

# Hazards and risks

## DEHNrecord SD of the types DRC SD 1 1 and DRC SD 2



The prototypes of the DEHNrecord SD measuring instrument of the types DRC SD 1 1 and DRC SD 2 1 are provisional, unfinished, and not yet fully tested or approved pre-series versions – for which there are also no CE declarations of conformity. The prototypes therefore do not comply with the performance, quality and safety standard of a final version of a DEHNrecord SD measuring instrument which would be released by us for commercial use and may not – at least formally – comply with all product safety law requirements. Please be aware that the prototypes may not yet fully function correctly. The pilot customer therefore uses the prototypes at its own risk.

The identification and compilation of hazards based on the normatively indicated hazards caused by the device, including foreseeable misuse, is listed below on the basis of the respective standards. The hazard assessments are presented in green.

### **Identification/compilation of hazards:**

#### ■ **Safety:** EN 61010-1:2010+Cor.2011

##### 1.6 Electric shock

The dimensioning of the components and the design of the clearance and creepage distances were carried out in accordance with the normative specifications. In addition, individual inspection of the insulation resistance has been carried out.

##### 1.7 Mechanical hazards

There are no risks of mechanical hazards.

##### 1.8 Resistance against mechanical stress

It is unlikely that a mechanical load will occur in the permanently installed operating state which could lead to damage. The lower mechanical strength of the 3D-casing is indicated on the device. There is a corresponding warning notice prohibiting the installation of damaged equipment.

##### 1.9 Spread of fire

The spread of fire in the event of a fault / i.e. device defect is assessed as being very unlikely. The device does not produce any waste heat.

##### 1.10 Temperatures and heat resistance

Increased temperatures can only occur in the event of a fault, i.e. device defect.

##### 1.11 Fluids

There are no hazards associated with fluids.

##### 1.12 Radiation

There are no hazards associated with radiation.

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## 1.13 Released gases and substances, explosion and implosion

There are no hazards associated with gases and substances, explosions and implosions.

## 1.14 Components and assemblies

The materials used comply with specifications, with which there are no known associated hazards.

## 1.15 Interlocking

There are no hazards associated with interlocking.

## 1.16 Foreseeable misuse

a) Plugging/unplugging/touching the pluggable sensor terminals under voltage could be a foreseeable misuse, although this is prohibited. Misuse can be minimised by the following measures, in which

- 1) Corresponding warning notices in accordance with the standard are available.
- 2) A cover can additionally be fitted over the terminals.

## ■ **EMC:** EN 61326-1:2013, EN 61000-6-2:2015

### 2.1 Emitted interference

The risk of a functional and temporary impairment is low, but cannot be completely excluded. The design complies with the normative requirements and the manufacturer's specifications. Partial verification is carried out by measurements during development.

### 2.2 Interference immunity

The risk of a functional and temporary impairment is low, but cannot be completely excluded. The design complies with the normative requirements and the manufacturer's specifications. Partial verification is carried out by measurements during development.

## ■ **Radio equipment:** EN 300328 V2.1.1:2016

### 3.1 Interference with neighbouring radio services

The risk of a functional and temporary impairment is low, but cannot be completely excluded. No uninterrupted radio throughput at the DRC SD (only with SignOfLife and Event). This is very unlikely as a pre-certified radio model is used.

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## Risk assessment:

A risk assessment based on the normatively indicated hazards caused by the device is shown below:

Prima facie nature of damage		Probability of damage					Never
		Frequent	Probable	Possible	Rarely	Improbable	
Severe	Catastrophic						1.7 ; 1.11 ; 1.12 ; 1.13 ; 1.15
	Serious		1.16.a	1.16.a1		1.6 ; 1.9 ; 1.16.a2	
	Moderate					1.8 ; 1.10 ; 1.14	
	Low			2.2	2.1	3.1	

## **Key:**

Severe	Persons	Operating resources/installation	Setting
Catastrophic	One or more deaths	Loss of the system or of the installation	Release of chemicals with acute effect on individual or public health
Serious	Injury resulting in disability or illness	Loss of a major part of the system or damage to the installation	Release of chemicals with transitory effect on the environment or public health
Moderate	Medical treatment or restricted ability to work	Loss of a subordinate system or damage to the installation	Release of chemicals which triggers mandatory reporting to external parties
Low	Provision of first aid is sufficient	No serious damage to an operating resource or the installation	Release of chemicals which only requires ordinary cleaning and no reporting

Possibility	Anticipated frequency
Frequent	More than five times a year
Probable	More than once a year but not more than five times a year
Possible	More than once in five years but not more than once a year
Rarely	More than once in ten years but not more than once in five years
Improbable	Not more than once in ten years

Key	Category	Description
	Broad acceptance	This category fulfils the requirement for an ACCEPTABLE RISK.
	As small as reasonably practicable	This category does not automatically fulfil the requirement for an ACCEPTABLE RISK. Where possible, these risks should be further reduced to category 1. If this is not possible, the instructions should describe the RISKS so that the OPERATOR can take reasonable steps to protect the USER.
	Not acceptable	This category includes RISKS that are not ACCEPTABLE RISKS.

## **Conclusion:**

A reasonable risk can be assumed for the device(s) as a result of the measures taken.