



LMK 487

Probe for Marine and Offshore 22 mm

Ceramic Sensor

accuracy according to IEC 61298-2: 0.25 % FSO

Nominal pressure

from 0 ... 1 mH₂O up to 0 ... 100 mH₂O

Output signals

2-wire: 4 ... 20 mA others on request

Special characteristics

- ▶ diameter 22 mm
- LR-certificate (Lloyd's Register)
- DNV•GL Approval (Det Norske Veritas • Germanischer Lloyd)
- ▶ diaphragm 99.9 % Al₂O₃
- high long-term stability

Optional versions

- housing material titanium
- IS-versionEx ia = intrinsically safe for gas and dust
- ▶ temperature element Pt 100
- different kinds of elastomer

The hydrostatic probe LMK 487 has been developed for measuring levels in various tank applications for shipbuilding and offshore. In comparison to the hydrostatic probe LMK 458 the external diameter amounts to only 22 mm by which the installation in 1" pipes can be carried out easily.

Beside the housing materials stainless steel and titanium, different elastomer materials are available by which an optimum adaptation to the application can be ensured.

Preferred areas of use



Water

drinking water abstraction desalinization plant

Shipbuilding / Offshore

ballast tanks



monitoring of a ship's position and draught

level measurement in ballast and storage tanks



Tel.: +49 (0) 92 35 / 98 11- 0

Fax: +49 (0) 92 35 / 98 11- 11













Probe for Marine and Offshore

Input pressure range												
Nominal pressure gauge	[bar]	0.1	0.16	0.25	0.4	0.6	1	1.6	2.5	4	6	10
Level	[mH ₂ O]	1	1.6	2.5	4	6	10	16	25	40	60	100
Overpressure	[bar]	3	4	5	5	7	7	12	20	20	20	20
Burst pressure ≥	[bar]	4	6	8	8	9	9	18	25	25	30	30
Permissible vacuum	[bar]	-0.2	-0.3		-0	.5				-1		
Max. ambient pressure (housing): 40 bar												

Max. ambient pressure (housing): 4	0 bar							
Output signal / Supply								
Standard								
Option IS-version	2-wire: 4 20 mA / V _S = 14 28 V _{DC}							
·	Option Pt 100-temperature element ¹							
Temperature range	-25 125 °C							
Connectivity technology	3-wire	max. voltage 10 V _{DC} ,	in intrinsica	ally safe circuit 30 V _{DC}				
Resistance	100 Ω at 0 °C	max. current 2 mA,		ally safe circuit 54 mA				
Temperature coefficient	3850 ppm/K	max. power 10 mW,	in intrinsica	ally safe circuit 405 mW				
Supply I _S	0.3 1.0 mA _{DC}	-						
1 not possible in combination with IS-vers	sion							
Performance								
Accuracy ²	nominal pressure ≥ 0.4 bar: ≤ ± 0.2	5 % FSO nomina	al pressure < 0	0.4 bar ≤ ± 0.35 % FSO				
Permissible load	$R_{\text{max}} = [(V_{\text{S}} - V_{\text{S min}}) / 0.02 \text{ A}] \Omega$							
Influence effects	supply: 0.05 % FSO / 10 V	load: 0).05 % FSO / k	Ω				
Long term stability	≤ ± 0.1 % FSO / year							
Turn-on time	450 msec							
Mean response time	≤ 70 msec							
Measuring rate	80 Hz							
	nit point adjustment (non-linearity, hysteres	is, repeatability)						
Thermal effects (offset and span)								
Tolerance band	≤ ± 1 % FSO	in com	npensated rang	ge -20 80 °C				
Permissible temperatures								
Permissible temperatures	medium / storage: -25 85 °C							
Electrical protection ³								
Short-circuit protection	permanent							
Reverse polarity protection	no damage, but also no function							
Electromagnetic compatibility	emission and immunity according to							
	- EN 61326 - DNV•GL (Det Norske Veritas • Germanischer Lloyd)							
	on unit in terminal box KL 1 or KL 2 with at	mospheric pressure referenc	e available on re	quest				
Mechanical stability								
Vibration	4 g (according to DNV•GL: Class B	, curve 2 / basis: IEC 600	068-2-6)					
Electrical connection								
Cable with sheath material ⁴	TPE-U (-25125 °C) blue	Ø 7.4 mm						
Bending radius	static installation: 10-fold cable diar			20-fold cable diameter				
⁴ shielded cable with integrated ventilation tube for atmospheric pressure reference (for nominal pressure ranges absolute, the ventilation tube is closed)								
Materials (media wetted)								
Housing	standard: stainless steel 1.4404 (3 option: titanium (resistant agains			others on request				
Seals (O-rings)	standard: FKM							
	options: EPDM; FFKM (min. pern	nissible temperature from	1-15 °C)	others on request				
Diaphragm	ceramics Al ₂ O ₃ 99.9%							
Protection cap	POM-C							
Cable sheath	TPE-U (flame-resistant, halogen resistant against salt, sea	· · · · · · · · · · · · · · · · · · ·	ce against oil a	and gasoline,				
Category of the environment	10000tant against salt, see	a water, ricary oil)						
Lloyd's Register (LR)	number of certificate: 18/20068	ENI\/1 ENI\/2 EN	11/3 EN1/4					
Det Norske Veritas/	number of certificate: TAA00000RN	ENV1, ENV2, EN	1VJ, EINV4					
Germanischer Lloyd (DNV GL)	temperature: D humidity: B	vibration: B	EMC: B	enclosure: D				
Explosion protection	Tomporatore. D. Humlary. B.	VIDIALIOII. D	LIVIO. D	ondiosure. D				
Approval DX14B-LMK 487	IBEXU 15 ATEX 1066 X / IECEX IB	E 18 0010Y						
Approval DA 14B-Livik 467	zone 0: II 1G Ex ia IIB T4 Ga	E 10.0019A						
		°C Da						
	zone 20: II 1D Ex ia IIIC T135 °C Da U _i = 28 V, I _i = 93 mA, P _i = 660 mW, C _i = 49.2 nF, L _i = 0 μH;							
		$C_{i} = 49.2 \text{ nF} \cdot L_{i} = 0.0 \text{ H}$	$O_i = 28 \text{ V}, I_i = 93 \text{ mA}, P_i = 660 \text{ mW}, C_i = 49.2 \text{ nF}, L_i = 0 \text{ µH};$ the supply connections have an inner capacity of max. 100 nF opposite the enclosure					
Safety technical maximum values	$U_i = 28 \text{ V}, I_i = 93 \text{ mA}, P_i = 660 \text{ mW},$		nF opposite the	e enclosure				
,	U _i = 28 V, I _i = 93 mA, P _i = 660 mW, the supply connections have an inn	er capacity of max. 100 r		e enclosure				
Safety technical maximum values Permissible temperatures for environment	U _i = 28 V, I _i = 93 mA, P _i = 660 mW, the supply connections have an inn			e enclosure				
Permissible temperatures for	U _i = 28 V, I _i = 93 mA, P _i = 660 mW, the supply connections have an inn in zone 0: -20 60 °C wi zone 1 and higher: -25 65 °C cable capacity: signal line/shie	er capacity of max. 100 r	par ignal line: 160	pF/m				



