

# Capacitive threshold level probe – Type LEVELTEC S / VAS –



## FEATURES

- FOR THRESHOLD LEVEL DETECTION OF LIQUID MEDIA, INDEPENDENT OF CONDUCTIVITY, FOAM AND CONDENSATE ARE NOT DETECTED
- SIMPLE PARAMETRISATION WITH TEACH-IN KEY
- APPLICATION ALSO AS PUMP PROTECTION
- SPECIAL DESIGN VAS FOR HIGHLY VISCOUS MEDIA
- VIBRATION-RESISTANT, CAST CONSTRUCTION

## DESCRIPTION

The threshold level probes of type LEVELTEC are suitable for liquid media. Thanks to the capacitive measuring process, the LEVELTEC devices can reliably detect a wide range of conductive and non-conductive media.

In the standard version S, the electronic version, the dielectric constant ( $D_c$  value) of the medium can easily be stored if you briefly press the teach-in key in the threshold level switch. The LEVELTEC is factory-set to a  $D_c$  value of  $\epsilon=20$ .

A high-temperature version for media with continuous temperatures up to 140°C is available.

As an output signal, the threshold level switches of type LEVELTEC are equipped with an active switch output with a maximum output current of 50mA. This can be connected directly to a PLC.

The LEVELTEC threshold level probes are equipped with a G1/2" screw-in thread with elastomer-free sealing cone as a process connection. To enable integration into the process, welded-in lugs and various adapters, e.g. for VARIVENT®, DIN11851 conical couplings etc. are available.

The probe tip, as the only component in contact with the medium, is manufactured from FDA-compliant PEEK. The housing and the extension tube of the process connection are made of 1.4301 or 1.4305.

The LEVELTEC threshold level probes with the NAM1FTP16 adapter socket, taking into account the medium conditions, may provide a suitable alternative to threshold level measurements based on the vibration principle.

Medium	$D_c$ value
Water	81
Methanol	32.6
Brew	25
Ketchup	24
Cream (skin)	19
Ice cream (-20°C)	16.5
Acetic acid	6.2
Butter	6
Chocolate	3
Vegetable oil	2

