BD SENSORS®
pressure measurement

LMK 358

Detachable Stainless Steel Probe

Ceramic Sensor

accuracy according to IEC 60770:
standard: 0.35 % FSO
option: 0.25 % FSO

Nominal pressure

from 0 ... 40 cmH_2O up to 0 ... 100 mH_2O

Output signals

2-wire: 4 ... 20 mA
3-wire: 0 … 10 V
others on request

Special characteristics

- cable and probe detachable
- diameter 39.5 mm
- especially for sewage, viscous and pasty media

Optional versions

- IS-version

  Ex ia = intrinsically safe for gas and dust
- cable protection with stainless steel corrugated pipe
- diaphragm 99.9 % Al_2O_3
- different kinds of cable
- different kinds of elastomers

The detachable stainless steel probe LMK 358 has been designed for level measurement in waste water, waste and higher viscosity media. Basic element is a capacitive ceramic sensor.

In order to facilitate stock-keeping and maintenance the transmitter head is plugged to the cable assembly with a connector and can be changed easily.

Preferred areas of use are

Water
ground water level measurement
rain spillway basin

Sewage
waste water treatment
water recycling

Fuel / Oil
level monitoring in open tanks with low filling heights
fuel storage
tank farms / biogas plants

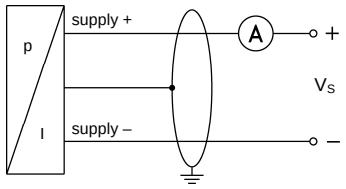
BD SENSORS s.r.o.
Hradišťská 817
CZ – 687 08 Buchlovice
Tel.: +420 572 411 011
www.bdsensors.cz
info@bdsensors.cz

Input pressure range													
Nominal pressure gauge [bar]	0.04	0.06	0.1	0.16	0.25	0.4	0.6	1	1.6	2.5	4	6	10
Level [mH_2O]	0.4	0.6	1	1.6	2.5	4	6	10	16	25	40	60	100
Overpressure [bar]	2	2	4	4	6	6	8	8	15	25	25	35	35

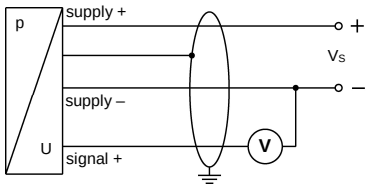
Output signal / Supply		
Standard	2-wire: 4 ... 20 mA / V_S = 9 ... 32 V_{DC}	
Option IS-protection	2-wire: 4 ... 20 mA / V_S = 14 ... 28 V_{DC}	
Option 3-wire	3-wire: 0 ... 10 V / V_S = 12.5 ... 32 V_{DC}	
Performance		
Accuracy [1]	standard: ≤ ± 0.35 % FSO option: ≤ ± 0.25 % FSO	
Permissible load	R_{max} = [(V_S – $V_{S\,min}$) / 0.02 A] Ω	
Influence effects	supply: 0.05 % FSO / 10 V load: 0.05 % FSO / kΩ	
Long term stability	≤ ± 0.1 % FSO / year	
Turn-on time	700 msec	
Mean response time	< 200 msec	measuring rate 5/sec
Max. response time	380 msec	
[1] accuracy according to IEC 60770 – limit point adjustment (non-linearity, hysteresis, repeatability)		
Thermal effects (Offset and Span)		
Thermal error	≤ ± 0.1 % FSO / 10 K in compensated range 0 ... 70 °C	
Permissible temperatures		
Permissible temperatures	Medium/ electronics/ environment/ storage: -20 … 125 °C *	
**If the cable is intended for use in a smaller temperature range, the use of the probe is limited by this range.*		
Electrical protection [2]		
Short-circuit protection	permanent	
Reverse polarity protection	no damage, but also no function	
Lightning protection	2-wire: integrated 3-wire: without	
Electromagnetic compatibility	emission and immunity according to EN 61326	
[2] additional external overvoltage protection unit in terminal box KL 1 or KL 2 with atmospheric pressure reference available on request		
Electrical connection		
Cable with sheath material [3]	PVC (-5 … 70 °C) grey (-25 … 70 °C in fixed condition) Ø 7,4 mm PUR (-25 … 80 °C) black Ø 7,4 mm FEP [4] (-25 … 75 °C) black Ø 7,4 mm TPE-U (-25 … 125 °C) blue (with drinking water certificate) Ø 7,4 mm	
Bending radius	static installation: 10-fold cable diameter; dynamic application: 20-fold cable diameter	
[3] shielded cable with integrated air tube for atmospheric pressure reference *[4] do not use freely suspended probes with an FEP cable if effects due to highly charging processes are expected*		
Materials (media wetted)		
Housing	stainless steel 1.4404 (316L)	
Seals	FKM EPDM others on request	
Diaphragm	standard: ceramics Al_2O_3 96 % option: ceramics Al_2O_3 99.9 %	
Cable sheath	PVC, PUR, FEP, TPE-U	
Protection cap	POM-C	
Explosion protection (only for 4 ... 20 mA / 2-wire)		
Approval DX4-LMK 358	IBExU05ATEX1069 X Zone 0 [5]: II 1G Ex ia IIB T4 Ga Zone 20: II 1D Ex iaD 20 T 85°C	
Safety technical maximum values	U_i = 28 V, I_i = 93 mA, P_i = 660 mW, C_i = 27 nF, L_i = 5 µH	
Permissible temperature	in zone 0: -20 ... 60 °C with patm 0.8 bar up to 1.1 bar; zone 1 or higher: -25 ... 70 °C	
Connecting cables (by factory)	cable capacitance: signal line/shield also signal line/signal line: 160 pF/m cable inductance: signal line/shield also signal line/signal line: 1 µH/m	
[5] for optional stainless steel pipe following designation is valid: "II 1G Ex ia IIC T4 Ga" (zone 0)		
Miscellaneous		
Current consumption	max. 21 mA	
Weight	approx. 650 g (without cable)	
Ingress protection	IP 68	
CE-conformity	EMC Directive: 2014/30/EU	
ATEX Directive	2014/34/EU	

