

RadarSens User Manual (part 2 of 2)

- Safety Supplement



1: Introduction.

This document gives additional safety information for when the equipment is used in potentially explosive atmospheres.



Warning: This manual contains important safety and operating information. Please read, understand and follow the instructions / warnings contained in this manual.

2: Product marking

Identity Label:

Temperature limits →

The Identity Label is a rectangular box containing the HWM logo and 'RadarSens' text at the top. Below this is a table with two columns. The first column contains 'S/N: XXXXXXXXXXXX', 'DOM: DD/MM/YYYY', and '-20°C ≤ TAMB ≤ +60°C'. The second column contains 'IECEX EMT 23.0001X', 'ERO23ATEX0001X', and 'EMA23UKEX0006X'. Below the table is a box for '***BARCODE***' and the manufacturer's details: 'HWM-Water Ltd., NP44 3AW, UK, www.hwmglobal.com'.

Company logo and product name

Type Identification (model part-number)

International certification number

ATEX certification number

UKEx certification number

Name of manufacturer, address & website

Approvals Marking Label:

Ex Markings →

Warning markings →

The Approvals Marking Label is a rectangular box containing various certification marks and warnings. At the top left is the 'Ex' mark and 'II 1 G Ex ia IIC T4 Ga'. To the right is the 'CE' mark and '2813'. Below the 'Ex' mark is a crossed-out trash can icon and 'Contains: FCC ID: 2AQ6KA1001 IC: 24388-A111'. To the right of this is the 'UKCA' mark and '0518'. At the bottom are two warning boxes: 'WARNING - DO NOT OPEN WHEN EXPLOSIVE ATMOSPHERE IS PRESENT' and 'WARNING - POTENTIAL ELECTROSTATIC CHARGING HAZARD, DO NOT RUB WITH DRY CLOTH'.

CE mark and certified body number

UKCA mark and certified body number

Entity Parameters Label:

INPUT POWER EEI_V+ (R_PWR)	COMMS INPUT LOG_SCLK, LOG_SDAT
Ui = 7.8V	Ui = 5.4V
Ii = 0.283A	Ii = 0.010A
Pi = 0.528W	Pi = 0.016W
Ci = 0.0uF	Ci = 0.0uF
Li = 5.77 uH	Li = 9.66uH

3: Part Number scheme and nomenclature

A RadarSens model has a part-number in the format of **S170/zzzzy/x/www/IS/H**.

Refer to the drawing MDEX-170-0006, reproduced on the following two pages, for details of the Part Number scheme and nomenclature.

4: Connection and Entity Parameters

When used in a potentially explosive environment, RadarSens must be connected to HWM intrinsically safe data loggers only; do not connect to any other type of logger.

Use only with the following type of intrinsically safe HWM logger: ISLog.

(An ISLog model has a part-number in the format of: **HIS/xxxxx/xx/www/xxxxxx/W**).

Refer to the drawing MDEX-170-0006, reproduced on the following two pages, for details of the equipment that can be interconnected, including the entity parameters of the equipment.

Warnings on device and operators manual (ATEX related):

WARNING - POTENTIAL ELECTROSTATIC CHARGING

HAZARD, DO NOT RUB WITH A DRY CLOTH.

