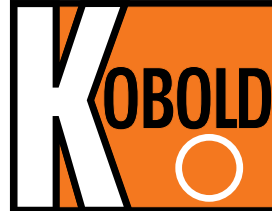




Level Switch

Tuning Fork Principle



measuring
•
monitoring
•
analysing



- Repeatability: ± 1 mm
- p_{\max} : 50 bar
 t_{\max} : 130 °C,
150 °C (for CIP cleaning)
- Connections:
sanitary connection, NPT,
flange, hygienic connection
- Material:
stainless steel 1.4404
- Viscosity: max. 5000 mm²/s
- no moving parts
- Insensitive to plant vibrations



KOBOLD offices exist in the following countries:

ARGENTINA, AUSTRIA, BELGIUM, BRAZIL, CANADA,
CHINA, FRANCE, GREAT BRITAIN, ITALY, NETHERLANDS,
POLAND, SWITZERLAND, USA, VENEZUELA

KOBOLD Messring GmbH
Nordring 22-24
D-65719 Hofheim/Ts.
☎ (06192) 299-0
Fax (06192) 23398
E-mail: info.de@kobold.com
Internet: www.kobold.com

Model:
NWS



Description

The KOBOLD liquid level switch NWS is designed as a 2 and 3-wire switch and can be universally used in vessels and pipelines. The NWS operates on the tuning fork principle in air at resonance frequency. A piezoelectric crystal is used for excitation of oscillations and for monitoring the actual oscillation frequency. When the fork is immersed in liquid, the frequency changes: this change is detected electronically and the output signal is changed. The NWS operates as a two-wire switch in series with the load. The simple electronic switch is operated by the liquid. The NWS can also be connected to a PLC through a third terminal.

Special features

The NWS does have output status indication with an LED that can be viewed through a lens on the cover. The LED flashes about once a second when the NWS has switched off and is permanently illuminated when the NWS is switched on. The LED is an optical confirmation that the NWS is working correctly and the condition of the wet side is correctly displayed. The NWS can be set as upper or lower limiter with a mode selector.

Applications

- Oils
- Water
- Paints and transparent inks
- Sauces
- Milk
- Carbonated liquids
- Foamed oils

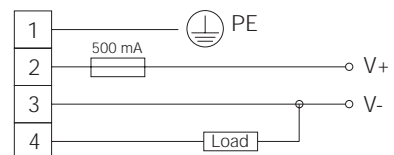
The NWS is ideal for hygienic and sterile applications and for CIP cycles up to 150°C.

Technical Details

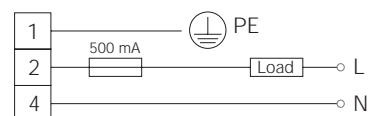
Housing:	glass-fibre-reinforced nylon, orange, black cover with window, housing 330° rotatable
Process connections:	R 3/4, R 1 3/4 NPT, 1 NPT Tri Clamp Sanitary connection DIN 11851 Aseptic connection DIN 11864 DRD-flange Flange B 25 PN 40 DIN 2527 Flange B 50 PN 40 DIN 2527 Flange ASME B 16.5 - 1", 300 lbs Flange ASME B 16.5 - 2", 300 lbs
Sensor material:	st. steel 316 (for example: 1.4404)
Protection:	IP 66/IP 67
Max. operat. pressure:	50 bar between -40°C and +50°C 45 bar at 130°C Flanges: see pressure-steps
Max. operating temp.:	130°C medium temperature (150°C CIP)
Power supply:	24 V to 240 V _{DC} or V _{AC} (50/60 Hz)
Cable gland:	M 16 x 1.5
Terminals:	max. 1.5 mm ² (26 - 14 AWG)
Loading capacity:	0.5 A max. (5 A for 40 ms)
Min. switching current:	7.5 mA
OFF-state leakage current:	< 2 mA constant
Voltage drop:	approx. 6 V
Delay:	1 sec wet/dry 1 sec dry/wet
Viscosity:	5000 mm ² /sec. max. at 25°C (response time can be increased)
Hysteresis:	4 mm vertical, 1 mm horizontal
Repeatability:	± 1 mm
Weight:	0.5 kg (for R 3/4 and 3/4 NPT)

