Operating Instructions

For

Magnetic level switch

RFS

1. Content

Manufactured by:

Kobold Mesura S.L.U
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Fax: +34 93 460 38 72
E-Mail: info.es@kobold.com
Internet: www.kobold.com

Edition: March 2024

2. Note

Please read these operating instructions before unpacking and putting the unit in operation. Follow the instructions precisely as described herein.
The instruction manuals on our website WWW.kobold.com are always for currently manufactured version of our products. Due to technical changes, the instruction manuals available online may not always correspond to the product version you have purchased. If you need an instruction manual that correspond to the purchased product version, you can request it from us free of charge by email (info.de@kobold.com) in PDF format, specifying the relevant invoice number and serial number. If you wish, the operating instructions can also be sent to you by post in paper form against an applicable postage fee.

The devices are only to be used, maintained and serviced by persons familiar with these operating instructions and in accordance with local regulations applying to Health & Safety and prevention of accidents.

When used in machines, the measuring unit should be used only when the machines fulfil the EC-machine guidelines.

3. Instrument Inspection

Instruments are inspected before shipping and sent out in perfect condition.

Should damage to a device be visible, we recommend a thorough inspection of the delivery packaging. In case of damage, please inform your parcel service / forwarding agent immediately, since they are responsible for damages during transit.

Scope of delivery

The Standard delivery includes:

- Magnetic Level switch RFS
- Operating instructions

4. Description

Model RFS devices are used for monitoring liquid levels. The device should only be used with liquids that are compatible with the unit´s materials of construction.

The standard version can be mounted in a wide range of installations while the ATEX version is to be mounted in classified installations category 1 requiring certification 1G Ex ia IIC T6, 1D Ex ia IIIC T85ºC Da.

5. Operation

Working principle is based on the magnetic field of a magnet that activates the reed contact.

RFS have the magnet located inside the float, the float is balancing following the liquid level. When magnetic field of the magnet in the float reaches the reed contact or the micro switch located in the fixed part of the instrument, it switches and indicates the level of the tank.

The switching function (N/O contact N/C contact) is determined by the mounting position. The switching function is reserved by simply rotating the switch through 180º.

6. Use in Hazardous Areas

With the approval the Level Switch, model RFS, can be used within hazardous areas. Thereby the aluminium housing is applicable outside the process in zone of category 1GD.

The approvals are as follows:

II 1 GD Ex ia IIC T6 Ga
Ex ia IIIC T85ºC Da
-20≤Ta≤+60ºC

An additional intrinsically safe relay is required in environment with gas explosion hazards (KFA...and respectively KFD).

For a correct and professional potential equalization, the ground terminal on the housing of the RFS must be connected in applications in hazardous areas.

7. Mechanical Connection

The Level Switch should be mounted so that the float can move freely over its entire path without hitting the wall, floor or roof of the container. Avoid fitting the switch where agitators or inlet valves could expose it to excessive turbulence.

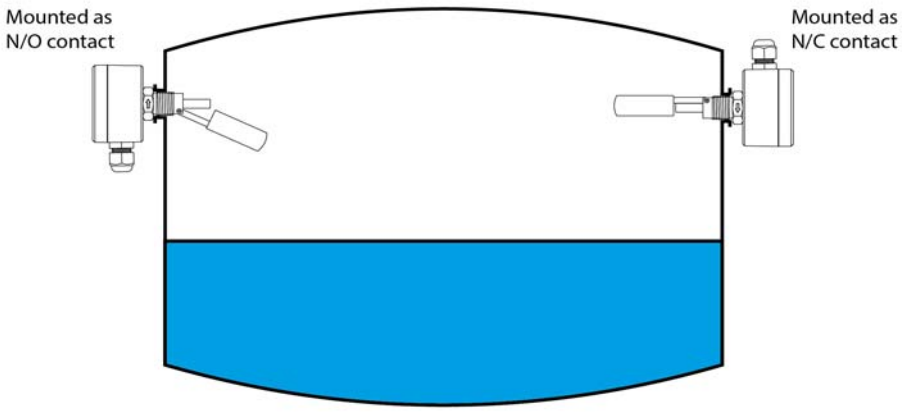
Make sure that the medium does not contain solids or ferrite particles, as they could collect on the float magnet and interfere with the switching operation. If the liquid does contain sediment or suspended matter, you must be sure they do not come into contact with the float system.

Mount the switch in a way that is easily accesible for installation and maintenace.

- Do not hit the instrument.
- Do not install the instrument close to magnetic fields to avoid malfunctioning.
- Avoid mechanical vibrations.
- Be sure that the media (liquid) has no solid particles.
- Be sure that the media is chemically compatible with instrument materials.
- Make sure that the allowed max. operational pressure and service temperature for the device is not exceeded.
- The installation position must be horizontal.
- If possible, examine all the connection joints for proper sealing, just after mechanical intalation.
- The engraved arrow on the hexagon must point up or down depending on the desired contact function. In any case the marked hexagon surface must always be mounted vertically.

