Level Switch
HNS 526

Ultrasound | **Display**

Up to 2 switching outputs

VDMA

Description:

The level switch HNS 526 is a non-contact, highly compact sensor for fluid level measurement in stationary applications. By definition, its functional principle (measurement of sound transmission time) means that it operates with an extremely high resolution and sampling rate.

Thanks to the integrated temperature compensation, the sensors can be used in a wide temperature range.

The HNS 526 is available for measuring ranges up to 6400 mm and is obtainable in different signal output variants (2 switching outputs; 1 switching output plus 1 analogue output, either 4 .. 20 mA or 0 .. 10 V).

The sensor can be adjusted simply and conveniently via two push-buttons and a self-explanatory menu structure according to VDMA.

The actual fluid level can be displayed in a 3-digit digital display either in absolute value or in percent (selectable); 2 three-colour LEDs also indicate the operating status.

Technical data:

Input data						
Operating range	mm	280	480	1600	4000	6400
Blind zone	mm	0 .. 30	0 .. 85	0 .. 200	0 .. 350	0 .. 600
Maximum range	mm	350	600	2000	5000	8000
Resolution			≤ 0.18 mm			
Mechanical connection			M30x1.5			
Output data						
Switching outputs			1; 2 PNP transistor outputs Switching current: max. 200 mA per output Switching cycles: > 100 million			
Analogue output, permitted load resistance			Selectable: 4 .. 20 mA, R_{Lmax} = 100 Ω (U_B ≤ 20 V) R_{Lmax} = 500 Ω (U_B > 20 V) 0 .. 10 V, R_{Lmin} = 100 kΩ (U_B ≥ 20 V)			
Accuracy			≤ ± 1 % of the actual measured value			
Repeatability			± 0.15 % of the actual measured value			
Reaction time	ms	32	64	92	172	240
Environmental conditions						
Ambient temperature range			-25 °C .. +70 °C			
Storage temperature range			-40 °C .. +85 °C			
Max. tank pressure			Only for depressurised vessels			
CE mark			DIN EN 60947-5-2 DIN EN 60947-5-7			
Vibration resistance acc. to DIN EN 60068-2-6 (5 .. 2000 Hz)			≤ 2 g			
Shock resistance acc. to DIN EN 60068-2-27 (11 ms)			≤ 30 g			
Protection class acc. to DIN EN 60529[1)]			IP 67			
Other data						
Supply voltage			9 .. 30 V DC without analogue output 20 .. 30 V DC with analogue output			
Residual ripple of supply voltage			± 10 %			
Current consumption			≤ 80 mA			
Housing			Brass, nickel-plated; ultrasonic transducer with PEEK film			
Display			3-digit, LED-display, 2 three-colour-LEDs			
Weight	g	~ 150	~ 150	~ 150	~ 210	~ 270

Note: Reverse polarity protection of the supply voltage and load short circuit protection are provided.

[1)] With mounted mating connector in corresponding protection class

Setting options:

All the terms and symbols used for setting the HNS 526 as well as the menu structure comply with the specifications of the German Engineering Federation Standard (VDMA 24574-4) for level switches.

In order to prevent unauthorised adjustment of the device, a key-lock can be set.

Setting ranges of the switch points or switch-back points:

Switch point function distance and window function distance

Operating range	SP1, SP2, FH1, FH2 *	RP1, RP2, FL1, FL2*
280 mm	2 .. 32 cm 2 .. 13 inch	1 .. 31 cm 1 .. 12 inch
480 mm	2 .. 59 cm 2 .. 23 inch	1 .. 58 cm 1 .. 22 inch
1600 mm	2 .. 180 cm 2 .. 71 inch	1 .. 179 cm 1 .. 70 inch
4000 mm	2 .. 465 cm 2 .. 183 inch	1 .. 464 cm 1 .. 182 inch
6400 mm	2 .. 740 cm 2 .. 291 inch	1 .. 739 cm 1 .. 290 inch

Switch point function:
SP1, SP2 = switch point 1 or 2
RP1, RP2 = switch-back point 1 or 2

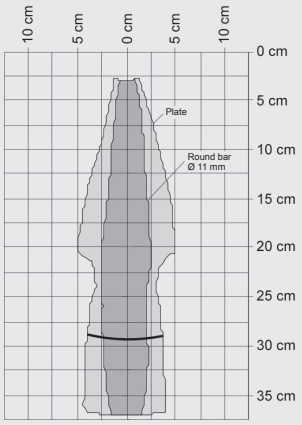
Window function.
FH1, FH2 = upper switch values 1 or 2
FL1, FL2 = lower switch values 1 or 2

* The increment for all devices is 1 cm or 1 inch

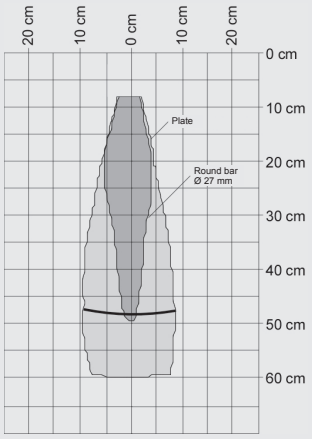
Recording ranges (for different objects):

The grey areas show the detection range for a very large reflector, e.g. a fluid surface, providing the sensor is ideally positioned. Outside the grey area, it is not possible to evaluate the ultrasonic reflections.