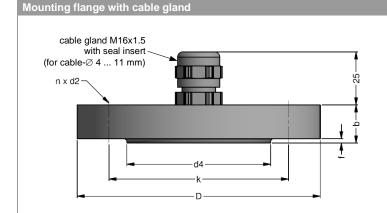
Miscellaneous					
Current consumption	max. 22 mA				
Weight	approx. 180 g (without cable)				
Ingress protection	IP 68				
CE-conformity					
		EMC Directive: 2014/30/EU			
ATEX Directive	2014/34/EU				
Pin configuration					
Electrical connection		cable colours (IEC 60757)			
Supply +		WH (white)			
Supply –		BN (brown)			
Option Pt 100 temperature element:					
Supply T+		YE (yellow)			
Supply T-		GY (grey)			
Supply T-		PK (pink)			
Shield					
		GNYE (green-yellow)			
Viring diagrams					
2-wire-system (current)		2-wire-system (pressure) / 3-wire-system (temperature)			
p supply +		supply V _S +			
p / (A) ~ (A)	+	(A) +			
		P / Vs			
\	5	/ supply V _S –			
1/		/			
	_	supply T+ o			
/ I supply –		supply T- option Pt 100-tem-			
<u> </u>		operature			
		supply T- element			
		÷			
Dimensions (mm / in)					
standard		screw-in version			
Standard		in stainless steel 1.4404 (316 L)			
		(0.10 2)			
		de code con			
→ ⋖ Ø7,4 [Ø0.29]		→ Ø7,4 [Ø0.29]			
	1				
		Ø22 [Ø0.87]			
		Ø22 [Ø0.87]			
		Ø22 [Ø0.87]			
	[68				
	[5.89]				
E:	,5 [5.89]				
[6.3]	149,5 [5.89]				
160 [6.3]	149,5 [5.89]	Ø22 [Ø0.87]			
—160 [6.3]	149.5 [5.89]				
160 [6.3]	149,5 [5.89]				
160 [6.3]	149,5 [5.89]				
160 [6.3]	149.5 [5.89]				
160 [6.3]	149,5 [5.89]				
160 [6.3]	149,5 [5.89]				
160 [6.3]	149,5 [5.89]	146,5 [5.77]			
160 [6.3]	149,5 [5.89]	146,5 [5.77]			
160 [6.3]	149,5 [5.89]	146,5 [5.77]			
160 [6.3]	149,5 [5.89]	146,5 [5.77]			
160 [6.3]	149,5 [5.89]	146,5 [5.77]			
160 [6.3]	149.5 [5.89]	146,5 [5.77]			
	149.5 [5.89]	SW34			
160 [6.3]	149,5 [5.89]	SW34			
		SW34			
		34 [1.34] SW34			
		SW34			
		SW34			
	87]	146.5 [5.77] 16 [0.63] 0.33/4- 0.38 [1.2]			
	87]	146.5 [5.77] 16 [0.63] Q3/4 Q38 [1.2]			

the right to make modifications to the specifications and materials

reserve

We

represent the state of engineering at the time of publishing.



