



V23-1

 **7** YEAR WARRANTY

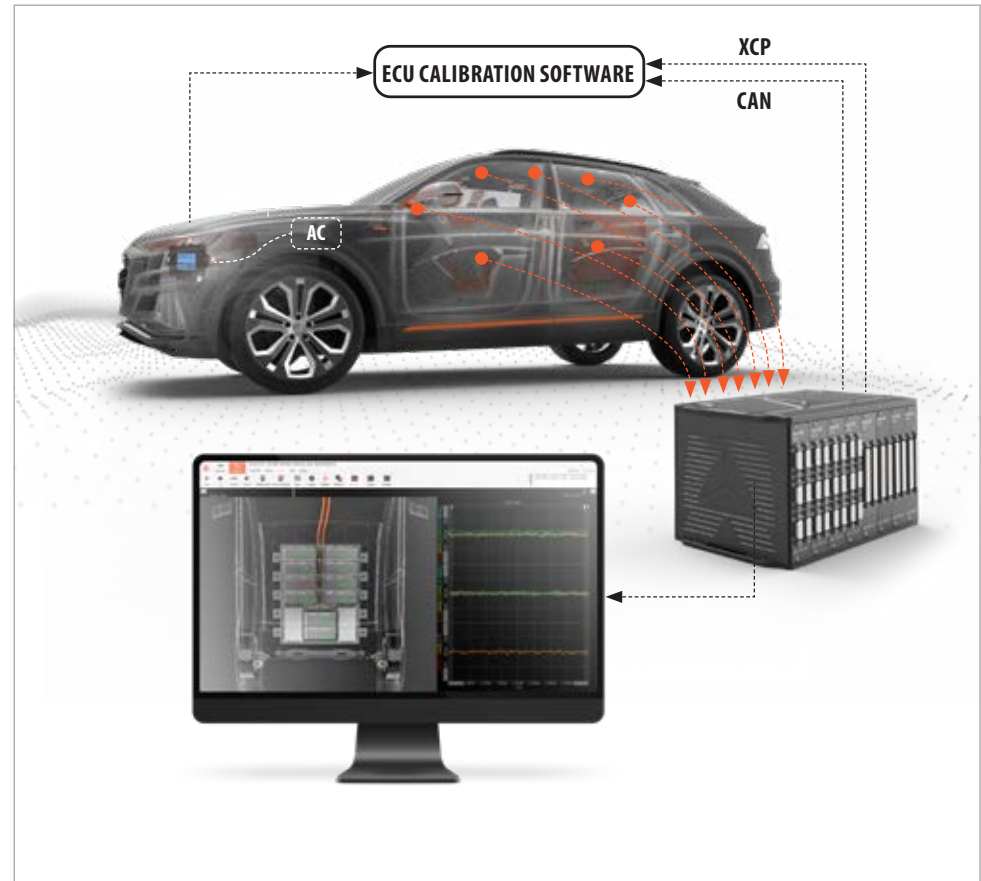
# **OBSIDIAN® R8** A WORLD OF NEW SOLUTIONS

**THE OBSIDIAN® SYSTEM OPENS A NEW WORLD OF APPLICATIONS.  
ITS EMBEDDED LINUX-BASED PROCESSING PLATFORM ALLOWS STAND-ALONE LOGGING AND REAL-TIME OPERATIONS.**



## **STAND-ALONE DATA RECORDER**

The OBSIDIAN R8 system can store data autonomously from objects in the air, on land, or in water. Its rugged design and robust operating system enable long-term data storage. You can store analog, digital, and positional data for months or even years. You can easily monitor the device's status through a simple indicator system or by using the advanced mobile application.



