



# **DMK 331P**

## Industrial **Pressure Transmitter**

Pressure Ports with Flush Welded Stainless Steel Diaphragm

accuracy according to IEC 61298-2: 0.5 % FSO

#### **Nominal pressure**

from 0 ... 60 bar up to 0 ... 400 bar

#### **Output signals**

2-wire: 4 ... 20 mA

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

others on request

### Special characteristics

suited for viscous and pasty media

#### **Optional versions**

- IS-version Ex ia = intrinsically safe for gases and dusts
- according to IEC 61508 / IEC 61511
- food compatible filling fluid with FDA approval
- cooling element for media temperatures up to 300 °C
- customer specific versions

The pressure transmitter DMK 331P is suitable for measuring the pressure of viscous and pasty media, where a totally flush pressure port is required.

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

#### Preferred areas of use are



Plant and machine engineering



Food industry

### Preferred used for



Viscous and pasty media

















## **Industrial Pressure Transmitter**

Input pressure range						
Nominal pressure gauge/a	bs. [bar]	60	100	160	250	400
Overpressure	[bar]	100	200	400	400	600
Burst pressure ≥	[bar]	180	300	500	750	1000

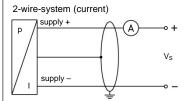
Standard   2-wine   4 20 mA / V <sub>8</sub> = 8 32 V <sub>9c</sub>   SiL-version: V <sub>8</sub> = 14 28 V <sub>9c</sub>   Options 3-wine   3-wine   0 20 mA / V <sub>8</sub> = 10 28 V <sub>9c</sub>   SiL-version: V <sub>8</sub> = 14 28 V <sub>9c</sub>   Options 3-wine   3-wine   0 20 mA / V <sub>8</sub> = 14 30 V <sub>9c</sub>   SiL-version: V <sub>8</sub> = 14 28 V <sub>9c</sub>   Options 3-wine   3-wine   0 20 mA / V <sub>8</sub> = 14 30 V <sub>9c</sub>   Options 3-wine   3-wine   0 20 mA / V <sub>8</sub> = 14 30 V <sub>9c</sub>   Options 3-wine   3-wine   Options 3-wine   Opti						
Quiton Suvers   Quiton Suvers   Quiton A   V <sub>8</sub> = 10 28 V <sub>9c</sub>   SIL-version: V <sub>8</sub> = 14 28 V <sub>9c</sub>   Quiton Suvers   Quiton A   V <sub>8</sub> = 14 30 V <sub>9c</sub>   Quiton Suvers   Quiton A   V <sub>8</sub> = 14 30 V <sub>9c</sub>   Quiton Suvers   Quiton A   V <sub>8</sub> = 14 30 V <sub>9c</sub>   Quiton Suvers   Quiton A   V <sub>8</sub> = 14 30 V <sub>9c</sub>   Quiton Suvers   Quiton A   V <sub>8</sub> = 14 30 V <sub>9c</sub>   Quiton Suvers   Quiton A	Output signal / Supply					
Savirie   3-wire   3-wire   0 20 mA / V <sub>S</sub> = 14 30 Voc	Standard	2-wire: 4 20 mA / V <sub>S</sub> = 8 32 V <sub>DC</sub>	SIL-version: $V_S = 14 \dots 28 V_{DC}$			
September   Sep	Option IS-protection		SIL-version: $V_S = 14 \dots 28 V_{DC}$			
Accuracy \	Options 3-wire					
Certification   Court   2-wire   Ram = 10 (N = Vs enc) / 0.02 Å] Ω   current 3-wire   Ram = 50 (N ± Ram = 10 kΩ	Performance					
Certification   Court   2-wire   Ram = 10 (N = Vs enc) / 0.02 Å] Ω   current 3-wire   Ram = 50 (N ± Ram = 10 kΩ	Accuracy 1	≤±0.5 % FSO				
load:  0.05 % FSO / kar at reference conditions  Response time	Permissible load	current 2-wire: $R_{max} = [(V_S - V_{S min}) / 0.02 \text{ A}] \Omega$ current 3-wire: $R_{max} = 500 \Omega$				
Response time 2. virie: ≤ 10 msec 3-wire: ≤ 3 msec   3-wire: ≤ 3 msec	Influence effects	supply: 0.05 % FSO / 10 V				
accuracy according to ICC 61293-2 - limit point adjustment (non-linearity, hysteresis, repeatability)   Thermal effects (offset and span)   Thermal effects (offset and span	Long term stability	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1				