Mounting position

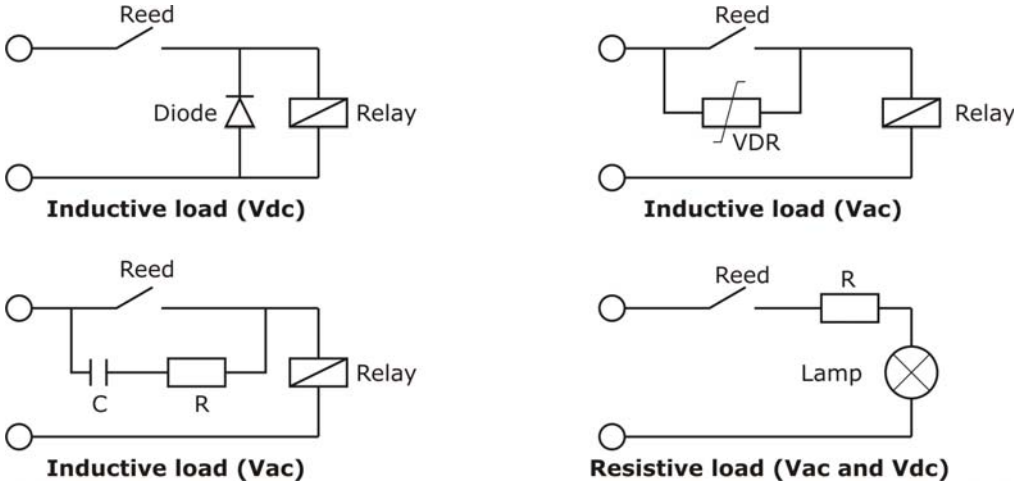
Depending on the mounting position of the device, the contact function (N/O or N/C contact)of the level switch will be defined.



8. Electrical Connection

Caution! Make sure that voltage of your system correspond with the voltage values of the level switch

- The switching power of Reed contacts of these magnetic levels is very low, so they can only be connected to resistive high impedance loads, like PLCs.
- When load is relay, electro valve or other element that requires some power it is absolutely necessary to protect the Reed contacts as follows depending on load and voltage types.



- For the RFS version for ATEX applications, the connection of the potential terminal is mandatory.
- An additional intrisically safe relay is required in environment with gast or dust explosion hazards (KFA...and respectively KFD).

Supplementary devices:

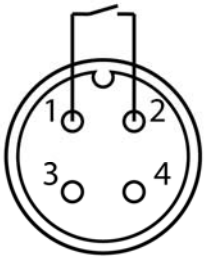
1. Contact protection relays

We recommend the use of contact protection relays in conjunction with sealed contacts.

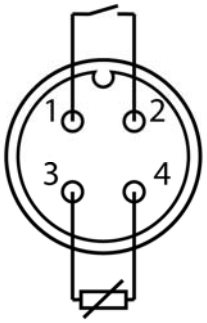
Contact protection relays have the following advantages:

- No contact overloads arising from sparking and high currents, which can, for example, be caused by self-induced e.m.f.`s when switching solenoid valves.
- Float switches are electrically isolated from the high voltage power supply system.
- Protection for persons who come into contact with liquids according to VDE 0100.
- **Standard models:**
  - ◆ Mod. MSR 10 1 channel, 1 changeover
  - ◆ Mod. MSR 20 2 channels, 2 changeovers
  - ◆ Mod. MSR 11 2 channels, 1 changeover bistable
- **Atex models:**
  - ◆ Mod. KFD2-SR2-Ex1.W 1 channel, 1 relay output, supply 24 V_{DC}
  - ◆ Mod. KFA6-SR2-Ex1.W 1 channel, 1 relay output, supply 230 V_{AC}
  - ◆ Mod. KFD2-SR2-Ex2.W 2 channel, 2 relay output, supply 24 V_{DC}
  - ◆ Mod. KFA6-SR2-Ex2.W 2 channel, 2 relay output, supply 230 V_{AC}

