Vibration level switches
- Type LIQUITEC -

- **SHORT FORK FOR LOW INSTALLATION DEPTH**
- **CONTINUOUS TEMPERATURE UP TO 150°C AND 100 BAR OVERPRESSURE**
- **24 V DC PNP TRANSISTOR OUTPUT FOR CONNECTION TO SPS / PLS**
- **STANDARD HYGIENIC DESIGN CONSTRUCTION FOR FOOD AND PHARMACEUTICAL INDUSTRY**

DESIGN

The maintenance-free LIQUITEC series consists of liquid level switches for use in non-hazardous industrial environments. The standard version with G1B screw thread and weld-in socket with O-ring seal and polished fork meets the requirements for limit level detection in liquid / pumpable media.

TECHNICAL DATA

Application & assembly

Use in most liquids, including sticky and bubbly liquids and slurries.
Installation in any position on tanks and pipes in EX-free areas with 1" threads.

Structural design

Housing:	Stainless steel material 1.4301 (AISI 304) LED window: Flame-retardant polycarbonate
Process connection:	Type **LIQUITEC**: Screw-in thread G1B, Sealing O-ring (EPDM, for weld-in sleeve) or flat gasket (NBR, for hexagon) Medium-wetted parts mirror polished (standard)
Medium-wetted parts:	Cr Ni St 1.4404, 316 L
Electrical connection:	Cable junction box made of polyamide, glass fiber reinforced
Plug seal:	Nitrile butadiene rubber
Protection class:	IP 66/67 acc. EN 60529

Operating conditions

Medium temperature:	-40ºC to +150ºC
Ambient temperature:	-40ºC to + 80ºC (+50ºC at +150ºC Process side)
Pressure range:	-0.25 bar to +100 bar at +50ºC
Specific weight:	0.6 to 2.0 Viscosity range 0.2 to 10,000 cP
Water switching point:	13 mm from the tip (vertical) and from the edge (horizontal) of the fork
Hysteresis (Water):	+/- 1mm, nom. Switching delays 1s dry / wet and wet / dry

Standards / regulations

CE conformity is fulfilled,
Requirements according to EN 50081 (emission) / EN 50082-2 (immission),
EN 61326 Low Voltage Directive EN 61010-1 Pollution degree 2,
Insulation material group II (264 max) and III (150 V max) are complied with

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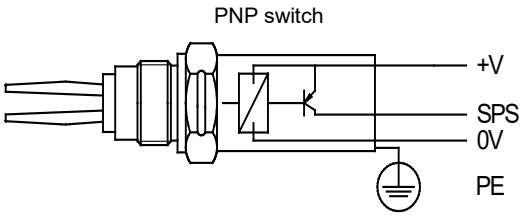
ELECTRICAL CONNECTION

Switching function:



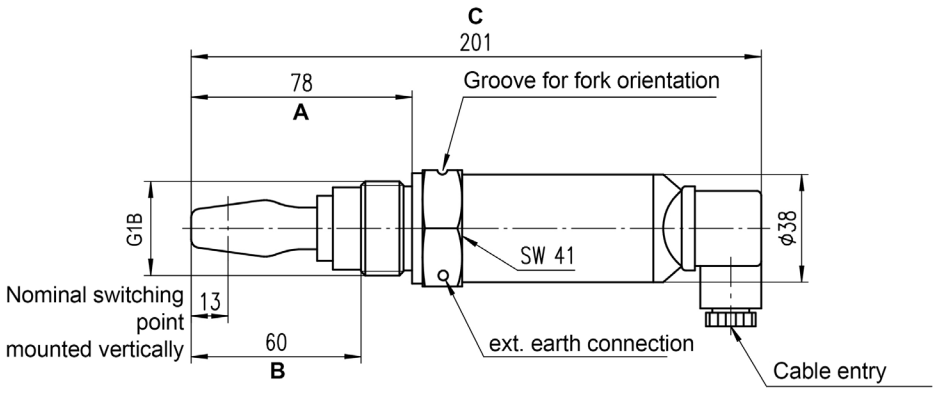
Protection: Reverse polarity protection, protection against missing load / short circuit

