PRODUCT CATALOGUE PRESSURE TRANSMITTER DIGITAL





PRESSURE AT THE HIGHEST LEVEL

"Successful medium-sized companies are not successful because they are active in many areas, but rather because they concentrate on one area and do it better than anyone else"

This is our philosophy. That's why BDSENSORS has concentrated on electronic pressure measurement technology from the beginning.

With our unremitting product and and quality strategy we have been successful in becoming a major player on the world market for electronic pressure sensing devices within a few years.



With 260 employees at 4 locations in Germany, the Czech Republic, Russia and China BD|SENSORS has solutions from 0.1 mbar to 6000 bar:

- pressure sensors, pressure transducers pressure transmitters
- > electronic pressure switches
- pressure measuring devices with display and switching outputs
- hvdrostatic level probes

Two pressure transmitters and a submersible probe, based on a stainless steel silicon sensor were the beginning.

Today the range extends to more than 70 standard products, from economical OEM devices to high-end products with HART* communication or field bus interface.

In addition we have developed hundreds of customer-specific applications, underlining the competence and flexibility of BDISENSORS. The excellent price/performance ratio of our products is proof of the fact that we are able to meet the toughest demand: Being a problem-solver for our customers.

INDEX

PRECISION PRESSURE TRANSMITTER 6-10

INDUSTRIAL PRESSURE TRANSMITTER 11-55

4 ADVANTAGES 58

For large production batches as well as for small production numbers, no matter for what medium or external factors, with almost any mechanical or electrical connection - we solve your problem

flexibly, quickly and cost-efficiently.

PRODUCT MATRIX "PRESSURE AND LEVEL MEASUREMENT DEVICES WITH DIGITAL INTERFACES"

	PRODUCT DIGITAL	PRODUCT ANALOG	ACCU RACY	NOMINAL PRESSURE		SEN	SOR		OUTI	PUT SIG	NAL
		equivalent product with analog output signal	% FS0	mbar / bar	piezoresistive stainless steel silicon sensor (with mediarisolation)	capacitive ceramic sensor (Ø 32,4 mm)	piezoresistive ceramic thickfilm sensor	capacitive ceramic sensor (Ø19 mm)	IO-LINK	MODBUS RTU	i2C
(EM)	DRUCKM	ESSTECH	NIK								
	DCT 531	DMP 321	0,25	0 100 mbar to 0 400 bar	•					•	
	DCT 532	DMP 321	0,25	0 100 mbar to 0 400 bar	•						•
	DCT 533	DMP 321	0,25	0 100 mbar to 0 400 bar	•				•		
INDUSTRY	DCT 531P	DMP 331P	0,25	0 100 mbar to 0 40 bar	•					•	
	DCT 533P	DMP 331P	0,25	0 100 mbar to 0 40 bar	•				•		
	DCT 553P	DMK 351P	0,25	0 40 mbar to 0 20 bar		•			•		
	DCT 561	DMK 331	0,50	0 600 mbar to 0 600 bar			•			•	
	DCT 562	DMK 331	0,50	0 400 mbar to 0 600 bar			•				•
	DCT 563	DMK 331	0,50	0 600 mbar to 0 600 bar			•		•		
	DCT 571	DMK 387	0,35	0 100 mbar to 0 60 bar				•		•	
PRECISION	DCT 531i	DMP 331i	0,10	0 400 mbar to 0 400 bar	•					•	

ANNOTATION PRODUCT CODE

 $DCx_1 5x_2x_3[x_4]$

x, | VERSION

- L level probe
- T pressure transmitter

$\mathbf{x_3}$ | COMMUNICATION INTERFACE

- 1 RS 485 Modbus
- 2 I²C
 3 IO-Link

x₂ | PRESSURE SENSOR

- 3 piezoresistive stainless steel silicon sensor (with media isolation)
- 5 capacitive ceramic sensor (Ø 32,4 mm)
- 6 piezoresistive ceramic thick film sensor
- 7 capacitive ceramics sensor (Ø 19mm)

x₄ | SPECIAL FEATURES

P process connections in hygienic design



DCT 531i

Precision Pressure Transmitter with RS485 Modbus RTU

Stainless Steel Sensor

accuracy according to IEC 60770: 0.1 % FSO

Nominal pressure

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

Output signal

RS485 with Modbus RTU protocol

Special characteristics

- transfer of pressure and temperature value
- perfect thermal behaviour
- excellent long term stability
- reset function

Optional versions

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

The DCT 531i is characterized by very good accuracy and excellent temperature behaviour and is therefore ideally suited for applications where precise pressure measurement is necessary (e.g. test benches, leakage tests, etc.).

Thanks to the integrated RS485 interface (based on the MODBUS RTU protocol), reliable and robust data transmission is available, which also works without problems over longer distances. Since the DCT 531i works directly with a master e.g. is coupled to a SPS, conversion losses of an analogue input card are avoided.

Different mechanical and electrical connections are available so that the DCT 531i can be used in various applications without any problems.

Preferred areas of use are



Plant and machine engineering



Energy industry







DCT 531i

Input pressure range												
Nominal pressure gauge	[bar]	-10	0.10	0.16	0.25	0.40	0.60	1	1.6	2.5	4	6
Nominal pressure absolute	[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	16	0	250	400
Overpressure	[bar]	40	80	8	30	105	210	600	60	0	1000	1000
Burst pressure ≥	[bar]	50	120	1	20	210	420	1000	100	00	1250	1250
Vacuum resistance $p_N \ge 1$ bar: unlimited vacuum resistance $p_N < 1$ bar: on request												
Output signal												
Digital RS485 with Modbus RTII protocol (pressure & temperature)												

Output signal		
Digital	RS485 with Modbus RTU protocol (pressure & te	mperature)
Supply		
Direct voltage	V _S = 9 32 V _{DC}	
Performance		
Accuracy ¹	≤±0.1 % FSO	
Long term stability	≤ ± 0.1 % FSO / year at reference conditions	
Measuring rate	500 Hz	
Delay time	500 msec	
¹ accuracy according to IEC 60770 – limit	point adjustment (non-linearity, hysteresis, repeatability)	
Thermal effects (offset and span)		
Thermal error	≤±0.02 % FSO / 10 K	
In compensated range	-20 80 °C	
Permissible temperatures		
Medium	-25 125 °C	
Electronics / environment	-25 85 °C	
Storage	-40 100 °C	
Electrical protection		
Short-circuit protection	permanent	
Reverse polarity protection	on supply connections no damage, but also no fur	nction
Electromagnetic compatibility	emission and immunity according to EN 61326	
Mechanical stability	•	
Vibration	10 g RMS (20 2000 Hz) acc	ording to DIN EN 60068-2-6
Shock	100 g / 11 msec acc	ording to DIN EN 60068-2-27
Materials		
Pressure port / housing	stainless steel 1.4404 (316 L)	
Seals	standard: FKM option: EPDM without ² (welded version) other	ers 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, p _N ≤ 40 bar	
Miscellaneous		
Weight	approx. 210 g	
Current consumption	max. 10 mA	
Ingress protection	IP 67	
Installation position	any ³	
Operational life	100 million load cycles	
CE-conformity	EMC Directive: 2014/30/EU	
	Pressure Equipment Directive: 2014/68/EU (modu	
deviations in the zero point for pressure	n vertical position with the pressure connection down. If this ranges p№ ≤ 1 bar. ith maximum permissible overpressure > 200 bar.	s position is changed on installation there can be slight



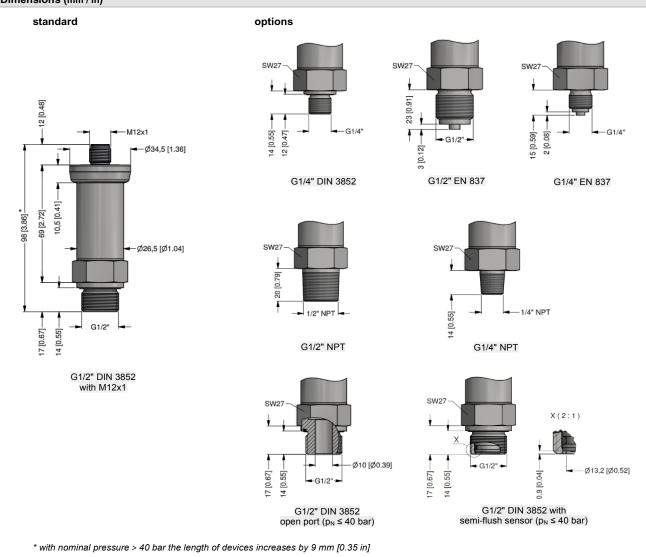
plug housing

Pin configuration / electrical connection Electrical connection M12x1, metal (5-pin) Supply + 1 Supply 3 A (+) 2 B (-) 4 Reset 5

Shield



Dimensions (mm / in)



⇒ metric threads and other versions on request

DCT 531i

Configuration Modbus RTU					
Standard configuration	001	-	1	-	1
Address					
Address	001				
	247				
Baud Rate					
4800 Bd			0		
9600 Bd			1		
19200 Bd			2		
38400 Bd			3		
Parity					
None					0
Odd					1
Even					2
Configuration code (to specify with order)		-		-	



	Ordering code DCT 531i	
DCT 531i	m-m-m-n-m-m-	
Pressure gauge		
absolute	D C 7 D C 8	
Input [bar] 0.10	1 0 0 0	
0.16	1 6 0 0	
0.25 1	2 5 0 0	
0.40 0.60	4 0 0 0 0 6 0 0 0	
1.0	1 0 0 1	
1.6 2.5	1 6 0 1 2 5 0 1	
4.0	4 0 0 1	
6.0	6 0 0 1	
10 16	1 0 0 2 1 6 0 2	
25	2 5 0 2	
40	4 0 0 2	
60 100	6 0 0 2 1 0 0 3	
160	1 6 0 3	
250 400	2 5 0 3 4 0 0 3	
-1 0	X 1 0 2	
customer	9 9 9 9	consult
Output RS485 Modbus RTU	L 5	
Accuracy		
0.1 % FSO	1	
customer Electrical connection	9	consult
male plug M12x1 (5-pin) / metal	N 1 1 9 9 9	
customer Mechanical connection	9 9 9	consult
G1/2" DIN 3852	1 0 0	
G1/2" EN 837	2 0 0	
G1/4" DIN 3852 G1/4" EN 837	3 0 0 4 0 0	
G1/2" DIN 3852	F 0 0	
with semi-flush sensor ² G1/2" DIN 3852 open pressure port ²	H 0 0	
1/2" NPT	N 0 0	
1/4" NPT	N 4 0	
Seal	9 9 9	consult
FKM	1	
EPDM without (wolded version) 3	3 2	oons::It
without (welded version) ³ customer	9	consult consult
Special version		
standard customer	1 1 1 9 9 9	consult
Customer	9 9 9	Consult

¹ absolute pressure possible from 0.4 bar

² not possible for nominal pressure $p_N > 40$ bar ³ welded version only with pressure ports according to EN 837, possible for $p_N \le 40$ bar



DCT 531

Industrial Pressure Transmitter with RS485 Modbus RTU

Stainless Steel Sensor

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

Nominal pressure

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

output signal

RS485 with Modbus RTU protocol

Special characteristic

- pressure value
- perfect thermal behaviour
- excellent long term stability
- reset function

Optional versions

- pressure portG 1/2" flush up to max. 40 bar
- pressure sensor welded
- ▶ customer specific versions

The DCT 531 with RS485 interface uses the communication protocol Modbus RTU which has found the way in industrial communication as an open protocol. The Modbus protocol is based on a master slave architecture with which up to 247 slaves can be questioned by a master.

Due to the usage of high quality materials and components, the DCT 531 is suitable for almost every industrial application, if the medium is compatible with stainless steel 316L.