Electrical connection

3-wire SPS/PLC
24 V_{DC}



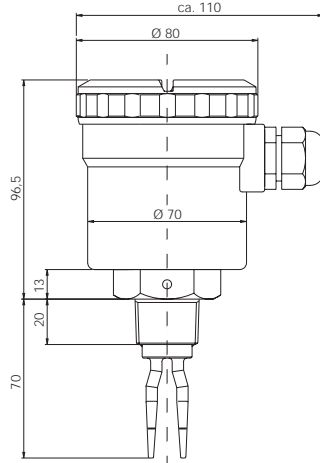
2-wire serial load
24-240 V_{AC}/V_{DC}



Dimensions

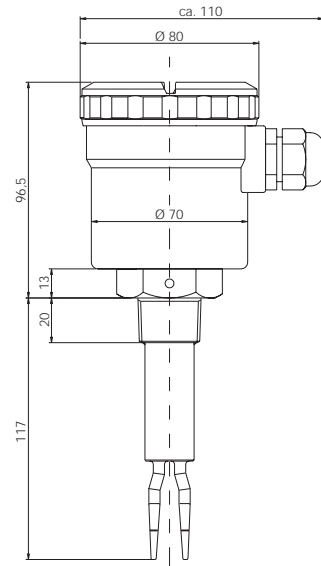
Connection: R 3/4 male, 3/4 NPT male

NWS-R 25 20 0
NWS-N 20 20 0



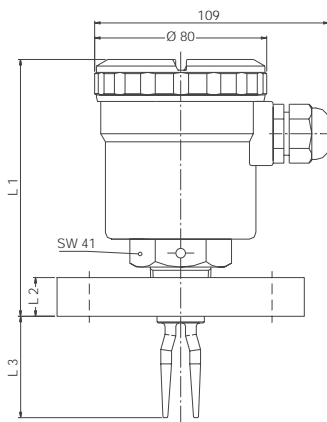
Connection: R 1 male, 1 NPT male

NWS-R 25 20 0
NWS-N 25 20 0



Connection: DIN-flange, ASME-flange

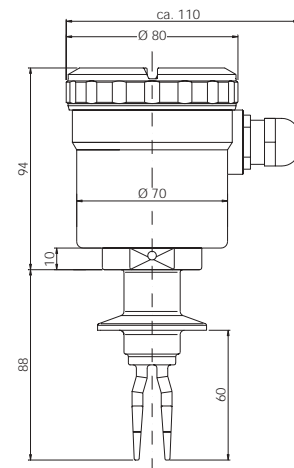
NWS-F 25...
NWS-F 50...
NWS-A 25...
NWS-A 50...



	L 1	L 2	L 3
DN 25 / PN 40	approx. 119.5	18	approx. 47
DN 50 / PN 40	approx. 119	20	approx. 95
ASME 1" 300 lbs	approx. 125.5	17.5	approx. 41
ASME 2" 300 lbs	approx. 121	22.4	approx. 92

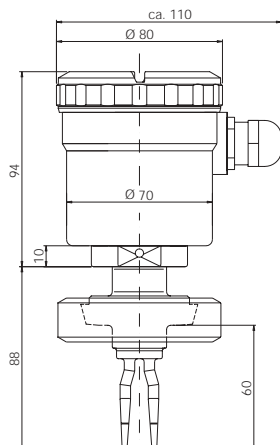
Connection: Tri Clamp

NWS-T 40 20 0
NWS-T 50 20 0



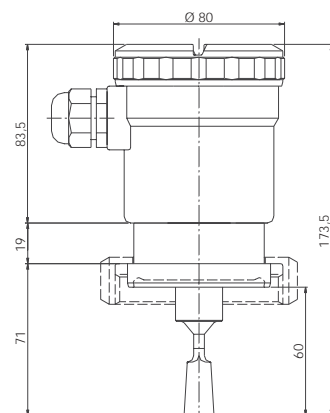
Connection: Sanitary connection accord. DIN 11851

NWS-L 40 20 0
NWS-L 50 20 0



Connection: Aseptic-connection accord. DIN 11864

NWS-H 50...

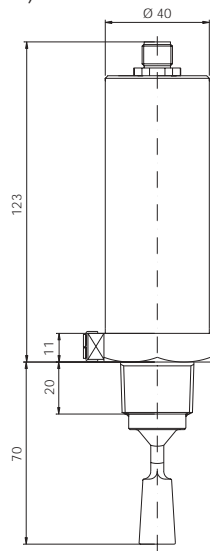


Namur with plug connection

(all connections are possible)

NWS-...2N0

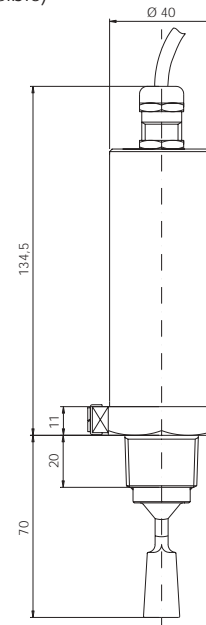
NWS-...230



Namur with cable connection

(all connections are possible)

NWS-...2K0



Order details (Example: NWS-R20 230)

Connection	Order No.	Power supply	Version with sensor
R 3/4 male	NWS-R20...	20 = 24 V...240 V _{DC/AC} 23 = 24 V _{DC} ± 20% 2N = Namur; connector M12x1 2K = Namur; 1.5 m cable (blue)	0 = compact 3 = 300 mm sensor length 5 = 500 mm sensor length Y = Special sensor length (up to 3 m) to be specified
R 1 male	NWS-R25...*		
3/4 NPT male	NWS-N20...		
1 NPT male	NWS-N25...*		
DIN-flange DN 25	NWS-F25...		
DIN-flange DN 50	NWS-F50...*		
1" ASME-flange	NWS-A25...		
2" ASME-flange	NWS-A50...*		
Tri Clamp DN 40	NWS-T40...		
Tri Clamp DN 50	NWS-T50...		
Sanitary conn. DN 40 (DIN 11851)	NWS-L40...		
Sanitary conn. DN 50 (DIN 11851)	NWS-L50...		
Aseptic conn. DN 50 (DIN 11864)	NWS-H50...		
DRD Ø 125 mm flange	NWS-D1Z...		
Special connection	NWS-YYY...		

*only the marked models are available with longer sensor lengths (...3, ...5, ...y)