Be-K3 User Manual $C\!E$

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Warranty

Bernini Design SRL (hereinafter BD) warrants that Be-K3 shall be free from defect in material or workmanship for a period of 3 years from the BD delivery date. BD shall, at its discretion, repair or replace the product without charge. BD shall return the Be-K3 to the buyer with the Default parameters at no extra charge. The buyer shall furnish sufficient information on any alleged defects in the product, so as to enable BD to determine their cause and existence. If the Be-K3 is not defective, or the product is defective for reason other than covered by this warranty, the buyer will be charged accordingly. This warranty shall not apply if the Be-K3 has not been used in accordance with the User Manual and other operating instruction, particularly if any defects are caused by misuse, improper repair attempts, negligence in use or handling. This purchase is non-refundable.

!! WARNING !!

High voltage is present inside the Be-K3. Do not remove the protective cover. Do not disconnect the grounding connection. The Be-K3 can start the engine at anytime. Do not work on equipment, which is controlled by the Be-K3. When servicing the engine, disconnect all voltages, the battery and battery charger. We recommend that warning signs be placed on equipment indicating the above

Contents:

Quick start guide ! How to..........

How to............	*See section..*	*How to............*	*See section..*
start the engine	*2.20*	**Read alarm events**	*5.06*
stop the engine	*2.20*	**set the clock**	*6.00*
cancel the alarm	*11.0*	**use the display**	*4.00*
select a mode of operation	*2.00*	**Read parameters**	*10.05*
display Voltage & Current	*4.0, 5.0*	**Transfer the LOAD**	*2.21*

Section 1.0 - INTRODUCTION

The Be-K3 can control automatically a generating set and transfer the LOAD according to your needs. In order to guarantee efficiency of the system, we recommend that you carry out regular manual and automatic start/stop sequences. Figure 1 illustrates the layout of the front panel.

Figure 1: Front Panel layout
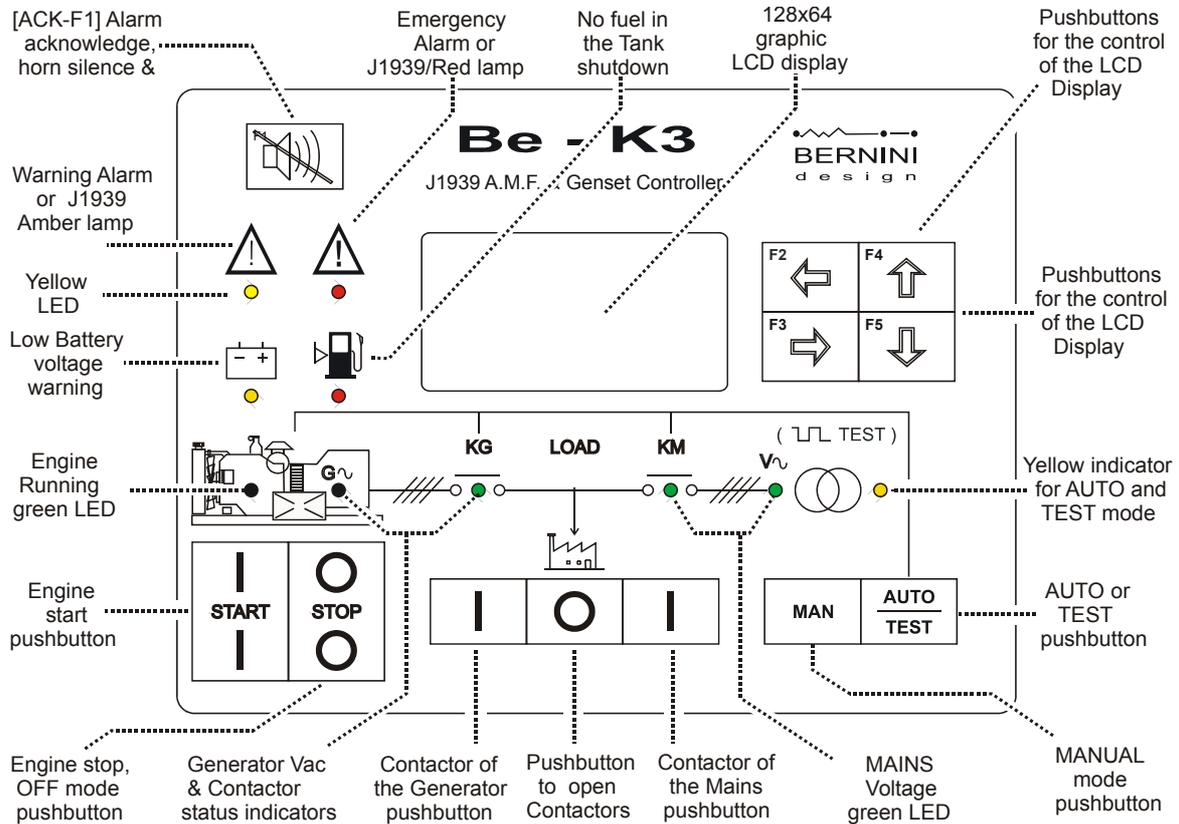
Section 2.0 -   SELECTING AN OPERATIONAL MODE

