



# IDCT 533P

## Industrial Pressure Transmitter with IO-Link Interface

Process Connections with Flush Welded  
Stainless Steel Diaphragm

accuracy according to IEC 60770:  
standard:  $\leq \pm 0.25\%$  FSO  
option:  $\leq \pm 0.1\%$  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 300 °C

The IDCT 533P is suitable for food / beverage and pharmaceutical industry as well as, for applications where a totally flush pressure port is 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



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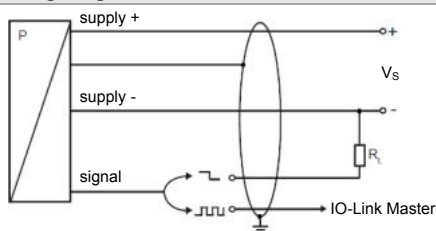
Technical Data

Input pressure range <sup>1</sup>												
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 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		
Overpressure	[bar]	40		80			80			105		
Burst pressure ≥	[bar]	50		120			120			210		
Vacuum resistance	p <sub>N</sub> > 1 bar: unlimited vacuum resistance							p <sub>N</sub> ≤ 1 bar: on request				
<sup>1</sup> consider the pressure resistance of fitting and clamps												
Output signal / Supply												
Standard	IO-Link (measured value transmission) SIO (switching output)							V <sub>S</sub> = 18 ... 30 V <sub>DC</sub>				
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 <sup>2</sup>	standard: ≤ ± 0.25 % FSO option: ≤ ± 0.1 % FSO											
Switching current (SIO-Mode)	max. 200 mA											
Switching frequency	max. 200 Hz											
Switching cycles	> 100 x 10 <sup>6</sup>											
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											
<sup>2</sup> accuracy according to IEC 60770 – limit point adjustment (non-linearity, hysteresis, repeatability)												
Thermal effects (offset and span) <sup>3</sup>												
Nominal pressure p <sub>N</sub>	[bar]	-1 ... 0				< 0.40				≥ 0.40		
Tolerance band	[% FSO]	≤ ± 0.75				≤ ± 1.5				≤ ± 0.75		
In compensated range <sup>4</sup>	[°C]	-20 ... 85				0 ... 50				-20 ... 85		
<sup>3</sup> an optional cooling element can influence thermal effects for offset and span depending on installation position and filling conditions												
<sup>4</sup> the minimum compensation temperature depends on the filling fluid used												
Permissible temperatures												
Filling fluid	silicone oil						food compatible oil					
Medium <sup>5</sup>	-40 ... 125 °C						-10 ... 125 °C					
Medium with cooling element <sup>6</sup>	overpressure: -40 ... 300 °C vacuum: -40 ... 150 °C <sup>7</sup>						overpressure: -10 ... 250 °C vacuum: -10 ... 150 °C <sup>7</sup>					
Electronics / environment	-40 ... 85 °C											
Storage	-40 ... 100 °C											
<sup>5</sup> max. temperature of the medium for nominal pressure gauge > 0 bar: 150 °C for 60 minutes with a max. environmental temperature of 50 °C												
<sup>6</sup> max. temperature depends on the used sealing material and type of seal and installation												
<sup>7</sup> also for p <sub>abs</sub> ≤ 1 bar												
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												
Vibration	acc. to DIN EN 60068-2-6 G 1/2": 20 g RMS (25...2000 Hz) others: 10 g RMS (25...2000 Hz)											
Shock	acc. to DIN EN 60068-2-27 G 1/2": 500 g / 1 msec others: 100 g / 1 msec											
Filling fluids												
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											
Materials												
Housing / electrical connection	stainless steel 1.4404 (316 L)											
Pressure port	stainless steel 1.4435 (316 L), R <sub>a</sub> < 0.8 µm (media wetted parts and weld seam)											
Diaphragm	stainless steel 1.4435 (316 L), R <sub>a</sub> < 0.15 µm											
Seals	standard: FKM (recommended for medium temperatures ≤ 200 °C) option: FFKM (recommended for medium temperatures < 260 °C) others on request Clamp, Varivent®: without											
Media wetted parts	pressure port seal diaphragm											

## Miscellaneous


EHEDG certificate Type EL Class I (in preparation)	EHEDG conformity is only ensured in combination with an approved seal. This is e.g. for - Clamp (C61, C62): T-ring-seal from Combifit International B.V. - Varivent® (P41): EPDM-O-ring which is FDA-listed
Weight	approx. 200 g
Current consumption	max. 15 mA
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 $p_N \leq 2$ bar have to be specified in the order)
CE-conformity	EMC Directive: 2014/30/EU