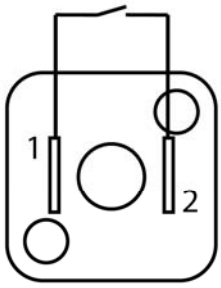
Pin assigment for RFS Level Switches



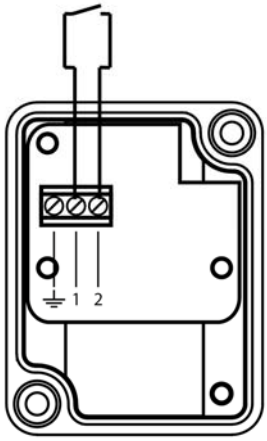
RFS-12N4_01200



RFS-12N4_11200



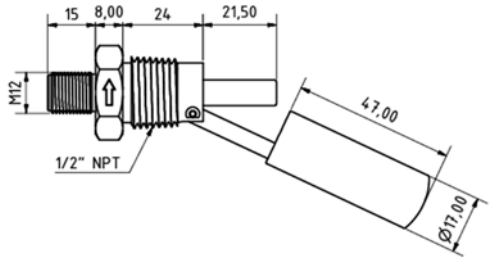
RFS-12N4_00000



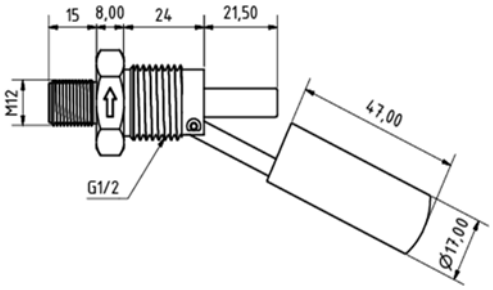
RFS-12N4_001__

9. Models

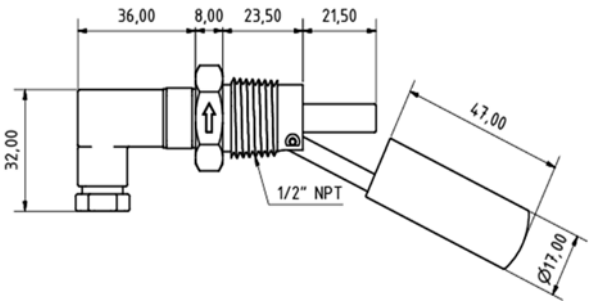
RFS-12N4__1200



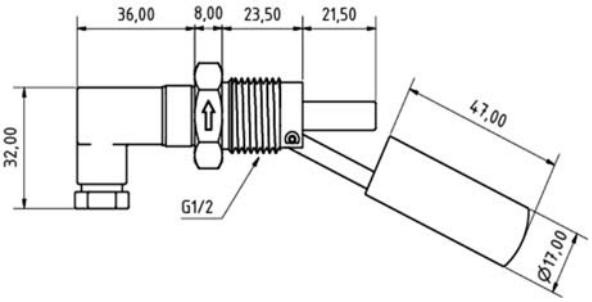
RFS-12G4__1200



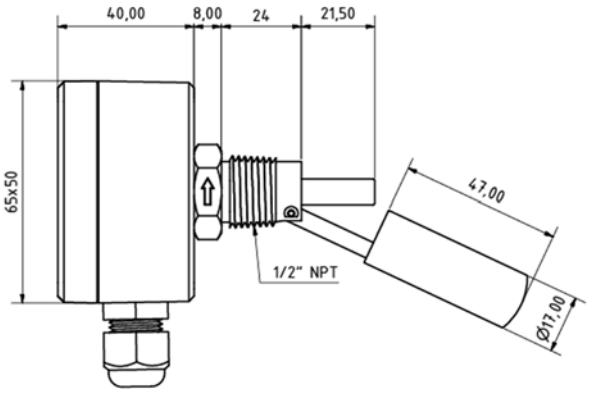
RFS-12N4_00000



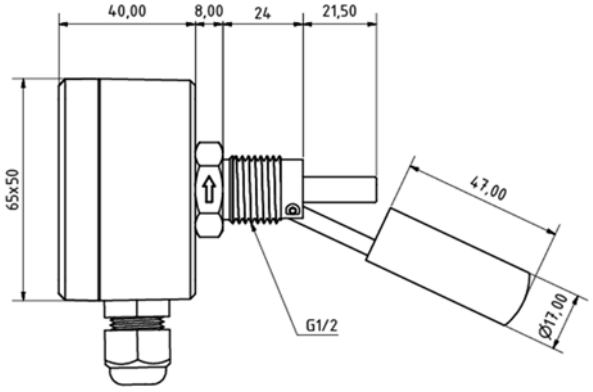
RFS-12G4_00000



RFS-12N4_00100 / RFS-12N4_001EX



RFS-12G4_00100 / RFS-12G4_001EX



10. Technical data

Note:	Kobold Mesura makes every attempt to ensure the accuracy of these specifications, however, are subject to change without notice.

SERIE RFS

RFS-12N4__1200 | RFS-12G4__1200

Mounting Style:	External
Process connection:	G½ or ½" NPT
Stem:	1.4301 or 1.4404
Float:	Ø17x47 - 1.4404
Medium max. Temp.:	-40ºC...+120ºC
Max.pressure:	10 bar
Min. liquid density:	>0.8g/cm³
Switching power max:	50W
Switching voltage max:	300Vac / 350Vdc 150Vac / 200Vdc (model with pt100)
Switching current max:	DC 0.7 / AC 0.5A
Electrical connection:	M12 4 poles
IP degree :	IP65

RFS-12N4_00000 | RFS-12G4_00000

Mounting Style:	External
Process connection:	G½ or ½" NPT
Stem:	1.4301 or 1.4404
Float:	Ø17x47 - 1.4404
Medium max. Temp.:	-40ºC...+120ºC
Max.pressure:	10 bar
Min. liquid density:	>0.8g/cm³
Switching power max:	50W
Switching voltage max:	300Vac / 350Vdc
Switching current max:	DC 0.7 / AC 0.5A
Electrical connection:	Connector DIN43650 (EN175301-803)
IP degree:	IP65

RFS-12_____0100

Mounting Style:	External
Process connection:	G½ or ½" NPT
Stem:	1.4301 or 1.4404
Float:	Ø17x47 - 1.4404
Medium max. Temp.:	-40ºC...+120ºC
Max.pressure:	10 bar
Min. liquid density:	>0.8g/cm³
Switching power max:	50W
Switching voltage max:	300Vac / 350Vdc
Switching current max:	DC 0.7 / AC 0.5A
Electrical connection:	Aluminum housing
IP degree:	IP65

RFS-12_____01EX

Mounting Style:	External
Process connection:	G½ or ½" NPT
Stem:	1.4301 or 1.4404
Float:	Ø17x47 - 1.4404
Medium max. Temp.:	-40ºC...+120ºC
Max.pressure:	10 bar
Min. liquid density:	>0.8g/cm³
Switching power max:	50W
Switching voltage max:	Ui: 40V, Li: negligible, Ci: negligible
Switching current max:	DC 0.7 / AC 0.5A
Electrical connection:	Aluminium box
IP degree:	IP65
ATEX Marking:	 II 1 GD Ex ia IIC T6 Ga Ex ia IIIC T85ºC Da -20≤Ta≤+60ºC

11. Safety Instructions (ATEX)

11.1. Validity

These safety instructions must be applied to the magnetic level switches series RFS…EX when used in explosive atmospheres.

