

The copyright to this drawing belongs to us. No duplication or transfer to, providing access to or communicating to any third parties is allowed of its contents or excerpts thereof. This drawing may not be used without our approval for any purpose other than that for which it has been entrusted to the recipient. Any non-compliance shall obligate the violator to compensate for damages. In case any patent is issued or a utility model is registered, or in case of any other industrial property rights, all such rights must be reserved for us.

BEDIA Motortechnik GmbH & Co.KG,  
Altdorf bei Nürnberg

Das Urheberrecht an dieser Zeichnung gehört uns. Vervielfältigung, Überlassung, Zugänglichkeit oder Mitteilung des Inhalts, auch auszugsweise, an Dritte ist nicht gestattet. Die Zeichnung darf ohne unsere Zustimmung, zu einem anderen Zweck als sie dem Empfänger anvertraut wird, nicht benutzt werden. Zuwiderhandlung verpflichtet zu Schadensersatz. Alle Rechte, für den Fall einer Patenterteilung, Gebrauchsmustereintrag oder anderer Schutzrechte, sind uns vorbehalten.

**Technical data**

Medium	oil
Function	minimum - quiescent current (rc)
Operating voltage	12 / 24 V (-25% / +50%) (9 - 36 VDC)
Current consumption	< 8 mA
Output	low side switch ≤ 1 A over the whole temperature range short-circuit and overload protected over the ambient temperature range. At inductive loads freewheeling diode e.g. 1N4007, has to be mounted at the load.
Mounting thread	M14x1,5
Function control	0 seconds ±5%
Fault indication delay	7 seconds ±5%
Connection	connector ISO 15170-A1-3.1-Sn/K1 (former DIN72585)
Housing material	CuZn38Pb2 EN12164; CW608N capacitive connected to ground
Probe coating	Tefzel® ETFE
Probe protection	IP 69K to DIN40050 with mounted mating connector
Weight	approx. 85 g
Marking	manufacturer; type; manufacturer no.; SN; year / week; approval
Switch point hysteresis	< 3 mm
Reference medium	paraffin oil, εr = 2,0..2,4, for switchpoint adjustment
Medium temperature	-40°C to +150°C (-40°F to +302°F)
Ambient temperature	-40°C to +125°C (-40°F to +257°F)
Storage temperature	-50°C to +125°C (-58°F to +257°F)
Mounting position	optional
Reverse polarity protection	inbuilt between positive and negative terminal

**Caution!!**  
Do not connect negative potential to signal terminal of the sensor and positive potential to negative terminal of the sensor.

