



FEDERATION INTERNATIONALE DE L'AUTOMOBILE

**INSTALLATION SPECIFICATION FOR
FIA-APPROVED 8872-2018 ACCIDENT DATA RECORDER (ADR)**

05-02-2021

FOREWORD

Accident Data Recorder (ADR) devices are designed to measure and record accident data such as in-car accelerations along three axes (X, Y and Z) – also referred to as “G-forces”, as well as context vehicle data, when available.

The aim of this specification is to provide objective installation requirements of FIA-approved 8872-2018 ADRs listed in Technical List no. 88, so that meaningful data is recorded.

Competitors shall install the ADRs according to the instructions defined in this document (INSTALLATION SPECIFICATION FOR FIA-APPROVED 8872-2018 ACCIDENT DATA RECORDER (ADR)), and in the User's Manual provided by the manufacturer. In case of conflicting information, this document will prevail.

In addition, the ADR installation shall also comply with the requirements set out in Appendix J, the relevant championship technical regulations, or the car Homologation Form.

1 System specification

For the system specification, fixation, orientation and connectivity details, please refer to the User's Manual provided by the manufacturer.

2 System position

- 2.1 - The ADR shall be as close to the nominal centre of gravity of the car as practical,
 - GT / Touring / Rally cars: between the driver and passenger spaces, typically on the tunnel (where applicable).
 - Prototypes: within the monocoque, as close as possible to the car centre line.
 - Single-Seaters: within the monocoque, under the driver's seat back or under the seat-kick.
- 2.2 - The mounting position shall be sufficiently stiff for its purpose.
- 2.3 - The underside of the device shall be in full contact with the mounting surface.
- 2.4 - The ADR shall be easily accessible to help scrutineering and allow easily the replacement of the device.
- 2.5 - The ADR has a built-in status light to show the unit has recorded an accident. It also provides relevant diagnostics to the user regarding the status of the ADR. As such, the unit shall be mounted in a location where the status light is visible when the occupant(s) is(are) seated normally. Where this is not possible, a remote status light shall be installed in a visible location for scrutineering, and connected to the relevant pins of the ADR.

3 System orientation

- 3.1 - The device shall be mounted in accordance with the manufacturer User's Manual. The positive X-axis shall point forward along the longitudinal axis of the car ± 2.5 degrees.
- 3.2 - The mounting surface shall be horizontal ± 2.5 degrees.

4 System fixation

- 4.1 - An interface plate may be used to simplify the installation and strengthen the mounting surface to isolate the device from vibrations. In this case:
 - (i) the device must be in sufficient contact with the plate, and the plate must be in sufficient contact with the chassis.
 - (ii) the interface plate shall be made from steel or aluminum of minimum 5 mm thickness.
- 4.2 - The device and its interface plate, if used, must not be fitted to any form of unsupported tray.
- 4.3 - The device shall be hard mounted using all the holes provided for such purposes, and secured to the mounting surface or interface plate using the number and type of bolts defined by the manufacturer. The length of the bolts shall be sufficient to ensure 4 mm MIN

engagement with the nut or insert.

- 4.4 - The ADR device shall not be modified.
- 4.5 - The use of Velcro, double or single sided tape, rivets or anti-vibration mounts is prohibited in any of the interfaces between the device, chassis and interface plate (if used).
- 4.6 - Any exception to these installation rules must be authorised directly by the FIA.

5 Power supply

- 5.1 - If the ADR system operates on external power supply, it must be connected to the car's battery in accordance with the specification in the manufacturer User's Manual provided by the manufacturer.

6 Environment

- 6.1 - The device must not be mounted close to, or coupled to, sources of extreme vibration, such as the engine or gearbox. The device should not be installed close to any mechanical driveshaft components (such as bearings).
- 6.2 - A minimum clearance of 5 mm between the device and any other devices should be maintained around the entire external surface of the device. No devices can be fitted on top of, or in contact with, the ADR or interface plate.
- 6.3 - The ADR shall be mounted in an area where the mounting surface temperature does not exceed 85°C at any time. It must also be ensured that no device around the ADR [typically 10-20 mm] will generate heat in excess of 85°C. The use of temperature stickers is recommended for monitoring purposes.

7 Car connection

- 7.1 - The ADR shall be connected in accordance with the pinout defined in the manufacturer User's Manual.
- 7.2 - If available, and unless otherwise forbidden by the relevant championship or category regulations, the ADR shall be connected to the ECU of the car via CAN to receive and record context vehicle data (car speed, engine rotational speed, throttle, brake, steering, etc.), according to the CAN messages and IDs as defined in the device specification or user manual.

8 Led flashing scheme

- 8.1 - Normal running and communicating with ECU/CAN: LED solid green at 50% brightness;
- 8.2 - Accident stored: LED flashing red at full brightness at 4Hz with 5% duty cycle.
The LED shall indicate this status from when a new accident is stored until the device is turned off.
When the device is turned on, if any accidents are stored, the LED shall show the status for a duration of 60 seconds, then return to its normal status.
- 8.3 - If the system relies solely on an internal battery, an additional LED shall be used to indicate the status of the battery. The flashing scheme for this LED should clearly indicate the state of charge of the battery as follows:
 - (i) Fully charged: LED solid.
 - (ii) Less than 24 hours of normal operation is remaining: LED flashing ON for 100ms every 2s.

LIST OF AMENDMENTS

New text: **thus**

Deleted text: ~~thus~~

Comments: *thus*

Date	Modifications
05.02.2021	<i>Initial release</i>