The mode of operation is selected by the pushbuttons **[MAN]** & **[AUTO-TEST]**

-see 2.1 for OFF mode
-see 2.2 for MAN mode
-see 2.3 for AUTO mode

If the Be-K3 was in TEST or AUTO prior to power down, when you switch on the power supply, the Be-K3 enters the AUTO mode. In the other cases, the Be-K3 will enter the OFF mode and the display will open the MAIN MENU (see 4.00).

Section 2.10 - OFF mode

Push and hold for 2 seconds the **[0-STOP]** pushbutton: you turn **OFF** the Be-K3 and clear the fault alarms. The display will indicate the message **[MODE OFF]**. You are allowed to program the user parameters if you have a password (section 8.0). Push **[MAN]** or **[AUTO-TEST]** pushbutton on the front panel to turn on the Be-K3; the display will indicate the Mode of Operation.

Section 2.20 - MAN (manual) mode

The **MAN** mode allows you to manually control the Engine and Contactors.

	Instructions
Engine Running green LED — Generator Voltage green LED; Engine start pushbutton — START STOP — Engine stop, OFF mode pushbutton	Push the **[MAN]** pushbutton to select the **MAN** mode (*). Push one of the **[I-START]** pushbutton until engine starts; the display will automatically open the **[ENGINE STATUS PAGE]** with information about the engine (see section 5.04A). When the engine is running, the green lamp, on the engine drawing, turns on. To stop the engine, push one of the **[0-STOP]** pushbutton until the **[STOPPING]** message appears on the display. *(*) See section 11.0 in case an alarm appears on the display*

Section 2.21 - Manual Control of the Contactors

	To transfer the LOAD follow the instructions:
Generator Available LED (Green) Contactor-closed LED (Green) LOAD Contactor-closed LED (Green) Mains Available LED (Green); KG KM; KG Pushbutton (push to close) KM Pushbutton (push to close); [O] Pushbutton (push to open)	Select the **MAN** mode, start the engine (see 2.20) and wait until the green lamp Generator Available turns on. Push the **[KG]** pushbutton to close the contactor of the Generator: the green lamp **KG** will turn on and display will indicate the message 'RUN ON LOAD'. To transfer the load to the Mains wait for the green lamp Mains available and push the **[KM]** pushbutton: the **KG** will open and **KM** will close after a 2-seconds delay; the green lamp **KG** will turn on. *To open a contactor, push the [O] pushbutton at anytime.*

!! WARNING !!   !! WARNING !!

LINE VOLTAGE IS EXPOSED WITHIN THE Be-K3 AND ANCILLARY CIRCUITRY EVEN WHEN THE GREEN LAMPs ARE TOTALLY OFF

Section 2.30 - AUTO mode (Automatic mode of operation)

Push the **[AUTO]** pushbutton (*) until the yellow lamp illuminates. The engine starts when the Be-K3 detects a Mains failure. When the generator runs properly, the Be-K3 will transfer the load to generator (the **KG** light will turn on). When Mains will restore, the Be-K3 will transfer the load to MAINS (the **KM** light will turn on); the engine will stop after a cooling down time. In **AUTO** mode, the Be-K3 will periodically test the engine if the test is programmed (see section 8.02). During the test, the yellow lamp of the **AUTO** mode will continue to blink. In **AUTO** mode, the Be-K3 can start and stop the engine if a remote control is activated. To stop the engine push **[MAN]** and then push **[0-STOP]**. All functions made by Be-K3 are indicated on the display **[ENGINE STATUS PAGE]** (see section 5.04A).

