Vibration level fork
- Liquitec series -

Hengesbach
Prozessmesstechnik

- **SHORT FORK FOR MINIMUM INSTALLATION DEPTH**

- **CONTINUOUS OPERATING TEMPERATURE OF UP TO 150°**
  AND 100 BAR GAUGE PRESSURE

- **24 V DC PNP TRANSISTOR OUTPUT**
  FOR CONNECTION TO SPS / PLS

- **STANDARDISED VERSION AND HYGIENIC**
  DESIGN SUITABLE FOR FOOD AND PHARMACEUTICALS

VERSIONS

The maintenance-free **Liquitec** series consists of liquid level switches for use in an EX-free operating environment.

- ❖ **Liquitec**   Standard with GIB threaded connection and welding socket, with O-ring seal, fork polishing optional
- ❖ **Liquitec L**   Hygienic version with Tri-Clamp 2", parts in contact with the medium have been polished

TECHNICAL DATA

Application & Installation
For use in most liquids, including viscous and effervescent liquids and slurries. Installation in any position in containers and pipes in the EX-free area with 1" threads.

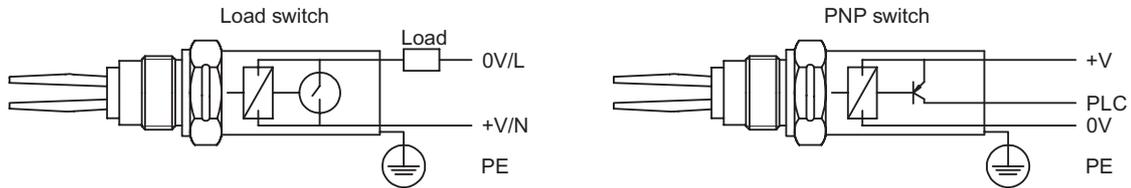| Construction	
Housing:	Stainless steel 304
	LED window: Flame-retarding polycarbonate
Process connection:	Liquitec series:
	G1B threaded connection
	O-ring seal (EPDM, for zem / Liquitec),
	or flat seal (NBR, for hexagonal)
	Liquitec L series:
	Tri-Clamp 2" according to ISO 228,
	Parts in contact with the medium have been mirror-finished (standard)
Parts in contact with the medium:	Cr Ni St 1.4404, 316 L
Electrical connection	Polyamide cable socket, glassfibre-reinforced
Plug seal:	Nitrile butadiene rubber
Type of protection	IP 66/67 according to EN 60529

Operating conditions	
Temperature of medium:	-40°C to +150°C
Environmental temperature	-40°C to + 80°C (+50°C at +150°C on medium side)
Pressure range:	-0.25 bar to +100 bar at +50°C
Specific weight:	0.6 to 2.0 viscosity range 0.2 to 10,000 cP
Switch point (water):	13 mm from tip (vertical) and from edge (horizontal) of fork
Hysteresis (water): +/- 1mm, nom. switching delay 1s dry / wet and wet / dry	

Norms / regulations
CE conformity conditions have been fulfilled Requirements according to EN 50081 (emission) / EN 50082-2 (immission), EN 61326 Low-voltage guideline EN 61010-1 Pollution level 2, Insulation material group II (264 max) and III (150 V max) conditions have been adhered to

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ELECTRICAL CONNECTION

Selection of switching mode:

Load switch

PNP switch


Protection	Reverse polarity protection, missing load / short circuit protection
Cable connection:	via 4-pin plug according to DIN 43650 (attached), Max. conductor size = 1.5 mm², 4-position orientation (90º, 180º, 270º, 360º), PG 9 cable connection (attached), cable diameter 6 to 8 mm
Earthing:	always recommended, either via a cable plug or an external earth connection

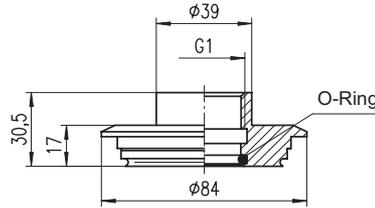|	**2-wire load switch**	**PNP switch**
Operating voltage:	24 to 240 V (+/- 10%) DC / AC	18-60 V DC
Max. switch load:	500 mA	500 mA
Max. peak load:	5 A	5 A
Min. switch load:	20 mA continuous	–
Voltage drop:	6.5 V @ 24 V DC / 5.0 V @ 240 V AC	< 3 V
Power requirements:	-	3 mA effective
Output current (without load):	-	< 0.5 mA
Input current (without load):	< 3.0 mA continuous	–

