be controlled in several ways :

- via the front panel using the keypad

- via the isolated USB interface

This DC power supply is regulated in voltage of 0 to 32V and current of 0 to 6A 96W max.

Several programmable functions U and I are accessible directly from the keypad and you will make positive or negative ramp, up or down time, or a square, or arbitrary wave.

The output can be turned "ON" or "OFF" (by key or input signal) and there is a sleep mode by a "standby" touch.

All parameters are displayed on the graphic display.

2.3 SAFETY INSTRUCTIONS

Before any operation, read the following safety precautions to avoid injury and prevent damage to this product or another connected.

o ⚠️ *To avoid all potential hazards, use this product only in the specified limits.*

o ⚡ *Do not use the device without its cover. Do not use the item with its housing or any panels removed.*

o *Any intervention inside the casing, and particularly the fuses replacement, must imperatively be effected by a skilled staff.*

o *The instrument must be used according to the instructions of this manual.*

o *Use it in a well ventilated area. The air inlets and the fan outlet must be widely free, do not block them.*

o *Do not use in wet conditions. Do not use in wet environment to avoid electric shocks or short-circuit inside the product.*

o *Do not use in an explosive atmosphere. It is very important do not operate the item near an explosive atmosphere, to prevent damage to the device or any personal injuries.*

o *The power cable is used as a cut system, the product must be connected to a 230V main source, easily accessible, with earth.*

o *When this unit must be powered via a separate autotransformer for a reduction of voltage, ensure that the common socket is connected to the grounding pole of the circuit of the supply.*

o ⚠️⚡ *The common mode voltage between ground and the output terminals must not exceed 150VDC. In this case a deemed dangerous voltage (> 60VDC) can be reached between one of the terminals and earth. Therefore, it is imperative to use safety cables to connect the outputs of the device. Also, all connected devices must not have conductive parts accessible.*

2.4 SAFETY TERMS AND SYMBOLS

You will find the following symbols on this equipment :

⚠️ **CAUTION REFER TO MANUEL**	⚡ **CAUTION HIGH VOLTAGE RISK**	⏚ **PROTECTIVE GROUND (EARTH) TERMINAL**

2.5 PACKAGING AND REPACKAGING

Your power supply ALR3203 comes with an quickstart guide and its power cable 2 poles + earth type "EUROPE" : CEE7 / 7 - IEC60320 C13.

3   OPERATING

3.1   TECHNICAL FEATURES

The specifications below are given after at least 30 minutes use within the specified operating temperature range.

Operating	Constant voltage	Automatic
	Constant current	Automatic
Mini maxi adjustment	Voltage	0 to 32.00 Volts (0 to ±10mV)
	Current	0 to 6.000 Amps
	OVP (voltage protection)	0 to 32.20 Volts
	OCP (current protection)	0 to 6.100 Amps
Adjustment accuracy ± (% of output + offset)	Voltage	< 0,03% +10 mV
	Current	< 0,03% +2 mA
Regulation / Load 10 – 90%	Constant voltage	< 20 mV
	Constant current	< 1 mA
Regulation / Source ±10%	Constant voltage	< 1 mV
	Constant current	< 1 mA
Ripple	Constant voltage	< 1.5 mV$_{RMS}$; < 5mVp-p noise < 10 mVp-p Pics of commutation
	Constant current	< 0.4 mA$_{RMS}$ ou 1mAp-p
Accuracy measurement (25°C ±5°C) ± (% of output + offset)	Voltage	< 0,06% or ±10 mV
	Current	< 0,06% or ±10 mA
Temperature coefficient ± (% of output + offset)	Voltage	0,01% / °C
	Current	0,05% / °C
Resolution	Voltage / Current	4 digits
Time of answer (Load variation)	Load 50 – 100%	< 8 ms (±20mV)
	Load 100 – 50%	< 5 ms (±20mV)
Overvoltage output	ON/OFF source or output	< 0.3V

Voltage programming speed (up) to 1% of the total course		Without load	Load 100%
Rise times	0 – 32 V	70 ms	420 ms
	0 – 16 V	35 ms	128 ms
Fall times	32V – 0V	100 ms	8.5 ms
	16V – 0V	70 ms	7.5 ms

3.1.1 Connections

Outputs + and -	Front panel	Safety terminals Ø4 mm
Ground terminal	Front panel	Safety terminals Ø4 mm

