Be42 User's Manual

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Customer Support BERNINI DESIGN SRL ITALY

e-mail: bernini@bernini-design.com
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Warranty

Bernini Design SRL (hereinafter "BD") warrants that Be42 shall be free from defect in material or workmanship for a period of 3 years from the BD delivery date. BD shall, at its option, repair or replace the product without charge. BD shall return the Be42 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 Be42 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 Be42 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.

This equipment complies with the EMC protection requirements $C\epsilon$

WARNING!!   High voltage is present inside the Be42. To avoid electric-shock hazard, operating personnel must not remove the protective cover. Do not disconnect the grounding connection. The Be42 can start the engine at anytime. Do not work on equipment, which is controlled by the Be42. When servicing the engine, disconnect the battery and battery charger. We recommend that warning signs be placed on equipment indicating the above.

Alphabetic index of the sections (see also alphabetic index on page 3)

Be42 OEM's Manual - Contents

Section 1.0 Introduction

  The Be42 integrates a 3-Phase Automatic Transfer Switch controller (A.T.S.) and a Generating Set controller. The Be42 provides visual indication by means of LEDs and Display for Fuel Level, Engine & Electrical parameters, Alarms and Status of the contactors. It features 7 Operating modes and provides a RS485 interface for remote control & monitoring. The version Be42-N does not indicate Oil pressure / Temperature and Fuel Level. Specifications or notes about BE42-N will be indicated with the notation '(**)'. Figure 1 presents the panel layout.

Figure 1: Front Panel layout
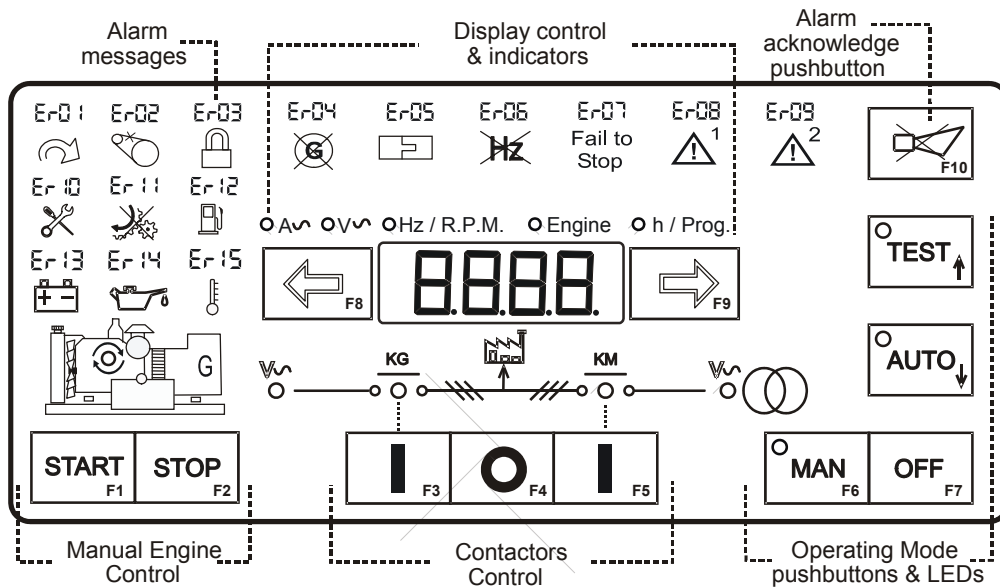
Section 2.0 Operating Mode selection

