



HR-0431

- contactless capacitive limit value detection
- all media:
solid or liquid, conductive or non-conductive
- adjustable switching distance
- also available in an adjustable version
- options: casing material, screw fitting, flange
- use in Ex-zone 1, 2 possible
- approved as part of an overspill prevention system accord. WHG

Function:

As the medium level rises into the electric field of the probe, the capacitance of the capacitor increases behind the active surface.

When the adjustable threshold value is achieved, the switch is activated. The switching characteristics depend primarily on the dielectric constant ϵ_r of the medium. Substances containing moisture or metal are detected at larger distances than dry or non-conductive substances.

Proximity switching is easily adjustable when using aqueous media (and media with large values of ϵ_r).

Adjustment notes:

The typical switching distance for aqueous media is $s < 20$ mm. If the probe is to switch **without contact** to the medium, then with the medium at the desired level and < 20 mm beneath the active surface, the potentiometer should be turned clockwise until the sensor switches.

Switching is checked using a measuring instrument connected to the wires.

Note: When no medium is detected using the NAMUR probe, the current level is ≤ 1 mA. When the probe is switched, the current level is ≥ 2.2 mA.

Order No.:

HR-0431

Basic version (HR - 043100):	0	
Type:		
Screw version		
screw fitting:	probe casing:	
1 1/2" BSP	PP	1
1 1/2" BSP	PTFE	2
1 1/2" BSP	PP extended	3
1 1/2" BSP	PTFE extended	4
Adjustable version:		
adjustment tube:	probe casing:	
stainless steel	PP	5
stainless steel	PTFE	6
PA coated	PP	7
PTFE coated	PTFE	8
Installation:		
screw version (1 ... 4, 5th figure):		
1 1/2" BSP	0	
Adjustable version:		
with screw fitting:	material:	
2" BSP	stainless steel	1
2" BSP	PP	2
2" BSP	PTFE	3
with flange:	material:	
flange	steel	4
flange	stainless steel	5
flange	PVC	6
flange	PP	7
flange	PTFE	8

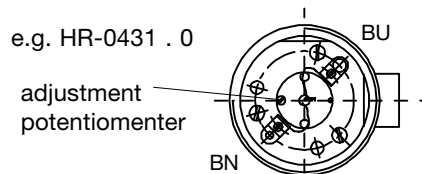
the nominal diameters for flanges should be separately specified, min. DN 65
special pressures, temperatures, materials and dimensions on request

please indicate if to be used as part of an overspill prevention system.

Connection, operating elements:

e.g. HR-0431 . 0

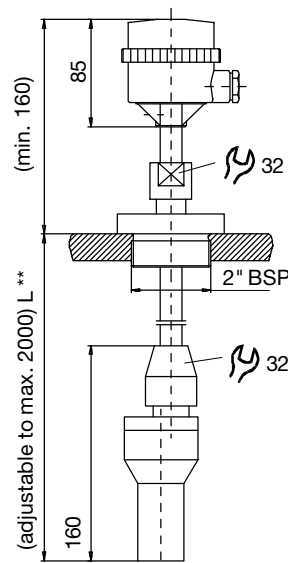
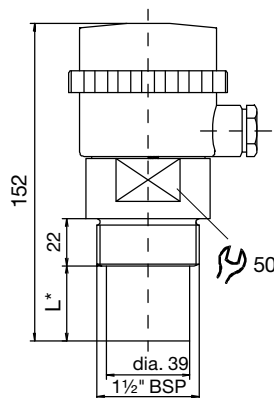
The indicated connection points and adjustment potentiometer can be accessed with the terminal box top screwed off.



Dimensions / types:

adjustable version:

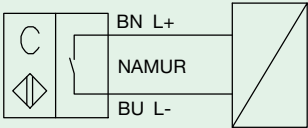
screw version:
(standard and extended version)



* please specify length L if other than the standard length of 57 mm

** please specify the desired length L when ordering

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Dimensions / types:	<p>Basic version: for simple uses, e.g. as a leak detector</p> <ul style="list-style-type: none"> • NAMUR • without casing • without terminal head • not as OSS <p>standard cable length L = 2 m other lengths on request</p>
Ex-zone 1,2	Switch probes of the series HR-0430 must be used in connection with approved (Ex) i-relays in these explosive areas.
Overspill prevention/WHG	The probe is approved for use as part of an overspill prevention system for non-flammable, water-contaminating liquids in connection with the NAMUR relays HR - 1071 and HR - 1171.
Technical Data	
Measuring range Switching distance (ε–dependent) Switching hysteresis (ε–dependent) installation	0 ... 20 mm 0 ... 3 mm not flush
Supply Operating voltage Operating current	accord. DIN 19 234 (NAMUR) 8.2 V DC ± 5% from the NAMUR relay ≤ 1 mA no medium detected ≥ 2.2 mA medium detected
Switching frequency	1 Hz
Environmental conditions Ambient temperatures max. pressure	243 K ... 333 K (-20 °C ... +60 °C) 2 bar OSS: atmospheric conditions
Mechanical Terminal box Connection Type of protection	material PBT flat plug 6.3 x 0.8 mm accord. DIN 46 244 IP 55
Connection diagram	 <p style="margin-left: 200px;">e.g: HR-1071 HR-1171 [EEx i] II C</p>