3.1.2 Display

Display	LCD graphic display FSTN N&B 3.2 inch
Resolution	128 x 64 pixels
Backlight	White LED

3.1.3 Protections

Against short-circuits	By current regulation
Against over-temperature	By thermal circuit-braker
Against over-current on main source	By internal fuse (T1.6A ; 250V ; 5x20)

3.1.4 Memories

Memory	Storage	15 configurations
	Recall	15 + 1(factory configuration)

3.1.5 Functions

Functions accessible by keypad	7 available In Voltage or Current	SQUARE periodic
		RAMP positive and negative periodic and single shot
		ARBITRARY periodic and multi shot
Timer (2 Ranges)	Seconde or minute	100 ms to 50 min

3.1.6 Standby

Isolation mode of the output	Enable / disable output
Standby mode	Puts the power supply in standby mode

3.1.7 Interfaces

Isolation / output	150 Vdc
Isolation / Earth	150 Vdc
USB	Serie
Processing time of control	< 20ms

3.1.8 Other caracteristics

Power source	220 – 240 Volts ±10%, 50 – 60 Hz
	EEC socket C14 for cable 2 poles + earth C13 (2P + E)
Maximum power consumption	126W (<4W in Standby mode)
Internal fuses (x2) AC input	5 x 20 ; 250V T1.6A
Efficiency	> 78% of the maxi powerful
Safety	Class I, CAT II, degree of pollution 2
	Complies with EN 61010-1, CAT II
CEM	Complies with EN 61326-1 & EN 55011
Voltage on the earth	± 150 Vdc

Operating temperature	0°C to + 40°C
Storage temperature	-20°C to + 60°C
Humidity condition	< 85% to 30°C and decrease to 50% at 40°C
Altitude	< 2000 m
Presentation	Front panel with soft-touch keypad, back side with handle and cord storage area, metallic case with epoxy finish
Dimensions	95 mm x 174.5 mm x 219.5 mm
Weight	1.38kg

4 OVERVIEW

4.1 FRONT PANEL

1	LCD display	2	Keypad double function
3	Functions key	4	ON/OFF output
5	Keys setting	6	Standby
7	Safety socket output	8	Earth socket

4.2 REAR PANEL

9	Handel	10	USB Connector
11	AC power inlet socket	12	Power AC switch
13	Cord storage		

5 SHORT DESCRIPTION OF THE FRONT PANEL

5.1 DISPLAY

The basic mode on the LCD display (**1**) shows the value of the voltage and current setting, the output's powerful, the currently regulation mode (CV or CC) and the output's state (ON or OFF). If the OVP and OCP stopped are less than the maximum setting (32.20V and 6.100A) they will be displayed.

The measurement (voltage or current) is displayed instead of the set, if different. Simply touch on V or A selection keys, displays the operator instructions.

5.2 KEYPAD AND SHIFT

The keypad (**2**) allows directly modifying the set values U and I getting access to secondary functions.

5.3 KEYS CONTROL

The keys (**3**) allows the selection of the set to change and the selection of the dual function keyboard with shift.

5.4 ON/OFF : GENERAL & STANDBY

The keypad (**4**) allows to enable disable the output. The keypad (**6**) combined with the function ''2nd'' this is the Standby, which is enabled or disabled.

5.5 KEYS SETTING

The keys (**5**) allow a direct change to the set value U and I or navigate through the secondary functions menu.

5.6 SOUND SIGNAL

Short signal low frequency   : keypad detect [0] to [9].
Short signal medium frequency   : keypad detect function ([V], [A], [OK], …)
Long signal high frequency   : Input value error or safety detect.

5.7 SAFETY SOCKETS CHANNEL

The sockets (**7**) (safety sockets Ø4mm) allow the connection to the output + and – to the load

5.8 EARTH FUNCTIONNAL SOCKETS

The socket (**8**) (safety socket Ø4mm) allow a functional connection to the earth.

6   DESCRIPTION OF CONTROL COMMANDS

6.1   PARAMETERS SETTING
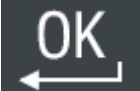
6.1.1   Escape Key

	Touch **Esc 2nd**	Allow to go out without taking the value. If no action, allow access secondary function.