Cable connection: Via 4-pin plug in accordance with DIN 43650 (enclosed),
Max. conductor cross-section = 1.5 mm², 4-position orientation (90º, 180º, 270º, 360º),
PG 9 cable gland (enclosed), cable diameter 6 to 8 mm

Earthing: Always recommended, either via plug connection or via external earthing screw

	PNP switch
Operating voltage:	18-60 V DC
Max. switching load:	500 mA
Max. peak load:	5 A
Min. switching load:	-
Voltage drop:	< 3 V
Power requirement:	3 mA effective
Output current (without load):	< 0,5 mA
Supply current (without load):	-

DIMENSIONAL DRAWING



Prozess-anschluss	**A (mm)**	**B (mm)**	**C (mm)**
G1B	78	60	201

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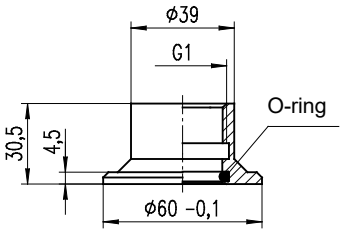
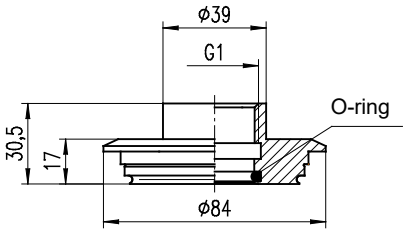
PROCESS CONNECTION ADAPTER



zem / G1 - liquitec
Z-NEM1FLQT
Z-NEM1LLQT



zfl / VA - liquitec
Z-NVA6FLQT

A) Use / Assembly

- The **LIQUITEC** level switch is suitable for use in EX-free areas.
- The device must be installed, operated and maintained by qualified personnel in compliance with the usual and current national and local technical regulations.
- Before using the device, check its suitability for the specific application.
- Product deposits of any kind in the sensor area must be avoided.
- The correct sensor alignment (groove for fork orientation, see dimensional drawing above) must be ensured. Align the forks so that they do not obstruct the flow, i.e. the narrow side faces the direction of flow.

B) Function / LED

- The function selection and the LED indication are shown on the rating plate in terms of circuitry.

  > DRY = ON > Application as upper limit switch (HI alarm)
  > WET = ON > Lower limit switch (LO alarm / dry-running protection)

  The LED display built into the electrical connection area clocks at 1 Hz during normal operating states or lights up ´ON`, in the event of a short circuit the LED clocks at 0.25 Hz, in the event of an internal fault at 3 Hz.

C) Magnetic function test

- A provisional function test (normally open / normally closed functions) can be carried out before installation by applying a special bar magnet to the device housing.

D) Electrical connection

- Before connecting the device, the respective type plate must be identified again in order to determine the electrical connection and the choice of switching function (PNP transistor switch).
  For technical connection data, see the table above.
- The supplied connection part must be fitted with a suitable cable to achieve protection class IP66 or IP67.
  The cable entry should point downwards to ensure tightness.
- **Relay connection warning:**
  The level switch requires a minimum current of 3 mA, even in the´OFF` state.
  With a relay in series connection, it must be ensured that the drop-out voltage of the relay is greater than the voltage drop across the relay coil when 3 mA is flowing.

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ORDER INFORMATION

Process connection

Y	Thread G1 ISO 228, fork highly polished < 0.8µm, **hygienic design**

Electronics

B	PNP transistor output 24-60 V DC

Length

A	Standard length

Approvals

A	Standard

LIQUITEC				

Accessories / mounting parts

Weld-in socket Ø 60, with welding collar, material 1.4404 (AISI 316L)	Z-NEM1FLQT
Weld-in socket Ø 60, with leakage holes, stainless steel 1.4404 (AISI 316L)	Z-NEM1LLQT
Varivent flange, type N (d68, pipe DN40-DN125), material 1.4404 (AISI 316L)	Z-NVA6FLQT

Notes on this document:
This document provides all technical data relating to the device. The texts and illustrations have been compiled with the utmost care. Nevertheless, incorrect information cannot be ruled out. The plant operator is responsible for ensuring that the material is compatible with the process conditions and peripherals. The devices are not suitable for use in potentially explosive atmospheres or safety-relevant plant components (SIL). Our devices are subject to continuous development, and we therefore reserve the right to make changes.

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