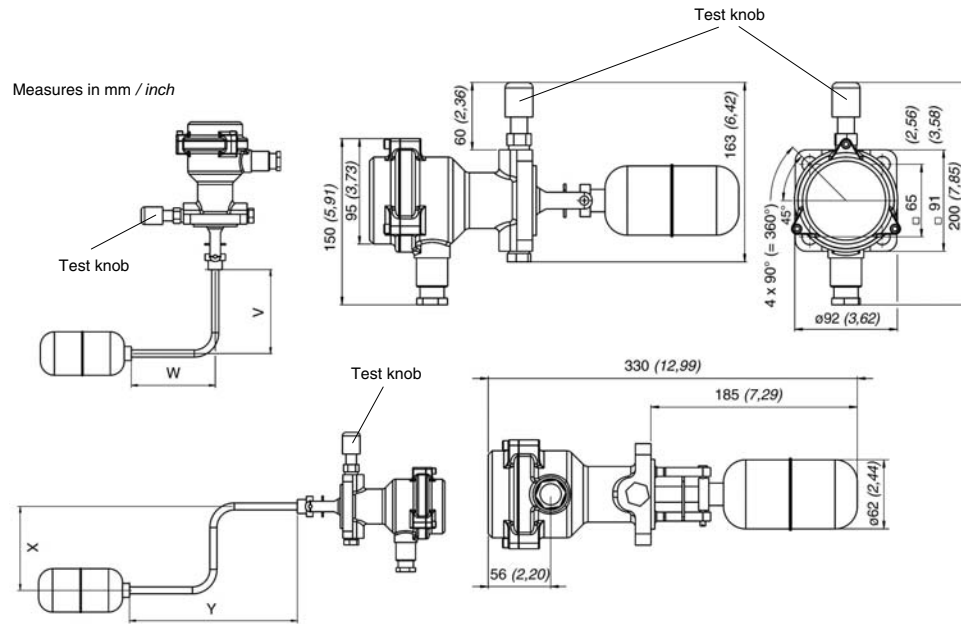


Dimensions



V, W, X, Y = connecting parts
 V + W = max. 750 mm
 X + Y = max. 750 mm
 standard value for W = 75 mm

Operating Instructions

**Level Switch
UNS-RG-040**



1	Intended Applications.....	2
2	Safety Instructions.....	2
3	Standards.....	3
4	Warranty/Guaranty.....	3
5	Storage.....	3
6	Installation/Commissioning	4
7	Maintenance/Cleaning	5
8	Principle of Operation.....	7
9	Technical Data.....	7

Barksdale GmbH
 Dorn-Assenheimer Straße 27
 D-61203 Reichelsheim

Tel.: +49 (6035) 949-0
 Fax: +49 (6035) 949-111 and 949-113
 email: info@barksdale.de
 Internet: www.barksdale.de

Art. no.: 923-1432
 Index C, 14.03.2008
 Specifications are subject to
 changes without notice!



1 Intended Applications

The level switch serves for level measurement in tanks and containers. It has been designed for universal use in shipbuilding and plant engineering.

DANGER

Read the operating instructions and the safety instructions carefully before using the level switch. Nonobservance may cause injuries to health or material damage. Barksdale GmbH cannot be held liable for any damage resulting from incorrect use. Observe also the applicable national safety instructions for assembly, commissioning and operation of the level switch.

2 Safety Instructions

The safety instructions are intended to protect the user from dangerous situations and/or material damage.

In the operating instructions the seriousness of the potential risk is designated by the following signal words:

DANGER

Refers to imminent danger to men. Nonobservance may result in fatal injuries.

WARNING

Refers to a recognizable danger. Nonobservance may result in fatal injuries, and destroy the equipment or plant parts.

CAUTION

Refers to a danger. Nonobservance may result in light injuries and material damage to the switch and/or to the plant.

IMPORTANT

Refers to important information essential to the user.



Disposal

The level switch must be disposed of correctly in accordance with the local regulations for electric/electronic equipment.

The level switch must not be disposed of with the household garbage!

3 Standards

The standards applied during development, manufacture and configuration are listed in the CE conformity and manufacturer's declaration.

4 Warranty/Guaranty

Warranty

Our scope of delivery and services is governed by the legal warranties and warranty periods.

Terms of guaranty

We guaranty for function and material of the level switch under normal operating and maintenance conditions in accordance with the statutory provisions.

Loss of guaranty

The agreed guaranty period will expire in case of:

- incorrect use,
- incorrect installation or
- incorrect handling or operation contrary to the provisions of these operating instructions.

No liability is assumed for any damage resulting therefrom, or any consequential damage.

5 Storage

CAUTION

The switch should not be dropped or subjected to any mechanic influence that could cause damage.

Since the level switch contains magnets, it should not be stored in close proximity to other sources of magnetic fields. Improper storage can lead to malfunctions in the level switch.

Storage conditions:

- dry/ clean
- temperatures between approx. 1 °C and 60 °C
- humidity not above 68% relative humidity

The packing should be removed immediately before installing the switch.

6 Installation/Commissioning



DANGER

Prior to any work on electrical components disconnect them from power supply.
The electrical connection may only be made by trained expert staff!

To install the level switch remove all packing materials and make sure that all delivered parts, such as cable glands, gaskets, etc., are taken out of the box.



