

Level Sensor NR 80

Description

Level Sensor NR 80 is designed to monitor a preset medium level in electrically non-conductive containers with a wall thickness up to approx. 5 mm. It is fitted outside the container. Suitable for water and other electrically conductive liquids with a high relative dielectric constant ϵ_r . Available as MIN or MAX sensor.

Features

- non-invasive mounting
- transistor output
- minimum or maximum sensor
- LED status indication
- very small physical size

Ordering information

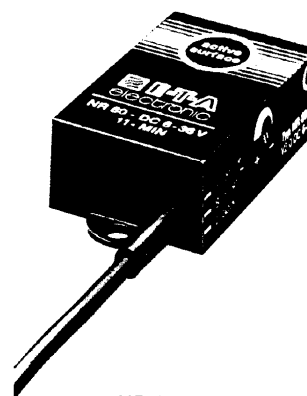
Type No.	
NR 80	level sensor for liquids
Voltage rating	
DC 6 - 36 V	
Housing	
1	moulded housing (54.5 x 36 x 18 mm)
Output	
1	NPN transistor, low side switching
2	PNP transistor, high side switching
Function (factory preset)	
MIN	minimum sensor
MAX	maximum sensor
Cable (type: LVCC, AWG 24, 3x0.2mm ²)	
Cable 2 m standard	
10 m max. ⁽¹⁾	

NR 80	-	DC 6-36 V	-	1	1	-	MIN	-	2 m	ordering example
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⁽¹⁾ Available cable lengths: 2 m, 3 m, 5 m, 8 m, 10 m

Options

AC voltage ratings and relay outputs:
only with power supply NG 03 (see page 73)



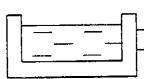
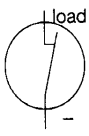
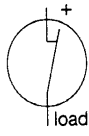

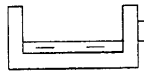
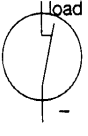
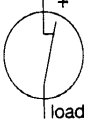

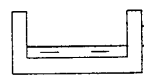
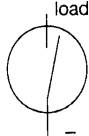
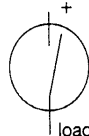


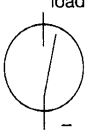
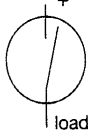

NR 80-...

Technical data

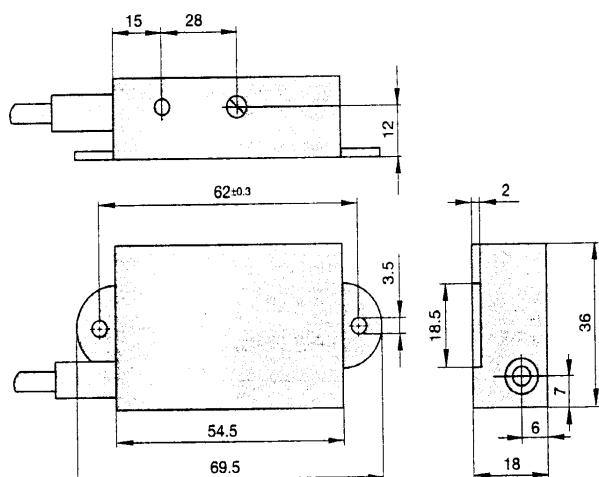
Input voltage	DC 6...36 V or with power supply NG 03
Power consumption	typically 5 mA
Output	NPN transistor, low side switching, or PNP transistor, high side switching
max. load	100 mA, with free-wheeling diode
Voltage drop	approx. 2 V
Ambient temperature	0 °C ... +70 °C
Medium temperature	sensor not in contact with medium
Response delay	approx. 60 ms
Degree of protection to IEC 529/DIN 40050	IP 54 housing
Medium	liquids
Pressure resistance	N/A
Connection	3-wire AWG24 cable
Reverse polarity protection	in-built
Material housing	ABS = acrylonitrile butadiene styrene
Mounting method	outside container (see dimension diagram)
Mounting attitude	optional
Cable length	2 m standard, 10 m max.
Switch point hysteresis (depending on medium viscosity)	vertically mounted: 12.5 mm max. (probe dia. = dia. of active surface)
Mass	approx. 90 g

Level Sensor NR 80

Status indication factory preset for MIN or MAX

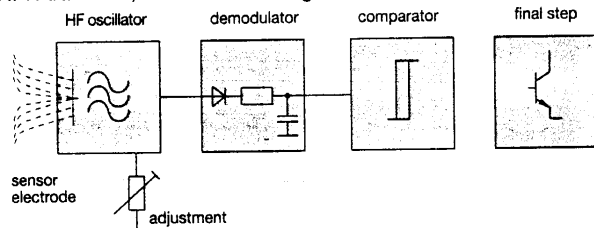
Minimum				Maximum			
medium level	transistor output		LED green	medium level	transistor output		LED green
	NPN	PNP			NPN	PNP	
			 ON				 ON
			 OFF				 OFF

