



DMK 458

Pressure Transmitter for Marine and Offshore

Ceramic Diaphragm

accuracy:
0.25 % FSO IEC 60770



Product characteristics

- ▶ nominal pressure ranges from 0 ... 40 mbar up to 0 ... 20 bar
- ▶ high overpressure resistance
- ▶ excellent accuracy
- ▶ small thermal effect
- ▶ very good long term stability

Optional versions

- ▶ IS version, zone 0 (temperature class 4)
- ▶ diaphragm Al₂O₃ 99.9 %
- ▶ pressure port CuNiFe version
- ▶ different mechanical connections

The pressure transmitter DMK 458 has been developed for marine and offshore applications. In addition to thread connections, different flush versions are available, which are especially suitable for pasty, viscous, and polluted media.

Due to the capacitive ceramic sensor developed by BD SENSORS, which is optionally available in Al₂O₃ 99.9 %, the DMK 458 shows an outstanding accuracy as well as a high overload and temperature resistance.

Preferred areas of use are



Monitoring of pressure during loading and unloading processes



Draught monitoring



Use in anti-heeling systems

Level measurement in ballast and storage tanks

Transmitter for
Marine and Offshore

DMK 458



paab

TEKNO TRADING

DMK 458

Transmitter for Marine and Offshore

Technical Data

Pressure ranges																		
Nominal pressure 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	[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								
¹ available in gauge, sealed gauge and absolute; nominal pressure ranges sealed gauge and absolute from 1 bar																		
Output signal / Supply																		
Standard	2-wire: 4 ... 20 mA / V _S = 11 ... 32 V _{DC}									V _S rated = 24 V _{DC}								
Option IS-version	2-wire: 4 ... 20 mA / V _S = 14 ... 28 V _{DC}									V _S rated = 24 V _{DC}								
Performance																		
Accuracy ²	standard: ≤ ± 0.25 % FSO option for P _N ≥ 0.6 bar ³ : ≤ ± 0.1 % FSO																	
Permissible load	R _{max} = [(V _S - V _S min) / 0.02] Ω																	
Long term stability	≤ ± 0.1 % FSO / year																	
Influence effects	supply: 0.05 % FSO / 10 V permissible load: 0.05 % FSO / kΩ																	
Turn-on time	700 msec																	
Mean response time	< 200 msec									mean measuring rate 5/sec								
Max. response time	380 msec																	
² accuracy according to IEC 60770 – limit point adjustment (non-linearity, hysteresis, repeatability)																		
³ Under the influence of disturbance burst according to EN 61000-4-4 (2004) +2 kV accuracy decreases on ≤ ± 0.25 % FSO.																		
Thermal effects																		
Thermal error	≤ ± 0.1 % FSO / 10 K in compensated range -20 ... 80 °C																	
Permissible temperatures																		
Permissible temperatures	medium: -40 ... 125 °C electronics / environment: -25 ... 85 °C storage : -40 ... 100 °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 and Germanischer Lloyd (GL)																	
Mechanical stability																		
Vibration	4 g (according to GL: curve 2 / basis: DIN EN 60068-2-6)																	
Materials																		
Pressure port	standard: stainless steel 1.4404 (316 L) option for threaded connections: CuNi10Fe1Mn - on request																	
Housing	stainless steel 1.4404 (316 L)																	
Cable sheath for version cable outlet	PUR																	
Cable gland for version field housing	absolute, sealed gauge: brass, nickel plated gauge: polyamide (with integrated pressure reference) others on request																	
Seals (media wetted)	FKM; others on request																	
Diaphragm	standard: ceramics Al ₂ O ₃ 96 % option: ceramics Al ₂ O ₃ 99.9 % - for pressure ranges 0.1 up to 1 bar (absolute on request)																	
Media wetted parts	pressure port, seals, diaphragm																	
IS protection (with option IS version)																		
Approval DX14A-DMK 458	field housing zone 0: II 1G Ex ia IIC T4 ISO 4400, M12x1, cable outlet: zone 0: II 1G Ex ia IIB T4																	
Safety technical maximum values	U _i = 28 V; I _i = 93 mA; P _i = 660 mW field housing: C _i = 52.3 nF; L _i = 5 μH; 90.2 nF opposite GND ISO 4400, M12x1, cable outlet: C _i = 105 nF; L _i = 5 μH; 140 nF opposite GND																	
Permissible temperatures for environment	in zone 0: -20 ... 60 °C with p _{atm} 0.8 bar up to 1.1 bar zone 1 and higher: -25 ... 70 °C																	
Permissible temperatures for medium	-40 ... 85 °C																	
Miscellaneous																		
Ingress protection	IP 67																	
Installation position	any																	
Current consumption	max. 21 mA																	
Weight	min. 400 g (depending on housing and mechanical connection)																	
Operational life	> 100 x 10 ⁶ cycles																	
CE conformity	EMC Directive: 2004/108/EC																	