Wiring diagram

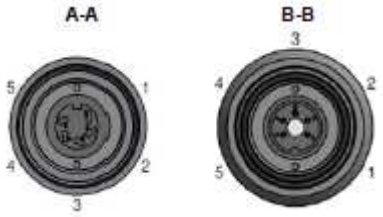
2-wire-system (current)



3-wire-system (voltage)



connector



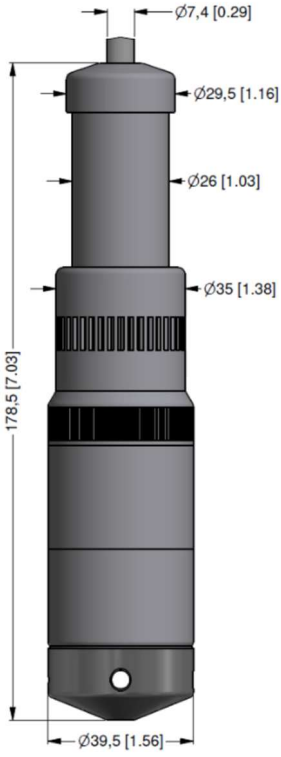
Pin configuration

Electrical connection	Binder series 723 [6] (5-pin)		cable colours (DIN 47100)
	2 - wire	3 - wire	
Supply +	3	3	wh (white)
Supply –	1	4	bn (brown)
Signal + (only for 3-wire)	-	1	gn (green)
Shield	5	5	gn/ ye (green / yellow)

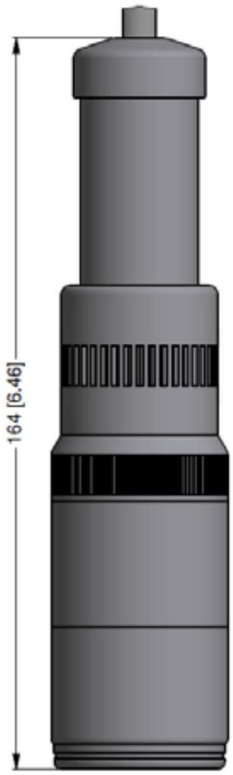
[6] *in detached version*

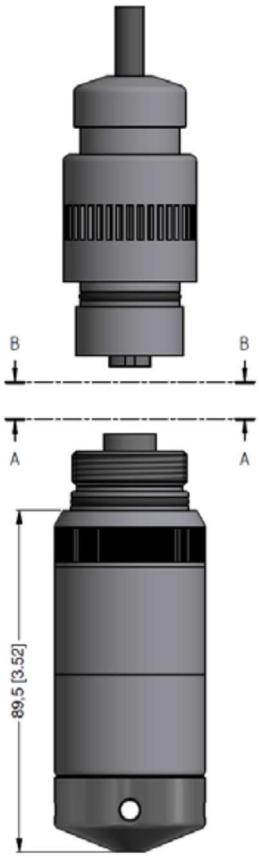
Dimensions (mm / in)

standard:



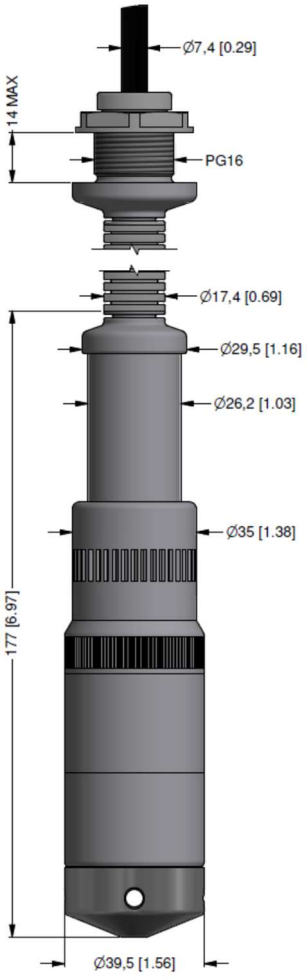
protection cap removable



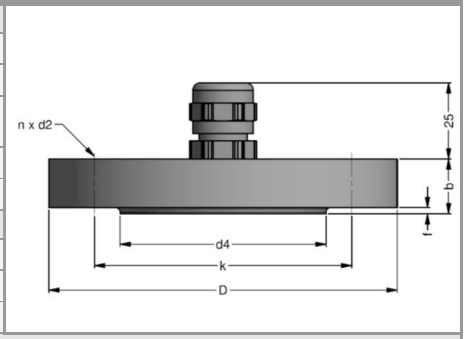


detached version

optional:



with corrugated pipe

Mounting flange with cable gland			
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		
Version	**Size (in mm)**	**Weight**	
DN25 / PN40	D = 115, k = 85, b = 18, n = 4, d= 14	1.4 kg	
DN50 / PN40	D = 165, k = 125, b = 20, n = 4, d= 18	3.2 kg	
DN80 / PN16	D = 200, k = 160, b = 20, n = 8, d= 18	4.8 kg	
Ordering type		**Ordering code**	
DN25 / PN40 with cable gland brass, nickel plated		5000275	
DN50 / PN40 with cable gland brass, nickel plated		5000278	
DN80 / PN16 with cable gland brass, nickel plated		5000279	
Terminal clamp			
Technical Data			
Suitable for	all probes with cable ∅ 5.5 ... 10.5 mm		
Material	standard: steel, zinc plated optionally: stainless steel 1.4301 (304)		
Weight	approx. 160 g		
Ordering type		**Ordering code**	
Terminal clamp, steel, zinc plated		1003440	
Terminal clamp, stainless steel 1.4301 (304)		1000278	
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 output

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

PA 440
Field display with 4-digit LC display

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

Tel.: +420 572 411 011

www.bdsensors.cz
info@bdsensors.cz

BD SENSORS® pressure measurement

BD SENSORS®
pressure measurement

Ordering code LMK 358

21.4.2020

LMK 358 □□□ - □□□□ - □ - □ - □ - □ - □ - □ - □□□ - □□□ - □□□ - □□□

Pressure			
in bar			445
in m H_2O			446
Input	**[mH_2O]**	**[bar]**	
	0 … 0.4	0 … 0,04	0400
	0 … 0.6	0 … 0,06	0600
	0 … 1	0 … 0,1	1000
	0 … 1.6	0 … 0,16	1600
	0 … 2.5	0 … 0,25	2500
	0 … 4	0 … 0,4	4000
	0 … 6	0 … 0,6	6000
	0 … 10	0 … 1	1001
	0 … 16	0 … 1,6	1601
	0 … 25	0 … 2,5	2501
	0 … 40	0 … 4	4001
	0 … 60	0 … 6	6001
	0 … 100	0 … 10	1002
Customer			9999
Housing material			
Stainless steel 1.4404 (316 L)			1
Customer			9
Diaphragm material			
Ceramic Al_2O_3 96 %			2
Ceramic Al_2O_3 99,9 %			C
Customer			9
Output			
4 … 20 mA / 2-wire			1
0 … 10 V / 3-wire [1]			3
Intrinsic safety Ex ia 4 … 20 mA / 2-wire			E
Customer			9
Seals			
Viton (FKM)			1
EPDM			3
FFKM			7
Customer			9
Electrical connection			
Without cable part			0
PVC - cable (grey, Ø 7,4 mm, price for 1 m)			1
PUR - cable (black, Ø 7,4 mm, price for 1 m)			2
FEP - cable with PTFE sheath (black, Ø 7,4 mm, price for 1 m)			3
TPE-U - cable, up to 125°C (blue, Ø 7.4 mm, price for 1 m)			4
Customer			9
Accuracy			
0,35 % (standard)			3
0,25 %			2
0,35 % including Calibration Certificate			S
Table of measured values for accuracy 0,35 %			M
Customer			9
Cable length			
in m			999
Special version			
Standard			000
Temperature sensor PT100			013
Cable protected by SS corrugated hose			103
+ stainless steel hose / 1 m			999
Customer			999

Accessories for submersible transmitter	
Cabel part + price for cabel in m	5000722
Terminal clamp - zinc plated	1003440
Terminal clamp - Stainless Steel 1.4301	1000278
Mounting screw PG16 - plastic	5002200

BD SENSORS s.r.o.
Hradišťská 817
CZ – 687 08 Buchlovice
Tel.: +420 572 411 011
Fax: +420 572 411 497
www.bdsensors.cz
info@bdsensors.cz

0,-…without additional charge
1 - maximum length of PVC cable – 25 m, PUR, FEP, TPE – 40 m
On request … in accordance with the producer
Surcharges for calibration are not subject to any discounts. Subject to change.
This document contains the specification for ordering the product; detailed technical parameters of the product and its possible variants are given in the data sheet.
BD SENSORS reserves the right to change sensor specifications without further notice.