Electronic level switch with display
Model LSD-30

Applications

- Machine tools
- Hydraulics
- Coolant and lubrication systems
- Machine building

Special features

- Easily-readable, robust display
- Intuitive and fast setup
- Easy and flexible mounting configurations

Level switch model LSD-30

Description

Award-winning in design and functionality
The successful design and the excellent functionality of the WIKA switch family were already confirmed by winning the "iF product design award 2009" for the PSD-30 pressure switch.

The robust LED display has been designed using 9 mm high characters (the largest possible) and with a slight incline in order to make reading the level as easy as possible from a long way off. A 14-segment display has been used, since it represents text very well.

The 3-key operation makes simple, intuitive menu navigation possible, with no need for additional assistance. The menu navigation is designed in accordance with the latest VDMA standard. The VDMA standard for fluid sensors (24574-4, part 4 - level switches) has the aim of considerably simplifying the use of level switches by standardising menu navigation and display.
The control keys have been designed as large as possible and are arranged ergonomically to ensure fast and easy adjustments. Operation without any additional assistance is made easier through the tactile feedback.

Customised installation
The installation of the LSD-30 can be flexibly adapted to the individual mounting situation. Due to the almost unlimited rotation of the display and case by more than 300°, the display can be adjusted independently of the electrical connection. The display can thus always be aligned to face the operator, and the M12 x 1 connection positioned to suit the desired cable routing.

High quality
During development of the WIKA switch family a high value was placed on a robust design and the selection of appropriate materials suited to machine building applications. For this reason the case and the threaded connection of the electrical connector are made from stainless steel. Overwinding or tearing off the connector is therefore virtually impossible.

Data sheets showing similar products:
Electronic pressure switch with display; model PSD-30; see data sheet PE 81.67
Electronic temperature switch with display; model TSD-30; see data sheet TE 67.03

Measuring ranges

for parallel process connections					
Sensor length F	250	370	410	520	730
mm	189	309	349	459	669
inch	7.44	12.17	13.74	18.07	26.34

for tapered process connections					
Sensor length F	250	370	410	520	730
mm	205	325	365	475	684
inch	8.07	12.80	14.37	18.70	26.93

Insertion lengths see "Dimensions in mm"

Specific gravity range of the medium
≥ 0,7 g/cm^3

Display

14-segment LED, red, 4-digit, character size 9 mm
Display can be turned electronically through 180°

Update
200 ms

Output signal

Switching output 1	Switching output 2	Analogue signal
PNP	-	4 ... 20 mA
PNP	-	DC 0 ... 10 V
PNP	PNP	-
PNP	PNP	4 ... 20 mA
PNP	PNP	DC 0 ... 10 V

Alternatively also available with NPN rather than PNP switching output

Offset adjustment (display)
max. +1,500 mm

Scaling (display and analogue signal)
Zero point: max. +25 % of span
Final value: max. -25 % of span

Analogue signal
Load
- Current output: ≤ 500 Ω
- Voltage output: > 10 kΩ

Switching output
Switch point 1 and 2 are individually adjustable

Function
- Normally open and normally closed: freely adjustable
- Window and hysteresis: freely adjustable

Switching voltage: Power supply − 1 V
Switching current: max. 250 mA per switching output
Response time: < 200 ms
Adjustment accuracy: 2.5 mm steps

Voltage supply

Power supply
DC 15 ... 35 V

Current consumption
max. 100 mA

Total current consumption
max. 600 mA (incl. switching current)

Measuring element

Resistance measuring chain with reed switches and float

Resolution
< 6 mm

Response time
< 700 ms

Maximum working pressure
3 bar

Media compatibility
Test following ISO 7620, section 6, table 1

Medium		Standard
Mineral oil	HLP	per DIN 51524
Aqueous solution	HFC	per VDMA 24317
Organic ester	HFD-U	per VDMA 24317
Triglyceride (rape oil)	HETG	per VDMA 24568
Synthetic ester	HEES	per VDMA 24568
Polyglycols	HEPG	per VDMA 24568

Accuracy (electronics)

Switching and indication accuracy at room temperature
1 % of span (display ±1 digit)

Analogue signal
≤ ± 0.5 % of span

Reference conditions

Temperature:	15 ... 25 °C
Atmospheric pressure:	950 ... 1,050 mbar
Humidity:	45 ... 75 % relative
Nominal position:	Process connection lower mount (LM)
Power supply:	DC 24 V
Load:	see "Output signal"

Operating conditions

Temperatures and humidity

Permissible medium temperature:	-20 ... +80 °C
Ambient temperature:	-20 ... +80 °C
Storage temperature:	-20 ... +80 °C
Permissible humidity:	45 ... 75 % relative

Mechanics

Mounting position: vertical

Process connections

Connections

Standard	Thread
DIN 3852-E	G 3/4 A
ANSI / ASME B1.20.1	3/4 NPT

Other connections on request.
Details on the sensor dimensions see "Dimensions in mm".