The operating modes are selected by pushbuttons and indicated by means of green LEDs:
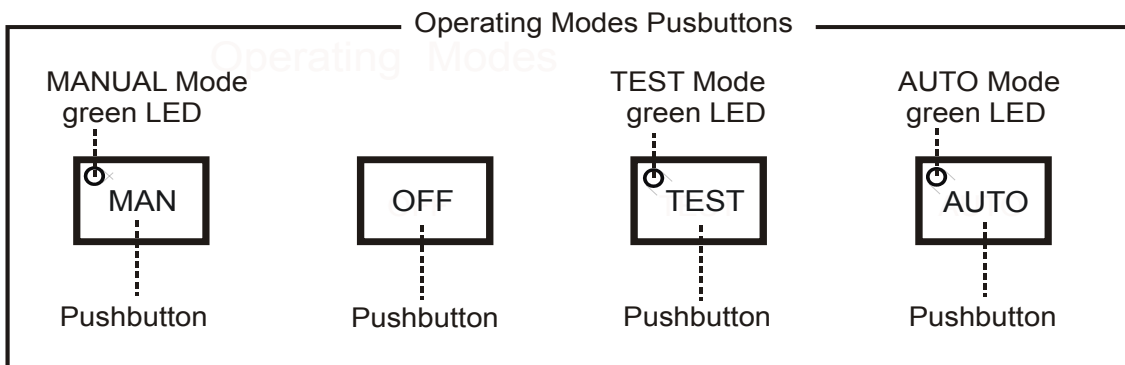
Every time the power supply is switched on, the Be42 returns to the "AUTO" operating mode, if the BE42 was in TEST or AUTO prior to power down. In the other cases, the Be42 will enter the OFF mode. The following table indicates the operating modes.

2.1 OFF mode

Push the [OFF] pushbutton to enter this operating mode. OFF mode clears the fault alarms and allows you to read the parameters (section 6.0). The Display and LEDs are turned off and a dot on the display will blink slowly. Push one of the pushbuttons on the front panel to energize the display.

2.2 MANUAL operating mode

The MANUAL operating mode allows you to manually control the Engine and Contactors.

Manual Engine Control	Instructions
	Push the [MAN] pushbutton to select the MANUAL mode (if in AUTO mode, push the OFF button first). Push the [START] pushbutton until engine starts; the display indicates the message [. . . .] during the starting attempts (and [! ! ! !] during the preheat). When the engine is running, the green LED turns on. To stop the engine, push the [STOP] pushbutton until the [StOP] message appears on the display. If the engine has already stopped, it is possible to reset the STOP sequence by pressing the [STOP] pushbutton.

2.21 Manual Control of the LOAD   To control the contactors follow the instructions:

Contactors Control Panel	Instructions
	Select the MANUAL mode, start the engine (see above) and wait until the 'Generator Presence' green Led turns on. Push the [I] (KG) pushbuttons to close the contactor of the Generator. To transfer the Load to Mains, push the [I] (KM) pushbutton (the [KG] will open after a short delay). To open a contactor, push the [O] pushbutton at anytime.

! ! WARNING ! !

LINE VOLTAGE IS EXPOSED WITHIN THE Be42, THE LOAD OR ANCILLARY CIRCUITRY EVEN WHEN THE GREEN LEDs ARE TOTALLY OFF

2.3 AUTO operating mode

Push the [AUTO] pushbutton until the green LED will illuminate. The engine starts when the Be42 detects a Mains failure. The contactor of the MAINS (KM) opens after a delay. After the warm-up time, if the Voltage and Frequency are within the settings, the contactor of the Generator (KG) will close. If the Mains restores, the KG will open. The KM will close after a programmable changeover timing. The Engine will stop after a cooling down time. If the engine shuts down, the KM will close only if the Mains is within the programmed settings. In AUTO operating mode, the Be42 will periodically test the engine if the parameters [P.41] and [P.42] have been programmed (see section 6.0). During this test, the green LED of the AUTO operating mode will continue to blink. In AUTO operating mode, the Be42 can start and stop the engine according to programmable inputs (ask to your Panel manufacturer).

2.4 TEST operating mode

Push the [TEST] pushbutton until the green LED will illuminate.The Be42 starts the engine and transfers the load to the Generator if the [P.17] is [on]. To stop the engine, select the AUTO operating mode (if the Mains is present) or select the OFF mode. If you push the [STOP] pushbutton when the Be42 is in AUTO or TEST, the [Er.09] will energize. To clear the alarm, select the OFF mode (section 8.0).