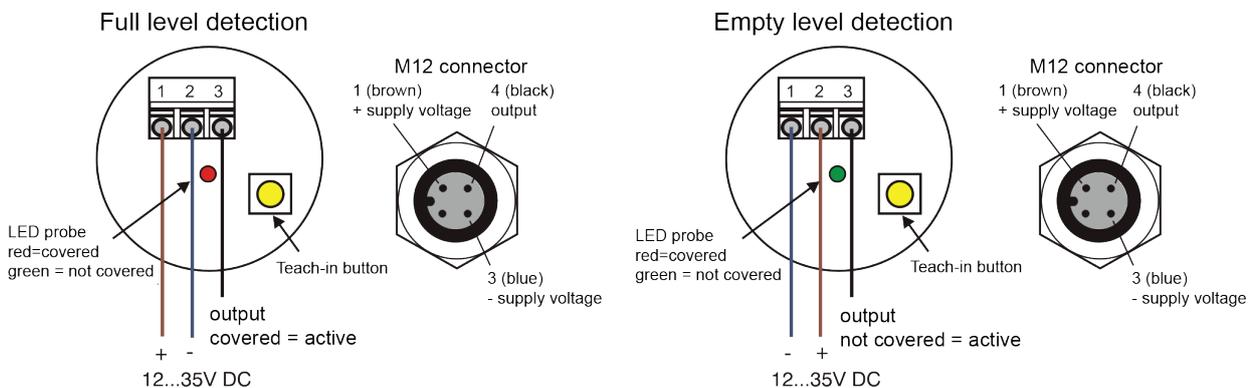
# Capacitive threshold level probe

## – Type LEVELTEC S / VAS –

### TECHNICAL DATA

General details	
Device type/measuring principle	LEVELTEC/capacitive
Output	
Output signal	3-wire: Active output, max. 50mA, short-circuit-proof
Switching function	Full/empty level indication, by means of the polarity of the auxiliary voltage, constant display by 2-colour LED
Electronics	
Version S	Standard version, set to a dielectric constant ( $D_c$ value), factory setting $\epsilon=20$ Parametrised by pressing on teach-in key (3...4 seconds) in the device, probe must be covered
Conditions of use	
Installation position	10h, 14h, horizontal
Setting	Press and hold teach-in key for approx. 3 seconds; probe must be covered when settings are created
Medium temperature	Design B: -20...+100°C (short duration 140°C for max. 30 min) Design HT: -20...+140°C (high-temperature version)
Ambient storage temperature	-20...+80°C
Max. operating pressure	10 bar (with TEM1FTP16 welded-in lug)
Protection class acc. to EN60529	IP 67 and IP 69K
Electromagnetic compatibility	Sensitivity against interference: acc. to DIN IEC 61000-6-2 Interference radiation: acc. to DIN IEC 61000-6-4
Construction	
Electrical connection	- Standard: M16x1.5 cable screw connection, nickel-plated brass (stainless steel available on request) - Optional: M12x1 round plug-in connector, nickel-plated brass (stainless steel available on request)
Process connection	- G1/2" with elastomer-free sealing cone (TP16)
Materials	- Field housing / lid: CrNiSt 1.4301 (304) - Housing seal: FPM (Viton®) - Process connection/extension tube: CrNiSt 1.4305 - Probe tip: PEEK (FDA-compliant)
Device design	- S Standard design, installation length 10.5 mm - VAS Design with extended electrode rod 50 mm ... 400 mm, installation length 10.5 mm
Auxiliary energy resources	
Supply voltage	12...35V DC, max. 25 mA without switching load

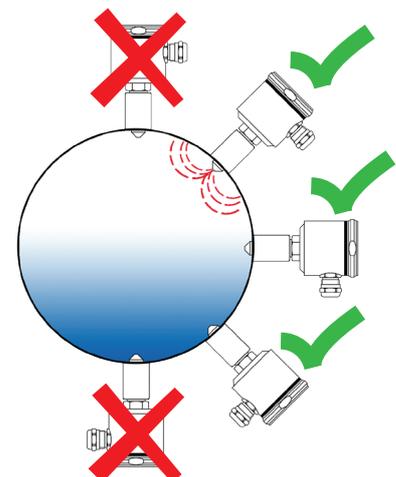
### ELECTRIC CONNECTION ELECTRONIC S



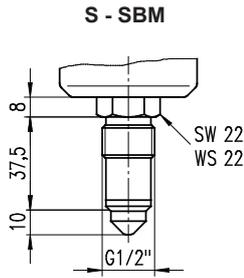
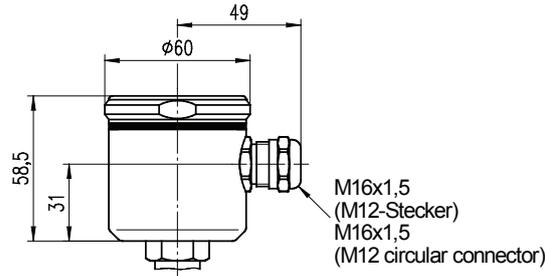
### INSTALLATION INSTRUCTIONS

Due to their high flexibility and short installation lengths, the threshold level switches of type LEVELTEC are suitable both for applications in metallic tanks, for empty or full level indication, as well as for use in metallic pipes, as pump protection. During assembly, it is essential to ensure a flawless electrically conductive connection between LEVELTEC and tank or pipe; do not use insulating material such as Teflon tape. To guarantee reliable detection in pipes, the LEVELTEC threshold level switches should not be installed at 12 or 6 o'clock.

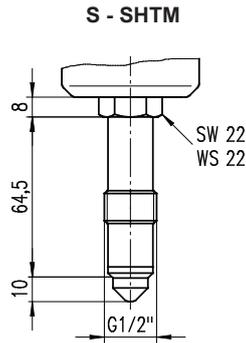
PFA-coated components are sensitive to mechanical influences. Therefore, it is important to take extreme care when installing these parts. Mechanically damaged parts are not covered by the warranty. Furthermore, a minimum distance of 0.5 m must be maintained during cleaning with high-pressure and jet spray cleaning devices.



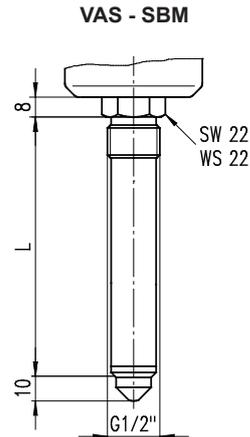
# Capacitive threshold level probe – Type LEVELTEC S / VAS –



**LEVELTEC S**  
Bauform B  
design B

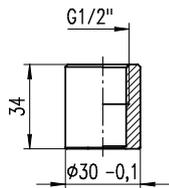


**LEVELTEC S**  
Bauform HT  
design HT

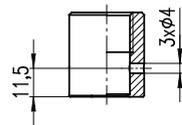


**LEVELTEC VAS**  
Bauform B  
design B

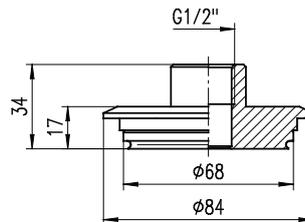
**Prozessanschlussadapter:** (weitere Ausführungen auf Anfrage)  
**adapters for process-connection:** (other constructions on request)