DIMENSIONAL DRAWING
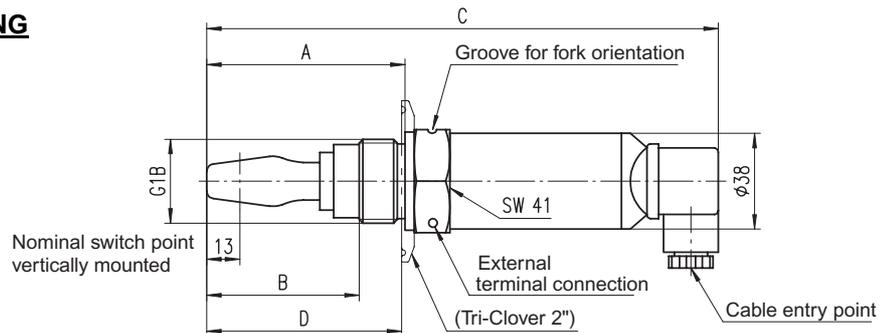
Liquitec (Tri-Clover)

Process connection	A (mm)	B (mm)	C (mm)	D (mm)
G 1 B	78	60	201	N/A
Tri-Clamp 2"	69	50	188	64
Semi-extended	116	98	239	N/A

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ADAPTOR
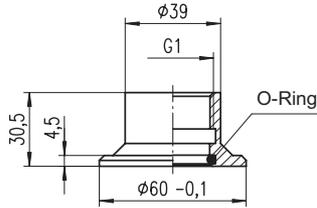
⌀39	⌀39	⌀39
G1	G1	G1
O-Ring	O-Ring	O-ring
30,5 / 4,5	30,5 / 17	30,5
⌀60 −0,1	⌀84	
zem / G1 - liquitec	**zfl / VA - liquitec**	**zfl / MG ... - liquitec**
Welding socket Liquitec	Varivent flange DN50 / 40	Conical socket DIN 11851 - DN40 ... DN50
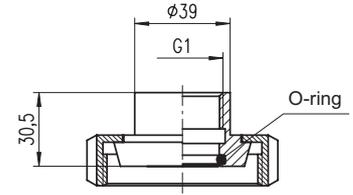
ORDER INFORMATION

LIQUITEC series (standard versions)

Process connection	
S	Thread G 1, ISO 228, standard fork surface
X	Other (¾" NPT,...)
Y	Thread G 1, ISO 228, fork manually polished < 0,8 µm

Electronics	
B	PNP-transistor output 24 - 60 VDC
F	2-wire-circuit in series with load

Length	
A	Standard length (69 / 50 mm)
B	Semi-extended (116 / 98 mm)

Authorisations	
A	Standard
Z	WHG overflow safeguard

Liquitec ☐ ☐ ☐ ☐

LIQUITEC L series (hygienic version)

Process connection	
L	Tri clamp 2", ISO 228

Electronics	
B	PNP-transistor output 24 - 60 VDC
F	2-wire-circuit in series with load

Length	
A	Standard length (69 / 50 mm)

Authorisations	
A	Standard
Z	WHG overflow safeguard

Liquitec **L** ☐ **A** ☐

A) Utilisation / installation

- The Liquitec vibration level fork is suitable for use in an EX-free environment.

- The device must be installed, operated and maintained by trained staff,
  taking into account the usual and current national and local technical specifications.

- Before using the device, its suitability for the specific application must be checked.

- Product deposits of all kinds in the sensor area should be avoided.

- The correct sensor alignment (groove for fork orientation, see dimensional drawing above) must
  be ensured.

B) Function / LED

- The range of functions and the LED display are indicated on the type label.

  > DRY = ON > Use as upper limit switch (HI alarm)
  > WET = ON > Lower limit switch (LO alarm / dry run protection)

  The LED display installed as part of the electrical connections has a cycle time of 1 Hz under normal operating
  conditions and displays ON; in the event of a short-circuit, the cycle time is reduced to 0.25 Hz, while in the
  event of an internal fault it increases to 3 Hz.

C) Magnetic function test

- A provisional function test (closing / opening functions) can be carried out before installation by touching the
  housing with a special bar magnet.

D) Electrical connection

- Before connecting the device, the type label must be identified once again, in order to determine the electrical
  connection and the switch modes (2-wire load switch or PNP transistor switch). Technical connection data -
  see table above.

- The adaptor supplied must be equipped with a suitable cable to achieve the protection class IP66 or IP67. The
  cable inlet should be orientated downwards to ensure leak-tightness.

- Warning for relay connection:
  The level switch requires a minimum current of 3 mA, even when "OFF".
  When using a serially switched relay, care must be taken that the drop-out voltage of the relay
  is greater than the voltage drop via the relay coil when the current is equal to 3 mA.

Our products are constantly in further development, therefore subjects to modifications.