IMPORTANT

Handle the gaskets with care; avoid buckling.
Before installation, check that the gasket is not damaged.
Avoid any contact of the level switch with ferrous particles, since these may adhere to the magnet of the level switch. This may impair the function of the switch.
Do not use the level switch in positions with heavy turbulences.



CAUTION

During mounting and after installation of the level switch, make sure that the float unit inside the tank/container can move freely, without knocking against the sides, top or bottom of the tank/container.

During mounting the level switch should be vertical within 2° either way from the switch axis.

The level switch is mounted on a backing flange (meeting international standards with the measures 92x92 mm and a bolthole circle of Ø92 mm).

For shipbuilding the backing flange comes with a welding phase for welding it to the tank/container.

There are stay bolts on the flange. During assembly, make sure that the included flat packing is inserted between level switch and backing flange. The level switch is attached to the backing flange with screws. The screws must be tightened crosswise. Stall torques comply with DIN norms for screws M12x35 and nuts M12.

Electrical connection

We recommend to connect the ground / protective conductor to the ground terminal marked in the casing.

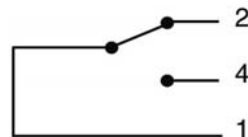


WARNING

Heat-resisting cables must be used on switch head and cable gland if the switch is subjected to high temperatures.

Do not connect different voltages to the switch mechanism.

Connection diagram



Electrical data for switch

Load carrying capacity	V AC	V DC inductive	V DC resistive
Max. voltage	up to 250 V	24 V	24 V
Max. current	6 A	1 A	1 A

7 Maintenance/Cleaning

Checking the wet side - float unit

The float unit of this level switch can be checked mechanically and electrically in mounted condition using the test knob integrated in the level switch flange.

Pressing the test knob will move the float, and you can check whether the plant-specific control command is provided.

Level switches without test knob must be checked in dismantled condition.

For this purpose it is necessary:

1. To switch off the power supply before dismantling.
2. To empty the tank/container.
3. After the switch has been removed from the tank/ container, check the float unit for soiling and ferrous particles on the magnet.
Carefully remove any ferrous particles from the magnet.
4. All mechanic parts of the joint must move easily.
5. Check the float unit for damage and corrosion. Damaged or corroded parts must be replaced.

Checking the dry side - switch body

1. Unscrew the casing top.
2. Check the gasket.
3. Check the inside of the switch for humidity and corrosion. Replace corroded parts, if any.
4. Check all screws and clamps for tightness and correct position. There is no need to remove magnet and micro switch.
5. Check the test knob (if any) for leakage and easy movement.

Mounting the switch after maintenance

1. See "Mounting/ Installation"
Make sure the gasket in the top of the casing is inserted properly into the groove. The gasket must not be jammed. Check proper positioning of the gasket between level switch and backing flange.
2. Connect power supply.
3. Check operation of switch.

Removal of electric switch mechanism and replacement of micro switch

1. Switch off power supply.
2. Open casing top and disconnect cable.
3. Unscrew the hexagon socket head cap screws and remove the complete switch mechanism.
4. Check, if necessary clean, the inside of the level switch.
5. Check position and easy movement of the magnet.
6. Loosen the cable on the micro switch.
7. Unscrew the hexagon socket head cap screws on the micro switch and remove the micro switch.
8. Insert new micro switch and tighten hexagon socket head cap screws, being careful not to damage the micro switch!
9. Move the magnet to check mechanic switch function on the micro switch. The mechanic function can be heard as a soft click.
10. Fasten the cable of the micro switch to the wire nut.
11. Reinstall the switch mechanism in reverse order of removal; reconnect the wiring.
12. Insert gasket into the groove and fasten the top of the casing securely.
13. Check cable gland for sealing.
14. Check operation of switch.

8 Principle of Operation


The sturdy gunmetal casing with integrated connection flange is the core part of the switch. The casing top is sealed by means of an O ring and thus has an IP 56 protection system. The protection system IP 68 is achieved by factory mounted and shrunken cable as well as with the top of the casing, which is stucked together.

All components feature high vibration and impact resistance.

Magnetic transmission of the float position to the switch mechanism is effected without any ducts. The magnet works according to the repulsion principle and thus effects an abrupt, positive switching function. Appropriate assignment of the micro switch enables transmission of plant-specific control commands (level-dependent) to pumps, solenoid valves or switching relays.

The magnet is integrated in the actuating element and completely welded with the float to one unit. Float, axle, test knob (optional) and threaded plug are completely made of 1.4571 and thus corrosion-resistant and of long service life. The O ring in the test knob features high pressure resistance and allows testing of the switch function also during operation.

Conversion to an EEx device can be effected without dismounting the device.

	IMPORTANT
When a perforated disk is used (-LS) on the float unit the switching hysteresis can be limited.	

9 Technical Data

Materials - casing - float unit - flat packing - rubber gasket	RG5, RG10 (gunmetal) 1.4571 oil and saltwater-proof EPDM, NPR
System of protection	IP56 / IP68 (cable type)
Approvals	EEx d IIC T6 accord. to ATEX
Max. pressure	42 bar for float
Min. density	0.46 g / cm ³
Max. temperature - ambient temperature - ambient temperature for EEx d approval	-40 °C ... +125 °C -40 °C ... +82 °C
Installation position	from top, lateral
Electrical connection	screwed cable gland M20 x 1.5 mm
Contact type	change-over contact (WE)
Weight	3.5 kg approx.