The POB-D series

COIL TESTER & POWER SUPPLY

Manual

DVpower

Contents

Manual Version: M-P0X0DN-200-EN

This Manual refers to the following POB-D models and their corresponding firmware versions

Model	Firmware versions
POB30D	PA1-6.07
POB40D	PA1-6.07

1 Introduction

This manual provides helpful instructions on how to use the POB-D series instruments.
The following instructions will help a user avoid unsafe situations, reduce maintenance costs and ensure reliability and durability of the POB-D series instruments.
The POB-D series must be used in accordance with all existing safety requirements and regulations based on national/local standards for accident prevention and environmental protection. In addition, the relevant international standards are listed in the “Technical data” section of this document.

1.1 Safety Instructions

Safety is the responsibility of the user. Before operating the POB-D, please read the following safety instructions carefully.

It is not recommended to use the POB-D (or even turn it on) without careful observation of the instructions listed in this Manual. The POB-D should only be operated by trained and authorized personnel.

1.1.1 Safety Terms and Symbols

Terms in this Manual. The following terms may appear in this manual:

WARNING: Warning statements identify conditions or practices that could result in injury or loss of life.
CAUTION: Caution statements identify conditions or practices that could result in damage to this product or to other property.

Symbols on the Device. The following symbols may appear on the device:

Refer to Manual

Protective Earth Terminal

1.1.2 Terms of Use

- The POB-D shall be used only if it is in a good technical condition. Its use shall be in accordance with local safety and industrial regulations. Adequate precautions must be taken to avoid any risks related to high voltages associated with this equipment and nearby objects.
- The POB-D is intended exclusively for application purposes specified in the ”Intended Use” section. The manufacturer and distributors are not liable for any damage resulting from wrong usage. The user bears responsibility in case of not following the instructions defined in this document.
- Do not remove the protective casing of the POB-D.
- All service and maintenance work must be performed by qualified personnel only.

1.1.3 Orderly Practices and Procedures

- The Manual shall always be available on the site where the POB-D is used.

- Before using the POB-D, all personnel (even personnel who only occasionally, or less frequently, work with the POB-D) assigned to operate the POB-D should read this Manual.
- Do not make any modifications, extensions, or adaptations to the POB-D.
- Use the POB-D only with the original accessories provided by its manufacturer.
- Use the POB-D and its original accessories for the device's intended use only.

1.1.4 Instrument Maintenance

The device should be kept clean in order to prevent excessive dust or other contaminants affecting its operation. It should be cleaned with water/isopropyl alcohol after any dirt/contaminants are noticed on its surfaces.

1.1.5 Operator Qualifications

- Testing with the POB-D should only be carried out by authorized and qualified personnel.
- Personnel receiving training, instruction or education on the POB-D should remain under the constant supervision of an experienced operator while working with the test set and the test object.

1.1.6 Safe Operating Procedures

- Hazardous voltages up to 400 V can occur inside the POB-D. Therefore, it is not permitted to remove the protective casing of the POB-D.
- Hazardous voltages exist on the terminals of the POB-D when the red LED is lit. Never assume that the connections are safe even if this LED is off. Switch off and unplug the POB-D before touching the connections, especially if a fault is suspected.
- Before putting the POB-D into operation, check the test set for any visible damage.
- Do not operate the POB-D under wet or moist conditions (condensation).
- Do not operate the POB-D if explosive gas or vapors are present.
- Only the external devices which meet the requirements for SELV equipment according to EN 60950 or IEC 60950 should be connected to the POB-D through the serial interface.
- When setting up the POB-D, make sure that the air slots of the test set remain unobstructed.
- Removing the POB-D protective casing will void the warranty. Any work inside the instrument without prior authorization from DV Power will also void the warranty.
- If the POB-D seems to be malfunctioning, please contact the DV Power Support Team (refer to the "Manufacturer Contact Information" section) after previously checking the "Error Messages" section.
- Prior to connecting the POB-D, ensure that the circuit breaker (object) to be tested is completely de-energized and isolated from both the line and the load. Every terminal should be checked and verified before connecting the POB-D. Ground connections may be left in place.
- Do not use the POB-D without the extra protective ground cables supplied with the POB-D. It must never be operated in a non-grounded configuration as this may result in an electric shock to the user or damage to the POB-D. Always establish this connection first before establishing any other connections and remove this connection as the very last one.

1.2 Power Supply

- Supply the POB-D only from a power outlet which is equipped with the protective ground.
- Besides being supplied from phase – neutral (L1-N, A-N), the POB-D may also be supplied from phase to phase (e.g., L1-L2; A-B). However, the voltage must not exceed 264 V AC. Please refer to the section “Technical Data”.
- The POB-D should be positioned in such a way that it is possible to safely disconnect it from the power supply at any moment.

WARNING / AVERTISSEMENT

This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

Il s'agit d'un produit de classe A. Dans un environnement domestique, ce produit peut provoquer des interférences radio, auquel cas l'utilisateur peut être amené à prendre des mesures adéquates.

