

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 kbit/s
- 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

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 parameterized and the measured values transferred. The integration to the master is easy by using the IODD-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 pasty, polluted and aggressive media as well as for low-pressure oxygen applications.

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



Input pressure range ¹										
Nominal pressure gauge	[bar]	-1...0 ²	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								
¹ PVDF pressure port possible for nominal pressure ranges up to 60 bar										
² accuracy ≤ 1 % FSO										

Output signal / Supply	
Standard	IO-Link (measured value / status transmission) / V _S = 18 ... 30 VDC SIO (switching output)
IO-Link	V 1.1 / slave / smart sensor profile
Data transfer	COM2 38.4 kbit/s
Mode	SIO / IO-Link (COMx)
Standard	IEC 61131-2, IEC 61131-9

Performance	
Accuracy ³	≤ ± 0.5 % FSO
Switching current (SIO-Mode)	max. 200 mA
Switching frequency	max. 200 Hz
Switching cycles	> 100 x 10 ⁶
Long term stability	≤ ± 0.1 % FSO / year at reference conditions
Turn-on time	SIO modus: approx. 20 msec
Response time	SIO modus: < 4 msec
Measuring rate	400 Hz

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

Thermal effects (Offset and Span)	
Thermal error	≤ ± 0.3 % FSO / 10 K
In compensated range	-25 ... 85 °C

Permissible Temperatures	
Permissible temperatures ⁴	medium: -25 ... 125 °C electronics / environment: -25 ... 85 °C storage: -40 ... 80 °C

⁴ for pressure port in PVDF the medium temperature is -25 ... 60 °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 _N ≤ 160 bar) others on request
Diaphragm	ceramic Al ₂ O ₃ 96 %
Media wetted parts	pressure port, seal, diaphragm

Miscellaneous	
Option oxygen application	for p _N ≤ 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 million load cycles
CE-conformity	EMC Directive: 2014/30/EU Pressure Equipment Directive: 2014/68/EU (module A) ⁵

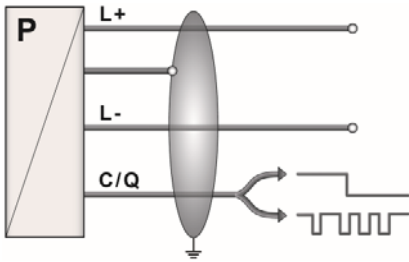
⁵ This directive is only valid for devices with maximum permissible overpressure > 200 bar

DCT 563

Industrial Pressure Transmitter with IO Link interface

Technical Data

Wiring diagram

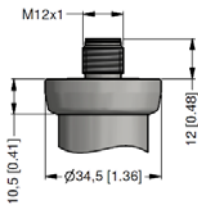


Pin configuration

Electrical connection	M12x1 / metal (4-pin)	cable colour (IEC 60757)
(L+) Supply +	1	WH (white)
(L-) Supply -	3	BN (brown)
(C/Q) SIO / IO Link (COMx)	4	GN (green)
Shield	housing	GNYE (green-yellow)

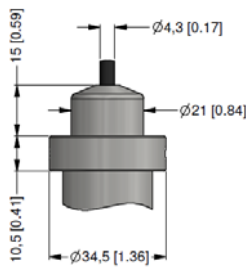
Electrical connections (dimensions mm / in)

standard

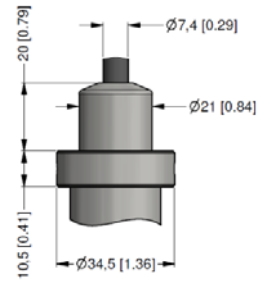


M12x1, 4-pin (IP 67)