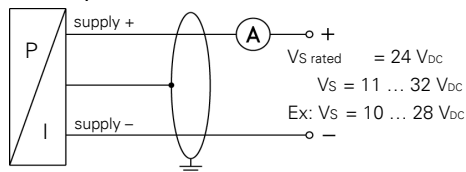
DMK 458

Transmitter for Marine and Offshore

Technical Data

Wiring diagram

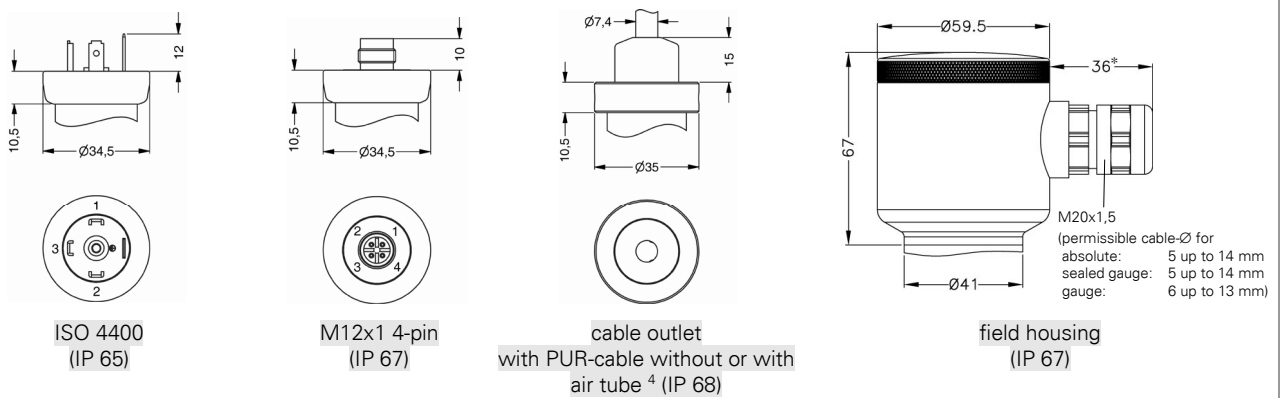
2-wire system (current)



Pin configuration

Electrical connections	ISO 4400	field housing (clamp section: 2.5 mm ²)	M12x1 (4-pin) metal	cable colours (DIN 47100)
Supply +	1	VS+	1	wh (white)
Supply -	2	VS-	2	bn (brown)
Shield	ground contact	⊥	4	gn/ye (green / yellow)

Electrical connections (dimensions in mm)

