

# DCT 563

## 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 kBaud
- 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 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 IO-Link 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 almost every industrial application, if medium is compatible with stainless steel 316L and ceramics.

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

  **IO-Link**

Input pressure range <sup>1</sup>										
Nominal pressure gauge	[bar]	-1...0 <sup>2</sup>	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 gauge / abs.	[bar]	25	40	60	100	160	250	400	600
Overpressure	[bar]	50	120	120	200	400	400	650	800
Burst pressure ≥	[bar]	75	150	180	300	500	750	1000	1100

Vacuum resistance unlimited vacuum resistance

<sup>1</sup> PVDF pressure port possible for nominal pressure ranges up to 60 bar

<sup>2</sup> accuracy ≤ 1 % FSO

Output signal / Supply	
Standard	IO-Link (measured value transmission) V <sub>S</sub> = 18 ... 30 V <sub>DC</sub> SIO (switching output)
IO-Link	V 1.1 / Slave / Smart Sensor Profile
Data transfer	COM 2 38,4 kBaud
Mode	SIO / IO-Link
Standard	IEC 61131-9

Performance	
Accuracy <sup>3</sup>	≤ ± 0.5 % 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-Modus: ca. 20 ms
Response time	SIO-Modus: < 4 ms
Measuring rate	400 Hz

<sup>3</sup> accuracy according to IEC 60770 – limit point adjustment (non-linearity, hysteresis, repeatability)

Thermal effects (Offset and Span) / Permissible Temperatures	
Thermal error	≤ ± 0.3 % FSO / 10 K
in compensated range	-25 ... 85 °C
Permissible temperatures <sup>4</sup>	medium: -25 ... 125 °C    electronics / environment: -25 ... 85 °C    storage: -40 ... 80 °C

<sup>4</sup> for pressure port of PVDF the minimum temperature is -30 °C

Electrical protection	
Short-circuit protection	permanent
Reverse polarity protection	no damage, but also no function
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" open port with nominal pressure range up to 60 bar: PVDF    others on request
Housing	stainless steel 1.4404 (316L)
Seals (media wetted)	standard: FKM options: EPDM (for P <sub>N</sub> ≤ 160 bar)    others on request
Diaphragm	ceramic Al <sub>2</sub> O <sub>3</sub> 96 %
Media wetted parts	pressure port, seal, diaphragm

Miscellaneous	
Option oxygen application	for P <sub>N</sub> ≤ 15 bar: O-ring in 70 EPDM 281 (with BAM-approval); permissible maximum values are 15 bar / 60° C and 10 bar / 90° C for P <sub>N</sub> ≤ 25 bar: O-ring in FKM Vi 567 (with BAM-approval); permissible maximum values are 25 bar / 150° C
Current consumption	max. 20 mA
Weight	approx. 140 g
Installation position	any
Protection class	IP 67
Operational life	> 100 x 10 <sup>6</sup> pressure cycles
CE-conformity	EMC Directive: 2004/108/EC    Pressure Equipment Directive: 97/23/EC (module A) <sup>5</sup>

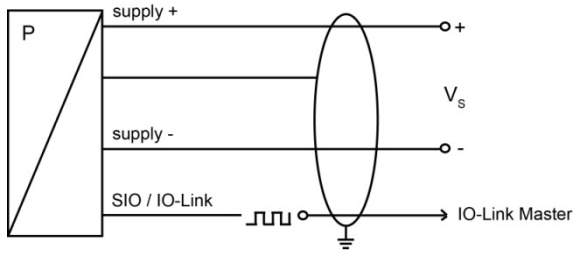
<sup>5</sup> This directive is only valid for devices with maximum permissible overpressure > 200 bar

# DCT 563

Industrial Pressure Transmitter with IO Link interface

Technical Data

## Wiring diagrams

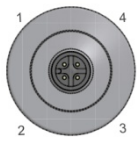
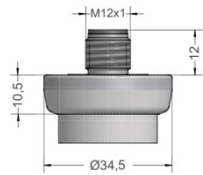


## Pin configuration

Electrical connection	M12x1 / metal (4-pin)	Binder 723 (5-pin)	cable colours (DIN 47100)
Supply +	1	1	wh (white)
Supply -	3	3	bn (brown)
SIO / IO Link	4	4	gn (green)
Shield	housing	housing	ye/gn (yellow / green)

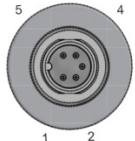
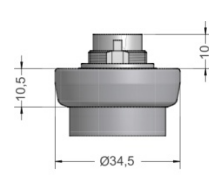
## Electrical connections (dimensions in mm)

### standard

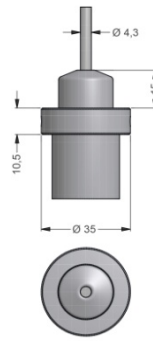


M12x1 4-pin (IP 67)

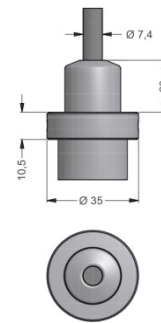
### option



Binder Series 723 5-pin (IP 67)



cable outlet with PVC cable (IP 67)<sup>5</sup>



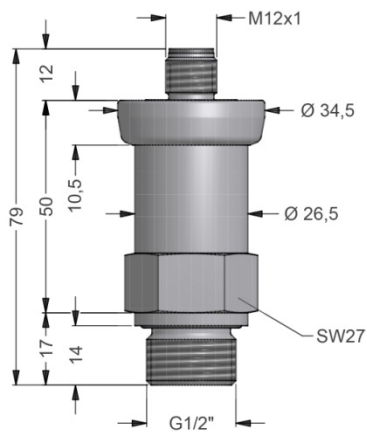
cable outlet, cable with ventilation tube (IP 68)<sup>6</sup>