1.3 Intended Use

The Coil Tester & Power Supply (POB-D) is designed for a circuit breaker testing. It is developed for use in switchyards, high power and industrial environment.
Typical application area for POB-D is testing high power circuit breakers:

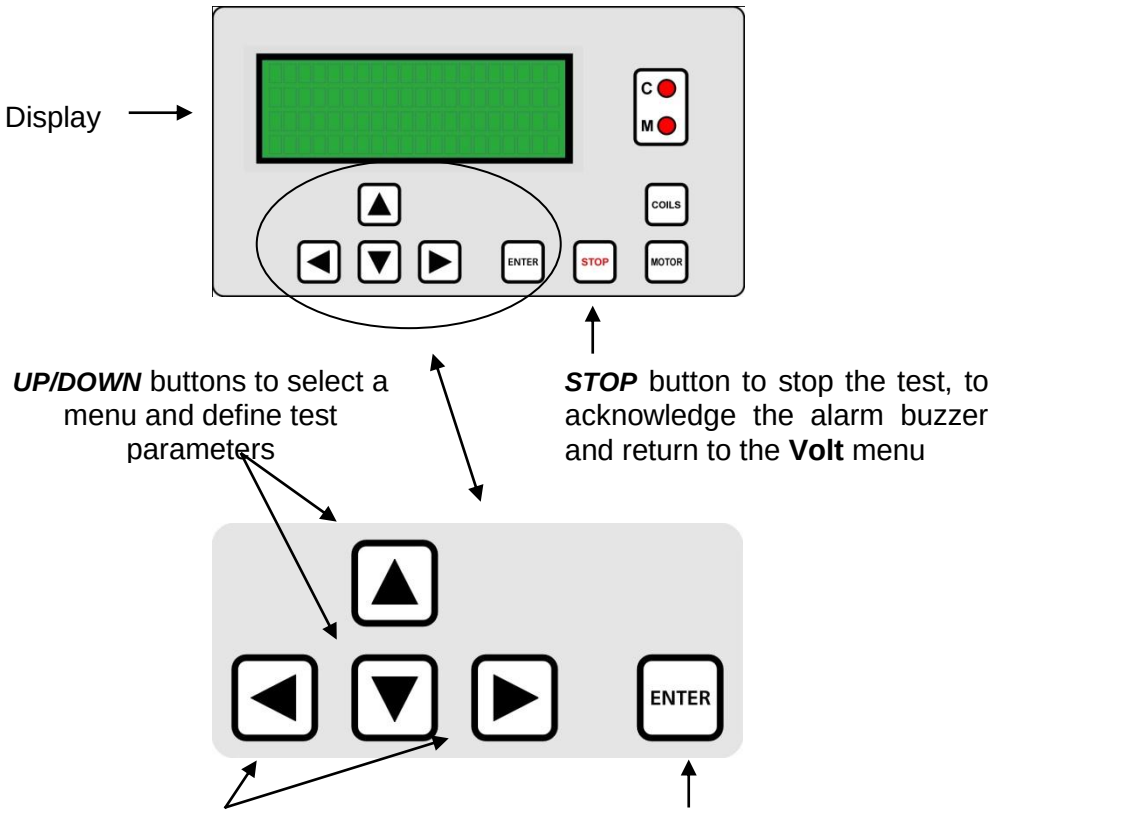
- circuit breaker operation condition,
- supplying of spring-charging motors,
- providing a power supply in the tests involving circuit breaker analyzers,
- minimum trip voltage test of circuit breaker’s coils.

 Any other use of the POB-D than the ones mentioned above is to be considered improper and will not only invalidate all customer warranty claims but also exempt the manufacturer from its liability for repair or exchange.

The POB-D is intended to operate breaker coils and spring charging motors as a part of commissioning and maintenance testing.
The POB-D generates filtered DC voltage. It eliminates the use of stationary batteries or converters during testing. Output voltage is selectable from 10 V to 300 V DC.

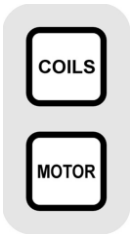
2 Description

2.1 Front Panel Components



COILS button

Press this button to start generating a continuous **DC voltage** on the COIL outputs (breaking and closing). Test voltages must be selected beforehand.