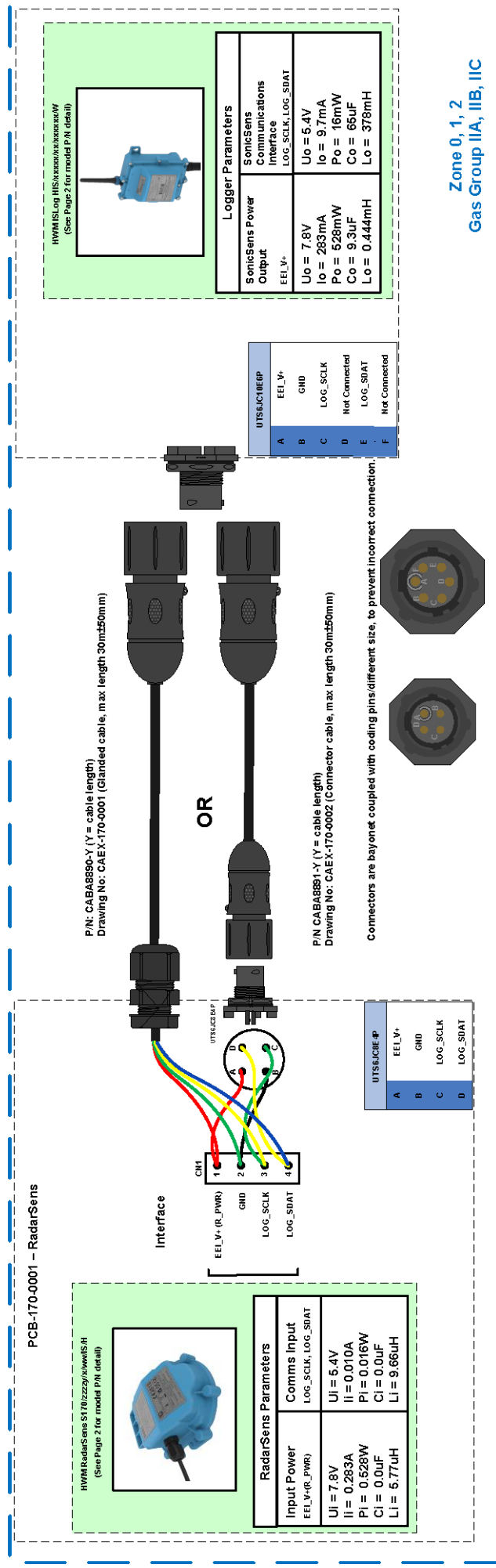
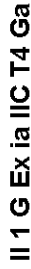
(In accordance with 29.12 EN 60079-0:2018)

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WARNING - DO NOT OPEN V
ATMOSPHERE IS PRESENT

ATMOSPHERE IS PRESENT.
(In accordance with 12.3 EN 60079-11:2012)

See page 2 for Full Model Number

[illegible]

Schedule drawing

Certified product. No modifications permitted to this drawing without approval of an ATEX authorised person. Any modifications must also be submitted to the notified body for approval.

Sensor (HWM RadarSens) Model Number S170

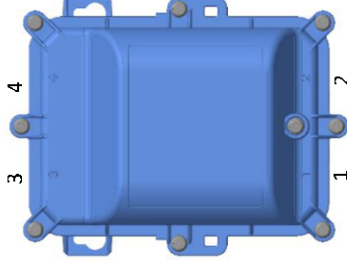
S170	/zzzzz	/x	/ww	/IS	/H
Product Type and Project Number	Input/Output Options	Hardware Variant	Software Settings	Safety Accreditation	Branding

- Product Type
- 'S170' identifies the unit as belonging to the 'RadarSens' product family.
- Input/Output Option
- This controls variations in connectorisation and cable length.
 - 'zzzz' is a variable length field which encodes the approximate cable length (in meters). The field is only used for option 'y' = 'G'; When 'y' = 'C' it is blank. 30m (max length). 'M' is used as decimal point. e.g., 10M = 10m, 0M35 = 0.35m.
 - 'y' is a single character field, used as follows:
 - 'C' indicates a sensor (with bulkhead connector) is supplied.
 - 'G' indicates a sensor (with captive cable) is supplied.
 - 'x' is an enumerator (set to 1 or 2) identifying the hardware variant (HWM use only).
- Hardware Variant
- Software Settings
- 'ww' is a variable length field which encodes a set of software parameters, required for the host logger device to identify the sensor and its available functions (HWM use only).
- Safety Accreditation
- 'IS' indicates the model is of the Intrinsically Safe construction.
- Branding
- 'H' indicates the model is HWM branded.

Logger (HWM ISLog) Model Number HIS

HIS	/xxxxx	/xx	/xxxxxx	/W
Product Type No and Safety Designation	Antenna and Input/Output Options	Shipping Spec.	Modem Options	Model Type

- Product Type
- 'HIS' identifies the unit as belonging to the 'ISLog' product family.
- Antenna and Input/Output Option
- This controls variations in logger configuration.
 - 'x' is a single character field which indicates antenna type (HWM use only).
 - 'xxx' field is used to define logger connections (up to 3 locations selectable).
 - 'D' in any location 1,2 or 4 indicates RadarSens input.
 - 'x' is a single character field which indicates digital connector (HWM use only).
 - 'xx' (customer specific, HWM use only).
 - 'xx' is a Modem country code (HWM use only).
 - 'xxxx' is a Modem variant code (HWM use only).
- Shipping Spec.
- Modem Options
- Model Type
- 'W' indicates the model is for Waste water (and similar) applications.