## **SIGNAL CONDITIONING AND REAL-TIME INTERFACES**

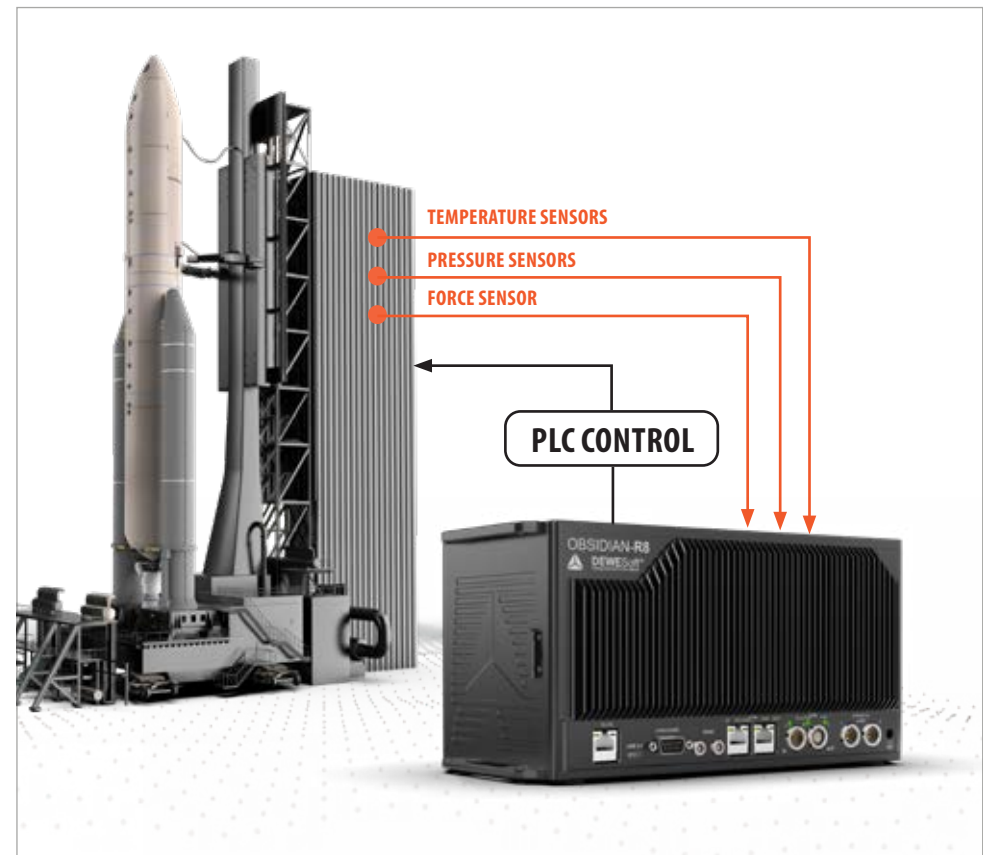
The OBSIDIAN R8 system offers you extensive and accurate analog signal conditioning. It provides nanosecond precise synchronization with CAN and CAN-FD bus. The system also includes an embedded operating system. It can deliver real-time data through multiple interfaces, including CAN bus, XCP over Ethernet, EtherCAT, and OPC UA.

# OBSIDIAN<sup>®</sup> R8 A NEW WORLD OF SOLUTIONS



**FLEET MONITORING**

The OBSIDIAN R8 offers you unattended data collection. It can store your data internally or on a removable SDHC card with large capacity. Additionally, it provides you the option to remotely configure and monitor measurement systems in multiple vehicles/objects. You can do this through Wi-Fi or 5G network from any location.



**DATA ACQUISITION AND REAL-TIME CONTROL**

The OBSIDIAN R8 offers a redundant power supply for continuous operation. It has internal fixed storage and you can also use an SDHC card or external USB-C disc. It lets you transmit data on interfaces like Ethernet, EtherCAT, and CAN. It includes real-time control of analog outputs. This makes the OBSIDIAN R8 suitable for mission-critical applications, providing robustness, reliability, and multi-redundancy as a measurement system.

# OBSIDIAN® R8 HIGHLIGHTS

## THE FIRST DEWESOFT EMBEDDED COMPUTING DEVICE.

### HIGH-END SIGNAL CONDITIONING

OBSIDIAN R8 offers prime signal conditioning. With its range of input modules, you can measure voltage, current, strain, displacement, vibration (IEPE), sound, temperature (thermocouples and RTD), digital, counters up to **20 ks/s**.

Proven high-quality Dewesoft data acquisition hardware combined with the award-winning DewesoftX data acquisition software ensures data collection without losing even a single sample and provides excellent data visualization and processing capabilities.

### WIDE OPERATING TEMPERATURE RANGE

OBSIDIAN systems are labelled to run from -10°C to 50°C, although certain configurations can operate in the environments ranging from -40°C to +85°C.

### EMBEDDED PROCESSING

Built-in processor with real-time Linux operating system - ideal for embedded applications such as unattended data recording, cloud connection and real-time control and automation.

### DUAL INTEGRATED CAN PORTS

Enables recording of all raw CAN traffic or online decoding of individual messages. Support of ISO11898, J1939, as well as XCP protocol. Functionality for transmitting of any signal.

### EXCESSIVE CONNECTIVITY

Primary communication through Ethernet, Wi-Fi or EtherCAT, supported additional standard protocols include XCP, OPC-UA and CAN. Secondary communication through standard EtherCAT protocol with real-time 3rd party controller.