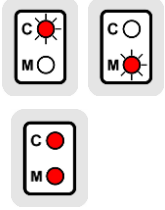
MOTOR button

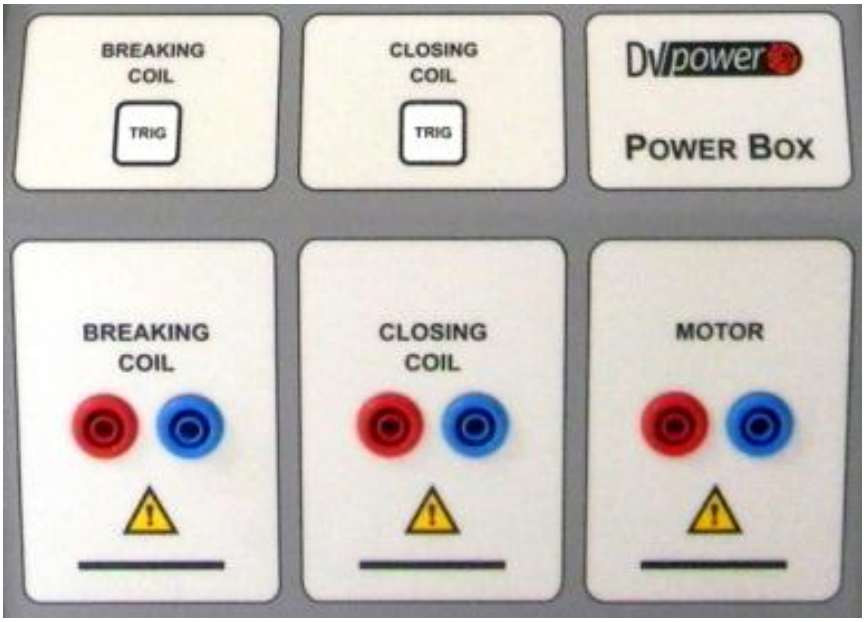
Press this button to generate a **DC voltage** on the MOTOR output. Test voltages must be selected beforehand.

LEDs

C LED flashes during the COIL test, and M LED flashes during the MOTOR test.

C and M LEDs lit continuously in case of operational error.





Voltage DC output for breaking coil

Voltage DC output for closing coil

Voltage DC output for spring-charging motor

2.2 Rear Panel Components

Connector for mains power supply

Power switch

I – POB-D is turned on.

0 – POB-D is turned off.

Device grounding connector

For protection against parasitic currents or voltages, always connect POB-D's grounding connector to protective ground (PE). Use only the originally provided cable.

For safety reasons, always establish this connection as the first one before you do any other connections, and separate this connection as the very last one.

Ventilation

2.3 Setting the POB-D's Language

To set POB-D's language, press the ***LEFT*** button two times in order to move the cursor to the upper line, and then ***UP*** button to select the **Language** menu.

Figure 2-1:
The **Language** menu

Move the cursor to the bottom line using the ***LEFT/RIGHT*** buttons, and select the language of your choice using the ***UP/DOWN*** buttons.
Pressing ***ENTER*** to confirm, brings back the **Volt DC** menu.
Pressing ***STOP*** to cancel, brings back the **Volt DC** menu.

2.4 Setting POB-D's Time and Date

To set the POB-D's internal time and date, press the ***LEFT*** button two times, and then two times the ***UP*** button to select the **Time** menu.

Figure 2-2:
The **Time** menu showing the POB-D's internal time and date

Move the cursor to the position of your choice using the ***LEFT/RIGHT*** buttons, and change the value with the ***UP/DOWN*** buttons.

Pressing ***ENTER*** to confirm, brings back the **Volt DC** menu.
Pressing ***STOP*** to cancel, brings back the **Volt DC** menu.

3 Getting Started

3.1 Connecting the POB-D to a Test Object

Before connecting the circuit breaker to the POB-D, make sure that:

- the breaker is disconnected or separated from its circuit on both sides in accordance with the national safety regulations; always comply with local safety regulations when using the Coil tester & power supply POB-D,
- the substation DC system is disconnected,
- the breaker is properly grounded to the protective ground (PE),
- The POB-D itself is properly grounded. To do so, connect the grounding screw on the back of the POB-D's to PE using the grounding cable.

With the POB-D turned off, connect the appropriate cables to the breaker's coils and spring-charging motor.

Note: Cables between the POB-D and other equipment are to be connected and removed ONLY when the POB-D is switched off.

Always connect measuring cables to the POB-D instrument first and then to the test object; and when disconnecting always, disconnect cables from the test object first and after that from the POB-D. The grounding cable PE should be disconnected last.
Otherwise a life threatening situation may occur.
The circuit breaker has to be disconnected from its circuit on both sides in accordance with the national safety regulations; always comply with the local safety regulations when using the POB-D.

