

Operating Instructions for Level Switch for Liquids

Model: RFS



1. Contents

1. Contents.....	2
2. Note	3
3. Instrument Inspection.....	3
4. Regulation Use	3
5. Operating Principle	4
6. Use in Hazardous Areas	4
7. Mechanical Connection	5
8. Electrical Connection	6
9. Technical Information	8
10. Order Codes	10
11. Dimensions	11
12. Declaration of Conformance	12
13. ATEX-Certificate	13

Manufactured and sold by:

Kobold Messring GmbH
Nordring 22-24
D-65719 Hofheim
Tel.: +49(0)6192-2990
Fax: +49(0)6192-23398
E-Mail: info.de@kobold.com
Internet: www.kobold.com

2. Note

Please read these operating instructions before unpacking and putting the unit into operation. Follow the instructions precisely as described herein.

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 EWG-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:

- Level Switch model: RFS
- Operating Instructions

4. Regulation Use

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

Level control is often accomplished with at least two level switches - one acting to sense the minimum level and the other for maximum level detection.

Any use of the Level Switch, model: RFS, which exceeds the manufacturer's specification may invalidate its warranty. Therefore, any resulting damage is not the responsibility of the manufacturer. The user assumes all risk for such usage.

5. Operating Principle

The Level Switch RFS is designed for economical control of liquids in vessels. The following three versions are available: A device with plug connection and two devices with aluminium housing connection of which one is an ATEX-version for the use in environment with gas explosion hazards. The switch is remarkable for its maintenance-free design and small dimensions. The switch is mounted on the side of the vessel. A hinged stainless steel float with a magnet floats up and down through the liquid level. In the end position a potential-free reed contact is operated by the magnet. 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 180°.

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 2D. The float is appropriate for the use within the process in zone of category 2D and 1D.

The approvals are as follows:

For gas:  II 1 GD Exia II C T6

For dust:  II 2/1 D ExtD A21 IP65 T85 °C

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

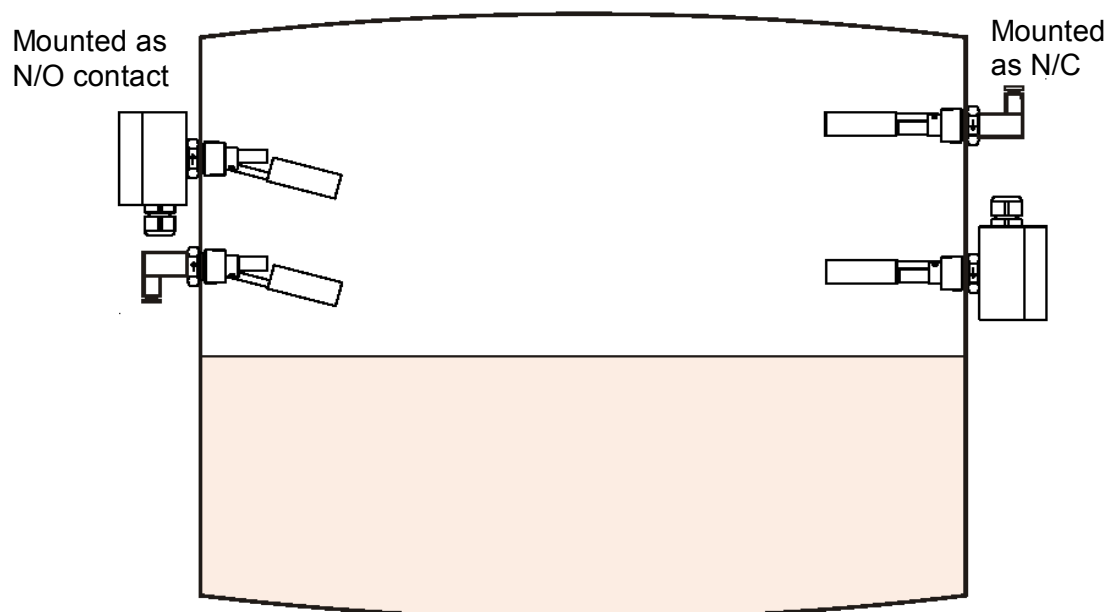
The Level Switch should be mounted so that the float can move freely over its entire path without hitting the walls, floor or roof of the container. Avoid fitting the switch where agitators or inlet valves could expose it to excessive turbulence. Make sure that the medium does not contain solids or ferrite 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 it is easily accessible for installation and maintenance.

- 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 installation.
- 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 the voltage values of your system correspond with the voltage values of the level switch.

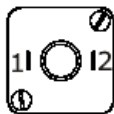
- Make sure that the supply wires are de-energised.
- Connect your connection cable to the terminal of the aluminium housing or the plug of the RFS level switch.
- The level switch has a protective insulation; a separate protection wiring for the standard version is not necessary.
- For the RFS version for ATEX applications, the connection of the potential terminal is mandatory.
- An additional intrinsically safe relay is required in environment with gas explosion hazards (KFA...and respectively KFD).