6.1.2   Setting Voltage or Current
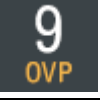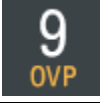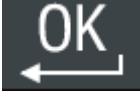
Two possibilities :
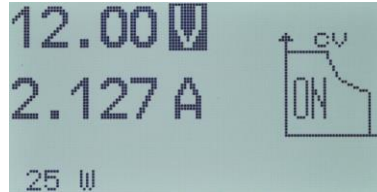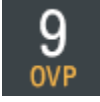

	Action	Description
1.	Touch on **V** or **A**	Select the voltage or current value to change
2.	Touch on **0** to **9 OVP**	Enter the value
3.	Touch on **OK**	Valid the value
1.	Touch on **V** or **A**	Select the value voltage or current to change
2.	Touch on **Select Digit**	Select the 'Digit' to modify by successive push
	Touch on **+** or **−**	Change value selected, step by step

6.1.3   Setting the OVP or OCP limits

	Action	Description
1.	Touch on **Esc 2nd**	Select key "2nd"
2.	Touch on **9 OVP** or **6 OCP**	Enter the U (OVP) or I (OCP) limit
3.	Touch **0** to **9 OVP**	Enter the value
4.	Touch **OK**	Valid the value
CANCEL OVP or OCP		
1.	Touch on **Esc 2nd**	Select key "2nd"
2.	Touch on **9 OVP** or **6 OCP**	Enter the U (OVP) or I (OCP) you need to cancel
3.	Touch **OK**	Cancel the limit selected

6.1.4 *Isolation of output*

	Action	Description
1.	Touch on **On/Off**	Touch this key disconnect the output. So, the instructions are then displayed and editable

6.2 MEMORIES

6.2.1 Storage setting

```
        STO   1                        STO   5
          U = 12.00                      U =  1.00
          I = 5.000                      I = 2.000
        OVP = 15.00                    OVP = 15.00
        OCP =  6.00                    OCP =  6.00

  [+ or -] or [0 to 9]          [+ or -] or [0 to 9]
       [OK] FOR VALID                [OK] FOR VALID
```

	Action	Description
1.	Touch on **Esc / 2nd**	Select key "2nd"
2.	Touch on **8 STO**	Select the function "Storage" configuration
3.	Touch on **1 Util** to **9 OVP** or touch on **+** or **−**	Select where to save the current configuration (1-15). The display shows the registration number and the current contents.
4.	Touch on **OK**	Stores the current configuration in the storage number selected.

6.2.2 Recall setting

The memorie "0" recalls a factory configuration and can't be erased.

```
        RCL   1                        RCL   5
          U = 12.00                      U =  1.00
          I = 5.000                      I = 2.000
        OVP = 15.00                    OVP = 15.00
        OCP =  6.00                    OCP =  6.00

  [+ or -] or [0 to 9]          [+ or -] or [0 to 9]
       [OK] FOR VALID                [OK] FOR VALID
```

	Action	Description
1.	Touch on **Esc / 2nd**	Select the key "2nd"
2.	Touch on **7 RCL**	Select the function "Recall" configuration
3.	Touch on **0** to **9 OVP** Touch on **+** or **−**	Select the configuration number (0-15). The display shows the contents of the configuration.
4.	Touch on **OK**	Recall the configuration with the output disconnected

	Action	Description
1.	Touch on M1 or M2 Touch on M3	Recall configuration number 1, 2 or 3.
2.	Touch on OK	Recall the configuration with the output disconnected

6.3 CONTROL UTILITIES

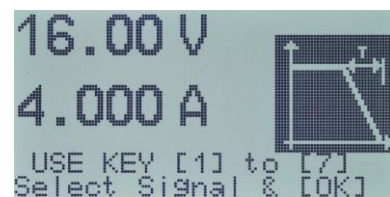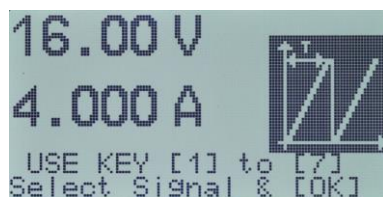This command control includes the following functions :
- Language choice
- Changing the contrast of the display.
- Reset memories
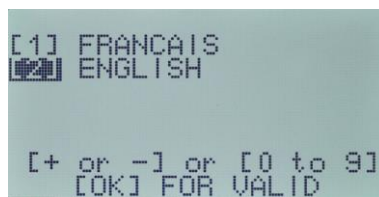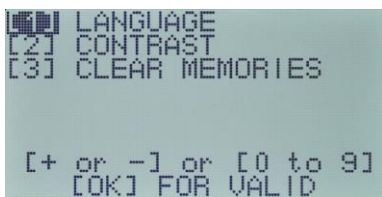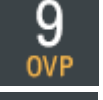
	Action	Description
1.	Touch on Esc 2nd	Select key "2nd"
2.	Touch on 1 Util	Select the function "Util"
3.	Touch on 1 Util to 3 F(t) Touch on + or −	Select with keys different configuration choices.
4.	Touch on OK	Valid the choice with "OK"