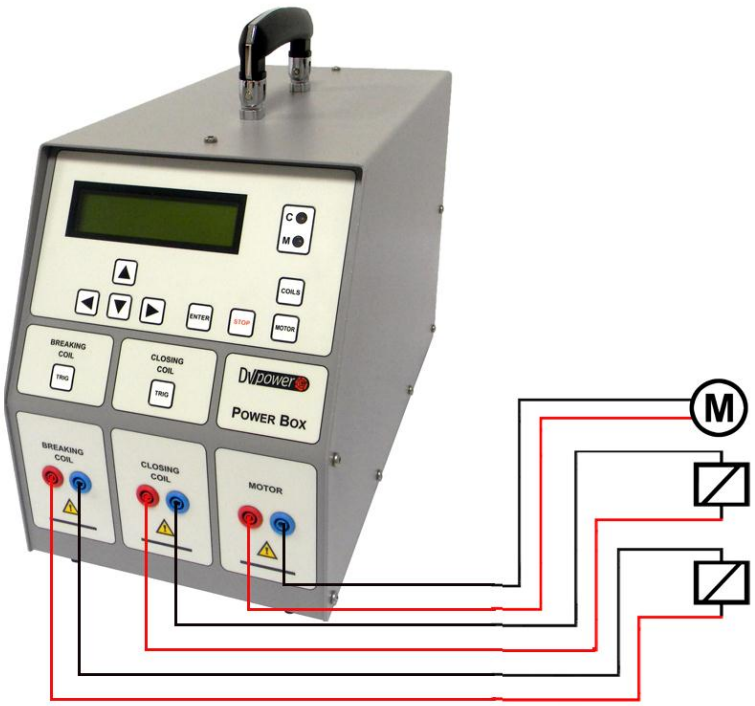


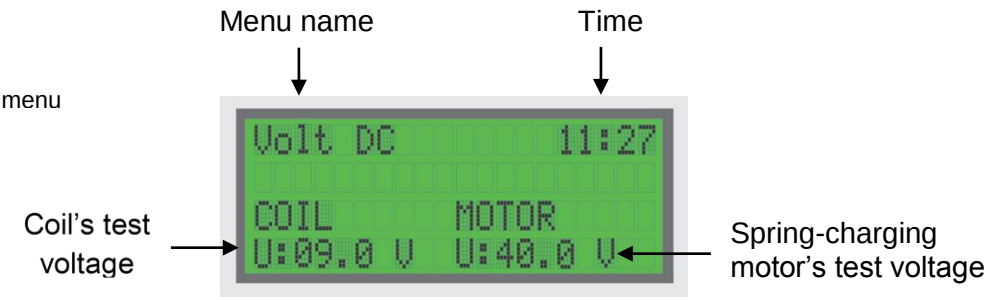
Figure 3-1:
Connecting a circuit breaker coils and spring-charging motor to POB-D

4 Setting the Test Parameters

4.1 Volt DC

Please turn on the POB-D using the power switch on the back of the test set. The display shows the **Volt DC** menu; LEDs C and M are off (Figure 4-1).

Figure 4-1:
The **Volt DC** menu



The DC test voltages for coils and spring-charging motor test voltage can be defined using the ***LEFT/RIGHT*** buttons in the **Volt DC menu.** Their individual values can be selected using the ***UP***/***DOWN*** buttons.

4.2 MTV DC

This section describes how to perform the Minimum Trip Voltage test with the POB-D device.
Turn on the POB-D using the power switch on the back of the test set. The display shows the **Volt DC** menu; LEDs C and M are off.
Press the ***ENTER*** button two times to select the **MTV DC** menu.

Once the **MTV DC** menu is selected, please define the minimum (initial) and maximum DC test voltage along with the voltage step for the minimum trip voltage test.

To ensure that circuit breaker operation is within specifications under the most rigorous conditions placed on the substation tripping supply, circuit breaker trip coils are designed to work with a minimum tripping voltage much below the nominal battery voltage.
The minimum trip voltage test is described in a number of international and national standards such as IEC 56, ANSI C37.09 etc.

Minimal trip voltage test of circuit breaker's coils could be conducted in two ways:

1. Manual: Pushing the ***TRIG*** button, a pre-selected DC voltage lasting 140 ms (milliseconds) is brought to the selected coil. Voltage value is increased manually until the coil is actuated.

2. Automatic: In the **MTV DC** menu, by pushing ***TRIG*** button a pre-selected minimal DC voltage is brought to a desired coil, lasting 100 ms.
If the coil is not actuated, after 900 ms of waiting time, the voltage is automatically increased for a pre-selected step (value 1 V to 19 V), and the instrument repeats this procedure.

Test could have two possible outcomes:

- The coil is actuated; in which case the voltage and maximum current are registered,

- The maximum pre-selected test voltage is reached without coil actuation, which is indicated by "No activation" message at the display, and announced by sound and light alarm.

The POB-D is designed to be used as an independent instrument or to provide a power supply in a combination with the Circuit Breaker Analyzer. When working with a Circuit Breaker Analyzer, the POB-D and Circuit Breaker Analyzer should be connected using EXTERNAL connector on the front panel of the POB-D.

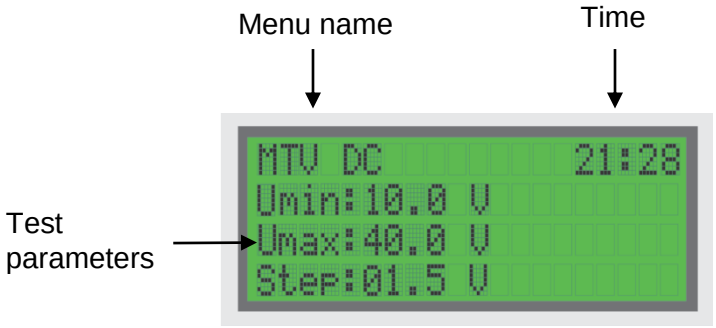
The motor and coil voltage should be selected in the **Volt DC** menu. By pressing the ***MOTOR*** button, a breaker spring is charged. By pressing the ***COILS*** button, a pre-selected voltage is generated at the coil outputs. The coils are triggered from the Circuit Breaker Analyzer. The POB-D instrument serves as a voltage supply in this case. The voltage is generated at the coil outputs until the ***STOP*** button is pushed.

