BD SENSORS®
pressure measurement

DMP 334i

Precision-Pressure Transmitter for High Pressure

Thinfilm Sensor

accuracy according to EN IEC 62828-2: 0.1 % span

Nominal pressure

from 0 ... 600 bar up to 0 ... 2200 bar

Analogue output

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

Special characteristics

► welded pressure sensor
► turn-down 10:1
► excellent accuracy
► robust and long-term stable

Optional versions

► communication interface for adjusting offset, span and damping
► pressure port
  M20 x 1.5 or 9/16 UNF
► different kinds of electrical connections

The precision pressure transmitter DMP 334i is a consistent further development of the approved industrial pressure transmitter DMP 334. Basic element is a thinfilm sensor which is welded with the pressure port.

The integrated digital electronics compensates actively sensor specific deviations like non-linearity and thermal error.

It is therefore possible to offer a high pressure transmitter with excellent metrological qualities.
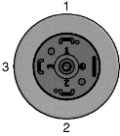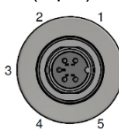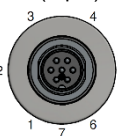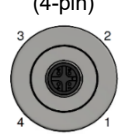
Preferred areas of use are

Plant and machine engineering
Test benches

Commercial vehicles and mobile hydraulics

CE ROHS REACH

Input pressure range

Nominal pressure gauge	[bar]	600 [1]	1000	1600	2000	2200
Overpressure	[bar]	800	1400	2200	2800	2800

[1] only available with pressure port G1/2" EN 837

Output signal / Supply

Standard	2-wire: 4 ... 20 mA / V_S = 12 ... 36 V_{DC}
Options	2-wire: 4 ... 20 mA with communication interface [2]

[2] only possible with el. connection Binder series 723 (7-pin)

Performance

Accuracy[3]	≤ ± 0.1 % span
performance after turn-down	
- TD ≤ 5:1	no change of accuracy
- TD > 5:1	for calculation use the following formula: ≤ ± (0.1 + 0.015 x turn down) % span with turn-down = nominal pressure range / adjusted range e.g. with a turn-down of 10:1 following accuracy is calculated: ≤ ± (0.1 + 0.015 x 10) % span i.e. accuracy is ≤ ± 0.25 % span
Permissible load	current 2-wire: R_{max} = [(V_S − $V_{S\ min}$) / 0.02 A] Ω
Influence effects	supply: 0.05 % span / 10 V load: 0.05 % span / kΩ
Long term stability	≤ ± (0.1 x turn-down) % span / year at reference conditions
Response time	approx. 10 msec

Adjustability (option)[4]	configuration of following parameters possible (interface / software necessary):
	  - electronic damping: 0 ... 100 sec
	  - offset: 0 ... 90 % span
	  - turn down of span: max. 10:1

[3] accuracy according to EN IEC 62828-2– limit point adjustment (non-linearity, hysteresis, repeatability)
[4] adjustable version is only possible in combination with Binder Series 723, 7-pin;
software, interface, and cable have to be ordered separately (software appropriate for Windows® 95, 98, 2000, NT Version 4.0 or higher, and XP)

Thermal effects (Offset and Span) / Permissible temperatures

TC, average	< 0.25 % span / 10 K in compensated range - 20 ... 85 °C
Permissible temperatures	medium: - 40 ... 140 °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

Mechanical stability

Vibration	10 g RMS (20 ... 2000 Hz) according to DIN EN 60068-2-6
Shock	100 g / 11 msec. according to DIN EN 60068-2-27

Materials

Pressure port	stainless steel 1.4542 (17-4 PH)
Housing	stainless steel 1.4404 (316L)
Option field housing	stainless steel 1.4301 (304); cable gland M16x1.5, brass, nickel plated (clamping range 2 … 8 mm)
Seals	none (welded)
Diaphragm	stainless steel 1.4542 (17-4 PH)
Media wetted parts	pressure port, diaphragm

Miscellaneous

Current consumption	signal output current: max. 25 mA
Weight	approx. 300 g
Installation position	any
Operational life	p_N = 600 bar: 100 million load cycles p_N > 600 bar: 10 million load cycles
CE-conformity	EMC Directive: 2014/30/EU Pressure Equipment Directive: 2014/68/EU (module A)