<sup>5</sup> standard: 2 m PVC cable without ventilation tube (permissible temperature: -5 ... 70°C)

<sup>6</sup> different cable types and lengths available, permissible temperature depends on kind of cable

## Mechanische Anschlüsse (Maße in mm)

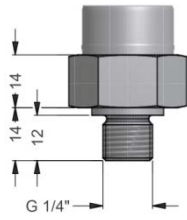
### standard



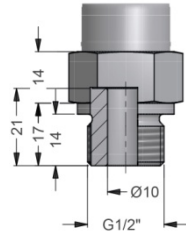
G1/2" DIN 3852 with M12x1

**Mechanical connections (dimensions in mm)**

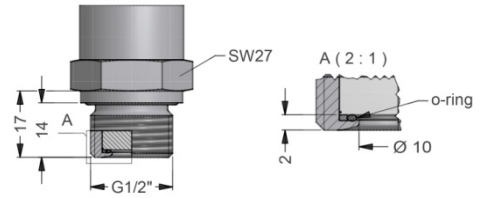
**option**



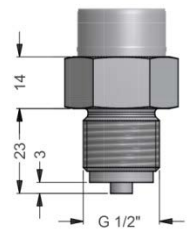
G1/4" DIN 3852



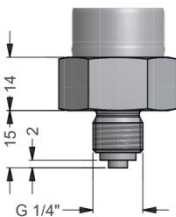
G1/2" open port



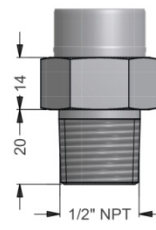
G1/2" DIN 3852  
with flush sensor<sup>6</sup>



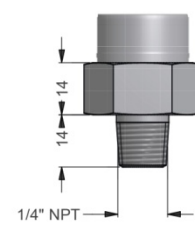
G1/2" EN 837



G1/4" EN 837



1/2" NPT



1/4" NPT

⇒ metric threads and other versions on request

<sup>6</sup> possible for nominal pressure ranges  $PN \leq 25$  bar; absolute pressure ranges on request

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The specifications given in this document represent the state of engineering at the time of publishing. We reserve the right to make modifications to the specifications and materials.

## Ordering code DCT 563

DCT 563

<b>Pressure</b>										
	gauge	D	C	5						
	absolute	D	C	6						
<b>Input</b>										
	[bar]									
	0.6	6	0	0	0					
	1	1	0	0	1					
	1.6	1	6	0	1					
	2.5	2	5	0	1					
	4	4	0	0	1					
	6	6	0	0	1					
	10	1	0	0	2					
	16	1	6	0	2					
	25	2	5	0	2					
	40	4	0	0	2					
	60	6	0	0	2					
	100	1	0	0	3					
	160	1	6	0	3					
	250	2	5	0	3					
	400	4	0	0	3					
	600	6	0	0	3					
	-1 ... 0	X	1	0	2					
	customer	9	9	9	9					consult
<b>Output</b>										
	IO-Link / SIO					IO				
<b>Accuracy</b>										
	0.5 %								5	
	customer								9	consult
<b>Electrical connection</b>										
	Male plug M12x1 (4-pin) / metal							M	1	7
	Male plug Binder series 723 (5-pin)								2	0
	Cable outlet with PVC cable <sup>1</sup>							T	A	0
	Cable outlet (IP68) <sup>2</sup>							T	R	0
	customer							9	9	9
<b>Mechanical connection</b>										
	G1/2" DIN 3852								1	0
	G1/2" EN 837								2	0
	G1/4" DIN 3852								3	0
	G1/4" EN 837								4	0
	G1/2" DIN 3852 with <sup>4</sup>									
	semi-flush sensor							F	0	0
	G1/2" DIN 3852 open pressure port								H	0
	1/2" NPT								N	0
	1/4" NPT								N	4
	customer							9	9	9
<b>Seals</b>										
	FKM									1
	EPDM <sup>5</sup>									3
	customer									9
<b>Pressure port</b>										
	Stainless steel 1.4404 (316L)									1
	PVDF <sup>6</sup>									B
	customer									9
<b>Diaphragm</b>										
	Ceramics Al <sub>2</sub> O <sub>3</sub> 96%									2
	customer									9
<b>Special version</b>										
	standard									0
	oxygen application <sup>7</sup>									0
	customer									9

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<sup>1</sup> standard: 2 m PVC cable without ventilation tube (permissible temperature: -5 ... 70°C)  
<sup>2</sup> cable with ventilation tube (code TR0 = PVC cable), different cable types and lengths available, price without cable  
<sup>3</sup> metric threads and others on request  
<sup>4</sup> possible for nominal pressure ranges P<sub>N</sub> ≤ 25 bar; absolute pressure ranges on request  
<sup>5</sup> possible for nominal pressure range P<sub>N</sub> ≤ 160 bar  
<sup>6</sup> PVDF only with G1/2" DIN 3852 open pressure port (up to 60 bar), minimum permissible temperature is -30 °C  
<sup>7</sup> oxygen application with FKM-seal up to 25 bar and with EPDM-seal up to 15 bar possible