6.4 PROGRAMMED FUNCTIONS

Enabling this key allows to get to the output, multiple periodic wave forms or not, in voltage or current mode (see Appendix C).

	Action	Description
1.	Touch on Esc 2nd	Select the key "2nd"
2.	Touch on 3 F(t)	Select the function generator, "F(t)"
3.	Touch on OK	Valid the choice with "OK"
4.	Touch on 0 or 9 OVP Touch on + or −	Follow the choices
5.	Touch on OK	Valid the choice with "OK"

6.5   OTHER FUNCTIONS

6.5.1   Sleep mode

"Standby" mode is available on the front panel. This mode reduces the current consumption if the power supply is ON but not used.
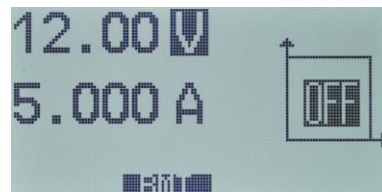
	Action	Description
1.	Touch on Esc 2nd	Select the key "2nd"
2.	Touch on ⏻	Sleep mode ON The backlight is OFF
3.	Touch on ⏻	Go out the sleep mode The backlight comes back after few seconds

6.5.2   Locked and unlocked keyboard

Two possibilities :
Hold on the key "**5**"
Without a connection to a computer, touch on "Local"
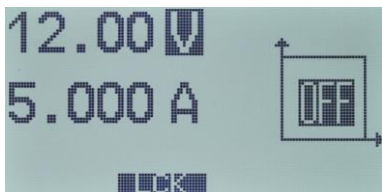
	Action	Description
	LOCKED / UNLOCKED	
1.	Touch on 5 Local during 4s	Active the locked or unlocked keyboard

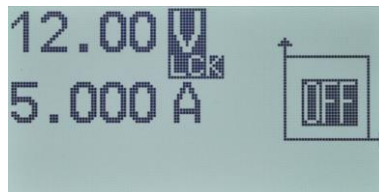|	Action	Description
1.	Touch on **Esc** / **2nd**	Select the key "2nd"
2.	Touch on **5** **Local**	Active the locked "RMT" or unlocked keyboard. *(control via USB or RS485)*

6.5.3 *Locked setting value*

Locked setting voltage value

	Action	Description
1.	Touch on **Lock** **Unlock**	Press key 'Lock' until displaying "LCK" for locked setting value
2.	Touch on **Esc** / **2nd** and **Lock** **Unlock**	Press key 'Unlock' until erase "LCK" on display for unlocked setting value

7 PC control

The activation or deactivation of control via USB:
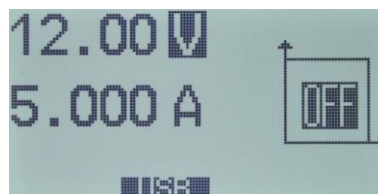
	Action	Description
1.	Touch on **Esc** / **2nd**	Select the key "2nd"
2.	Touch on **5** **Local**	Enable or disable the takeover via the serial USB port.

You will find the list of commands in APPENDIX A

8   MAINTENANCE

No particular maintenance is required for this instrument.
Avoid : dust, humidity, shocks ; your instrument will appreciate it.
For the cleaning, please use a smooth duster.

8.1   TROUBLESHOOTING

If indicators do not light up on switching on, check :
- The mains connection
- The replacement of the cord can be realized only with the model : 3G0.75mm² ; H05VV-F ; CEE7/7 – IEC60320 C13
- The mains voltage
- That the ON switch is pressed

8.2   ERROR MESSAGE

If following messages appear on the display, please contact the after sales service.