Wiring diagrams

2-wire-system (current)

Pin configuration

Electrical connections		ISO 4400	Binder 723 (5-pin)	Binder 723/423 (7-pin)	M12x1/ metal (4-pin)	field housing	cable colours (IEC 60757)
						Vs+ Vs- GND	
Supply +		1	3	3	1	V_S +	WH (white)
Supply –		2	4	1	2	V_S –	BN (brown)
Shield		ground pin ⏚	5	2	4	GND⏚	GNYE (green-yellow)
Communication interface [5]	RxD	-	-	4	-	-	-
	TxD	-	-	5	-	-	-
	GND	-	-	7	-	-	-

[5] may not be connected directly with the PC (the suitable adapter is available as accessory)

Electrical connections (dimensions in mm)

standard   **options**

ISO 4400 (IP 65)

Binder Series 723 (IP 67)

M12x1 4-pin (IP 67)

cable gland PG7/ cable length specify (IP 67) [6]
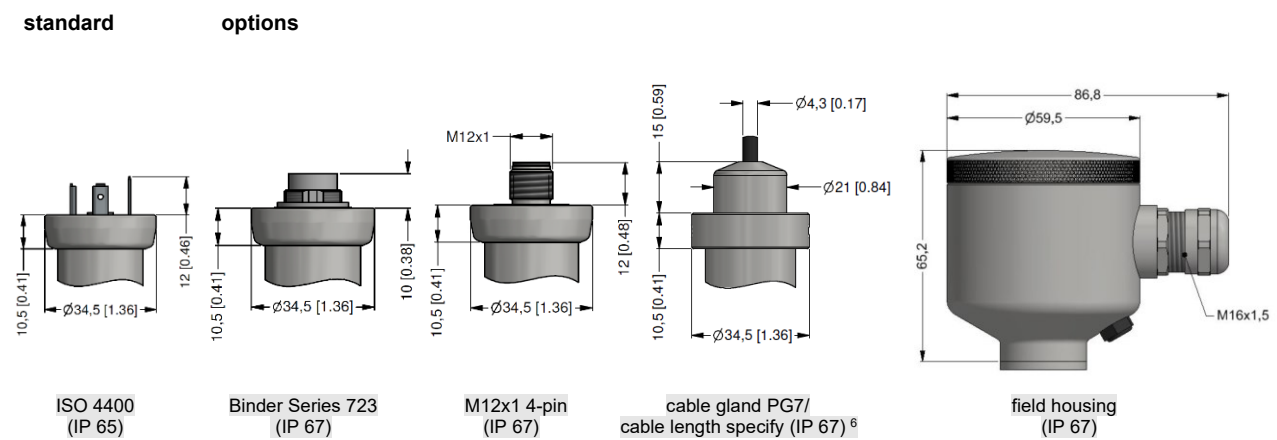
field housing (IP 67)

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

[6] standard: 2 m PVC cable (without ventilation tube, permissible temperature: -5 ... 70 °C)

Mechanical connection (dimensions in mm)

standard [7]   **options [7]**

G1/2" EN 837 [8]

