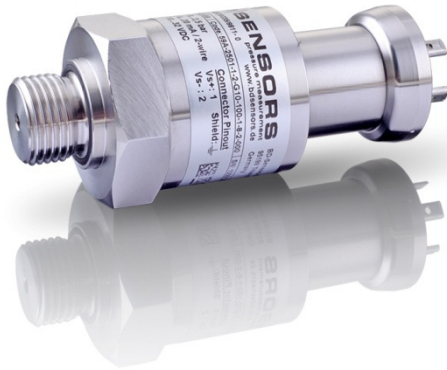


# DMK 458

## Pressure Transmitter for Marine and Offshore

Ceramic Sensor

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



### Nominal pressure

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

### Output signals

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

### Product characteristics

- ▶ LR-certificate (Lloyd's Register)
- ▶ GL-certificate (Germanischer Lloyd)
- ▶ DNV-certificate (Det Norske Veritas)
- ▶ ABS-certificate (American Bureau of Shipping)
- ▶ CCS-certificate (China Classification Society)
- ▶ high overpressure resistance
- ▶ excellent long term stability




### Optionale Ausführungen

- ▶ IS-version  
Ex ia= intrinsically safe for gases
- ▶ diaphragm Al<sub>2</sub>O<sub>3</sub> 99.9 %
- ▶ pressure port CuNiFe

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 Al<sub>2</sub>O<sub>3</sub> 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
-  Monitoring of a ship's position and draught
- Use in anti-heeling systems
-  Level measurement in ballast and storage tanks



# DMK 458

Transmitter for Marine and Offshore

Technical Data

<b>Pressure ranges</b>																
Nominal pressure <sup>1</sup>	[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 <sub>2</sub> 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							
<sup>1</sup> available in gauge and absolute; nominal pressure ranges absolute from 1 bar																
<b>Output signal / Supply</b>																
Standard	2-wire: 4 ... 20 mA / V <sub>S</sub> = 9 ... 32 V <sub>DC</sub>									V <sub>S rated</sub> = 24 V <sub>DC</sub>						
Option IS-version	2-wire: 4 ... 20 mA / V <sub>S</sub> = 14 ... 28 V <sub>DC</sub>									V <sub>S rated</sub> = 24 V <sub>DC</sub>						
<b>Performance</b>																
Accuracy <sup>2</sup>	standard: ≤ ± 0.25 % FSO									option for P <sub>N</sub> ≥ 0.6 bar <sup>3</sup> : ≤ ± 0.1 % FSO						
Permissible load	R <sub>max</sub> = [(V <sub>S</sub> - V <sub>S min</sub> ) / 0.02 A] Ω															
Long term stability	≤ ± 0.1 % FSO / year at reference conditions															
Influence effects	supply: 0.05 % FSO / 10 V									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															
<sup>2</sup> accuracy according to IEC 60770 – limit point adjustment (non-linearity, hysteresis, repeatability)																
<sup>3</sup> Under the influence of disturbance burst according to EN 61000-4-4 (2004) □ 2 kV accuracy decreases on ≤ ± 0.25 % FSO.																
<b>Thermal effects</b>																
Thermal error	≤ ± 0.1 % FSO / 10 K in compensated range -20 ... 80 °C															
<b>Permissible temperatures</b>																
Permissible temperatures	medium: -40 ... 125°C electronics / environment: -25 ... 85°C storage: -40 ... 100°C															
<b>Electrical protection</b>																
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)															
<b>Mechanical stability</b>																
Vibration	4 g (according to GL: curve 2 / basis: DIN EN 60068-2-6)															
<b>Materials</b>																
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	TPE -U (flame-resistant, halogen free, increased resistance against oil and gasoline, resistant against salt, sea water, heavy oil)															
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 <sub>2</sub> O <sub>3</sub> 96 % option: ceramics Al <sub>2</sub> O <sub>3</sub> 99.9 %															
Media wetted parts	pressure port, seals, diaphragm															
<b>Category of the environment</b>																
Lloyd's Register (LR)	EMV1, EMV2, EMV3 <sup>4</sup> , EMV4									number of certificate: 13/20055						
Germanischer Lloyd (GL)	D, F, EMC 1									number of certificate: 75 012 - 09 HH						
Det Norske Veritas (DNV)	temperature: D humidity: B									vibration: B						
	electromagnetic compatibility: B									number of certificate: A-12144						
<sup>4</sup> not valid for IS-version (DX14A-DMK 458)																
<b>IS protection</b>																
Approval DX14A-DMK 458	IBExU 07 ATEX 1180 X field housing zone 0: II 1G Ex ia IIC T4 Ga ISO 4400, M12x1, cable outlet: zone 0: II 1G Ex ia IIB T4 Ga															
Safety technical maximum values	U <sub>i</sub> = 28 V; I <sub>i</sub> = 93 mA; P <sub>i</sub> = 660 mW field housing: C <sub>i</sub> = 52.3 nF; L <sub>i</sub> = 5 μH; 90.2 nF opposite GND ISO 4400, M12x1, cable outlet: C <sub>i</sub> = 105 nF; L <sub>i</sub> = 5 μH; 140 nF opposite GND															
Permissible temperatures for environment	in zone 0: -20 ... 60 °C with p <sub>atm</sub> 0.8 bar up to 1.1 bar zone 1 and higher: -25 ... 70 °C															
Permissible temperatures for medium	-40 ... 85 °C															
<b>Miscellaneous</b>																
Ingress protection	IP65, IP 67, IP68															
Installation position	any															
Current consumption	max. 21 mA															
Weight	min. 400 g (depending on housing and mechanical connection)															
Operational life	> 100 x 10 <sup>6</sup> cycles															
CE conformity	EMC Directive: 2014/30/EU															
ATEX Directive	2014/34/EU															