Message	Possible cause
“FAULT : FAILURE START-UP VOLTAGE”	Internal auxiliary power doesn't work
“UNREGULATED CURRENT/VOLTAGE PROTECTION”	Internal stage power doesn't work

9   AFTER SALE SERVICE

The after sales service is ensured by the elc company.
During two years, spare parts and workmanship are guaranteed. This guarantee does not apply to instruments presenting defects or faults caused by an improper use (wrong mains voltage, shocks ...) or which have been repaired outside our factory or the repair shops of our authorized agencies.

10 DECLARATION OF CONFORMITY

Manufacturer : elc
Address   : 59 avenue des Romains 74000 Annecy France

Declares the product
Name   : DC POWER SUPPLY
Type   : ALR3203

conformable to the requirements of the directives:

Low voltage 2014/35/UE, Electromagnetic Compatibility 2014/30/UE and RoHs 2017/2102/UE.
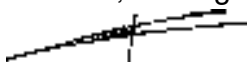
The following harmonized standards have been applied :
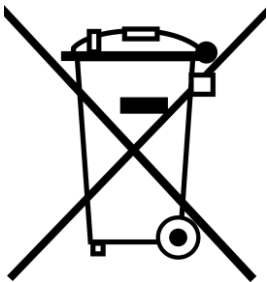
Safety : EN 61010-1:2010
EMC   : EN 61326-1:2013

Annecy March, 2021

H.CURRI, Manager

ELIMINATION OF MANUFACTURING WASTES BY THE PRIVATE USERS IN THE EU

This symbol written in the product or in its packaging indicates that this product must not be throw in the garbage with your other waste.

Its your responsibility to rid of your manufacturing wastes bringing it to a specialized sorting office for the recycling of electrical and electronic instruments.

Collection and recycling separated of your wastes will contribute to preserve natural resources and guarantee a recycling respectful of the Environment and human health.

For further information concerning the recycling center near your place of residence, contact your town hall, the elimination service of garbage heap or the store where you bought the instrument.

APPENDIX A – OPERATING CODES

Commands control format :

[address] <SP>Parameter<SP>Command<SP>[Value]<CR>

[address] = character ASCII 0 (port USB)

Parameter = IDN – SERIAL - VOLT - CURR - OVP- OCP - OUT- RCL - STO - REM - MODE (ASCII character).

Command = WR - RD - MES (ASCII character).
<SP> = 20h (space).
[Value] = ASCII character.
<CR> = 0Dh (return)

Example 1 : 0 VOLT WR 1250 ↵ ➔ *Writing setpoint 1,25 V on USB port*

Example 2 : 0 CURR MES ↵   ➔ *Current measurement request on USB port*

Answer :

[address] <SP>Status<SP>Value<CR>

[address] = character ASCII 0 (USB)

Status = OK- ERR- Local (ASCII character).

OK	Command valid.
ERR	Syntax error in the command.
LOCAL	Command impossible, the power supply is in local mode.

<SP> = 20h (space).
[Value] = characters ASCII.
<CR> = 0Dh (enter)

Example 3 : 0 OK↵   ➔ Back of *example 1*

Example 4 : 0 OK 450 ↵   ➔ *Back of example 2 current measurement : 450 mA*

Command & Answers	Description
Command : **[Address] VOLT WR [0-32200]**↵ Answer : **[Address] OK**↵	Writing the voltage setpoint in mV.
Command : **[Address] CURR WR [0-6100]**↵ Answer : **[Address] OK**↵	Writing the current setpoint in mA.
Command : **[Address] OVP WR [0-32200]**↵	Writing the limit voltage setpoint in mV.