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

Preferred areas of use are



Plant and machine engineering



Energy industry







Modbus®

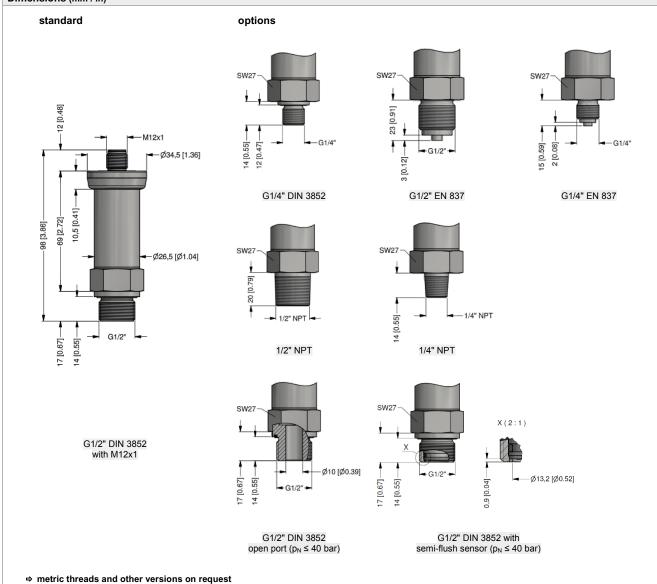
Input pressure range														
Nominal pressure gauge	[bar]	-10	0.10	0.16	0.25	0.40	0.60	1	1.6	2.5	4	6		
Nominal pressure absolute	[bar]	-	-	-	-	0.40	0.60	1	1.6	2.5	4	6		
Overpressure	[bar]	5	0.5	1	1	2	5	5	10	10	20	40		
Burst pressure ≥	[bar]	7.5	1.5	1.5	1.5	3	7.5	7.5	15	15	25	50		
Nominal pressure										_				
gauge / absolute	[bar]	10	16		25	40	60	100	16	0 2	250	400		
Overpressure	[bar]	40	80	8	30	105	210	600	60		000	1000		
Burst pressure ≥	[bar]		120		20	210	420	1000			250	1250		
Vacuum resistance		p _N ≥ 1 ba	ır: unlimit	ed vacuu	m resis	tance		p _N < 1	bar: on r	equest				
Output signal														
Digital		RS 485 v	with Modl	ous RTU	protoco	l (pressure)							
Supply														
Direct current		V _S = 9	. 32 V _{DC}											
Performance														
Accuracy ¹ standard: ≤ ± 0.25 % FSO														
option: ≤ ± 0.10 % FSO														
Long term stability														
Measuring rate		500 Hz												
Delay time		500 mse	С											
¹ accuracy according to IEC 60770 – limit point adjustment (non-linearity, hysteresis, repeatability)														
Thermal effects (offset and	d span)												
Tolerance band		≤ ± 0.75	% FSO											
In compensated range -20 85 °C														
Permissible temperatures														
Medium		-40 12	5 °C											
Electronics / environment		-40 85 °C												
Storage														
Electrical protection														
Short-circuit protection		permane	nt											
Reverse polarity protection		on supply	v connec	tion no da	amage,	but also no	function							
Electromagnetic compatibilit	v					to EN 6132								
Mechanical stability	,			,										
Vibration		10 a RM	S (25 2	2000 Hz)		acc	ording to [OIN FN 60	068-2-6					
Shock		100 g / 1		1000 112)			ording to I			,				
Materials							5. ug to .							
Pressure port / housing		stainless	steel 1 A	404 (316	1)									
Seals		standard		+0+ (010	<u></u>									
Codio		option:		welded	ersion	2 (for p _N ≤ 4	0 bar)			other	s on req	uest		
Diaphragm		stainless					,							
Media wetted parts		pressure		•										
² welded version only with press	ure port	•	•	•										
Miscellaneous														
Weight		approx. 2	210 g											
Ingress protection		IP 67												
Current consumption		max. 10	mA											
Operational life		100 millio		cles										
Installation position		any 3												
CE-conformity		EMC Dir	ective: 20	14/30/EU	J	Pre	ssure Equ	ipment Di	rective: 2	014/68/El	J (modu	le A) ⁴		
³ Pressure transmitters are calibit deviations in the zero point for ⁴ This directive is only valid for defending the control of the c	pressur	e ranges p	v ≤ 1 bar.				n. If this pos	ition is cha	nged on in	stallation th	nere can b	e sligh		



Pin configuration / electrical connection											
Electrical connection	M12x1, metal (5-pin)										
Supply +	1										
Supply –	3										
A (+)	2										
B (–)	4										
Reset	5										
Shield	plug housing										



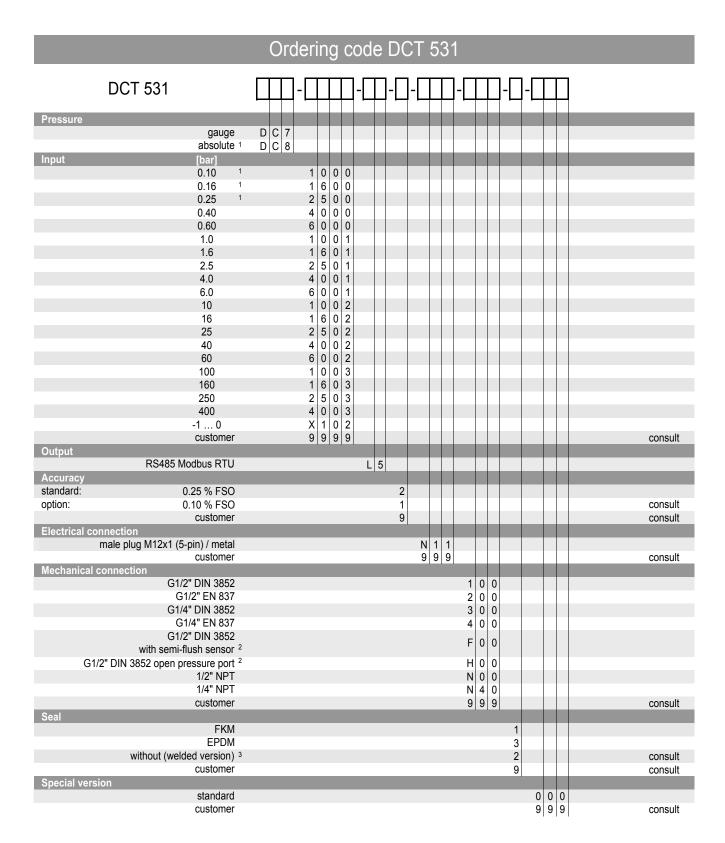
Dimensions (mm / in)



Configuration Modbus RTU					
Standard configuration	001	-	1	-	1
Address					
Address	001				
	247				
Baud Rate					
4800 Bd			0		
9600 Bd			1		
19200 Bd			2		
38400 Bd			3		
Parity					
None					0
Odd					1
Even					2
Configuration code (to specify with order)		-		-	

DCT 531

Ordering Code



¹ absolute pressure possible from 0.4 bar

 $^{^{2}\,}$ not possible for nominal pressure p_N > 40 bar

 $^{^3\,}$ welded version only with pressure ports according to EN 837, possible for $p_{N} \le 40\,$ bar



DCT 532

Industrial **Pressure Transmitter** with i²C interface

Stainless Steel Sensor

Accuracy according to IEC 60770: standard: ≤ ± 0.35 % FSO option: $\leq \pm 0.25 \%$ FSO

Nominal pressure

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

Digital output signal

- 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 analogue 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 pressure transmitter to different conditions on-site.

Preferred areas of use are



Plant and machine engineering



Energy industry



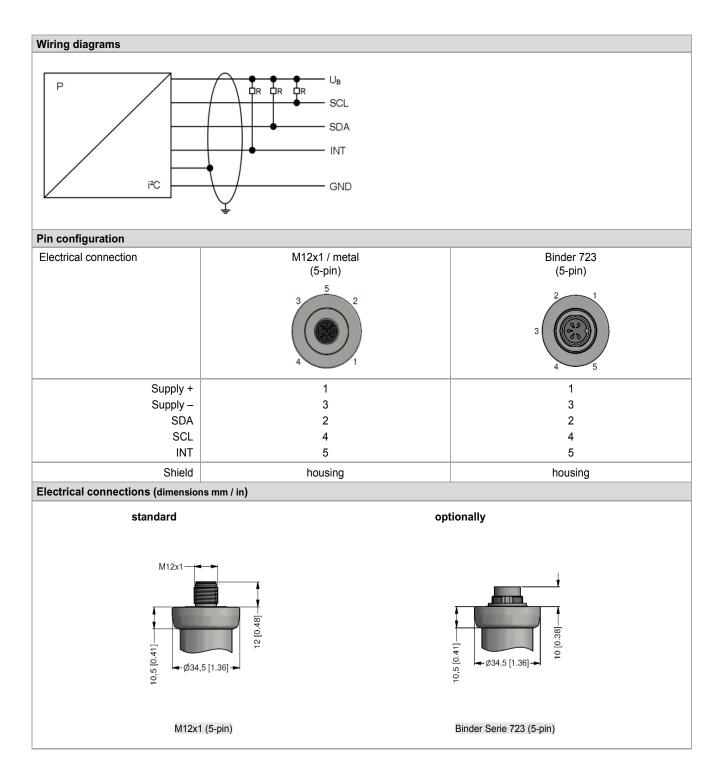


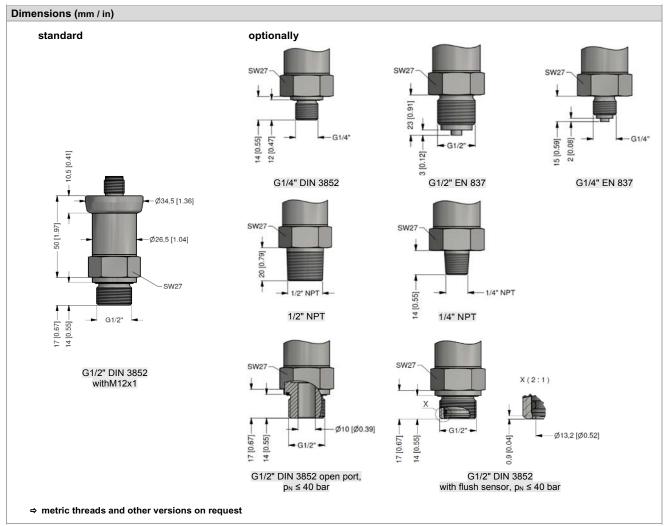






Nominal pressure gauge	[bar]	-10	0.10	0.16	0.25	0.40	0.60	1	1.6	2.5	4	6
Nominal pressure abs.	[bar]	-	-	-	-	0.40	0.60	1	1.6	2.5	4	6
Overpressure	[bar]	5	0,5	1	1	2	5	5	10	10	10 20	
Burst pressure ≥	[bar]	7.5	1.5	1.5	1.5	3	7.5	7.5	15	15	25	50
Nominal pressure	[la au]	40	40		25	40		400		20	050	400
gauge / abs.	[bar]	10	16	4	25	40	60	100	16	50	250	400
Overpressure	[bar]	40	80		30	105	210	600		00	1000	100
Burst pressure ≥	[bar]	50	120		20	210	420	1000	10	00	1250	125
/acuum resistance		p _N ≥ 1 bar p _N < 1 bar			m resista	ance						
Output signal / Supply												
i ² C		V _S = 3.5 .	5.5 V _{DC}	;								
Performance												
Accuracy ¹ $\begin{array}{cccccccccccccccccccccccccccccccccccc$												
Max. I/O current		10 mA	ρ _N = 0	. + Dai.		0.20 /01	50					
ong term stability		≤ ± 0.1 %	FSO / ve	ear at refe	erence o	onditions						
Response time							us frequer	ncy)				
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 an			(1)		,,,	,						
Nominal pressure p _N	[bar]		-1	0			< 0.40				≥ 0.40	
	6 FSO]		=1 ≤ ± 0.				0.40≤ ± 1				≥ 0.40 ≤ ± 0.75	
n compensated range	[°C]		-20	-			0 70				20 85	
Permissible temperatures							<u> </u>		-			
Medium		-25 125	5 °C									
Electronics / environment		-25 85										
Storage	-40 85 °C											
Electrical protection												
Short-circuit protection		permaner	nt									
Reverse polarity protection		by exchai	nged sup			no damage signal lines				anatallat	ion to dan	2222
Electromagnetic compatibili	itv					5 EN 61326		ne accord	allig to c	Jiistellat	ion to dan	layes.
Mechanical stability	ity	emission	and min	urnity acc	ording to	EN 01320	<u> </u>					
/ibration		10 a DMC	1/25 2	000 H=/		0000	ording to D	INI ENI GO	060 2 6			
Shock		10 g RMS	<u> </u>	000 HZ)						7		
		500 g / 1	msec			accc	ording to D	IIN EIN OU	000-2-2	<u> </u>		
Materials												
Pressure port / Housing		stainless		404 (316	L)							
Seals (media wetted)		standard: options:	EPDM	l version	² (for n _N	≤ 40 bar)				oth	ers on red	nuest
Diaphragm		stainless				_ 13 541)				Oil	.5.5 511160	14501
Media wetted parts		pressure										
welded version only with pres	sure nor		•		-							
Miscellaneous	5 001			, , , , , , ,								
Current consumption		< 15 mA										
Weight		approx. 1	40 a									
ngress protection		IP 67										
nstallation position		any ³										
Operational life		100 millio	n load o	rcles								
Derational life DE-conformity		EMC Dire			I	Droc	sure Equi	nment Di	rective: 3	014/62/	FII (modu	۵۱۵ مار
>_ OUTHORITIES						nection dowr					•	