Spring-charging motor is tested in the following way:

- a pre-selected DC voltage from the POB-D is brought to the motor terminals (maximum currents, and their duration data are described in the 5.5 section „Duty Cycles").

- after the motor supply from the instrument motor terminals stops, the POB-D will automatically switch to the Result menu. The display will show total time of the test duration as well as the maximum current value reached in that period. It will not display the startup motor current. This behavior will occur only if the current reached a value of 500 mA or higher. In case the test current recorded was bellow 500 mA, the device will show no results in the Result menu. It will behave as the test has not been performed at all.

Figure 4-3:
The **MTV DC** menu



Using the ***LEFT/RIGHT*** buttons move the cursor on the display to the position of Umin (start) and Umax (end) voltage level (here **10,0 V** and **40,0 V**), and voltage step fields (here **1,5 V**), then using ***UP/DOWN*** buttons select desired values in each of them.

5 Testing using the POB-D

5.1 Spring-charging Motor

Turn on the POB-D using the power switch on the back of the test set. The display shows the **Volt DC** menu; LEDs C and M are off.
Before the test can be started, a test voltage needs to be defined using the **Volt DC** menu (Figure 4-1).

Motor voltage can be selected in the range from 10 V to 250 V DC. Press the ***MOTOR*** button to start a test. The output **DC voltage** is generated supplying the motor at the pre-selected value, and the POB-D displays the **MOTOR** menu. During the test, LED M flashes and the display shows voltage and current values as well as the test duration time.

Figure 5-1:
The **MOTOR** menu during the test

Once the test is finished (the test current drops to zero), the POB-D shows the **Result** menu.

Figure 5-2:
The **Result** menu

The display shows the DC voltage value reached, maximum current (not the starting peak current) and test duration time. LED M is switched off.

After 5 sec time delay the POB-D automatically changes the display from the **Result** to the **Volt DC** menu display.

To stop the test at will, press the ***STOP*** button at any time during the test. The POB-D goes into the **Result** menu, indicating a DC voltage value reached, maximum current (but not the starting peak current) and test duration time. LED M is switched off.

5.1.1 Important notes while testing with the POB-D

Note: For XXX seconds the POB-D generates the predefined voltage value on the Motor outputs. After successfully exceeding 500 mA the POB-D treats the test as successfully performed and displays the

voltage and current values reached at the end as well as duration time of the test. These values will be presented on the display for 6 seconds and after that the display reverts to the previous menu.
In case the level of 500 mA has not been reached, the POB-D treats the test as unsuccessful, the POB-D shows no results on its display and the test has to be repeated.

In case the motor charging process has been interrupted (e.g. loss of a connection or other reason) the POB-D will present the last recorded voltage value and test duration time for 6 seconds and after that revert to the previous menu. The test has to be repeated.

Note: If the ***COIL*** button has been pressed while the POB-D is generating the voltage on the motor outputs (no current is present on the MOTOR outputs), the POB-D will switch off the motor outputs and start to generate predefined voltage on the COIL outputs (breaking and closing). The **COIL** menu will be displayed (Figure 5-3) indicating the voltage value. To stop the test at will, press the ***STOP*** button at any time during the test.

Note: If any of the **TRIG** buttons have been pressed on the breaking/closing outputs, while the POB-D is generating a predefined voltage on the motor outputs (no current is present on MOTOR outputs), the POB-D will switch off the motor outputs and generate a predefined voltage impulse lasting 140 ms on the corresponding COIL outputs (breaking or closing). The **COIL** menu will be displayed (Figure 5-3) indicating the voltage value. After the voltage impulse is generated, the POB-D will continue generating voltage on the motor outputs. To stop the test at any time, press the ***STOP*** button.

5.2 DC Coils Testing

The minimum trip voltage test of the circuit breaker's coils can be performed manually or automatically.

5.2.1 Manual test

Turn on the POB-D using the power switch on the back of the test set. The display shows the **Volt DC** menu; LEDs C and M are off.
Before a test can start please define the test voltages using the **Volt DC** menu (Figure 4-1) as described in the Section 4.1.

By pushing the **TRIG** button on the breaking/closing outputs, pre-selected DC voltage lasting 140 ms is brought to a desired coil. During the test, the LED C flashes, the POB-D displays the **COIL** menu indicating the generated voltage value (Figure 5-3), and then returns to the **Volt DC** menu.