# OBSIDIAN<sup>®</sup> R8 HIGHLIGHTS



## PERFECT SYNCHRONIZATION

Optional GPS with a timing accuracy of ~20 ns. Simple synchronization with other Dewesoft product lines and support of PPS, PTPv2 and IRIG-B-DC timing protocols.

## DEWESOFT RT CORE

Enabling on-board real-time data processing and triggering, typical for open and closed-loop control.



## EXPANDABLE STORAGE

In addition to the internal data storage, OBSIDIAN R8 features a storage expansion slot for standard SDHC cards of up to 2 TB and a USB Type-C interface for external drives. This opens for simple storage expansion and also an easy way to transfer data.

## REDUNDANCY

Redundant data storage and interface with an additional power supply seamlessly switching between available power sources and providing non-stop availability even for the most demanding applications.

# OBSIDIAN® R8 AMPLIFIERS

## IOLITE 32xDI

32-channel module for Digital input with terminal block connector.

## IOLITE 6xSTG

Universal 6-channel differential voltage and Full/Half/Quarter bridge input with DSUB9 connector. Compatible with DSI adapters for IEPE, CHG, 200V, RTD, and TH measurements.

## IOLITEi 8xLV

8-channel-channel isolated voltage input with  $\pm 100V$  or  $\pm 10V$  input range and BNC or terminal block connector.

## IOLITE 8xACC

8-channel-ground isolated module for IEPE and voltage inputs with BNC connector type.

## IOLITEi 8xTH/8xTH-HS

8-channel-channel isolated universal thermocouple input module with miniTC connector. Accepts K, J, T, R, S, N, E, C, B thermocouple types.

## IOLITE 16xLV

16-channel-ground isolated  $\pm 200V$  or  $\pm 10V$  analog input module with screw terminal connector.

## IOLITE 8xLVe

8-channel-ground isolated module with  $\pm 100V$  and  $\pm 5V$  input range and sensor power supply. Voltage, current (ext.shunt) and potentiometer supported modes with terminal block or DSUB37 connector.

## IOLITE 16xAO

16-channel differential analog output module with  $\pm 10V$  voltage range and terminal block connector.

## IOLITEi 8xRTD/8xRTD-HS

8-channel-channel isolated PTx temperature, resistance and voltage with either LEMO or terminal block connector.

## IOLITEi 8xLA

8-channel-channel isolated module for current measurements with  $\pm 20mA$  and  $\pm 2mA$  ranges with BNC or terminal block connector.

## IOLITE 8xSTGS

8-channel-ground isolated cost effective strain gage amplifier supporting Full/Half/Quarter bridge input with terminal block or DB37 connector.

## IOLITE 4xCNT

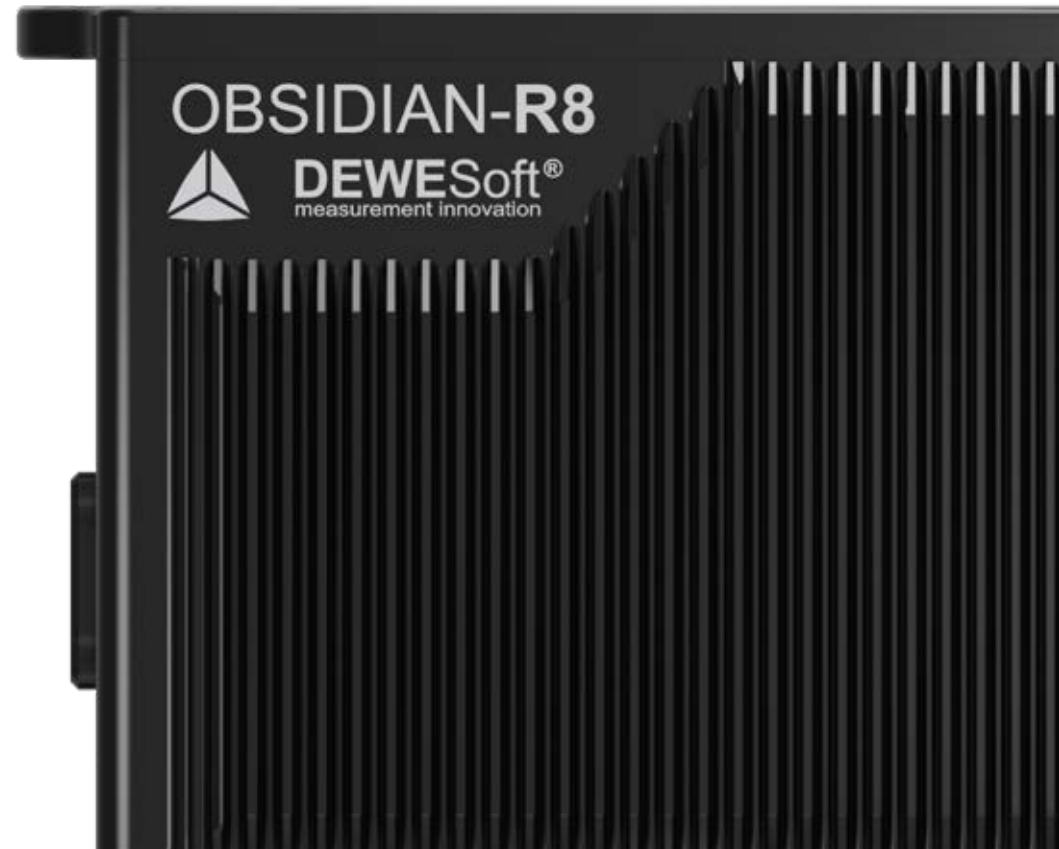
4-channel supercounter module with LEMO connector for angle measurement of tacho, gear tooth, flywheel and encoder sensors.

