BD|SENSORS
pressure measurement

DCT 532

Industrial Pressure Transmitter with i²C interface

Stainless Steel Sensor

Accuracy according to IEC 60770:
standart: ≤ ± 0.35 % FSO
option: ≤ ± 0.25 % FSO

Nominal pressure

from 0 ... 100 mbar up to 0 ... 400 bar

Digital output signals

- i²C
- bus frequency max. 400 kHz
- configuration of data format
- interrupt signal

Special characteristic

- ► perfect thermal behaviour
- ► excellent long term stability

Optional versions

- ► pressure port
  G 1/2" flush up to 40 bar
- ► welded sensor
- ► customer specific versions

Contrary to the industrial pressure transmitter with analog signal, the DCT 532 has a digital i²C-interface. i²C has a master-slave topology, whereby you can use up to 127 devices at one master. In addition to the typical settings, as slave address, data format, etc., it is possible to do special parametrisation for pressure unit and more.

Due to the usage of high quality materials and components, the DCT 532 is suitable for almost every industrial application, if medium is compatible with stainless steel 316L.

The modular concept of the pressure transmitter allows customized electrical or mechanical connections, so it is easy to adapt the DCT 532 to different conditions on-site.

Preferred areas of use are

- Plant and Machine Engineering
- Energy Industry

CE

BD SENSORS GmbH
BD-Sensors-Straße 1
D - 95199 Thierstein

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

Input pressure range												
Nominal pressure gauge	[bar]	-1…0	0.10	0.16	0.25	0.40	0.60	1	1.6	2.5	4	6
Nominal pressure abs.	[bar]	-	-	-	-	0.40	0.60	1	1.6	2.5	4	6
Overpressure	[bar]	5	0,5	1	1	2	5	5	10	10	20	40
Burst pressure ≥	[bar]	7.5	1.5	1.5	1.5	3	7.5	7.5	15	15	25	50

Nominal pressure gauge / abs.	[bar]	10	16	25	40	60	100	160	250	400
Overpressure	[bar]	40	80	80	105	210	600	600	1000	1000
Burst pressure ≥	[bar]	50	120	120	210	420	1000	1000	1250	1250
Vacuum resistance		P_N ≥ 1 bar: unlimited vacuum resistance P_N < 1 bar: on request								

Output signal / Supply	
i²C	V_S = 3.5 ... 5.5 V_{DC}

Performance	
Accuracy [1]	standard for P_N ≥ 0.4 bar: ≤ ± 0.35 % FSO standard for P_N < 0.4 bar: ≤ ± 0.5 % FSO option for P_N ≥ 0.4 bar: ≤ ± 0.25 % FSO
max. I/O current	10 mA
Long term stability	≤ ± 0.1 % FSO / year at reference conditions
Response time	1.5 msec + transmission time (depending on bus frequency)
Measuring rate	500 Hz
[1] accuracy according to IEC 60770 – limit point adjustment (non-linearity, hysteresis, repeatability)	

Thermal effects (Offset and Span)				
Nominal pressure P_N	[bar]	-1 … 0	< 0.40	≥ 0.40
Tolerance band	[% FSO]	≤ ± 0.75	≤ ± 1	≤ ± 0.75
in compensated range	[°C]	-20 ... 85	0 ... 70	-20 … 85

Permissible temperatures	
Permissible temperatures	medium: -25 ... 125 °C electronics / environment: -25 ... 85 °C storage: -40 ... 85 °C

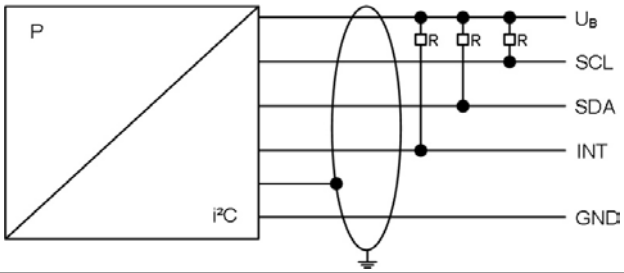
Electrical protection	
Short-circuit protection	Permanent
Reverse polarity protection	by exchanged supply connections no damage, but also no function by exchanged communication with signal lines it can come according to constellation to damages.
Electromagnetic compatibility	emission and immunity according 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 / Housing	stainless steel 1.4404 (316 L)
Seals (media wetted)	standard: FKM options: EPDM welded version [2] others on request
Diaphragm	stainless steel 1.4435 (316 L)
Media wetted parts	pressure port, seal, diaphragm
[2] welded version only with pressure ports according to EN 837	