Configuration i ² C-interface																	
Stand configuration	0	5	0	T -	0	_	0	_	0	_	0	_	0	0	0	0	1
Slave address																	<u> </u>
address	0	0	1														
dudiess			'														
	1	2	7														
Type of result register																	
32bit IEEE float					0												
16bit Integer					1												
Byte order of values					<u> </u>												
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
Configuration code (has to be defined with the order)				-		-		-		-		-					

Ordering Code



																	_	saire incasarement
		Ord	erir	ng	CC	ode	D :	СТ	5	532	2							
				_	_		_	_					_	_		_		1
DCT 5	32		-Ш		Ш.	-					-Ш			-L	J-L			
Pressure						-		-										
Pressure	gauge	DC0		_	П					7			_			т	_	
	absolute 1	D C 1		ш														
Input	[bar]		4 (
	0.10 ¹ 0.16 ¹		1 (0 0 6 0 5 0 0 0	0													
	0.10		2 5	5 0	0													
	0.40		4 (0 0	0													
	0.60		6 (0 0	0													
	1.0		1 (0 0	1													
	1.6 2.5		1 6	0 0 6 0 5 0 0 0	1													
	4.0		4 (0 0	1													
	6.0																	
	10		1 (0 0	2													
	16		1 6	0 6	2													
	25 40		2 5	0 0	2													
	60		6 (ט כ	2													
	100		1 (0 0	3													
	160		1 6	0 6	3													
	250		2 5	5 0	3													
	400		4 (0	3													
	-1 0 customer		9 9	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	9													consult
Output		_		7 0	•													33113411
	i ² C					IC				_						ш		
Accuracy standard for p _N ≥ 0.4 bar	0.35 % FSO			-	-		2	-					-	-		Н		
standard for $p_N \le 0.4$ bar	0.50 % FSO						3 5											
option for $p_N \ge 0.4$ bar	0.25 % FSO						2											
	0.10 % FSO						1											consult
	customer						9			_			_			ш	L	consult
Electrical connection	12x1 (5-pin) / metal							N	1	7								
male plug M	r series 723 (5-pin)							N 2	1 0	7								
maio piag zinao	customer							2 9	9	9								consult
Mechanical connection	0.4/01/ 0.11																	
	G1/2" DIN 3852 G1/2" EN 837										1	0	0					
	G1/4" DIN 3852										3	0 0 0	0					
	G1/4" EN 837										4	0	0					
	G1/2" DIN 3852																	
04/01/01/01/0050	with flush sensor ²																	
G1/2" DIN 3852	open pressure port ² 1/2" NPT										H	0	0					
	1/2 NPT 1/4" NPT										N	4	0					
	customer										9	4 9	9					consult
Seals																		
	FKM													1				
witho	EPDM ut (welded version) ³													3 2 9				
WILLIO	customer													9				consult
Special version																		
	standard														0	0	0 9	
	customer														9	9	9	consult

 $^{^{\}mathrm{1}}$ absolute pressure possible from 0.4 bar

 $^{^{2}}$ not possible for nominal pressure $p_{N} > 40$ bar

 $^{^3\,}$ welded version only with pressure ports according to EN 837, possible for $p_N \leq 40$ bar



DCT 533

Industrial **Pressure Transmitter** with IO-Link Interface

Stainless Steel Sensor

accuracy according to IEC 60770: standard: ≤ ± 0.35 % FSO ≤ ± 0.25 % FSO option:

Nominal pressure

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

Digital output signal

- IO-Link according to specification V 1.1
- data transfer 38.4 kbit/sec
- smart sensor profile

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

IO-Link is a digital interface for sensors and actuators, which is worldwide standardized by IEC 61131-9. IO-Link does not have a bus topology, but it is a powerful point-to-point communication, where the device can be parametrized, and the measured values transferred. The integration to the master is easy by using the IODD-file.

The sensor technology of the DCT 533 is the same as those of the proven pressure transmitter DMP 331 / DMP 333, whereby the DCT 533 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 533 to different conditions on-site.

Preferred areas of use are



Plant and machine engineering



Energy industry





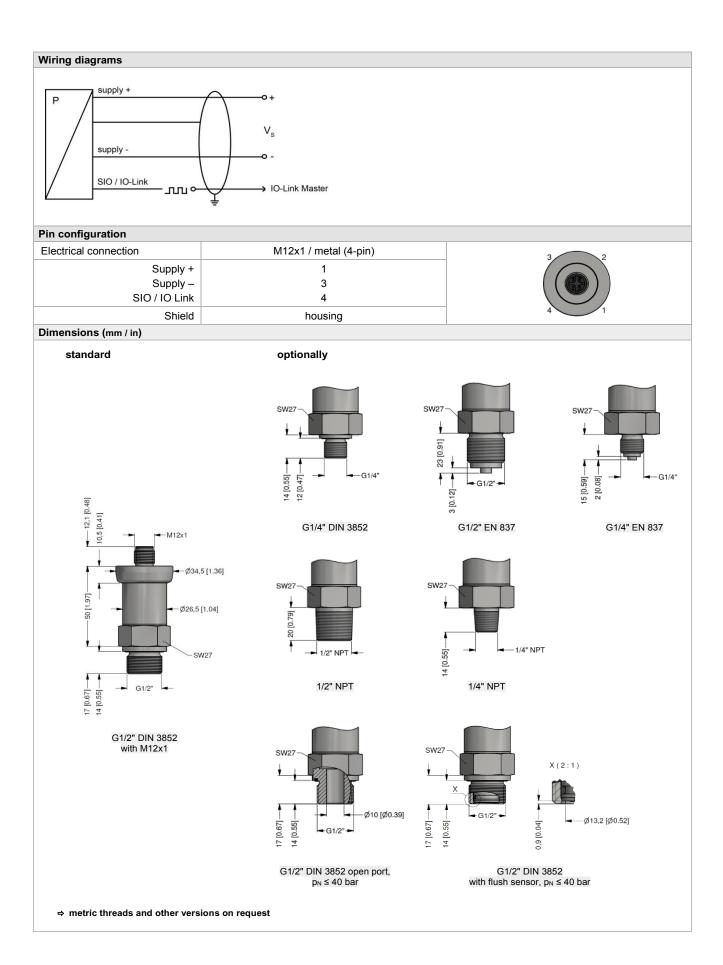






Input pressure range

input pressure range					1						_	
Nominal pressure gauge [bar]	-10	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 40	
Overpressure [bar]	5	0.5	1	1	2	5	5	10	10			
Burst pressure ≥ [bar]	7.5	1.5	1.5	1.5	3	7.5	7.5	15	15	25	50	
Nominal pressure [bar]	10	16	2	25	40	60	100	16	60	250		
gauge / abs.	40	90		20	105	210	600	60	20	1000	1000	
Overpressure [bar] Burst pressure ≥ [bar]	40 50	80 120		20	105 210	210	1000	10		1000	1000	
Burst pressure ≥ [bar] Vacuum resistance	p _N ≥ 1 bar					420			00	1250	1250	
vacuum resistance	p _N ≥ 1 bai	. uriiiriik	eu vacuu	111 1621216	ance	ρ _N \	1 bar: on r	equesi				
Output signal / Supply												
Standard	IO-Link (n			ansmissi	on)	V _S =	18 30 \	/ _{DC}				
	SIO (swite		· ·									
IO-Link		1.1 / slave / smart sensor profile										
Data transfer	COM 2		sec									
Mode	SIO / IO-L											
Standard	IEC 6113	1-9										
Performance												
Accuracy ¹	standard	for p _N	≥ 0.4 ba < 0.4 ba	r: ≤±	: 0.35 % F : 0.50 % F							
	option		≥ 0.4 ba	r: ≤±	0.25 % F	SO						
Switching current (SIO-Mode)	max. 200	mA										
Switching frequency	max. 200											
Switching cycles	> 100 x 10											
Long term stability	≤ ± 0.1 %				onditions							
Turn-on time	SIO mode	SIO mode: approx. 20 msec										
Response time	SIO mode: < 4 msec											
Measuring rate	400 Hz											
¹ accuracy according to IEC 60770 – lin	nit point adju	stment (no	on-linearity	, hysteres	sis, repeata	bility)						
Thermal effects (offset and spar)											
Nominal pressure p_N [bar]		-1	0			< 0.40			2	≥ 0.40		
Tolerance band [% FSO]		≤ ± 0.7	'5			≤ ± 1			≤	± 0.75		
in compensated range [°C]		-20 8	35			0 70			-2	0 85		
Permissible temperatures												
Medium	-25 125	5 °C										
Electronics / environment	-25 85	5 °C										
Storage	-40 85	5 °C										
Electrical protection												
Short-circuit protection	permaner	nt										
Reverse polarity protection	no damag	ge, but al	so no fur	nction								
Electromagnetic compatibility	emission	and imm	unity acc	ording to	EN 6132	6						
Mechanical stability												
Vibration	10 g RMS	(25 2	000 Hz)	acc	cording to	DIN EN 6	0068-2-6					
Shock	500 g / 1				cording to			,				
Materials					J							
Pressure port / housing	stainless	steel 1.4	404 (316	L)								
Seals (media wetted)	standard:		(0.0	-,								
(options:	EPDM										
				² (for p _N	≤ 40 bar)			c	thers on	request		
Diaphragm	stainless											
Media wetted parts	pressure	port, sea	l, diaphra	agm								
² welded version only with pressure por	ts according	to EN 837	7, pn≤40 b	ar								
Miscellaneous												
Current consumption	max. 15 mA											
Weight	approx. 1											
Installation position	any ³	- 3										
Protection class	IP 67											
Operational life	100 millio	n load c	cles									
CE-conformity				ı	Dros	ssure Fau	inment Di	rective: 1	2014/69/5	ELL (modu	Ie Δ) 4	
· · · · · · · · · · · · · · · · · · ·	EMC Directive: 2014/30/EU Pressure Equipment Directive: 2014/68/EU (module A) 4 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 pressul ⁴ This directive is only valid for devices	e ranges p _N	≤ 1 bar.	•			11 4113 1908	orr is Uridi	ngca on II	.StallallUll	aiore carri	oo onyiil	



Ordering Code

		О	rde	rin	ıg	COC	de [DC ⁻	Γ5	53	3	i	i	i				
DCT 53	33		- 🗌			-	-]-	- Ц]-[]-				
Pressure	gauge	D C 2																
Input	absolute ¹ [bar]	D C 2 D C 3				_				ı		_						
Прис	0.10		1	0 0	0							Т						
	0.16 ¹ 0.25 ¹		1		0													
	0.40		4	0 0	0													
	0.60 1.0		6	0 0	0													
	1.6		1	6 0	1													
	2.5		2	5 0 0 0														
	4.0 6.0		4 6	0 0														
	10		1	0 0	2													
	16 25		1	6 0 5 0	2 2 2 2													
	40		4	0 0	2													
	60 100		6	0 0	3													
	160		1	6 0	3													
	250		2	5 0	3													
	400 -1 0			1 0	3													
	customer		9	9 9	2													consult
Output	IO-Link / SIO				•	Ю						+			•			
Accuracy																		
standard for $p_N \ge 0.4$ bar standard for $p_N < 0.4$ bar	0.35 % FSO 0.50 % FSO						3											
option for $p_N \ge 0.4$ bar	0.25 % FSO						5 2 9											
	customer						9					_		_				consult
Electrical connection male plug M12x	(1 (4-pin) / metal	_	_	-	-	-	-	М	1 7	7		т	-	-	-			
	customer			_		_	_	9	1 7	9		_	_	_				consult
Mechanical connection	G1/2" DIN 3852										1	0 0)					
	G1/2" EN 837										2	0 0)					
	G1/4" DIN 3852 G1/4" EN 837										3	0 0)					
	G1/2" DIN 3852											0 0						
	with flush sensor 2																	
G1/2" DIN 3852 op	en pressure port 2 1/2" NPT										N	0 0)					
	1/4" NPT										Ν	4 0)					
Seals	customer	_									9	9 9)					consult
- Joan Joan Joan Joan Joan Joan Joan Joan	FKM													1				
without /	EPDM (welded version) ³													3				
witilout	customer													9				consult
Special version	Office allegad														^			
	standard customer														9	0 9	9	consult
																!		