11.2. General remarks.

Working principle of RFS…EX is based on the magnetic field of a magnet that activate reed contact and these instruments are used to control the level of a liquid of any zone. Including zones with explosion risk.

It can be used in hazardous areas group IIC, category 1 G/D.

The probe can be installed in explosion risk areas category 1 certification 1G/D.

The process connection element and the housing must be installed in category 1 certification 1G/D Ex ia.

When installing these instruments in explosive areas. All general instructions and recommendations regarding installations in explosive areas, as well as the instructions of this safety manual must be followed.

Verify that all data on the label of the instrument fits the installations requirements.

EN 60079-0, EN 60079-11, and Directive ATEX 2014/34 must be followed.

Switch off power supply before open the housing or be sure there is no explosion risk.

Verify that housing is closed before switch on the instrument.

It is very important to verify that ground terminal of the instrument is connected to ground of the installation.

Installation in hazardous areas must be done by specialized personnel.

11.3. Protection against ESD (electro static discharges)

Instruments with plastic parts that can produce electro statics discharges, have a warning label.
It is important to follow some rules to avoid ESD:

- Avoid frictions.
- Do not clean the instruments with a dry cloth.
- Do not install in locations close to pneumatic flow of materials or close to steam exhaust systems.

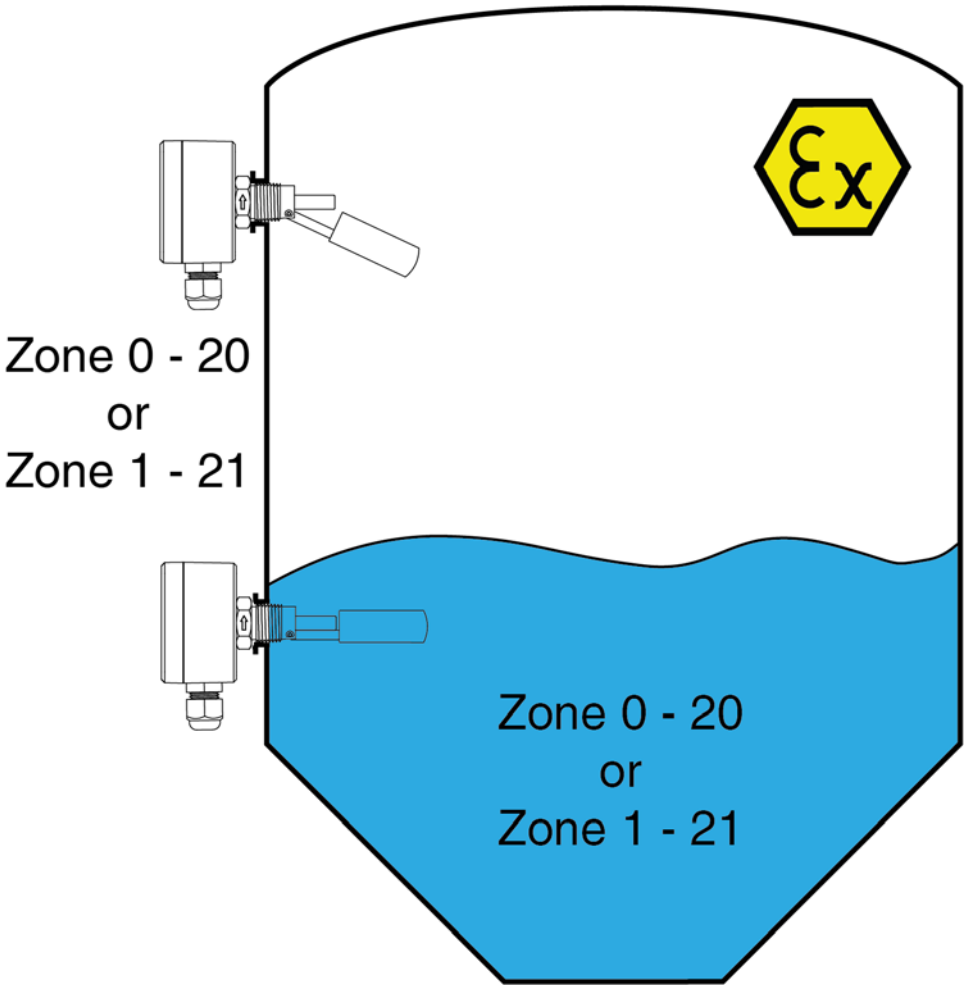
11.4. Chemical resistance.

Make sure that the instrument materials must be chemically resistants specially when used in hazardous areas.