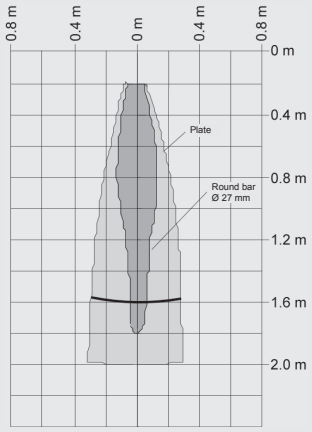
Operating range 280 mm:



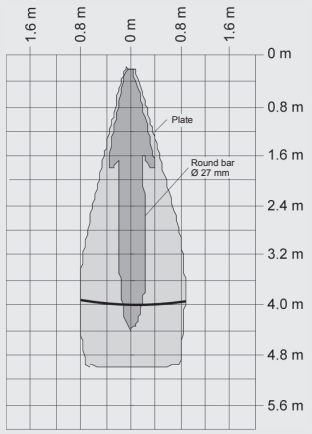
Operating range 480 mm:



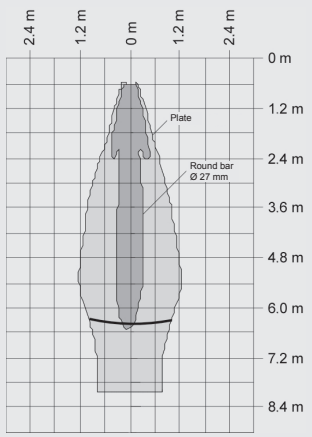
Operating range 1600 mm:



Operating range 4000 mm:



Operating range 6400 mm:

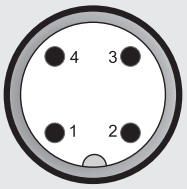


Additional functions:

- Switching mode of the swiching outputs adjustable (switch point function or window function)
- Switching direction of the switching outputs adjustable (N/C or N/O function)
- Switch-on delay adjustable from 0 .. 20 seconds
- Energy saving mode

Pin connections:

M12x4, 4 pole

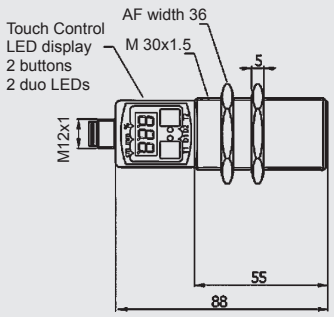


Pin	HNS 526-2	HNS 526-3
1	$+U_B$	$+U_B$
2	SP2	I/U
3	0 V	0 V
4	SP1	SP1

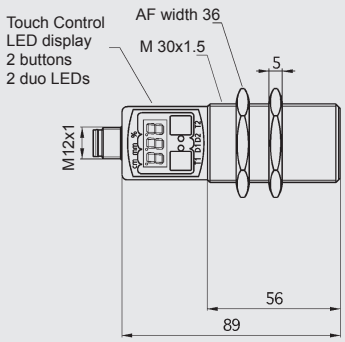
Dimensions:

Operating range:

280 mm

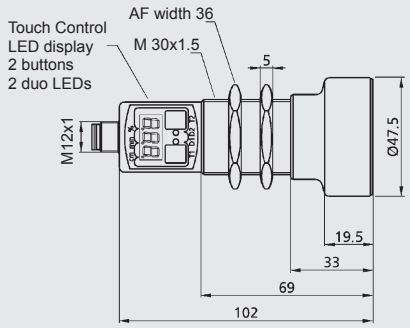


480 mm,1600 mm

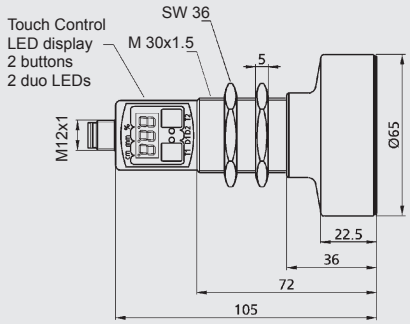


Operating range:

4000 mm



6400 mm



Model code:

HNS 5 2 6 - X - XXXX - 000 - F

Mechanical connection
2 = M30x1.5

Electrical connection
6 = male M12x1, 4 pole
(mating connector not supplied)

Output
2 = 2 switching outputs
3 = 1 switching output and 1 analogue output

Operating range in mm
0280; 0480; 1600, 4000, 6400

Modification number
000 = standard

Design, front face of sensor
F = foil

Accessories:
Appropriate accessories, such as mating connectors, can be found in the Accessories brochure.

Note:

The information in this brochure relates to the operating conditions and applications described.

For applications or operating conditions not described, please contact the relevant technical department.

Subject to technical modifications.

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