S ± 0.2 % FSO / 10 K	Response time					
Thermal error	<sup>1</sup> accuracy according to IEC 61298-2 - In	mit point adjustment (non-linearity, hysteresis, repeatability)				
n compensated range 0 85°C an optional cooling element can influence thermal effects for offset and span depending on installation position and filling conditions   Permissible temperatures  Filling fluid silicone oil food compatible oil whedium 3 -40 125 °C -10 125 °C overpressure: -10 250 °C wacuum: -40 150 °C overpressure: -10 250 °C vacuum: -10 150 °C vacuum:	Thermal effects (offset and span) 2					
n compensated range   0 85°C   an aptional cooling element can influence thermal effects for offset and span depending on installation position and filling conditions   Permissible temperatures   Filling fluid   Silicone oil   Good compatible oil   Medium   3	Thermal error	≤±0.2 % FSO / 10 K				
Permissible temperatures   Silicone oil   Silicone oil   Food compatible oil   Silicone oil   Silicone oil   Food compatible oil   Silicone oil	In compensated range					
Silicone oil   Food compatible   Food compatible oil   Food compatible   Food compatible oil   Food compatib			ation position and filling conditions			
Silicone oil   Good compatible oil   Good compatible oil   Hedium 3	<u> </u>	. , 5	<u> </u>			
Medium   3	-	silicone oil	food compatible oil			
Medium with cooling element   Overpressure: -40 300 °C   vacuum: -10 250 °C   vacuum: -10 150 °C   vacuum: -10 °C   vacuum: -10 °C   vacuum: -10 °C °C   vacuum: -10 °C °C   vacuum: -10 °C °C °C °C   vacuum: -10 °C		1 11 1	·			
Security	Medium with cooling element <sup>4</sup>	overpressure: -40 300 °C	overpressure: -10 250 °C			
Storage	Flectronics / environment		I .			
I max. temperature of the medium for overpressure > 0 bar: 150 °C for 60 minutes with a max. environmental temperature of 50 °C max. temperature depends on the used sealing material, type of seal and installation  Electrical protection  Short-circuit protection  Permanent  Reverse polarity protection  Permanent						
Short-circuit protection permanent Reverse polarity protection no damage, but also no function Electromagnetic compatibility  Wechanical stability  Wibration  20 g RMS / 10 2000 Hz according to DIN EN 60068-2-6 10 g RMS / 10 2000 Hz according to DIN EN 60068-2-6 (with cooling element)  Shock  500 g / 1 msec half sine according to DIN EN 60068-2-7  Filling fluids  Standard  Options  food compatible oil (with FDA approval) (Mobil SHC Cibus 32; Category Code: H1; NSF Registration No.: 141500) others on request  Waterials  Pressure port / housing  Stainless steel 1.4404 (316 L)  Option compact field housing  Stainless steel 1.4404 (316 L)  Scals  standard: FKM (recommended for medium temperatures ≤ 200 °C) option: FFKM δ (recommended for medium temperatures ≤ 200 °C) option: FFKM δ (recommended for medium temperatures < 260 °C) option: FFKM δ (recommended for medium temperatures < 260 °C)  Wedia wetted parts  For pressure ranges p <sub>N</sub> ≤ 100 bar  Explosion protection (only for 4 20 mA / 2-wire)  BEXU 10 ATEX 1068 X / IECEx IBE 12.0027X  ZOX19-DMK 331P  Safety technical maximum values  I ISEXU 10 ATEX 1068 X / IECEx IBE 12.0027X  ZOX19-DMK 331P  Safety technical maximum values  I ISEXU 10 ATEX 1068 Nay i IIC 74 Ga  Zone 20: II 10 Ex ia IIIC 74 Ga  Zone 20: II	<sup>3</sup> max. temperature of the medium for or	verpressure > 0 bar: 150 °C for 60 minutes with a max. env				
