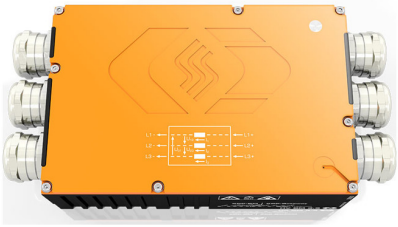

CSM Type 3.1 OBC HV Breakout Module Instructions

Safety Instructions
HV Breakout Module Type 3.1 OBC

Contents

General safety instructions

Please observe the following safety instructions and the signs and symbols printed on the measurement modules as well as the safety-specific information in the accompanying technical documentation.

 **WARNING!**

HV BM 3.1 OBC measurement modules are used in high-voltage applications.
The improper use of the HV measurement module may result in life-threatening electrical shocks.
☞ Only use qualified and trained personnel.
☞ Observe safety instructions.

 **WARNING!**

The orange lid of the device housing may be opened to mount or remove the HV power cables.
☞ Before handling, especially before opening the lid, make sure that the HV power cables are de-energized.
☞ Fix the HV power cables preferably with the ring terminals and nuts supplied.
☞ Observe the mounting instructions in the user guide. It is particularly important that the lid and the cable glands are properly mounted in order to ensure the tightness of the housing.

 **WARNING!**

If the HV power cables cannot be disconnected from the power supply, there is danger to life due to electric shock!
☞ Make sure that the work in such cases is only carried out by trained, qualified electricians (please observe the applicable country-specific/local regulations).

 **WARNING!**

The improper opening of the device housing compromises the operational safety of the HV measurement module and entails the risk of life-threatening electrical shocks.
HV BM 3.1 OBC measurement modules are not integrated into the interlock loop. If the lid is not mounted, there is danger to life by accidentally touching non-insulated contacts at high-voltage potential.
☞ Remove the lid only to connect the HV power cables and then re-mount it properly.
☞ Do not carry out any mechanical or electrical modifications on the HV measurement module.
☞ Only operate the high-voltage measurement module with its lid closed.

 **WARNING!**

The internal temperature of the measurement module and the shunt temperatures must not exceed +120 °C. As soon as that value is exceeded, the module will send the error code “0x8001” and the error message “THERMAL_OVERLOAD” instead of a easured value until the temperature value drops again below +115 °C.
Exceeding the limit compromises the operational safety of the HV measurement module and entails the risk of life-threatening electrical shocks.
☞ Tighten the nuts for fastening the ring terminals to the shunts using the specified torque (observe the installation instructions in the user guide).
☞ Monitor the temperatures in order to make sure that the limit will not be exceeded.
☞ Reduce or interrupt the current flow through the shunt to avoid a further increase of temperature of the module.
→ User Guide “HV BM 3.1 OBC”, section “Options Info Message and BM Temperatures (additional CAN signals)”

 **WARNING!**

The measurement module has to be connected to the vehicle chassis or protective earth (PA/PE) in order to ensure user safety.
If the ground connection is not established, there is danger to life due to high voltage.
☞ Connect the measurement module to ground/PE using a suitable ground strap.
☞ Make sure that this work is only carried out by qualified and trained personnel.

 **WARNING!**

When using HV power cables made of aluminum in combination with ring terminals for
HV power cables made of copper, the contact resistance between the two components increases.
This can lead to a massive increase in temperature and in the worst case to the development of fire.

☞ Use ring terminals for copper cables only in combination with HV power cables made of copper!
HV power cables made of aluminum require a specific connection technology. Please contact our technical support for further information.

CAUTION!
The measurement module can heat up considerably if it is operated in a corresponding working environment (e.g. engine compartment). The shunts also heat up significantly during operation under high load. The surface and the inside of the measurement module can therefore become extremely hot.
Touching the surface may cause serious burns.
☞ Let the measurement module cool down before handling, especially before opening the orange lid.) Wear appropriate safety gloves, if required

- Make sure that HV BM 3.1 OBC measurement modules are only operated within an operating temperature range of -40 °C to +120 °C and at a relative humidity of max. 95 % (non condensing).
- To ensure operational safety, an HV BM 3.1 OBC has to undergo an isolation test in accordance with the latest edition of EN 61010 at least once per year.
- All documents supplied with a HV BM 3.1 OBC have to be read carefully and observed before initial operation. The operating personnel has to be instructed accordingly. Please contact CSM GmbH with any additional questions.

Our company is certified.

ISO 9001, ISO 14001
Certified Integrated Quality and Environmental Management System

www.tuv-sud.com/ms-cert

HV_BM_3.1_OBC_SI_0100_ENG_Serie 2023-07-10

CSM GmbrH
Computer-Systeme-Messtechnik
Raiffeisenstr. 36, 70794 Filderstadt, Germany
+49711-779640
info@csm.de
www.csm.de

Documents / Resources

	CSM Type 3.1 OBC HV Breakout Module [pdf] Instructions Type 3.1 OBC HV Breakout Module, Type 3.1 OBC, HV Breakout Module, Breakout Module, Module