AWILCO

IMDBOX SAFETY SYSTEM

AWIMDBOX

USER MANUAL

Please be sure to read and save the entire manual before using the **IMDBOX**. Misuse may result in damage to the unit and/or cause harm or serious injury.

PLEASE KEEP THE MANUAL FOR FUTURE REFERENCE

SERVICE AND CONTACT INFORMATION

Email:	mail@awilco.dk
Phone:	+45 56 56 54 00
Web:	awilco.dk

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For safe and optimum performance, the **IMDBOX** must be used properly.
Carefully read and follow all instructions and guidelines in this manual and give special attention to the **CAUTION** and **WARNING** statements.

PLEASE NOTE: For optimal safety, extension cords are required to have an earth conductor.

PLEASE KEEP THIS MANUAL FOR FUTURE REFERENCE

DISCLAIMER

While every precaution has been taken to ensure the accuracy of the contents of this guide, **AWILCO ApS** assumes no responsibility for errors or omissions. Note as well that specifications and product functionality may change without notice.

IMPORTANT

Please be sure to read and save the entire manual before using the **IMDBOX**.
Misuse may result in damage to the unit and/or cause harm or serious injury. Read manual in its entirety before using the unit and save manual for future reference.

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1. PRODUCT DESCRIPTION:

The intended use of this IMDBOX is to ensure electrical safety when using an AC 230V energypower systems, e.g. mobile inverters- or generators run by fossil fuel inside a vehicle, by the means of protective measure". Protective separation with insulation monitoring and disconnection". All essential components are included in the IMDBOX ready-to-connect safety distribution box.

F1 = RCBO

Q1 = CONTACTOR

Q2 = ISOLATION MONITORING DEVICE

The safety distribution box is also suitable for retrofitting purposes of e.g. existing AWILCO energy/power systems.

To provide the highest safety, the AWIMDBOX is equipped with both a combi C16A/30mA RCBO protection relay (RCD type A acc. to IEC 61009), and an Isolation Monitoring Device (IMD acc. to IEC 61557-8) combined with a 16A contactor.

The combination of both the protective separation (in practice an unearthed system, also called an isolated system or an IT-system) and the integrated protective devices mentioned above, gives a safe environment for end users of AC 230V, both inside and outside vehicles equipped with AC 230V systems connected to the IMDBOX.

2. APPLICATION:

The integrated IMD in the IMDBOX continuously monitors the insulation resistance of the unearthed system (IT-system / isolated system). The currently measured insulation resistance is indicated on the built-in diode-LED of the IMD. In this way, changes such as the connection of loads via the socket(s) can easily be visual detected, through the transparent hatch in the electrical switchboard.

An advantage of an IMD is that the standard requires, that it must support a prescribed measuring principle which enables the IMD to monitor both symmetrical and asymmetrical deteriorations in insulation.

The definition of a symmetrical deterioration in the isolation level can be said to occur, when the insulation resistance of all conductors in the system to be monitored, declines to approx. the same extent. An asymmetrical isolation deterioration can be said to occur when the isolation resistance, e.g. of a conductor, declines to a significantly greater extent than that of the other conductor(s) in the system.

If an overload or a short circuit occurs e.g. in a consumer load connected to the IMDBOX via the socket(s), the RCBO will be activate, and herby automatically provide disconnection of the AC 230V output supply. Correspondingly, if an isolation fault (a first fault) of less than 23kΩ occurs, the IMD inside the IMDBOX will also activate a disconnection of the AC 230V output supply, via the built-in contactor. At the same time, the alarm diode in the IMD will light up as a visual alarm.

3. INSTALLATION:

Only qualified and/or skilled personnel are allowed to install the IMDBOX.

The IMDBOX only protects one AC 230V source/socket.

If the AC 230V source/socket inside the vehicle has multiple sockets, you have to blind ALL others than the one connected to the IMDBOX.

USE: IMDBOX **BLIND**

3. INSTALLATION:

CAUTION: Always switch off all equipment before installing.