Miscellaneous	
Current consumtion	< 15 mA
Weight	approx. 140 g
Ingress protection	IP 67 / IP 68 for cable with ventilation tube
Installation position	any [3]
Operational life	> 100 x 10^6 pressure cycles
CE-conformity	EMC Directive: 2004/108/EC
[3] Pressure transmitters are calibrated in a vertical position with the pressure connection down. If this position is changed on installation there can be slight deviations in the zero point for pressure ranges P_N ≤ 1 bar.	

Wiring diagrams

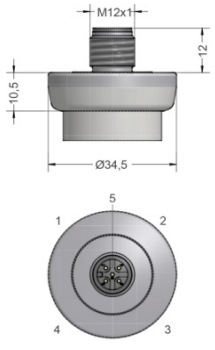


Pin configuration

Electrical connection	M12x1 / metal (5 pin)	Binder 723 (5 pin)	cable colours (DIN 47100)
Supply +	1	1	wh (white)
Supply –	3	3	bn (brown)
SDA	2	2	ye (yellow)
SCL	4	4	gn (green)
INT	5	5	pk (pink)
Shield	housing	housing	ye/gn (yellow / green)

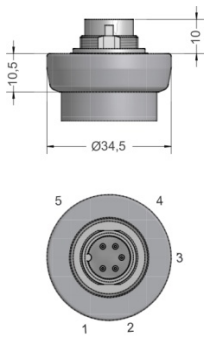
Electrical connections (dimensions in mm)

Standard

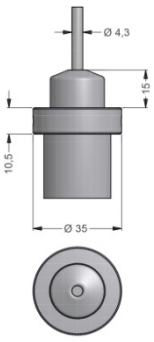


M12x1 5 pin
(IP 67)

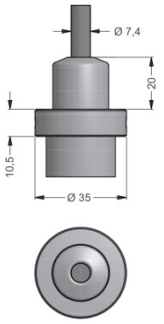
Optional



Binder Serie 723 5 pin
(IP 67)



cable outlet with PVC cable
(IP 67) [4]

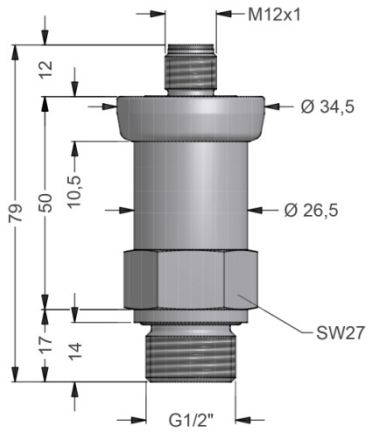


cable outlet, cable with ventilation tube
(IP 68) [5]

[5] *standard: 2 m PVC cable without ventilation tube (permissible temperature: -5 ... 70°C)*
[6] *different cable types and lengths available, permissible temperature depends on kind of cable*

Mechanical connections (dimensions in mm)

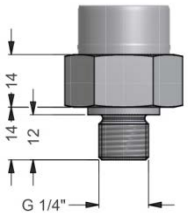
standard



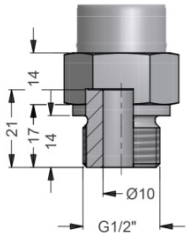
G1/2" DIN 3852
with ISO 4400

Mechanical connections (dimensions in mm)

