



**GUTERMANN**



***HISCAN***

Permanent Trunk Main Monitoring

**Safety Guidelines**

**&**

**Installation Manual**

Language: English

Version: 1.2





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# 1 Indications for Use

It is essential to read the operating instructions carefully and completely before using the first time the equipment and software. They contain important information on safety, installation and use. Keep these instructions in a safe place.

## 1.1 Symbols

	<b>Warning of dangerous situations that can cause injury and damage to the devices.</b>
	<b>Warning of non-ionising electromagnetic radiation.</b>
	<b>Important notes and tips are a sign Info provided. Follow these guidelines.</b>
	<b>Never put in your household waste bin.</b>

## 1.2 Safety



The operating and maintenance personnel must read the instructions carefully before using the equipment. Knowing all the information contained therein - in particular the warning and safety instructions - is needed to safely operate the equipment, and to protect yourself and others against possible dangers. Ignoring the warning, safety and operating instructions can result in injury, damage, or a considerable shortening of the equipment life time. Do not make any changes or alterations to our products.

HISCAN is powered via Lithium primary cell. The battery/cells must not be charged, short-circuited, physically damaged or exposed to heat, fire or water. Follow the transport stipulations of the carrier (IATA-DGR, IMDG-Code, ADR, RID) when returning HISCAN to Gutermann. For questions concerning replacing the battery, please contact your Gutermann distributor.

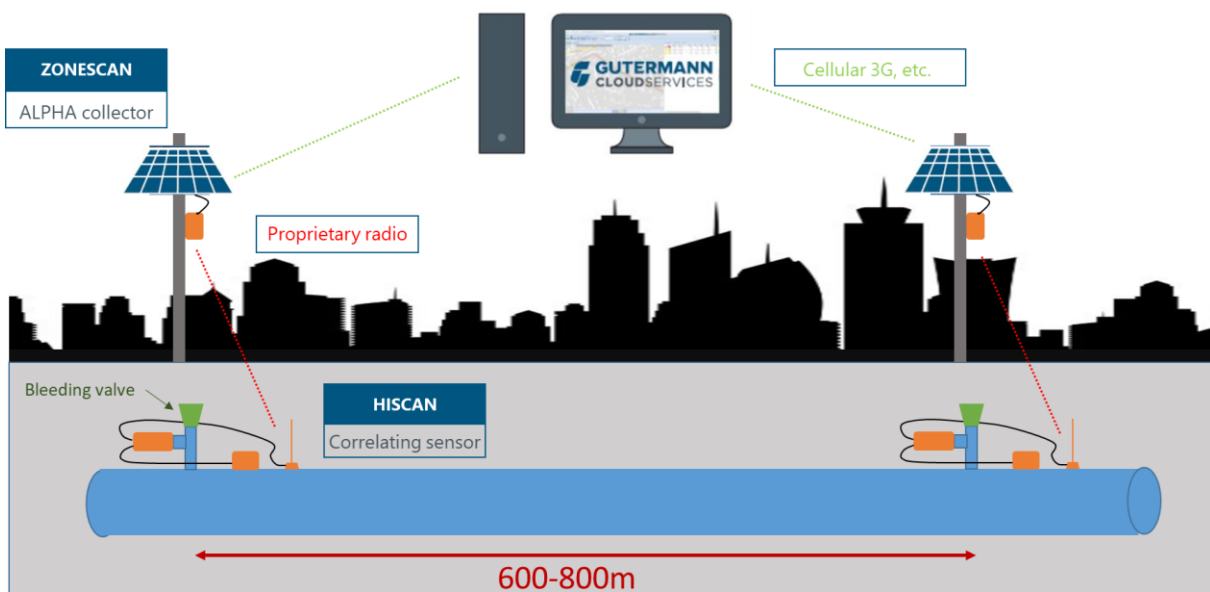
In order to fulfill the standards for human exposure to radio frequency electromagnetic fields HISCAN must be kept at least 20 cm away from the body.

Never open the device unless otherwise stated in this document, otherwise any warranty and conformity expires.

When using the software or the equipment, make sure you adhere to any applicable regulations, in particular traffic regulations.

## 1.3 Intended Use

HISCAN products, hardware, software and accessories are exclusively intended for industrial use and exclusively intended for leak detection on water pipes of the public water supply. In particular, these products are not intended to be used on waste water and gas pipes. Gutermann is not liable for any damages caused by misuse, improper operation, and as a result of non-compliance with safety instructions and warnings.