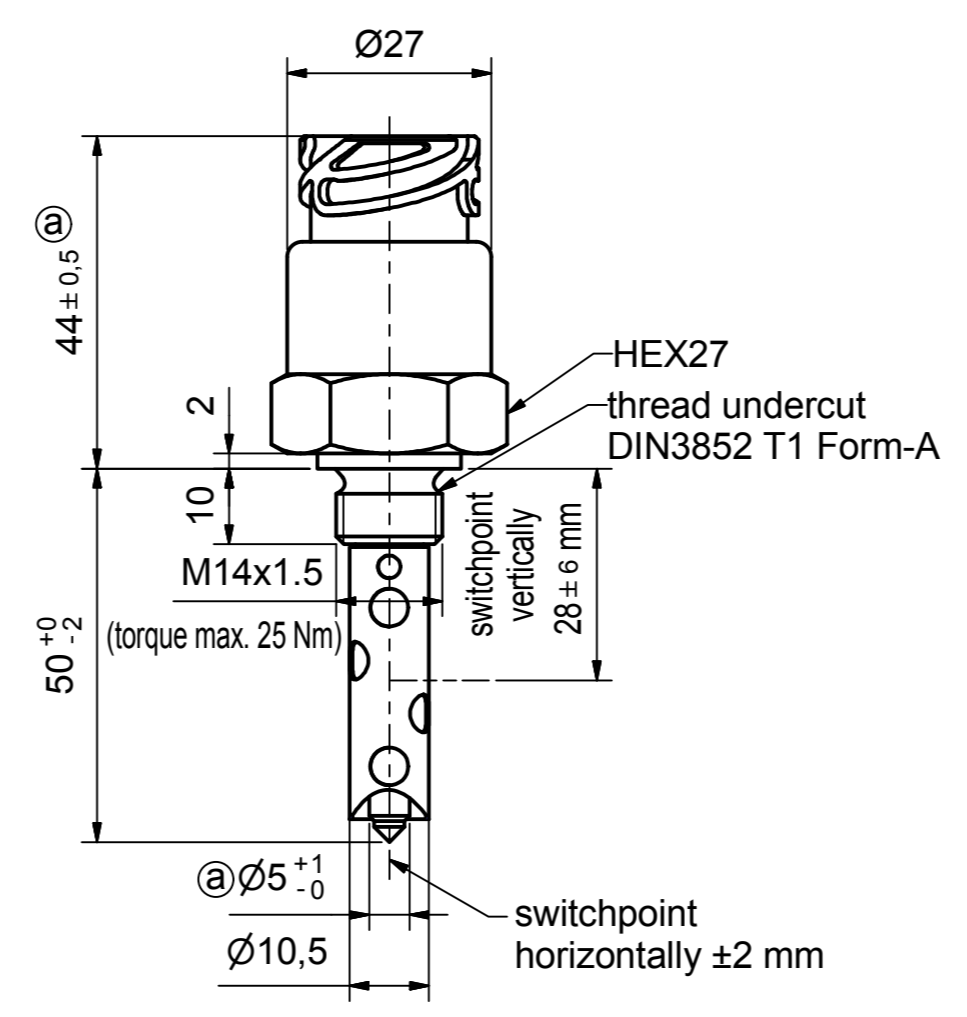
Approval	e1
Customs tariff number	035459 90261029

**Environmental simulations**

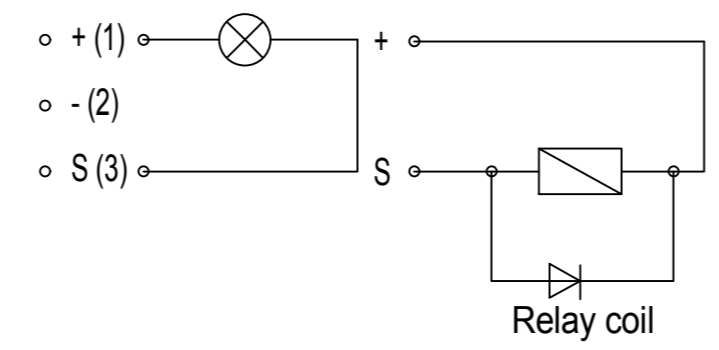
Vibration	ISO 16750-3:2007	10 Hz - 2000 Hz 20 g
Free Fall	IEC 16750	
Mechanical Shock	DIN EN 60068-2-27:1995;	100 g / 11 ms
Dry Cold	DIN EN 60068-2-1:2006;	-40°C / 24 h (-40°F / 24 h)
Dry Heat	DIN EN 60068-2-2:2008;	+125°C / 96 h (+257°F / 96 h)
Temperature cycling	DIN EN 60068-2-14:2000	
Damp Heat	DIN EN 60068-2-78:2002	
Damp Heat, steady state	DIN EN 60068-2-30:2006	
Salt spray	DIN EN 60068-2-52:1996	
Pressure resistance	2,5 MPa (25 bar / 362,6 psi)	(25°C / 77°F / 1 h)