Reverse polarity protection no damage, but also no function  Electromagnetic compatibility emission and immunity according to EN 61326  Wechanical stability  Vibration 20 g RMS / 10 2000 Hz according to DIN EN 60068-2-6 10 g RMS / 10 2000 Hz according to DIN EN 60068-2-6 (with cooling element)  Shock 500 g / 1 msec half sine according to DIN EN 60068-2-27  Filling fluids  Standard silicone oil Coptions food compatible oil (with FDA approval) (Mobil SHC Cibus 32; Category Code: H1; NSF Registration No.: 141500) others on request  Waterials  Pressure port / housing stainless steel 1.4404 (316 L) Stainless steel 1.4301 (304); cable gland M12x1.5, brass, nickel plated (clamping range 2 8 mm)  Seals stainless steel 1.4301 (304); cable gland M12x1.5, brass, nickel plated (clamping range 2 8 mm)  Standard: FKM (recommended for medium temperatures < 200 °C) option: FFKM stainless steel 1.4435 (316 L)  Pressure ranges p <sub>N</sub> ≤ 100 bar  Explosion protection (only for 4 20 mA / 2-wire)  Approvals  Diaphragm IBEXU 10 ATEX 1068 X / IECEX IBE 12.0027X zone 0: II 10 Ex ia IIIC T135 °C Da  Safety technical maximum values  U = 28 V, I = 93 mA, P <sub>i</sub> = 660 mW, C <sub>i</sub> ≈ 0 nF, L <sub>i</sub> ≈ 0 µH, the supply connections have an inner capacity of max. 27 nF to the housing in zone 0: in zone 1 or higher: -400/-20 70 °C conhecting cables	Electrical protection					
### Mechanical stability  ### Wechanical st	Short-circuit protection	permanent				
### Mechanical stability  ### Wechanical st	Reverse polarity protection					
Mechanical stability           Vibration         20 g RMS / 10 2000 Hz according to DIN EN 60068-2-6 (with cooling element)           Shock         500 g / 1 msec half sine according to DIN EN 60068-2-6 (with cooling element)           Shock         500 g / 1 msec half sine according to DIN EN 60068-2-6 (with cooling element)           Filling fluids           Standard         silicone oil           Options         food compatible oil (with FDA approval) (Mobil SHC Cibus 32; Category Code: H1; NSF Registration No.: 141500) others on request           Materials           Pressure port / housing         stainless steel 1.4404 (316 L)           Option compact field housing         stainless steel 1.4301 (304); cable gland M12x1.5, brass, nickel plated (clamping range 2 8 mm)           Seals         standard: FKM         (recommended for medium temperatures ≤ 200 °C) option: FFKM <sup>5</sup> (recommended for medium temperatures < 260 °C) others on request						
10 g RMS / 10 2000 Hz according to DIN EN 60068-2-6 (with cooling element)	Mechanical stability	· · · · · · · · · · · · · · · · · · ·				
Shock 500 g / 1 msec half sine according to DIN EN 60068-2-27  Filling fluids  Standard silicone oil food compatible oil (with FDA approval) (Mobil SHC Cibus 32; Category Code: H1; NSF Registration No.: 141500) others on request  Materials  Pressure port / housing stainless steel 1.4404 (316 L) stainless steel 1.4301 (304); cable gland M12x1.5, brass, nickel plated (clamping range 2 8 mm)  Seals standard: FKM (recommended for medium temperatures ≤ 200 °C) option: FFKM (recommended for medium temperatures < 260 °C) others on request stainless steel 1.4435 (316 L)  Diaphragm stainless steel 1.4435 (316 L)  Media wetted parts pressure port, seals, diaphragm  For pressure ranges p <sub>N</sub> ≤ 100 bar  Explosion protection (only for 4 20 mA / 2-wire)  Approvals  DA19-DMK 331P Seals V, I is 93 mA, P <sub>1</sub> = 660 mW, C <sub>1</sub> ≈ 0 nF, L <sub>1</sub> ≈ 0 μH, the supply connections have an inner capacity of max. 27 nF to the housing in zone 0: -20 60 °C with p <sub>atm</sub> 0.8 bar up to 1.1 bar in zone 1 or higher: -40/-20 70 °C  Connecting cables cables cable in zone 1 or higher: -40/-20 70 °C  Connecting cables  Sillone oil (with FDA approval)  (Mobil SHC (bitwis FDA approval)  (Altitude)  (Altitude)  (Mobil SHC (bitwis FDA approval)  (Mobil SHC (bitwis FDA approval)  (Altitude)  (A	Vibration					