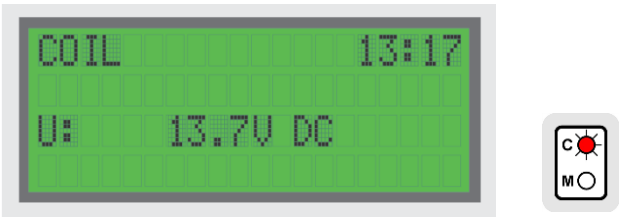


Figure 5-3:
The **COIL** menu during the DC test

If coil is actuated, the POB-D displays the **Result** menu, showing activating voltage and maximal current achieved during the test (Figure 5-4).

Figure 5-4:
The **Result** menu
after the DC test

If the coil failed to actuate, please select the higher value for the voltage in the **Volt DC** menu (Figure 4-1) and repeat this operation.

The test can be aborted at any time by pressing the ***STOP*** button. In that case the POB-D displays the **Volt DC** menu and LED C is turned off.

The POB-D can also be used as a source of **continuous DC voltage**. This option is available when using the POB-D as a standalone device or in a combination with other test devices (DV Power or other manufacturer devices).

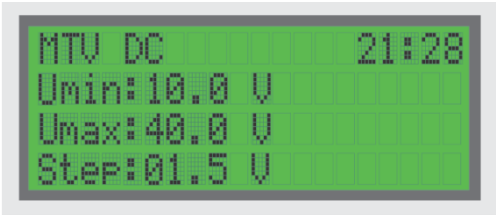
The user defines the voltage value using the **Volt DC** menu as described in the Section 4.1. Use the ***LEFT/RIGHT*** buttons to move to the desired test voltage value. Use the ***UP***/***DOWN*** buttons to select the test voltages for coils.

By pressing the ***COILS*** button, continuous pre-selected DC voltage is generated on the **COIL** outputs. The LED C flashes to indicate the DC voltage is generated.

5.2.2 Automatic test

Turn on the POB-D using the power switch on the back of the test set. The display shows the **Volt DC** menu; LED C and M are off.
Pushing the ***ENTER*** button three times will bring the **MTV DC** menu (Figure 5-5).

Figure 5-5:
The **MTV DC**
menu



Use the ***LEFT/RIGH*** buttons move the cursor to the position of initial the voltage (*U min*), maximal voltage (here **10,0 V** and **40,0 V**), and the voltage step (here **1,5 V**). Using the ***UP/DOWN*** buttons please select their desired values. By pushing the **TRIG** button on the breaking/closing outputs the starting voltage is brought to the selected coil for 140 ms (milliseconds), and the display switches to the **COIL** menu (Figure 5-3).

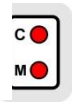
If the coil was not actuated, after 900 ms delay, the voltage increases automatically for the selected voltage step and the voltage is generated again (duration of 140 ms).

The test could have two possible outcomes:

a. The coil is actuated, when the POB-D displays the **Result** menu, showing the activating voltage and maximal current (Figure 5-4),

After 10 seconds the POB-D returns to the **MTV DC** menu.

b. The maximal test voltage was reached without coil actuation. "No activation“ error message will be displayed, LEDs M and C are ON continually, and the alarm beeps.



To stop the test press the ***STOP*** button at any time during the test. The POB-D switches to the **MTV DC** menu (Figure 5-5) and LED C is off.

Note: There is an auxiliary (AUX) contact in the breaker circuit, which intersects the circuit protecting the coil. This way the POB-D device detects the moment when the current drops to and the voltage at that instant of time is defined as the lowest coil activation voltage.

5.3 Duty Cycles

During the test, the POB-D generates a high current that heats up the test set. To prevent overheating of the POB-D, certain duty cycles apply depending on the test voltage and current being deployed.
The POB-D is a powerful and versatile unit with the possibility to generate an initial current of 30 A (POB30D) and 40 A (POB40D) at 230 V mains supply as well as the continuous current according to the tables below:

Model	Mains Voltage	Load Voltage	Max Current	Max load interval
POB30D	230 V	110 V DC	24 A 20 A 10 A	20 sec 60 sec contin.
		220 V DC	12 A 10 A 7 A	20 sec 60 sec contin.
	120 V	48 V DC	24 A 20 A 10 A	20 sec 60 sec contin.
		110 V DC	12 A 10 A 7 A	20 sec 60 sec contin.
		125 V DC	10.6 A 8.9 A 3.5 A	20 sec 60 sec contin
		220 V DC	7 A 6 A 5 A	20 sec 60 sec contin.

Model	Mains Voltage	Load Voltage	Max Current	Max load interval
POB40D	230 V	110 V DC	30 A 24 A 12 A	20 sec 60 sec contin.
		220 V DC	15 A 12 A 8 A	20 sec 60 sec contin.
	120 V	48 V DC	30 A 24 A 12 A	20 sec 60 sec contin.
		110 V DC	15 A 12 A 8 A	20 sec 60 sec contin.
		115 V DC	13.2 A 10.5 A 7 A	20 sec 60 sec contin.
		220 V DC	8 A 6 A 5 A	20 sec 60 sec contin.

6 Error Messages

Any operational error is indicated by continual light on the C and M LEDs along an audio alarm. Furthermore, the display indicates an error status message.
Press the ***STOP*** button to stop the alarm buzzer, remove the status message off the display and return to the **Volt DC** menu.