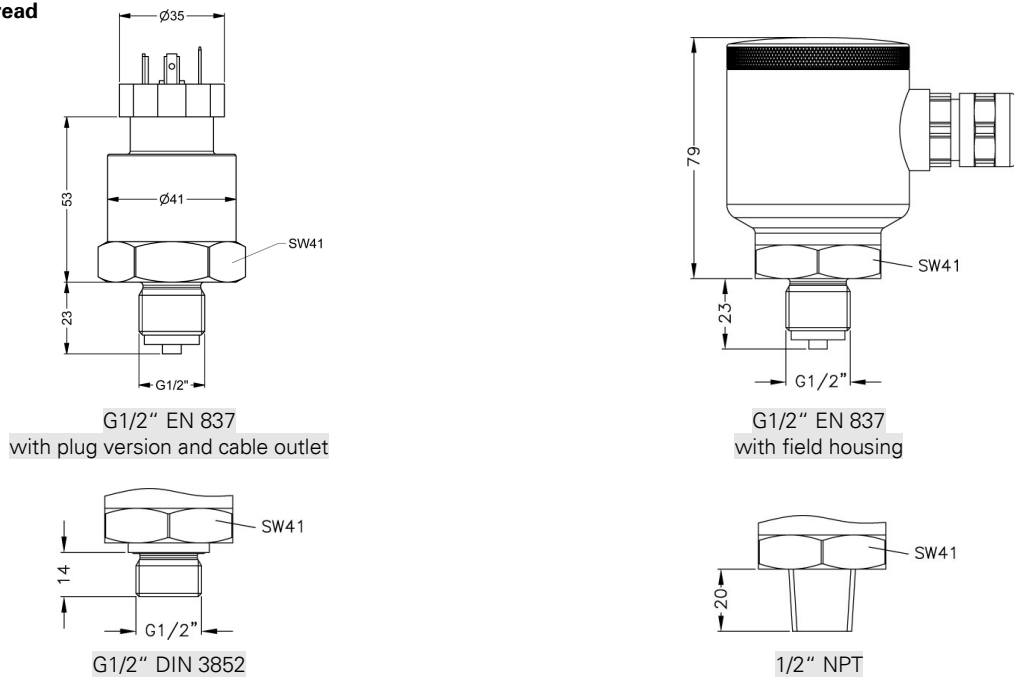


* for gauge pressure ranges with field housing the marked dimension increases by 8 mm

⁴ cable versions are delivered with shielded cable (different cable types and lengths available);
for gauge pressure cable with ventilation tube required; tested at 4 bar or 40 mH₂O for 24 hours

Dimensions (in mm)

Inch thread



⇒ For version field housing with pressure port in CuNi10Fe1Mn, total length increases by 27 mm!

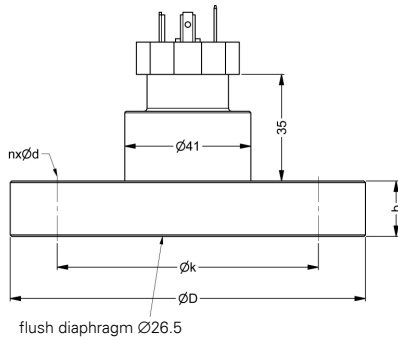
DMK 458

Transmitter for Marine and Offshore

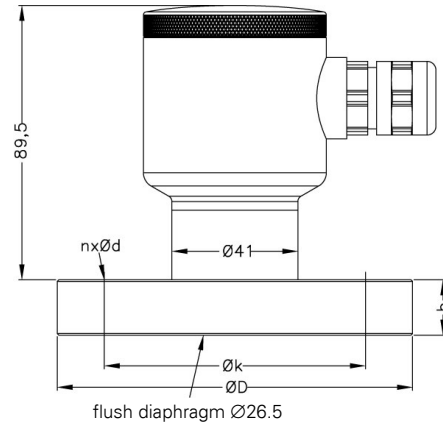
Technical Data

Dimensions (in mm)

Flange ⁵ (DIN 2501)



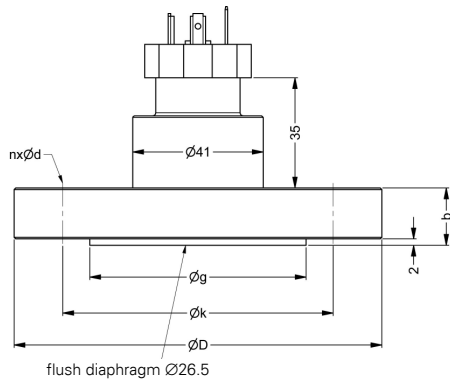
with plug version and cable outlet



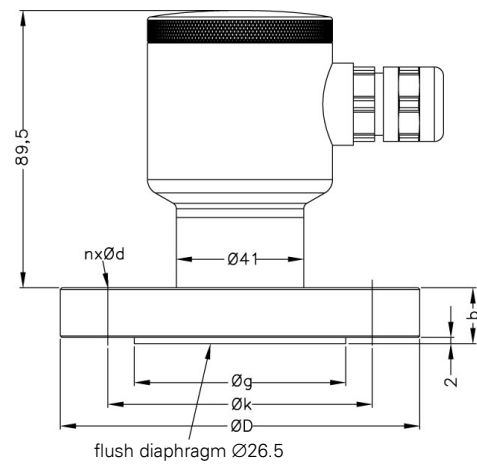
with field housing

dimensions in mm				
size	DN25/PN40	DN40/PN40	DN50/PN40	DN80/PN16
D	115	150	165	200
k	85	110	125	160
b	18	18	20	20
n	4	4	4	8
d	14	18	18	18

Flange ⁵ (ANSI)



with plug version and cable outlet



with field housing

dimensions in mm		
size	2"/150 lbs	3"/150 lbs
D	152.4	190.5
g	91.9	127
k	120.7	152.4
b	19.1	23.9
n	4	4
d	19.1	19.1

⇒ For version field housing with pressure port in CuNi10Fe1Mn, total length increases by 27 mm!

⁵ DN80/PN16 possible for nominal pressure ranges $P_N \leq 16$ bar; 2"/150 lbs and 3"/150 lbs possible for nominal pressure ranges $P_N \leq 10$ bar