Sealings

for connections per DIN 3852-E	
Standard	without
Option	NBR, FPM / FKM

Materials

Wetted parts

Level sensor:	Stainless steel 316Ti
Float:	see „Media compatibility“

Non-wetted parts

Case:	Stainless steel 304
Keyboard	TPE-E
Display window:	PC
Display head:	PC+ABS-Blend

Approvals, directives and certificates

CE conformity

EMC directive 2004/108/EC, EN 61326-2-3 emission (group 1, class B) and interference immunity (industrial application)

RoHS conformity

Yes

Electrical connections

Connections

Circular connector M12 x 1, 4-pin
Circular connector M12 x 1, 5-pin [1)]

1) Only for version with SP1, SP2 and S_+

Ingress protection

IP 65 and IP 67

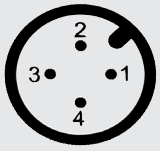
The stated ingress protection (per IEC 60529) only applies when plugged in using mating connectors that have the appropriate ingress protection.

Electrical safety

Short-circuit resistance:	S_+ / SP1 / SP2 vs. U-
Reverse polarity protection:	U_+ vs. U-
Insulation voltage:	DC 500 V
Overvoltage protection:	DC 40 V

Connection diagram

Circular connector M12 x 1, 4-pin



Assignment

U_+	U-	S_+	SP1	SP2
1	3	2	4	2

Circular connector M12 x 1, 5-pin

Assignment

U_+	U-	S_+	SP1	SP2
1	3	5	4	2

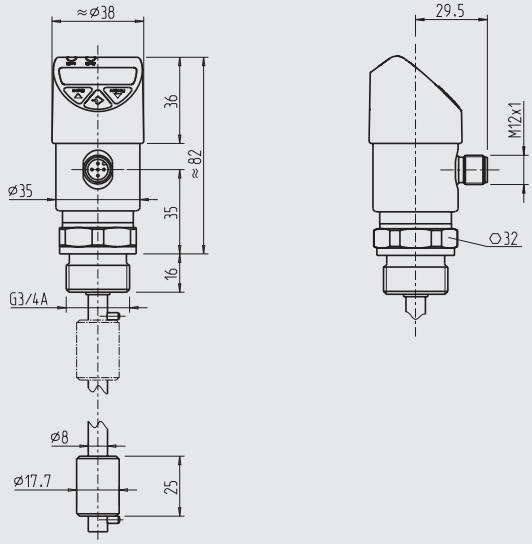
Legend:

U+	Positive supply voltage
U-	Reference potential
SP1	Switching output 1
SP2	Switching output 2
S+	Analogue output

Dimensions in mm

Level switch

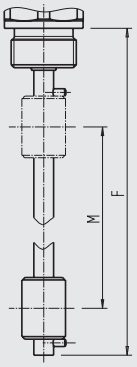
with M12 x 1 circular connector
4-pin / 5-pin



Weight: approx. 0.3 kg

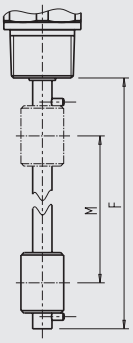
Insertion lengths

Parallel thread



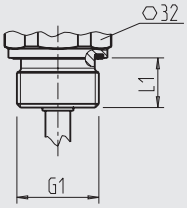
F	M
250	189
370	309
410	349
520	459
730	669

Tapered thread

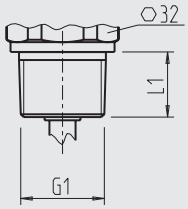


F	M
250	205
370	325
410	365
520	475
730	684

Process connections



G1	L1
G 3/4 A DIN 3852-E	16



G1	L1
3/4 NPT	20

Accessories and spare parts

Sealings	Order no.
NBR profile sealing G 3/4 DIN 3852-E	1100378
FPM / FKM profile sealing G 3/4 DIN 3852-E	1158309

Ordering information

Model / Sensor length F / Output signal / Process connection / Sealing

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