Section 3.0 Display measurements

The Be42 features a 4 Digit display, two pushbuttons and 5 yellow Leds as indicated below.
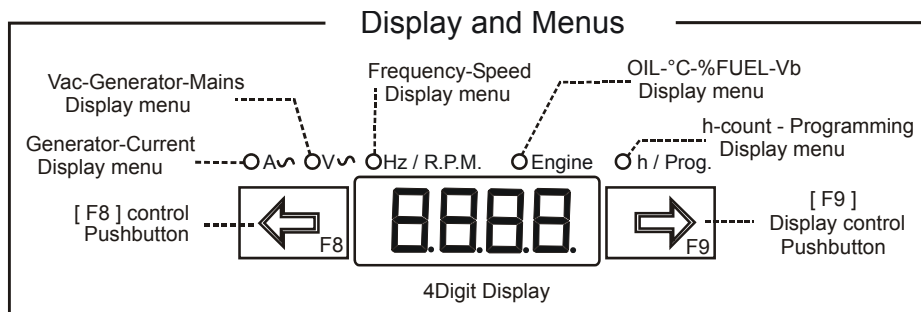
Use [←F8] and [F9→] to select a menu. Use [ACK-F10] (see the layout in section 1.0) to display the name of the parameter. The OFF mode shuts down the display and turns on the dot on the right side of it. Push a button to turn on the panel. The following table lists the functions of the display.

Display Function	Display indications (*)	Pushbutton(s)	Menu & Led indicator	
Current of the Generator (0 up to 2000A)	[XXXX] Ampere	[←F8] or [F9→]	Aac menu	Yellow
	[A -G]	[ACK-F10]		
Voltage of the Generator (60V up to 998V)	[GXXX] Volt L1-L2	[←F8] or [F9→]	Vac menu	Yellow
	[U -G]	[ACK-F10]		
Voltage of the Mains (60V up to 998V). If the Mains is simulated, see otion [15] in table 7.07, the display will show the message [U-on]	[nXXX] (VL1-2) [-XXX] (V L2-3) [_XXX] (L1-L3)	[←F8] or [F9→]		
	[U -on]	[ACK-F10]		

Display Function	Display indications (*)	Pushbutton(s)	Menu & Led indicator	
Generator Frequency (20Hz up to 70Hz)	**[GXXX]** Hz	**[←F8]** or **[F9→]**	Hz/RPM menu	Yellow
	[H - G]	**[ACK-F10]**		
Mains Frequency (20Hz up to 70Hz)	**[nXXX]** Hz	**[←F8]** or **[F9→]**		
	[H - n]	**[ACK-F10]**		
Speed (600RPM up to 4000RPM)	**[XXXX]** RPM	**[←F8]** or **[F9→]**	Hz/RPM menu	Yellow (blinks)
	[SPd]	**[ACK-F10]**		
Battery Voltage (5,5 Vdc up to 36Vdc)	**[bXX.X]** Vdc	**[←F8]** or **[F9→]**	Engine	Yellow
	[batt]	**[ACK-F10]**		
Charger Voltage (3.0 Vdc up to 36Vdc)	**[cXX.X]** Vdc	**[←F8]** or **[F9→]**		
	[Char.]	**[ACK-F10]**		
Oil Pressure 0.0-20.0 Bar _**NOTE (**)**_	**[PXX.X]** Bar	**[←F8]** or **[F9→]**		
	[bar]	**[ACK]**		
Temperature 0°-250 °C _**NOTE (**)**_	**[XXX °]** °C	**[←F8]** or **[F9→]**		
	[°C]	**[ACK]**		
Fuel Level % 0% - 99% _**NOTE (**)**_	**[F XX]** %	**[←F8]** or **[F9→]**		
	[FUEL]	**[ACK-F10]**		
Hours-count (0 up to 9999h)	**[XXXX]** h	**[←F8]** or **[F9→]**	h/Prog menu	Yellow
	[Hour]	**[ACK-F10]**		Yellow (blinks)
OFF	**[　.]**	**[OFF-F7]**	OFF	OFF

(*)NOTE: X indicates a numerical digit, if the measurement is out of range, the display will indicate [- - - -]

(**)NOTE: Be42-N will indicate always [- - - -] beacuse it does not interface with sensors.

Section 4.0 Display messages

The Be42 shows alarms (table 4.10) and messages (table 4.20). The presence of alarms is indicated by the blinking message [ALAr.]. Push the [→F9] pushbuttons to display the alarms one by one. Push the [←F8] pushbutton to display additional information (section 8.0).

