TEMATEC GmbH

Postal address: Postbox 1261

53759 Hennef

House address Löhestr. 37

Fax (+49) 0 22 42-87 03-20 http:// www.tematec.de 53773 Hennef e-mail: team@tematec.de



Page 1/5

TEMATEC GmbH Data Sheet DMK 331

Fon (+49) 0 22 42-8703-0





Industrial **Pressure Transmitter**

Ceramic Sensor

accuracy according to IEC 60770: 0.5 % FSO

Nominal pressure:

from 0 ... 400 mbar up to 0 ... 600 bar

Output signals:

2-wire: 4 ... 20 mA

3-wire: 0 ... 20 mA / 0 ... 10 V

others on request

Special characteristics:

- pressure port G 1/2" flush for pasty and polluted media
- pressure port G 1/2" open port PVDF for aggressive media
- oxygen application

Optional versions:

- IS-version Ex ia = intrinsically safe for gases and dusts
- SIL 2 according to IEC 61508 / IEC 61511
- customer specific versions

The industrial pressure transmitter DMK 331 with ceramic sensor has been especially designed for pasty, polluted or aggressive media and for oxygen applications at low pressure range.

As with all industrial pressure transmitters made by BD|SENSORS, you may choose between various electrical and mechanical connections also on DMK 331.

Preferred areas of use are



Plant and Machine Engineering



Energy Industry



Environmental Engineering (water - sewage - recycling)



Medical Technology

Pressure Transmitter

Industrial







TEMATEC GmbH Data Sheet DMK 331 Page 2/5

Input pressure range ¹																			
Nominal pressure gauge	[bar]	-10	0.4	0.6	1	1,6	2,5	4	6	10	16	25	40	60	100	160	250	400	600
Nominal pressure abs.	[bar]	-	-	0.6	1	1,6	2,5	4	6	10	16	25	40	60	100	160	250	400	600
Overpressure	[bar]	4	1	2	2	4	4	10	10	20	40	40	100	100	200	400	400	600	800
Burst pressure ≥	[bar]	7	2	4	4	5	5	12	12	25	50	50	120	120	250	500	500	650	880
Vacuum resistance $P_N \ge 1$ bar: unlimited vacuum resistance																			
	P _N < 1 bar: on request																		
¹ PVDF pressure port possible for nominal pressure ranges up to 60 bar																			

	ominal pressure ranges up to 60 bar							
Output signal / Supply								
Standard	2-wire: 4 20 mA / V _S = 8 32 V _{DC}							
Option IS-protection	2-wire: 4 20 mA / V _S = 10 28 V _{DC}							
Options 3-wire	3-wire: $0 \dots 20 \text{ mA} / V_S = 14 \dots 30 V_{DC}$							
	$0 \dots 10 \text{ V} / \text{V}_{\text{S}} = 14 \dots 30 \text{ V}_{\text{DC}}$							
Performance								
Accuracy ²	≤± 0.5 % FSO							
Permissible load	current 2-wire: $R_{max} = [(V_S - V_{S min}) / 0.02] \Omega$ current 3-wire: $R_{max} = 500 \Omega$ voltage 3-wire: $R_{min} = 10 \text{ k}\Omega$							
Influence effects	supply: 0.05 % FSO / 10 V load: 0.05 % FSO / kΩ							
Long term stability	$\leq \pm 0.3$ % FSO / year at reference conditions							
Response time	2-wire: ≤ 10 msec 3-wire: ≤ 3 msec							
	limit point adjustment (non-linearity, hysteresis, repeatability)							
Thermal effects (Offset and S	pan) / Permissible Temperatures							
Thermal error	≤ ± 0.2 % FSO / 10 K							
in compensated range	-25 85 °C							
Permissible temperatures	medium: -40 125 °C electronics / environment: -40 85 °C storage: -40 100 °C							
Electrical protection	The state of the s							
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 (25 2000 Hz) according to DIN EN 60068-2-6							
Shock	500 g / 1 msec according to DIN EN 60068-2-27							
Materials								
Pressure port	standard: stainless steel 1.4404 (316 L) optional for G1/2" open port with nominal pressure range up to 60 bar: PVDF							
Housing	others on request							
Option compact field housing	stainless steel 1.4404 (316 L)							
Seals (media wetted)	stainless steel 1.4305 (303) with cable gland brass, nickel plated others on request standard: FKM options: EPDM (for $P_N \le 160$ bar), NBR others on request							
Diaphragm	ceramic Al_2O_3 96 %							
Media wetted parts	pressure port, seals, diaphragm							
Explosion protection (with op	· · ·							
Approval DX19-DMK 331	IBEXU 10 ATEX 1068 X							
Арргоvаг в х тэ-віхік 33 т	stainless steel pressure port: zone 0: II 1G Ex ia IIC T4 Ga zone 20 : II 1D Ex ta IIIC T 85°C, IP6x in preparation plastic pressure port: zone 1: II 2G Ex ia IIC T4 Ga zone 21: II 2D Ex tD A21 IP6x T 85°C in preparation							
Safety technical maximum values	U_i = 28 V_{DC} , I_i = 93 mA, P_i = 660 mW, C_i ≈ 0 nF, L_i ≈ 0 μ H							
Permissible temperatures for environment	in zone 0: -20 60 °C with p _{atm} 0.8 bar up to 1.1 bar in zone 1 or higher: -20 70 °C							
Connecting cables	cable capacitance: signal line/shield also signal line/signal line: 160 pF/m							
(by factory)	cable inductance:signal line/shield also signal line/signal line: 1 µH/m							
Miscellaneous								
Option SIL 2	according to IEC 61508 / IEC 61511							
Option oxygen application	for P _N ≤ 25 bar: O-ring in special material with oxygen-approval (FKM)							
Current consumption	signal output current: max. 25 mA signal output voltage: typ. 5 mA							
Weight	approx. 140 g							
Installation position	any							
motunation position								
Operational life	> 100 x 10 ⁶ pressure cycles							
	·							