6.1 Error Message "Over current"

This message is displayed if the test current is too high. In this case reduce the test voltage and repeat the test.

Figure 6-1:
Error message
"Overcurr"

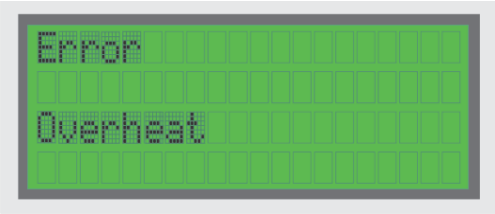
6.2 Error Message “Overheat”

This message is displayed when POB-D’s operating temperature rises too high.

The reason for this could be:

- ambient temperature too high (refer to section 10),
- despite the duty cycle time control, too many high current tests were performed in a too short period of time.

Figure 6-2:
Error message
"Overheat"



New test could not commence before the device has cooled down. In this case, wait for the test set to cool down and repeat the test.

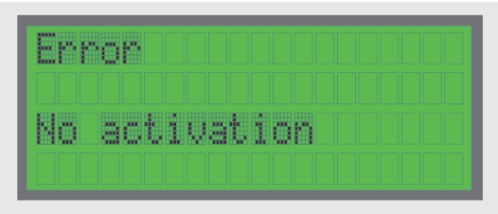
6.3 Error Message “No activation”

This message is displayed if the POB-D reaches the maximum pre-selected voltage and the coil is not yet actuated during the automatic test on the coil.

The reason for this could be:

- maximal pre-selected voltage is not high enough for coil activation,
- test cables between the coils and the instrument are not connected properly.

Figure 6-3:
Error message
"No activation"



Select a higher test voltage (the max pre-selected value) or verify cable connections. Repeat the test.

6.4 Error Message “Malfunction”

If this message is shown on the display, or if POB-D cannot be operated anymore, a serious internal error occurred.

Figure 6-4:
Error message
"Malfunction"

Please do not open POB-D by yourself. Contact IBEKO Power AB (please refer to Section ”Manufacturer Contact Information”).

7 Troubleshooting

7.1 Voltage test

If the device is suspected of presenting inaccurate voltage values, the DC voltage measurement check should be performed as described bellow.

7.1.1 DC voltage measurement check

1. Connect the DC voltmeter to the POB-D Breaking or Closing Coil DC output, as shown in the Figure 7.1.
2. Choose voltage values on the device according to the Table 7.1, to cover all ranges.
3. To choose a Coil's test, press ***COIL*** key on the device.
4. Compare each voltage value measured with DC voltmeter to the expected voltage value from the Table 7.1. In the case of major differencies please contact DV Power support team.

Figure 7.1 – *DC voltage test connection*

Voltage on the device [V]	Expected voltage value [V]
24	*23,69 – 24,31*
48	*47,63 – 48,37*
72	*71,57 – 72,43*
110	*109,1 – 110,9*
150	*149 – 151*
200	*198,85 – 201,15*
230	*228.75 – 231.25*
260	*258.7 – 261.3*

Table 7.1 – *DC voltage measurement check*

7.2 Current test

If the device is suspected of presenting inaccurate current meaurement values, the current measurement check described bellow should be performed.

1. Connect the POB-D, DC voltmeter, 5 Ω load and 10 mΩ test shunt, as shown in the Figure 7.3.
2. Choose voltage values on the device according to the Table 7.3.
3. To choose the *Spring charging Motor* test, press the MOTOR key on the device.
4. Measure the voltage drop on the test shunt R_{shunt} using a DC voltmeter.
5. Compare the current value displayed on the device and the measured voltage drop on the test shunt with the expected values in the Table 7.3. In case of major differencies please contact DV Power support team.