Pin assignment for RFS Level Switch

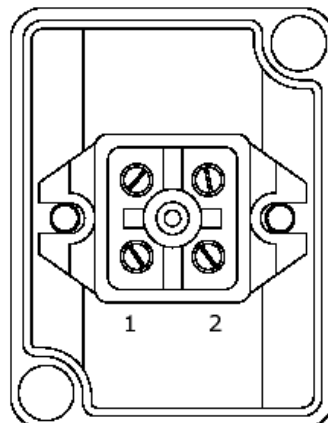
RFS-1200N4 and RFS-1201N4

There are only two connection terminals which can be connected by choice and which do not have any influence on the contact function (N/C / N/O). The contact function is defined by the mounting position of the instrument.

RFS-1200N4

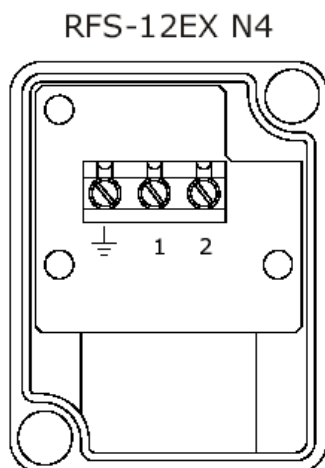


RFS-1201 N4



RFS-12EXN4

There are three connection terminals of which one terminal is clearly marked as a ground terminal. The two other terminals are connected in the same way as the standard devices RFS-1200N4 and RFS-1201N4 respectively.





After the connection of any other from your designated external instruments to the limit contact, the device is ready for operation.

9. Technical Information

Medium temperature:	- 40...+120 °C
Ambient temperature:	-20...+80 °C (RFS-1200 N4 and RFS-1201 N4)
	-20...+ 60 °C (RFS-12Ex N4)
Operating pressure:	max. 5 bar
mounting position:	horizontal

Materials

• Housing / plug:	plastic with RFS-1200 N4 aluminium with RFS-1201 N4 and RFS-12Ex N4
• Float:	stainless steel 1.4301
• Connection:	stainless steel 1.4301
Process connection:	1/2 NPT
Electr. connection:	for RFS-1200 N4: DIN plug for RFS-1201 and RFS-12Ex: terminals in the aluminium connection
Contacts:	N/O or N/C contact, depending on the mounting position of the device
Switching voltage:	max. 240 V _{AC} / 300 V _{DC} with RFS-1200 and RFS-1201 max. 40 V _{DC} with RFS-12Ex
Switching current:	max. 0.5 A
Switching capacity:	max. 15 VA with RFS-1200 and RFS-1201 max. 4 VA with RFS-12Ex
Medium density:	>0.7 g/cm ³
Contact resistance:	max. 150 kΩ
Protection:	IP65
ATEX marking for RFS-12Ex:	 II 1 GD Exia II CT6 (gas)

 II 2/1D ExtD A21 IP65 T85 °C (dust)

