

# HVSB – High-Voltage Safety Box

## HV laboratory equipment for validation tasks of power electronics

### OVERVIEW OF HVSB

Bosch Engineering's High-Voltage Safety Box ensures maximum safety for testing the electric vehicle power electronics of the drive in the high-voltage lab. The compact HV safety module includes all relevant safety and comfort functions required for the circuit of the component under test.

Due to the possibility to integrate the HV safety box flexible into existing laboratory equipment, now many of the tests on the power electronics of electric vehicles can be safely shifted from the test bench to the high-voltage laboratory. It protects the tester and the power electronics itself during the everyday test operation in the development laboratory.



High-Voltage Safety Box (HVSB)



Example: HVSB integrated in the HVLR

### Functions

- ▶ Safe switching and monitoring of high-voltage up to 1,200 Volt / 200 Ampere
- ▶ Isolation and operation monitoring
- ▶ HV interlock
- ▶ Safety PLC
- ▶ Precharge and active discharge function
- ▶ Emergency shut-off
- ▶ Touchscreen or external monitor as central operating and display unit
- ▶ Remote controllability
- ▶ Integration into test automation
- ▶ Safety and comfort function

The protection concept covers potential causes of accidents and reduces the risks when working on the high-voltage circuit. Another resulting advantage is the protection of the test object from damage during testing and the reduction of component wear. This is particularly advantageous for prototype components that are only available in small quantities.

The HV safety box is conveniently operated via a touchscreen display or external monitor, which provides a clear-cut overview of all operating parameters such as status messages, information on system settings, and any error warnings.

The HVSB offers isolation monitoring, an interlock circuit, integration into a laboratory emergency stop shut-off concept and a PLC interface with which the HVSB can be integrated application-specific into the test automation of the respective environment and operated remotely.

The HVSB was developed in the context of the High-Voltage Lab Rig (HVLR) and can therefore be easily integrated into it.

## TECHNICAL FEATURES

HVSB – High-Voltage Safety Box	
Dimensions (H x W x D)	400 x 483 x 710 mm
Weight	39 kg
Supply voltage	230 V AC
Current carrying capacity	200 A
Dielectric strength	1.200 V
Isolation monitoring	✓
Interlock	✓
Safety PLC	✓
Emergency shut-off	✓
Precharge function	✓
Active discharge function	✓
Remote control	✓
HV-Sense	✓
Automation interface	2 x digital input for switching requirements HV relay 2 x digital output for switching status HV relay
Communication interfaces	1 x DVI (monitor) 1 x USB 1 x safety relay (DSUB9) 1 x CAN (optional)
External control and emergency shut-off interface	analoge and digital in-/output
Control and operation module	touchscreen / external monitor
Developed according to standards	DIN EN ISO 13849 DIN EN 61010 DIN EN 61326 (EMC)
Devices to test	inverter, DC/DC converter, converter

### Order data

#### Article description

- HVSB – High-Voltage Safety Box

#### Price and delivery time

upon request

### Individual solutions

**We offer individual customization according to your requirements**

contact us

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