Standard silicone oil Options food compatible oil (with FDA approval) (Mobil SHC Cibus 32; Category Code: H1; NSF Registration No.: 141500) others on request  Materials  Pressure port / housing stainless steel 1.4404 (316 L) Option compact field housing stainless steel 1.4301 (304); cable gland M12x1.5, brass, nickel plated (clamping range 2 8 mm) Seals standard: FKM (recommended for medium temperatures ≤ 200 °C) option: FKM f (recommended for medium temperatures < 260 °C) others on request stainless steel 1.4435 (316 L) Media wetted parts pressure port, seals, diaphragm  Seals pressure ranges p <sub>N</sub> ≤ 100 bar  Explosion protection (only for 4 20 mA / 2-wire)  Approvals DA19-DMK 331P   IBExU 10 ATEX 1068 X / IECEx IBE 12.0027X   zone 0: II 1G Ex ia IIC T4 Ga   zone 20: II 1D Ex ia IIC T135 °C Da  Seafety technical maximum values   U₁ = 28 V, I₁ = 93 mA, P₁ = 660 mW, C₁ ≈ 0 nF, L₁ ≈ 0 μH, the supply connections have an inner capacity of max. 27 nF to the housing in zone 0: -20 60 °C with p <sub>atm</sub> 0.8 bar up to 1.1 bar environment in zone 0: -20 60 °C with p <sub>atm</sub> 0.8 bar up to 1.1 bar in zone 0: in zone 1 or higher: -40/-20 70 °C cable capacitance: signal line/shield also signal line/signal line: 160 pF/m	Shock					
Standard silicone oil  Options food compatible oil (with FDA approval) (Mobil SHC Cibus 32; Category Code: H1; NSF Registration No.: 141500) others on request  Materials  Pressure port / housing stainless steel 1.4404 (316 L) Option compact field housing stainless steel 1.4301 (304); cable gland M12x1.5, brass, nickel plated (clamping range 2 8 mm) Seals standard: FKM (recommended for medium temperatures ≤ 200 °C) option: FFKM ⁵ (recommended for medium temperatures < 260 °C) others on request stainless steel 1.4435 (316 L)  Media wetted parts pressure port, seals, diaphragm  Media wetted parts pressure ranges p <sub>N</sub> ≤ 100 bar  Explosion protection (only for 4 20 mA / 2-wire)  Approvals OX19-DMK 331P IBExU 10 ATEX 1068 X / IECEx IBE 12.0027X zone 0: II 1G Ex ia IIC T4 Ga zone 20: II 1D Ex ia IIIC T135 °C Da  Safety technical maximum values U₁ = 28 V, I₁ = 93 mA, P₁ = 660 mW, C₁ ≈ 0 nF, L₁ ≈ 0 μH, the supply connections have an inner capacity of max. 27 nF to the housing in zone 1 or higher: -40/-20 70 °C Dennecting cables cable capacitance: signal line/shield also signal line/signal line: 160 pF/m		1000 g	<del>33                                   </del>			
food compatible oil (with FDA approval) (Mobil SHC Cibus 32; Category Code: H1; NSF Registration No.: 141500) others on request		silicone oil				