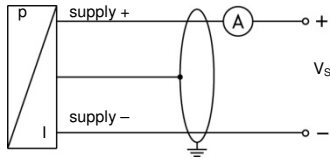
# DMK 458

Transmitter for Marine and Offshore

Technical Data

## Wiring diagram

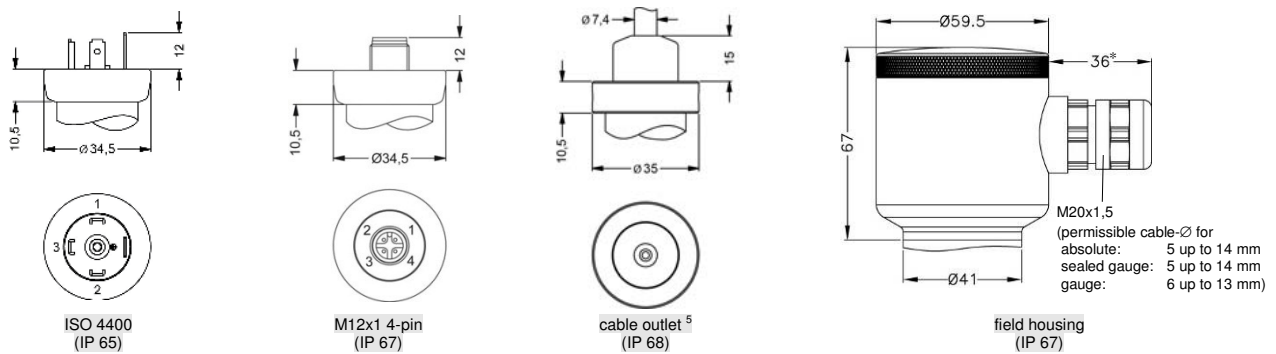
2-wire-system (current)



## Pin configuration

Electrical connections	ISO 4400	field housing (clamp section: 2.5 mm <sup>2</sup> )	M12x1 (4-pin) metal	cable colours (IEC 60757)
Supply +	1	VS+	1	wh (white)
Supply -	2	VS-	2	bn (brown)
Shield	ground contact		4	gnye (green-yellow)

## Electrical connections (dimensions in mm)

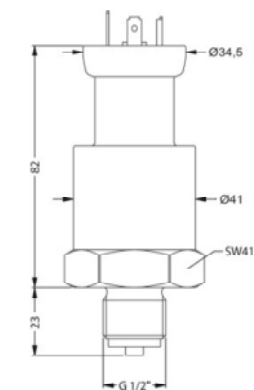


\* for gauge pressure ranges with field housing the marked dimension increases by 8 mm

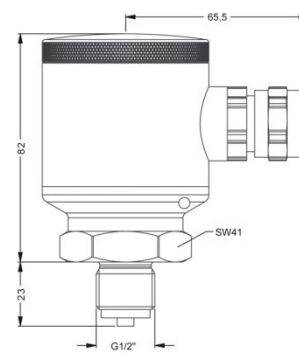
<sup>5</sup> cable versions are delivered with shielded cable (different lengths available);  
for gauge pressure cable with ventilation tube required; tested at 4 bar or 40 mH<sub>2</sub>O for 24 hours

## Dimensions (in mm)

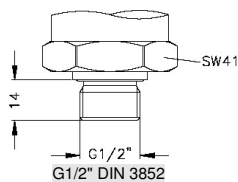
### Inch thread



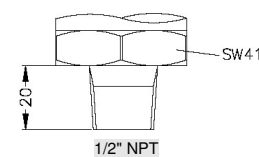
G1/2" EN 837  
with plug version and cable outlet



G1/2" EN 837  
with field housing



G1/2" DIN 3852



1/2" NPT

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