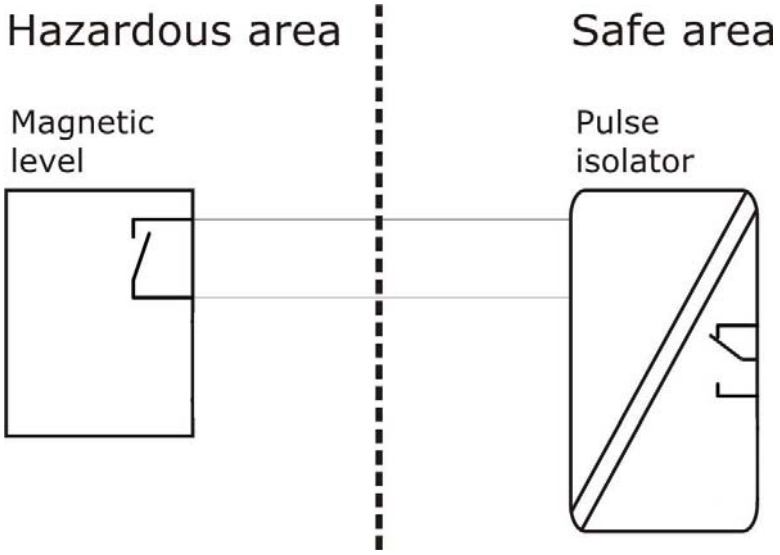
12. Installation in ATEX areas

In classified areas, the level switch series RFS ATEX version, can be installed with the housing in zone 0, 1, 20, 21 (category 1G/D) or in a NON CLASSIFIED area.

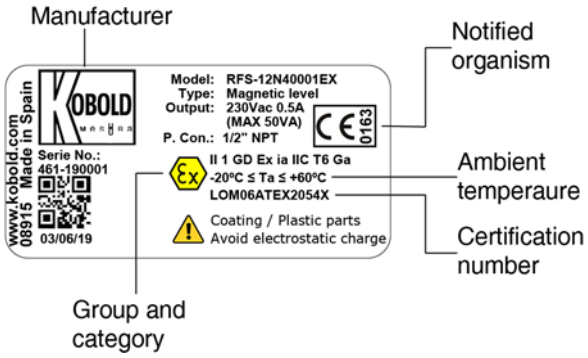
Wet part (probe) can be installed in zone 0, 20 (category 1).
Installation must be done with trained personnel on ATEX environments.



13. Electrical connection in ATEX area



14. Label description (ATEX)



15. EU Declaration of conformity (ATEX)

DECLARACIÓN DE CONFORMIDAD EU

EU DECLARATION OF CONFORMITY
EG-KONFORMITÄTSERKLÄRUNG
DÉCLARATION DE CONFORMITÉ
DICHIARAZIONE DI CONFORMITÀ CE

KOBOLD MESURA SLU
Avda. Conflent 68 nave 15, 08915 Badalona (España)

Declara, bajo la propia responsabilidad, que el producto
Declares under our sole responsibility, that the product
Erklärt in alleiniger Verantwortung, dass das Produkt
Déclare sous sa seule responsabilité, que le produit
Dichiara sotto la propia responsabilità, che il prodotto

RFS…EX

A los cuales se refiere esta declaración, son conformes a las siguiente Directivas Europeas:
To which this declaration relates is in conformity with the following European Directives:
Mit folgenden Richtilinien konform ist:
À auxquels se réfère cette déclaration, ils sont conformes aux Directives Européennes suivant :
A ai quali si riferisce questa dichiarazione, sono conformi alle direttive europee seguente:

EMC2014/30/EU LVD2014/35/EU ATEX2014/34/EU RoHS2011/65/EU

Normas armonizadas y documentos de la normativa aplicados:
Applied harmonised standards and normative documents:
Angewandte harmonisierte Normen oder normative Dokumente:
Normes harmonisées et documents normatifs appliqués
Norme armonizzate e documenti normativi applicati:

EN61010-1:2010 EN60079-0:2009 (acc. EN60079-0:2018)
EN61000-6-2:2019 EN60079-11:2007 (acc. EN60079-11:2012)
*No changes are required to enable compliance with the replacement standards.

Certificado de examen CE de tipo
EC-type examination certificate
EG-baumusterprübescheinigung
Attestation d´examen CE de type
Certificazione per esame di tipo CE

Marcado
Marking
Kennzeichnung
Inscription
Marcatura

LOM06ATEX2054X
II 1 GD Ex ia IIC T6 / Ex iaD 20 T85
Ta :-20/+60ºC

Fabricado en: **KOBOLD MESURA SLU Avda. Conflent 68 nave 15, 08915 Badalona (Spain)**
Made in:
Hergesteltlt in:
Fabriqué dans:
Fabbricato in:

Organismo notificado : **LOM 0163**
Notified organism
Mitgeteilter Organismus
Organization annoncée
Organismo informato

Número notificación : **LOM 05ATEX9070**
Number notification
Zahlmitteilung
Nombre notification
Notifica di numero

Badalona March 2024

Gerente

16. EU Declaration of conformity

DECLARACIÓN DE CONFORMIDAD EU

EU DECLARATION OF CONFORMITY
EG-KONFOMITÄTSERKLÄRUNG
DÉCLARATION DE CONFORMITÉ
DICHIARAZIONE DI CONFORMITÀ EU

KOBOLD MESURA SLU
Avda. Conflent 68 nave 15, 08915 Badalona (España)

Declara, bajo la propia responsabilidad, que el producto
Declares under our sole responsibility, that the product
Erklärt in alleiniger Verantwortung, daß das produkt
Déclare sous sa seule responsabilité, que le produit
Dichiara sotto la propia responsabilità, che il prodotto

RFS...