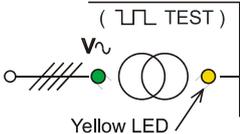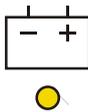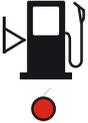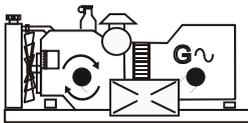*(*) See section 11.0 in case an alarm appears on the display*

> If you push the **[0-STOP]** pushbutton when the Be-K3 is in **AUTO** or **TEST**, the **[LOCAL EMERGENCY]** alarm will energize if engine is running (section 11.0). To clear the alarm, push [🔔] and **[0-STOP]**.

Section 2.40 - TEST mode

Push and hold the **[AUTO]** pushbutton until the yellow lamp starts to blink (aprox. 10 secs). The Be-K3 will start the engine immediately and transfer the load to the Generator only in case of Mains failure if not otherwise programmed by the panel manufacturer. To exit the **TEST** mode, push the **[AUTO]** pushbutton shortly or select another mode of operation.

Section 3.00 - LAMPs (LEDs) INDICATORS

The table describes the functions of the indicators on the front panel (section 1, figure 1). To test the lamps, select the OFF mode (see 2.10) and push + hold the **[←F2]** and **[F3→]** pushbuttons simultaneously.

LAMP(s)	Note	LAMP(s)	Note
Indicators of Voltages and Contactor status (Vac, KM, KG....)	4 Lamps (Green color). See section 2.21 for the description.	Manual / Auto Mode Yellow LED	Yellow lamp - it turns on indicating the **AUTO** mode - it blinks indicating the **TEST** mode
	1 Yellow lamp indicator for Battery voltage warning 1 Red lamp indicator for Tank Empty shutdown		
RED YELLOW	Red lamp indicator: it turns on in case of a shutdown. Yellow lamp indicator: it turns on in case of a warning.		Green (Engine) lamp: it turns on when the engine is running. Green (G) lamp: it turns on when the voltage of the generator is within the programmed limits.

Section 4.00 - GRAPHIC DISPLAY- MAIN MENU

Repeatedly push **[←]** until the following screen appears. Use **[↑]** or **[↓]** to select a Menu and **[→]** to enter the Menu

MAIN MENU	Section	Description
METERS & ALARMS	5.00	You read measurements, alarms, events, clock....
SET DATE & TIME	6.00	You can set the Clock
DISPLAY-LANGUAGE	7.00	You can set the contrast of the display and select a language
USER PARAMETERS	8.00	You can read or configure the **USER PARAMETERS**
OEM PARAMETERS	-	This function is reserved for the panel maker.
RESET AND CLEAR	-	This function is reserved for the panel maker.
USER PASSWORD	8.00	You can modify the **USER PASSWORD**
OEM PASSWORD	-	This function is reserved for the panel maker.

Section 5.00 - [METERS & ALARMS] MENU

Select the Menu **[METERS & ALARMS]** from the list on section 4.0 and push **[→]**. The display will indicate:

Display Indication	Section	Description	Instructions
GENSET METERING	5.01	Electrical measurements of Generator	Use **[↑]** or **[↓]** to select a function and **[→]** to enter the function. Push [←] to return back.
MAINS METERING	5.02	Electrical measurements of the Mains	
POWER & ENERGY	5.03	Indication of Power/Energy/Power factor	
ENGINE & FUEL	5.04	Parameters of the engine and fuel	
ALARM MONITORING	5.05	Information about alarms	
EVENT HISTORY	5.06	Memory of the last 200 events	
SHOW DATE & TIME	5.07	Indicates date and time	

Section 5.01 - GENSET METERING   *(see instructions on section 5.00 for accessing this menu)*

This Sub-menu indicates the following measurements:

Use **[↑]** or **[↓]** to select a page, use **[←]** to return *(^ see NOTE)*			
L1-L2 (V) [XXXX]	**L1-N (V) [XXXX]**	**CURRENT 1 [XXXX]**	**CONTACTOR [ON/OFF]** **SIMULATED (+) [ON/OFF]**
L2-L3 (V) [XXXX]	**L2-N (V) [XXXX]**	**CURRENT 2 [XXXX]**	(+) It indicates that the Generator presence is simulated by an external device.
L1-L3 (V) [XXXX]	**L3-N (V) [XXXX]**	**CURRENT 3 [XXXX]**	
FREQUENCY [XXXX]	**SEQUENCE [CW/CCW]**	**EARTH FAULT [XXXX]**	

Section 5.02 - MAINS METERING   *(see instructions on section 5.00 for accessing this menu)*

This Sub-menu indicates the following measurements:

Use **[↑]** or **[↓]** to select a page, use **[←]** to return *(^ see NOTE)*		
R - S (V) [XXXX] **S - T (V) [XXXX]** **T - R (V) [XXXX]** **FREQUENCY [XXXX]**	**R - N (V) [XXXX]** **S - N (V) [XXXX]** **T - N (V) [XXXX]** **SEQUENCE [CW-CCW]**	**CONTACTOR [ON/OFF]** **SIMULATED (++) [ON/OFF]** (++) It indicates that the Mains presence is simulated by an external device

Section 5.03 - POWER & ENERGY   *(see instructions on section 5.00 for accessing this menu)*

This Sub-menu indicates the following measurements:

Use **[↑]** or **[↓]** to select a page, use **[←]** to return *(^ see NOTE)*				
KVA 1 [XXXX] **KVA 2 [XXXX]** **KVA 3 [XXXX]** **KVA TOTAL [XXXX]**	**KW 1 [XXXX]** **KW 2 [XXXX]** **KW 3 [XXXX]** **KW TOTAL [XXXX]**	**KVAR 1 [XXXX]** **KVAR 2 [XXXX]** **KVAR 3 [XXXX]** **KVAR TOTAL [XXXX]**	**PF 1 [X.XX]** **PF 2 [X.XX]** **PF 3 [X.XX]** **PF TOTAL [X.XX]**	**ENERGY KWH** **[XXXXXX]**

> *^NOTE: [XXX] indicates numerical digits or [- - - -] if measurement is not available or consistent*

Section 5.04 - ENGINE & FUEL   *(see instructions on section 5.00 for accessing this menu)*

This Sub-menu contains information about the engine:

5.04A [ENGINE STATUS PAGE] Push the **[↓]** to browse all the other pages related to the engine and fuel	

MODE OFF(!!) **[MESSAGE]** **(see on the right)** --:--:-- (Time) KG OFF(!!) KM ON(!!)	This page indicates in real time, by messages, the status of the engine. You can see below the description of the messages.

This page indicates in real time, by messages, the status of the engine. You can see below the description of the messages.

[RUNNING] The engine is running in normal condition with no LOAD	**[NOT RUNNING]** The engine is not running (Standby condition)	**[RUN ON LOAD]** The engine is running in normal condition with LOAD
[REST] The START sequence is in progress. The controller is waiting a delay before attempting a new start pulse.	**[STARTING]** The START sequence is in progress. The controller is waiting the condition for starting the engine (pre-glow or other functions)	**[CRANK]** The START sequence is in progress. The controller is energizing the start motor.
[STOPPING] The STOP sequence is in progress. The controller is driving the STOP solenoid.	**[COOLING]** The STOP sequence is initiated. The engine is running out of load in order to cool down the parts.	**[WARM UP]** The engine is warming up. After warm up the Be-K3 will transfer the LOAD to the generator.
[IDLE SPEED] Engine is running at IDLE speed waiting for an external command	**[PREGLOW]** The START sequence is in progress. The controller is driving the Pre-glow (diesel engine)	**[PRELUBE]** The START sequence is in progress. The controller is driving the lubricating pump
[REMOTE TEST] An external equipment is requesting the start of the engine	**[MAINS FAILURE]** Be-K3 detected a failure of the MAINS and it is going to start the engine.	**[MAINS RESTORE]** Mains returned normal, the BeK3 will initiate the sequence to transfer the LOAD to MAINS.
[PERIODIC TEST] Be-K3 triggers the periodic test according to the programming.		**[MAINS BREAKER]** The Mains is out of order and Be-K3 is going to open the contactor of the MAINS.

Note (!!) : indicates the mode of the operation of the controller and status of the contactors

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5.04B Pages of information about the engine. Use **[↑]** or **[↓]** to select a page, use **[←]** to return

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SPEED RPM [XXXX] **OIL BAR [XX.X]** **COOLANT °C [XXX]** **OIL °C [XXX]**	**FUEL LEVEL [XX.X]** **PUMP STATUS [ON-OFF]** **BATTERY (V) [XX.X]** **ALTERNATOR [XX.X]**	**AUX °C [XXX]** **HOURS RUN [XXXXX]** **N° OF STARTS [XXX]** **RENTAL H [XXX]** (remaining hours before expiring the RENTAL timers, see 8.01 & 8.03)	**SERVICE 1 [XXXX]** **SERVICE 2 [XXXX]** **SERVICE 3 [XXXX]** (remaining hours before expiring the Maintenance timers, see 8.01 & 8.03)
OIL LEVEL **SPN 98 [XXX]** **WATER IN FUEL** **SPN 97 [ON/OFF]**	**FUEL °C** **SPN 174 [XXX]** **FUEL BAR** **SPN 94 [XXX]**	**FUEL RATE** **SPN 183 [XXX]** **PEDAL %** **SPN 91 [XXX]**	**TURBO BAR** **SPN 102 [XXX]** **EXHAUST** **SPN 173 [XXX]**

