



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



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 ... 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 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: $< 4 \text{ msec}$
Measuring rate	400 Hz

¹ accuracy according to IEC 60770 – limit point adjustment (non-linearity, hysteresis, repeatability)

Thermal effects (offset and span)

Tolerance band	$\pm 1 \%$ 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

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

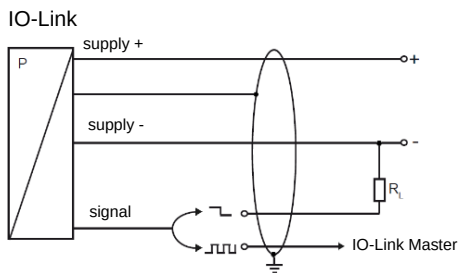
Materials

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
1. General Information: - Name: _____ - Address: _____ - City: _____ State: _____ Zip: _____ - Phone: _____
2. Medical History: - Current Medications: _____ - Previous Surgeries: _____ - Chronic Conditions: _____ - Allergies: _____
3. Insurance Information: - Insurance Company: _____ - Policy Number: _____ - Primary Care Physician: _____
4. Other Notes: _____ _____ _____

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

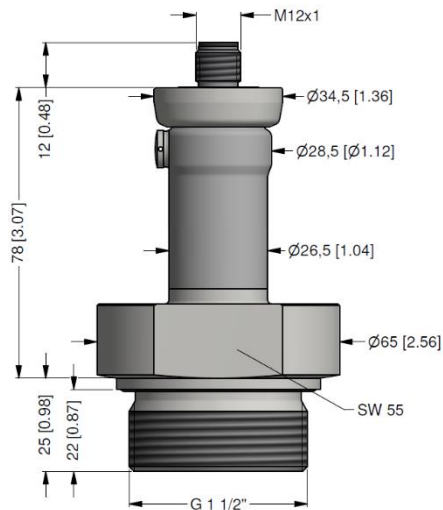
Wiring diagram



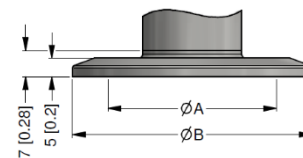
Pin configuration / electrical connection

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

Dimensions / mechanical connection (mm / in)



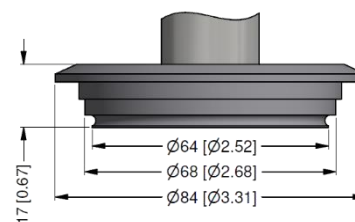
G 1 1/2" flush (DIN 3852)



Clamp (DIN 32676)

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

* higher pressure ranges on request



Varivent® DN 40/50

Ordering code DCT 553P

DCT 553P

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Pressure											
	gauge	2	9	8							
	absolute ¹	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				3						
option for p _N ≥ 0.6 bar:	0.25 % FSO				2						
	customer				9						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 Tuchenhausen GmbH

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01.04.2022