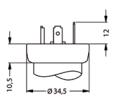
TEMATEC GmbH Data Sheet DMK 331 Page 3/5

Wiring diagrams 2-wire-system (current) 3-wire-system (current / voltage) supply + V_s supply supply signal +

Pin configuration									
Electrical connection	ISO 4400	Binder 723 (5-pin)	M12x1 / metal (4-pin)	field housing	cable colours (DIN 47100)				
Supply +	1	3	1	IN +	wh (white)				
Supply –	2	4	2	IN -	bn (brown)				
Signal + (for 3-wire)	3	1	3	OUT+	gn (green)				
Shield	ground pin	5	4	=	gn/ye (green / yellow)				

Electrical connections (dimensions in mm)

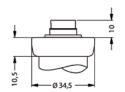






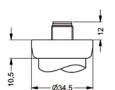
ISO 4400 (IP 65)

option



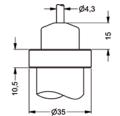


Binder Series 723 5-pin (IP 67)



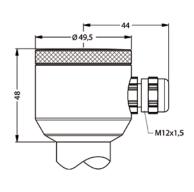


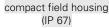
M12x1 4-pin (IP 67)

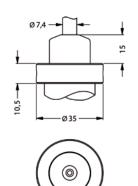




cable outlet with PVC cable (IP 67) ⁴







cable outlet, cable with ventilation tube (IP 68) 5

universal field housing stainless steel 1.4404 (316 L) with cable gland M20x1.5 (ordering code 880) and other versions on request

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

Mechanical connection (dimensions in mm) standard for SIL- and SIL-IS-version standard ≈33 33 ≈ 33 Ø34,5 33 83 **-**−Ø26,5 Ø26,5 20 SW27 SW27 17 17 4 G1/2" G1/2" G1/2" DIN 3852 G1/2" DIN 3852 with ISO 4400 with ISO 4400 option G1/2" + G1/2" EN 837 G1/2" semi-flush DIN 3852; M20x1.5 ⁶ G1/2" open port 17 15 4 G 1/4" G 1/4"-1/4" NPT G1/4" DIN 3852 G1/4" EN 837 1/2" NPT 1/4" NPT \Rightarrow metric threads and other versions on request ⁶ possible for nominal pressure ranges $P_N \le 25$ bar

TEMATEC GmbH

Postal address: House address Postbox 1261 Löhestr. 37

53759 Hennef 53773 Hennef

Fon (+49) 0 22 42-8703-0 Fax (+49) 0 22 42-8703-20

http://www.tematec.de e-mail: team@tematec.de



TEMATEC GmbH Data Sheet DMK 331 Page 5/5

Ordering code DMK 331 DMK 331 Pressure gauge 2 5 0 absolute Input [bar] 0.40 0.60 1.0 1.6 2.5 4.0 6 0 0 1 1 0 0 2 1 6 0 2 2 5 0 2 4 0 0 2 6 0 0 2 1 0 0 3 1 6 0 3 4 0 0 3 6 0 0 3 X 1 0 2 9 9 9 9 10 16 25 40 60 100 160 250 400 600 -1 ... 0 customer consult Output 4 ... 20 mA / 2-wire 0 ... 20 mA / 3-wire $0\,\ldots\,10\,\,\text{V}\,/\,3\text{-wire}$ Intrinsic safety $\,4\,\ldots\,20\,\,\text{mA}\,/\,2\text{-wire}$ 3 F SIL2 4 ... 20 mA / 2-wire 1S SIL2 with Intrinsic safety FS 4 ... 20 mA / 2-wire customer 9 consult Accuracy 0.5 % customer 9 consult Electrical connection Male and female plug ISO 4400 1 0 0 2 0 0 Male plug Binder series 723 (5-pin) T A 0 T R 0 Cable outlet with PVC cable 1 Cable outlet with cable Male plug M12x1 (4-pin) / metal M 1 0 compact field housing 8 5 0 stainless steel 1.4305 9 9 9 customer consult Mechanical connection G1/2" DIN 3852 0 0 0 0 1 G1/2" EN 837 G1/4" DIN 3852 0 0 G1/4" EN 837 G1/2" DIN 3852 with 3 4 0 0 F 0 0 semi-flush sensor H 0 0 N 0 0 G1/2" DIN 3852 open pressure port 1/2" NPT N 4 0 9 9 9 1/4" NPT customer FKM **EPDM** 3 NBR 5 9 customer consult Stainless steel 1.4404 (316L) PVDF В customer consult Diaphragm Ceramics Al₂O₃ 96% 2 customer consult Special version 0 0 0 0 0 7 standard oxygen application customer consult

 $^{^{1}\,}$ standard: 2 m PVC cable without ventilation tube (permissible temperature: -5 ... 70°C)

² metric threads and others on request

 $^{^{3}}$ possible for nominal pressure ranges P_N ≤ 40 bar

⁴ PVDF only with G1/2" DIN 3852 open pressure port (up to 60 bar)

⁵ oxygen application possible up to 25 bar