¹ absolute pressure possible from 0.4 bar

² not possible for nominal pressure $p_N > 40$ bar ³ welded version only with pressure ports according to EN 837, possible for $p_N \le 40$ bar



DCT 531P

Industrial **Pressure Transmitter** with RS485 Modbus RTU

Process Connections with Flush Welded Stainless Steel Diaphragm

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

Nominal pressure

from 0 ... 100 mbar up to 0 ... 40 bar

Output signal

RS485 with Modbus RTU protocol

Special characteristics

- hygienic version
- diaphragm with low surface roughness
- CIP / SIP-cleaning up to 150 °C
- ingress protection IP 67 / IP 69
- reset function

Optional versions

- different process connections
- cooling element for media temperatures up to 250 °C

The pressure transmitter DCT 531P was designed for use in the food / beverage and pharmaceutical industry. The compact design with hygienic versions guarantees an outstanding performance in terms of accuracy, thermal behaviour and long term stability.

The integrated RS485 interface is characterized by a robust and reliable data transmission that works failure-free even over long distances.

Additionally, the modular construction concept of the device allows to combine different electrical and mechanical connections, so it is easy to adapt the pressure transmitter to different conditions on-site.

Preferred areas of use are



Food and beverage



Pharmaceutical industry

Material and test certificates

- inspection certificate 3.1 according to EN 10204
- test report 2.2 according to EN 10204







Input pressure range 1

Nominal pressure gauge	[bar]	-10	0.10	0.16	0.25	0.4	10	0.60	1	1.6			
Nominal pressure absolute	[bar]	-	-	-	-	0.4	10	0.60	1	1.6			
Overpressure	[bar]	5	0.5	1	1	2		5	5	10			
Burst pressure ≥	[bar]	7.5	1.5	1.5	1.5	3	7.5		7.5	15			
Nominal pressure gauge / absolute	[bar]	2.5	4		6	10	16		25	40			
Overpressure	[bar]	10	10 20		0	105	40)	80	80			
Burst pressure ≥	[bar]	15 25			0	50	12	0	120	210			
Vacuum resistance			p _N > 1 bar: unlimited vacuum resistance p _N ≤ 1 bar: on request										
¹ consider the pressure resistant	ce of fitting a	·											
Output signal / Supply													
Standard		RS485 with	Modbus RTI	U protocol	/ V _S = 9	. 32 V _{DC}							
Performance													
Accuracy ²													
Long term stability		≤ ± 0.1 % FS			conditions								
Measuring rate		500 Hz											
Delay time		500 msec											
² accuracy according to IEC 607	70 – limit poi	t adjustment (non-linearity, hysteresis, repeatability)											
Thermal effects (offset and	d span) ³												
Nominal pressure p _N	[bar]	-1 0 < 0.40 ≥ 0.40											
Tolerance band	[% FSO]	≤±0.75 ≤±1.5 ≤±0.75											
In compensated range ⁴	[°C]	-2	0 85		0	50			-20 8	5			
³ an optional cooling element car ⁴ the minimum compensation ter	n influence th				ling on insta	allation position	on and fill	ing condit	tions				
Permissible temperatures													
Filling fluid			silico	ne oil				food co	mpatible oil				
Medium ⁵			-40 ·	125 °C				-10 .	125 °C				
Medium with		ove	rpressure:	-40 250	°C		overp	ressure:	-10 250	°C			
cooling element 250 °C				-40 150			vacuu	ım:	-10 150	°C ⁶			
Electronics / environment					-40	0 85 °C							
Storage					-40	0 100 °C							
5 max. temperature of the medium 6 also for $p_{abs} \le 1$ bar	m for nomina	al pressure gau	ge > 0 bar: 15	50 °C for 60	minutes with	h a max. env	ironmenta	al tempera	ature of 50 °C				
Electrical protection													
Short-circuit protection		permanent											
Reverse polarity protection		on supply co	nnection no	damage,	but also no	function							
Electromagnetic compatibilit	у	emission an	d immunity a	according	o EN 6132	26							
Mechanical stability													
Vibration		according to DIN EN 60068-2-6 G 1/2": 20 g RMS (252000 Hz) others: 10 g RMS (252000 Hz)											
Shock		according to DIN EN 60068-2-27											
Filling fluids		1				9							
Standard		silicone oil											
Option		food compatible oil according to 21CFR178.3570 (Mobil SHC Cibus 32; Category Code: H1; NSF Registration No.: 141500) others on request											

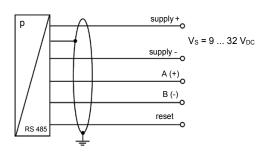
DCT 531P

Technical Data

Materials	
Housing / electrical connection	stainless steel 1.4404 (316 L)
Pressure port	stainless steel 1.4435 (316 L)
Diaphragm	stainless steel 1.4435 (316 L)
Seal	standard: FKM medium temperatures ≤ 200 °C
	option: FFKM (recommended for medium temperatures > 200 °C) without: Clamp, dairy pipe, Varivent® others on request
Media wetted parts	pressure port, seal, diaphragm
Miscellaneous	
Weight	approx. 200 g
Current consumption	max. 10 mA
Surface roughness	pressure port R _a < 0.8 μm (media wetted parts)
	diaphragm $R_a < 0.15 \mu m$
	weld seam $R_a < 0.8 \mu m$
Operational life	100 million load cycles
Installation position	any (standard calibration in a vertical position with the pressure port connection down; differing installation position for $p_N \le 2$ bar have to be specified in the order)
CE-conformity	EMC Directive: 2014/30/EU

Wiring diagram

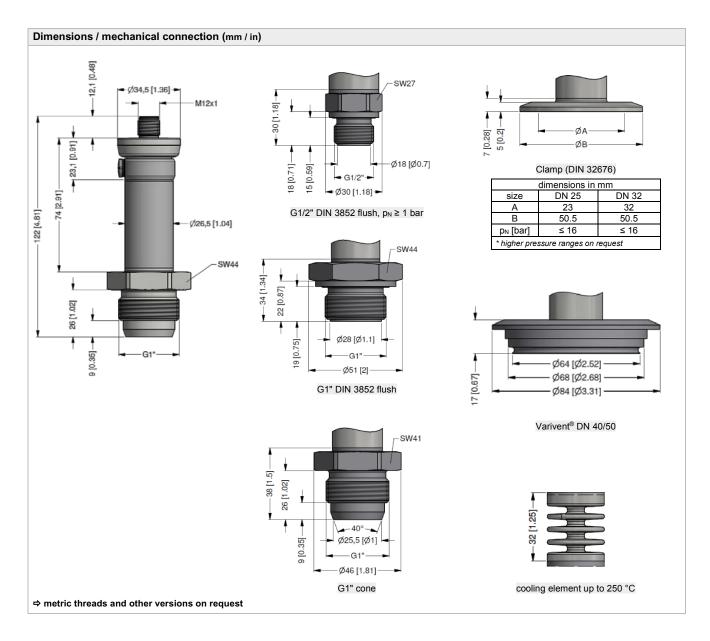
RS 485 / Modbus RTU



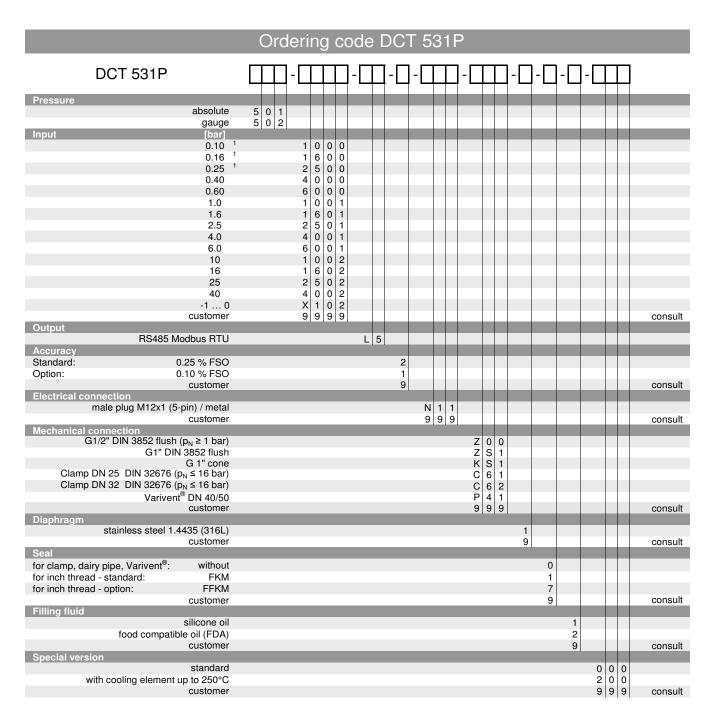
Pin configuration / electrical connection

Electrical connection	M12x1 / metal (5-pin), IP 67
Supply +	1
Supply –	3
A (+)	2
B (–)	4
Reset	5
Shield	plug housing





Configuration Modbus RTU					
Standard configuration	001	-	1	- 1	
Address					
Address	001				
	247				
Baud Rate					
4800 Bd			0		
9600 Bd			1		
19200 Bd			2		
38400 Bd			3		
Parity					
None				0	
Odd				1	
Even				2	
Configuration code (to specify with order)		-		-	



¹ absolute pressure possible from 0.4 bar

Varivent® is a brand name of GEA Tuchenhagen GmbH, Hastelloy® is a brand name of Haynes International Inc.



DCT 533P

Industrial **Pressure Transmitter** with IO-Link Interface

Process Connections with Flush Welded Stainless Steel Diaphragm

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

Nominal pressure

from 0 ... 100 mbar up to 0 ... 40 bar

Output signal

- IO-Link according to specification V 1.1
- data transfer rate 38.4 kbit/sec
- smart sensor profile

Special characteristics

- hygienic version
- diaphragm with low surface roughness
- CIP / SIP-cleaning up to 150 °C
- ingress protection IP 67 / IP 69

Optional versions

- different process connections
- cooling element for media temperatures up to 250 °C

The DCT 533P is suitable for food / beverage and pharmaceutical industry as well as, for applications where a totally flush pressure port required. The special design prevents condensation inside the pressure transmitter and thus a failure in applications with large temperature changes.

The integrated, standardised IO-Link interface increases productivity and supports the operator in service and maintenance. Properties can be read and qualified via IO-Link, which helps the user to assess the state of system or process.