Command & Answers	Description
Answer : **[Address] OK** ↵	
Command : **[Address] OCP WR [0-6100]** ↵ Answer : **[Address] OK** ↵	Writing the limit current setpoint (mA) channel 1, In double mode. Writing the limit current setpoint (mA) in serial, parallel or tracking mode.
Command : **[Address] OUT WR [0-1]** ↵ Answer : **[Address] OK** ↵	Disconnect / Connect the output.
Command : **[Address] RCL WR [1-16]** ↵ Answer : **[Address] OK** ↵	Recall the configuration memorised.
Command : **[Address] STO WR [1-16]** ↵ Answer : **[Address] OK** ↵	Save the usual configuration.
Command : **[Address] REM WR [0-1]** ↵ Answer : **[Address] OK** ↵	Mode 'Local' => 0. Mode 'Remote =>1
Command : **[Address] VOLT RD** ↵ Answer : **[Address] OK [0-32200]** ↵	Reading the voltage setpoint in mV.
Command : **[Address] CURR RD** ↵ Answer : **[Address] OK [0-6100]** ↵	Reading the current setpoint in mA.
Command : **[Address] OVP RD** ↵ Answer : **[Address] OK [0-32100]** ↵	Reading the limit voltage setpoint in mV.

Command & Answers	Description
Command : **[Address] OCP RD**↵ Answer : **[Address] OK [0-6100]**↵	Reading the limit current setpoint in en mA.
Command : **[Address] OUT RD**↵ Answer : **[Address] OK [0-1]**↵	Reading the output connection.
Command : **[Address] REM RD**↵ Answer : **[Address] OK [0-1]**↵	0 => Mode 'Local'. 1 => Mode 'Remote
Command : **[Address] MODE RD**↵ Answer : **[Address] OK [0-2]**↵	0 => not defined mode (output OFF) 1 => voltage regulation mode. 2 => current régulation mode
Command : **[Address] VOLT MES**↵ Answer : **[Address] OK [0-32200]**↵	Measure the output voltage in mV.
Command : **[Address] CURR MES**↵ Answer : **[Address] OK [0-6100]**↵	Measure the output current in mA.
Command : **[Address] SERIAL RD**↵ Answer : **[Address] OK [0-N]**↵	Read the serial number of the device.
Command : **[Address] IDN RD**↵ Answer : **[Address] OK ALR3203 VERSION [N]**↵	Read the device ID.

APPENDIX B – USB CONNECTION

Preparation of communication :

Download on our website www.elc.fr the file : ALR32xx.inf
Connect the power supply to the USB2.0 PC port with a USB cable
as A / B type USB (its length shouldn't exceed 5 meters).
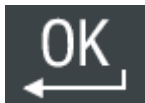Install the file.
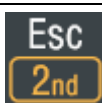Your PC is ready to communicate with the ALR3203.
Use "Hyper Terminal ®" simple utility to communicate via the serial port, present on all
PCs with Windows 95®, 98®, XP®, Seven®.
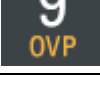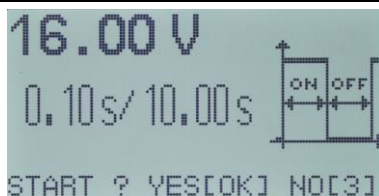You will find on the website www.elc.fr, LabVIEW ® drivers.
The USB connection allows to upgrade the Firmware (see website).
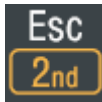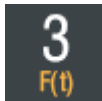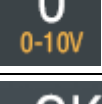
APPENDIX C – SEQUENCER
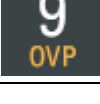
The key allows to generate the signal function (Voltage or Current) on output.
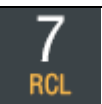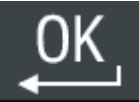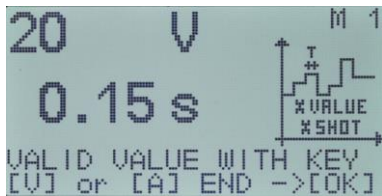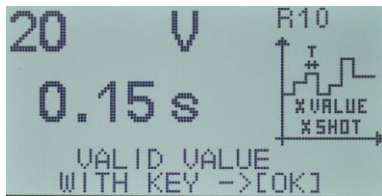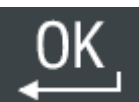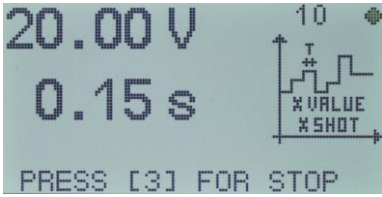
Step	Action	Description
Before entering the sequencer, initialize the setpoints that will be taken as reference values to generate the signal.		
1.	Touch on	Select key "2nd"
2.	Touch on .	Select sequencer function
3.	Touch on	If the display signal is suitable, validate with the OK key, the display becomes for example :
Setting pre-programmed signal		
1.	Touch on	Select key "2nd"
2.	Touch on	Select sequencer function