^NOTE: [XXX] indicates numerical digits or [- - - -] if measurement is not available or consistent

COOLANT %	DEMANDE TORQUE	CRANKCASE BAR	INTAKE BAR
SPN 111 [XXX]	SPN 512 [XXX]	SPN 101 [XXX]	SPN 106 [XXX]
COOLANT BAR	ACTUAL TORQUE	BOOST °C	AIR FILTER BAR
SPN 109 [XXX]	SPN 513 [XXX]	SPN 105 [XXX]	SPN 107 [XXX]

LOAD
SPN 92   [XXX]

ECU ENGINE HOURS

[XXXXXXXXXX]

^NOTE: [XXX] indicates numerical digits or [- - - -] if measurement is not available or consistent

Section 5.05 - ALARM MONITORING   *(see 5.00 for instructions for accessing this menu)*

This menu can contain up to 9 pages of active alarms tagged with clock. A typical alarm page is indicated below (see section 11.0 for the list of all possible alarms):

Instructions	
ALARMS PAGE 1/9 OIL BAR WARNING VALUE: 0,8 BAR DD/MM/YY HH:MM:SS	Use **[↑]** or **[↓]** to browse the content of the pages This page opens automatically in case of alarm(s). The alarm status is also recorded in the Memory Events register. To return to **[METERS & ALARMS]** , push the **[←]** pushbutton twice.

Section 5.06 - EVENT HISTORY   *(see 5.00 for instructions for accessing this menu)*

This submenu displays 200 events providing Date & Time information for: Warnings, Shutdowns, switching of the Contactors and changing of the mode of operation.

Instructions	
EVENT PAGE 1 EMERGENCY DD/MM/YY HH:MM:SS	Push **[↑]** or **[↓]** to browse the list of the events. To return to **[METERS & ALARMS]** , push the **[←]** pushbutton twice (see section 11.0 for the description of the alarms)

Section 5.07 - SHOW DATE & TIME   *(see 5.00 for instructions for accessing this menu)*

This submenu displays the real time clock (Date and Time). To modify the settings see section 6.00.
Typical screen is indicated below:

Instructions	
DAY TIME HH:MM:SS DATE DD/MM/YY	To return to **[METERS & ALARMS]** , push the **[←]** pushbutton twice.

Section 6.00 - SET DATE & TIME

To access this menu push **[O-STOP]** then, repeatedly push **[←]** until **[METERS & ALARMS]** appears on the top of the display. Push **[↓]** to select **[SET DATE & TIME]**. Push **[→]** to enter the Menu. Set time is allowed in **OFF** mode of operation only.

Display Indication	Instructions
TIME 00:00:00 **DATE 01/01/00**	Use [↑] or [↓] to select a function. Push [→] to enter the numerical field. Push [↑] or [↓] to set a value. Push [←] to return. After setting the clock, push [↓].
FORMAT DD/MM/YY	a) - If you want to change the format, push [→] and [↑] to select the option MM/DD/YY. Push [←] to return to the function; push [↓] to go on. b) - If option DD/MM/YY is ok for you, push [↓] to proceede.
SAVE →	Push [→] to start up the clock of Be-K3 at the proper moment (use an external clock reference)

Section 7.0 - DISPLAY & LANGUAGE

To access this menu push **[O-STOP]** then, repeatedly push **[←]** until **[METERS & ALARMS]** appears on the top of the display. Repeatedly push **[↓]** to select **[DISPLAY-LANGUAGE]**. Push **[→]** to enter the Menu.

Display	Instructions
LANGUAGE ENGLISH	A) - Use **[↑]** or **[↓]** to select Spanish – Italian - French or English B) - Push the **[←]** twice; the display will work using the selected language.
CONTRAST 5	You can optimize the text-readability of the display: - Push **[→]** to enter the **[CONTRAST]**; push **[↑]** or **[↓]** (range 0..... 15) - Push **[←]** to save and exit

Section 8.00 - USER PARAMETERS

To access this menu push **[O-STOP]** then, repeatedly push **[←]** until **[METERS & ALARMS]** appears on the top of the display. Repeatedly push **[↓]** to select **[USER PARAMETERS]**. Push **[→]** to enter the Menu. The display will present the options **[READ PARAMETERS]** and **[MODIFY PARAMETER]**. This menu contains the following functions:

Display Indication	Section	Description
SERVICE TIMERS **TEST SETTINGS** **MISCELLANEOUS** **AMF SCHEDULER**	**8.01** **8.02** **8.03** **8.04**	Use **[↑]** or **[↓]** to select a function. Push **[→]** to enter the function. Push **[←]** to return.