10. Order Codes

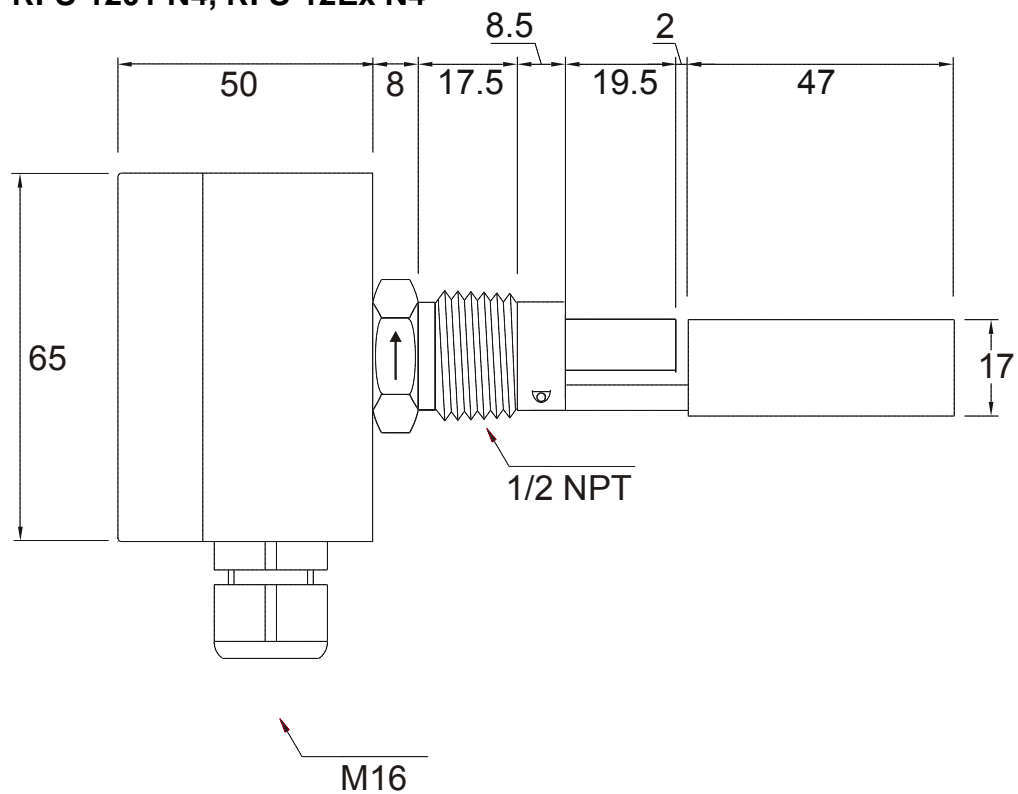
Example: RFS-1200 N4

Model	Description
RFS-1200 N4	Standard version with plug connection
RFS-1201 N4	Standard version with housing connection (aluminium)
RFS-12Ex N4*	ATEX version for use in environments with explosion hazards

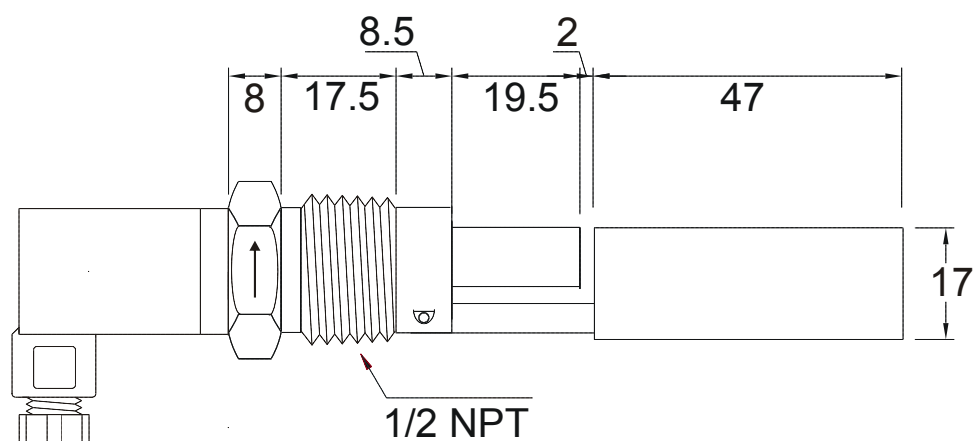
*an additional relay is required for the use in environment with gas explosion hazards

11. Dimensions

RFS-1201 N4, RFS-12Ex N4



RFS-1200 N4



12. Declaration of Conformance

We, KOBOLD Messring GmbH, Hofheim-Ts, Germany, declare under our sole responsibility that the product:

Level Switch Model: RFS-...

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

EN 50020	2002
EN 60079-0	2006
EN 60079-11	2007
EN 61241-0	2006
EN 61241-1	2004
EN 61241-11	2006

Also the following EEC guidelines are fulfilled:

2004/108/EC	EEC Electromagnetic compatibility
93/68/EWG	PED (Pressure Equipment Directive)

Hofheim, 28. Jul. 2005



H. Peters
General Manager



M. Wenzel
Proxy Holder

13. ATEX-Certificate



DECLARACIÓN DE CONFORMIDAD

Declaration of Conformity



KOBOLD MESURA S.L.U.
Guifré 655 08918 BADALONA (Spain)

Declara bajo la propia responsabilidad que el producto:
Declare under our sole responsibility that the products

Nivel Magnetico Serie MIL...EX y RFS...EX

**A los cuáles se refiere esta declaración, son conformes a las
Directivas de la Comunidad Europea 94/9/CE**
To which this declaration relates is in conformity with the 94/9/CE European
Community Directive.

Norma EN 50020:2002 ; EN60079-0:2006 ; EN 60079-11:2007
Norma EN 61241-0:2006 ; EN 61241-1:2004 ; EN 61241-11:2006

**COMPATIBILIDAD ELECTROMAGNÉTICA 89/336/CEE
modificada de la 93/68/EEC**
ELECTROMAGNETIC COMPATIBILITY 89/336/EEC amended by
93/68/EEC

Fabricado en: KOBOLD MESURA S.L.U. Guifré, 655 Badalona (Spain)

Nombre y firma o marca equivalente de la persona autorizada
Name and signature or equivalent marking of authorized person

Organismo notificado LOM 0163
anexo IV y VII que le autoriza a marcar
Ex II 2/1D Ex tD A21 IP65 T85° Ta:-20/+60°C
Ex II 1 GD Ex ia IIC T6 / Ex iaD 20 T85 Ta:-20/+60°C

Badalona, 24 Julio de 2007

Antonio Sánchez Tomás-Gerente

Firma
Signature

A handwritten signature in black ink, appearing to read 'Antonio Sánchez Tomás'.

This document was created with Win2PDF available at <http://www.win2pdf.com>.
The unregistered version of Win2PDF is for evaluation or non-commercial use only.
This page will not be added after purchasing Win2PDF.