Table 4.10: Alarm messages

> *(!!!) NOTE: consult always your supplier or the user manual of the engine. A short description of the alarms is indicated below.*

Display	Description of the Alarm	Display	Description of the Alarm
[Er.01]	Over Frequency Shutdown **(°°°)**	[Er. 14]	Low Oil Pressure Shutdown **(!!!)**
[Er.02]	Engine Belt Break Shutdown **(!!!)**	[Er. 15]	Temperature Switch Shutdown **(!!!)**
[Er.03]	Remote LOCK Shutdown.	[Hi-C]	Over Current Shutdown or Warning (push [←F8] to display the value). **(°°°)**
[Er.04]	Alternator Failure Shutdown **(!!!)**	[Hi-U]	Over Voltage / Under Voltage Shutdown
[Er.05]	Overload Warning or Shutdown **(°°°)**	[Lo-U]	**(°°°)**
[Er.06]	Under Frequency Shutdown **(°°°)**	[InP.1] [InP.2]	Input 1-2-3-4 Shutdown / Warning

Normally these alarms protect your Generator. Consult your supplier for further details. |
[Er.07]	Fail To STOP Shutdown **(!!!)**	[InP.3]	
[Er.08]	Emergency Shutdown. (Wait for the end of the Emergency condition before starting the engine).	[InP.4]	
[Er.09]	Emergency Shutdown from the Front Panel. (Cancel the Alarm and restart the engine).	[-oIL] **(**)**	Oil pressure warning or sensor failure. Push [←F8] to display the value. **(!!!)**
[Er.10]	Maintenance SERVICE warning **(!!!)**	[-°C] **(**)**	Water temperature warning or sensor failure. Push [←F8] to display the value. **(!!!)**
[Er.11]	Fail To START Shutdown **(!!!)**	[FUEL] **(**)**	Fuel level warning (High or Low) or sensor failure. Push [←F8] to display the value. (Fill the tank and restart the engine)
[Er.12]	Low Fuel Shutdown (Fill the tank and restart the engine)	[rEnt.]	Push [←F8] to display the remaining hours of Rent contract.
[Er. 13]	Battery Voltage Warning **(!!!)**	[FAIL]	There is an internal failure or memory error in the BE42 controller **(!!!)**

> *(°°°) NOTE: verify if you are Overloading the Generator: consult an electrician.*

(**)NOTE: Be42-N will note indicate these messages; this controller does not interface with the Sensor.

4.20 Operating messages

Message	Description	Message	Description
[rESt]	The Be42 is counting the rest time between the starting attempts	**[ProG]**	The Be42 is in program mode
[n-on]	MAINS Simulated. A programmable input simulates the presence of the Mains.	**[-CAL]**	The Be42 is in calibration mode
		[. . . .]	The Be42 is performing the start
[' ' ' ']	The Be42 is performing the pre-glow	**[tEst]**	The Be42 is in Troubleshooting mode
[StoP]	The Be42 is stopping the engine	**[- - - -]**	The measurement is not available

Section 5.0 LED indicators
5.1 Lamp and Display Test

   To test the LEDs and DISPLAY push the [OFF] pushbutton; the display turns off. Push and hold the [←F8] and [F9→] pushbuttons simultaneously. The LEDs and DISPLAYs remain energised as long as the pushbuttons are pressed and held together.

Section 6.0 Reading of the Parameters

   To read the setting of the parameters, follow the instructions:
1) - Press the [OFF] pushbutton until the LEDs and display turn OFF.
2) - Push the [←F8] or [F9→] pushbutton to select a parameter (section 7.0).
3) - Push [START-F1] to display the setting of the parameter (example: [P.10] = [450]; the Overvoltage limit is set to 450Volt).
4) - Push [STOP-F2] to display the setting of the sub-parameter (example: [P.10] = [2"]. The timing delay of Overvolatge is set to 2 seconds).
5) - Push the [←F8] or [F9→] pushbutton to select another parameter.

NOTE: if the pushbuttons remain inoperative for more than 5 minutes, the Be42 enters the OFF mode.

Section 7.0 Programmable Parameters

You are not allowed to program the controller. You can read the setting of the paramaters. If you need information contact the manufacturer of your panel. The parameters are divided into classes as indicated below. We recommend that you read the parameters and record the settings on this paper (use the `Setting` column). Allowed settings are indicated in the columns 'Min', 'Max' and 'Options'.