Pressure port / housing  Stainless steel 1.4404 (316 L)  Stainless steel 1.4301 (304); cable gland M12x1.5, brass, nickel plated (clamping range 2 8 mm)  Seals  Standard: FKM (recommended for medium temperatures ≤ 200 °C) option: FFKM ⁵ (recommended for medium temperatures < 260 °C) option: FFKM ⁵ (recommended for medium temperatures < 260 °C)  Others on request  Stainless steel 1.4435 (316 L)  Media wetted parts  For pressure ranges p <sub>N</sub> ≤ 100 bar  Explosion protection (only for 4 20 mA / 2-wire)  Approvals  DX19-DMK 331P  Safety technical maximum values  U <sub>i</sub> = 28 V, I <sub>i</sub> = 93 mA, P <sub>i</sub> = 660 mW, C <sub>i</sub> ≈ 0 nF, L <sub>i</sub> ≈ 0 μH, the supply connections have an inner capacity of max. 27 nF to the housing  Permissible temperatures for in zone 0: -20 60 °C with p <sub>atm</sub> 0.8 bar up to 1.1 bar in zone 1 or higher: -40/-20 70 °C  Connecting cables	Options	food compatible oil (with FDA approval) (Mobil SHC Cibus 32; Category Code: H1; NSF Registration No.: 141500)				
Seals  Stainless steel 1.4301 (304); cable gland M12x1.5, brass, nickel plated (clamping range 2 8 mm)  Standard: FKM (recommended for medium temperatures ≤ 200 °C) option: FFKM <sup>5</sup> (recommended for medium temperatures < 260 °C) option: FFKM <sup>5</sup> (recommended for medium temperatures < 260 °C) option: FFKM <sup>5</sup> (recommended for medium temperatures < 260 °C)  Others on request  Stainless steel 1.4435 (316 L)  Media wetted parts  For pressure ranges p <sub>N</sub> ≤ 100 bar  Explosion protection (only for 4 20 mA / 2-wire)  Approvals DX19-DMK 331P  Safety technical maximum values  U <sub>i</sub> = 28 V, I <sub>i</sub> = 93 mA, P <sub>i</sub> = 660 mW, C <sub>i</sub> ≈ 0 nF, L <sub>i</sub> ≈ 0 μH, the supply connections have an inner capacity of max. 27 nF to the housing  Permissible temperatures for in zone 0: -20 60 °C with p <sub>atm</sub> 0.8 bar up to 1.1 bar in zone 1 or higher: -40/-20 70 °C  Connecting cables  Stainless steel 1.4301 (304); (recommended for medium temperatures ≤ 200 °C) others on request others on request  Others on request  Others on request  Others on request  Others on request  Others on request  Others on request  Others on request  Others on request  Others on request  Others on request  Others on request  Others on request  Others on request  Others on request  Others on request  Others on request  Others on request  Others on request  Others on request	Materials					
Seals  Stainless steel 1.4301 (304); cable gland M12x1.5, brass, nickel plated (clamping range 2 8 mm)  Standard: FKM (recommended for medium temperatures ≤ 200 °C) option: FFKM <sup>5</sup> (recommended for medium temperatures < 260 °C) option: FFKM <sup>5</sup> (recommended for medium temperatures < 260 °C) option: FFKM <sup>5</sup> (recommended for medium temperatures < 260 °C)  Others on request  Stainless steel 1.4435 (316 L)  Media wetted parts  For pressure ranges p <sub>N</sub> ≤ 100 bar  Explosion protection (only for 4 20 mA / 2-wire)  Approvals DX19-DMK 331P  Safety technical maximum values  U <sub>i</sub> = 28 V, I <sub>i</sub> = 93 mA, P <sub>i</sub> = 660 mW, C <sub>i</sub> ≈ 0 nF, L <sub>i</sub> ≈ 0 μH, the supply connections have an inner capacity of max. 27 nF to the housing  Permissible temperatures for in zone 0: -20 60 °C with p <sub>atm</sub> 0.8 bar up to 1.1 bar in zone 1 or higher: -40/-20 70 °C  Connecting cables  Stainless steel 1.4301 (304); (recommended for medium temperatures ≤ 200 °C) others on request others on request  Others on request  Others on request  Others on request  Others on request  Others on request  Others on request  Others on request  Others on request  Others on request  Others on request  Others on request  Others on request  Others on request  Others on request  Others on request  Others on request  Others on request  Others on request  Others on request	Pressure port / housing	stainless steel 1.4404 (316 L)				