Step	Action	Description
3.	Touch on **3** F(t)	Enter in setup sequencer mode
4.	Touch on **1** Util to **5** Local	Select signal.
5.	Touch on **1** Util or **2**	Select regulation mode (voltage or current)
6.	Touch on **1** Util or **2**	Select range of timer : seconds or minutes
7.	Touch on **0** 0-10V to **9** OVP	Setting value timer (60 seconds maxi or 50 minutes maxi)
8.	Touch on **OK**	Valid timer value, sequencer run, for exemple :

16.00 V
0.10s/ 10.00s ON OFF
START ? YES[OK] NO[3]
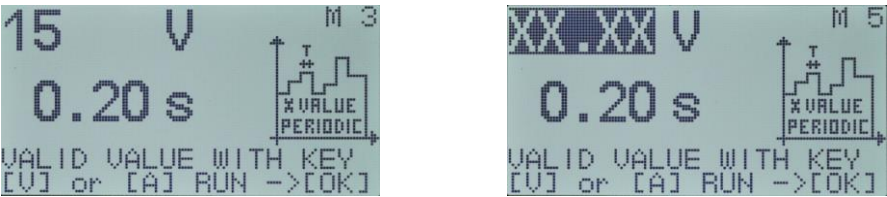
	Setting arbitrary multi-shot signal	
1.	Touch on Esc **2nd**	Select key "2nd"
2.	Touch on **3** F(t) .	Select sequencer function
3.	Touch on **3** F(t) .	Enter in setup sequencer mode
4.	Touch on **7** RCL	Select multi-shot arbitrary signal.
5.	Touch on **1** Util or **2**	Select regulation mode (voltage or current)
6.	Touch on **1** Util or **2**	Select range of timer : seconds or minutes (max 60.00)
7.	Touch on **0** to **9** OVP	Setting value timer (60 seconds maxi or 50 minutes maxi)
8.	Touch on **OK**	Timer value is valid when press "OK"

Step	Action	Description
9.	Touch on **0** to **9** OVP	Setting value in regulation mode selected step 5 (Voltage or current).
10.	Touch on **V** or **A**	Valid value by unit selected step 5 (32 values maximum)
11.	Touch on **OK**	End setting value
	20 V M 1 / 0.15 s / ✗VALUE ✗SHOT / VALID VALUE WITH KEY [V] or [A] END ->[OK] 20 V R10 / 0.15 s / ✗VALUE ✗SHOT / VALID VALUE WITH KEY ->[OK]	
12.	Touch on **1** Util to **9** OVP	Enter number of repeat signal (1 to 99).
13.	Touch on **OK**	Run sequencer with the key "OK"
	20.00 V 10 / 0.15 s / ✗VALUE ✗SHOT / PRESS [3] FOR STOP	
	Displaying at right up repeat value remaining	

Step	Action	Description
	Setting arbitrary periodic signal.	
1.	Touch on **Esc 2nd**	Select key "2nd"
2.	Touch on **3** F(t)	Select sequencer function
3.	Touch on **3** F(t)	Enter in setup sequencer mode
4	Touch on **6** OCP	Select periodic arbitrary signal.
5	Touch on **1** Util or **2**	Select regulation mode (voltage or current)

Step	Action	Description
6	Touch on **1** Util or **2**	Select range of timer : seconds or minutes (max 60.00)
7	Touch on **0** to **9** OVP	Setting value timer (60 seconds maxi or 50 minutes maxi)
8	Touch on **OK**	Timer value is valid when press "OK"
9	Touch on **0** to **9** OVP	Setting value in regulation mode selected step 5 (Voltage or current).
10	Touch on **V** or **A**	Valid value by unit selected step 5 (32 values maximum)
	15 V M 3 0.20 s X VALUE PERIODIC VALID VALUE WITH KEY [V] or [A] RUN ->[OK] XX.XX V M 5 0.20 s X VALUE PERIODIC VALID VALUE WITH KEY [V] or [A] RUN ->[OK]	
11	Touch on **OK**	Run sequencer with the key "OK"
	15.00 V ○ 0.20 s X VALUE PERIODIC PRESS [3] FOR STOP	