7.01A, B - Mains Failure Control   7.07 - Input Options List
7.02A, B - Generator Parameters   7.08 - Programmable Outputs
7.03A, B - Engine Parameters   7.09 - Output Options table
7.04 - Alarms Options   7.10 - Oil Pressure Sensor
7.05A, B - Miscellaneous   7.11 - Temperature Sensor
7.06 - Programmable Inputs   7.12 - Fuel level Sensor

Table 7.01A - Mains Failure Control Note: [xx "] = seconds, [xx '] = minutes, [xxh] = hours				
	Parameter Code & Description	Setting	Min	Max
P.0	Mains Contactor control (KM). If the Mains Failure persists for more than [P.0] (seconds or minutes), the Mains contactor will open and the [P.1] timer will start to count. The Mains contactor will close only after the [P.2] timing.		0	59mins
P.1	Mains Failure time. After the [P.0] timing (see above), the engine will start if the Mains Failure persists for the [P.1] time.		0	23h
P.2	Mains Restore time. The Be42 transfers the Load to the Mains once the MAINS is stable for at least [P.2] (seconds, minutes or hours) . During [P.2] , the engine will continue to run ON-LOAD. After [P.2], the [P.24] timer will take place to run the engine OFF-LOAD (the contactor of the generator will open)		0	23h

Table 7.01B - Mains Failure Control Note: [xx "] = seconds, [xx '] = minutes, [oFF] = disabled

Parameter Code & Description		Setting	Min	Max	Options
P.3	Contactors changeover. This timing introduces a delay between the switching of the contactors.		0.1secs	15.0secs	-
P.4	Under voltage limit. If the Phase-to-Phase voltage falls under this limit, the [P.0] timer will energise.		60V	998V	[oFF]
P.5	Over voltage limit. If the Phase-to-Phase voltage rises above the limit, the [P.0] timer will energise.		60V	998V	[oFF]
P.6	Under Hz limit. If the Phase-to-Phase frequency falls under the limit, the [P.0] timer will energise.		20.0Hz	70.0Hz	[oFF]
P.7	Over Hz limit. If the Phase-to-Phase frequency rises above the limit, the [P.0] timer will energise.		20.0Hz	70.0Hz	[oFF]
P.8	Phase Selection. It allows a 3-Phase or Single Phase control		-	-	[3-Ph] [Ph-n]

Table 7.02A - GENERATOR PARAMETERS   Note: [xx "] = seconds, [xx '] = minutes, [oFF] = disabled

Parameter Code & Description		Mode (°)	Setting	Min	Max	Options
P.9	Under voltage	1		60V	998V	[oFF]
	Under voltage delay			1sec	15secs	-
P.10	Over voltage	2		60V	998V	[oFF]
	Over voltage delay			1sec	15secs	-
P.11	Under Frequency	1		20.0Hz	70.0Hz	[oFF]
	Under Frequency delay			1sec	15secs	-
P.12	Over Frequency	2		20.0Hz	70.0Hz	[oFF]
	Over Frequency delay			1sec	15secs	-
P.13	Warning current limit	3		10A	2000A	[oFF]
	Warning current delay			1sec	15mins	-
P.14	Over current shut down	1		10A	2000A	[oFF]
	Over current shut down delay			1sec	15mins	-

(°) Mode1: The engine shuts down,after a cooling down time ([P.24]). (°) Mode2: The engine shuts down without a cooling down time.
(°) Mode3: The Be42 provides a warning if the parameters rises above the setting for the specified timing.

Table 7.02B - GENERATOR PARAMETERS   Note: [oFF] = disabled, [on] = enabled

Parameter Code & Description	Setting	Min	Max	Options
P.15	Alternator failure options. The alarm [E04] energises if the voltage (or the frequency) is lower than the setting of P.9 (or P11) for more than 150 seconds.		-	-	[on] [oFF]
P.16	Alternator number of Poles. Options [2] or [4] allow you to display the engine speed.		2	4	-
P.17	Generator Contactor Control. The option [off] inhibits the transfer of the load to the generator in TEST operating mode (or remote TEST) when the MAINS is present.		-	-	[on] [oFF]
P.18	CT size (/5Aac).		50A	2000A	-

Table 7.03A - ENGINE PARAMETERS Note: [xx "] = seconds, [xx '] = minutes, [oFF] = disabled

