Level switch - SMMR

Installation and reference manual for SMMR Level Switches

inpro
research & development

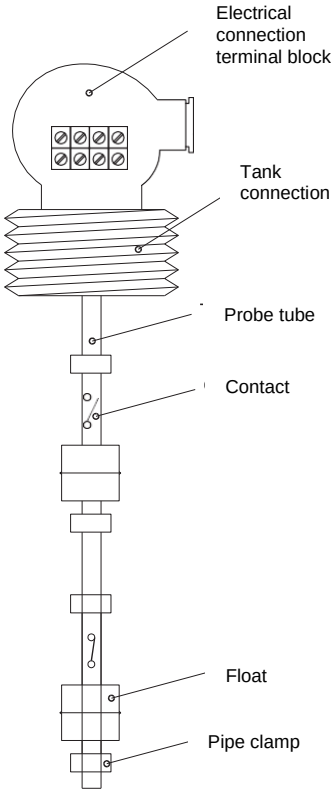
CE

Table of Contents

Overview of SMMR Level Probes

Base codes

Probe Code + Control Box	Name	Signals (relays to be connected)	Probe only Code
23060000010010	SMMR-1 LEVEL SWITCH	A relay	23060001010010
23060000020010	SMMR-2 LEVEL SWITCH	2 relays	23060001020010
23060000030010	SMMR-3 LEVEL SWITCH	3 relays	23060001030010
23060000040010	SMMR-4 LEVEL SWITCH	4 relays	23060001040010



These probes are designed to be mounted from the top of the reservoir.

SMMR level probes consist of a rigid tube probe with built-in internal Reed contacts and one or more floats. The floats move freely through the tube of the probe and between the stops that have been preset. Floats have a magnet and when the float is in the vicinity of the Reed contact, the magnetic field activates the reed contact, and stops activating it as it moves away from the vicinity.

The positions of the reed contacts, and their connections, are defined according to the required maneuvers and the order specifications.
Once manufactured, they cannot be modified by the customer.

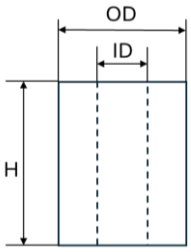
Note: *Standard SMMR level probes are not designed or manufactured for use in potentially explosive atmospheres.*

Technical Specifications

Parameter	Standard value	Consult
Tension:	1 to 24 Vdc/Vac @50/60 Hz	230 VAC @ 50/60 Hz
Intensity:	1 mA to 500 mA	Up to 1 A
Maximum Power (VA max):	12 VA	
Probe Tube Material:	AISI 304 Stainless Steel	316 Ti/Li...
Probe tube diameter:	13 mm	8mm
Material of end stops for floats:	AISI 316 Stainless Steel	
Connection:	2" thread Material: Brass	Threads 1-1/2", 1-1/4", 1" Flange Materials: Brass, Stainless Steel
Connection box (head):	PVC	aluminum, explosion-proof, stainless, others on request
Working temperature:	-10 ºC to +90ºC	-10 ºC to 125 ºC
Type of contacts (relays) (To be defined):	NC, NA, Switching	
Floats (Buoys)	Type A floats (see description below)	Type B, C and D floats. (see description below)
Working fluids:	Diesel	Water, Kerosene, HVO, Depends on the buoy (other fluids consult)

Dimensions and materials of floats, and limit dimensions

Float Type	Max OD (mm)	Min. ID (mm)	H max. (mm)	Material	Xi min. (mm)	Xe min. (mm)	Xf (mm)
To	32,0	15,5	40,2	Butyl	30	80	30
B	26,4	9,0	28,5	Butyl	25	80	20
C	40,5	15,3	33,1	INOX 304	30	80	30
D	45,15	15,3	53,4	INOX 304	30	100	40

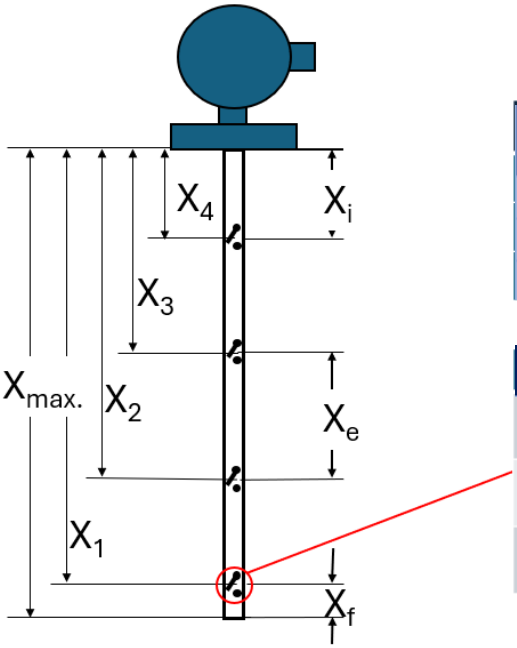


Xi : Distance from the top of the probe to the first upper relay

Xe: Minimum distance between relays

Xf: Distance between lowest relay and the end of the probe.