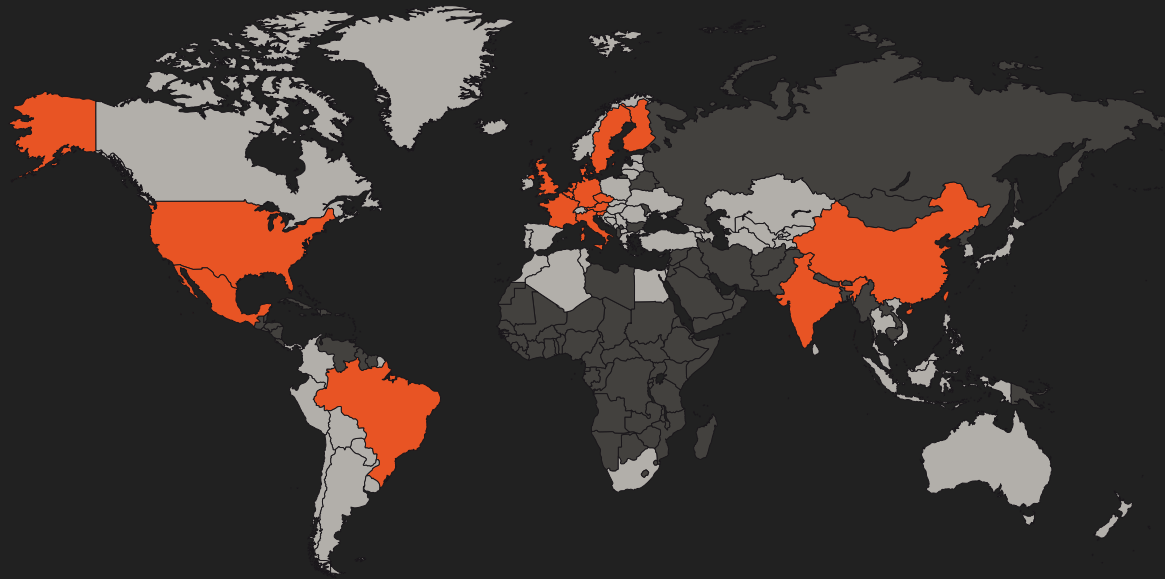


# OBSIDIAN® R8 SYSTEM SPECS



Chassis	8-slot OBSIDIAN R8 chassis
Processor	ARM Sitara AM5726 processor, 2GB RAM, Linux, DewesoftRT
Storage	Internal 32 GB, optional SD card up to 2 TB or USB Type-C external storage
Network	Dual EtherCAT® interface: Primary interface connected to ARM® CPU as master with 2x LEMO 1B 8pin (IN, OUT) Secondary interface 2x RJ45 (IN, OUT)
USB	1x USB Type-C for external storage or external GPS receiver
CAN bus	2x CAN 2.0 interface, DSUB9 connector
Power supply	9-48V
Physical dimensions	282x145x144





**DEWESOFT® WORLDWIDE:** SLOVENIA, Austria, Belgium, Brazil, Czech, China, Denmark, Finland, France, Germany, Hong Kong, India, Italy, Mexico, Singapore, Sweden, UK, USA and PARTNERS IN MORE THAN 50 COUNTRIES

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