option: FFKM $^5$ (recommended for medium temperatures < 260 °C) others on request stainless steel 1.4435 (316 L)  Media wetted parts pressure port, seals, diaphragm  For pressure ranges $p_N \le 100 \text{ bar}$ Explosion protection (only for 4 20 mA / 2-wire)  Approvals DX19-DMK 331P IBEXU 10 ATEX 1068 X / IECEX IBE 12.0027X zone 0: II 1G Ex ia IIC T4 Ga zone 20: II 1D Ex ia IIIC T135 °C Da  Safety technical maximum values U <sub>i</sub> = 28 V, I <sub>i</sub> = 93 mA, P <sub>i</sub> = 660 mW, C <sub>i</sub> ≈ 0 nF, L <sub>i</sub> ≈ 0 $\mu$ H, the supply connections have an inner capacity of max. 27 nF to the housing in zone 0: -20 60 °C with $p_{atm}$ 0.8 bar up to 1.1 bar in zone 1 or higher: -40/-20 70 °C  Connecting cables cables cable capacitance: signal line/shield also signal line/signal line: 160 pF/m	Option compact field housing	stainless steel 1.4301 (304);				
Media wetted parts pressure port, seals, diaphragm  For pressure ranges $p_N \le 100$ bar  Explosion protection (only for 4 20 mA / 2-wire)  Approvals  DX19-DMK 331P  Safety technical maximum values  U <sub>i</sub> = 28 V, I <sub>i</sub> = 93 mA, P <sub>i</sub> = 660 mW, C <sub>i</sub> ≈ 0 nF, L <sub>i</sub> ≈ 0 $\mu$ H, the supply connections have an inner capacity of max. 27 nF to the housing in zone 1 or higher: -40/-20 70 °C  Connecting cables  pressure port, seals, diaphragm  pressure ranges $p_N \le 100$ bar  Explosion protection (only for 4 20 mA / 2-wire)  IBEXU 10 ATEX 1068 X / IECEX IBE 12.0027X  zone 0: II 1G Ex ia IIC T4 Ga  zone 20: II 1D Ex ia IIIC T135 °C Da  U <sub>i</sub> = 28 V, I <sub>i</sub> = 93 mA, P <sub>i</sub> = 660 mW, C <sub>i</sub> ≈ 0 nF, L <sub>i</sub> ≈ 0 $\mu$ H, the supply connections have an inner capacity of max. 27 nF to the housing  in zone 0: -20 60 °C with $p_{atm}$ 0.8 bar up to 1.1 bar  in zone 1 or higher: -40/-20 70 °C  Connecting cables	Seals	standard: FKM (recommended for medium temperatures ≤ 200 °C)				
Explosion protection (only for 4 20 mA / 2-wire)  Approvals  DX19-DMK 331P  Safety technical maximum values  Permissible temperatures for environment  DY19-DMS and DY2-wire)  IBEXU 10 ATEX 1068 X / IECEX IBE 12.0027X  ZONE 0: II 1G Ex ia IIC T4 Ga  ZONE 20: II 1D Ex ia IIIC T135 °C Da  U <sub>i</sub> = 28 V, I <sub>i</sub> = 93 mA, P <sub>i</sub> = 660 mW, C <sub>i</sub> ≈ 0 nF, L <sub>i</sub> ≈ 0 $\mu$ H, the supply connections have an inner capacity of max. 27 nF to the housing in zone 0: -20 60 °C with p <sub>atm</sub> 0.8 bar up to 1.1 bar in zone 1 or higher: -40/-20 70 °C  Connecting cables  Cable capacitance: signal line/shield also signal line/signal line: 160 pF/m	Diaphragm					
Explosion protection (only for 4 20 mA / 2-wire)  Approvals  DX19-DMK 331P  BEXU 10 ATEX 1068 X / IECEx IBE 12.0027X  zone 0: II 1G Ex ia IIC T4 Ga  zone 20: II 1D Ex ia IIIC T135 °C Da  Safety technical maximum values  U <sub>i</sub> = 28 V, I <sub>i</sub> = 93 mA, P <sub>i</sub> = 660 mW, C <sub>i</sub> ≈ 0 nF, L <sub>i</sub> ≈ 0 $\mu$ H, the supply connections have an inner capacity of max. 27 nF to the housing  Permissible temperatures for in zone 0: -20 60 °C with p <sub>atm</sub> 0.8 bar up to 1.1 bar  environment in zone 1 or higher: -40/-20 70 °C  Connecting cables  Cable capacitance: signal line/shield also signal line/signal line: 160 pF/m	Media wetted parts	pressure port, seals, diaphragm				