M20x1.5 internal thread

9/16-18 UNF internal thread
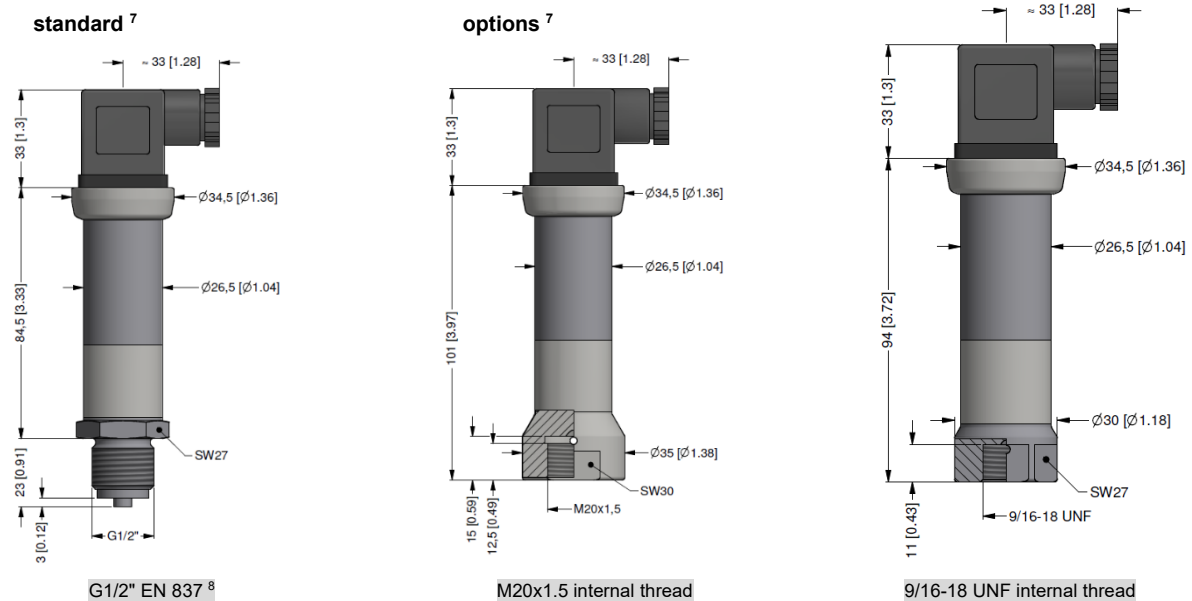
[7] adjustable version is only possible in combination with Binder Series 723, 7 pin
[8] According to EN 837, the pressure port and the complement at pressure over 1000 bar must be preferably made of stainless steel with a tensile strength of R_P > 260 N/mm² in accordance with DIN 17440. The maximum allowed pressure is 1600 bar!

The manufacturer provides the EU declaration of conformity.

Calibration - All production undergoes output control, which is performed by comparison with standards. The traceability of standards and working gauges is ensured in accordance with Act No. 505/1990, as amended, on metrology.
The manufacturer offers the possibility to supply sensors calibrated in the calibration laboratory of BD SENSORS, accredited according to ČSN EN ISO / IEC 17025: 2018.

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BD SENSORS®
pressure measurement

Programming kits for i-devices: CIS 510-RS232 and CIS 510-USB

CIS 510-RS232		CIS 510-USB	

Supply V_S	**for CIS 510-RS232**: 24V_{DC} **for CIS 510-USB**: 24V_{DC}
Package contents	Programming software "Config 3.0" on CD operating manual **CIS 510-RS232:** Adapt 1 RS-232 connecting cable (for PC) 7-pin connecting cable (for measuring device) **CIS 510-USB**: Adapt 5 USB connecting cable (for PC) 7-pin connecting cable (for measuring device)
System requirement	For the installation of the software, a Windows® PC (95, 98, ME, 2000, NT, XP) with serial interface (RS 232) or USB-interface is required

Please read the operating manual carefully before installing and starting up the programming kit.

Wiring diagrams

CIS 510-RS232:   **CIS 510-USB interface:**
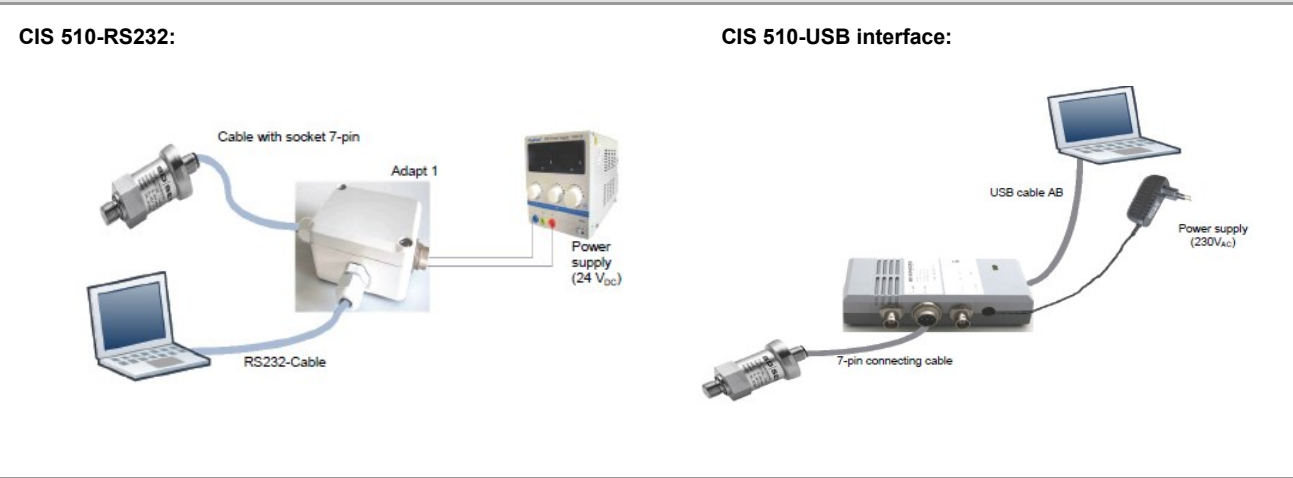
Ordering codes

