

# IMNR CB INOX

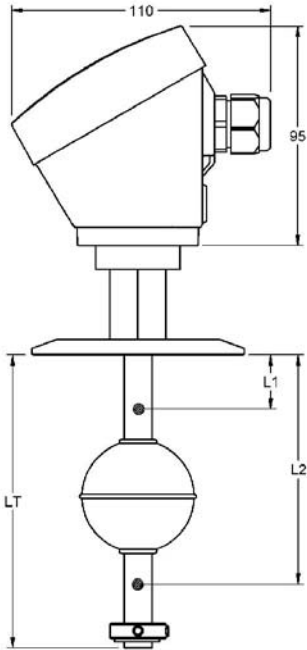
## MAGNETIC LEVEL SWITCH WITH MANEUVER CONTROL INCORPORATED



Application	Level control for general application in conductive liquids with preferred use in conductive tanks (see other possibilities in page 5).
Operating principle	The sensor uses the own process connection fitting as the common electrode and the rods for detecting the liquid contained into the tank where the level is to be controlled. The detection of that level provokes the action of a relay integrated into the sensor main body. A time can be set to delay the detection in tanks equipped with shakers or with turbulences. In order to adapt easily to the tank characteristics, it can be set the state of the contacts of the relay.
Operating mode	It depends on the number of contacts placed inside: <ul style="list-style-type: none"> <li>· With 1 contact: Detection of a only level point (amplifier KMPA). See page 2.</li> <li>· With 2 contacts: Detection of max/min levels (amplifier KMCA). See page 3.</li> </ul>

Sensor	Process connection	By Clamp flange (See table 1).
	Guided tube	SS AISI316 (1.4401), Ø12 mm.
	Lenght	90..3500 mm.
	Float	<b>FEI601M13</b> (FCI-1), Ø52x52 mm. SS AISI316 (1.4401). See table 2.
	Nr max. of contacts	1..2
	Dist. between contacts	> 40 mm.
	Temperatura	-40..+125°C
	Mounting position	Vertical, ±30°
Housing	Material and dimensions	PBT. 64 x 95 x 110 mm
	Protection	IP67
	Temperature	-20..+50 °C
	Cable gland	M20 x 1,5 (IP68)
Output	Type	SPDT relay 6A/250VAC
	Response time	· At power on: 800 ms · At liquid detection: 500 ms
	Timing	Adjustable between 0..9 s. It can be set when detecting, undetecting or at whichever of both situations.

Dimensions




**IMNR CB INOX**

1 Contact




1 Level control

**Start-up and adjustment**






Prior to start working with the sensor IMNR, it must be adjusted for getting a right operation. Adjustments can be modified whenever required. It must be taken into account that the behaviour of the device can be different whether the adjustments are done while the electrodes are in touch or not with the liquid.

Be sure that the options selector is right positioned. Each time that it is moved to a new option, the  led flashes twice indicating that the option has been correctly reached.

**Default values**








The sensor is adjusted by default with values that can be used in a large number of applications. When pressing the push-button PROG the led  turns on. Keep the push-button pressed until the led  turns off (3 seconds), indicating that the default values have been reset (they are framed with  at the left column).

**State of the relay contacts**


(Relay NO (  ): led  OFF; Relay NC (  ): led  ON). When accessing to this option, the led  shows the actual state of the adjustment. Each time the push-button PROG is pressed, it is reversed the state of the relay contacts.

**WARNING:** This option modifies the state of the relay and this could provoke undesired effects in the case that any device be connected to the contacts of the relay.

**Timing type**

(Detecting (  ): led  OFF; Undetecting (  ): led  OFF; Detecting and undetecting (  ): led  flashing). When accessing to this option, the led  shows the actual state of the adjustment. Each time the push-button PROG is pressed, it is moved to the next timing type in a cyclic way.

**Time**


When accessing to this option, the led  emits as many flashes as the number of seconds adjusted in the timer, between 0 and 9 seconds. Each time the push-button PROG is pressed, the time value increases in 1 second, except when the value is 9 that moves to 0.