Date:	Drawn:	Checked:	Approved:	Rev:	PCN:	Description:	Title:		
03/04/2023	JBM	BW	BB	A	8434	First release.	RadarSens System Control		
							Dwg. No.		
							Rev:		
							MDEX-170-0006		
							A		
							2 of 2		

Safety Considerations

Certification of RadarSens includes the following schemes (dependant on model):



Check the labels of the equipment for the presence of any required approvals marks prior to their use.

Note: Where the terms “Intrinsically Safe” or “ATEX” are used throughout this document, this must be understood to mean the applicable intrinsic safety standards (ATEX, UKEX, IECEx) that are in force in country of installation.

Note: The installer is responsible for ensuring the logger and any connected equipment are certified for use and are also compatible for interconnection.

Note:

Before continuing, carefully read and follow the non-ATEX, general safety information in the “Safety Warnings and Approvals Information” document supplied with the product. This document provides additional ATEX-related safety information. Retain all documents for future reference.

Before using this product:

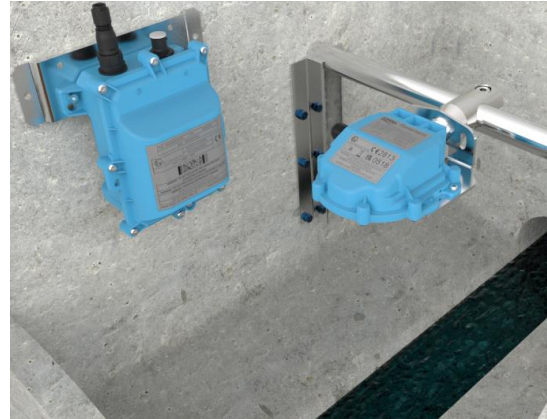
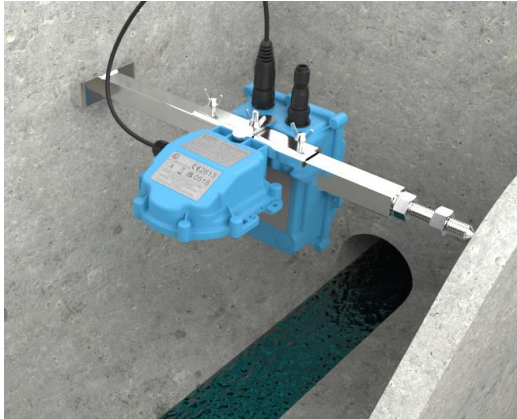
- Make a risk assessment of the installation site and expected work activity.
- Installations in a hazardous environment (e.g., ATEX) must be carried out by appropriate technicians with suitable training for that environment.
- It is the responsibility of the end user to take suitable precautions to prevent exposure to aggressive chemicals that may attack the metals or polymeric materials used in the construction of this equipment.
The following materials are used in the construction of this equipment:
 - Enclosure: PC/ABS.
 - Enclosure Labels: Polyester.
 - Gasket: Silicone.
 - Connectors: Nylon / Macromelt.
 - Cables: PVC.
 - Gland: Nylon.
 - Fasteners: Stainless Steel.
 - Bracketry: Stainless Steel.
- Ensure any tools necessary for installation are suitable for use within the hazardous environment.
- Ensure suitable PPE (personal protective equipment) is used and that safe working practices are followed during installation and any maintenance.
- Check with the site owner or supervisor for any additional safety requirements before commencing work.
- Ensure any communications device being used to assist in the install or setup of the logger is also suitable for use in the hazardous environment in which you are working.

Before entering hazardous area:

- Check the sensor and apparatus have the right approvals and certifications for use within the intended installation environment.
- Confirm the equipment has suitable ATEX markings and is being operated within its ATEX limits.
- Check the port parameters of the relevant logger interface and the equipment to be attached. Confirm they are suitable for interconnection.
- Check the equipment includes a suitable cable with connector attached for interconnecting RadarSens to the logger interface. A water-tight connection is required.

Installation of Equipment:

Installation Accessories, including brackets for mounting the unit, are available to suit most installation situations. Examples are shown below.



For safe and secure installation, adhere to the safety warnings (section 6) and always use bracket solutions if required from HWM when installing RadarSens.

For additional guidance of installation of RadarSens, refer to the RadarSens User Guide (Part 1 of 2), document MAN-170-0001.

RadarSens is installed in conjunction with a compatible HWM logger device. Refer to the related documentation for the logger, including the user guide and safety supplement. Follow the instructions and warnings contained within each of the user guides and the product labelling during installation and maintenance of the equipment.

