

HVLR - High Voltage Lab Rig

Lab equipment for validation tasks of power electronics

OVERVIEW OF HVLR

Bosch Engineering's High Voltage Lab Rig (HVLR) offers a fast, efficient and, above all, safe solution for testing the electric vehicle power electronics of the drive in the development lab. The system integrates a high-voltage power supply and electronic safety functions for the circuit of the component under test in a portable compact control cabinet.

Many of the tests on the power electronics of electric vehicles can therefore be shifted from the test bench to the high-voltage laboratory. This frees up valuable bench capacity for other testing and validation tasks, thereby reducing development time and costs.

Thanks to its modular design, the test system can be flexibly adapted to individual customer requirements. For example, different voltage levels of up to 1,200 volts as well as different communication interfaces can be selected.

Functions

- ▶ Safe switching and monitoring of HV 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
- ▶ Modular design

A key focus in the design of the HVLR was safety in everyday test operations. 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. This is particularly advantageous for prototype components that are only available in small quantities.

The system 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 safety functions are implemented in the High Voltage Safety Box (HVSF). This offers isolation monitoring, an interlock circuit, integration into a laboratory emergency stop shut-off concept and a PLC interface with which the HVLR can be seamlessly integrated into the test automation of the high-voltage laboratory and operated remotely. The HVSF is included with the HVLR, but is also available as a separate module, for example to retrofit the safety functions and the PLC interface to existing high-voltage power supplies.



High Voltage Lab Rig (HVLR)

TECHNICAL FEATURES

HVLR - High Voltage Lab Rig	
Dimensions (H x W x D)	2,150 x 620 x 1,150 mm
Weight	650 kg (config. dependent)
Supply voltage	400 V AC / 63 A (CEE)
HV output voltage	max. 1,200 V DC / 200 A
NV output voltage (optional)	e.g. 24 V DC
Power consumption	32 kW
Isolation monitoring	✓ (HVSB)
Interlock	✓ (HVSB)
Safety PLC	✓ (HVSB)
Emergency shut-off	✓ (HVSB)
Precharge function	✓ (HVSB)
Active discharge function	✓ (HVSB)
Remote control	✓ (HVSB)
Automation interface	✓ (HVSB)
HV-Sense	✓ (HVSB)
Signal light	✓
HV support capacitor	✓ (optional)
3-phase dummy load (optional)	max. 600 A (short-term)
Perm. ambient temperature	5 °C – 40 °C
Communication interfaces	1 x DVI 1 x USB 1 x CAN (optional)
External control and emergency shut-off interface	analog and digital in-/output
Peripheral interface	test chamber (OSSD)
Control and operation module	touchscreen / external monitor
Standards complied with	DIN EN ISO 13849 DIN EN 61010 DIN EN 61326 (EMC)
Devices to test	inverter, converter

Order data

Article description

- HVLR - High Voltage Lab Rig
- HVSB - High Voltage Safety Box

Price and delivery time

upon request

Individual solutions

We offer individual customization according to your requirements

contact us

Bosch Engineering GmbH

Bergfeldstraße 2
83607 Holzkirchen
Deutschland
TestingTechnology.BEG@de.bosch.com
www.bosch-engineering.com