



LMK 351

Screw-in Transmitter

Ceramic Sensor

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

Nominal pressure

from 0 ... 40 mbar up to 0 ... 20 bar

Output signal

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

Product characteristics

- ▶ pressure port PVDF-version for aggressive media
- ▶ pressure port G 1 1/2" for pasty and polluted media

Optional versions

- ▶ IS-version
Ex ia = intrinsically safe for gases and dust
- ▶ diaphragm 99.9 % Al₂O₃
- ▶ customer specific versions

The screw-in transmitter LMK 351 has been designed for measuring small system pressure and level measurement in container. The LMK 351 is based on an own-developed capacitive ceramic sensor element. Usage in viscous and pasty media is possible because of the flush mounted sensor.

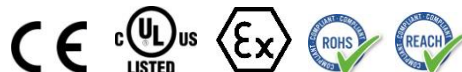
For the usage in aggressive media a pressure port in PVDF and the diaphragm in Al₂O₃ 99.9 % is available. An intrinsically safe version completes the range of possibilities.

Preferred areas of use are

- Plant and machine engineering
- Environmental engineering (water – sewage – recycling)

Preferred used for

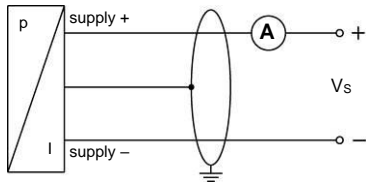
- Fuel and oil
- Viscous and pasty media



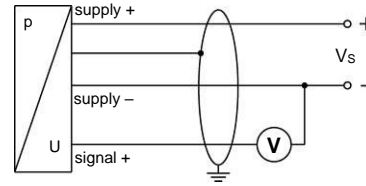
Pressure ranges																	
Nominal pressure	[bar]	0.04	0.06	0.1	0.16	0.25	0.4	0.6	1	1.6	2.5	4	6	10	16	20	
Level	[mH ₂ O]	0.4	0.6	1	1.6	2.5	4	6	10	16	25	40	60	100	160	200	
Overpressure	[bar]	2	2	4	4	6	6	8	8	15	25	25	35	35	45	45	
Permissible vacuum	[bar]	-0.2		-0.3		-0.5				-1							
Output signal / Supply																	
Standard		2-wire: 4 ... 20 mA / V _S = 9 ... 32 V _{DC}															
Option IS-version		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 for p _N ≥ 0.6 bar: ± 0.25 % FSO										
Permissible load		current 2-wire: R _{max} = [(V _S - V _{S min}) / 0.02 A] Ω					voltage 3-wire: R _{min} = 10 kΩ										
Influence effects		supply: 0.05 % FSO / 10 V					load: 0.05 % FSO / kΩ										
Long term stability		≤ ± 0.1 % FSO / year at reference conditions															
Turn-on time		700 msec															
Mean measuring time		5/sec															
Response time		mean response time: ≤ 200 msec					max. response time: 380 msec										
¹ accuracy according to IEC 60770 - limit point adjustment (non-linearity, hysteresis, repeatability)																	
Thermal effects (offset and span)																	
Tolerance band		≤ ± 1 % FSO															
in compensated range		-20 ... 80 °C															
Permissible temperatures																	
Permissible temperatures ²		medium: -40 ... 125 °C					electronics / environment: -40 ... 85 °C										
							storage: -40 ... 100 °C										
² for pressure port in PVDF the medium temperature is -30 ... 60 °C																	
Electrical protection																	
Short-circuit protection		permanent															
Reverse polarity protection		no damage, but also no function															
Electromagnetic compatibility		emission and immunity according to EN 61326															
Mechanical stability																	
Vibration		10 g RMS (20 ... 2000 Hz)					according to DIN EN 60068-2-6										
Shock		100 g / 1 msec					according to DIN EN 60068-2-27										
Materials (media wetted)																	
Pressure port		standard: stainless steel 1.4404 (316L)					option: PVDF										
Housing		standard: stainless steel 1.4404 (316L)					option: PVDF										
Option compact field housing		stainless steel 1.4301 (304); cable gland M12x1.5, brass, nickel plated (clamping range 2 ... 8 mm)															
Seals		FKM -40 ... 125 °C															
		FFKM -15 ... 125 °C															
		EPDM -40 ... 125 °C															
Diaphragm		standard: ceramics Al ₂ O ₃ 96 %					options: ceramics Al ₂ O ₃ 99.9 %										
Media wetted parts		pressure port, seals, diaphragm															
Explosion protection (only for 4 ... 20 mA / 2-wire)																	
Approval DX14-LMK 351		IBExU05ATEX1070 X stainless steel-pressure port with connector: zone 0: II 1G Ex ia IIC T4 Ga zone 20: II 1D Ex ia IIIC T110 °C Da plastic-pressure port with connector: zone 0/1: II 1/2G Ex ia IIC T4 Ga/Gb zone 20/21: II 1/2D Ex ia IIIC T110 °C Da/Db															
Safety technical maximum values		U _i = 28 V, I _i = 93 mA, P _i = 660 mW, C _i = 14 nF, L _i ≈ 0 μH, C _{gnd} = 27 nF															
Max. permissible temperature for environment		in zone 0: -20 ... 60 °C for p _{atm} 0.8 bar up to 1.1 bar					zone 1 and higher: -25 ... 70 °C										
Connecting cables (by factory)		cable capacity: signal line / shield also signal line / signal line: 220 pF/m					cable inductance: signal line / shield also signal line / signal line: 1.5 μH/m										
Miscellaneous																	
Current consumption		signal output current: max. 21 mA					signal output voltage: max. 5 mA										
Weight		approx. 200 g															
Installation position		any															
Operational life		100 million load cycles															
CE-conformity		EMV-directive: 2014/30/EU															
ATEX Directive		2014/34/EU															