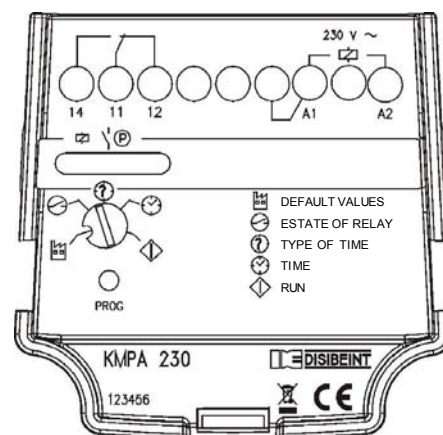
If it is pressed longer than 3 seconds, the time value moves to 0.

1s

**Run**

Normal operation mode.

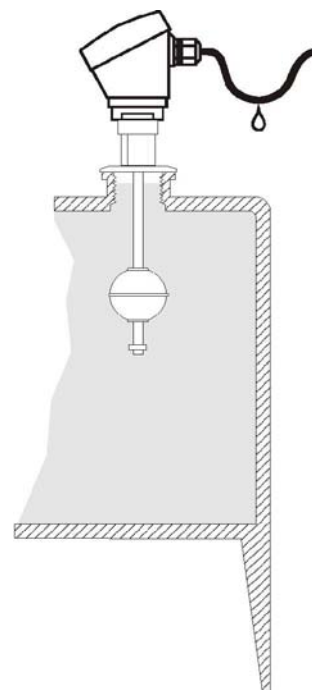
The state of the led  matches with the state of the relay contact (led ON = relay ON).

**Assembly conditions**

**Handling:** Do not use the housing to screw the sensor into the fitting. Use a tool 40 mm wide at the steel part on the thread. Once tightened, you can turn the housing 350° with your hand until it be placed in the right position.

**Electrical connection:** Use a cable according with the load the relay will manage. It is convenient that the cable gland completely tight the cable of the electrical connection, and it becomes essential in the event of humidity or when installed outdoor. In these cases, make a loop in the cable to facilitate the removal of accumulated drops (see figure).

Installation at the top side:  
level control of maximum or minimum.



## IMNR CB INOX



2 Contacts

Level control  
Max./Min.

State of the  
relay contacts









Run



### Start-up and adjustment

Prior to start working with the sensor IMNR, it must be adjusted for getting a right operation. Adjustments can be modified whenever required. It must be taken into account that the behaviour of the device can be different whether the adjustments are done while the electrodes are in touch or not with the liquid.

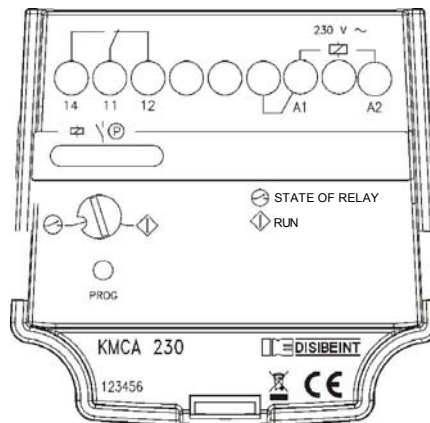
Be sure that the options selector is right positioned. Each time that it is moved to a new option, the  led flashes twice indicating that the option has been correctly reached.

(Relay NO (  ): led  OFF (emptying); Relay NC (  ): led  ON (filling). When accessing to this option, the led  shows the actual state of the adjustment. Each time the push-button PROG is pressed, it is reversed the state of the relay contacts.

**WARNING:** This option modifies the state of the relay and this could provoke undesired effects in the case that any device be connected to the contacts of the relay.

Normal operation mode.

The state of the led  matches with the state of the relay contact (led ON = relay ON).