A los cuales se refiere esta declaración, son conformes a las siguiente Directivas Europeas:
To which this declaration relates is in conformity with the following European Directives:
An auf das diese Erklärung verweist, sie mit den Europäischen Richtlinien im Einklang stehen folgend:
À auxquels se réfère cette déclaration, ils sont conformes aux Directives Européennes suivant :
A ai quali si riferisce questa dichiarazione, sono conformi alle direttive europee seguente:

EMC2014/30/EU LVD2014/35EU RoHS2011/65/EU

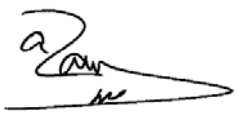
Normas armonizadas y documentos de la normativa aplicados:
Applied harmonised standards and normative documents:
Angewandte harmonisierte Normen oder normativer Dokumente:
Normes harmonisées et documents normatifs appliqués
Norme armonizzate e documenti normativi applicati:

EN61010-1:2010
EN61000-6-2:2019

Fabricado en: **KOBOLD MESURA SLU Avda. Conflent 68 nave 15, 08915 Badalona (Spain)**
Made in:
Hergesteltlt in:
Fabriqué dans:
Fabbricato in:

Badalona March 2024

Gerente



17. UK Declaration of conformity

DT0667

DECLARACIÓN DE CONFORMIDAD UK

UK DECLARATION OF CONFORMITY
UK-KONFOMITÄTSERKLÄRUNG
DÉCLARATION DE CONFORMITÉ UK
DICHIARAZIONE DI CONFORMITÀ UK

KOBOLD MESURA SLU
Avda. Conflent, 68 nave 15 08915 Badalona (España)

We Kobold Mesura S.L.U. declare under our sole responsibility that the product:

Magnetic level switch
RFS...

To which this declaration relates is in conformity with the standards noted below:

BS EN 61010-1:2010

Safety requirements for electrical equipment for measurement,controL, and laboratory use. General requirements

BS EN 61000-6-2:2019

Electromagnetic compatibility (EMC) -- Part 6-2: Generic standards - Immunity for industrial environments

Also, the following UK guidelines are fulfilled:

S.I. 2016/1091 Electromagnetic Compatibility Regulations 2016.

S.I. 2016/1101 Electrical Equipment (Safety) Regulations 2016.

S.I. 2012/3032 The Restiction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012.

Badalona October 2021 Gerente

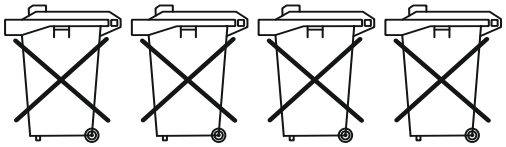
18. Disposal

Note!

- Avoid environmental damage caused by media-contaminated parts
- Dispose of the device and packaging in an environmentally friendly manner
- Comply with applicable national and international disposal regulations and environmental regulations.

Batteries

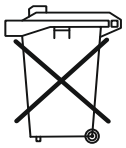
Batteries containing pollutants are marked with a sign consisting of a crossed-out garbage can and the chemical symbol (Cd, Hg, Li or Pb) of the heavy metal that is decisive for the classification as containing pollutants:



Cd[1] Hg[2] Pb[3] Li[4]

1. „Cd" stands for cadmium
2. „Hg" stands for mercury
3. „Pb" stands for lead
4. „Li" stands for lithium

Electrical and electronic equipment



19. ATEX Certified

LABORATORIO OFICIAL J. M. MADARIAGA

EC-TYPE EXAMINATION CERTIFICATE

(1)

(2) Equipment or protective system intended for use in potentially explosive atmospheres Directive 94/9/EC

(3) EC-Type Examination Certificate number: **LOM 06ATEX2054 X**

(4) Equipment or Protection System: Level detectors
Types MIL... EX y RFS...EX

(5) Applicant: CONTROL INSTRUMENTS MESURA S.L.

(6) Address: Guifré, 665 1º
08912 BADALONA(BARCELONA)
SPAIN

(7) This equipment or protective system and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

(8) Laboratorio Oficial J.M. Madariaga (LOM), notified body number 0163 in accordance with Article 9 of the Directive 94/9/EC of the European Parliament of 23 March 1994, certifies that this equipment or protective system has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres, given in Annex II to the Directive.

The examination and test results are recorded in confidential report nr. **LOM 04.221 JP**

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:
– Standards **EN 60079-0:2004** **EN 50020:2002**
prEN 61241-0:2005 **EN 61241-1:2004**

(10) If the sign X is placed after the certificate number, it indicates that the equipment or protective system is subject to special conditions for safe use specified in the schedule to this certificate.

(11) This EC-Type Examination Certificate relates only to the design and construction of this specified equipment or protective system in accordance with the Directive 94/9/EC. Further requirements of the Directive applies to the manufacture and supply of this equipment or protective system. These are not covered by this certificate.

