



DCT 553P

Industrial Pressure Transmitter with IO-Link Interface

Process Connections with semi-flush
ceramic diaphragm

accuracy according to IEC 61298-2:
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



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Technical Data

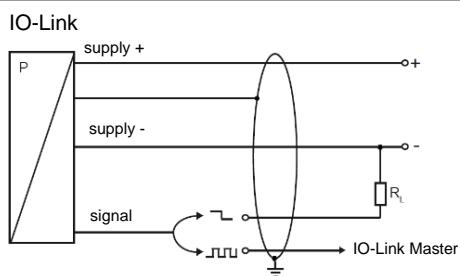
Input pressure range																																					
Nominal pressure gauge	[bar]	0.04	0.06	0.1	0.16	0.25	0.4	0.6	1	1.6	2.5	4	6	10	16	20																					
Nominal pressure absolute	[bar]	on request				0.4	0.6	1	1.6	2.5	4	6	10	16	20																						
Overpressure	[bar]	2	2	4	4	6	6	8	8	15	25	25	35	35	45	45																					
Burst pressure ≥	[bar]	-0.2	-0.3		-0.5			-1																													
Output signal / Supply																																					
Standard	IO-Link (measured value transmission) SIO (switching output)										$V_S = 18 \dots 30 \text{ V}_{\text{DC}}$																										
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 ¹	standard: $\leq \pm 0.35 \% \text{ FSO}$ option for $p_N \geq 0.6 \text{ bar}$: $\leq \pm 0.25 \% \text{ FSO}$																																				
Switching current (SIO-Mode)	max. 200 mA																																				
Switching frequency	max. 200 Hz																																				
Switching cycles	$> 100 \times 10^6$																																				
Long term stability	$\leq \pm 0.1 \% \text{ FSO} / \text{year at reference conditions}$																																				
Turn-on time	SIO mode: approx. 20 msec																																				
Response time	SIO mode: < 4 msec																																				
Measuring rate	400 Hz																																				
¹ accuracy according to IEC 61298-2 – limit point adjustment (non-linearity, hysteresis, repeatability)																																					
Thermal effects (offset and span)																																					
Tolerance band	$\leq \pm 1 \% \text{ FSO}$																																				
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																																					
Vibration	20 g RMS / 10 ... 2000 Hz according to DIN EN 60068-2-6																																				
Shock	500 g / 1 msec half sine 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																																				

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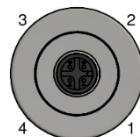
Technical Data

Wiring diagram

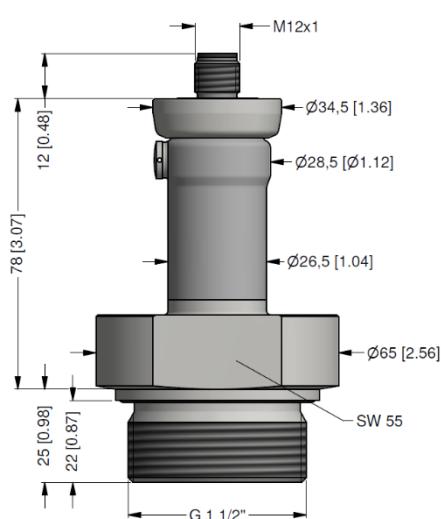


Pin configuration / electrical connection

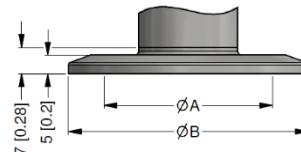
Electrical connection	M12x1 / metal (4-pin)
Supply +	1
Supply -	3
SIO / IO Link	4
Shield	housing



Dimensions / mechanical connection (mm / in)

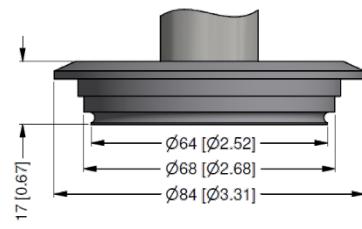


G 1 1/2" flush (DIN 3852)



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

Ordering code DCT 553P

DCT 553P															
Pressure															
		gauge absolute ¹	2 9 8 2 9 6												
Input	[mH ₂ 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
Output	IO-Link / SIO			I O											
Accuracy															
standard:	0.35 % FSO														
option for p _N ≥ 0.6 bar:	0.25 % FSO														
	customer														consult
Electrical connection															
male plug M12x1 (4-pin) / metal					M 1 7										
customer					9 9 9										consult
Mechanical connection															
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
Seal															
FKM							1								
EPDM							3								
customer							9								consult
Pressure port															
stainless steel 1.4404 (316L)							1								
customer							9								consult
Diaphragm															
ceramics Al ₂ O ₃ 99.9 %							C								
customer							9								consult
Special version															
standard							0 0 0								
customer							9 9 9								consult

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

Varivent® is a brand name of GEA Tuchenhagen GmbH