**EMC**

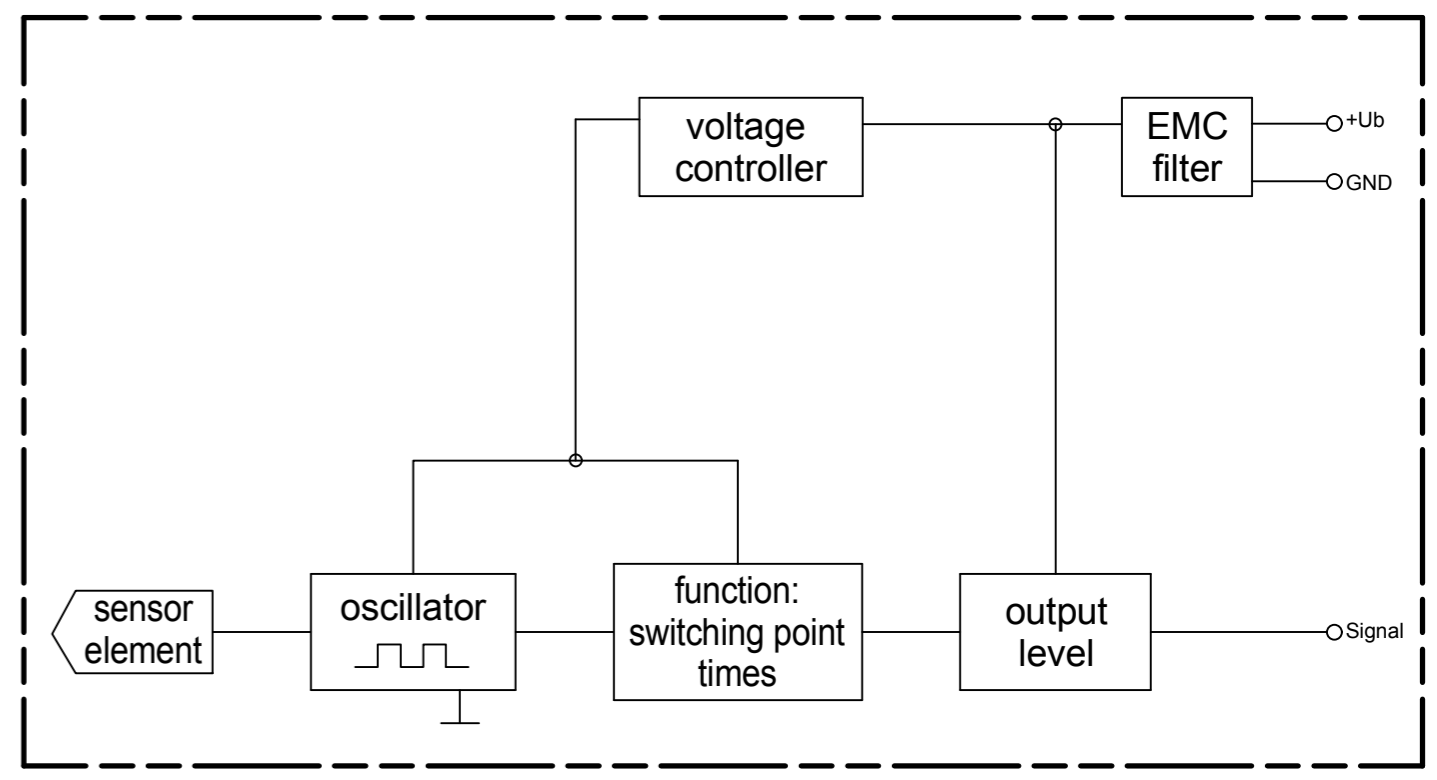
Radiated emission	2004/104/EG	30 MHz - 1 GHz; 1 m
Conducted transient emission	ISO 7637-2:2004	
Immunity to RF electromagnetic fields	ISO 11452-1/-2	1000 MHz - 2000 MHz; 150 V / m (rms)
Immunity to RF electromagnetic fields in the stripline	ISO 11452-1/-5	20 MHz - 1000 MHz; 150 V / m (rms)
Transient immunity test on power lines	ISO 7637-2/2004	Impulse 1, 2a, 2b, 3a, 3b, 4