Dimensions

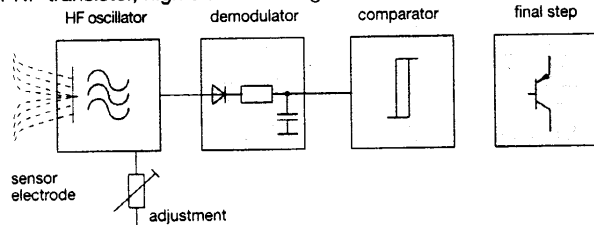


Schematic diagram

NPN transistor, low side switching

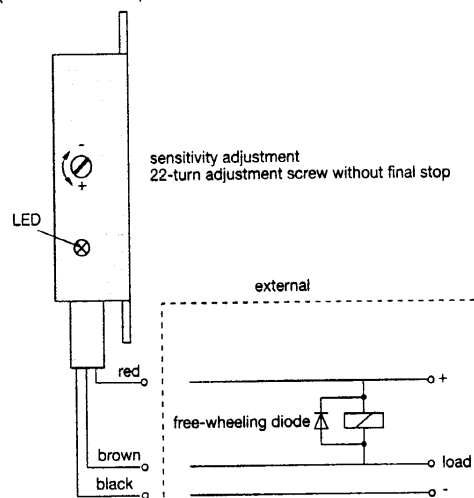


PNP transistor, high side switching

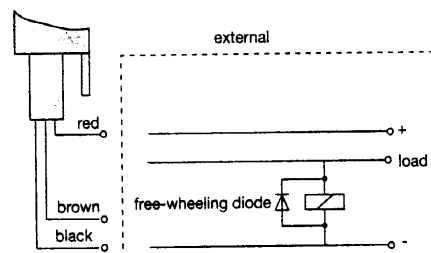


Connection diagram

NR 80-DC 6-36-11-...
(NPN transistor)



NR 80-DC 6-36-12-...
(PNP transistor)



Applications

E-T-A Level Sensors are used wherever there is a need for a yes/no indication as to whether the medium is available or not, to supervise the filling level of containers, or to protect pipelines from liquid leakage.

E-T-A Level Sensors are suitable for use in harsh environments to monitor almost any liquid, powders and granules (please inquire for aggressive media). Small deposits on the sensors do not affect their performance.

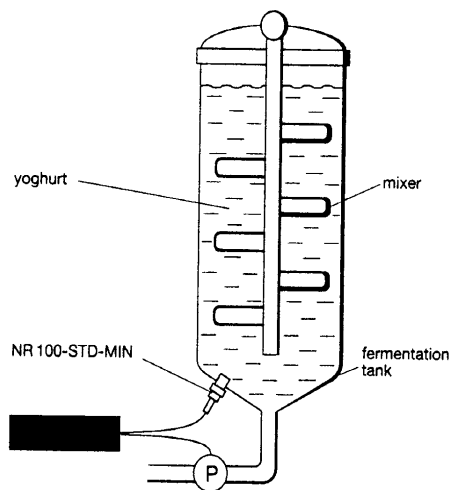
Level Sensor NR 100 is suitable for sanitary applications.

Steam cleaning does not harm this sensor.

Application examples

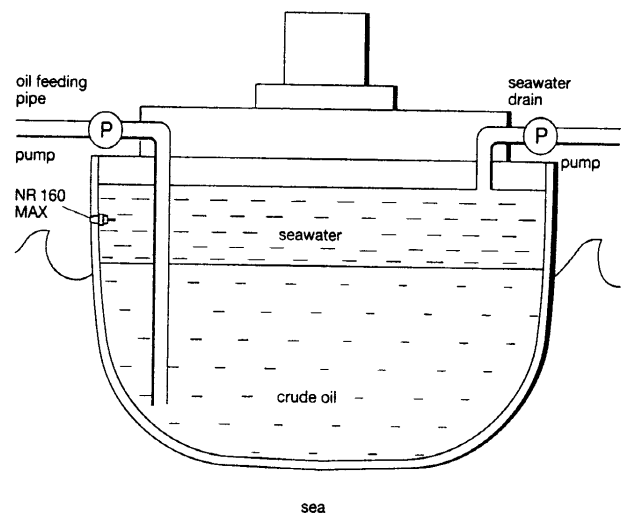
NR 100 as used by the food industry

Yoghurt paste is removed from fermentation tanks by means of a pump. The pipes must be filled completely with the paste to ensure there is no air in the pipes which may promote microbacterial growth.



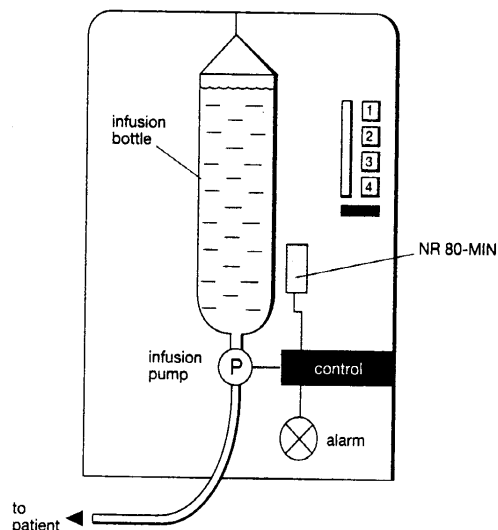
NR 160 in crude oil tankers

To eliminate environmental pollution when tankers are filled or drained, there must be a clear separating line between crude oil and seawater to ensure that crude oil can not be pumped inadvertently into the sea.



NR 80 in medical equipment

Indication that infusion bottles are empty: To overcome personnel shortages, level sensing of infusion bottles can be provided by Level Sensor NR 80 which is able to sense the liquid value through the bottle wall.



NR 60 in process control systems

Low level sensing of oil and cooling water in emergency diesel generator sets.