dimensions in mm						
oi=o	DN25 /	DN50 /	DN80 /			
size	PN40	PN40	PN16			
b	18	20	20			
D	115	165	200			
d2	14	18	18			
d4	68	102	138			
f	2	3	3			
k	85	125	160			
n	4	4	8			

Technical	data	
Suitable fo	r	

Suitable for all probes
Flange material stainless steel 1.4404 (316L)
Material of cable gland standard: brass, nickel plated on request: stainless steel 1.4305 (303); plastic
Seal insert material: TPE (ingress protection IP 68)
Hole pattern according to DIN 2507

Hole pattern	according to Dirk 2007		
Ordering type		Ordering code	Weight
DN25 / PN40 with cable gland brass	s, nickel plated	ZMF2540	1.4 kg
DN50 / PN40 with cable gland brass	s, nickel plated	ZMF5040	3.2 kg
DN80 / PN16 with cable gland brass	s, nickel plated	ZMF8016	4.8 kg

Terminal clamp

Taabalaal dat



i echnicai data		
Suitable for	all probes with cable Ø 5.5 10.5 mm	
Material of housing	standard: steel, zinc plated	optionally: stainless steel 1.4301 (304)
Material of clamping jaws	PA (fibre-glass reinforced)	

and positioning clips

Dimensions (mm)

PA (fibre-glass reinforced)

174 x 45 x 32

Hook diameter 20 mm

Ordering type	Ordering code	Weight	
Terminal clamp, steel, zinc plated	Z100528	approx 160 a	
Terminal clamp, stainless steel 1.4301 (304)	Z100527	approx. 160 g	

Display program

CIT 200 Process display with LED display

CIT 250 Process display with LED display and contacts

CIT 300 Process display with LED display, contacts and analogue outputCIT 350 Process display with LED display, bargraph, contacts and analogue output

CIT 400 Process display with LED display, contacts, analogue output and Ex-approval

CIT 600 Multichannel process display with graphics-capable LC display

CIT 650 Multichannel process display with graphics-capable LC display and datalogger

CIT 700 / CIT 750 Multichannel process display with graphics-capable TFT monitor, touchscreen and contacts

PA 440 Field display with 4-digit LC display

For further information please contact our sales department or visit our homepage: http://www.bdsensors.de



LMK487_E_140425

Tel.: +49 (0) 92 35 / 98 11- 0 Fax: +49 (0) 92 35 / 98 11- 11



Ordering code LMK 487 LMK 487 Pressure gauge in bar 3 6 5 gauge in mH₂O 3 6 6 Input 1.0 0.10 1 0 0 0 1.6 0.16 1 6 0 0 2.5 0.25 2 5 0 0 4 0 0 0 40 0.40 0.60 6 0 0 0 6.0 1 0 0 1 10 1.0 16 1.6 1 6 0 1 2 5 0 1 4 0 0 1 25 2.5 40 40 60 6 0 0 1 6.0 1 0 0 2 100 10 customer 9 9 9 9 consult stainless steel 1.4404 (316L) 1 titanium customer consult Design probe 1 screw-in version G3/4" flush В Diaphragm ceramics Al₂O₃ 99,9 % С customer consult Output 4 ... 20 mA / 2-wire 1 intrinsic safety 4 ... 20 mA / 2-wire Е customer 9 consult FKM EPDM 3 FFKM ² customer 9 consult TPE-U-cable (blue, Ø 7.4 mm) 3 4 standard for p_N < 0,4 bar 0.35 % FSO 3 standard for $p_N \ge 0.4$ bar 0.25 % FSO 2 customer 9 consult Cable length 9 9 9 Special version standard 0 0 0 with temperature sensor Pt 100 ⁴ 0 1 3 9 9 9 customer consult

© 2025 BD|SENSORS GmbH - The specifications given in this document represent the state of engineering at the

reserve the right to make modifications to the specifications and materials

We,

time of publishing.

¹ only in combination with housing in stainless steel 1.4404 (316L)

 $^{^2\,}$ min. permissible temperature from -15 $^{\circ}\text{C}$

³ shielded cable with integrated ventilation tube for atmospheric pressure reference

⁴ not possible in combination with IS-version