option



cable outlet with PVC cable (IP 67) ⁶

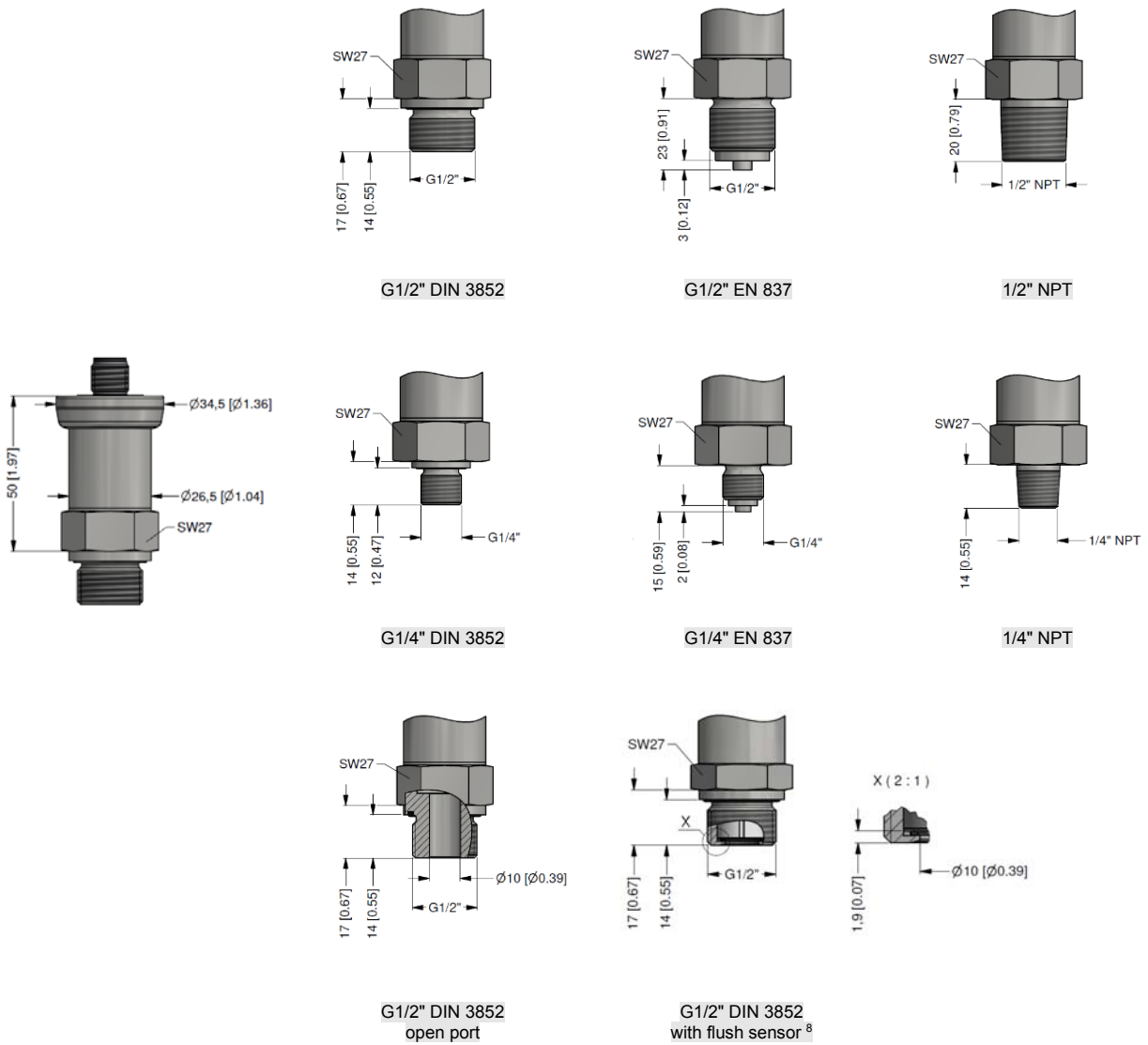


cable outlet, cable with ventilation tube (IP 68) ⁷

⁶ standard: 2 m PVC cable without ventilation tube (permissible temperature: -5 ... 70°C)

⁷ different cable types and lengths available, permissible temperature depends on kind of cable

Mechanical connections (dimensions mm / in)



⇒ metric threads and other versions on request

⁸ possible for nominal pressure ranges $p_N \leq 25$ bar; absolute pressure ranges on request

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Ordering code DCT 563

DCT 563

□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□
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Pressure		gauge	D	C	5														
		absolute	D	C	6														
Input		[bar]																	
		0.6	6	0	0	0													
		1.0	1	0	0	1													
		1.6	1	6	0	1													
		2.5	2	5	0	1													
		4.0	4	0	0	1													
		6.0	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
Output		IO-Link (COMx) / SIO																	
		IO																	
Accuracy		0.5 % FSO																	
		customer																	consult
Electrical connection		male plug M12x1 (4-pin) / metal																	
		cable outlet with PVC cable (IP67) ¹																	
		cable outlet,																	
		cable with ventilation tube (IP68) ²																	
		customer																	consult
Mechanical connection ³		G1/2" DIN 3852																	
		G1/2" EN 837																	
		G1/4" DIN 3852																	
		G1/4" EN 837																	
		G1/2" DIN 3852 with																	
		semi-flush sensor ⁴																	
		G1/2" DIN 3852 open pressure port																	
		1/2" NPT																	
		1/4" NPT																	
		customer																	consult
Seals		FKM																	
		EPDM ⁵																	
		customer																	consult
Pressure port		stainless steel 1.4404 (316L)																	
		PVDF ⁶																	
		customer																	consult
Diaphragm		ceramics Al ₂ O ₃ 96%																	
		customer																	consult
Special version		standard																	
		oxygen application ⁷																	
		customer																	consult

¹ standard: 2 m PVC cable without ventilation tube (permissible temperature: -5 ... 70 °C); others on request

² code TR0 = PVC cable, cable with ventilation tube available in different types and lengths

³ metric threads and others on request

⁴ possible for nominal pressure ranges $p_N \leq 25$ bar; absolute pressure ranges on request

⁵ possible for nominal pressure range $p_N \leq 160$ bar

⁶ PVDF only with G1/2" DIN 3852 open pressure port (up to 60 bar); permissible medium temperature: -25 ... 60 °C

⁷ oxygen application with FKM-seal up to 25 bar