Section 8.01 - SERVICE TIMERS

Use **[↑]** or **[↓]** to select this function from the **[USER PARAMETERS]** list (section 8.00) and push **[→]** to enter the function. These functions can be protected by the **[USER PASSWORD]**.

Display Indication	Instructions

MAINTENANCE 1
                    OFF
 	
MAINTENANCE 2
                    OFF
 	
MAINTENANCE 3
                    OFF
	Use **[↑]** or **[↓]** to select a function. Push **[→]** to select the numerical field. Push **[↑]** or **[↓]** to set a value. Option **[OFF]** disables the function. Push **[←]** to return. The timers 1, 2 and 3 set the hours of Maintenance. Maintenance 1 and 2 will generate a warning alarm. Maintenance 3 will shut down the engine.
	The remaining time is indicated in the ENGINE & FUEL page (see 5.04B, SERVICE-1-2-3). When a timer expires, enter this screen and exit (push **[←]**). The timer will restart automatically.

Section 8.02 - AUTOMATIC TEST

Use **[↑]** or **[↓]** to select the [**TEST SETTINGS**] from the [**USER PARAMETERS**] list (section 8.00) and push **[→]** to enter the programming. These functions can be protected by USER PASSWORD.

Section 8.02 - AUTOMATIC TEST (TEST SCHEDULER)

Use **[↑]** or **[↓]** to select the [**TEST SETTINGS**] from the [**USER PARAMETERS**] list (section 8.00) and push **[→]** to activate the menu. These functions can be protected by USER PASSWORD.

Display Indication			Description
	START	STOP	**Automatic Test setting**. You can set the day/time of the Periodic Test.
MO	--:--	--:--	Instructions:
TU	--:--	--:--	Use **[↑]** or **[↓]** to select a function. Push **[→]** to enter the numerical field.
WE	--:--	--:--	Push **[↑]** or **[↓]** to set a value. Push **[←]** to return to the function.
TH	--:--	--:--	
FR	--:--	--:--	Automatic test triggers a start only if Be-K3 is in **AUTO** mode of operation. The yellow LED blinks
SA	--:--	--:--	during the Test (you can set an output with option [55] that activates during the **Automatic test**)
SU	--:--	--:--	

Section 8.03 - MISCELLANEOUS

Use **[↑]** or **[↓]** to select [**MISCELLANEOUS**] from the [**USER PARAMETERS**] list (section 8.00) and push **[→]** to activate the menu. These functions can be protected by User password.

Display Indication	Description
RENTAL CONTRACT OFF	You can set up to 9999 hours of rent contract. When the remaining hours drop to less than 48, the [**RENTAL WARNING**] alarm sets off. At zero hours, the engine will shut down. You are required to re-program the timer. Option **OFF** disables the [**RENTAL CONTRACT**] function.
KG TEST CONTROL OFF	Options: **ON or OFF**. The option **ON** will transfer the Load to the Generator when **TEST** mode of operation is active. The option **OFF** will allow you to run the engine in **TEST** mode without switching the Load. Mains Failure overrides the option **OFF**; it will transfer the load to the generator.
EJP **5sec** (Effacement des Jours de Pointe).	(Range 1sec - 99 minutes). This timer delays the switching of the contactor of the Generator **KG** if the engine has been started using the EJP functions.
RUN TIMEOUT **OFF**	Maximum time allowed for running the engine (up to 24 hours). The option **OFF** disables the time-out and the engine will run until a stop is required. In **MAN** mode the engine runs for unlimited time.
RS485 NODE **1**	It allows you to select the **NODE** address on the **MODBUS** network.

Section 8.04 - AMF SCHEDULER

Use **[↑]** or **[↓]** to select the **[AMF SCHEDULER]** from the **[USER PARAMETERS]** list (section 8.00) and push **[→]** to activate the menu. These functions can be protected by USER PASSWORD.