START UP CONNECTION

- When IMDBOX is installed, always use ground cable (Yellow/green) in output (FIXED).
- "FIXED" means no sockets are attached, the user chooses what type of socket he want to mount, SHUKO, UK socket etc.
- IN: Input-cable from the AC 230V source inside the vehicle (e.g. Inverter, Power system, generator etc.)
- OUT: Output from AWIMDBOX, providing safe AC 230V to power tools or distributer plugs.

3. INSTALLATION:

IMPORTANT!
All equipment attached to IMDBOX after SHUKO socket/UK Socket has to have earth wiring.

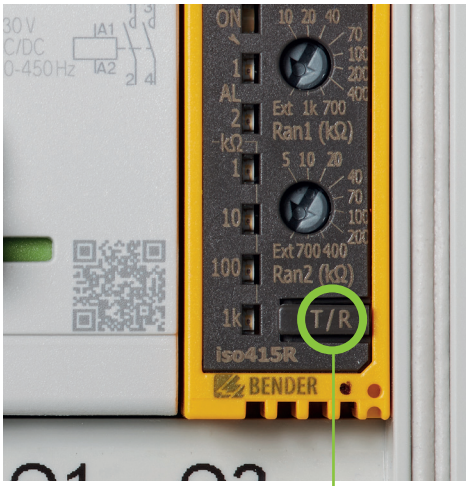
4. TEST/RESET FUNCTION:

When the IMDBOX detects an insulation fault, it will disconnect the AC 230V output.

PROCEDURE TO RESET

1. Unplug the connected power tool
2. Open the IP65 hatch on the IMDBOX
3. Press the T/R button on the yellow (Q2) IMD relay until it resets (approx. 3 seconds). The T/R button is the test/reset button on the IMD relay.
4. Close the hatch and ensure the power tool is safe to use before re-connected.

The TEST button on the IMD relay can also be activated for test purposes, if needed.



T/R = TEST / RESET

5. FAULT CODE AND TROUBLE SHOOTING:

LED LIGHTS IN IMD RELAY

1. If only the green ON-LED lights, the system are OK, the IMD covers the system = NO fault.

   2. In the event of the yellow-LED lights, there is an earth fault present!! (STOP) Disconnect/unplug the connected power tool from AWIMDBOX).

3. Go to the Procedure to RESET.

FAULT (YELLOW LED IN IMD)

1. Disconnect the connected power tool from IMDBOX

2. Search and find fault before using the AWIMDBOX.

CAUTION: NEVER press the T/R button before a fault is found and repaired.

SETTINGS ON IMD RELAY

The settings in the IMD relay are preinstalled from AWILCO and **must not be modified.**

SELF TEST IMD

When AWIMDBOX is installed correctly, the IMD inside the box will do a self-test.

The IMD will make a self-test every time the AWIMDBOX has been disconnected from AC 230V and reconnected to AC 230V again.

6. WARRANTY AND CE MARKING:

The warranty of this product follows the normal rules for B2B in and outside of Europe.

Awilco' CE mark for this product covers the AWIMDBOX, its components and its internal electrical wiring in the IP65 box, as long as no mechanical and/or electrical changes are made to this switchboard.

7. SPECIFICATIONS:

PRODUCT NUMBER	AWIMDBOX
STANDARD	IEC 61439-1, -3
INTERNAL FORM	Form 1
POLLUTION DEGREE	2
EMC ENVIRONMENT	1
ENCLOSURE MATERIAL	Impact resistant polyester
IP CLASS	IP65 (IP20c with open hatch)
RATED IMPULSE VOLTAGE	250V
EARTHING SYSTEM	IT-system
RATED VOLTAGE UE	1 x 230 VAC
IKMAX., ICF	6kA
MAX. IK, ICW	0,28kA
MAX. I2T	78400A2S
NOMINAL CURRENT, IE	max. 16 A
PROTECTION AGAINST INDIRECT CONTACT	- CONNECTION BOX: Total isolation - OUTGOING CIRCUIT: Automatic disconnection
OPERATING TEMPERATURE	-25°C to +60°C
STORAGE TEMPERATURE	0°C to +50°C
WEIGHT	1.32 kg
DIMENSIONS	115x200x150 mm (HxLxW)
CERTIFICATES	CE Conformity DGUV 203-032 Conformity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