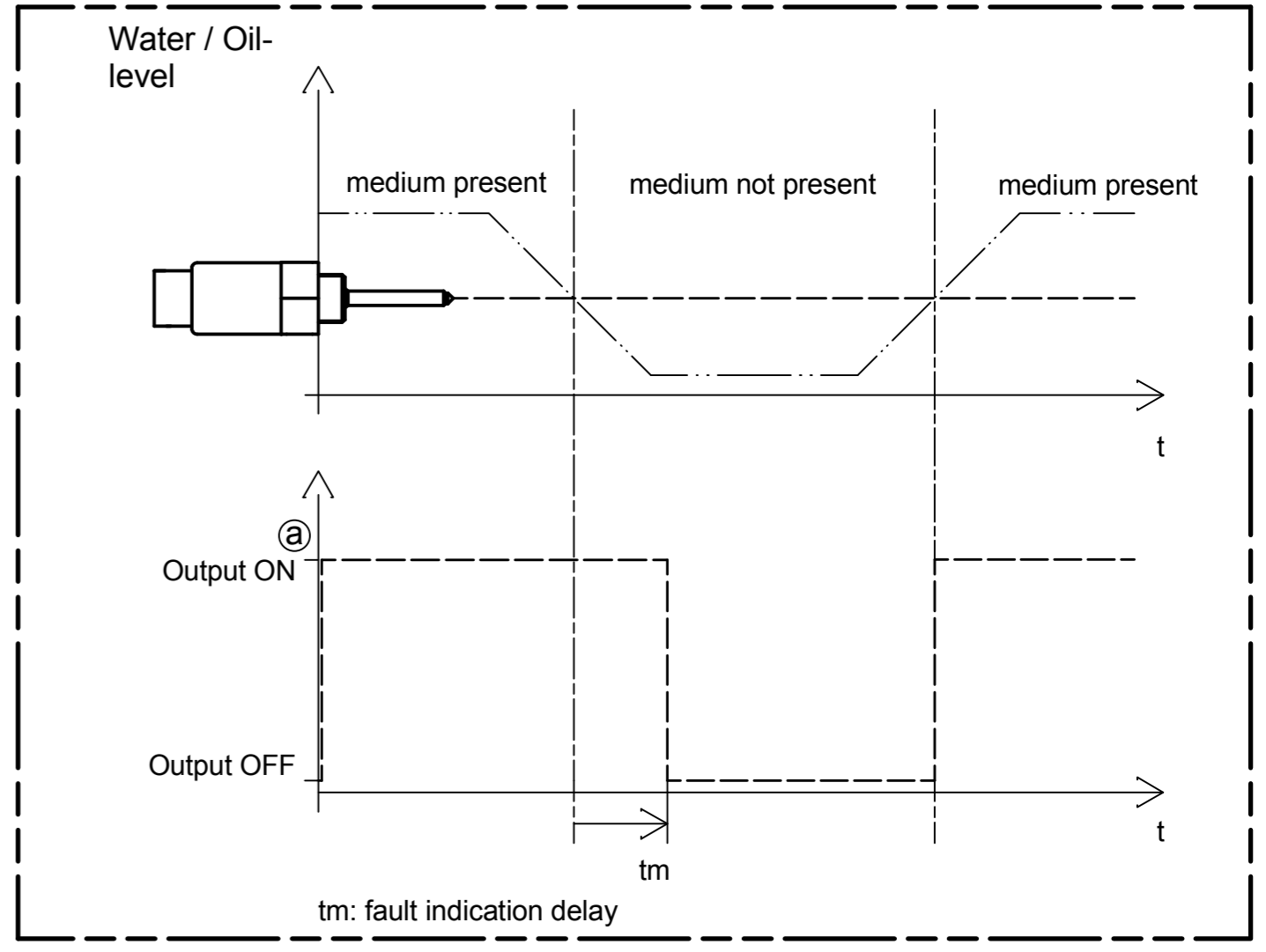
1 = positive (+)  
2 = negative (-)  
3 = signal (s)



**Block diagram**



**Functional diagram for MINIMUM Probes**



Zul. Abweichung / admissible tolerance	Oberfläche / surface	Maßstab / scale	1:1	Position / position	Menge / amount
ISO2768-mK	-	-	-	-	-
Erstellt / created by	Datum / date	Name / name	Benennung / description		
01.02.2010	01.02.2010	MoeMi	CLS-40 oil level sensor		
Geprüft / checked by	01.02.2010	SasCh	low side switch - quiescent current		
Format / Size	Maßeinheit / dimension unit		with connector ISO 15170-A1-3.1-Sn/K1		
A2	mm		Zeichnungsnummer / drawing number		
a connector norm	11.02.13	MoeMi/StaRo	320433		
Zust. / rev.	Aenderung/modification	Datum/date	Blatt / sheet		
			1/1		