Display Indication			Description
	ON(*)	OFF(*)	**Automatic Mains Failure scheduler**. You can set the day / time to limit the control of the Mains. The engine will start only in the allowed window of time between ON and OFF.
MO	00:00	24:00	
TU	00:00	24:00	
WE	00:00	24:00	Instructions:
TH	00:00	24:00	Use **[↑]** or **[↓]** to select a function. Push **[→]** to enter the numerical field.
FR	00:00	24:00	Push **[↑]** or **[↓]** to set a value. Push **[←]** to return to the function.
SA	00:00	24:00	
SU	00:00	24:00	**(*)** Automatic start takes place only if Be-K3 is in **AUTO** mode of operation.

Section 9.00 -   USER PASSWORD

Push **[O-STOP]** to enter the **OFF** mode. Repeatedly push **[←]** until the message **[METERS & ALARMS]** appears on the top of the display. Repeatedly push **[↓]** to select the function **[USER PASSWORD]**.
Push **[→]** to enter the menu for the following options.

Display Indication	Instructions
PASSWORD **CLEAR PASSWORD**	The display will present the option **[PASSWORD]** and **[CLEAR PASSWORD]**. Use **[↑]** or **[↓]** to select a function and push **[→]** to enter the function; Section 9.01 provides step-by-step instructions.

Section 9.01 USER PASSWORD programming instructions

Display Indication	Instructions
INSERT PASSWORD **BACK 0 * * *** **OK** **< >**	A) - Use [←] or [→] to select a digit of the password. B) - Push [↑] or [↓] to edit a number . C) - Repeat steps A) and B) to complete the 4-digit password. D) - Select OK using the [→] button (the OK backlights when selected). E) - Push the [→] button to confirm the password. *Note: by programming [0000] you disable (clear) the password*

Section 10.0 PROGRAMMING INSTRUCTIONS

10.01   Preliminary operation

Push **[O-STOP]** to enter the **OFF** mode. Repeatedly push **[←]** until the message **[METERS & ALARMS]** appears on the top of the display. Repeatedly push **[↓]** to select the function **[USER PARAMETERS]**. Push **[→]**; the following screen will appear

Display Indication	Instructions
READ PARAMETERS MODIFY PARAMETERS	A) - Push **[→]** to enter directly the **[READ PARAMETERS]** (section 10.05) B) - Push **[↓]** to select the line **[MODIFY PARAMETERS]** C) - Push **[→]** to enter the programming of **[USER PARAMETERS]**.

10.02 Type the Password

 If a password was inserted, the Be-K3 will present a screen to ask for the password as indicated below, otherwise follow directly the instructions on section 10.03.

Display Indication	How to insert a password
INSERT PASSWORD **BACK * * * * OK** **< >**	A) - Use [←] or [→] to select a digit of the password. B) - Push [↑] or [↓] to edit a number . C) - Repeat steps A) and B) to complete the 4-digit password. D) - Select OK using the [→] button (the OK backlights when selected). E) - Push the [→] button to confirm the password.

10.03   Select a parameter

Choose the MENU of your interest by using the **[↑]** or **[↓]** buttons and then push **[→]** ; the list of the parameters will appear.

10.04   Programming a parameter

- Select a parameter by using the **[↑]** or **[↓]** buttons (see section 8.00 for the list of parameters).
- Push the **[→]** button to enter the numerical / options field of the parameter.
- Modify the parameter using **[↑]** or **[↓]** according to your need.
- Exit the numerical/options field using the **[←]** pushbutton.
- You can modify another parameter by repeating the previous steps
- Push twice the **[←]** pushbutton. The Be-K3 will provide you 3 options:

[EXIT ←]   **SAVE**   **[BACK →]**

Choose the proper option. After using the command 'SAVE', we recommend that you disconnect the supply for a few seconds, re-apply the supply and verify that the modifications have been saved in a way that Be-K3 operates according to your need.

10.05   How to   Read a parameter

To read a parameter, follow the set up indicated in section 10.01 then:
- Choose a parameter using **[↑]** or **[↓]**
- Push **[→]** to read the setting of the parameter
- Repeatedly push **[←]** to return or exit

Section 11.0 - *Instructions in case of alarm(s):*

1) Look at the front panel and take note of LAMPs indicators (LED) and messages on display.
2) Some alarms, in order to cool down the engine, shutdown the engine after a programmable delay. We recommend that you wait for the complete stop of the engine.
3) Push the pushbutton in order to acknowledge the alarm. Push the **[0-STOP]** button.
4) Consult the following sections for further information
5) Remove the cause of the alarm. Consult the supplier of the Genset or the manufacture of the panel
6) Restart the engine by using a proper Mode of operation.

