



# 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 % Al<sub>2</sub>O<sub>3</sub> 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



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Technical Data

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 $\geq$ [bar]	-0.2		-0.3		-0.5				-1							

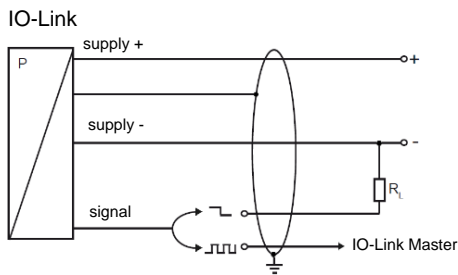
Output signal / Supply	
Standard	IO-Link (measured value transmission) SIO (switching output) $V_s = 18 \dots 30 V_{DC}$
IO-Link	V 1.1 / slave / smart sensor profile
Data transfer	COM 2 38.4 kbit/sec
Mode	SIO / IO-Link
Standard	IEC 61131-9
Performance	
Accuracy <sup>1</sup>	standard: $\leq \pm 0.35\%$ FSO option for $p_N \geq 0.6$ bar: $\leq \pm 0.25\%$ FSO
Switching current (SIO-Mode)	max. 200 mA
Switching frequency	max. 200 Hz
Switching cycles	$> 100 \times 10^6$
Long term stability	$\leq \pm 0.1\%$ FSO / year at reference conditions
Turn-on time	SIO mode: approx. 20 msec
Response time	SIO mode: $< 4$ msec
Measuring rate	400 Hz
<sup>1</sup> accuracy according to IEC 60770 – limit point adjustment (non-linearity, hysteresis, repeatability)	
Thermal effects (offset and span)	
Tolerance band	$\leq \pm 1\%$ FSO
In compensated range	$-20 \dots 80$ °C
Permissible temperatures	
Medium	$-40 \dots 125$ °C
Electronics / environment	$-40 \dots 85$ °C
Storage	$-40 \dots 100$ °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	
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 <sub>2</sub> O <sub>3</sub> 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

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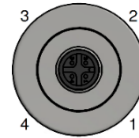
Technical Data

## Wiring diagram

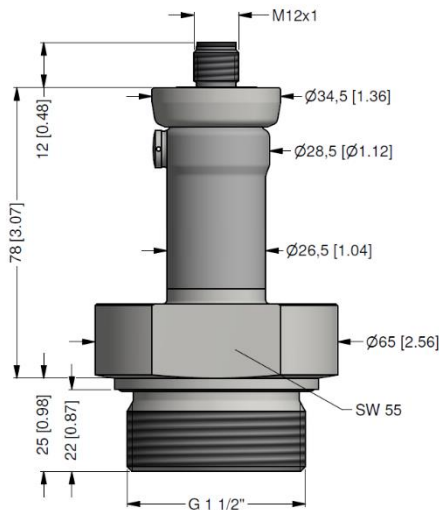


## Pin configuration / electrical connection

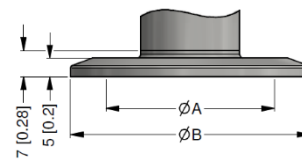
Electrical connection	M12x1 / metal (4-pin)
Supply +	1
Supply -	3
SIO / IO Link	4
Shield	housing



## Dimensions / mechanical connection (mm / in)



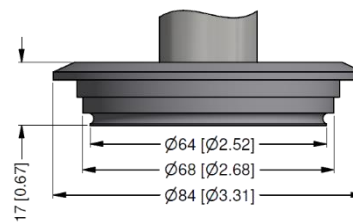
G 1 1/2" flush (DIN 3852)



Clamp (DIN 32676)

dimensions in mm		
size	DN 25	DN 50
A	23	45
B	50.5	64
pN [bar]	≤ 16	≤ 16

\* higher pressure ranges on request



Varivent® DN 40/50

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## Ordering code DCT 553P

**DCT 553P**

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<b>Pressure</b>											
	gauge		2	9	8						
	absolute <sup>1</sup>		2	9	6						
<b>Input</b>											
	[mH <sub>2</sub> O]	[bar]									
	0.4	0.04		0	4	0	0				
	0.6	0.06		0	6	0	0				
	1.0	0.10		1	0	0	0				
	1.6	0.16		1	6	0	0				
	2.5	0.25		2	5	0	0				
	4.0	0.40		4	0	0	0				
	6.0	0.60		6	0	0	0				
	10	1.0		1	0	0	1				
	16	1.6		1	6	0	1				
	25	2.5		2	5	0	1				
	40	4.0		4	0	0	1				
	60	6.0		6	0	0	1				
	100	10		1	0	0	2				
	160	16		1	6	0	2				
	200	20		2	0	0	2				
	customer			9	9	9	9		consult		
<b>Output</b>											
	IO-Link / SIO					I	O				
<b>Accuracy</b>											
standard:	0.35 % FSO							3			
option for p <sub>N</sub> ≥ 0.6 bar:	0.25 % FSO							2			
customer								9	consult		
<b>Electrical connection</b>											
male plug M12x1 (4-pin) / metal						M	1	7			
customer						9	9	9	consult		
<b>Mechanical connection</b>											
G 1 1/2" DIN flush (DIN 3852)						M	0	0			
Clamp DN 32 (DIN 32676)						C	6	2			
Clamp DN 50 (DIN 32676)						C	6	3			
Varivent® DN 40/50						P	4	1	consult		
customer						9	9	9	consult		
<b>Seal</b>											
FKM								1			
EPDM								3			
customer								9	consult		
<b>Pressure port</b>											
stainless steel 1.4404 (316L)								1			
customer								9	consult		
<b>Diaphragm</b>											
ceramics Al <sub>2</sub> O <sub>3</sub> 99.9 %								C			
customer								9	consult		
<b>Special version</b>											
standard								0	0	0	
customer								9	9	9	consult

<sup>1</sup> absolute pressure from 0.04 bar up to 0.25 bar on request

Varivent® is a brand name of GEA Tuchenhagen GmbH