





LMK 458

Probe for Marine and Offshore

Ceramic Sensor

accuracy according to IEC 60770: standard: 0.25 % FSO option: 0.1 % FSO

Nominal pressure

from 0 ... 40 cmH₂O up to 0 ... 200 mH₂O

Output signals

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

Special characteristics

- diameter 39.5 mm
- LR-certificate (Lloyd's Register)
- DNV-approval (Det Norske Veritas)
- **ABS-certificate** (American Bureau of Shipping)
- **CCS-certificate** (China Classification Society)
- high overpressure resistance
- high long-term stability

Optional versions

- diaphragm Al₂O₃ 99.9 %
- different housing materials (stainless steel, CuNiFe)
- IS-version Ex ia = intrinsically safe for gas
- screw-in and flange version
- accessories e.g. assembling and probe flange, mounting clamp

The hydrostatic probe LMK 458 has been developed for measuring level in service and storage tanks and is certificated for shipbuilding and offshore applications.

A permissible operating temperature up to 125 °C and the possibility to use the device in intrinsic safe areas enable to measure the pressure of various fluids under extreme conditions. The basis for the LMK 458 is a capacitive ceramic sensor element designed by BD|SENSORS, which offers a high overload resistance and medium compatibility.

Preferred areas of use are



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



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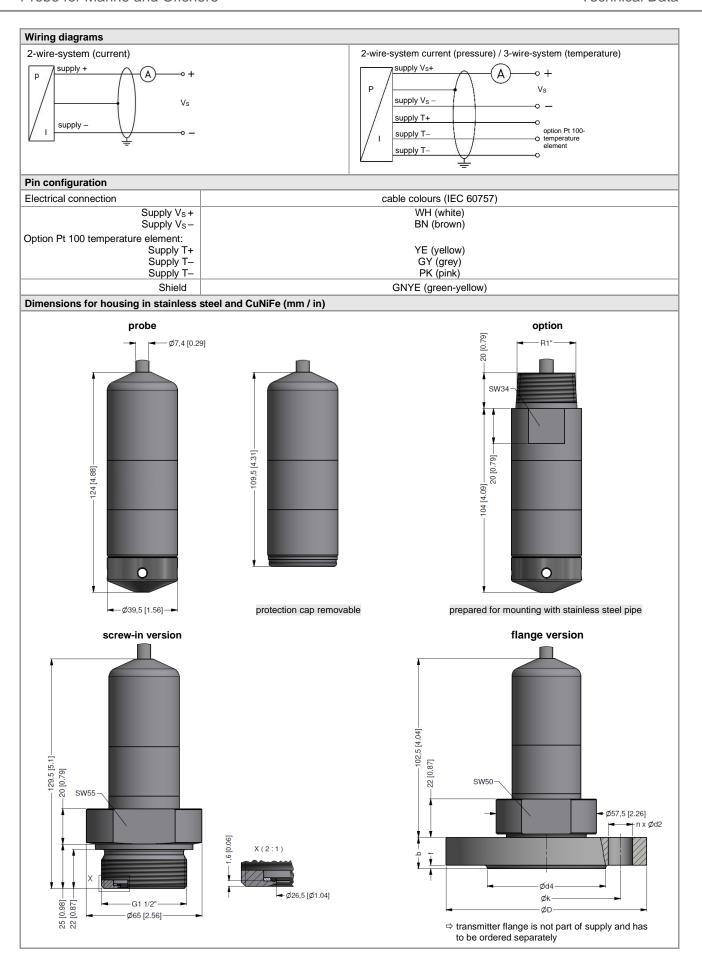


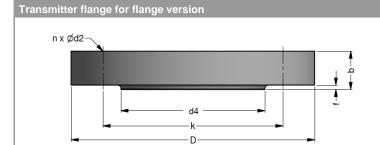
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Probe for Marine and Offshore