Wiring diagram

2-wire-system (current)



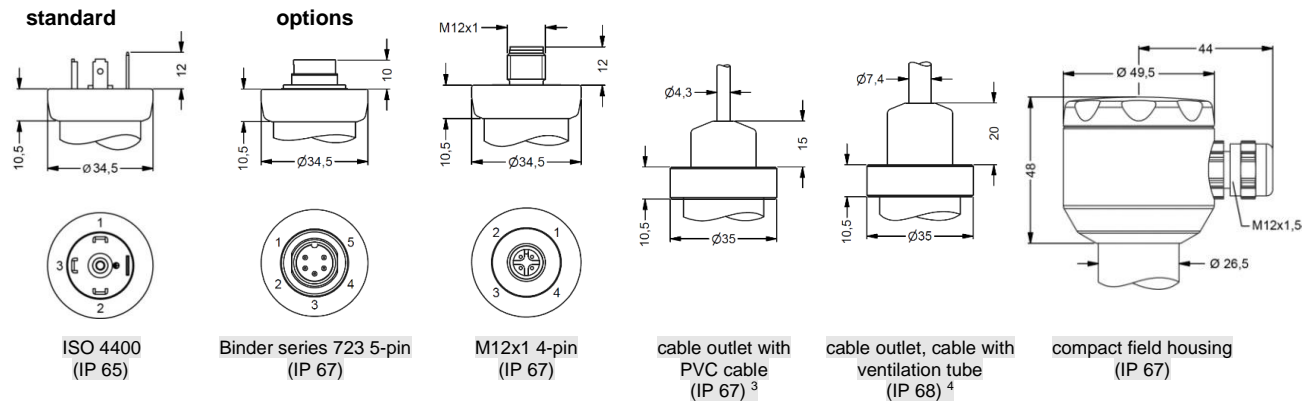
3-wire-system (voltage)