Parameter Code & Description	Setting	Min	Max	Options
P.19	Crank delay		0	15secs	-
P.20	Crank time		1 sec	15secs	-
P.21	Rest time		3secs	15secs	-
P.22	Pre-glow time		1sec	59mins	[oFF]
	Modes (see below)		-	-	1-2-3-4

P.23	Engine Warm up time		0	59mins	-
P.24	Engine Cooling time		0	59mins	-
P.25	Stop Solenoid timing (Energized to stop)		1sec	59mins	-
P.26	Crank termination setting (Charger Alternator)		3.0V	30.0V	[oFF]
	Belt break setting (Charger Alternator)		3.0V	30.0V	[oFF]
P.27	Crank termination setting (Generator Voltage)		60V	998V	[oFF]
P.28	Crank termination (GeneratorFrequency)		20.0Hz	70.0Hz	[oFF]

Table 7.03B - ENGINE PARAMETERS Note: [xx "] = seconds, [xx '] = minutes, [oFF] = disabled						
Parameter Code & Description		Setting	**Min**	**Max**	**Options**	
P.29	Low Oil pressure warning **(**)**		0.1Bar	20.0 Bar	[oFF]	
P.30	High engine temperature warning **(**)**		40°C	250°C	[oFF]	
P.31	Crank attempts (numbers)		3	15	-	
P.32	Purge timing (for Gas fuelled engine)		1sec	15secs	-	

Table 7.04 - ALARM OPTIONS Note: [xx "] = seconds, [xx '] = minutes, [oFF] = disabled						
Parameter Code & Description		Setting	**Min**	**Max**	**Options**	
P.33	Alarms bypass (for oil, temperature, auxiliary1-2-3-4 alarms)		2secs	90secs	-	
P.34	Fail to stop alarm control (oFF = inhibited, on = enabled)		-	-	[oFF]/ [on]	
P.35	Emergency contact type (Input #36)		-	-	[n.o. / n.c.]	
P.36	No fuel in the tank delay		15secs	99mins	[oFF]	
P.37	Low fuel % limit **(**)**		1%	99%	[oFF]	
P.38	High fuel % limit **(**)**		1%	99%	[oFF]	
P.39	Engine temperature contact type		-	-	[n.o. / n.c.]	

(**) The controller BE42N will not allow you to modifify the [OFF] setting (it does not support sensors)

Table 7.05A - MISCELLANEOUS Note: [xx "] = seconds, [xx '] = minutes, [oFF] = disabled						
Parameter Code & Description		Setting	**Min**	**Max**	**Options**	
P.40	EJP time		1 sec	99 mins	-	
P.41	Periodic Test interval		1 Day	60 Days	[oFF]	
P.42	Periodic Test duration		1 min	99 mins	-	
P.43	Test timeout ([OFF= no timeout)		1 min	99 mins	[oFF]	
P.44	Maintenance SERVICE 1		1h	9999h	[oFF]	

Table 7.05B - MISCELLANEOUS Note: [xx "] = seconds, [xx '] = minutes, [oFF] = disabled					
Parameter Code & Description		Setting	**Min**	**Max**	**Option**s
P.45	Maintenance SERVICE 2		1h	9999h	[oFF]
P.46	Maintenance SERVICE 3		1h	9999h	[oFF]
P.47	Rent Contract Setting		1h	9999h	[oFF]
P.48	NFPA - 110 Level 1&2		-	-	[on]/[oFF]
P.49	RS485 Node Address		1	127	-
P.50	Horn timeout (see section 8.0)		5secs	15mins	[oFF]
P.51	Hour Counter set (over 9999, a dot will appear to indicate a value multiplied by10. Example 3250. will indicate 32500 hours. In this case the relosution is 10 hours)		0h	50.000 (the display will indicate [5000.])	[oFF]

Table 7.06 - Programmable inputs (see options list in table 7.07)					
Parameter		**Options**	Setting	**Parameter**	**Options**	Setting

Parameter		**Options**	Setting	**Parameter**		**Options**	Setting
[InP.1]	Input 1/ Mode	[n.o.][n.c.]		[InP.3]	Input 3 / Mode	[n.o.][n.c.]	
[InP.2]	Input 2 /Mode	[n.o.][n.c.]		[InP.4]	Input 4 / Mode	[n.o.][n.c.]	