Approvals DX19-DMK 331P IBExU 10 ATEX 1068 X / IECEx IBE 12.0027X zone 0: II 1G Ex ia IIC T4 Ga zone 20: II 1D Ex ia IIIC T135 °C Da  Safety technical maximum values U <sub>i</sub> = 28 V, I <sub>i</sub> = 93 mA, P <sub>i</sub> = 660 mW, C <sub>i</sub> $\approx$ 0 nF, L <sub>i</sub> $\approx$ 0 $\mu$ H, the supply connections have an inner capacity of max. 27 nF to the housing in zone 0: -20 60 °C with p <sub>atm</sub> 0.8 bar up to 1.1 bar in zone 1 or higher: -40/-20 70 °C  Connecting cables capacitance: signal line/shield also signal line/signal line: 160 pF/m	<sup>5</sup> for pressure ranges p <sub>N</sub> ≤ 100 bar					
DX19-DMK 331Pzone 0: zone 20: II 1D Ex ia IIIC T4 Ga zone 20: 	Explosion protection (only for 4	. 20 mA / 2-wire)				
Safety technical maximum values $U_i = 28 \text{ V}, \ I_i = 93 \text{ mA}, \ P_i = 660 \text{ mW}, \ C_i \approx 0 \text{ nF}, \ L_i \approx 0 \text{ µH}, \\ \text{the supply connections have an inner capacity of max. 27 nF to the housing} \\ \text{Permissible temperatures for} \\ \text{in zone 0:}  -20 \dots 60 \text{ °C with patm } 0.8 \text{ bar up to } 1.1 \text{ bar in zone } 1 \text{ or higher:}  -40/-20 \dots 70 \text{ °C} \\ \text{Connecting cables} \\ \text{cable capacitance:}  \text{signal line/shield also signal line:} 160 \text{ pF/m} \\ \text{The supply connections have an inner capacity of max. 27 nF to the housing} \\ \text{In zone 0:}  -20 \dots 60 \text{ °C with patm } 0.8 \text{ bar up to } 1.1 \text{ bar in zone } 1.0 \text{ pF/m} \\ \text{The supply connections have an inner capacity of max.} \\ \text{In zone 0:}  -20 \dots 60 \text{ °C with patm } 0.8 \text{ bar up to } 1.1 \text{ bar in zone } 1.0 \text{ pF/m} \\ \text{The supply connections have an inner capacity of max.} \\ \text{In zone 0:}  -20 \dots 60 \text{ °C with patm } 0.8 \text{ bar up to } 1.1 \text{ bar in zone } 1.0 \text{ pF/m} \\ \text{The supply connections have an inner capacity of max.} \\ \text{In zone 0:}  -20 \dots 60 \text{ °C with patm } 0.8 \text{ bar up to } 1.1 \text{ bar in zone } 1.0 \text{ pF/m} \\ \text{The supply connections have an inner capacity of max.} \\ \text{In zone 0:}  -20 \dots 60 \text{ °C with patm } 0.8 \text{ bar up to } 1.1 \text{ bar in zone } 1.0 \text{ pF/m} \\ \text{The supply connections have an inner capacity of max.} \\ \text{In zone 0:}  -20 \dots 60 \text{ °C with patm } 0.8 \text{ bar up to } 1.1 \text{ bar in zone } 1.0 \text{ properties} \\ \text{In zone 0:}  -20 \dots 70 \text{ °C with patm } 0.8 \text{ bar up to } 1.1 \text{ bar in zone } 1.0 \text{ properties} \\ \text{The supple connections have an inner capacity of max.} \\ \text{In zone 0:}  -20 \dots 60 \text{ °C with patm } 0.8 \text{ bar up to } 1.1 \text{ bar in zone } 1.0  $	Approvals DX19-DMK 331P	zone 0: II 1G Ex ia IIC T4 Ga				
Permissible temperatures for in zone 0: -20 60 °C with p <sub>atm</sub> 0.8 bar up to 1.1 bar in zone 1 or higher: -40/-20 70 °C  Connecting cables cable capacitance: signal line/shield also signal line: 160 pF/m	Safety technical maximum values	$U_i = 28 \text{ V}, I_i = 93 \text{ mA}, P_i = 660 \text{ mW}, C_i \approx 0 \text{ nF}, L_i \approx 0  \mu\text{H},$				
Connecting cables capacitance: signal line/shield also signal line/signal line: 160 pF/m	Permissible temperatures for environment	in zone 0: -20 60 °C with p <sub>atm</sub> 0.8 bar up to 1.1 bar				
	Connecting cables (by factory)	cable capacitance: signal line/shield also signal				