## 2 Delivery Contents

HISCAN consists of the hydrophone logger, battery box, antenna and power cable.

Additionally you can either install ALPHA V2 data collector or use ZONESCAN smart.



### 3 Mechanical installation.

HISCAN is a high performance noise data logger, used for (semi)permanent monitoring of drinking water pipes.

#### 3.1 Safety Precautions



You must ensure that there is adequate safety present when working at great heights, deep chambers or traffic situation.



Always thoroughly clean the hydrophone and fittings according to local laws and regulations, to eliminate risk of contamination of drinking water.



Use protective gloves to prevent cuts from sharp edges.

#### 3.2 Directions for the Hydrophone



When connecting the hydrophone to the pipe, make sure all valves are closed and all connections are fastened securely. High pressure water jets pose risk of serious damage or injury.



To ensure proper function, the hydrophone must have contact to the water. No air must be present at the membrane. Avoid vertical installation on the top of the pipe as no bleeding is possible in that configuration.



If bleeding is necessary, automatic bleeding valves are recommended to ensure continuous operation.



### 3.3 Directions for the External Antenna

Use the provided antenna.

Tighten connectors correctly to ensure good contact and sealing. No tools necessary – fingertight fastening is adequate.

The antenna has a magnetic foot for easy application to ferrous surfaces, place the antenna as high as possible to ensure good radio connection with the data collector.



Not using an antenna (not connecting anything to the TNC connector) may potentially damage the equipment when this is powered.



The HISCAN hydrophone has to be used only with the antenna (GT-ANT01) provided with the device. In case that the user chooses a different antenna, the user will be responsible for its suitability to the safety of the equipment and the compliance with local and national radio regulations.

### 3.4 Directions for the Power Supply

The power supply for HISCAN is the provided HISCAN battery box HSB10.



The HISCAN Hydrophone has to be powered from the HISCAN battery box (HSB10), using a battery according the specifications. In case that the user chooses to use a different power supply, the user will be responsible for fulfilling local and national requirements both radioelectric and safety regulations.

#### 3.4.1 Installation

To install the battery box, connect the battery box to the hydrophone with the provided power cable. Tighten connectors correctly to ensure good contact and sealing. No tools necessary – finger-tight fastening is adequate.



The HISCAN battery box (HSB10) is intended to be used with a lithium primary cell. Both the battery box (HSB10) or a primary cell are not intended to be charged. Both the battery box or the primary cell must never be subjected to any external power supply - this may lead to explosion or fire and harm to people or places.



In case that the battery is connected reversed, there is no danger to the equipment, but the hydrophone will not be powered.



Initially the box comes with installed battery. No service or opening of the box is necessary.



### 3.4.2 Battery Replacement

To replace the battery, follow these steps:

- Open the battery box in dry conditions only.
- To open the box, use a flat blade screwdriver, insert it in the small holes and gently push to the outside.
- Exchange the battery, pay attention to polarity.
- Before closing the battery box, check the seal. Remove any dirt and exchange it if damaged.
- Close the lid and close the latches until you hear them snap in place.



To replace the cell on the HISCAN battery box (HSB10), a suitable exchange battery of the same kind must be used. In case of doubt contact a Gutermann representative.

## 4 Technical Data

### 4.1 Hydrophone (model name HS401, HS501)

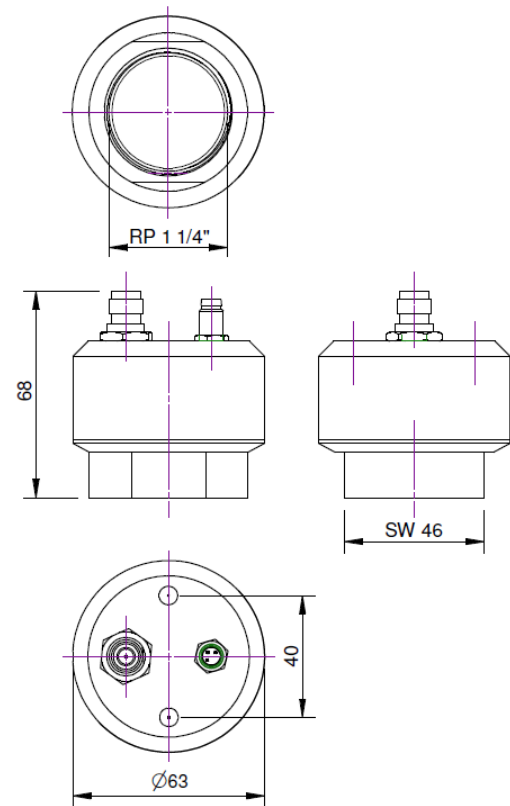
Mechanical dimensions		
Diameter	63	mm
Height	68	mm
Hydrophone thread	Female 1 ¼	Inches
Weight	660g	
Protection class	IP67	