Version:	Ordering code:
Adapt 1 with RS232 connecting cable for PC	**CIS 510-RS232**
Adapt 5 with USB connecting cable for PC	**CIS 510-USB**

Windows® is a registered trade mark of Microsoft Corporation

Ordering code DMP 334i

23.08.2024

DMP 334i ☐☐☐ - ☐☐☐☐ - ☐ - ☐ - ☐☐☐ - ☐☐☐ - ☐ - ☐☐☐

Pressure																		
Gauge	1	4	0															

Input [bar]																		
0 … 600[1]				6	0	0	3											
0 … 1000				1	0	0	4											
0 … 1600				1	6	0	4											
0 … 2000				2	0	0	4											
0 … 2200				2	2	0	4											
Customer				9	9	9	9											

Output																		
4 … 20 mA / 2-wire								1										
Customer								9										

Accuracy																		
0,1 %									1									
Customer									9									

Electrical connection																		
Connector DIN 43650 (ISO 4400) (IP 65)										1	0	0						
Connector Binder 723 5-pin (IP 67)										2	0	0						
Cable gland PG7 / cable length specify (IP 67)										4	0	0						
+ PVC cable / 1 m																		
Connector DIN 43650 (ISO 4400) - potting compound inside (IP 67)										E	0	0						
Connector M12 x 1, 4-pin (IP 67)										M	0	0						
Connector M12 x 1, 4-pin (IP 67) - metal										M	1	0						
Connector Binder 723 7-pin (IP 67)										A	0	0						
Customer										9	9	9						

Mechanical connection																		
G 1/2" EN 837 ($P_N \le 1000$ bar)[2]													2	0	0			
M 20 x 1,5 internal thread													D	2	8			
9/16 UNF internal thread													V	0	0			
Customer													9	9	9			

Seals																		
Without seals - welded																2		
Customer																9		

Special version																		
Standard																	1 1 1	
RS-232 interface[3]																	1 2 1	
Customer																	9 9 9	

Accessories
Adapt 1 with RS232 connecting cable for PC   (CIS 510-RS232)
Adapt 5 with USB connecting cable for PC (CIS 510-USB)

0,-…without additional charge
On request … in accordance with the producer

Surcharges for calibration are not subject to any discounts. Subject to change.
This document contains the specification for ordering the product;
detailed technical parameters of the product and its possible variants are given in the data sheet.
BD SENSORS reserves the right to change sensor specifications without further notice.

1 only available with pressure port G1/2" EN 837
2 According to EN 837, the pressure port and the complement, at pressure over 1000 bar must be preferably made of stainless steel with a ten
strength of RP > 260 N/mm² in accordance with DIN 17440. The maximum allowed pressure is 1600 bar!
3 RS-232 interface only possible with el. connection Binder serie 723/423 (7pin)

Software, Interface and cable for DMP 334i with option RS-232 have to be order separately

(Ordering code: CIS Set 510; Software appropriate for Windows® 95, 98, 2000, NT Version 4.0 or newer and XP)

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The company BD SENSORS s.r.o. is certified by Bureau Veritas Czech according to the standard ISO 9001.