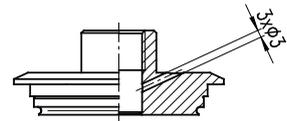
**TEM1FTP16**  
Einschweißmuffe  
welded socket



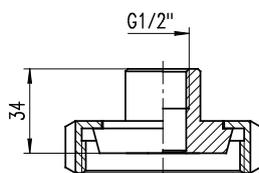
**TEM1LTP16**  
Einschweißmuffe  
mit Leckagebohrungen  
welded socket  
with leakage drills



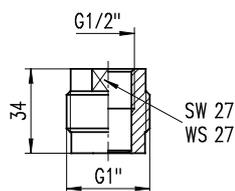
**TVA6FTP16**  
VARIVENT-Flansch Ø68  
VARIVENT-flange Ø68



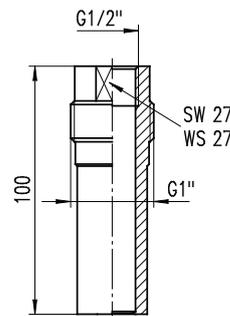
**TVA6LTP16**  
VARIVENT-Flansch Ø68  
mit Leckagebohrungen  
VARIVENT-flange Ø68  
with leakage drills



**TMN...FTP16**  
Kegelstutzen DIN 11851  
conical nozzle DIN 11851  
DN25, DN40, DN50



**NAM1FTP16**  
Adaptermuffe L  
adapter socket L



**NEM...FVAS**  
Adaptermuffe VAS  
adapter socket VAS

# Capacitive threshold level probe – Type LEVELTEC S / VAS –

## ORDERING INFORMATION for LEVELTEC

### Device version LEVELTEC

S	Standard version
VAS	Version with extended electrode rod

### Electronics

S	Standard version with adjustment via teach-in key
H	Standard version with adjustment via potentiometer

### Design

B	Standard version
HT	High-temperature version

### Electrical connection

C	M16x1.5 cable screw connection
M	M12x1 round plug-in connector

### Installation length (for device version LEVELTEC VAS only)

A	50 mm
B	100 mm
C	150 mm
D	200 mm
E	250 mm
F	300 mm
G	350 mm
H	400 mm

LEVELTEC

--	--	--	--	--

## ORDERING INFORMATION for accessories LEVELTEC S/LEVELTEC VAS

Process connection adapter (please order separately)	Article number
Welded-in lug Ø 30 mm, 1.4404 (316L)	TEM1FTP16
Welded-in lug Ø 30 mm, with 3 leakage holes Ø 3 mm, 1.4404 (316L)	TEM1LTP16
VARIVENT® flange Ø 68 mm, DN40-125/PN40, 1.4404 (316L)	TVA6FTP16
VARIVENT® flange Ø 68 mm, DN40-125/PN40 with 3 leakage holes 1.4404 (316L)	TVA6LTP16
Conical couplings with groove union nut DIN 11851, DN25/PN40, 1.4404 (316L)	TMN2FTP16
Conical coupling with DIN 11851 groove union nut, DN40/PN40, 1.4404 (316L)	TMN4FTP16
Conical coupling with DIN 11851 groove union nut, DN50/PN25, 1.4404 (316L)	TMN5FTP16
Adapter socket for fitting in internal thread G1", 1.4404 (316L)	NAM1FTP16
Adapter socket for LEVELTEC VAS, for fitting in internal thread G1", L 50 mm, 1.4404 (316L)	NEM1FVAS
Adapter socket for LEVELTEC VAS, for fitting in internal thread G1", L 100 mm, 1.4404 (316L)	NEM2FVAS
Adapter socket for LEVELTEC VAS, for fitting in internal thread G1", L 150 mm, 1.4404 (316L)	NEM3FVAS
Adapter socket for LEVELTEC VAS, for fitting in internal thread G1", L 200 mm, 1.4404 (316L)	NEM4FVAS
Adapter socket for LEVELTEC VAS, for fitting in internal thread G1", L 250 mm, 1.4404 (316L)	NEM5FVAS
Adapter socket for LEVELTEC VAS, for fitting in internal thread G1", L 300 mm, 1.4404 (316L)	NEM6FVAS
Adapter socket for LEVELTEC VAS, for fitting in internal thread G1", L 350 mm, 1.4404 (316L)	NEM7FVAS
Adapter socket for LEVELTEC VAS, for fitting in internal thread G1", L 400 mm, 1.4404 (316L)	NEM8FVAS
Welded-in dummy MS58	TED1FTP16

Please observe the permissible nominal pressure of the process connection selected.  
All specifications and certifications specified are only guaranteed when Hengesbach original components are used.  
Our devices are subject to constant development; subject to technical modification.