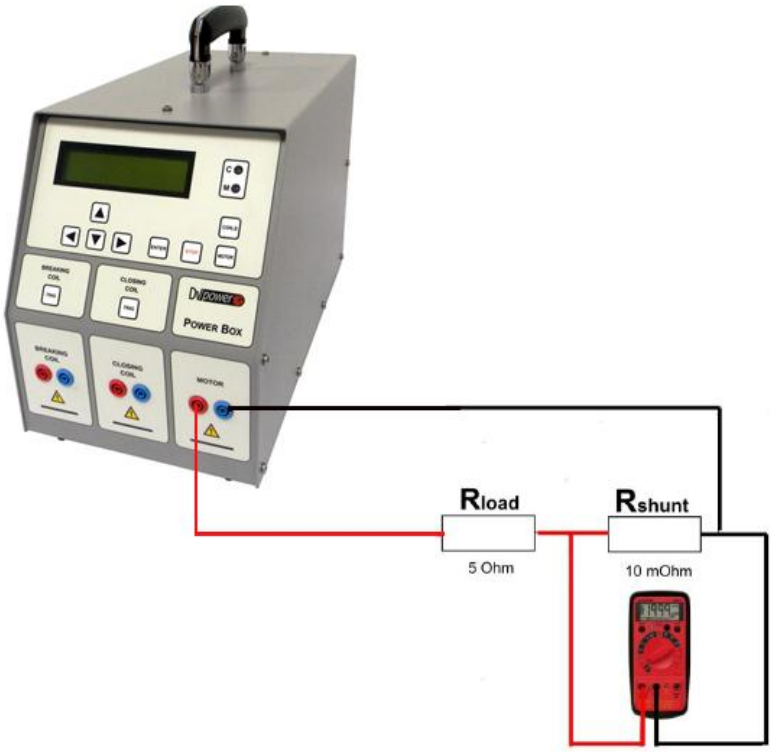


Figure 7.3 – *Current test connection*

R_{load} [Ω]	R_{shunt} [Ω]	Voltage on the device [V]	Current value on the device [A]	Measured voltage drop on the test shunt V_{shunt} [mV]	Power through the load [W]
5	**10m**	**20**	*3,96 – 4,04*	*39,6 – 40,4*	80
5	**10m**	**40**	*7,95 – 8,05*	*79,5 – 80,5*	320

Table 7.3

NOTE: ***Please pay attention to the maximal power allowed through the load. Maximal power through the load is 320 W, when the voltage on the POB30D device is 30 V (POB40D device is 40 V). If there is no available load that can handle that power, please do not perform this test.***

8 Customer Service

Before calling or sending an e-mail to the Customer Service for assistance, please perform the following steps:

1. Check all cable connections.
2. Try to perform the test with another instrument, if available.
3. Perform the troubleshoot procedure as described above.
4. Provide the following information:

- Instrument serial number, hardware configuration description, and software version
- Comprehensive description of the problem, including information about the test object characteristic, error messages and the sequence of events before it appeared
- List of solutions that have been tried

The Customer Support Department can be reached at:

Local support (Sweden): +46 8 731 78 24
International support: +46 70 0925 000
E-mail: support@dv-power.com

Note: Email communication is preferred for support issues, since the case is then documented and traceable. Also, the time zone problems and issues with occupied telephones do not occur.

9 Packing the Instrument for Shipment

If the instrument needs to be shipped to DV Power for servicing, please contact the DV Power Customer Service at:

Local support (Sweden): +46 8 731 78 24
International support: +46 70 0925 000
E-mail: support@dv-power.com

Note: DV Power is not responsible for any damage during shipping. Please protect each instrument from shipping and handling hazards carefully. Please ensure that the protective covers are securely in place. Instruments should be sent to DV Power freight pre-paid, unless other arrangements have been preauthorized by the DV Power Customer Service.

To prepare the instrument for shipment, please follow these instructions:

1. Disconnect and remove all external cables. Do not include manuals, cables, and transducer connecting rods unless instructed by the DV Power Customer Service.

2. Reuse the original packing material if available. If it is not available, pack the instrument for shipment according to the instructions for fragile electronic equipment. It is recommended to use a two-wall minimum corrugated cardboard box with a minimum 5 cm (2 inch) thick poly foam padding, or a wooden crate with minimum of 5 cm (2 inch) thick poly foam padding all around.

10 Technical Data

10.1 Mains Power Supply

- Connection	according to IEC/EN60320-1; UL498, CSA 22.2
- Voltage single phase	96 V – 264 V AC, +10% – -15%
- Frequency	50 Hz

10.2 Output data

	Max DC Current	Output DC Voltage
POB30D	30 A	10 V - 300 V
POB40D	40 A	10 V - 300 V

10.3 Measurement

- Voltage	1 V – 300 V DC or 1 V – 250 V AC
- Current	1 A – 50 A
- Accuracy	± (0,25 % rdg + 0,25 % F.S.)

10.4 Environmental conditions

- Operating temperature	-10 °C - +50 °C / 14 °F - +122 °F
- Storage temperature	-25 °C - +70 °C / -13 °F - +158 °F
- Humidity	5% – 95% relative humidity, non-condensing

10.5 Dimensions and Weight

- Dimensions	205 mm x 287 mm x 480 mm (W x H x D) without handle 8 in x 11.3 in x 18.9 in
- Weight	10,6 kg / 22.5 lbs

10.6 Safety Standards

- European standards	LVD 2006/95/EC EN 61010-1
- International standards	IEC 61010-1 UL 61010-1 CAN/CSA-C22.2 No. 61010-1, 2nd edition, including Amendment 1

10.7 Electromagnetic Compatibility (EMC)

- CE conformity	EMC directive 2004/108/EC
- Emission	EN 61326-1
- Immunity	EN 61326-1

11 Accessories

Accessories	Article number
Mains power cable	
Ground cable	
Cable set 6 x 2 m, 2,5 mm^2	**C6-02-02BPBP**
Cable set 6 x 5 m, 2,5 mm^2	**C6-05-02BPBP**
Extern trigger cable 2 m	**TC-02-04MCBP**
Device bag	**DEVIC-BAG-00**
Cable bag	**CABLE-BAG-01**
Transport case	**HARD-CASE-P0**

Manufacturer Contact Information

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