Note: each alarm is followed by the message **[SHUTDOWN]** in case that Be-K3 stops the engine or **[WARNING]** in case the Be-K3 provides only an optical-acoustical prealarm.	
CLOCK ERROR WARNING	Real time clock failure or wrong programming: reprogram the clock see section 6.00
PARAMETER ERROR **MEMORY ERROR** **CAN BUS ERROR** **WARNING**	Error in a parameter, CANBUS or Failure of the memory. <center>**(!!!)NOTE(!!!)**</center>

LOCAL EMERGENCY	This alarm takes place if you push the **[0-STOP]** button when the Be-K3 is in **AUTO** mode of operation
INPUT 1..2..3 WARNING EMERGENCY SHUTDOWN	Input 1 - 2 – 3 : Warning or Shutdown **(!!!)NOTE(!!!)**
REMOTE LOCK	A remote switch to LOCK the Be-K3 has been activated.
ECU SPEED ERROR	Failure in detecting the signal from Pick-up (shutdown) **(!!!)NOTE(!!!)**
OVER SPEED UNDER SPEED	Over or Under Speed shutdown **(!!!)NOTE(!!!)**
LOW BATTERY WARNING HIGH BATTERY WARNING	We recommend that you verify the status of the battery (see instruction manual of the engine)
FAIL TO START	Starting Failure shutdown **(!!!)NOTE(!!!)**
FAIL TO STOP	Fail to stop shutdown **(!!!)NOTE(!!!)**
BELT BREAK	Engine Belt break shutdown (Charger Failure) **(!!!)NOTE(!!!)**
OVERLOAD SHUTDOWN SHORT CIRCUIT UNDER VOLTAGE OVER VOLTAGE PHASE UMBALANCE UNDER FREQUENCY OVER FREQUENCY OVER KVA PHASE SEQUENCE OVER CURRENT ALTERNATOR FAILURE EARTH CURRENT REVERSE POWER CONTACTOR KM WARNING CONTACTOR KG WARNING	All these alarms are related to the Alternator. Normally these alarms are caused by problems in the LOAD (excess demand of POWER). We recommend that you remove the cause of the alarm and try to restart the engine. Consult an electrician or the manufacturer of the panel. Do not insist in re-starting the engine if the Be-K3 will continue provide an alarm. **(!!!)NOTE(!!!)**
LOW COOLANT °C HIGH COOLANT °C TEMPERATURE SW OIL TEMPERATURE WARNING / SHUTDOW AUX °C SENSOR AUX °C SENSOR OPEN	All these alarms are related to the temperature. We recommend that you wait to cool the engine before restarting it again. Consult the manufacturer of the generator if you are not able to find the cause of the alarm. **(!!!)NOTE(!!!)**
LOW FUEL LEVEL HIGH FUEL LEVEL TANK EMPTY FUEL RESERVE PUMP TIMEOUT FUEL SENDER OPEN	These alarms are related to the FUEL. We recommend that you check for level and leak of fuel. Consult engine manual also **(!!!)NOTE(!!!)**
LOW OIL PRESSURE OIL BAR SENDER OPEN	Check the OIL level. Verify the requirements in the user manual of the engine. **(!!!)NOTE(!!!)**
SERVICE 1 SERVICE 2 SERVICE 3	Maintenance 1 & 2 provide a warning after timeout. Maintenance 3 provides a shutdown after timeout. To cancel the alarm, reprogram the Maintenance or simply enter & exit the **[MAINTENANCE]** menu to restart the count. Maintenance should be carried out by specialized personnel only.
RENTAL 48h WARNING	Less than 48 hours remaining before engine shutdown.
RENTAL EXPIRED SHUTDOWN	Rental period termination. To cancel the alarm, reprogram the RENTAL or simply enter & exit the **[TEST & RENTAL]** program menu to restart the count
MAXIMUM RUN TIME SHUTDOWN	Time expired. This timer allows the engine to run a limited number of hours. If case of alarm, verify the general status of the engine, cancel the alarm and restart the engine. In **MAN** mode the timeout is disabled and the engine runs for unlimited time.

(!!!)NOTE(!!!) CONSULT THE USER MANUAL OF THE ENGINE/GENERATOR AND CONSULT THE MANUFACTURER OF PANEL OR GENSET. QUALIFIED PERSONNEL IS REQUIRED TO CARRY OUT TROUBLESHOOTING TASKS