### Wiring diagram

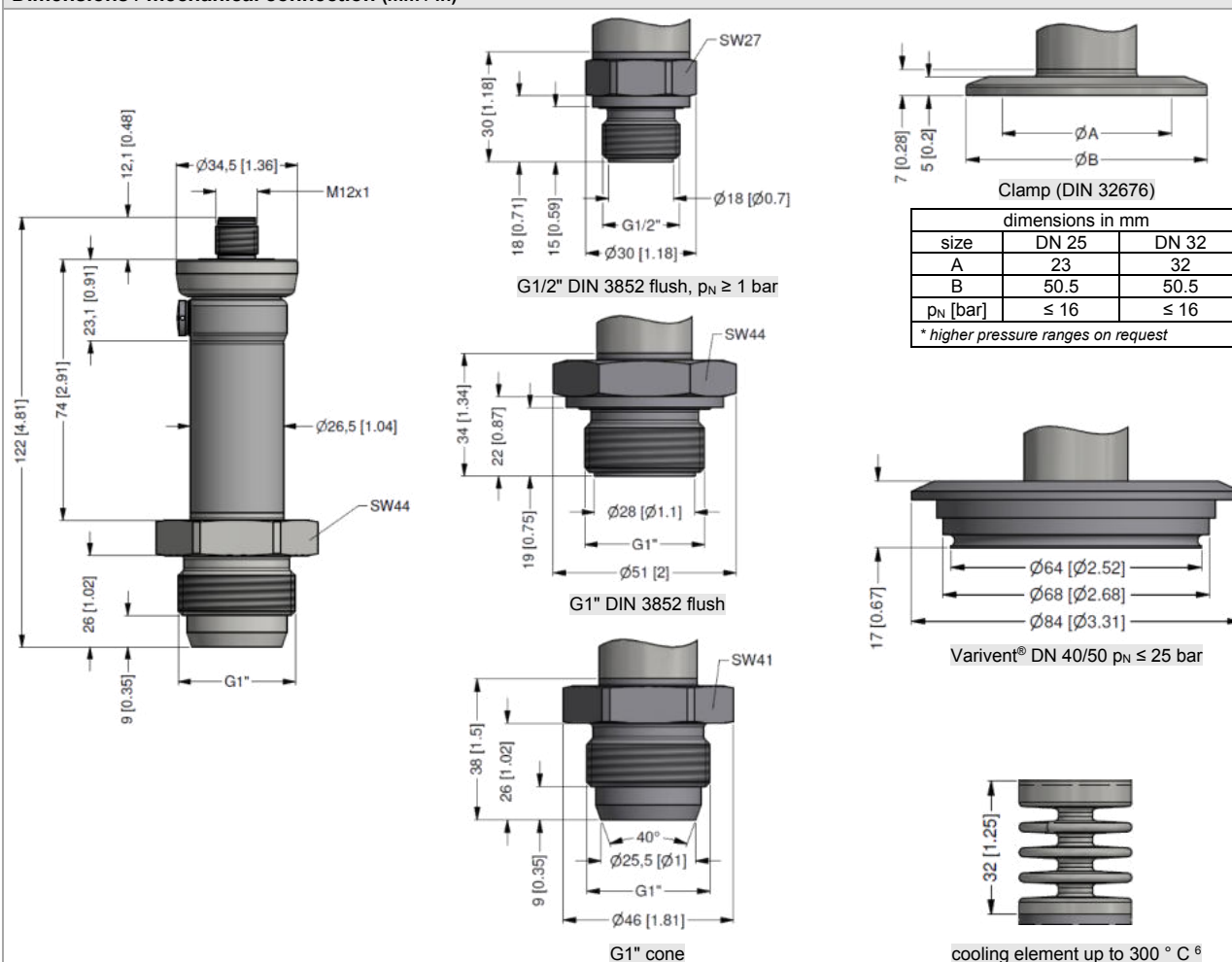


### Pin configuration / electrical connection

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



#### Dimensions / mechanical connection (mm / in)



⇒ metric threads and other versions on request

<sup>6</sup> max. temperature depends on the used sealing material and type of seal and installation

Ordering code IDCT 533P

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<sup>1</sup> absolute pressure possible from 0.4 bar

Varivent® is a brand name of GEA Tuchenhausen GmbH