Connection and Commissioning:

Whilst adhering to the safety measures within this document, connect the equipment and commission the RadarSens as described in the RadarSens user guide.

Safety of Operation:

Once installed, the unit has been certified to the appropriate standards for continuous operation without user intervention.

Maintenance:

The RadarSens may be cleaned as a maintenance task. Adhere to the safety warnings (section 6) and within the documentation and labelling when performing any maintenance.

The RadarSens has no internal serviceable parts. Do not attempt to disassemble the unit.

6: Warnings



Warnings:

- DO NOT OPEN WHEN EXPLOSIVE ATMOSPHERE IS PRESENT.
- POTENTIAL ELECTROSTATIC CHARGING HAZARD. DO NOT RUB WITH A DRY CLOTH. WHEN CLEANING, USE A DAMP CLOTH THAT CAN HAVE A MILD CLEANING SOLUTION.
- TAKE STEPS TO MINIMISE BUILD UP OF ELECTROSTATIC CHARGES, SUCH AS INSTALLING RADARSENS IN A LOCATION PROTECTED FROM DIRECT AIRFLOW.
- THE UNIT MUST BE INSTALLED IN A SUITABLE LOCATION. CONSIDERATION MUST BE GIVEN TO LOW HUMIDITY SITES TO AVOID THE GENERATION OF STATIC ELECTRICITY. ADDITIONAL PROTECTION MEASURES MAY BE REQUIRED.
- WHEN MAKING A RISK ASSESSMENT, CONSIDER ANY STEPS REQUIRED TO PREVENT ELECTROSTATIC DISCHARGE TO RADARSENS OR SURROUNDING EQUIPMENT DURING INSTALLATION.
- DURING INSTALLATION, USE INSULATED TOOLS AND EQUIPMENT, TO PREVENT ELECTROSTATIC DISCHARGE.

7: Standards and Ratings

RadarSens complies with the following standards:

IEC 60529:1991	Degrees of protection provided by enclosures (IP Code). - RadarSens Ingress Protection level: IP56/58 (1.5m for 1 hr).
EN 60079-0:2018	Explosive atmospheres - Equipment. General requirements.
EN 60079-11:2012	Explosive atmospheres - Equipment protection by intrinsic safety "i".
EN 61010-1:2010/A1:2019	Safety requirements for electrical equipment for measurement, control, and laboratory use - General requirements.
EN 62368-1:2014/A11:2017	Audio/video, information and communication technology equipment - Safety requirements.
EN 62479:2010	Assessment of the compliance of low power electronic and electrical equipment with the basic restrictions related to human exposure to electromagnetic fields (10 MHz to 300 GHz).
EN 62311:2008	Assessment of electronic and electrical equipment related to human exposure restrictions for electromagnetic fields (0 Hz - 300 GHz).
EN 55032:2015	Electromagnetic compatibility of multimedia equipment. Emission Requirements.
EN 55035:2017	Electromagnetic compatibility of multimedia equipment. Immunity requirements.
EN 301 489-1 V2.2.3	Electromagnetic compatibility and Radio spectrum Matters (ERM); ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 1: Common technical requirements.
EN 301 489-3 V1.1.1	ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 3: Specific conditions for Short-Range Devices (SRD) operating on frequencies between 9 kHz and 246 GHz; Harmonised Standard covering the essential requirements of article 3.1(b) of Directive 2014/53/EU.
EN 305 550 V2.1.0	Short Range Devices (SRD); Radio equipment to be used in the 40 GHz to 246 GHz frequency range; Harmonised Standard for access to radio spectrum.
EN 305 550-1 V1.2.1	Electromagnetic compatibility and Radio spectrum Matters (ERM); Short Range Devices (SRD); Radio equipment to be used in the 40 GHz to 246 GHz frequency range; Part 1: Technical characteristics and test methods.
EN 305 550-2 V1.2.1	Electromagnetic compatibility and Radio spectrum Matters (ERM); Short Range Devices (SRD); Radio equipment to be used in the 40 GHz to 246 GHz frequency range; Part 2: Harmonized EN covering the essential requirements of article 3.2 of the R&TTE Directive.
Notified Body Opinion. (CE 0682)	Radio. Complies with the essential requirements of article 3.2 of Directive 2014/53/EU. (Certificate Registration No: T818606L-01-TEC).
EN IEC 63000:2018	Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances.

**If further support or assistance is required, please contact HWM Technical Support on
01633 489479 (option 5) or e-mail: cservice@HWM-Water.com**

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