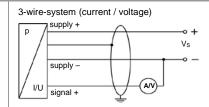
#### **Industrial Pressure Transmitter**

Miscellaneous					
according to IEC 61508 / IEC 61511					
signal output current: max. 25 mA	signal output voltage: max. 7 mA				
min. 200 g (depending on process connection)					
any (standard calibration in a vertical position with the pressure port connection down)					
100 million load cycles					
EMC Directive: 2014/30/EU	Pressure Equipment Directive: 2014/68/EU (module A) 7				
2014/34/EU					
	signal output current: max. 25 mA min. 200 g (depending on process cor any (standard calibration in a vertical) 100 million load cycles EMC Directive: 2014/30/EU				

<sup>&</sup>lt;sup>6</sup> only for 4 ... 20 mA / 2-wire

#### Wiring diagrams





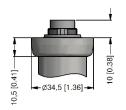
#### Pin configuration Electrical connection ISO 4400 Binder 723 M12x1 / metal compact (5-pin) (4-pin) field housing cable colours (IEC 60757) Vs- S+ GND supply + V<sub>S</sub>+ WH (white) BN (brown) 2 4 2 $V_{\text{S}}$ supply -3 signal + (only 3-wire) 3 GN (green) 1 S+ **GNYE** (1) 4 5 GND Shield ground pin (green-yellow)

## Electrical connections (dimensions mm / in)

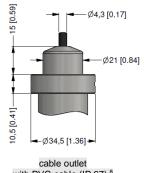


ISO 4400 (IP 65)





Binder series 723, 5-pin (IP 67)



with PVC-cable (IP 67) 8



M12x1, 4-pin (IP 67)

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

<sup>8</sup> standard: 2 m PVC cable without ventilation tube (permissible temperature: -5 ... 70 °C)

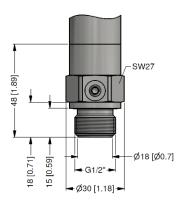
<sup>&</sup>lt;sup>7</sup> this directive is only valid for devices with maximum permissible overpressure > 200 bar

#### **Industrial Pressure Transmitter**

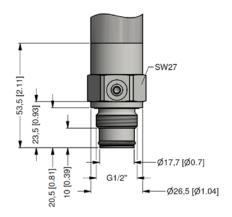
# 

<sup>4</sup> max. temperature depends on the used sealing material, type of seal and installation

#### Mechanical connections (dimensions mm / in)



G1/2" flush DIN 3852



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G1/2" flush with radial o-ring 9

⇒ SIL- and SIL-Ex version: total length increases by 26.5 mm!

 $\Rightarrow$  metric threads and other versions on request

<sup>9</sup> not possible in combination with cooling element

BD SENSORS

pressure measurement

DMK331P\_E\_080425

Tel.: +49 (0) 92 35 / 98 11- 0 Fax: +49 (0) 92 35 / 98 11- 11



#### Ordering code DMK 331P **DMK 331P** Pressure gauge absolute 5 0 6 Input [bar] 60 6 0 0 2 100 0 0 3 1 6 0 3 160 2 5 0 3 250 400 4 0 0 3 customer 9 9 9 9 consult 4 ... 20 mA / 2-wire 1 0 ... 20 mA / 3-wire 2 0 ... 20 mA / 3-wire intrinsic safety 4 ... 20 mA / 2-wire SIL2 4 ... 20 mA / 2-wire 3 F 1S SIL2 with intrinsic safety ES 4 ... 20 mA / 2-wire 9 customer consult Accuracy 0.5 % FSO 5 customer 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) T A 0 male plug M12x1 (4-pin) / metal compact field housing M 1 0 8 5 0 stainless steel1.4301 (304) 9 9 9 customer consult G1/2" DIN 3852 with Z 0 0 flush diaphragm G 1/2" DIN 3852 with rad. o-ring and flush diaphragm <sup>2</sup> Z 6 1 9 9 9 customer consult Diaphragm stainless steel 1.4435 (316L) 1 customer consult FKM FFKM <sup>3</sup> customer 9 consult Filling fluid silicone oil 1 food compatible oil customer consult Special version standard 0 0 0 with cooling element up to 300°C 2 0 0 9 9 9 consult

06.03.2025

We reserve the right to make modifications to the specifications and materials.

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

 $<sup>^{\</sup>rm 2}\,$  not possible in combination with cooling element

<sup>&</sup>lt;sup>3</sup> only for p<sub>N</sub> ≤ 100 bar possible

<sup>&</sup>lt;sup>4</sup> only for p<sub>N</sub> ≤ 160 bar possible