Preferred areas of use are



Food and beverage



Pharmaceutical industry

Material and test certificates

- inspection certificate 3.1 according to EN 10204
- test report 2.2 according to EN 10204

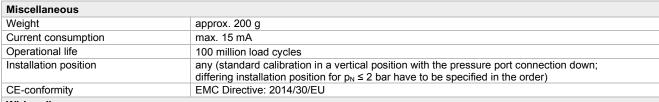




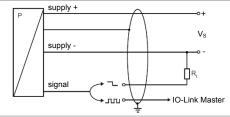




Input pressure range ¹																
Nominal pressure gauge	[bar]	-10	0.10	0.16	0.25	0.40	0.60	1	1.6	2.5	4	6				
Nominal pressure absolute	[bar]	-10	-	-	-	0.40	0.60	1	1.6	2.5	4	6				
Overpressure	[bar]	5	0.5	1	1	2	5	5	1.0	10	20	40				
Burst pressure ≥	[bar]	7.5	1.5	1.5	1.5	3	7.5	7.5	15	15	25	50				
<u> </u>	[bai]	7.5	1.5	1.5	1.5	<u> </u>	1.5	7.5	10	13	25					
Nominal pressure gauge / abs.	[bar]		10		16			25		40						
Overpressure	[bar]		40		80			80			105					
Burst pressure ≥	[bar]		50		120			120			210					
Vacuum resistance		$p_N > 1 b$	ar: unlim	ited vacu	um resist	ance		p _N ≤	1 bar: on	request						
¹ consider the pressure resistance of	fitting a	nd clamps														
Output signal / Supply																
Standard			(measure		ransmiss	ion)		V _S =	18 30	V_{DC}						
IO-Link		V 1.1 / s	lave / sm	art senso	or profile											
Data transfer		COM 2	OM 2 38.4 kbit/sec													
Mode		SIO / IO	-Link													
Standard		IEC 611	31-9													
Performance																
Accuracy ²		standar	d: ≤ ± 0.2	5 % FSO												
		option: ≤ ± 0.1 % FSO														
Switching current (SIO-Mode)		max. 20														
Switching frequency		max. 20														
Switching cycles		> 100 x	> 100 x 10 ⁶													
Long term stability		≤ ± 0.1 % FSO / year at reference conditions														
Turn-on time		SIO mode: approx. 20 msec														
Response time		SIO mode: < 4 msec														
Measuring rate		400 Hz														
² accuracy according to IEC 60770 –	limit poi	nt adjustm	ent (non-li	nearity, hy	steresis, re	epeatability	y)									
Thermal effects (offset and sp	an) ³															
Nominal pressure p _N	[bar]		-1	0			< 0.40			≥ (0.40					
	FSO]		≤ ± 0.7	75		:	≤ ± 1.5			≤ ±	0.75					
In compensated range 4	[°C]		-20	85		(0 50			-20	85					
³ an optional cooling element can infi					an depend	ing on inst	allation po	sition and f	filling cond	itions						
4 the minimum compensation temper	rature de	epenas on	tne filling f	iuia usea												
Permissible temperatures				silicone	a di l				food o	ama atibla	انما					
Filling fluid Medium ⁵				-40 12	-					ompatible 125 °C						
Medium with			overnree		40 250	°C		0)/0		125 C						
cooling element 250 °C			vacuum:		40 250 40 150				Jum:		150 °C 6					
Electronics / environment			vaoaam.		10 100		10 85		JUIII.	10	100 0					
Storage							10 100									
⁵ max. temperature of the medium fo	r nomina	al pressure	gauge >	0 bar: 150	°C for 60 r				tal temper	rature of 50) °C					
⁶ also for p _{abs} ≤ 1 bar																
Electrical protection																
Short-circuit protection		perman														
Reverse polarity protection							no function	1								
Electromagnetic compatibility		emissio	n and imi	munity ac	cording to	EN 613	326									
Mechanical stability																
Vibration			DIN EN 6				MS (252	2000 Hz)			1S (252	000 Hz				
Shock		acc. to I	DIN EN 6	0068-2-2	7 G 1/2	:": 500 g	/ 1 msec		others	: 100 g /	1 msec					
Filling fluids																
Standard		silicone oil food compatible oil according to 21CFR178.3570														
Option							3570 NSF Regis	stration N	o.: 14150	00) oth	ers on re	quest				
Materials																
Housing / electrical connection																
Pressure port		stainless steel 1.4435 (316 L), Ra < 0.8 µm (media wetted parts and weld seam)														
Diaphragm			s steel 1.			< 0.15 µı										
Seals		option:	tandard: FKM (recommended for medium temperatures ≤ 200 °C) potion: FFKM (recommended for medium temperatures > 200 °C) others on request Clamp, dairy pipe, Varivent®: without													
Modia wotted parts						ul										
Media wetted parts		pressur	e port, se	aı, ulapn	iayiii	pressure port, seal, diaphragm										



Wiring diagram

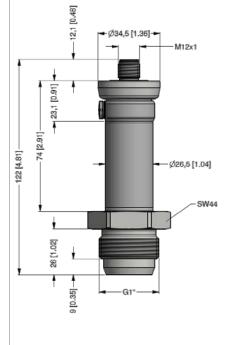


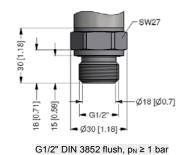
Pin configuration / electrical connection

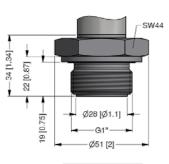
Electrical connection	M12x1 / metal (4-pin)
Supply +	1
Supply –	3
SIO / IO Link	4
Shield	plug housing

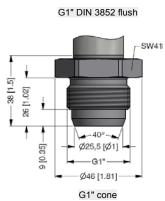


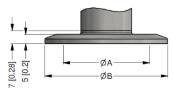
Dimensions / mechanical connection (mm / in)





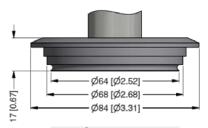






Clamp (DIN 32676)

dimensions in mm								
size	DN 25 DN 32							
Α	23	32						
В	50.5	50.5						
p _N [bar] ≤ 16 ≤ 16								
* higher pre	* higher pressure ranges on request							

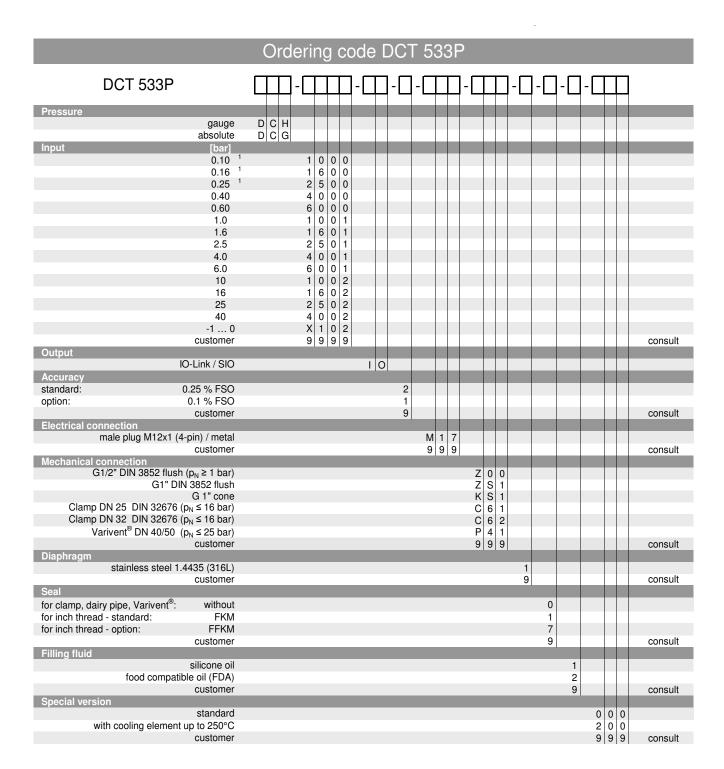


Varivent® DN 40/50 p_N ≤ 25 bar



cooling element up to 250 °C

⇒ metric threads and other versions on request



¹ absolute pressure possible from 0.4 bar

Varivent® is a brand name of GEA Tuchenhagen GmbH, Hastelloy® is a brand name of Haynes International Inc.



DCT 553P

Industrial **Pressure Transmitter** with IO-Link Interface

Process Connections with semi-flush ceramic diaphragm

accuracy according to IEC 60770: Standard: 0.35 % FSO Option: 0.25 % FSO

Nominal pressure

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

Output signal

- IO-Link according to specification V 1.1
- data transfer rate 38.4 kbit/sec
- smart sensor profile

Special characteristics

- hygienic version
- high purity ceramic 99.9 % Al₂O₃ diaphragm
- high overpressure capability
- ingress protection IP 67 / IP 69

Optional versions

different process connections

The pressure transmitter DCT 553P is used in the food and pharmaceutical industries or in applications where a dead space-free process connection is required. A capacitive ceramic pressure sensor developed in-house is used as the basic sensor, which is characterized by a high overload and excellent surface quality.

The special design prevents the condensation inside the pressure transmitter and thus failure in applications with large temperature changes.

The integrated, standardised IO-Link interface increases productivity and supports the operator in service and maintenance.

Preferred areas of use are



Food industry



Chemical and petrochemical industry

Material and test certificates

- inspection certificate 3.1 according to EN 10204
- test report 2.2 according to EN 10204





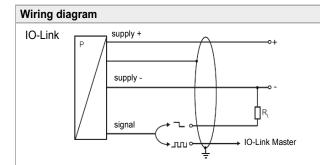




DCT 553P

Input pressure range																
Nominal pressure gauge	[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
Nominal pressure absolute	[bar]		on request				0.4	0.6	1	1.6	2.5	4	6	10	16	20
Overpressure	[bar]	2	2	4	4	6	6	8	8	15	25	25	35	35	45	45
Burst pressure ≥	[bar]	-0	-0.2 -0.3				-0.5				-1					

Output signal / Supply							
Standard	IO-Link (measured value transmission) $V_S = 18 30 V_{DC}$ SIO (switching output)						
IO-Link	V 1.1 / slave / smart sensor profile						
Data transfer	COM 2 38.4 kbit/sec						
Mode	SIO / IO-Link						
Standard	IEC 61131-9						
Performance							
Accuracy ¹	standard: $\leq \pm 0.35 \%$ FSO						
	option for $p_N \ge 0.6$ bar: $\le \pm 0.25 \%$ FSO						
Switching current (SIO-Mode)	max. 200 mA						
Switching frequency	max. 200 Hz						
Switching cycles	> 100 x 10 ⁶						
Long term stability	≤ ± 0.1 % FSO / year at reference conditions						
Turn-on time	SIO mode: approx. 20 msec						
Response time	SIO mode: < 4 msec						
Measuring rate	400 Hz						
¹ accuracy according to IEC 60770 – li	imit point adjustment (non-linearity, hysteresis, repeatability)						
Thermal effects (offset and spa	n)						
Tolerance band	≤±1% FSO						
In compensated range	20 80 °C						
Permissible temperatures							
Medium	-40 125 °C						
Electronics / environment	-40 85 °C						
Storage	-40 100 °C						
Electrical protection							
Short-circuit protection	permanent						
Reverse polarity protection	on supply connection no damage, but also no function						
Electromagnetic compatibility	emission and immunity according to EN 61326						
Mechanical stability	<u> </u>						
Vibration	10 g RMS (20 2000 Hz) according to DIN EN 60068-2-6						
Shock	100 g / 1 msec according to DIN EN 60068-2-27						
Materials							
Pressure port	stainless steel 1.4404 (316L)						
Housing	stainless steel 1.4404 (316L)						
Seals	FKM						
	EPDM						
	others on request						
Diaphragm	ceramic Al ₂ O ₃ 99.9 %						
Media wetted parts	pressure port, seals, diaphragm						
Miscellaneous							
Current consumption	max. 15 mA						
Weight	min. 200 g						
Installation position	any						
Operational life	100 million load cycles						
CE-conformity	EMC-directive: 2014/30/EU						
•	· · · · · · · · · · · · · · · · · · ·						