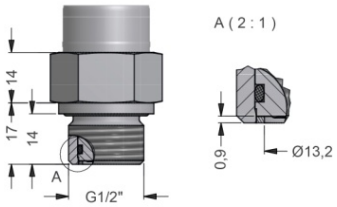
option



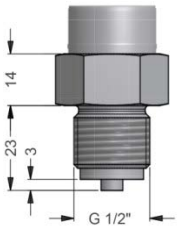
G1/4" DIN 3852



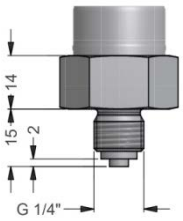
G1/2" open port



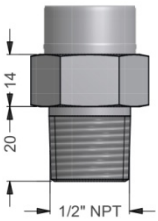
G1/2" DIN 3852
with flush sensor



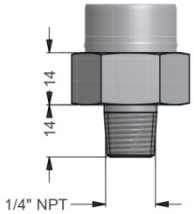
G1/2" EN 837



G1/4" EN 837



1/2" NPT



1/4" NPT

⇨ **metric threads and other versions on request**

Configuration i²C-interface																	
Stand configuration	0	5	0	-	0	-	0	-	0	-	0	-	0	0	0	0	1
Slave Address																	
adress	0	0	1														
		…															
	1	2	7														
Type of result register																	
32bit IEEE float					0												
16bit Integer					1												
Byte order of values																	
Low byte first							0										
High byte first							1										
Mode of result register																	
Value									0								
Percent of nominal									1								
Restore of address pointer																	
No restore											0						
To last set address on next start											1						
Digital meaning																	
Count of result													0	0	0	0	1
															…		
													1	0	0	0	0

Tel +49 (0) 92 35 / 98 11- 0
Fax +49 (0) 92 35 / 98 11- 11
www.bdsensors.com
info@bdsensors.de
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Ordering code DCT 532

DCT 532 □□□-□□□□-□-□-□□□-□□□-□-□□□

Pressure																									
gauge		D	C	0																					
absolute	1	D	C	1																					
Input	**[bar]**																								
0.1	1				1	0	0	0																	
0.16	1				1	6	0	0																	
0.25	1				2	5	0	0																	
0.4					4	0	0	0																	
0.6					6	0	0	0																	
1					1	0	0	1																	
1.6					1	6	0	1																	
2.5					2	5	0	1																	
4					4	0	0	1																	
6					6	0	0	1																	
10					1	0	0	2																	
16					1	6	0	2																	
25					2	5	0	2																	
40					4	0	0	2																	
60					6	0	0	2																	
100					1	0	0	3																	
160					1	6	0	3																	
250					2	5	0	3																	
400					4	0	0	3																	
-1 … 0					X	1	0	2																	
customer					9	9	9	9																	consult
Output																									
i²C									IC																
Accuracy																									
standard for $P_N \geq 0.4$ bar	0.35 %									3															
standard for $P_N < 0.4$ bar	0.5 %									5															
option for $P_N \geq 0.4$ bar	0.25 %									2															
	0.1 %									1															consult
customer										9															consult
Electrical connection																									
Male plug M12x1 (5-pin) / metal											N	1	7												
Male plug Binder series 723 (5-pin)											2	0	7												
Cable outlet with PVC cable	2										T	A	0												
Cable outlet (IP68)	3										T	R	0												
customer											9	9	9												consult
Mechanical connection																									
G1/2" DIN 3852														1	0	0									
G1/2" EN 837														2	0	0									
G1/4" DIN 3852														3	0	0									
G1/4" EN 837														4	0	0									
G1/2" DIN 3852 with flush sensor														F	0	0									
G1/2" DIN 3852 open pressure port														H	0	0									
1/2" NPT														N	0	0									
1/4" NPT														N	4	0									
customer														9	9	9									consult
Seals																									
FKM																	1								
EPDM																	3								
without (welded version)	4																2								
customer																	9								consult
Special version																									
standard																		0	0	0					
customer																		9	9	9					consult

[1] absolute pressure possible from 0.4 bar

[2] standard: 2 m PVC cable without ventilation tube (permissible temperature: -5 … 70°C), others on request

[3] cable with ventilation tube (code TR0 = PVC cable), different cable types and lengths available, price without cable

[4] welded version only with pressure ports according to EN 837

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BD|SENSORS GmbH
BD-Sensors-Straße 1
D - 95199 Thierstein

Tel. +49 (0) 9235 / 98 11 - 0
Fax +49 (0) 9235 / 98 11 - 11