Table 7.07 - Input Options List				
Option			Option	
[0]	Off: disables the input			
[1]	Immediate Stop		**[14]**	Generator simulation ON
[2]	Bypass and Stop		**[15]**	Mains Simultation ON
[3]	Cooling and Stop		**[16]**	Front panel LEDs test
[4]	Bypass+Cooling and Stop		**[17]**	Alarm acknowledge
[5]	Warning only		**[18]**	Display Right Pushbutton
[6]	Bypass and Warning		**[19]**	Display Left Pushbutton
[7]	Remote Manual Mode		**[20]**	Overload Input Warning
[8]	Remote Auto Mode		**[21]**	Overload Input Shutdown
[9]	Remote Off Mode		**[22]**	KG Forced closed
[10]	Remote Engine Test		**[23]**	KM Forced closed
[11]	Remote Generator Test		**[24]**	KG LED Feedback
[12]	Ejp function		**[25]**	KM LED Feedback
[13]	Remote LOCK		**[26]**	Idle Engine

7.08 - Programmable Outputs					
Parameter Code & description		**Setting**	**Parameter Code &description**	**Setting**	**Options**
[Out.1]	Output 1		[Out.3]	Output 3		see 7.09
[Out.2]	Output 2		[Out.4]	Output 4		see 7.09

Table 7.09 - Output Options Table		
Option & description		**Option & description**
[0]	Output is disabled	[32]	Alarm form Input 2: Shutdown/Warning
[1]	Under Frequency Shutdown	[33]	Alarm form Input 3: Shutdown/Warning
[2]	Over Frequency Shutdown	[34]	Alarm form Input 4: Shutdown/Warning
[3]	Over Current Shutdown	[35]	Cumulative Oil Alarms
[4]	Over Current Warning	[36]	Cumulative Temperature Alarms
[5]	Overload Warning or Shutdown	[37]	Cumulative Alternator Alarms
[6]	Over Voltage Shutdown	[38]	Common Fuel Alarms
[7]	Under Voltage Shutdown	[39]	Horn Output
[8]	Alternator Failure Shutdown	[40]	Crank Delay (Start Warning)
[9]	Low Oil Pressure Warning (**)	[41]	Presence of Nominal Mains Parameters
[10]	Low Oil Pressure Shutdown	[42]	Mains Failure Timing
[11]	Oil Sender Failure Warning (**)	[43]	Mains Restore Timing
[12]	High Temperature Warning (**)	[44]	KG Status
[13]	Temperature Switch Shutdown	[45]	KM Status
[14]	Temperature Sender Failure Warning (**)	[46]	Pre-glow MODE 1/2/3/4
[15]	Low Battery Voltage Warning	[47]	PURGE (gas engine valve control)
[16]	High Battery Voltage Warning	[48]	RENT<48h
[17]	Low Fuel Shutdown (switch)	[49]	RENT=0h (Expired)
[18]	Fuel Low Warning (sensor) (**)	[50]	Engine Running Status
[19]	Fuel Reserve Warning (switch)	[51]	Presence of Nominal Generator Voltage
[20]	Fuel high Warning (sensor) (**)	[52]	BE42 in OFF MODE (Status)
[21]	Fuel Sender Failure Warning (**)	[53]	BE42 in MANUAL MODE (Status)
[22]	Emergency Stop Shutdown (Er08)	[54]	BE42 in AUTO MODE (Status)
[23]	Stop Pushbutton Used in AUTO (Er09)	[55]	BE42 in TEST MODE (Status)
[24]	Maintenance SERVICE 1 (Er10)	[56]	BE42 in LOCK MODE (Status)
[25]	Maintenance SERVICE 2 (Er10)	[57]	Automatic Periodic Test
[26]	Maintenance SERVICE 3 (Er10)	[58]	Cooling Timing
[27]	Engine Belt Break Shutdown	[59]	Warm up Timing
[28]	Fail To START Shutdown	-	--
[29]	Fail To STOP Shutdown	-	--
[30]	Indication of Parameter Error warning	-	--
[31]	Alarm form Input 1: Shutdown/Warning	-	--

(**) This option will not trigger the output of the BE42N (it does not support sensors)

