Dinel®

Flexible level sensor FLD–48 "*Meduse*"

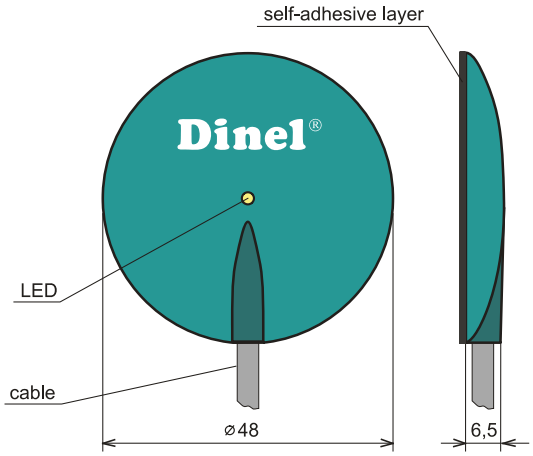
- **For limit level sensing of liquids in non-conductive plastic and glass vessels**
- **Miniature design in flexible housing, can be located on mildly bent surfaces**
- **The electrode system eliminates contamination in the vessel internal side**
- **Simple self-adhesive fixing**
- **Configuration and adjustment by third "programming" wire**
- **LED state indication**

Flexible level sensor FLD–48 *"Meduse"* is designed for detecting level of various liquids in non-conductive vessels. It is made from polyurethane flexible housing with flexible self adhesive layer, enabling simple attachment on flat and mildly bent surfaces of the vessel walls. Special configuration of the sensing surfaces and control by means of single-chip microprocessor enable reliable detection of the media and concurrent elimination of settled contamination on the internal side of the vessel. Setting of the sensor's sensitivity is very – performed by attaching the programming wire on the positive or negative potential of the supply voltage. The sensor can be connected in the relay electrical circuit or on the control system binary inlet.

Technical specifications

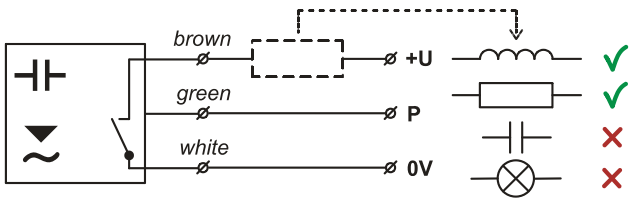
Supply voltage		6 ... 30 V DC
Current supply (static state)		max. 0.6 mA
Switching current (min. / max.)		3.3 / 40 mA
Remanet voltage in switched on state		max. 6 V
Maximum switching frequency		2 Hz
Ambient temperature range		–10 ... +60°C
Vessel diameter for attaching the sensor		min. 200 mm
Max. thickness of the vessel wall	– Conductive liquids – Non-conductive liquids	8 mm 3 mm
Protection class		IP 67
Housing material		polyurethane
Connection cable type		PUR 3 x 0.14 mm²
Weight (including 2 m cable)		approx. 45 g

Dimension drawing and application

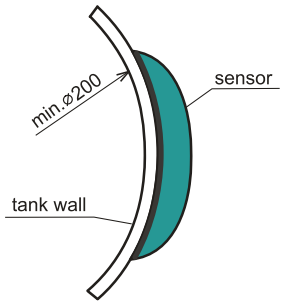


Electrical connection

Positive supply pole (+U) is connected to the brown conductor, negative (0V) to the white. The sensor output is equipped with short circuit protection. The capacity loads and low resistance (bulb) is evaluated by the sensor as short circuit.



Note: In case of strong ambient electromagnetic interference, paralleling of conductors with power distribution, or for the distribution to distance over 30 m, we recommend to use shielded cable.



Installation and sensor setting

The sensor is attached by self adhesive removable layer, which is equipped with a protection foil. Prior to the installation, remove the foil and press mildly the sensor on to the vessel wall. Before the first usage warm up the sensor for the wall´s vessel temperature – approx. 30 min. If the original self adhesive layer is damaged, it is necessary to place a new layer on the sensor (supplied as accessory). In case of replacement or dismantling of the sensor, remove the sensor carefully from the tank wall.

The setting can be performed by green, so called "programming" wire (P). Use the wire to set the upper and lower limit of the level sensing, SO modes (opens when the level drops) and SC (connects when the level drops).

SO mode: Attach the programming wire (P) to terminal 0V for approx. 2 seconds, if the tank is empty or partially filled (level is under the sensor bottom end).

When the level reaches the upper end of the sensor, potentially the tank is completely filled, attach wire (P) for the same time (2 seconds) to terminal +U.

SC mode: The setting procedure is reversed to SO mode.

Note: Wire (P) is used only for sensor´s programming. In another cases the wire (P) must be disconnected.

For comfortable setting of the sensor by 2 buttons, we recommend to use a wall evaluation switching unit Dinel SDSU-1222-W, which contains a stabilized power supply unit, optical signalization of the state, and relay output.

setting of initial values (reset of the sensor): disconnect the sensor from power supply, attached wire (P) to terminal +U and again connect power supply. After approx. 5 sec. the wire (P) from terminal +U disconnect. Now are initial values setted from producer and sensor is ready for usage in mode SO.

Failure alarm

incorrect setting: If the sensor will not recognize upper and lower level limit or mistake will occure during setting, LED control will start blink in a short interval approx. 0,2 sec. In this case repeat the setting again.

fault at output: In case of short-circuit or overrun of max. allowed switched current, LED control will blink in interval approx. 0,8 sec. Re-checked the connection status.

Range of application

Detection of various types of liquids – water, diesel, oil, cooling liquids, water solutions, some types of solvents. It is suitable for plastic and glass vessels, plastic container tanks, plastic tubs, pools, canisters, etc.

Order code

FLD-48 ☐ cable ☐ m

- Cable length in meters (2 or 5 m)
- Performance:
  N *– normal - for non-explosive areas*

Correct specification

FLD-48N cable 2m FLD-48N cable 5m

Accessories

standard – included in the sensor price

- 1x spare double-side self adhesive tape

Safety, protection and compatibility

The sensor is equipped with protection against reverse polarity, over-voltages, and against current overbad

Protection from hazardous hand contact is provided by means of feeding safe voltage supply.
Electromagnetic compatibility is provided by conformity with standards: EN 55022/B, EN 61326-1, EN 61000-4-2, -3, -4, -6.

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