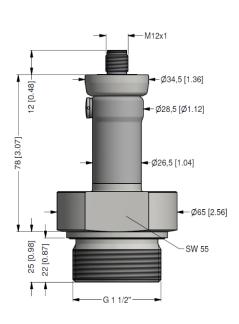


Pin configuration / electrical connection

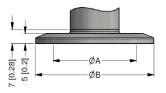
Electrical connection	M12x1 / metal (4-pin)
Supply +	1
Supply –	3
SIO / IO Link	4
Shield	housing



Dimensions / mechanical connection (mm / in)

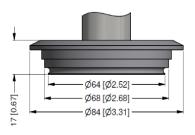


G 1 1/2" flush (DIN 3852)



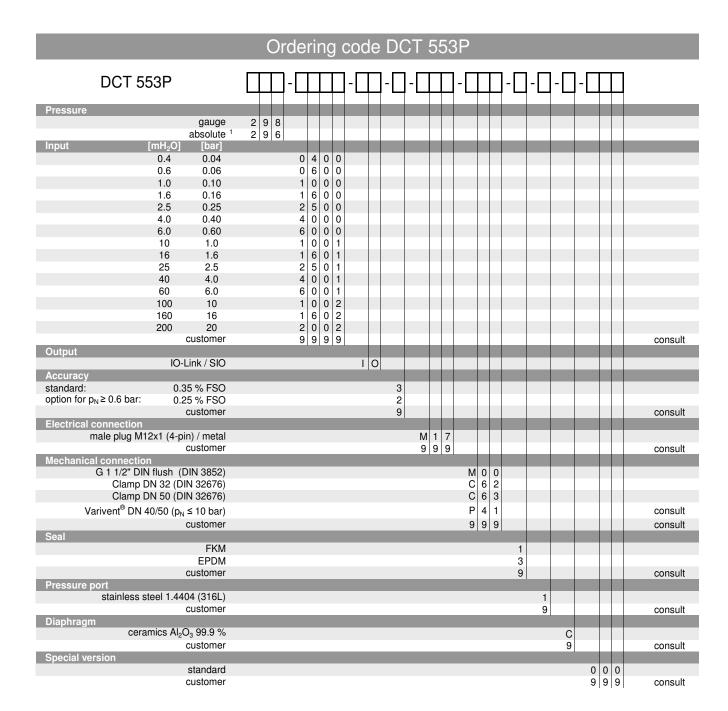
Clamp (DIN 32676)

dimensions in mm		
size	DN 25	DN 50
Α	23	45
В	50.5	64
p _N [bar]	≤ 16	≤ 16
* higher pressure ranges on request		



Varivent® DN 40/50 (p_N ≤ 10 bar)

DCT 553P



¹ absolute pressure from 0.04 bar up to 0.25 bar on request

 ${\sf Varivent}^{\sf B} \ {\sf is} \ {\sf a} \ {\sf brand} \ {\sf name} \ {\sf of} \ {\sf GEA} \ {\sf Tuchenhagen} \ {\sf GmbH}$



Industrial **Pressure Transmitter** with RS485 Modbus RTU

Ceramic Sensor

accuracy according to IEC 60770: 0.5 % FSO

Nominal pressure

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

Output signal

RS485 with Modbus RTU protocol

Special characteristic

- good thermal behaviour
- good long term stability
- reset function

Optional versions

- pressure port G 1/2" open port PVDF for aggressive media (up to 60 bar)
- oxygen application

The DCT 561 with RS485 interface uses the communication protocol Modbus RTU which has found the way in industrial communication as an open protocol. The Modbus protocol is based on a master slave architecture with which up to 247 slaves can be questioned by a master - the data will transfer in binary form.

The sensor technology of the DCT 561 is the same as those of the proven pressure transmitter DMK 331, whereby the DCT 561 is suitable for pasty, polluted and aggressive media as well as for low-pressure oxygen applications.

The modular concept of the pressure transmitter allows customized electrical or mechanical connections, so it is easy to adapt the DCT 561 to different conditions on-site.

Preferred areas of use are



Plant and machine engineering



Environmental engineering (water - sewage - recycling)



Medical technology









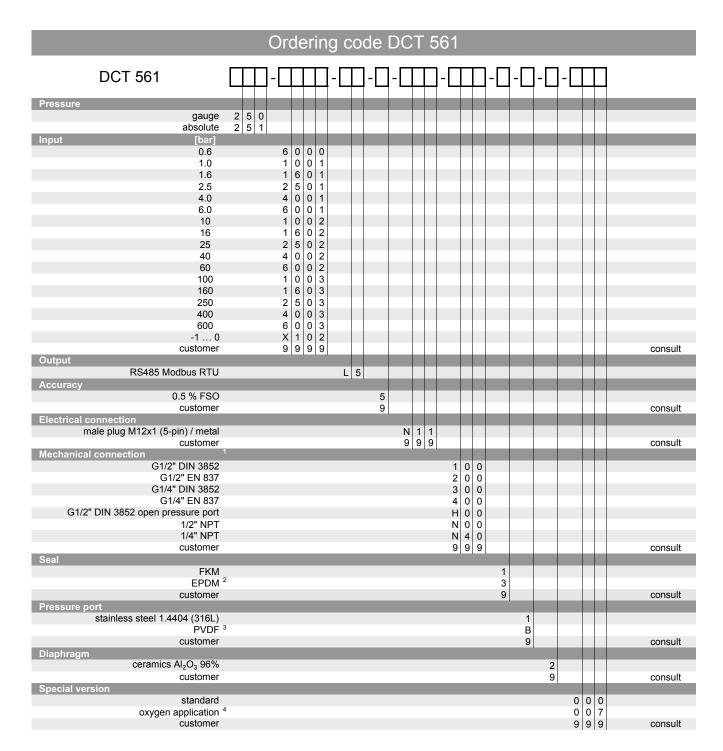
Technical Data

0.6	400 400 69	10 16 10 16 20 50 30 70 00 600 50 800 000 1100
2 3 4 4 40 60 120 120 150 180 Jum resistance ges up to 60 bar Modbus RTU protoco V _{DC} O O / year at reference	12 12 15 18 160 250 400 400 400 60	20 50 30 70 00 600 50 800
4 4 40 60 120 120 150 180 Jum resistance ges up to 60 bar Modbus RTU protoco V _{DC} O O / year at reference	15 18 160 250 40 66	30 70 00 600 50 800
40 60 120 120 150 180 uum resistance ges up to 60 bar Modbus RTU protoc	160 250 40 400 400 68	00 600 50 800
120 120 150 180 uum resistance ges up to 60 bar Modbus RTU protoc V _{DC} O O / year at reference	400 400 69	50 800
120 120 150 180 uum resistance ges up to 60 bar Modbus RTU protoc V _{DC} O O / year at reference	400 400 69	50 800
150 180 Jum resistance Jum resistance Jum to 60 bar Modbus RTU protoc V _{DC} O O / year at reference		
Jum resistance ges up to 60 bar Modbus RTU protoc V _{DC} O O / year at reference	500 750 10	000 1100
Modbus RTU protoc V _{DC} O O / year at reference		
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ent (non-linearity, hyst		
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ent (non-linearity, hyst		
e temperatures		
O / 10 K		
125 °C	ent: -25 85 °C sto	rage: -40 80 °
-25 60 °C		
out also no function		
immunity according		
,		
5 2000 Hz)	to DIN EN 60068-2-6	
ec	to DIN EN 60068-2-27	
,0		
inless steel 1.4404		
	ge up to 60 bar: PVDF	others on reques
el 1.4404 (316L)		
M		
PDM (for $p_N \le 160 \text{ b}$		others on reques
₃ 96 %		
, seal, diaphragm		
ar: O-ring in FKM ' 25 bar / 150° C	roval); permissible maximum	values are
]		
,		
ad cycles		
	automont Directives 2014/69	0/ELL (madula A)
	Equipment Directive: 2014/68	or⊏o (module A)
e: 2014/30/EU		
e: 2014/30/EU ermissible overpressu		
ermissible overpressu		
	. V _{DC}	V _{DC}

reset

Pin configuration			
Electrical connection	M12x1, metal (5-pin)		5
Supply +	1	3	2
Supply –	3		
A (+)	2		
B (–)	4		
Reset	5		
Shield	plug housing		
Dimensions (mm / in)			
standard	options		_
41]	4,5 [1.36] 4,5 [1.36] G1/4"	SW27 G1/2" Ø10 [Ø0.39]	↑
86 9	G1/4" DIN 3852	G1/2" DIN 3852 open port	G1/2" EN 837
G1/2" G1/2"	SW27 - G1/4"	SW27 6/2.0] 02 1/2" NPT	SW27 1/4" NP
G1/2" DIN 3852 with M12x1	G1/4" EN 837	1/2" NPT	1/4" NPT
⇒ metric threads and other version	ns on request		

Configuration Modbus RTU					
Standard configuration	001	-	1	-	1
Address					
Address	001				
	247				
Baud Rate					
4800 Bd			0		
9600 Bd			1		
19200 Bd			2		
38400 Bd			3		
Parity					
None					0
Odd					1
Even					2
				·	,
Configuration code (to specify with order)		-		-	



¹ metric threads and others on request

 $^{^2}$ possible for nominal pressure range $p_{N}\!\leq 160$ bar

³ PVDF only with G1/2" DIN 3852 open pressure port (up to 60 bar); permissible medium temperature: -25 ... 60 °C

⁴ oxygen application with FKM-seal up to 25 bar



Industrial Pressure Transmitter with i²C interface

Ceramic Sensor

accuracy according to IEC 60770: 0.5 % FSO

Nominal pressure

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

Digital output signal

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

Special characteristic

 pressure port G 1/2" open port PVDF for aggressive media

Optional versions

customer specific versions

Regardless of whether you need a pressure transmitter with i²C interface for an application in the laboratory area or in plant and mechanical engineering, the DCT 562 is adaptable for the detection of pressures and fill levels of pasty, contaminated Universal or aggressive media. Various mechanical and electrical connections are available.

The integrated i²C interface offers the user various options in the area of addressing and data acquisition, as well as simple control and use of the network for fast and slow bus users.