Table 7.10 - Oil Pressure Sensor Settings (**)			
Display	**Parameter**	Setting	**Range**
[Pr.1]	Pressure		0 up to 20 Bar
[-r1-]	Resistance		0 up to 2000 Ohm
[Pr.2]	Pressure		
[-r2-]	Resistance		
[Pr.3]	Pressure		
[-r3-]	Resistance		
[Pr.4]	Pressure		
[-r4-]	Resistance		
[Pr.5]	Pressure		
[-r5-]	Resistance		
[Pr.6]	Pressure		
[-r6-]	Resistance		

7.11 - Temperature Sensor (**)					7.12 - Fuel Level Sensor (**)			
Display	**Parameter**	Setting	**Range**		**Display**	**Parameter**	Setting	**Range**
[°C1]	Temperature		0°C up to 250°C		**[FUE1]**	Fuel Level		0% up to 99%
[-r1-]	Resistance		0 Ohm up to 2000 Ohm		**[-r1-]**	Resistance		0 Ohm up to 2000 Ohm
[°C 2]	Temperature				**[FUE2]**	Fuel Level		
[-r2-]	Resistance				**[-r2-]**	Resistance		
[°C 3]	Temperature				**[FUE3]**	Fuel Level		
[-r3-]	Resistance				**[-r3-]**	Resistance		
[°C 4]	Temperature				**[FUE4]**	Fuel Level		
[-r4-]	Resistance				**[-r4-]**	Resistance		
[°C 5]	Temperature				**[FUE5]**	Fuel Level		
[-r5-]	Resistance				**[-r5-]**	Resistance		
[°C 6]	Temperature				**[FUE6]**	Fuel Level		
[-r6-]	Resistance				**[-r6-]**	Resistance		

(**) These parameters are not availbale on the controller BE42N (it does not support sensors)

Section 8.0 - Alarms, Warnings and Shutdowns

The Be42 features Shutdowns (the engine stops) and Warnings (the engine will continue to run) and provides:
   A) - a general indication of alarm presence by means of the message [ALAr.] on the display
   B) - symbols and ideograms on the front panel to indicate alarms (see Figure 1, section 1)
   C) - display messages indicating warnings and shutdowns (see Table 4.1)
   D) - a pushbutton to silence the Horn ([ACK-F10])
To silence the HORN (if provided by your Panel manufacturer), push the [ACK-F10] pushbutton.
To browse the alarm memory push the [→F9] pushbutton. To display details about the alarm, push the [←F8] pushbutton. To clear the alarm from the panel, remove the cause of the alarm and then press the [OFF] pushbutton. The Table 4.10 in section 4.0 indicates all alarms.

!!! WARNING !!!   In case of Alarm consult always your supplier or the user manual of the engine

Section 9.0 Automatic Periodic Test

 The Be42 does not use an internal real time clock for the programmed days of automatic test. To see if your controller is programmed with a Periodic Test, enter the READING PARAMETER MODE and read the setting of [P.41] (table 7.05). You could experiment with shifting the periodic tests. To avoid error accumulation, we recommend the following procedures.

A) - Power off the controller (if a switch is provided by your panel manufacturer) or disconnect the battery.
B) - Connect the supply and select the 'AUTO' operating mode.

The Be42 will start the engine after the programmed days. The engine will run OFF-LOAD for the time programmed in the [P.42] (Periodic test duration). If the Mains fails during the Periodic Test, the Be42 will transfer the load to the generator.

IMPORTANT NOTICE If the Vdc supply is removed, the Be42 looses the counts of the days. If the supply restores, the Be42 starts to count the days from zero. To synchronize the periodic start follow the instruction of the section 9.0

!! WARNING !!

High voltage is present inside the Be42. To avoid electric-shock hazard, operating personnel must not remove the protective cover. Do not disconnect the grounding connection. The Be42 can start the engine at anytime. Do not work on equipment, which is controlled by the Be42. When servicing the engine, disconnect the battery and battery charger. We recommend that warning signs be placed on equipment indicating the above.

10.0 - Panel & Gen-set Builders Notes

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11.0 - SUPPORT & ASSISTANCE

You can contact us at anytime:

support@bernini-design.com   bernini@bernini-design.com

24h/24h worldwide: +40 721 241 361 or +39 335 7077148