Pressure ranges																
Nominal pressure gauge 1	[bar]	0.04	0.06	0.1	0.16	0.25	0.4	0.6	1	1.6	2.5	4	6	10	16	20
Level	[mH2O]	0.4	0.6	1	1.6	2.5	4	6	10	16	25	40	60	100	160	200
Overpressure	[bar]	2	2	4	4	6	6	8	8	15	25	25	35	35	45	45
Permissible vacuum	[bar]	-0).2	-	0.3		-0.	.5					-1			
Max. ambient pressure (hous					f 1 b-											
1 available in gauge and absolute	; nominai p	oressure	ranges a	bsolute	Irom i ba	ır										
Output signal / Supply		0 '	4 00	A / \		20.17			.,							
Standard						32 V _{DC}				$_{\text{ated}} = 24$						
Option IS-version		2-wire:	4 20	mA / V	's = 12	28 V _{DC}			Vs ra	$_{\text{ated}} = 24$	V _{DC}					
Performance																
Accuracy ²		standa	$ard: \leq \pm 0$	0.25 %	FSO				opti	on: for	o _N ≥ 0.6	bar ³ :	$\leq \pm 0$.	1 % FS	0	
Permissible load		R _{max} =	[(V _S - \	/ _{S min}) /	0.02 A]	Ω										
Long term stability		≤ ± 0.1	% FSC) / year	at refer	ence con	ditions									
Influence effects		supply	: 0.05 %	FSO	10 V				perr	nissible	load: (0.05 %	FSO/	kΩ		
Turn-on time		700 m	sec													
Mean response time		< 200	msec						mea	an meas	suring r	ate 5/s	ec			
Max. response time		380 m	sec													
² accuracy according to IEC 60770																
³ under the influence of disturband						2 kV accura	acy dec	reased to	$0 \le \pm 0.2$	25 % FS)					
Thermal effects (offset and	span) / I			nperat	ures											
Tolerance band		≤±19								ompens			20 8	0 °C		
Permissible temperatures		mediu	m / elec	tronics	/ enviro	nment: -2	5 12	25 °C	stor	age: -4	0 12	5 °C				
Electrical protection ⁴																
Short-circuit protection		perma	nent													
Reverse polarity protection		no dan	nage, bu	ut also	no funct	ion										
Electromagnetic compatibility		emissi	on and i	mmuni	ty accor	ding to		EN 613			DNV (D	et Nor	ske Ve	ritas)		
⁴ additional external overvoltage p		ınit in ter	minal box	x KL 1 o	r KL 2 wit	th atmosph	eric pre	essure re	ference	availabl	9					
Mechanical stability																
Vibration		4 g (ad	ccording	to DN	V: class	B, curve	2 / bas	sis: DIN	EN 60	068-2-6	5)					
Electrical connection											<u> </u>					
Cable with sheath material ⁵		TPE-U	l blue	. 0	'.4 mm											
		11 L-0														
	I	etatic i				la diamet			dyn	amic a	nlicatio	n. 20-	fold ca	ادناه ماما	matar	
Bending radius ⁵ shielded cable with integrated ve	entilation to		nstallati	on: 10-	fold cab	le diamet		nressure						ble dia	meter	
⁵ shielded cable with integrated ve	entilation tu		nstallati	on: 10-	fold cab			oressure							meter	
⁵ shielded cable with integrated ve Materials	entilation tu	ube for a	nstallati tmospher	on: 10- ic press	fold cab ure refere	ence (for no	ominal _l	pressure							meter	
⁵ shielded cable with integrated ve	entilation tu	ube for a	nstallation	on: 10- ic press nless s	fold cab ure referent steel 1.4	ence (for no 404 (316L	ominal _)		ranges				tube is	closed)		oct
⁵ shielded cable with integrated ve Materials Housing	entilation tu	standa	nstallation nstallation trospher rd: stai Cul	on: 10- ic press nless s Ni10Fe	fold cab ure referent steel 1.4	ence (for no	ominal _)		ranges				tube is			est
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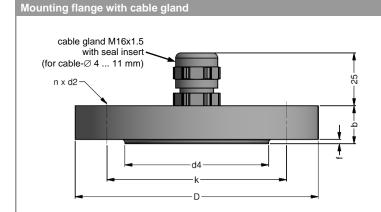




	dimensions in mm							
size	DN25 /	DN50 /	DN80 /					
Size	PN40	PN40	PN16					
b	18	20	20					
D	115	165	200					
d2	14	18	18					
d4	68	102	138					
f	2	3	3					
k	85	125	160					
n	4	4	8					
n	4	4	Ö					

O	0	VA/a:a:b.4
Hole pattern	according to DIN 2507	
Flange material	stainless steel 1.4404 (316L)	
Suitable for	LMK 382, LMK 382H, LMK 458, LMK 458H	
Technical data		

Ordering type	Ordering code	Weight
Transmitter flange DN25 / PN40	ZSF2540	1.2 kg
Transmitter flange DN50 / PN40	ZSF5040	2.6 kg
Transmitter flange DN80 / PN16	ZSF8016	4.1 kg



dimensions in mm							
size	DN25 / PN40	DN50 / PN40	DN80 / 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 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

Ordering type	Ordering code	Weight
DN25 / PN40 with cable gland brass, nickel plated	ZMF2540	1.4 kg
DN50 / PN40 with cable gland brass, nickel plated	ZMF5040	3.2 kg
DN80 / PN16 with cable gland brass, nickel plated	ZMF8016	4.8 kg

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LMK458_E_270622



Ordering code LMK 458 LMK 458 Pressure 7 6 5 7 6 8 7 6 6 in bar, gauge in bar, absolute in mH₂O Input mH₂O] 0.4 0.04 4 0 0 6 0 0 0 0 0 6 0 0 5 0 0 0 0 0 0 0 0 0 0 0 1 6 0 1 5 0 1 0 0 1 0 0 1 0 0 2 0 0 0.6 0.06 1.0 0.10 16 0.16 2 4 6 0.25 2.5 0 40 40 0.60 6.0 10 1.0 16 1.6 2 4 25 2.5 40 4.0 6 60 6.0 100 10 6 160 16 0 2 200 20 2 0 2 customer 9 9 9 consult Housing stainless steel 1.4404 (316L) copper-nickel-alloy (CuNi10Fe1Mn) customer consult Design probe 1 flange version 2 3 screw-in version Diaphragm ceramics Al₂O₃ 96 % 2 ceramics Al₂O₃ 99.9 % C 9 customer consult Output 4 ... 20 mA / 2-wire intrinsic safety 4 ... 20 mA / 2-wire F customer 9 consult FKM EPDM 3 FFKM³ customer 9 consult TPE-U-cable (blue, Ø 7.4 mm) 4 customer consult Accuracy 0.25 % FSO standard option für P_N ≥0.6 bar: 0.1 % FSO customer 9 consult Cable length 9 9 9 in m Special version 0 0 0 0 1 3 standard with temperature sensor Pt 100 ⁵ prepared for mounting ⁶ 0 5 2 with stainless steel pipe 9 9 9

customer

01.04.2022

to make modifications to the

the right

We

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consult

¹ nominal pressure ranges absolute from 1 bar

² mounting accessories are not part of supply and have to be ordered separately

 $^{^3\,}$ min. permissible temperature from -15°C

⁴ shielded cable with integrated ventilation tube for atmospheric reference

⁵ not possible in combination with IS-version

⁶ possible for probes in stainless steel; stainless steel pipe is not part of the supply