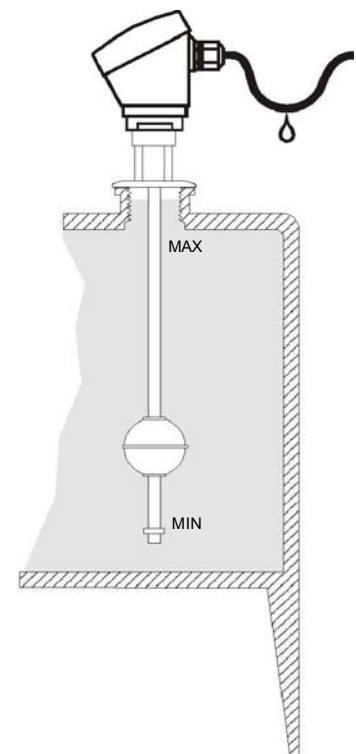


### Assembly conditions

**Handling:** Do not use the housing to screw the sensor into the fitting. Use a tool 40 mm wide at the steel part on the thread. Once tightened, you can turn the housing 350° with your hand until it be placed in the right position.

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Installation at the top side:  
Level control of maximum or minimum.



Model



IMNR CB INOX 1C

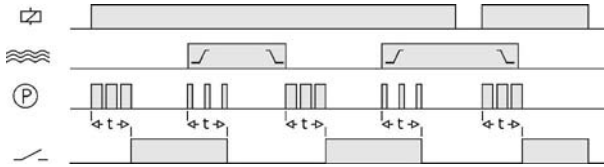
- 1 Contact
- Amplifier *KMPA*



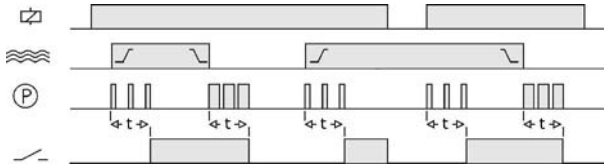
IMNR CB INOX 2C

- 2 Contacts
- Amplifier *KMCA*

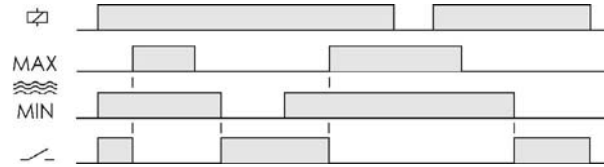
Operating diagrams



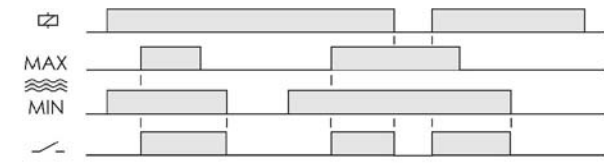
Simulation: Control of maximum level or filling  
Relay contacts: NC  
Timing type: Detecting and undetecting  
Time: Any value greater than 0



Simulation: Control of minimum level or emptying  
Relay contacts: NO  
Timing type: Detecting and undetecting  
Time: Any value greater than 0



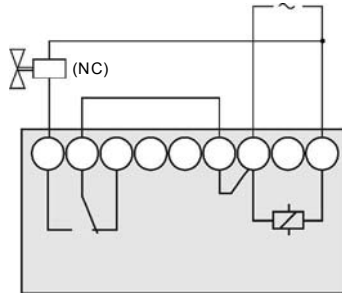
Simulation: Control for filling  
Relay contacts: NC



Simulation: Control for emptying  
Relay contacts: NO

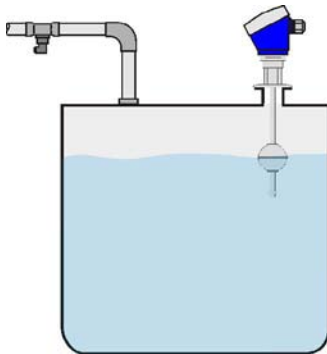
Example of wiring connection

Control of maximum level or filling control using a sensor with 1 contact and the amplifier KMPA.

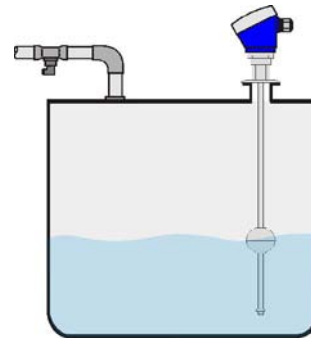


Filling control using a sensor with 2 contacts and the amplifier KMCA.

Installation examples



Detection of maximum level



Detection of maximum and minimum level