(12) The marking of the equipment or protective system shall include the following:

Ex II 2/1 D Ex tD A21 IP65 T85 ºC Ta:-20 /+ 60 ºC

Ex II 1 GD Ex ia IIC T6 / Ex iaD 20 T85 Ta:-20 /+ 60 ºC

OFICIAL LABORATORIO J.M. MADARIAGA LOM

Madrid, 16th June, 2006

Carlos Fernández Ramón
DIRECTOR OF THE LABORATORY

Angel Vega Remesal
Head of ATEX area

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UNIVERSIDAD POLITÉCNICA DE MADRID
ENSAYOS E INVESTIGACIONES DE MATERIALES Y EQUIPOS PARA ATMÓSFERAS EXPLOSIVAS Y MINERÍA
(Real Decreto 334/1992 de 3 de Abril - BOE 1992-04-29 -)
Alenza, 1 - 28003-MADRID • ☎ (34) 91 4421366/ 91 3367009 • Fax.(34) 91 4419933 • ✉ lom@lom.upm.es

LABORATORIO OFICIAL J. M. MADARIAGA

(A1) **SCHEDULE**

(A2) EC-Type Examination Certificate: : **LOM 06ATEX2054 X**

(A3) Description of equipment or protective system

Series of float switch magnetic level controllers which are mainly foreseen to be used in liquid tanks. The series is composed of the following types:

MIL.100.EX y MIL.200.EX	Float device in tube as guide and "reed" switch activated by magnet
MIL.300.EX	float device of bascule type and micro-switch
RFS.12.EX	float device of bascule type and "reed" switch

When they are used in explosive gas ambient and/or combustible dust thus must be connected to a intrinsically safe circuit, and having the marking:

Ex II 1 GD Ex ia IIC T6 / Ex iaD 20 T85 (simultaneous or alternative)

Alternatively, then can be used as category 2 apparatus when connected to conventional circuits. In this case the head of the apparatus is foreseen to be installed on the outside of tanks or silos; this head is a category 2 apparatus. The sensor that is foreseen to be installed inside tanks or silos have got a category ; this sensor is a simple mechanical device. The marking is:

Ex II 2/1 D Ex tD A21 IP65 T85 °C

As category 1 devices, the intrinsically safe specific parameter is Ui: 40 V.

As equipment having a protection by enclosure type of protection of category 2D the characteristics are:
Maximum voltage: 250 V Maximum current: 500 mA Maximum power: 4 VA

In all the cases the external ambient temperature is Ta: -20 °C /+60 °C

The floats are foreseen for a maximum process temperature up to 130 °C.

(A4) Test report nr: **04.221 JP**

(A5) Special conditions for safe use

The specific marking will determine the ambient type and zone of use.

(A6) Individual tests

None

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(A1) **SCHEDULE**

(A2) EC-Type Examination Certificate: : **LOM 06ATEX2054 X**

(A7) Essential Health and Safety Requirements

Explosion safe requirements are covered by application of the standards indicated in page 1/3 of this certificate.

(A8) Descriptive documents:

		Rev.	Date
- Description nr.	DT0126	0	2006-05-17
- Component lists nr.:	DT0078	0	2006-03-10
	DT0079	0	2006-03-10
	DT0125	0	2006-03-10
	DT0133	0	2006-03-21
- Drawings nº:	PM0347R0	0	1999-12-10
	PM0383R0	0	2004-11-15
	PM0385R0	0	2004-11-15
	PM0391R0	0	2004-11-15
	PM0425R0	0	2005-10-07
	PM0444R0	0	2006-03-10
	PM0447R0	0	2006-03-21

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LABORATORIO OFICIAL J. M. MADARIAGA

(1) EC-TYPE EXAMINATION CERTIFICATE SUPPLEMENT

(2) Equipment or protective system intended for use in potentially explosive atmospheres Directive 94/9/EC

(3) Supplement nr. 1 to EC-Type Examination Certificate number **LOM 06ATEX2054 X**

(4) Equipment or Protection System: Level detectors
Type MIL... EX and RFS...EX

(5) Applicant: KOBOLD MESURA, S.L.U.

(6) Address: Guifré, 665
08918 BADALONA(BARCELONA)
SPAIN

(7) Report nr.: **LOM 07.059 NP**

(8) Variations included in this certificate

- Change of the manufacturer name, before CONTROL INSTRUMENTS MESURA S.L.
- Update of applied standards to: EN 60079-0:2006, EN 60079-11:2007, EN 61241-0:2006, EN 61241-1:2004 and EN 61241-11:2006

(9) Marking variations

None

(10) Descriptive documents

		Rev.	Date
- Drawings nr.:	DT0132R2	2	2007-07-17

OFICIAL LABORATORIO J.M. MADARIAGA LOM

Madrid, 24th July, 2007

Carlos Fernández Ramón
DIRECTOR OF THE LABORATORY

Angel Vega Remesal
Head of ATEX area

This supplement must be an inseparable part together with the base certificate **LOM 06ATEX2054 X**

This Certificate is a translation from the original in Spanish. The LOM liability applies only on the Spanish text

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UNIVERSIDAD POLITÉCNICA DE MADRID
ENSAYOS E INVESTIGACIONES DE MATERIALES Y EQUIPOS PARA ATMÓSFERAS EXPLOSIVAS Y MINERÍA
(Real Decreto 334/1992 de 3 de Abril - BOE 1992-04-29 -)
Alenza, 1 - 28003-MADRID • ☎ (34) 91 4421366/ 91 3367009 • Fax.(34) 91 4419933 • ✉ lom@lom.upm.es

LABORATORIO OFICIAL J. M. MADARIAGA

EC-TYPE EXAMINATION CERTIFICATE SUPPLEMENT

(1) EC-TYPE EXAMINATION CERTIFICATE SUPPLEMENT

(2) Equipment or protective system intended for use in potentially explosive atmospheres Directive 94/9/EC

(3) Supplement nr. **2** to EC-Type Examination Certificate **LOM 06ATEX2054 X**

(4) Equipment or protective system: Level detectors Types MIL.. EX, RFS..EX y M.. E

(5) Manufacturer: KOBOLD MESURA, S.L.U.