Pin configuration

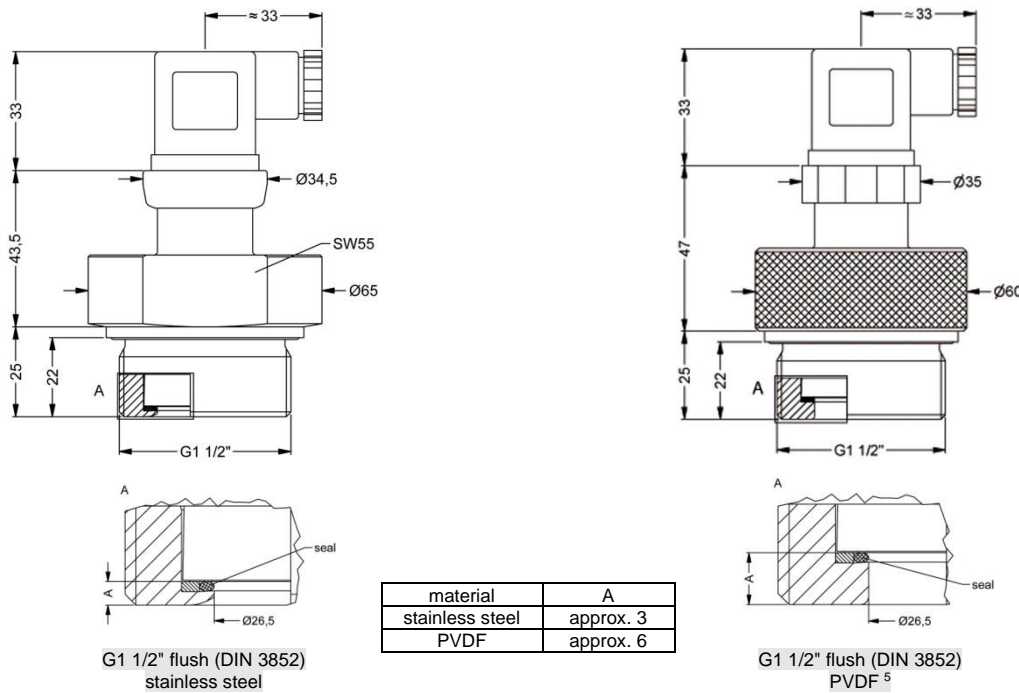
Electrical connection	ISO 4400	Binder 723 (5-pin)	M12x1 (4-pin)	compact field housing	cable colours (IEC 60757)
Supply +	1	3	1	IN +	WH (white)
Supply -	2	4	2	IN -	BN (brown)
Signal + (only for 3-wire)	3	1	3	OUT +	GN (green)
Shield	ground pin \oplus	5	4	\oplus	GNYE (green-yellow)

Electrical connections (dimensions in mm)



³ standard: 2 m PVC cable without ventilation tube (permissible temperature: -5 ... 70 °C)
⁴ different cable types and lengths available, permissible temperature depends on kind of cable

Dimensions (in mm)



⁵ not possible in combination with compact field housing

© 2022 BD|SENSORS GmbH – The specifications given in this document represent the state of engineering at the time of publishing. We reserve the right to make modifications to the specifications and materials.

Ordering code LMK 351

LMK 351

□□□□ - □□□□□ - □ - □ - □□□□ - □□□□□ - □ - □□ - □□ - □□□□

Pressure																						
	in bar	4	7	0																		
	in mH ₂ O	4	7	1																		
Input	[mH ₂ O]	[bar]																				
	0.4	0.04		0	4	0	0															
	0.6	0.06		0	6	0	0															
	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	0.40		4	0	0	0															
	6.0	0.60		6	0	0	0															
	10	1.0		1	0	0	1															
	16	1.6		1	6	0	1															
	25	2.5		2	5	0	1															
	40	4.0		4	0	0	1															
	60	6.0		6	0	0	1															
	100	10		1	0	0	2															
	160	16		1	6	0	2															
	200	20		2	0	0	2															
	customer			9	9	9	9															consult
Output																						
	4 ... 20 mA / 2-wire			1																		
	0 ... 10 V / 3-wire			3																		
	intrinsic safety 4 ... 20 mA / 2-wire			E																		
	customer			9																		consult
Accuracy																						
standard:	0.35 % FSO			3																		
option for p _N ≥ 0.6 bar:	0.25 % FSO			2																		
customer				9																		consult
Electrical connection																						
	male and female plug ISO 4400			1	0	0																
	male plug Binder series 723 (5-pin)			2	0	0																
	cable outlet with PVC cable (IP67) ¹			T	A	0																
	cable outlet,																					
	cable with ventilation tube (IP68) ²			T	R	0																
	male plug M12x1 (4-pin) / metal			M	1	0																
	compact field housing																					
	stainless steel 1.4301 (304)			8	5	0																
	customer			9	9	9																consult
Mechanical connection																						
	G1 1/2" DIN 3852 with									M	0	0										
	flush sensor																					
	customer									9	9	9										consult
Seals																						
	FKM			1																		
	EPDM			3																		
	FFKM			7																		
	customer			9																		consult
Pressure port																						
	stainless steel 1.4404 (316L)			1																		
	PVDF ³			B																		
	customer			9																		consult
Diaphragm																						
	ceramics Al ₂ O ₃ 96 %			2																		
	ceramics Al ₂ O ₃ 99.9 %			C																		
	customer			9																		consult
Special version																						
	standard																					0 0 0
	customer																					9 9 9
	customer																					consult

¹ standard: 2 m PVC cable without ventilation tube (permissible temperature: -5 ... 70 °C); others on request

² code TR0 = PVC cable, cable with ventilation tube available in different types and lengths

³ not possible in combination with compact field housing; permissible medium temperature: -30 ... 60 °C