Preferred areas of use are



Plant and machine engineering



Energy industry



Laboratory applications



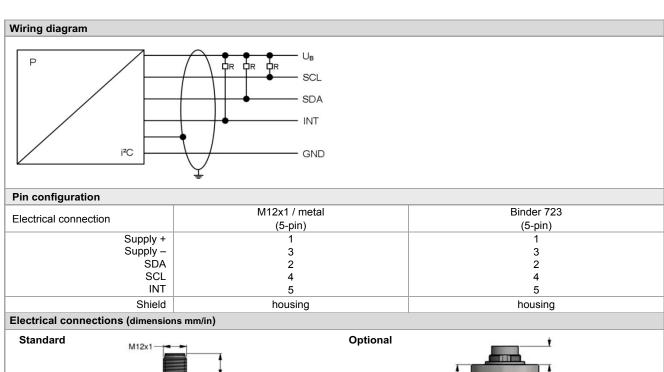


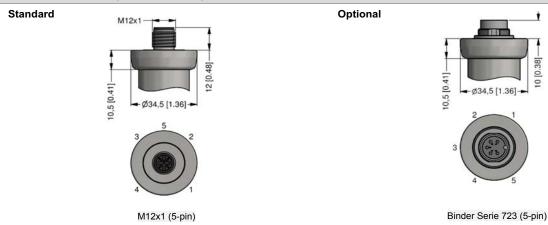


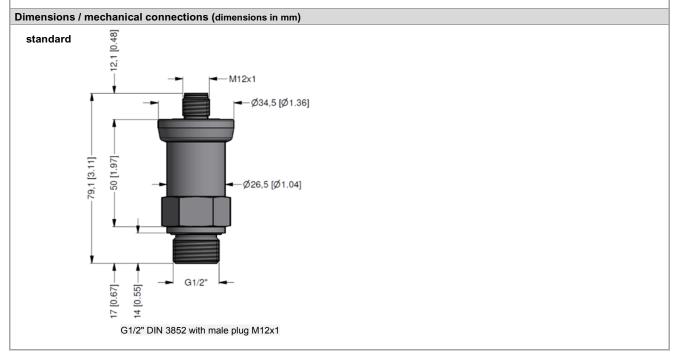


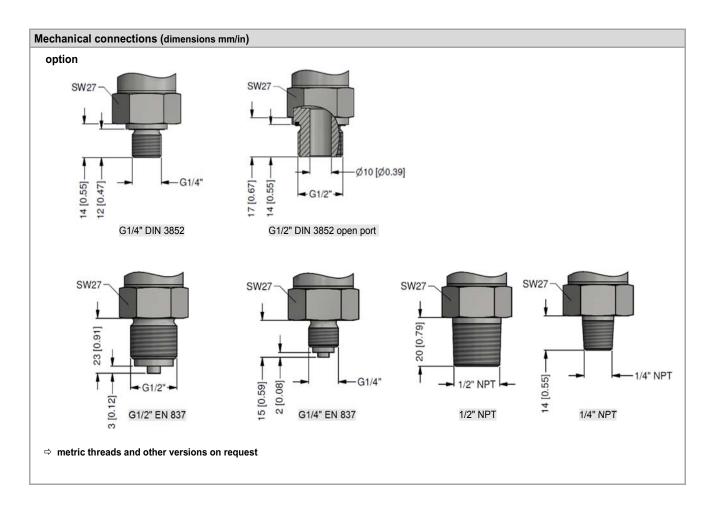
Input pressure range ¹	Input pressure range ¹																		
Nominal pressure gauge	[bar]	-10	0.4	0.6	1	1.6	2.5	4	6	10	16	25	40	60	100	160	250	400	600
Nominal pressure absolute	[bar]	-	-	0.6	1	1.6	2.5	4	6	10	16	25	40	60	100	160	250	400	600
Overpressure	[bar]	4	1 2 2 4 4 10 10 20 40 40 100 100 200 400 400 600 80								800								
Burst pressure ≥	[bar]	7	2	4	4	5	7.5	12	18	30	50	75	120	180	300	500	750	1000	1100
Permissible vacuum		p _N ≥ 1 k	oar: u	nlimite	d vac	uum r	esista	ince											
p _N < 1 bar: on request																			
¹ PVDF pressure port possible for nominal pressure ranges up to 60 bar																			

Output signal / Supply	
i ² C	V _S = 3.5 5.5 V _{DC}
Performance	
Accuracy ²	≤±0.5 % FSO
Max. I/O current	10 mA
Long term stability	≤ ± 0.3 % FSO / year at reference conditions
Response time	1.5 msec + transmission time (depending on bus frequency)
Measuring rate	500 Hz
² accuracy according to IEC 60770 – I	imit point adjustment (non-linearity, hysteresis, repeatability)
Thermal effects (offset and spa	n)
Thermal error	≤±0.2 % FSO / 10 K
In compensated range	0 85 °C
Permissible temperatures ³	
Medium	-40 125 °C
Electronics / environment	-40 85 °C
Storage	-40 100 °C
³ for pressure port in PVDF the mediu.	m temperature is -30 60 °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	standard: stainless steel 1.4404 (316 L)
	optional for G1/2" DIN 3852 open port with nominal pressure range max. up to 60 bar: PVDF
	others on request
Housing	stainless steel 1.4404 (316 L)
Seals	standard: FKM
	option: EPDM (for $p_N \le 160$ bar)
	others on request
Diaphragm	ceramic Al ₂ O ₃ 96 %
Media wetted parts	pressure port, seals, diaphragm
Miscellaneous	
Current consumption	< 15 mA
Weight	approx. 140 g
Ingress protection	IP 67
Installation position	any
Operational life	100 million load cycles
CE-conformity	EMC Directive: 2014/30/EU Pressure Equipment Directive: 2014/68/EU (module A) ⁴
·	s with maximum permissible overpressure > 200 bar
	· · · · · · · · · · · · · · · · · · ·



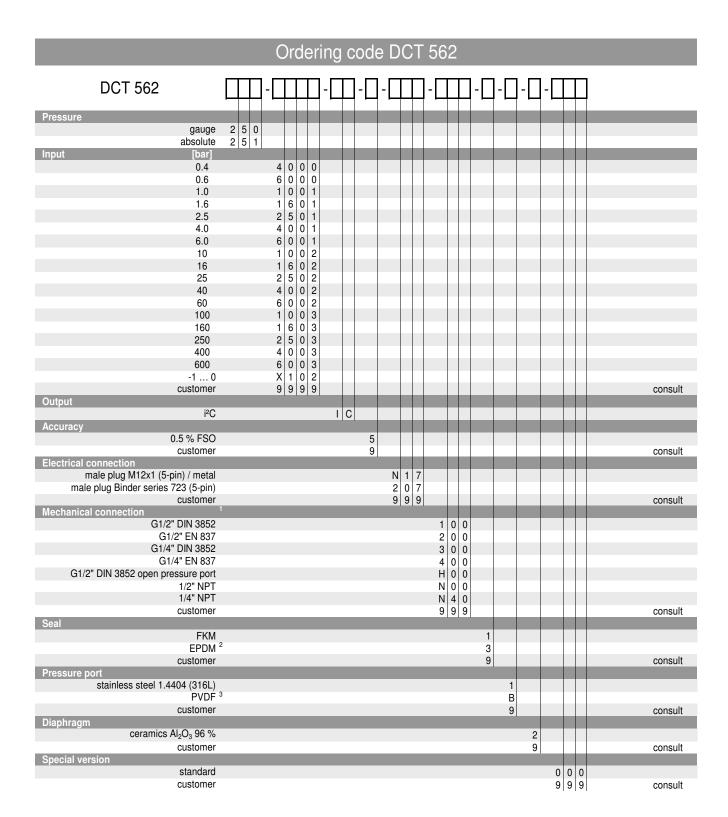






Configuration i ² C-interface																	
Stand configuration	0	5	0	-	0	-	0	-	0	-	0	-	0	0	0	0	1
Slave address																	
address	0	0	1														
	1	2	7														
Type of result register																	
32bit IEEE float					0												
16bit Integer					1												
Byte order of 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
0																	
Configuration code (has to be defined with the order)				-		-		-		-		-					

Ordering Code



¹ metric threads and others on request

 $^{^2}$ possible for nominal pressure ranges $p_N\!\le\!160$ bar

³ PVDF only with G1/2" DIN 3852 open pressure port (up to 60 bar); permissible medium temperature: -30 ... 60 °C



Industrial **Pressure Transmitter** with IO-Link Interface

Ceramic Sensor

accuracy according to IEC 60770: 0.5 % FSO

Nominal pressure

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

Digital output signal

- IO-Link according to specification V 1.1
- data transfer 38.4 kbit/s
- smart sensor profile

Special characteristic

- good thermal behaviour
- good long term stability

Optional versions

- pressure port G 1/2" flush for pasty media (up to 25 bar)
- pressure port G 1/2" open port PVDF for aggressive media (up to 60 bar)
- oxygen application

IO-Link is a digital interface for sensors and actuators, which is worldwide standardized by IEC 61131-9. IO-Link does not have a bus topology, but it is a powerful point to-point communication, where the device can be parameterized and the measured values transferred. The integration to the master is easy by using the IODD-file.

The sensor technology of the DCT 563 is the same as those of the proven pressure transmitter DMK 331, whereby the DCT 563 is suitable for pasty, polluted and aggressive media as well as for low-pressure oxygen applications.

The modular concept of the pressure transmitter allows customized electrical or mechanical connections, so it is easy to adapt the DCT 563 to different conditions on-site.

Preferred areas of use are



Plant and machine engineering



Environmental engineering (water - sewage - recycling)



Medical technology











Input pressure range 1

Input pressure range 1										
Nominal pressure gauge	[bar]	-10 ²	0.6	1	1.6	2.5	4	6	10	16
Nominal pressure abs.	[bar]	-	0.6	1	1.6	2.5	4	6	10	16
Overpressure	[bar]	3	2	3	5	5	12	12	20	50
Burst pressure ≥	[bar]	4	4	4	7	7.5	15	18	30	70
Nominal pressure		25	40	60	10	n /	160	250	400	600
gauge / abs.	[bar]	25	40	60	10	J	160	250	400	600
Overpressure	[bar]	50	120	120	20	200 400 400		400	650	800
Burst pressure ≥	[bar]	75	150	180	30	0 :	500	750	1000	1100
Vacuum resistance		unlimited va								
¹ PVDF pressure port possible ² accuracy ≤ 1 % FSO	e for nom	inal pressure r	anges up to	60 bar						
Output signal / Supply										
Standard		IO-Link (m	easured va	lue / status	transmissio	n) / V _S = 18	3 30 VD	C		
		SIO (switch	hing output)						
IO-Link		V 1.1 / slav	/e / smart s	ensor profile	e					
Data transfer		COM2 38	3.4 kbit/s							
Mode		SIO / IO-Li	nk (COMx)							
Standard		IEC 61131	-2, IEC 611	31-9						
Performance										
Accuracy ³		≤ ± 0.5 % F	SO							
Switching current (SIO-Mo	ode)	max. 200 r								
Switching frequency	000)	max. 200 F								
Switching cycles		> 100 x 10								
Long term stability				at reference	conditions					
Turn-on time		SIO modus			CONTUNIONS					
Response time			s: < 4 msec							
			s. < 4 msec							
Measuring rate	20770 lin	400 Hz	tmant (nan li	naaritu busata	rania ranaat	- h : l : h . l				
³ accuracy according to IEC 6			trnent (non-iii	nearity, riyste	resis, repeat	ability)				
Thermal effects (offset a	and Spar	·	-00 / 40 /							
Thermal error		≤ ± 0.3 % F	-SO / 10 K							
In compensated range		0 85 °C								
Permissible temperature	es ⁴									
Medium		-25 125								
Electronics / environment		-25 85								
Storage		-40 85								
for pressure port in PVDF the	ne mediun	n temperature	is -25 60	°C						
Electrical protection										
Short-circuit protection		permanent								
Reverse polarity protectio	n	no damage	e, but also r	no function						
Electromagnetic compatib				y according	to EN 6132	26				
Mechanical stability				, ,	<u> </u>					
Vibration		10 a RMS	(25 2000	Hz) ac	cording to F	IN EN 600	68-2-6			
Shock		500 g / 1 m			cording to E					
		500 g / 1 II	1560	aci	cording to L	IIN EIN 000	00-2-21			
Materials				1 1 1 1 0 1	(0.1.0.1.)					
Pressure port		optional for	r G1/2" ope			ssure rang	e up to 60	bar: PVDF	others	on reques
Housing			teel 1.4404	(316L)						
Seals (media wetted)		standard: I options: I		p _N ≤ 160 ba	r)				others	on reques
Diaphragm		ceramic Al								
Media wetted parts		pressure p	ort, seal, di	aphragm						
Miscellaneous										
Option oxygen application	1	for p _N ≤ 25		ng in FKM V ar / 150° C	'i 567 (with	BAM-appro	oval); perm	nissible maxi	imum values	are
Current consumption		max. 15 m.		ai / 130 C						
Weight										
vveigiii		approx. 14	v y							

any

IP 67

 $^{\rm 5}$ This directive is only valid for devices with maximum permissible overpressure > 200 bar

