HORIBA Global Support Network

Wherever you need us
Worldwide Sales & Service Network

- The specifications, appearance or other aspects of products in this catalog are subject to change without notice.
- Please contact us with inquiries concerning further details on the products in this catalog.
- The color of the actual products may differ from the color pictured in this catalog due to printing limitations.
- It is strictly forbidden to copy the content of this catalog in part or in full.
- Contractual preventative maintenance programs are available upon request. Contact your nearest HORIBA office or authorised representative for details.

Protect your emissions equipment and data in the toughest conditions
On-board Emissions Measurement System

OBS-ONE RE
(Rugged Enclosure)

Background
Since the introduction of NTE (Not To Exceed) for USA HD (Heavy Duty) On Road Vehicles in 2004, HORIBA has provided Portable Emissions Measurement Systems (PEMS) for In Service Conformity and Type Approval testing.

On road measurement of emissions has since extended to EU HD On Road Vehicles (In Service Conformity) and EU LD vehicles (Real Driving Emissions).

In 2019, it has become a requirement for some categories of Non-Road Mobile Machinery (NRMM) to perform and report In Service Monitoring – and the applicable categories are due to be extended under forthcoming EU legislation.

The NRMM application creates several challenges for OEMs, and for the OBS-ONE system. There are a wide variety of vehicles to be monitored with various conditions (environmental & operational) under which the measurements must be made. These include extreme variations in temperature, weather, shock and vibration. Special considerations also need to be taken into account in mounting on the vehicle. To overcome these challenges, HORIBA has developed the RE (Rugged Enclosure).

Whilst minimising the above effects on the OBS-ONE, the design allows its unique feature of front access and modularity to be retained, utilising the standard cables, connections and fittings. A key feature is the Wi-Fi module, which enables the NRMM driver to concentrate on the vehicle use.

Features
- Easy to Install
  - The RE allows the use of all the original OBS-ONE connections and cables; no special connectors are required.
  - Front access is for the heated line with a weather-proof brushed access point. All external connections enter via the top bulkhead, providing effective sealing of the OBS-ONE within the RE module.

- Adaptability
  - Designed to protect the OBS-ONE in a wide variation of temperatures from -7°C to +40°C; temperature controlled fans maintain a consistent internal temperature.
  - Dust filters are provided on the exterior covers.
  - A sub frame is provided for forklift handling, as well as D rings for overhead lifting.

- Accessibility
  - The RE is manufactured with all the OBS-ONE connections pre-fitted internally with cabling. This allows quick and simple installation of the OBS (GPS, Weather Station, Gas Supplies, Power etc.).

- Shock / Vibration Isolation
  - With long life and robust springs arranged for isolating movement in X, Y and Z directions, the OBS-ONE is protected from harmful vibrations and shock impacts, over a wide range of NRMM operating conditions.
  - The RE design is modular due to the springs, which can be changed easily on site should a new application require differing levels of shock / vibration isolation and damping.

- Additional Features
  - With inbuilt Wi-Fi, the RE allows the OBS to be remotely monitored and controlled from a distance.

NRMM (Non-Road Mobile Machinery) & HD (Heavy Duty) Specification

Protects against:
- Dust, Wind and Rain ingress
- Vibration
- Shock events
- Environmental variation

Provides:
- Maximum Duty
- Greater flexibility
- Temperature management
- Fast Setup
- Wi-Fi
- Easy mounting
- Ease of access

Total System Configuration

Recommended Setup

Recommended Setup Inside RE

Above layout is the recommended standard configuration for certification testing. A second enclosure is needed for the PN / PM Modules. Please contact your local HORIBA Group Office for further information on setups.
Harsh Operating Environments

The measurement accuracy of the OBS means that it must be protected from the extremes of NRMM operation e.g. weather conditions, dirt, dust, shock and vibration. The RE module has been designed to cope with the vast majority of such conditions.

Temperature controlled fans ensure that the internal temperature remains consistent over a wide range of ambient conditions.

NRMM & HD Challenges

Hot & Cold Climates

Testing is required to be within the normal driving conditions of the vehicle use, which can see it subjected to adverse weather conditions, and a variety of industrial applications.
Rigorous Solution

The RE’s development has included testing on a shaker rig and on NRMM vehicles, to ensure the product’s durability / robustness. Most importantly the analysers maintain a stable response within tolerance appropriate for certification.