Maximum and minimum limits:



Probe Type	Xmax (mm)
Rigid tube Ø13 mm	3.000*
Rigid tube Ø8 mm	2.000*
Flexible probe	12.000

Relay possibilities	
NO	
NC	
Switching	

*Maximum length considerations:
There must be enough space at the probe installation site to be able to reach the tank with the probe and insert the level probe through the fixing socket at the top of the tank. If there is no space available, ask for probes with flexible tubes.

Installation

Before carrying out any operation that involves handling chemical products (diesel, etc.), the safety and hygiene measures recommended by the manufacturer of the same must be adopted in its safety data sheet or packaging labelling.

1. The personnel in the installation, service, maintenance and inspection of the equipment must be perfectly qualified to carry out this type of work.

2. Equipment must be kept in safe working condition at all times and must be examined at regular intervals for functionality by competent training personnel. Any operation on the equipment will only be carried out by personnel trained in the procedures of INPRO, S.L. Please contact INPRO,
   S.L. in relation to training needs.

3. SMMR probes should not be used for any purpose other than that for which they are designed

4. Do not use spare parts other than those recommended and supplied by INPRO, S.L.

5. Any modification made by the customer to the equipment will be the sole responsibility of said customer. INPRO, S.L. will advise on any modification presented.

6. All regulatory safety standards should be taken into account together with the safety indications indicated in this manual for safer protection.

7. Failure to follow the safety instructions in this manual may cause hazards to persons and equipment.

8. Before repairing, replacing, you must disconnect the power supply.

9. Under no circumstances should the working conditions or the limits stipulated in this manual be exceeded.

10. In the event of accidental spillage, you must:
    Unplug the computer. Eliminate ignition sources. See the safety data sheet for the liquids, which will be given to you by the supplier of the liquid, where you will find guidelines to follow to avoid personal damage or damage to the environment.

Procedure:

- Insert the level probe through the probe connection socket, and screw the probe into the tank, ensuring the free movement of the buoy through the probe tube.
- Make the electrical connection.
  This manual does not include electrical wiring because it depends on the maneuvers required by the applicant. To do this, see the specific technical sheet that is sent with the probe.

Guide to Possible Breakdowns

First of all, make sure that the buoy(s) can move you correctly inside the tank without any obstacle.
For a correct check, disconnect the probe, remove it from the tank and use a multimeter to check the correct operation of the relays (Reed) by moving the buoys and verifying their switching.

number	SYMPTOMS	FAULTS	OPERATION	REMARKS
1	Micro does not switch	Bumpers moved	Move the stop until the change occurs	Adjust stop and tighten
		Broken Mic	Send equipment for replacement	
2	Micro Always Switches	Bumpers moved	Move the stop until the change occurs	Adjust stop and tighten
		Broken mics	Send equipment for replacement	
		Flooded probe	Submit Equipment for Repair	

Precautions

- Improper transport can cause damage to equipment. Excessive bending of the tube tube may not cause damage visible to the naked eye, but it does cause internal damage to the tube.
- Do not throw or drop the equipment as it could be damaged and even harm third parties. Impacts can cause internal breakdown of components.
- Equipment must be protected during transport from water, moisture and dirt.

EC DECLARATION OF CONFORMITY IN ACCORDANCE WITH DIRECTIVE 2006/95/EC, DIRECTIVE 2004/108/EC AND ROYAL DECREE 219/2013

Inpro Research and Development S.L. Pol. Ind. "El Malvar"
C/Invierno, naves 4-6
28500 Arganda del Rey (Madrid)

Declares under its responsibility that the Level Probes for deposit control, Type:

SMMR 1 / 2 / 3 / 4
Year of construction: **2024**

It is compliant with the Electrical Equipment Directive 2006/95/EC, Electromagnetic Compatibility 2004/108/EC and Royal Decree 219/2013 on ROHS Hazardous Substances Restrictions.

The company cannot be held responsible for any accident caused by:

- Non-observance of the measures contemplated in the manuals provided **by Inpro Research and Development S.L.**
- Modifications made to the machine without the prior consent **of Inpro Research and Development S.L.**
- Damage caused by maintenance and/or repair carried out by personnel not authorized by **Inpro Research and Development S.L.**

For its construction, the following standards have been taken into account:

UNE-EN 61010-1:2011, UNE-EN 61010-031:2004, EN 61293:1994, EN 61326-1, 2:2006, EN 61000-6-2:2005, EN 61000-6-4:2007, EN-ISO-9001

Fdo. Juan José Lezcano Barbero

Quality Manager

Signed in Arganda del Rey, Spain.

We recommend keeping this manual next to the SMMR Model Level Probes

C/Invierno, 4-6 Pol. Ind. "El Malvar"
28500 Arganda del Rey Madrid
Spain
Tel.: (+34) 91 871 92 94
info@inprord.com
www.inprogroup.net

IP-3282/05-2024