(6) Address: Guifré, 665 08918 BADALONA(BARCELONA SPAIN

(7) Test report nr.: **LOM 12.256 KP**

(8) Variations included in this certificate

- Update to the standards EN 60079-0:2009, EN 60079-11:2007 and EN 60079-31:2009
- To Include two new series named "M..E" and "MS..E" with intrinsically safe type of protection, with straight or angled tube respectively. May include junction box or direct cable connection
- To include new connection boxes and connectors for the variants MIL.100.EX, MIL.200.EX and RFS.12.EX
- Process temperature is not limited

(9) Changes in marking

All variants used in intrinsically safe circuits

II 1GD Ex ia IIC T6 Ga
Ex ia IIIC T85 °C Da
-20 °C ≤ Ta ≤ +60 °C

Variant MIL.300.EX used as protection by enclosure type of protection

II 2D Ex t IIIC T85 °C Db
-20 °C ≤ Ta ≤ +60 °C

(10) Changes in the special conditions for a safe use

It is added:

- The temperature class or surface temperature refers only to equipment operating at room temperature. In class facility shall be determined on the basis of actual temperature of the process.

(11) Descriptive documents

		Rev.	Date
- Descriptions nr.:	DT0494	-	2012-07
	DT0495	-	2012-07
- Drawings nr.:	DT0496	-	2012-07

Getafe, 2012-10-22

OFICIAL LABORATORIO J.M. MADARIAGA LOM

Carlos Fernández Ramón
DIRECTOR OF THE LABORATORY

Angel Vega Remesal
Head of the ATEX

This supplement must be an inseparable part together with the base certificate **LOM 06ATEX2054 X**
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(Real Decreto 334/1992 de 3 de Abril - BOE 1992-04-29)
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LABORATORIO OFICIAL J. M. MADARIAGA

(1) EC-TYPE EXAMINATION CERTIFICATE SUPPLEMENT

(2) Equipment or protective system intended for use in potentially explosive atmospheres Directive 94/9/EC

(3) Supplement nr. **3** to EC-Type Examination Certificate number **LOM 06ATEX2054 X**

(4) Equipment or protection system: Level detectors
Types MIL... EX, RFS...EX, M…E0 y MM…E

(5) Manufacturer: Kobold Mesura S.L.U.

(6) Address: Avda. Conflent 68, nave 15
08915 Badalona (Barcelona)
SPAIN

(7) Test report nr.: **LOM 14.120 CP**

(8) Variations included in this certificate

1. To include a new series called MM…E

MM _ _ _ E
- Float material
- Process connection / head
- Output / transmitter

This new series is manufactured with intrinsically safe type of protection. It is based on a chain resistances and contact type "reed" driven by the magnetic field of the float, with potentiometric measurement.

The output signal can be direct, or using the loop signal converters for 4-20 mA, HART or PROFIBUS / FIELDBUS, intrinsically safe using certified transmitter modules.

Used transmitters

Type	Certificate	Manufacturer
5333D	KEMA 03ATEX1535	PR electronics A/S
5335D, 5337D	KEMA 03ATEX1537	
5350B	KEMA 02ATEX1318	

Also it cans include a display type CombiView DFON 5XX from Baumer A/S with certificate TUV 13ATEX113124 X.

The input parameters of the intrinsically safe type of protection will be the same as those indicated in the transmitter modules. For the version with direct connection the input parameter is *Pi*: 1.2 W

2. It is restricted to the use of group II for gases and marking is updated for all the variants MIL... EX, RFS...EX, M…E0 and MM…E.

3. Assessment update to the standards EN 60079-0:2012 and EN 60079-11:2012

(9) Changes in marking

II 1GD Ex ia IIC T6 Ga
-20 °C ≤ Ta ≤ +60 °C

This supplement must be an inseparable part together with the base certificate **LOM 06ATEX2054 X**
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(3) Supplement nr. **3** to EC-Type Examination Certificate number **LOM 06ATEX2054 X**

(10) Changes in the special conditions for a safe use

- Attention should be paid to electrostatic risk of head and parts of the sensor / float made of plastic materials.
- The use in zone 0 of heads made of aluminium should be restricted to locations where the risk of ignition due to mechanical impact is not likely.

(11) Descriptive documents

		Rev.	Date
- Technical description nº:	DT0602	-	2014-05
- Drawings nr.:	DT0596	-	2013-12
	DT0598	-	2014-03
	PE0234	0	2014-02-11
	DT0615	-	2014-04-11

Getafe, 2014-06-23

Carlos Fernández Ramón
Responsible of the Certification Committee

RCPCER.07.4/2
Rev. 0

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Technical data

Subject to change without prior notice