Connectors	
Power supply connector	M8 Jack male 3 Poles
Antenna connector	TNC, reverse polarity

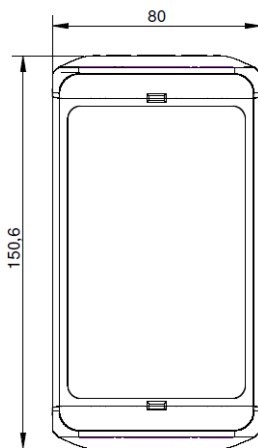
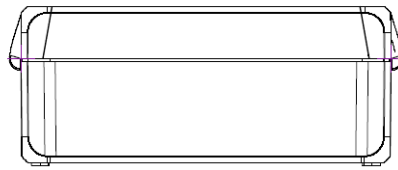
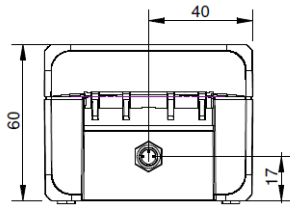
Data Power Supply				
Parameter	Min	Typ.	Max	Units
Operational temperature	-30		70	°C
Power supply voltage	2,5	3,7	4,2	V
Current consumption		20	110	mA
Stand by current		10		µA

Data Radio				
Radio modulation	FSK			
Radio Band	ISM 800-900			
Antenna output impedance	50Ω			
Radio power			40	mW

Cable indications		
Cable connections length	< 3	m




## 4.2 Battery Box (HSB10)




Mechanical dimensions		
Length	150,6	mm
Width	80	mm
Height	60	mm
Weight	360	Grams
Enclosure material	Polycarbonate	
IP Grade	IP68	
Reverse consumption	< 10µA	
Operational temperature	-30°C to 70°C	
Cable connections length	< 3 m	
Battery		
Internal battery kind	Lithium primary cell	
Battery Shape	D cell	
Battery voltage	3,7 V	
Minimum voltage	2 V	
Max current	0,375 A	

## 4.3 Connectors

### 4.3.1 Power Connector

M8 Connector	Pin	Signal
	1	No connected
	3	+3,7V
	4	Ground

### 4.3.2 Antenna Connector

RP-TNC Plug		
	1	RF Signal
	case	Ground

## 5 Storage and Transport

In order to avoid unwanted radio transmissions and prevent battery depletion, disconnect the hydrophone from the battery box or remove the battery.

## 6 Disposal



Never put electrical appliances in a household waste bin. Always collect them separately and perform an environmentally friendly recycling. When disposing of electrical appliances always comply with national and regional waste disposal regulations. If an orderly disposal of our products is not possible, send the unit to us. We dispose of our products environmentally friendly. Address see below.

## 7 Imprint

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Subject to changes

## 8 Conformity

This radio transmitter IC: 9789A-HISCAN915V1 has been approved by Innovation, Science and Economic Development Canada to operate with the antenna types listed below, with the maximum permissible gain indicated. Antenna types not included in this list that have a gain greater than the maximum gain indicated for any type listed are strictly prohibited for use with this device.

Le présent émetteur radio IC: 9789A-HISCAN915V1 a été approuvé par Innovation, Sciences et Développement économique Canada pour fonctionner avec les types d'antenne énumérés ci-dessous et ayant un gain admissible maximal. Les types d'antenne non inclus dans cette liste, et dont le gain est supérieur au gain maximal indiqué pour tout type figurant sur la liste, sont strictement interdits pour l'exploitation de l'émetteur.

Antenna Info: GT-ANT01 / -0.4 dBi / 50 Ohm

This device complies with part 15 of the FCC Rules and contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions:

1. This device may not cause interference.
2. This device must accept any interference, including interference that may cause undesired operation of the device.

L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :

1. L'appareil ne doit pas produire de brouillage;
2. L'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

## 9 Important Information

Please draw your attention to all warnings and information in the manual and on the products. By using this product, you acknowledge that you are aware of and have read the warnings and information provided in the manual.



Always clean the sensors and mechanical accessories with a clean towel after use before stowing them away in the carry case.