100 million load cycles

EMC Directive: 2014/30/EU

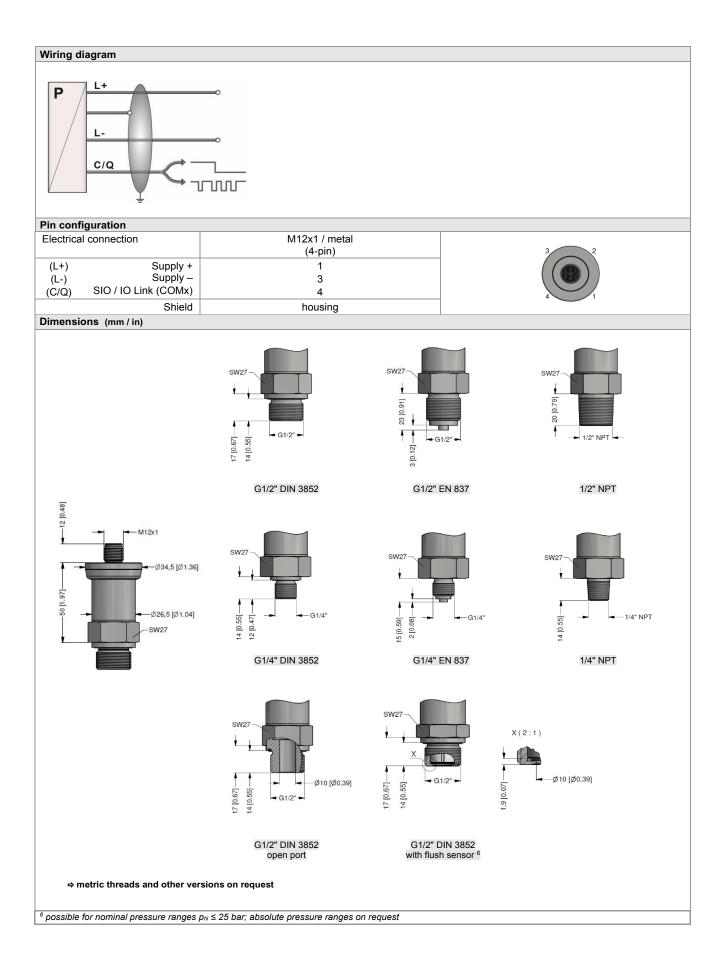
Pressure Equipment Directive: 2014/68/EU (module A) ⁵

Installation position

Protection class

Operational life

CE-conformity



Ordering Code

		Ord	erin	g co	ode	D(CT	- 5	563	3	i					i		
DCT 563]-[_		-	- <u> </u>]-□].	-[1]-	·□		-[]-[
Pressure											ı							
gauge	D C 5	5																
absolute [bar]	DICIE							٠			٠							
0.6		6 0	0 0					Т			Т							
1.0 1.6		1 0	0 1 0 1															
2.5		2 5	0 1															
4.0		4 0	0 1															
6.0 10		6 0																
16		1 6	0 2															
25		2 5	0 2															
40 60		4 0 6 0	0 2 0 2															
100		1 0	0 3															
160 250		1 6 2 5	0 3 0 3															
400		4 0	0 3															
600		6 0	0 3															
-1 0 customer		X 1 9 9	0 2 9 9															consult
Output		9 3	9 9															Consuit
IO-Link (COMx) / SIO				10							I							
Accuracy 0.5 % FSO	_	_	-	_	5		-	т			т		-			_		
customer					9													consult
Electrical connection						N 4	1	7										
male plug M12x1 (4-pin) / metal customer						M 9	1 9	9										consult
Mechanical connection 1																		
G1/2" DIN 3852 G1/2" EN 837									1	0 0	0							
G1/4" DIN 3852									3	0 (0							
G1/4" EN 837									4	0	0							
G1/2" DIN 3852 with semi-flush sensor 2									F	0	0							
G1/2" DIN 3852 open pressure port									Н	0 0	0							
1/2" NPT									N	0 0	0							
1/4" NPT customer									N	4 (0							consult
Seals									9	<i>3</i> ₹	اد							Consuit
FKM												1						
EPDM ³												3 9						consult
Pressure port customer												9						Consuit
stainless steel 1.4404 (316L)													1					
PVDF 4 customer													B 9					consult
Diaphragm																		CONSUIT
ceramics Al ₂ O ₃ 96%														2 9				
Special version customer														9				consult
standard															0	0	0	
oxygen application 5															0	0 0 9	7	
customer															9	9	9	consult

¹ metric threads and others on request

 $^{^{2}}$ possible for nominal pressure ranges $p_{N} \leq 25$ bar; absolute pressure ranges on request

³ possible for nominal pressure range p_N ≤ 160 bar

 $^{^4}$ PVDF only with G1/2" DIN 3852 open pressure port (up to 60 bar); permissible medium temperature: -25 ... 60 $^\circ$ C

 $^{^{\}rm 5}$ oxygen application with FKM-seal up to 25 bar



Industrial Pressure Transmitter with RS485 Modbus RTU

Ceramic Sensor

accuracy according to IEC 60770: standard: 0.35 % FSO option: 0.25 % FSO

Nominal pressure

from 0 ... 100 mbar up to 0 ... 60 bar

Output signal

RS485 with Modbus RTU protocol

Special characteristic

- diaphragm ceramics 99.9 % Al₂O₃
- high long-term stability
- reset function

Optional versions

- different kinds of inch threads
- pressure port in PVDF or PP-HT for aggressive media on request

The pressure transmitter DCT 571 was developed for applications in plant and mechanical engineering or in laboratory technology, e.g. designed to measure pressures or levels of pasty, contaminated or aggressive media.

The self-developed pressure sensor made of 99.9% pure ceramic is characterized by a high overload capacity, as well as temperature and media resistance.

The integrated RS 485 interface and the MODBUS RTU protocol used ensure reliable and robust data transmission, which also works smoothly over long distances.

Preferred areas of use



Plant and machine engineering



Laboratory techniques



Water



Aggressive media







Modbus®

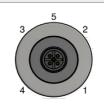
Input pressure range																
Nominal pressure gauge	[bar]	0.1	0.16	0.25	0.4	0.6	1	1.6	2.5	4	6	10	16	25	40	60
Level	[mH ₂ O]	1	1.6	2.5	4	6	10	16	25	40	50	100	160	250	400	600
Overpressure	[bar]	3	4	5	5	5	7	7	12	12	20	20	20	40	70	70
Burst pressure ≥	[bar]	4	6	8	8	7	9	9	18	18	25	30	30	45	80	80
Permissible vacuum	[bar]	-0.2	-0.3	-0.5 -1 (unlimited vacuum resistance)												

Output signal			
Digital (pressure)	RS485 with Modbus RTU proto	col	
Supply	· ·		
Direct current (DC)	V _S = 9 32 V _{DC}		
Performance	10		
Accuracy ¹	standard:	≤ ± 0.35 % FSO	
, local acy	option:	≤ ± 0.25 % FSO	
Long term stability	≤ ± 0,1 % FSO / year at referen		
Measuring rate	500 Hz	ioo donaraana	
Delay time	500 msec		
•	limit point adjustment (non-linearity, hyste	eresis repeatability)	
Thermal effects (offset and spa		noois, repeatability)	
Tolerance band	≤±1% FSO		
In compensated range	-20 80 °C		
Permissible temperatures ²	-20 00 0		
<u> </u>	-40 125 °C		
Medium			
Electronics / environment	-40 85 °C -40 85 °C		
Storage		2 00 00	
	the operation medium temperature is -30) 60 °C	
Electrical protection			
Short-circuit protection	permanent		
Reverse polarity protection	no damage, but also no function		
Electromagnetic compatibility	emission and immunity accordi	ng to EN 61326	
Mechanical stability			
Vibration	10 g RMS (25 2000 Hz)	according to DIN EN 60068-2-6	
Shock	100 g / 1 msec	according to DIN EN 60068-2-27	
Materials			
Pressure port	standard:	stainless steel 1.4404 (316 L)	
	option for G3/4" flush:	PVDF, PP-HT on request	
	others on request		
Housing	stainless steel 1.4404 (316 L)		
	others on request		
Seals (O-rings)	standard:	FKM	
	options:	EPDM	
		FFKM	
	others on request		
Diaphragm	ceramics Al ₂ O ₃ 99.9 %		
	others on request		
Media wetted parts	pressure port, seals, diaphragn	1	
Miscellaneous			
Ingress protection	IP 67		
Installation position	any		
Current consumption	max. 10 mA		
Weight	approx. 180 g		
Operational life	100 million load cycles		
CE-conformity	EMC Directive: 2014/30/EU		

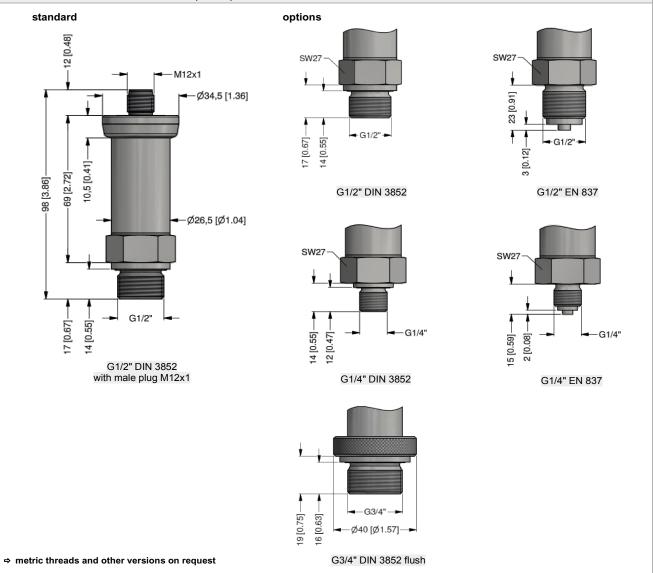


Pin configuration / electrical connection

Electrical connection	M12x1, metal (5-pin)
Supply +	1
Supply –	3
A (+)	2
B (–)	4
Reset	5
Shield	plug housing

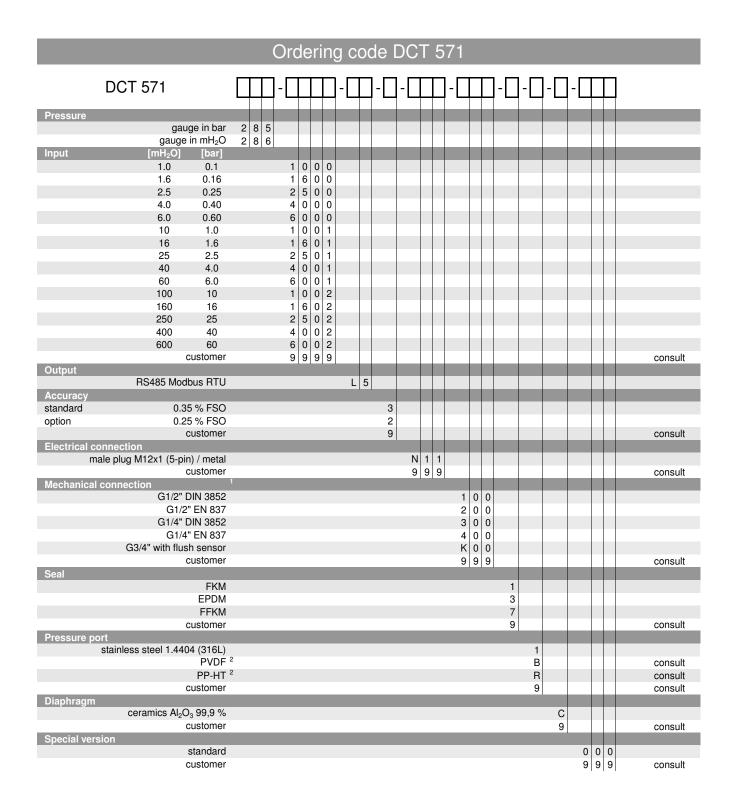


Dimensions / mechanical connection (mm / in)



Configuration Modbus RTU					
Standard configuration	001	-	1	-	1
Address					
Address	001				
	247				
Baud Rate					
4800 Bd			0		
9600 Bd			1		
19200 Bd			2		
38400 Bd			3		
Parity					
None					0
Odd					1
Even					2
Configuration code (to specify with order)		-		-	

Ordering Code



¹ metric threads and others on request

 $^{^2}$ only for mechanical connection G3/4"; for pressure port in PVDF or PP-HT the operation medium temperature is -30 \dots 60 $^{\circ}$ C

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Industrial pressure measurement technology from 0.1 mbar up to 6000 bar

pressure transmitters, electronic pressure

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water



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